



N E V A D A

AGENDA  
Regular Meeting  
City Council

Wednesday, April 6, 2022 • 5:00 PM

Mayor  
Roy Edgington

City Council  
Ward 1 - Raymond Lacy  
Ward 2 - Felicity Zoberski  
Ward 3 - Stan Lau  
Ward 4 - Albert Torres  
Ward 5 - Fran McKay

City Manager  
Daphne Hooper

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Fernley City Council Chambers, 595 Silver Lace Boulevard, Fernley, NV 89408

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**Zoom information:**

Please click the following link to join the webinar: <https://us02web.zoom.us/j/87544726373>, or one tap mobile: 12532158782, Dial: 669 900 9128, Webinar ID: 875 4472 6373

**Public Notice:** This agenda has been physically posted in compliance with 241.020 at Fernley City Hall, 595 Silver Lace Blvd. In addition, this agenda has been electronically posted in compliance with NRS 241.020(3) at [www.cityoffernley.org](http://www.cityoffernley.org) and NRS 232.2175 at <https://notice.nv.gov/>. To obtain further documentation regarding posting, please contact the City Clerk's Office at (775) 784-9830 or [cityclerk@cityoffernley.org](mailto:cityclerk@cityoffernley.org)

**Public Comment:** Those wishing to address the City Council may submit public comment through the online public comment form found at <https://www.cityoffernley.org/forms>, or by sending an email to [cityclerk@cityoffernley.org](mailto:cityclerk@cityoffernley.org). Comments received prior to 4:00 pm the day of the meeting will be provided to City Council and added to the record but will not be read during the live meeting. Public comments received after 4 pm the day of the meeting will be included in the record but may not reach council members before action is taken. Public comment, whether on action items or public comment, is limited to three (3) minutes per person. Unused time may not be reserved by the speaker, nor allocated to another speaker. The public may comment on any matter that is not specifically included on an agenda as an action item or comment on a specific agenda item. Items not included on the agenda cannot be acted upon other than to place them on a future agenda. Additionally, if you wish you can comment in person at the meeting or use the Raise your Hand feature in Zoom (\*9 if you are participating via phone).

**Accommodations:** City Council and staff will make reasonable efforts to assist and accommodate individuals with disabilities desiring to attend the meeting. Please contact the City Clerk's Office at (775) 784-9830 in advance so that arrangements can be made.

**Supporting Material:** Staff reports and supporting material for the meeting are available at the City Clerk's Office, and on the City's website at [www.cityoffernley.org](http://www.cityoffernley.org). Pursuant to NRS 241.020(6), supporting material is made available to the general public at the same time it is provided to the City Council.

**Order of Business:** The presiding officer shall determine the order of the agenda. The Fernley City Council may combine two or more agenda items for consideration; remove an item from the agenda; or delay discussion relating to an item on the agenda at any time. All items are action items unless otherwise noted. Items scheduled to be heard at a specific time will be heard no earlier than the stated time but may be heard later.

## **1. INTRODUCTORY ITEMS**

### **1.1. Roll Call**

### **1.2. Public Forum**

### **1.3. (For Possible Action) Approval of Agenda**

## **2. CONSENT AGENDA**

(PLEASE NOTE: ALL MATTERS LISTED UNDER THE CONSENT AGENDA ARE CONSIDERED ROUTINE, AND MAY BE ACTED UPON BY THE COUNCIL MEMBERS IN ONE MOTION, AND WITHOUT AN EXTENSIVE HEARING. ANY MEMBER OF THE COUNCIL MAY REQUEST THAT AN ITEM BE TAKEN FROM THE CONSENT AGENDA, DISCUSSED, AND ACTED UPON SEPARATELY DURING THIS MEETING.)

### **2.1. (For possible action) Approval of Voucher Report**

### **2.2. (Possible action) Approval of Business Licenses**

### **2.3. (For possible action) Approval of the contract between the City of Fernley and Kalbacher Associates LLC for comprehensive grant services in the amount not-to-exceed \$2,250/month from March 1, 2022 through June 30, 2022.**

### **2.4. (For possible action) To approve a contract with Construction Materials Engineers, Inc (CME) for an amount not to exceed \$28,510.00 for inspection services for the Farm District Rd Lift Station Reconstruction and Grit Chamber removal project.**

### **2.5. (For possible action) Approval of Minutes from March 2, 2022**

## **3. REPORTS THIS ITEM IS FOR VARIOUS PUBLIC ENTITY REPRESENTATIVES TO PROVIDE GENERAL INFORMATION TO THE COUNCIL AND PUBLIC. NO ACTION WILL BE TAKEN.**

### **3.1. Reports by City Staff, City Council, and the Mayor, including but not limited to monthly statistical reports by city departments.**

## **4. PROCLAMATIONS BY THE MAYOR**

## **5. PRESENTATIONS**

### **5.1. Presentation by Jim Womack of Atlanta Capital Investment Management Company regarding the City's investment portfolio.**

## **6. ORDINANCES**

### **6.1. (For possible action) First Reading, Introduction of Bill #307 Zoning Map Amendment – ZMA22002**

Consideration and possible action to introduce Bill #307 as an ordinance for a Zoning Map Amendment request associated with ZMA22002, to change the zoning on two parcels of land from C2 (General Commercial) and SF6 (Single Family, 6,000 sq. ft. minimum lot size) to MU (Mixed Use). The project site is approximately ±28.42 acres in size and is located at 590 & 600 W. Main Street (APN's: 021-071-02, and 021-072-03).

### **6.2. (For possible action) First Reading, Introduction of Bill #306 – ZMA22001**

Consideration and possible action to introduce Bill #306 as a general Ordinance for a Zoning Map Amendment, associated with ZMA22001, to change the zoning on a single parcel of vacant land from C2 (General Commercial) to I (Industrial) on a site approximately ±27.83 acres in size located at 1000 Pilot Road, Fernley, NV (APN: 021-061-32).

### **6.3. (For possible action) First Reading, Introduction, of Bill #308 - ZMA22003**

Consideration and possible action to introduce Bill #308 as an ordinance for a Zoning Map Amendment to change the zoning of a single parcel of land from SF6 (Single Family, 6,000 sq. ft. minimum lot size) to MF21 (Multi-Family, 10-21 dwelling units per acre). The project site



is approximately ±3.94 acres in size and is located at 1170 Newlands Drive (APN: 020-320-01).

**7. STAFF REPORTS**

**7.1. (For possible action) Update and discussion regarding Main Street Park and partnership with Rotary.**

**7.2. (For possible action) Discussion on Development Review Operations Assessment Implementation Action Plan Update**

**8. ADDRESS REQUEST(S) FOR FUTURE AGENDA ITEMS**

**9. PUBLIC FORUM**

**10. ADJOURNMENT**

**Next Meeting: April 20, 2022 @ 5 PM**



# CITY OF FERNLEY

## City Council AGENDA REPORT

Meeting Date: April 6, 2022

**REPORT TO:** Mayor and City Council

**REPORT FROM:** Jennie Carrick

**FINANCIAL IMPACT:**

Yes: No:

**CURRENTLY BUDGETED:**

Yes: No:

**FUND/ACCOUNT:**

various

**ACTION REQUESTED:**

**AGENDA ITEM: (For Possible Action):**

(For possible action) Approval of Voucher Report

**AGENDA ITEM BRIEF:**

Voucher Report

**RECOMMENDED MOTION:**

**BUSINESS IMPACT (per NRS Chapter 237):**

n/a

See attached report for background, analysis, alternatives.

**ALTERNATIVES:**

**BACKGROUND:**

n/a

**RELEVANT LAWS, STATUTES, AND REGULATIONS:**

**FINANCIAL IMPLICATIONS:**

**ATTACHMENTS:**

1. Vouchers for FCC Meeting 04062022

## Report Criteria:

Detail report.

Invoice detail records above \$0 included.

Paid and unpaid invoices included.

Vendor.Vendor Number = {&lt;&gt;} 2201

| Vendor                                             | Vendor Name                             | Invoice Number | Description                                                   | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title                  | GL Period |
|----------------------------------------------------|-----------------------------------------|----------------|---------------------------------------------------------------|--------------|----------------|------------|---------------------------------------|-----------|
| <b>AECOM TECHNICAL SERVICES, INC.</b>              |                                         |                |                                                               |              |                |            |                                       |           |
| 8633                                               | AECOM TECHNICAL SERVICES, INC.          | 2000582821     | Engineering services for the Gustafson bridge structural asse | 01/17/2022   | 1,789.00       |            | 100-475-342 Tech Services-Other       | 122       |
| 8633                                               | AECOM TECHNICAL SERVICES, INC.          | 2000596692     | Surface water conveyance project construction management      | 02/25/2022   | 16,839.00      | 03/17/2022 | 510-166100 Construction In Progress   | 222       |
| Total 8633:                                        |                                         |                |                                                               |              | 18,628.00      |            |                                       |           |
| <b>AGA - ASSOC OF GOVERNMENT ACCOUNTANTS</b>       |                                         |                |                                                               |              |                |            |                                       |           |
| 8518                                               | AGA - ASSOC OF GOVERNMENT ACCOUNTANTS   | 116201 DL      | RENEW GOV MEMBERSHIP D LEWIS                                  | 03/02/2022   | 100.00         | 03/17/2022 | 100-415-581 Dues and Memberships      | 322       |
| 8518                                               | AGA - ASSOC OF GOVERNMENT ACCOUNTANTS   | 15771 TL       | RENEW GOV MEMBERSHIP T LUKAS                                  | 03/02/2022   | 100.00         | 03/17/2022 | 100-415-581 Dues and Memberships      | 322       |
| Total 8518:                                        |                                         |                |                                                               |              | 200.00         |            |                                       |           |
| <b>AIT ADVANCED INTERPRETING &amp; TRANSLATION</b> |                                         |                |                                                               |              |                |            |                                       |           |
| 8498                                               | AIT ADVANCED INTERPRETING & TRANSLATION | 202202A-FMC    | Vera-Resendiz/Mudrovich                                       | 02/09/2022   | 140.00         | 03/24/2022 | 100-425-330 PROF SERV-INTERPRETER     | 222       |
| 8498                                               | AIT ADVANCED INTERPRETING & TRANSLATION | 202202B-FMC    | Vera-Resendiz                                                 | 02/10/2022   | 140.00         | 03/24/2022 | 100-425-330 PROF SERV-INTERPRETER     | 222       |
| 8498                                               | AIT ADVANCED INTERPRETING & TRANSLATION | 202202C-FMC    | Arenas-Gonzalez                                               | 03/01/2022   | 280.00         | 03/24/2022 | 100-425-330 PROF SERV-INTERPRETER     | 322       |
| 8498                                               | AIT ADVANCED INTERPRETING & TRANSLATION | 202203A-FMC    | Aguilera                                                      | 03/16/2022   | 140.00         | 03/24/2022 | 100-425-330 PROF SERV-INTERPRETER     | 322       |
| Total 8498:                                        |                                         |                |                                                               |              | 700.00         |            |                                       |           |
| <b>ALHAMBRA</b>                                    |                                         |                |                                                               |              |                |            |                                       |           |
| 4688                                               | ALHAMBRA                                | 7661929031722  | Shop - Bottled Water Service                                  | 03/17/2022   | 166.78         |            | 510-810-614 Supplies-Plant/Shop/Maint | 322       |
| Total 4688:                                        |                                         |                |                                                               |              | 166.78         |            |                                       |           |
| <b>ARAMARK</b>                                     |                                         |                |                                                               |              |                |            |                                       |           |
| 1895                                               | ARAMARK                                 | 259000101011   | Rugs and Rags                                                 | 03/10/2022   | 107.62         | 03/17/2022 | 510-840-420 Contract Services         | 322       |
| 1895                                               | ARAMARK                                 | 259000101046   | mats                                                          | 03/10/2022   | 159.58         | 03/17/2022 | 100-417-420 Contract Services         | 322       |
| 1895                                               | ARAMARK                                 | 259000101060   | SHOP TOWELS                                                   | 03/10/2022   | 66.33          | 03/17/2022 | 510-810-614 Supplies-Plant/Shop/Maint | 322       |
| 1895                                               | ARAMARK                                 | 2591004605     | Rags, Rugs                                                    | 03/24/2022   | 107.62         |            | 510-840-420 Contract Services         | 322       |
| 1895                                               | ARAMARK                                 | 2591004638     | mats                                                          | 03/24/2022   | 159.58         |            | 100-417-420 Contract Services         | 322       |
| 1895                                               | ARAMARK                                 | 598000097747   | Shop - WD Pants Service                                       | 03/07/2022   | 46.57          | 03/17/2022 | 510-810-614 Supplies-Plant/Shop/Maint | 322       |
| 1895                                               | ARAMARK                                 | 598000097752   | shirt contract                                                | 03/07/2022   | 45.31          | 03/17/2022 | 100-480-600 GENERAL SUPPLIES/TOOLS    | 322       |
| 1895                                               | ARAMARK                                 | 598000097756   | uniforms                                                      | 03/07/2022   | 38.16          | 03/17/2022 | 100-475-616 Supplies-Safety           | 322       |
| 1895                                               | ARAMARK                                 | 598000099238   | Shop - WD Pants Service                                       | 03/14/2022   | 46.57          | 03/17/2022 | 510-810-614 Supplies-Plant/Shop/Maint | 322       |
| 1895                                               | ARAMARK                                 | 598000099240   | shirt contract                                                | 03/14/2022   | 45.31          |            | 100-480-600 GENERAL SUPPLIES/TOOLS    | 322       |
| 1895                                               | ARAMARK                                 | 598000099243   | uniforms                                                      | 03/14/2022   | 38.16          |            | 100-475-616 Supplies-Safety           | 322       |
| 1895                                               | ARAMARK                                 | 598000100605   | Shop - WD Pants Service                                       | 03/21/2022   | 49.57          |            | 510-810-614 Supplies-Plant/Shop/Maint | 322       |

| Vendor                                | Vendor Name                | Invoice Number    | Description                                      | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title                       | GL Period |
|---------------------------------------|----------------------------|-------------------|--------------------------------------------------|--------------|----------------|------------|--------------------------------------------|-----------|
| 1895                                  | ARAMARK                    | 598000100607      | shirt contract                                   | 03/21/2022   | 45.31          |            | 100-480-600 GENERAL SUPPLIES/TOOLS         | 322       |
| 1895                                  | ARAMARK                    | 598000100609      | uniforms                                         | 03/21/2022   | 38.16          |            | 100-475-616 Supplies-Safety                | 322       |
| Total 1895:                           |                            |                   |                                                  |              | 993.85         |            |                                            |           |
| <b>AT&amp;T</b>                       |                            |                   |                                                  |              |                |            |                                            |           |
| 13                                    | AT&T                       | 28574 MAR 22      | 131 252-7192 857 4                               | 03/02/2022   | 160.00         | 03/24/2022 | 100-417-530 Communications (Internet,Cell) | 322       |
| 13                                    | AT&T                       | 53740 March 22    | 775 575-5455 374 0                               | 02/26/2022   | 368.11         | 03/10/2022 | 100-417-530 Communications (Internet,Cell) | 222       |
| 13                                    | AT&T                       | 74368 March 22    | 775 575-7187 436 8                               | 02/26/2022   | 961.88         | 03/10/2022 | 100-417-530 Communications (Internet,Cell) | 222       |
| 13                                    | AT&T                       | 81650 Mar 22      | 775 835-8598 165 0                               | 02/26/2022   | 3,387.48       | 03/10/2022 | 100-417-530 Communications (Internet,Cell) | 222       |
| 13                                    | AT&T                       | 85367 March 22    | 775 575-9058 536 7                               | 02/26/2022   | 961.88         | 03/10/2022 | 100-417-530 Communications (Internet,Cell) | 222       |
| 13                                    | AT&T                       | 96145 MAR 22      | 131 252-8129 614 5                               | 03/02/2022   | 230.00         | 03/24/2022 | 100-417-530 Communications (Internet,Cell) | 322       |
| 13                                    | AT&T                       | 98670 FEB22       | 775-786-2229 867 0                               | 02/20/2022   | 2,244.13       | 03/10/2022 | 100-417-530 Communications (Internet,Cell) | 222       |
| Total 13:                             |                            |                   |                                                  |              | 8,313.48       |            |                                            |           |
| <b>AT&amp;T LONG DISTANCE</b>         |                            |                   |                                                  |              |                |            |                                            |           |
| 448                                   | AT&T LONG DISTANCE         | 815519343 Mar 22  | Long Distance Telecommunications                 | 03/04/2022   | 779.63         | 03/17/2022 | 100-417-530 Communications (Internet,Cell) | 322       |
| Total 448:                            |                            |                   |                                                  |              | 779.63         |            |                                            |           |
| <b>AT&amp;T MOBILITY</b>              |                            |                   |                                                  |              |                |            |                                            |           |
| 7653                                  | AT&T MOBILITY              | 287252183474X0322 | 287252183474 WIRELESS                            | 03/13/2022   | 43.28          | 04/06/2022 | 100-417-530 Communications (Internet,Cell) | 322       |
| 7653                                  | AT&T MOBILITY              | X02212022         | 287252186474                                     | 02/13/2022   | 43.28          | 03/10/2022 | 100-417-530 Communications (Internet,Cell) | 222       |
| Total 7653:                           |                            |                   |                                                  |              | 86.56          |            |                                            |           |
| <b>ATKINS NORTH AMERICA, INC</b>      |                            |                   |                                                  |              |                |            |                                            |           |
| 8853                                  | ATKINS NORTH AMERICA, INC  | 1966897           | Cottonwood Lane Rehab Right of Way Services      | 02/24/2022   | 1,947.50       | 03/17/2022 | 100-475-745 RTC REIMBURSABLE EXPENDI       | 222       |
| 8853                                  | ATKINS NORTH AMERICA, INC  | 1967761           | Cottonwood lane right of way acquisiton services | 03/14/2022   | 5,077.50       |            | 100-475-745 RTC REIMBURSABLE EXPENDI       | 322       |
| Total 8853:                           |                            |                   |                                                  |              | 7,025.00       |            |                                            |           |
| <b>AUTO &amp; TRUCK ELECTRIC, INC</b> |                            |                   |                                                  |              |                |            |                                            |           |
| 8868                                  | AUTO & TRUCK ELECTRIC, INC | 40794             | SWITCH FOR WASTE WATER CRANE TRUCK               | 03/04/2022   | 45.00          | 03/17/2022 | 520-810-430 Service-Repair and Maintenance | 322       |
| 8868                                  | AUTO & TRUCK ELECTRIC, INC | 40873             | batteries for dump truck                         | 03/15/2022   | 120.00         |            | 100-575-430 Service-Repair and Maintenance | 322       |
| 8868                                  | AUTO & TRUCK ELECTRIC, INC | 40873             | batteries for dump truck                         | 03/15/2022   | 120.00         |            | 100-475-430 Service-Repair and Maintenance | 322       |
| 8868                                  | AUTO & TRUCK ELECTRIC, INC | 40873             | batteries for dump truck                         | 03/15/2022   | 120.00         |            | 510-810-610 Automotive Supplies            | 322       |
| 8868                                  | AUTO & TRUCK ELECTRIC, INC | 40873             | batteries for dump truck                         | 03/15/2022   | 120.00         |            | 520-810-430 Service-Repair and Maintenance | 322       |
| Total 8868:                           |                            |                   |                                                  |              | 525.00         |            |                                            |           |
| <b>BACKFLOW TECHNOLOGIES</b>          |                            |                   |                                                  |              |                |            |                                            |           |
| 6804                                  | BACKFLOW TECHNOLOGIES      | 22-22360          | Backflow Device - Repair Kit                     | 03/15/2022   | 282.53         |            | 510-810-614 Supplies-Plant/Shop/Maint      | 322       |

| Vendor                            | Vendor Name                | Invoice Number | Description                                  | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title                      | GL Period |
|-----------------------------------|----------------------------|----------------|----------------------------------------------|--------------|----------------|------------|-------------------------------------------|-----------|
| Total 6804:                       |                            |                |                                              |              | 282.53         |            |                                           |           |
| <b>BIG R OF FERNLEY</b>           |                            |                |                                              |              |                |            |                                           |           |
| 20                                | BIG R OF FERNLEY           | 14033/5        | paint rodeo panels                           | 03/10/2022   | 46.98          | 03/17/2022 | 100-575-600 General Supplies              | 322       |
| 20                                | BIG R OF FERNLEY           | 14045/5        | spray paint remover                          | 03/11/2022   | 26.97          | 03/17/2022 | 100-575-612 Building Maintenance Supplies | 322       |
| 20                                | BIG R OF FERNLEY           | 14046/5        | rubber boots                                 | 03/11/2022   | 99.99          | 03/17/2022 | 100-475-616 Supplies-Safety               | 322       |
| 20                                | BIG R OF FERNLEY           | 14058/5        | duct tape roller hooks                       | 03/14/2022   | 117.63         |            | 100-575-600 General Supplies              | 322       |
| 20                                | BIG R OF FERNLEY           | 14075/5        | shut off                                     | 03/16/2022   | 129.95         |            | 100-575-614 Supplies-Plant/Shop/Maint     | 322       |
| 20                                | BIG R OF FERNLEY           | 14079/5        | propane                                      | 03/16/2022   | 9.89           |            | 100-575-623 Propane                       | 322       |
| 20                                | BIG R OF FERNLEY           | 14087/5        | key                                          | 03/18/2022   | 3.98           |            | 100-417-430 Service-Building Repair/Maint | 322       |
| 20                                | BIG R OF FERNLEY           | 14097/5        | scrapers                                     | 03/21/2022   | 8.52           |            | 100-575-600 General Supplies              | 322       |
| 20                                | BIG R OF FERNLEY           | 14098/5        | Graffiti Remover                             | 03/21/2022   | 8.97           |            | 520-810-614 Supplies-Plant/Shop/Maint     | 322       |
| 20                                | BIG R OF FERNLEY           | 14099/5        | scrapers                                     | 03/21/2022   | 5.76           |            | 100-575-600 General Supplies              | 322       |
| 20                                | BIG R OF FERNLEY           | 14108/5        | stakes                                       | 03/22/2022   | 19.79          |            | 100-576-430 Service Repair & Maintenance  | 322       |
| 20                                | BIG R OF FERNLEY           | 14113/5        | spray                                        | 03/23/2022   | 37.74          |            | 100-575-600 General Supplies              | 322       |
| 20                                | BIG R OF FERNLEY           | 14115/5        | misc. irrigation                             | 03/23/2022   | 21.47          |            | 100-575-614 Supplies-Plant/Shop/Maint     | 322       |
| 20                                | BIG R OF FERNLEY           | 14116/5        | cap                                          | 03/23/2022   | 2.19           |            | 100-575-600 General Supplies              | 322       |
| 20                                | BIG R OF FERNLEY           | 14117/5        | hose and quick connect.                      | 03/23/2022   | 128.96         |            | 100-475-600 General Supplies              | 322       |
| 20                                | BIG R OF FERNLEY           | 14119/5        | misc. plumbing for fountain                  | 03/23/2022   | 23.48          |            | 100-575-612 Building Maintenance Supplies | 322       |
| 20                                | BIG R OF FERNLEY           | 14130/5        | farm clevis for tractors.                    | 03/24/2022   | 18.79          |            | 100-575-600 General Supplies              | 322       |
| 20                                | BIG R OF FERNLEY           | 14137/5        | aersol and keys                              | 03/25/2022   | 11.47          |            | 100-417-430 Service-Building Repair/Maint | 322       |
| 20                                | BIG R OF FERNLEY           | 14148/5        | Lubricant and rags                           | 03/28/2022   | 15.99          |            | 520-810-614 Supplies-Plant/Shop/Maint     | 322       |
| Total 20:                         |                            |                |                                              |              | 738.52         |            |                                           |           |
| <b>BLUE BEACON INTERNATIONAL</b>  |                            |                |                                              |              |                |            |                                           |           |
| 200                               | BLUE BEACON INTERNATIONAL  | 60167541       | wash vactor                                  | 03/14/2022   | 75.20          |            | 100-475-610 Automotive Supplies           | 322       |
| Total 200:                        |                            |                |                                              |              | 75.20          |            |                                           |           |
| <b>BOB'S PRINTING AND SIGNAGE</b> |                            |                |                                              |              |                |            |                                           |           |
| 6970                              | BOB'S PRINTING AND SIGNAGE | 021722-1       | Office supplies                              | 02/22/2022   | 46.50          | 03/17/2022 | 100-360-900 Miscellaneous Revenue         | 222       |
| 6970                              | BOB'S PRINTING AND SIGNAGE | 030322-1       | Envelopes                                    | 03/08/2022   | 208.25         | 03/17/2022 | 100-416-600 General Supplies              | 322       |
| 6970                              | BOB'S PRINTING AND SIGNAGE | 030422-2       | Public Records Records                       | 03/08/2022   | 10.00          | 03/17/2022 | 100-360-900 Miscellaneous Revenue         | 322       |
| 6970                              | BOB'S PRINTING AND SIGNAGE | 20122-1        | New employee business cards, plaques, etc.   | 02/11/2022   | 134.80         | 03/17/2022 | 100-414-550 Printing and Postage          | 222       |
| 6970                              | BOB'S PRINTING AND SIGNAGE | 21822-3        | City of Fernley garments                     | 03/17/2022   | 632.98         |            | 100-529-605 Minor Equipment               | 322       |
| 6970                              | BOB'S PRINTING AND SIGNAGE | 21822-3        | City of Fernley garments                     | 03/17/2022   | 75.40          |            | 510-810-605 Minor Equipment               | 322       |
| 6970                              | BOB'S PRINTING AND SIGNAGE | 22422-1        | COPY BLDG PLANS FOR TREX EXP PERMIT BP21-032 | 03/01/2022   | 117.25         | 03/17/2022 | 100-605-550 Printing and Postage          | 322       |
| 6970                              | BOB'S PRINTING AND SIGNAGE | 30122-1        | Business Cards/Name Plate                    | 03/10/2022   | 84.40          |            | 100-425-550 Printing and Postage          | 322       |
| 6970                              | BOB'S PRINTING AND SIGNAGE | 30322-2        | Gas/Electric tags                            | 03/22/2022   | 604.13         |            | 100-605-601 Office Supplies               | 322       |
| 6970                              | BOB'S PRINTING AND SIGNAGE | 31022-2        | Engraved office nameplates NM & SL           | 03/17/2022   | 54.80          |            | 100-610-550 Printing and Postage          | 322       |

| Vendor                                      | Vendor Name                          | Invoice Number | Description                                                  | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title                       | GL Period |
|---------------------------------------------|--------------------------------------|----------------|--------------------------------------------------------------|--------------|----------------|------------|--------------------------------------------|-----------|
| Total 6970:                                 |                                      |                |                                                              |              | 1,968.51       |            |                                            |           |
| <b>BRADY INDUSTRIES OF NEVADA LLC</b>       |                                      |                |                                                              |              |                |            |                                            |           |
| 8837                                        | BRADY INDUSTRIES OF NEVADA LLC       | 7242989        | stripper for floors                                          | 03/11/2022   | 102.69         |            | 100-417-612 Building Maintenance Supplies  | 322       |
| 8837                                        | BRADY INDUSTRIES OF NEVADA LLC       | 7262416        | misc. cleaning products, paper towels                        | 03/25/2022   | 593.41         |            | 100-417-612 Building Maintenance Supplies  | 322       |
| Total 8837:                                 |                                      |                |                                                              |              | 696.10         |            |                                            |           |
| <b>BUREAU OF SAFE DRINKING WATER - NDEP</b> |                                      |                |                                                              |              |                |            |                                            |           |
| 3021                                        | BUREAU OF SAFE DRINKING WATER - NDEP | MAR 2022       | WATER DIST EXAM D1 CERT, L HATHWAY                           | 03/11/2022   | 120.00         | 03/17/2022 | 510-810-642 Permits and Licenses           | 322       |
| Total 3021:                                 |                                      |                |                                                              |              | 120.00         |            |                                            |           |
| <b>CDM SMITH</b>                            |                                      |                |                                                              |              |                |            |                                            |           |
| 8576                                        | CDM SMITH                            | 90146153       | Surface Water Treatability Study                             | 02/28/2022   | 11,204.48      | 03/17/2022 | 510-166100 Construction In Progress        | 222       |
| Total 8576:                                 |                                      |                |                                                              |              | 11,204.48      |            |                                            |           |
| <b>CDW GOVERNMENT INC.</b>                  |                                      |                |                                                              |              |                |            |                                            |           |
| 27                                          | CDW GOVERNMENT INC.                  | S525619        | Marshal Monitors                                             | 02/22/2022   | 288.76         | 03/24/2022 | 210-425-605 Minor Equipment                | 222       |
| 27                                          | CDW GOVERNMENT INC.                  | S982240        | TRIPP 6FT DP TO HD ADAPTER                                   | 03/03/2022   | 169.50         | 03/17/2022 | 100-418-605 Minor Equipment                | 322       |
| 27                                          | CDW GOVERNMENT INC.                  | S990597        | Speakers-Marshal Office                                      | 03/03/2022   | 24.18          | 03/24/2022 | 210-425-605 Minor Equipment                | 322       |
| 27                                          | CDW GOVERNMENT INC.                  | T005458        | NCIC Computers-Front Staff                                   | 03/03/2022   | 1,713.84       | 03/24/2022 | 200-425-605 Minor Equipment                | 322       |
| 27                                          | CDW GOVERNMENT INC.                  | T138505        | KVm Switch for NCIC Computers                                | 03/08/2022   | 317.88         | 03/24/2022 | 210-425-605 Minor Equipment                | 322       |
| 27                                          | CDW GOVERNMENT INC.                  | T883783        | Monitors                                                     | 03/23/2022   | 288.76         |            | 100-414-605 Minor Equipment                | 322       |
| Total 27:                                   |                                      |                |                                                              |              | 2,802.92       |            |                                            |           |
| <b>CFA INC</b>                              |                                      |                |                                                              |              |                |            |                                            |           |
| 499                                         | CFA INC                              | 24525          | Engineering services for the green valley park improvement p | 01/31/2022   | 6,385.00       | 03/17/2022 | 230-575-730 Improve other than Buildings   | 122       |
| 499                                         | CFA INC                              | 24626          | Surveying services for green valley park improvement project | 02/28/2022   | 2,618.75       |            | 230-575-730 Improve other than Buildings   | 222       |
| Total 499:                                  |                                      |                |                                                              |              | 9,003.75       |            |                                            |           |
| <b>CHARTER COMMUNICATIONS</b>               |                                      |                |                                                              |              |                |            |                                            |           |
| 4479                                        | CHARTER COMMUNICATIONS               | 304798022822   | 8354 10 007 0304798                                          | 02/28/2022   | 129.98         | 03/10/2022 | 100-417-530 Communications (Internet,Cell) | 222       |
| Total 4479:                                 |                                      |                |                                                              |              | 129.98         |            |                                            |           |
| <b>CLEAN HARBORS ENVIRONMENTAL SERVICES</b> |                                      |                |                                                              |              |                |            |                                            |           |
| 5544                                        | CLEAN HARBORS ENVIRONMENTAL SERVICES | 1004072072     | Residual solids removal                                      | 02/28/2022   | 18,333.50      | 03/17/2022 | 510-840-426 Contract Svc-Residuals Dispose | 222       |

| Vendor                            | Vendor Name                       | Invoice Number | Description                                                   | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title |                                | GL Period |
|-----------------------------------|-----------------------------------|----------------|---------------------------------------------------------------|--------------|----------------|------------|----------------------|--------------------------------|-----------|
| Total 5544:                       |                                   |                |                                                               |              | 18,333.50      |            |                      |                                |           |
| COLONIAL INSURANCE                |                                   |                |                                                               |              |                |            |                      |                                |           |
| 3520                              | COLONIAL INSURANCE                | 31039340401085 | E3103934 SUPPLEMENTAL INSURANC                                | 04/01/2022   | 192.68         | 03/24/2022 | 100-218000           | COLONIAL INSURANCE PAYABL      | 422       |
| Total 3520:                       |                                   |                |                                                               |              | 192.68         |            |                      |                                |           |
| COMPLIANCE SAFETY SOLUTIONS, INC. |                                   |                |                                                               |              |                |            |                      |                                |           |
| 8506                              | COMPLIANCE SAFETY SOLUTIONS, INC. | 6122010-1078   | Weekly Safety Meetings                                        | 03/23/2022   | 74.50          |            | 510-810-616          | Supplies-Safety                | 322       |
| 8506                              | COMPLIANCE SAFETY SOLUTIONS, INC. | 6122010-1078   | Weekly Safety Meetings                                        | 03/23/2022   | 74.50          |            | 520-810-616          | Supplies-Safety                | 322       |
| 8506                              | COMPLIANCE SAFETY SOLUTIONS, INC. | 6122010-1078   | Weekly Safety Meetings                                        | 03/23/2022   | 74.50          |            | 510-840-616          | Safety Supplies                | 322       |
| 8506                              | COMPLIANCE SAFETY SOLUTIONS, INC. | 6122010-1078   | Weekly Safety Meetings                                        | 03/23/2022   | 74.50          |            | 100-475-616          | Supplies-Safety                | 322       |
| 8506                              | COMPLIANCE SAFETY SOLUTIONS, INC. | 6122010-1078   | Weekly Safety Meetings                                        | 03/23/2022   | 74.50          |            | 100-575-616          | Safety Supplies                | 322       |
| 8506                              | COMPLIANCE SAFETY SOLUTIONS, INC. | 6122010-1078   | Weekly Safety Meetings                                        | 03/23/2022   | 74.50          |            | 100-417-616          | Supplies-Safety                | 322       |
| Total 8506:                       |                                   |                |                                                               |              | 447.00         |            |                      |                                |           |
| CONSTRUCTION MATERIALS ENGINEERS  |                                   |                |                                                               |              |                |            |                      |                                |           |
| 5587                              | CONSTRUCTION MATERIALS ENGINEERS  | 11939          | Ongoing inspection and testing services for Sage Tank recoati | 03/07/2022   | 3,247.50       |            | 510-166100           | Construction In Progress       | 322       |
| Total 5587:                       |                                   |                |                                                               |              | 3,247.50       |            |                      |                                |           |
| EMPLOYEES, CITY OF FERNLEY        |                                   |                |                                                               |              |                |            |                      |                                |           |
| 8639                              | EMPLOYEES, CITY OF FERNLEY        | 054320         | REIMB USPS; CDBG/GOED GRANT DOCS                              | 03/23/2022   | 16.05          | 03/24/2022 | 100-413-550          | Printing and Postage           | 322       |
| 8639                              | EMPLOYEES, CITY OF FERNLEY        | 372349         | REIMB D2 TESTING                                              | 03/04/2022   | 189.00         | 03/10/2022 | 510-810-642          | Permits and Licenses           | 322       |
| 8639                              | EMPLOYEES, CITY OF FERNLEY        | MAR 2022       | REIMB UNIFORM/WEAPON                                          | 03/16/2022   | 862.82         | 03/24/2022 | 100-425-322          | Prof Serv-Other                | 322       |
| Total 8639:                       |                                   |                |                                                               |              | 1,067.87       |            |                      |                                |           |
| FALLON WELDING & OTT'S FARM EQ    |                                   |                |                                                               |              |                |            |                      |                                |           |
| 2339                              | FALLON WELDING & OTT'S FARM EQ    | IF60757        | teeth for backhoe                                             | 03/24/2022   | 56.70          |            | 100-575-430          | Service-Repair and Maintenance | 322       |
| Total 2339:                       |                                   |                |                                                               |              | 56.70          |            |                      |                                |           |
| FARR WEST ENGINEERING             |                                   |                |                                                               |              |                |            |                      |                                |           |
| 6275                              | FARR WEST ENGINEERING             | 17238          | On call GIS Services                                          | 03/04/2022   | 314.50         | 03/17/2022 | 100-417-320          | PROF SEV-ENGINEERING           | 322       |
| 6275                              | FARR WEST ENGINEERING             | 17238          | On call GIS Services                                          | 03/04/2022   | 314.50         | 03/17/2022 | 100-475-320          | Prof Serv-Engineering          | 322       |
| 6275                              | FARR WEST ENGINEERING             | 17238          | On call GIS Services                                          | 03/04/2022   | 314.50         | 03/17/2022 | 100-575-320          | Prof Serv-Engineering          | 322       |
| 6275                              | FARR WEST ENGINEERING             | 17238          | On call GIS Services                                          | 03/04/2022   | 314.50         | 03/17/2022 | 510-810-320          | Prof Serv-Engineering          | 322       |
| 6275                              | FARR WEST ENGINEERING             | 17238          | On call GIS Services                                          | 03/04/2022   | 314.50         | 03/17/2022 | 520-810-320          | Prof Serv-Engineering          | 322       |
| Total 6275:                       |                                   |                |                                                               |              | 1,572.50       |            |                      |                                |           |



| Vendor                               | Vendor Name                          | Invoice Number | Description                                            | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title |                          | GL Period |
|--------------------------------------|--------------------------------------|----------------|--------------------------------------------------------|--------------|----------------|------------|----------------------|--------------------------|-----------|
| FEDEX FREIGHT                        |                                      |                |                                                        |              |                |            |                      |                          |           |
| 8727                                 | FEDEX FREIGHT                        | 7-680-34779    | Fedex delivery of easement documents to property owner | 03/04/2022   | 68.65          | 03/17/2022 | 100-475-745          | RTC REIMBURSABLE EXPENDI | 322       |
| Total 8727:                          |                                      |                |                                                        |              | 68.65          |            |                      |                          |           |
| FLYERS ENERGY, LLC                   |                                      |                |                                                        |              |                |            |                      |                          |           |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2925345    | GASOLINE - PARKS                                       | 02/28/2022   | 340.31         | 03/17/2022 | 100-575-626          | Gasoline                 | 222       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2925345    | GASOLINE - VECTOR                                      | 02/28/2022   | 21.84          | 03/17/2022 | 100-528-626          | Gasoline                 | 222       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2925345    | GASOLINE - WATER DIST                                  | 02/28/2022   | 1,384.42       | 03/17/2022 | 510-810-626          | Gasoline                 | 222       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2925345    | GASOLINE - SEWER                                       | 02/28/2022   | 995.94         | 03/17/2022 | 520-810-626          | Gasoline                 | 222       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2925345    | GASOLINE - STREETS                                     | 02/28/2022   | 837.36         | 03/17/2022 | 100-475-626          | Gasoline                 | 222       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2925345    | GASOLINE - WATER TREATMENT                             | 02/28/2022   | 45.16          | 03/17/2022 | 510-840-626          | Gasoline                 | 222       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2925345    | GASOLINE - ANIMAL CONTROL                              | 02/28/2022   | 251.46         | 03/17/2022 | 100-525-626          | Gasoline                 | 222       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2925345    | GASOLINE - CDD BUILDING                                | 02/28/2022   | 223.23         | 03/17/2022 | 100-605-626          | Gasoline                 | 222       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2925345    | GASOLINE - FACILITIES                                  | 02/28/2022   | 186.58         | 03/17/2022 | 100-417-626          | Gasoline                 | 222       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2943504    | GASOLINE - PARKS                                       | 03/15/2022   | 507.83         |            | 100-575-626          | Gasoline                 | 322       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2943504    | GASOLINE - VECTOR                                      | 03/15/2022   | 28.61          |            | 100-528-626          | Gasoline                 | 322       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2943504    | GASOLINE - WATER DIST                                  | 03/15/2022   | 2,184.53       |            | 510-810-626          | Gasoline                 | 322       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2943504    | GASOLINE - SEWER                                       | 03/15/2022   | 1,998.77       |            | 520-810-626          | Gasoline                 | 322       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2943504    | GASOLINE - STREETS                                     | 03/15/2022   | 1,090.17       |            | 100-475-626          | Gasoline                 | 322       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2943504    | GASOLINE - WATER TREATMENT                             | 03/15/2022   | 23.73          |            | 510-840-626          | Gasoline                 | 322       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2943504    | GASOLINE - ANIMAL CONTROL                              | 03/15/2022   | 293.53         |            | 100-525-626          | Gasoline                 | 322       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2943504    | GASOLINE - CDD BUILDING                                | 03/15/2022   | 143.57         |            | 100-605-626          | Gasoline                 | 322       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2943504    | GASOLINE - FACILITIES                                  | 03/15/2022   | 278.40         |            | 100-417-626          | Gasoline                 | 322       |
| 18                                   | FLYERS ENERGY, LLC                   | CFS-2943504    | GASOLINE - FLEET                                       | 03/15/2022   | 78.04          |            | 100-480-626          | GASOLINE                 | 322       |
| Total 18:                            |                                      |                |                                                        |              | 10,913.48      |            |                      |                          |           |
| FLYNN GIUDICI GOVERNMENT AFFAIRS LLC |                                      |                |                                                        |              |                |            |                      |                          |           |
| 8869                                 | FLYNN GIUDICI GOVERNMENT AFFAIRS LLC | 1068           | March 22 Lobbyist Cont 21-23                           | 03/02/2022   | 5,800.00       | 03/17/2022 | 100-413-322          | Prof Serv-Other          | 322       |
| Total 8869:                          |                                      |                |                                                        |              | 5,800.00       |            |                      |                          |           |
| FULL CIRCLE COMPOST                  |                                      |                |                                                        |              |                |            |                      |                          |           |
| 8660                                 | FULL CIRCLE COMPOST                  | 13274          | compost                                                | 03/17/2022   | 1,994.00       |            | 100-575-600          | General Supplies         | 322       |
| Total 8660:                          |                                      |                |                                                        |              | 1,994.00       |            |                      |                          |           |
| GABRIEL DWAYNE FAW                   |                                      |                |                                                        |              |                |            |                      |                          |           |
| 8885                                 | GABRIEL DWAYNE FAW                   | MAR 2022       | PAINT SIGNAL BOX AT CHISHOLM & 95A                     | 03/04/2022   | 300.00         | 03/17/2022 | 100-413-322          | Prof Serv-Other          | 322       |
| Total 8885:                          |                                      |                |                                                        |              | 300.00         |            |                      |                          |           |

| Vendor                          | Vendor Name                     | Invoice Number | Description                            | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title |                                | GL Period |
|---------------------------------|---------------------------------|----------------|----------------------------------------|--------------|----------------|------------|----------------------|--------------------------------|-----------|
| GB GLOBAL LLC                   |                                 |                |                                        |              |                |            |                      |                                |           |
| 8707                            | GB GLOBAL LLC                   | 52331          | Spillman interface with Legal Edge     | 03/01/2022   | 7,500.00       | 03/10/2022 | 100-414-342          | Tech Services-Other            | 322       |
| Total 8707:                     |                                 |                |                                        |              | 7,500.00       |            |                      |                                |           |
| GRANITE CONSTRUCTION CO         |                                 |                |                                        |              |                |            |                      |                                |           |
| 64                              | GRANITE CONSTRUCTION CO         | 2198665        | tac oil                                | 03/21/2022   | 342.00         |            | 100-475-600          | General Supplies               | 322       |
| 64                              | GRANITE CONSTRUCTION CO         | 2198666        | hot mix                                | 03/22/2022   | 842.98         |            | 100-475-600          | General Supplies               | 322       |
| 64                              | GRANITE CONSTRUCTION CO         | 2199358        | hot mix                                | 03/23/2022   | 254.25         |            | 100-475-600          | General Supplies               | 322       |
| Total 64:                       |                                 |                |                                        |              | 1,439.23       |            |                      |                                |           |
| GRANITE TELECOMMUNICATIONS, LLC |                                 |                |                                        |              |                |            |                      |                                |           |
| 8838                            | GRANITE TELECOMMUNICATIONS, LLC | 554778784      | Telecommunications FEB2022             | 03/01/2022   | 182.99         | 03/10/2022 | 100-417-530          | Communications (Internet,Cell) | 322       |
| 8838                            | GRANITE TELECOMMUNICATIONS, LLC | 554778784      | Telecommunications JAN 2022            | 03/01/2022   | 183.04         | 03/10/2022 | 100-417-530          | Communications (Internet,Cell) | 322       |
| 8838                            | GRANITE TELECOMMUNICATIONS, LLC | 554778784      | Telecommunications Dec 2021            | 03/01/2022   | 183.05         | 03/10/2022 | 100-417-530          | Communications (Internet,Cell) | 322       |
| Total 8838:                     |                                 |                |                                        |              | 549.08         |            |                      |                                |           |
| HACH COMPANY                    |                                 |                |                                        |              |                |            |                      |                                |           |
| 406                             | HACH COMPANY                    | 12905281       | Turbidimeters                          | 02/25/2022   | 28,639.20      | 03/17/2022 | 510-166100           | Construction In Progress       | 222       |
| Total 406:                      |                                 |                |                                        |              | 28,639.20      |            |                      |                                |           |
| HANNEMAN SERVICE                |                                 |                |                                        |              |                |            |                      |                                |           |
| 70                              | HANNEMAN SERVICE                | 110811         | Service Labor                          | 02/22/2022   | 145.00         | 03/17/2022 | 100-605-322          | Prof Serv-Other                | 222       |
| 70                              | HANNEMAN SERVICE                | 110820         | Service Labor                          | 02/28/2022   | 145.00         | 03/17/2022 | 100-605-322          | Prof Serv-Other                | 222       |
| 70                              | HANNEMAN SERVICE                | 110821         | Service Labor                          | 02/28/2022   | 145.00         | 03/17/2022 | 100-605-322          | Prof Serv-Other                | 222       |
| 70                              | HANNEMAN SERVICE                | 110822         | Service Labor                          | 02/28/2022   | 145.00         | 03/17/2022 | 100-605-322          | Prof Serv-Other                | 222       |
| 70                              | HANNEMAN SERVICE                | 110828         | Service Labor                          | 03/03/2022   | 145.00         | 03/17/2022 | 100-605-322          | Prof Serv-Other                | 322       |
| 70                              | HANNEMAN SERVICE                | 110846         | Service Labor                          | 03/17/2022   | 145.00         |            | 100-605-322          | Prof Serv-Other                | 322       |
| 70                              | HANNEMAN SERVICE                | 110847         | Service Labor                          | 03/17/2022   | 145.00         |            | 100-605-322          | Prof Serv-Other                | 322       |
| 70                              | HANNEMAN SERVICE                | 110857         | Service Labor                          | 03/21/2022   | 145.00         |            | 100-605-322          | Prof Serv-Other                | 322       |
| 70                              | HANNEMAN SERVICE                | 110858         | Service Labor                          | 03/21/2022   | 145.00         |            | 100-605-322          | Prof Serv-Other                | 322       |
| 70                              | HANNEMAN SERVICE                | 12189          | 2003 Kia Sedona Van - Silver NVH8733   | 02/22/2022   | 55.00          | 03/17/2022 | 100-605-322          | Prof Serv-Other                | 222       |
| 70                              | HANNEMAN SERVICE                | 12191          | 1996 Ford Contour 4Dr - Purple NO PLTS | 02/28/2022   | 55.00          | 03/17/2022 | 100-605-322          | Prof Serv-Other                | 222       |
| 70                              | HANNEMAN SERVICE                | 12192          | 2006 Pontiac Vibe - White NV167YRZ     | 02/28/2022   | 55.00          | 03/17/2022 | 100-605-322          | Prof Serv-Other                | 222       |
| 70                              | HANNEMAN SERVICE                | 12193          | 2009 Ford Escape - Blue                | 02/28/2022   | 55.00          | 03/17/2022 | 100-605-322          | Prof Serv-Other                | 222       |
| 70                              | HANNEMAN SERVICE                | 12196          | 2000 Chevy Tahoe 4x4 - Green           | 03/03/2022   | 55.00          | 03/17/2022 | 100-605-322          | Prof Serv-Other                | 322       |
| 70                              | HANNEMAN SERVICE                | 12198          | 1989 GMC Sierra PU White MIFR21002     | 03/17/2022   | 55.00          |            | 100-605-322          | Prof Serv-Other                | 322       |
| 70                              | HANNEMAN SERVICE                | 12199          | 1993 Saturn 4DR Green no plts          | 03/17/2022   | 55.00          |            | 100-605-322          | Prof Serv-Other                | 322       |
| 70                              | HANNEMAN SERVICE                | 12200          | 1998 Honda Civic EX White NV932K37     | 03/21/2022   | 55.00          |            | 100-605-322          | Prof Serv-Other                | 322       |
| 70                              | HANNEMAN SERVICE                | 12503          | 1991 Chevy 1500 Green NV100N33         | 03/21/2022   | 55.00          |            | 100-605-322          | Prof Serv-Other                | 322       |

| Vendor                       | Vendor Name                  | Invoice Number | Description                            | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title                      | GL Period |
|------------------------------|------------------------------|----------------|----------------------------------------|--------------|----------------|------------|-------------------------------------------|-----------|
| Total 70:                    |                              |                |                                        |              | 1,800.00       |            |                                           |           |
| HANSFORD ECONOMIC CONSULTING |                              |                |                                        |              |                |            |                                           |           |
| 6228                         | HANSFORD ECONOMIC CONSULTING | 380            | WATER RATES/COUNCIL MTG                | 03/06/2022   | 1,239.78       | 03/17/2022 | 510-810-320 Prof Serv-Engineering         | 322       |
| 6228                         | HANSFORD ECONOMIC CONSULTING | 380            | WATER RATES/COUNCIL MTG                | 03/06/2022   | 1,239.78       | 03/17/2022 | 520-810-320 Prof Serv-Engineering         | 322       |
| Total 6228:                  |                              |                |                                        |              | 2,479.56       |            |                                           |           |
| HARRIS INDUSTRIAL GASES      |                              |                |                                        |              |                |            |                                           |           |
| 8630                         | HARRIS INDUSTRIAL GASES      | 8838-1870792   | welding helmet lenses                  | 03/17/2022   | 5.50           |            | 100-480-600 GENERAL SUPPLIES/TOOLS        | 322       |
| Total 8630:                  |                              |                |                                        |              | 5.50           |            |                                           |           |
| HDS WHITE CAP CONST SUPPLY   |                              |                |                                        |              |                |            |                                           |           |
| 7065                         | HDS WHITE CAP CONST SUPPLY   | 50018178179    | concrete cure                          | 03/14/2022   | 541.77         |            | 100-475-600 General Supplies              | 322       |
| Total 7065:                  |                              |                |                                        |              | 541.77         |            |                                           |           |
| HISKETT & SONS, LLC          |                              |                |                                        |              |                |            |                                           |           |
| 8487                         | HISKETT & SONS, LLC          | 111600         | conc. 13.5 yards                       | 02/09/2022   | 2,486.03       | 03/10/2022 | 100-575-600 General Supplies              | 222       |
| 8487                         | HISKETT & SONS, LLC          | 111739         | con. 11.5 yards                        | 02/18/2022   | 2,157.73       | 03/10/2022 | 100-575-600 General Supplies              | 222       |
| Total 8487:                  |                              |                |                                        |              | 4,643.76       |            |                                           |           |
| HOMETOWN HEALTH              |                              |                |                                        |              |                |            |                                           |           |
| 4842                         | HOMETOWN HEALTH              | 24901-010      | 3721P GROUP HEALTH INSURANCE           | 04/01/2022   | 73,472.53      | 03/24/2022 | 100-217000 HEALTH INSURANCE PAYABLE       | 422       |
| Total 4842:                  |                              |                |                                        |              | 73,472.53      |            |                                           |           |
| IBEW Local 1245              |                              |                |                                        |              |                |            |                                           |           |
| 83                           | IBEW Local 1245              | MAR 2022-1     | UNION DUES, ONE HALF OF MONTH          | 03/11/2022   | 882.21         | 03/11/2022 | 100-219900 OTHER PAYROLL PAYABLES         | 322       |
| 83                           | IBEW Local 1245              | MAR 2022-2     | UNION DUES, ONE HALF OF MONTH          | 03/25/2022   | 883.44         | 03/25/2022 | 100-219900 OTHER PAYROLL PAYABLES         | 322       |
| Total 83:                    |                              |                |                                        |              | 1,765.65       |            |                                           |           |
| INLAND SUPPLY COMPANY, INC.  |                              |                |                                        |              |                |            |                                           |           |
| 212                          | INLAND SUPPLY COMPANY, INC.  | 1060383        | toilet paper and trash liners, cleaner | 04/16/2022   | 704.42         |            | 100-575-612 Building Maintenance Supplies | 422       |
| Total 212:                   |                              |                |                                        |              | 704.42         |            |                                           |           |
| INTERNAL REVENUE SERVICE     |                              |                |                                        |              |                |            |                                           |           |
| 7879                         | INTERNAL REVENUE SERVICE     | MAR 2022-1     | FICA TAX PAYABLE, PAYROLL              | 03/11/2022   | 261.74         | 03/11/2022 | 100-211000 FICA PAYABLE                   | 322       |
| 7879                         | INTERNAL REVENUE SERVICE     | MAR 2022-1     | MED TAX PAYABLE, PAYROLL               | 03/11/2022   | 5,229.30       | 03/11/2022 | 100-211000 FICA PAYABLE                   | 322       |

| Vendor                                     | Vendor Name                         | Invoice Number | Description                               | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title                       | GL Period |
|--------------------------------------------|-------------------------------------|----------------|-------------------------------------------|--------------|----------------|------------|--------------------------------------------|-----------|
| 7879                                       | INTERNAL REVENUE SERVICE            | MAR 2022-1     | W/HOLD TAX PAYABLE, PAYROLL               | 03/11/2022   | 18,784.23      | 03/11/2022 | 100-212000 FEDERAL WITHHOLDING PAYAB       | 322       |
| 7879                                       | INTERNAL REVENUE SERVICE            | MAR 2022-2     | FICA TAX PAYABLE, PAYROLL                 | 03/25/2022   | 292.22         | 03/25/2022 | 100-211000 FICA PAYABLE                    | 322       |
| 7879                                       | INTERNAL REVENUE SERVICE            | MAR 2022-2     | MED TAX PAYABLE, PAYROLL                  | 03/25/2022   | 5,295.86       | 03/25/2022 | 100-211000 FICA PAYABLE                    | 322       |
| 7879                                       | INTERNAL REVENUE SERVICE            | MAR 2022-2     | W/HOLD TAX PAYABLE, PAYROLL               | 03/25/2022   | 18,987.64      | 03/25/2022 | 100-212000 FEDERAL WITHHOLDING PAYAB       | 322       |
| Total 7879:                                |                                     |                |                                           |              | 48,850.99      |            |                                            |           |
| <b>INTERSTATE BATTERIES OF THE SIERRAS</b> |                                     |                |                                           |              |                |            |                                            |           |
| 86                                         | INTERSTATE BATTERIES OF THE SIERRAS | 40089231       | battery for parks trailer                 | 03/09/2022   | 129.95         |            | 100-575-430 Service-Repair and Maintenance | 322       |
| Total 86:                                  |                                     |                |                                           |              | 129.95         |            |                                            |           |
| <b>INTERSTATE OIL COMPANY</b>              |                                     |                |                                           |              |                |            |                                            |           |
| 4329                                       | INTERSTATE OIL COMPANY              | 776992-IN      | oil for vac-con                           | 03/09/2022   | 206.09         | 03/17/2022 | 510-810-610 Automotive Supplies            | 322       |
| Total 4329:                                |                                     |                |                                           |              | 206.09         |            |                                            |           |
| <b>JOHNSON CONTROLS FIRE PROTECTION LP</b> |                                     |                |                                           |              |                |            |                                            |           |
| 8667                                       | JOHNSON CONTROLS FIRE PROTECTION LP | 22796641       | FM-200 Annual Service                     | 03/01/2022   | 450.00         | 03/17/2022 | 510-840-420 Contract Services              | 322       |
| 8667                                       | JOHNSON CONTROLS FIRE PROTECTION LP | 22806141       | contract                                  | 03/02/2022   | 450.00         | 03/17/2022 | 100-417-420 Contract Services              | 322       |
| Total 8667:                                |                                     |                |                                           |              | 900.00         |            |                                            |           |
| <b>LASER TECHNOLOGY, INC.</b>              |                                     |                |                                           |              |                |            |                                            |           |
| 8880                                       | LASER TECHNOLOGY, INC.              | 02/09/2022     | Truspeed Units x 5                        | 02/18/2022   | 5,475.00       |            | 100-425-322 Prof Serv-Other                | 222       |
| Total 8880:                                |                                     |                |                                           |              | 5,475.00       |            |                                            |           |
| <b>LB FENCE COMPANY</b>                    |                                     |                |                                           |              |                |            |                                            |           |
| 8631                                       | LB FENCE COMPANY                    | 1702           | 50ft chainlink fence otp batting cage     | 03/20/2022   | 410.81         |            | 100-575-600 General Supplies               | 322       |
| Total 8631:                                |                                     |                |                                           |              | 410.81         |            |                                            |           |
| <b>LEMONS, GRUNDY &amp; EISENBERG</b>      |                                     |                |                                           |              |                |            |                                            |           |
| 8835                                       | LEMONS, GRUNDY & EISENBERG          | 59-9082M #1    | HR legal issue                            | 02/04/2022   | 280.00         | 03/17/2022 | 100-414-310 Prof Serv-Legal                | 222       |
| Total 8835:                                |                                     |                |                                           |              | 280.00         |            |                                            |           |
| <b>LOWES CREDIT SERVICES</b>               |                                     |                |                                           |              |                |            |                                            |           |
| 7650                                       | LOWES CREDIT SERVICES               | 0-2286         | mounting hardware & electrical connectors | 03/10/2022   | 109.47         | 03/17/2022 | 510-840-614 Plant/Shop/Maint. Supplies     | 322       |
| 7650                                       | LOWES CREDIT SERVICES               | 0-2478         | misc nuts and teks screws                 | 03/11/2022   | 49.50          | 03/17/2022 | 100-575-612 Building Maintenance Supplies  | 322       |
| 7650                                       | LOWES CREDIT SERVICES               | 02684          | battery timer                             | 03/24/2022   | 61.74          |            | 100-475-600 General Supplies               | 322       |
| 7650                                       | LOWES CREDIT SERVICES               | 0-2947         | Rollers and misc parts                    | 03/14/2022   | 74.88          | 03/17/2022 | 100-575-614 Supplies-Plant/Shop/Maint      | 322       |
| 7650                                       | LOWES CREDIT SERVICES               | 18033          | cleaning and waste basket.                | 03/16/2022   | 79.48          |            | 100-417-612 Building Maintenance Supplies  | 322       |

| Vendor                            | Vendor Name                | Invoice Number | Description                                                    | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title                       | GL Period |
|-----------------------------------|----------------------------|----------------|----------------------------------------------------------------|--------------|----------------|------------|--------------------------------------------|-----------|
| 7650                              | LOWES CREDIT SERVICES      | 2267           | osb sheathing rodeo arena, paint and sprayer.                  | 03/10/2022   | 1,374.09       | 03/17/2022 | 100-575-612 Building Maintenance Supplies  | 322       |
| 7650                              | LOWES CREDIT SERVICES      | 23045          | Fire Hydrant Paint & Supplies                                  | 03/15/2022   | 283.06         | 03/17/2022 | 510-810-614 Supplies-Plant/Shop/Maint      | 322       |
| 7650                              | LOWES CREDIT SERVICES      | 23250          | Water Elbow Fitting                                            | 03/07/2022   | 14.24          | 03/17/2022 | 520-810-614 Supplies-Plant/Shop/Maint      | 322       |
| 7650                              | LOWES CREDIT SERVICES      | 2669           | wrench                                                         | 03/24/2022   | 40.82          |            | 100-575-430 Service-Repair and Maintenance | 322       |
| 7650                              | LOWES CREDIT SERVICES      | 2830           | bag concrete                                                   | 03/07/2022   | 19.85          | 03/17/2022 | 100-575-600 General Supplies               | 322       |
| Total 7650:                       |                            |                |                                                                |              | 2,107.13       |            |                                            |           |
| <b>LUMOS &amp; ASSOCIATES INC</b> |                            |                |                                                                |              |                |            |                                            |           |
| 370                               | LUMOS & ASSOCIATES INC     | 111898         | Engineering services for the Fernley industrial park rehab top | 02/24/2022   | 5,806.00       | 03/17/2022 | 100-475-745 RTC REIMBURSABLE EXPENDI       | 222       |
| 370                               | LUMOS & ASSOCIATES INC     | 111899-rev     | Engineering Services for the pavement maintenance project      | 03/07/2022   | 4,223.50       | 03/17/2022 | 100-475-430 Service-Repair and Maintenance | 322       |
| 370                               | LUMOS & ASSOCIATES INC     | 111905         | Engineering Services Red Rock Road extension project           | 02/24/2022   | 23,073.40      | 03/17/2022 | 100-475-745 RTC REIMBURSABLE EXPENDI       | 222       |
| 370                               | LUMOS & ASSOCIATES INC     | 111961         | NDOT Coordination and Permitting Services for Cottonwood L     | 03/02/2022   | 2,101.50       | 03/17/2022 | 100-475-745 RTC REIMBURSABLE EXPENDI       | 322       |
| Total 370:                        |                            |                |                                                                |              | 35,204.40      |            |                                            |           |
| <b>LYON COUNTY RECORDER</b>       |                            |                |                                                                |              |                |            |                                            |           |
| 108                               | LYON COUNTY RECORDER       | APN022-261-03  | LIEN RELEASE; 1525 TRUBODE LN; COLLINS                         | 03/09/2022   | 40.00          | 03/10/2022 | 510-810-322 Prof Serv-Other                | 322       |
| Total 108:                        |                            |                |                                                                |              | 40.00          |            |                                            |           |
| <b>LYON COUNTY SHERIFF'S DEPT</b> |                            |                |                                                                |              |                |            |                                            |           |
| 109                               | LYON COUNTY SHERIFF'S DEPT | 03102022       | Bailiff Duties                                                 | 03/10/2022   | 800.00         | 03/24/2022 | 100-425-322 Prof Serv-Other                | 322       |
| Total 109:                        |                            |                |                                                                |              | 800.00         |            |                                            |           |
| <b>MANAGEMENT PARTNERS INC.</b>   |                            |                |                                                                |              |                |            |                                            |           |
| 8840                              | MANAGEMENT PARTNERS INC.   | INV10248       | Professional Services Efficiency Study                         | 02/28/2022   | 19,100.00      | 03/17/2022 | 100-413-322 Prof Serv-Other                | 222       |
| Total 8840:                       |                            |                |                                                                |              | 19,100.00      |            |                                            |           |
| <b>MATCO TOOLS</b>                |                            |                |                                                                |              |                |            |                                            |           |
| 8529                              | MATCO TOOLS                | 112932         | hose cutter                                                    | 03/18/2022   | 47.69          |            | 100-480-600 GENERAL SUPPLIES/TOOLS         | 322       |
| Total 8529:                       |                            |                |                                                                |              | 47.69          |            |                                            |           |
| <b>MATHEUS, SENIOR JUDGE LORI</b> |                            |                |                                                                |              |                |            |                                            |           |
| 8042                              | MATHEUS, SENIOR JUDGE LORI | MAR 2022       | MUNICIPAL COURT JUDGE                                          | 03/31/2022   | 2,500.00       |            | 100-425-322 Prof Serv-Other                | 322       |
| Total 8042:                       |                            |                |                                                                |              | 2,500.00       |            |                                            |           |
| <b>MCDONALD CARANO</b>            |                            |                |                                                                |              |                |            |                                            |           |
| 322                               | MCDONALD CARANO            | 12439458       | Land use, NNCH litigation, Well 14, etc.                       | 02/15/2022   | 5,830.00       | 03/17/2022 | 100-414-310 Prof Serv-Legal                | 222       |
| 322                               | MCDONALD CARANO            | 12440934       | Well 14, NNCH, etc.                                            | 03/14/2022   | 1,980.00       |            | 100-414-310 Prof Serv-Legal                | 322       |

| Vendor                               | Vendor Name                   | Invoice Number | Description                                      | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title                       | GL Period |
|--------------------------------------|-------------------------------|----------------|--------------------------------------------------|--------------|----------------|------------|--------------------------------------------|-----------|
| Total 322:                           |                               |                |                                                  |              | 7,810.00       |            |                                            |           |
| <b>METLIFE SMALL BUSINESS CENTER</b> |                               |                |                                                  |              |                |            |                                            |           |
| 5387                                 | METLIFE SMALL BUSINESS CENTER | APR 2022       | 5952725 GROUP DENTAL INSURANCE                   | 04/01/2022   | 9,400.58       | 03/24/2022 | 100-217100 Dental Insurance Payable MetL   | 422       |
| Total 5387:                          |                               |                |                                                  |              | 9,400.58       |            |                                            |           |
| <b>MISCELLANEOUS ONE TIME VENDOR</b> |                               |                |                                                  |              |                |            |                                            |           |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | 02112022       | LAW ENFORCEMENT BCKGRND D LYNCH                  | 02/11/2022   | 400.00         | 03/24/2022 | 100-425-322 Prof Serv-Other                | 222       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | 11/2021        | REFUND F17 & F18 OPEN/CLOSE DEPOSITS             | 03/22/2022   | 700.00         | 03/24/2022 | 100-223200 Deferred Revenue - Cem. Plots   | 322       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | 25.000626      | REIMB OVERPAYMENT OF DOG LICENSE                 | 03/23/2022   | 15.00          | 03/24/2022 | 100-320-170 Licenses-Animal                | 322       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | EN2021-060     | RELEASE BOND; 762 GARNET WAY                     | 03/07/2022   | 500.00         | 03/17/2022 | 100-228300 Customer Deposits/Bonds - Dev   | 322       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | EN2021-064     | RELEASE BOND; 1641,1647,1651,1655,1659 SUMMERWIN | 03/09/2022   | 6,790.00       | 03/17/2022 | 100-228300 Customer Deposits/Bonds - Dev   | 322       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | EN2021-066     | RELEASE BOND; 1639,1660,1656,1652,1648 SUMMERWIN | 03/09/2022   | 2,960.00       | 03/17/2022 | 100-228300 Customer Deposits/Bonds - Dev   | 322       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | EN2022-005     | RELEASE BOND; 552 COUNTRY HOLLOW DR              | 03/04/2022   | 500.00         | 03/17/2022 | 100-228300 Customer Deposits/Bonds - Dev   | 322       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | EN2022-006     | RELEASE BOND; 559,557,555,562,562 COUNTRY HOLLOW | 03/22/2022   | 4,600.00       | 03/24/2022 | 100-228300 Customer Deposits/Bonds - Dev   | 322       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | EN2022-009     | RELEASE BOND; 2540 EMERSON CIR                   | 03/22/2022   | 1,180.00       | 03/24/2022 | 100-228300 Customer Deposits/Bonds - Dev   | 322       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | EN2022-010     | RELEASE BOND; 1608 SUMMERWIND DR                 | 03/23/2022   | 500.00         | 03/24/2022 | 100-228300 Customer Deposits/Bonds - Dev   | 322       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | EN2022-011     | RELEASE BOND; 1632 SUMMERWIND DR                 | 03/21/2022   | 500.00         | 03/24/2022 | 100-228300 Customer Deposits/Bonds - Dev   | 322       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | EN2022-012     | RELEASE BOND; 1636 SUMMERWIND DR                 | 03/21/2022   | 500.00         | 03/24/2022 | 100-228300 Customer Deposits/Bonds - Dev   | 322       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | EN2022-013     | RELEASE BOND; 1640 SUMMERWIND DR                 | 03/21/2022   | 500.00         | 03/24/2022 | 100-228300 Customer Deposits/Bonds - Dev   | 322       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | EN2022-014     | RELEASE BOND; 1644 SUMMERWIND DR                 | 03/21/2022   | 500.00         | 03/24/2022 | 100-228300 Customer Deposits/Bonds - Dev   | 322       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | EN2022-017     | RELEASE BOND; 1607 SUMMERWIND DR                 | 03/23/2022   | 500.00         | 03/24/2022 | 100-228300 Customer Deposits/Bonds - Dev   | 322       |
| 1111                                 | MISCELLANEOUS ONE TIME VENDOR | ROW#8          | APN 022-153-01; PE-11 CWL RECON PROJECT          | 03/16/2022   | 1,000.00       | 03/17/2022 | 100-475-745 RTC REIMBURSABLE EXPENDI       | 322       |
| Total 1111:                          |                               |                |                                                  |              | 21,645.00      |            |                                            |           |
| <b>MSC INDUSTRIAL SUPPLY CO</b>      |                               |                |                                                  |              |                |            |                                            |           |
| 115                                  | MSC INDUSTRIAL SUPPLY CO      | 44843964       | Fire Hydrant - Spray Paint                       | 03/15/2022   | 272.40         |            | 510-810-614 Supplies-Plant/Shop/Maint      | 322       |
| Total 115:                           |                               |                |                                                  |              | 272.40         |            |                                            |           |
| <b>MUNICIPAL CODE CORPORATION</b>    |                               |                |                                                  |              |                |            |                                            |           |
| 8538                                 | MUNICIPAL CODE CORPORATION    | 176855         | New muni code filler                             | 03/01/2022   | 269.95         |            | 100-414-640 Books and Periodicals          | 322       |
| Total 8538:                          |                               |                |                                                  |              | 269.95         |            |                                            |           |
| <b>NAPA AUTO &amp; TRUCK PARTS</b>   |                               |                |                                                  |              |                |            |                                            |           |
| 58                                   | NAPA AUTO & TRUCK PARTS       | 367455         | brakes for streets 3009                          | 03/15/2022   | 27.99          |            | 100-475-610 Automotive Supplies            | 322       |
| 58                                   | NAPA AUTO & TRUCK PARTS       | 367525         | antifreeze                                       | 03/16/2022   | 65.94          |            | 100-528-610 Automotive Supplies            | 322       |
| 58                                   | NAPA AUTO & TRUCK PARTS       | 36764          | antifreeze                                       | 03/18/2022   | 65.94          |            | 100-528-610 Automotive Supplies            | 322       |
| 58                                   | NAPA AUTO & TRUCK PARTS       | 367815         | support rod for back hoe                         | 03/21/2022   | 36.99          |            | 100-475-430 Service-Repair and Maintenance | 322       |

| Vendor                          | Vendor Name                     | Invoice Number | Description                                              | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title              | GL Period |
|---------------------------------|---------------------------------|----------------|----------------------------------------------------------|--------------|----------------|------------|-----------------------------------|-----------|
| Total 58:                       |                                 |                |                                                          |              | 196.86         |            |                                   |           |
| NATIONS MEDICAL                 |                                 |                |                                                          |              |                |            |                                   |           |
| 8502                            | NATIONS MEDICAL                 | 107898         | first aid                                                | 03/09/2022   | 82.85          | 03/17/2022 | 100-575-616 Safety Supplies       | 322       |
| 8502                            | NATIONS MEDICAL                 | 107899         | first aid supplies                                       | 03/09/2022   | 316.45         | 03/17/2022 | 510-810-616 Supplies-Safety       | 322       |
| 8502                            | NATIONS MEDICAL                 | 107900         | first aid                                                | 03/09/2022   | 106.83         | 03/17/2022 | 100-528-616 Safety Supplies       | 322       |
| 8502                            | NATIONS MEDICAL                 | 107904         | First Aid Supplies                                       | 03/09/2022   | 203.04         | 03/17/2022 | 510-840-616 Safety Supplies       | 322       |
| Total 8502:                     |                                 |                |                                                          |              | 709.17         |            |                                   |           |
| NCE                             |                                 |                |                                                          |              |                |            |                                   |           |
| 7617                            | NCE                             | 675192514      | On Call Inspection Services for New Development Projects | 02/22/2022   | 12,857.50      | 03/17/2022 | 100-529-320 Prof Serv-Engineering | 222       |
| Total 7617:                     |                                 |                |                                                          |              | 12,857.50      |            |                                   |           |
| NEVADA POWER PRODUCTS, INC      |                                 |                |                                                          |              |                |            |                                   |           |
| 124                             | NEVADA POWER PRODUCTS, INC      | 214665         | back pac sprayer                                         | 03/02/2022   | 134.99         | 03/17/2022 | 100-475-605 Minor Equipment       | 322       |
| Total 124:                      |                                 |                |                                                          |              | 134.99         |            |                                   |           |
| NNICC - N NV INT'L CODE COUNCIL |                                 |                |                                                          |              |                |            |                                   |           |
| 911                             | NNICC - N NV INT'L CODE COUNCIL | INV166         | Annual Membership dues for BSD staff                     | 03/10/2022   | 160.00         | 03/17/2022 | 100-605-581 Dues and Memberships  | 322       |
| Total 911:                      |                                 |                |                                                          |              | 160.00         |            |                                   |           |
| NSB - BANKCARD CENTER           |                                 |                |                                                          |              |                |            |                                   |           |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | STAMPLI; FEB 2022 ELECTRONIC INVOICE                     | 02/28/2022   | 1,034.00       | 03/10/2022 | 100-418-342 Tech Services-Other   | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | AMAZON; REFRIGERATOR FILTERS                             | 02/28/2022   | 148.50         | 03/10/2022 | 100-417-600 General Supplies      | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | NV ST FIRE MARSHALL; HAZMAT PERMIT                       | 02/28/2022   | 678.01         | 03/10/2022 | 510-840-642 Permits and Licenses  | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | NV ST FIRE MARSHALL; HAZMAT PERMIT                       | 02/28/2022   | 678.01         | 03/10/2022 | 520-810-642 Permits and Licenses  | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | NV ST FIRE MARSHALL; HAZMAT PERMIT                       | 02/28/2022   | 678.01         | 03/10/2022 | 510-810-642 Permits and Licenses  | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | RALEYS; SUPP CITIZEN ACADEMY 2/3/22                      | 02/28/2022   | 23.15          | 03/10/2022 | 100-412-580 Training              | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | WALMART; SUPPLIES CITIZENS ACADEMY 2/17/22               | 02/28/2022   | 16.70          | 03/10/2022 | 100-412-650 Community Support     | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | NORCO INC/RENO INDUSTRIAL; CARBON DIOXIDE FOR            | 02/28/2022   | 88.00          | 03/10/2022 | 100-528-617 Supplies-Chemical     | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | ZOOM MONTHLY SUB CMO                                     | 02/28/2022   | 140.00         | 03/10/2022 | 100-418-342 Tech Services-Other   | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | WALMART; SUPPLIES CITIZEN ACADEMY 2/24/22                | 02/28/2022   | 8.25           | 03/10/2022 | 100-412-650 Community Support     | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | RALEYS; SUPP CITIZEN ACADEMY 2/24/22                     | 02/28/2022   | 10.98          | 03/10/2022 | 100-412-650 Community Support     | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | AMAZON; REPLACEMENT BULBS                                | 02/28/2022   | 46.95          | 03/10/2022 | 100-417-600 General Supplies      | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | UNR; REG WARD 4 COUNCIL PUBLIC SECTOR HR 5/20/22         | 02/28/2022   | 205.00         | 03/10/2022 | 100-412-580 Training              | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | DROP BOX; REFUND FOR ERROR ANN'L SUB                     | 02/28/2022   | 142.19         | 03/10/2022 | 100-529-601 OFFICE SUPPLIES       | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | HARVARD KENNEDY SCHOOL; CLASS REG CM HOOPER              | 02/28/2022   | 995.00         | 03/10/2022 | 100-413-580 Training              | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | RALEYS; SUPP CITIZEN ACADEMY 2/10/22                     | 02/28/2022   | 22.45          | 03/10/2022 | 100-412-650 Community Support     | 222       |
| 8649                            | NSB - BANKCARD CENTER           | FEB 2022       | NV ENVIRON PROT; EXAM GRADE 1 C SALGADO                  | 02/28/2022   | 123.00         | 03/10/2022 | 510-810-642 Permits and Licenses  | 222       |

| Vendor              | Vendor Name  | Invoice Number | Description                         | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title             | GL Period |
|---------------------|--------------|----------------|-------------------------------------|--------------|----------------|------------|----------------------------------|-----------|
| Total 8649:         |              |                |                                     |              | 4,753.82       |            |                                  |           |
| <b>NV ENERGY</b>    |              |                |                                     |              |                |            |                                  |           |
| 167                 | NV ENERGY    | 26093 MAR 22   | 34596402626093 ACH                  | 03/08/2022   | 1,175.69       | 03/24/2022 | 100-575-622 Electricity          | 322       |
| 167                 | NV ENERGY    | 26100 MAR 22   | 34596502626100 ACH                  | 03/08/2022   | 39.55          | 03/24/2022 | 520-810-622 Electricity          | 322       |
| 167                 | NV ENERGY    | 26100 MAR 22   | 34596502626100 ACH                  | 03/08/2022   | 14,289.56      | 03/24/2022 | 510-810-622 Electricity          | 322       |
| 167                 | NV ENERGY    | 42683 MAR 22   | 82190404842683 ACH                  | 03/08/2022   | 8,087.09       | 03/24/2022 | 520-810-622 Electricity          | 322       |
| 167                 | NV ENERGY    | 42683 MAR 22   | 82190404842683 ACH                  | 03/08/2022   | 56.06          | 03/24/2022 | 100-475-622 Electricity          | 322       |
| 167                 | NV ENERGY    | 42683 MAR 22   | 82190404842683 ACH                  | 03/08/2022   | 693.51         | 03/24/2022 | 510-810-622 Electricity          | 322       |
| 167                 | NV ENERGY    | 42683 MAR 22   | 82190404842683 ACH                  | 03/08/2022   | 459.61         | 03/24/2022 | 100-575-622 Electricity          | 322       |
| 167                 | NV ENERGY    | 97899 MAR 22   | 80865904797899 ACH                  | 03/08/2022   | 15,620.63      | 03/24/2022 | 100-475-622 Electricity          | 322       |
| Total 167:          |              |                |                                     |              | 40,421.70      |            |                                  |           |
| <b>OFFICE DEPOT</b> |              |                |                                     |              |                |            |                                  |           |
| 133                 | OFFICE DEPOT | 226198301001   | ergonomic wrist pad                 | 02/21/2022   | 12.99          | 03/10/2022 | 100-414-600 General Supplies     | 222       |
| 133                 | OFFICE DEPOT | 226198937001   | Legal pads, staples, criminal files | 02/21/2022   | 110.02         | 03/10/2022 | 100-414-600 General Supplies     | 222       |
| 133                 | OFFICE DEPOT | 226198990001   | Wireless mouse for laptops          | 02/21/2022   | 197.98         | 03/10/2022 | 100-414-600 General Supplies     | 222       |
| 133                 | OFFICE DEPOT | 226198992001   | Binder clips, dry erase magnets     | 02/19/2022   | 30.07          | 03/10/2022 | 100-414-600 General Supplies     | 222       |
| 133                 | OFFICE DEPOT | 226198994001   | dry erase markers                   | 02/21/2022   | 9.79           | 03/10/2022 | 100-414-600 General Supplies     | 222       |
| 133                 | OFFICE DEPOT | 226375862001   | office supplies                     | 02/15/2022   | 53.59          | 03/17/2022 | 100-414-600 General Supplies     | 222       |
| 133                 | OFFICE DEPOT | 226673756001   | Office Supplies                     | 02/16/2022   | 4.69           | 03/17/2022 | 100-416-600 General Supplies     | 222       |
| 133                 | OFFICE DEPOT | 228237740001   | Office supplies-IT                  | 02/28/2022   | 38.59          | 03/10/2022 | 100-418-600 General Supplies     | 222       |
| 133                 | OFFICE DEPOT | 228237740001   | Office Supplies-CMO                 | 02/28/2022   | 5.12           | 03/10/2022 | 100-413-600 General Supplies     | 222       |
| 133                 | OFFICE DEPOT | 228237740001   | Office Supplies - Plng              | 02/28/2022   | 2.56           | 03/10/2022 | 100-610-601 Office Supplies      | 222       |
| 133                 | OFFICE DEPOT | 228237740002   | Office supplies                     | 03/03/2022   | 24.09          | 03/24/2022 | 100-413-600 General Supplies     | 322       |
| 133                 | OFFICE DEPOT | 228394971001   | Office Supplies                     | 02/26/2022   | 11.58          | 03/10/2022 | 100-413-600 General Supplies     | 222       |
| 133                 | OFFICE DEPOT | 228611433001   | office supplies                     | 02/15/2022   | 75.90          | 03/10/2022 | 100-414-600 General Supplies     | 222       |
| 133                 | OFFICE DEPOT | 230457121001   | Office Supplies                     | 02/25/2022   | 38.08          | 03/10/2022 | 100-610-601 Office Supplies      | 222       |
| 133                 | OFFICE DEPOT | 230457121001   | Office Supplies                     | 02/25/2022   | 12.83          | 03/10/2022 | 100-413-600 General Supplies     | 222       |
| 133                 | OFFICE DEPOT | 230458688001   | Printing & Postage BC               | 03/02/2022   | 21.38          | 03/17/2022 | 100-610-550 Printing and Postage | 322       |
| 133                 | OFFICE DEPOT | 230565031001   | Printer ink, date stamper           | 02/28/2022   | 273.56         | 03/10/2022 | 100-414-600 General Supplies     | 222       |
| 133                 | OFFICE DEPOT | 230566415001   | Original document stamp             | 02/25/2022   | 9.99           | 03/10/2022 | 100-414-600 General Supplies     | 222       |
| 133                 | OFFICE DEPOT | 231575977001   | Pens, eraser                        | 03/08/2022   | 31.64          |            | 100-414-600 General Supplies     | 322       |
| 133                 | OFFICE DEPOT | 231618325001   | Scissors, CD covers                 | 03/08/2022   | 19.26          |            | 100-414-600 General Supplies     | 322       |
| 133                 | OFFICE DEPOT | 232531073001   | Wall Calendar                       | 03/11/2022   | 15.51          | 03/24/2022 | 100-425-600 General Supplies     | 322       |
| 133                 | OFFICE DEPOT | 232531267001   | Calendar/Holder                     | 03/11/2022   | 18.48          | 03/24/2022 | 100-425-600 General Supplies     | 322       |
| 133                 | OFFICE DEPOT | 232531270001   | Batteries and Dry Erase Markers     | 03/11/2022   | 54.30          | 03/24/2022 | 100-425-600 General Supplies     | 322       |
| 133                 | OFFICE DEPOT | 232531270002   | Certificate Frame                   | 03/14/2022   | 6.36           | 03/24/2022 | 100-425-600 General Supplies     | 322       |
| 133                 | OFFICE DEPOT | 232531272001   | Desk Organizer                      | 03/10/2022   | 21.99          | 03/24/2022 | 100-425-600 General Supplies     | 322       |
| 133                 | OFFICE DEPOT | 233008792001   | MISC OFFICE SUPPLIES                | 03/08/2022   | 154.19         | 03/24/2022 | 100-425-600 General Supplies     | 322       |
| 133                 | OFFICE DEPOT | 233008792002   | Manilla Folders                     | 03/11/2022   | 107.20         | 03/24/2022 | 100-425-600 General Supplies     | 322       |
| 133                 | OFFICE DEPOT | 233011886001   | FOLDERS                             | 03/08/2022   | 109.58         | 03/24/2022 | 100-425-600 General Supplies     | 322       |



| Vendor                             | Vendor Name                        | Invoice Number | Description                   | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title |                      | GL Period |
|------------------------------------|------------------------------------|----------------|-------------------------------|--------------|----------------|------------|----------------------|----------------------|-----------|
| 133                                | OFFICE DEPOT                       | 233011888001   | HVY DUTY STAPLER              | 03/08/2022   | 28.73          | 03/24/2022 | 100-425-600          | General Supplies     | 322       |
| Total 133:                         |                                    |                |                               |              | 1,500.05       |            |                      |                      |           |
| O'REILLY AUTO PARTS                |                                    |                |                               |              |                |            |                      |                      |           |
| 6230                               | O'REILLY AUTO PARTS                | 3599-186703    | switch for 5003               | 03/08/2022   | 54.10          | 03/17/2022 | 100-605-610          | Automotive Supplies  | 322       |
| Total 6230:                        |                                    |                |                               |              | 54.10          |            |                      |                      |           |
| OTIS ELEVATOR COMPANY              |                                    |                |                               |              |                |            |                      |                      |           |
| 5011                               | OTIS ELEVATOR COMPANY              | 100400729393   | contract service              | 03/14/2022   | 464.76         | 03/24/2022 | 100-417-420          | Contract Services    | 322       |
| Total 5011:                        |                                    |                |                               |              | 464.76         |            |                      |                      |           |
| PACIFIC STORAGE COMPANY            |                                    |                |                               |              |                |            |                      |                      |           |
| 8876                               | PACIFIC STORAGE COMPANY            | 5096016        | Shredding                     | 02/16/2022   | 16.50          | 03/24/2022 | 100-425-322          | Prof Serv-Other      | 222       |
| 8876                               | PACIFIC STORAGE COMPANY            | 5099858        | schredding                    | 03/14/2022   | 16.50          | 03/24/2022 | 100-425-322          | Prof Serv-Other      | 322       |
| Total 8876:                        |                                    |                |                               |              | 33.00          |            |                      |                      |           |
| PUBLIC EMPLOYEES BENEFITS PROG     |                                    |                |                               |              |                |            |                      |                      |           |
| 143                                | PUBLIC EMPLOYEES BENEFITS PROG     | 3/2022         | Retiree Group Insurance       | 03/25/2022   | 206.95         | 03/17/2022 | 100-415-240          | Group Insurance      | 322       |
| 143                                | PUBLIC EMPLOYEES BENEFITS PROG     | 3/2022         | Retiree Group Insurance       | 03/25/2022   | 260.00         | 03/17/2022 | 520-810-240          | Group Insurance      | 322       |
| 143                                | PUBLIC EMPLOYEES BENEFITS PROG     | 3/2022         | Retiree Group Insurance       | 03/25/2022   | 5.32           | 03/17/2022 | 100-475-240          | Group Insurance      | 322       |
| Total 143:                         |                                    |                |                               |              | 472.27         |            |                      |                      |           |
| PUBLIC EMPLOYEES RETIREMENT SYSTEM |                                    |                |                               |              |                |            |                      |                      |           |
| 144                                | PUBLIC EMPLOYEES RETIREMENT SYSTEM | FEB 2022       | #621 RETIREMENT CONTRIBUTIONS | 02/28/2022   | 106,853.65     | 03/14/2022 | 100-216000           | RETIREMENT PAYABLE   | 222       |
| Total 144:                         |                                    |                |                               |              | 106,853.65     |            |                      |                      |           |
| PURCHASE POWER                     |                                    |                |                               |              |                |            |                      |                      |           |
| 3155                               | PURCHASE POWER                     | 69812 MAR 22   | POSTAGE - WATER               | 03/03/2022   | 93.29          | 03/30/2022 | 510-810-550          | Printing and Postage | 322       |
| 3155                               | PURCHASE POWER                     | 69812 MAR 22   | POSTAGE - PLANNING            | 03/03/2022   | 292.85         | 03/30/2022 | 100-610-550          | Printing and Postage | 322       |
| 3155                               | PURCHASE POWER                     | 69812 MAR 22   | POSTAGE - BUILDING            | 03/03/2022   | 3.98           | 03/30/2022 | 100-605-550          | Printing and Postage | 322       |
| 3155                               | PURCHASE POWER                     | 69812 MAR 22   | POSTAGE - COURT               | 03/03/2022   | 273.36         | 03/30/2022 | 100-425-550          | Printing and Postage | 322       |
| 3155                               | PURCHASE POWER                     | 69812 MAR 22   | POSTAGE - CITY MANAGER        | 03/03/2022   | 34.45          | 03/30/2022 | 100-413-550          | Printing and Postage | 322       |
| 3155                               | PURCHASE POWER                     | 69812 MAR 22   | POSTAGE - CLERK               | 03/03/2022   | 3,071.50       | 03/30/2022 | 100-416-550          | Printing and Postage | 322       |
| 3155                               | PURCHASE POWER                     | 69812 MAR 22   | POSTAGE - FINANCE             | 03/03/2022   | 141.45         | 03/30/2022 | 100-415-550          | Printing and Postage | 322       |
| 3155                               | PURCHASE POWER                     | 69812 MAR 22   | POSTAGE - PARKS               | 03/03/2022   | 1.00           | 03/30/2022 | 100-525-550          | Printing and Postage | 322       |
| 3155                               | PURCHASE POWER                     | 69812 MAR 22   | POSTAGE - ANIMAL CONTROL      | 03/03/2022   | 62.90          | 03/30/2022 | 100-525-550          | Printing and Postage | 322       |
| 3155                               | PURCHASE POWER                     | 69812 MAR 22   | POSTAGE - CITY ATTORNEY       | 03/03/2022   | 53.34          | 03/30/2022 | 100-414-550          | Printing and Postage | 322       |
| 3155                               | PURCHASE POWER                     | 69812 MAR 22   | POSTAGE - STREETS             | 03/03/2022   | 13.86          | 03/30/2022 | 100-475-550          | Printing and Postage | 322       |

| Vendor                                     | Vendor Name                         | Invoice Number | Description                                                  | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title                     | GL Period |
|--------------------------------------------|-------------------------------------|----------------|--------------------------------------------------------------|--------------|----------------|------------|------------------------------------------|-----------|
| Total 3155:                                |                                     |                |                                                              |              | 4,041.98       |            |                                          |           |
| <b>QUADIENT LEASING USA, INC.</b>          |                                     |                |                                                              |              |                |            |                                          |           |
| 8737                                       | QUADIENT LEASING USA, INC.          | 16614881       | In-house Mailing                                             | 02/15/2022   | 1,152.50       | 03/24/2022 | 510-810-441 Rental                       | 222       |
| 8737                                       | QUADIENT LEASING USA, INC.          | 16614881       | In-house Mailing                                             | 02/15/2022   | 1,152.50       | 03/24/2022 | 520-810-441 Rental                       | 222       |
| Total 8737:                                |                                     |                |                                                              |              | 2,305.00       |            |                                          |           |
| <b>REDWOOD TOXICOLOGY LABORATORY, INC.</b> |                                     |                |                                                              |              |                |            |                                          |           |
| 8886                                       | REDWOOD TOXICOLOGY LABORATORY, INC. | 765688         | Drug/Alcohol Testing Kits                                    | 03/14/2022   | 625.00         |            | 100-425-341 Pretrial Services Program    | 322       |
| Total 8886:                                |                                     |                |                                                              |              | 625.00         |            |                                          |           |
| <b>RENO GAZETTE JOURNAL</b>                |                                     |                |                                                              |              |                |            |                                          |           |
| 152                                        | RENO GAZETTE JOURNAL                | 4436113        | 5083589 GREEN VALLEY                                         | 02/28/2022   | 860.00         | 03/10/2022 | 230-575-730 Improve other than Buildings | 222       |
| 152                                        | RENO GAZETTE JOURNAL                | 4436113        | 5118076 2ND QTRLY                                            | 02/28/2022   | 175.00         | 03/10/2022 | 100-416-540 Advertising                  | 222       |
| 152                                        | RENO GAZETTE JOURNAL                | 4436113        | 5141717 BILL 308                                             | 02/28/2022   | 135.00         | 03/10/2022 | 100-610-540 Advertising                  | 222       |
| 152                                        | RENO GAZETTE JOURNAL                | 4436113        | 5141720 ZONING MAP                                           | 02/28/2022   | 151.00         | 03/10/2022 | 100-610-540 Advertising                  | 222       |
| 152                                        | RENO GAZETTE JOURNAL                | 4436113        | 5141723 BILL 307                                             | 02/28/2022   | 147.00         | 03/10/2022 | 100-610-540 Advertising                  | 222       |
| Total 152:                                 |                                     |                |                                                              |              | 1,468.00       |            |                                          |           |
| <b>SAN JOAQUIN DEPT CHILD SUPPORT</b>      |                                     |                |                                                              |              |                |            |                                          |           |
| 3087                                       | SAN JOAQUIN DEPT CHILD SUPPORT      | MAR 2022-1     | CHILD SUPPORT WITHHELD                                       | 03/11/2022   | 57.69          | 03/10/2022 | 100-219900 OTHER PAYROLL PAYABLES        | 322       |
| 3087                                       | SAN JOAQUIN DEPT CHILD SUPPORT      | MAR 2022-2     | CHILD SUPPORT WITHHELD                                       | 03/25/2022   | 57.69          | 03/24/2022 | 100-219900 OTHER PAYROLL PAYABLES        | 322       |
| Total 3087:                                |                                     |                |                                                              |              | 115.38         |            |                                          |           |
| <b>SECTRAN SECURITY, INC.</b>              |                                     |                |                                                              |              |                |            |                                          |           |
| 8629                                       | SECTRAN SECURITY, INC.              | 22030494       | ARMORED SERVICE - GF                                         | 03/10/2022   | 155.31         |            | 100-415-322 Prof Serv-Other              | 322       |
| 8629                                       | SECTRAN SECURITY, INC.              | 22030494       | ARMORED SERVICE - SEWER                                      | 03/10/2022   | 155.29         |            | 520-810-342 Tech Services-Other          | 322       |
| 8629                                       | SECTRAN SECURITY, INC.              | 22030494       | ARMORED SERVICE - WATER                                      | 03/10/2022   | 155.29         |            | 510-810-342 Tech Services-Other          | 322       |
| Total 8629:                                |                                     |                |                                                              |              | 465.89         |            |                                          |           |
| <b>SHAW ENGINEERING</b>                    |                                     |                |                                                              |              |                |            |                                          |           |
| 1897                                       | SHAW ENGINEERING                    | 183156         | Engineering services for the storm drain master plan project | 12/31/2021   | 220.00         | 03/17/2022 | 100-475-320 Prof Serv-Engineering        | 1221      |
| 1897                                       | SHAW ENGINEERING                    | 183305         | Engineering development review for royal oaks floodplain ana | 02/28/2022   | 370.00         |            | 100-529-320 Prof Serv-Engineering        | 222       |
| 1897                                       | SHAW ENGINEERING                    | 183309         | Sewer master plan engineering services                       | 02/28/2022   | 2,330.00       |            | 520-810-320 Prof Serv-Engineering        | 222       |
| 1897                                       | SHAW ENGINEERING                    | 183327         | Fernwood civil improvements and ERC engineering review se    | 02/28/2022   | 8,000.00       |            | 100-529-320 Prof Serv-Engineering        | 222       |
| 1897                                       | SHAW ENGINEERING                    | 183343         | West lift station upgrade engineering design services        | 02/28/2022   | 8,340.00       |            | 520-166100 Construction In Progress      | 222       |
| 1897                                       | SHAW ENGINEERING                    | 183357         | Engineering services for Sage Tank Recoat project            | 02/28/2022   | 359.50         |            | 510-166100 Construction In Progress      | 222       |
| 1897                                       | SHAW ENGINEERING                    | 183358         | Farm District road lift station engineering services         | 02/28/2022   | 4,368.00       |            | 520-166100 Construction In Progress      | 222       |

| Vendor                                   | Vendor Name                       | Invoice Number | Description                                                  | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title                       | GL Period |
|------------------------------------------|-----------------------------------|----------------|--------------------------------------------------------------|--------------|----------------|------------|--------------------------------------------|-----------|
| 1897                                     | SHAW ENGINEERING                  | 183388         | Engineering review services for sunrise trails parcel map    | 02/28/2022   | 500.00         |            | 100-529-320 Prof Serv-Engineering          | 222       |
| 1897                                     | SHAW ENGINEERING                  | 183389         | Engineering review services for DCR Holdings final parcel ma | 02/28/2022   | 500.00         |            | 100-529-320 Prof Serv-Engineering          | 222       |
| Total 1897:                              |                                   |                |                                                              |              | 24,987.50      |            |                                            |           |
| <b>SILVER STATE BARRICADE</b>            |                                   |                |                                                              |              |                |            |                                            |           |
| 170                                      | SILVER STATE BARRICADE            | 125234         | signs                                                        | 03/11/2022   | 904.66         | 03/17/2022 | 100-475-615 Supplies-Signs and Striping    | 322       |
| 170                                      | SILVER STATE BARRICADE            | 125243         | marking tape                                                 | 03/14/2022   | 336.24         |            | 100-475-615 Supplies-Signs and Striping    | 322       |
| 170                                      | SILVER STATE BARRICADE            | 125349         | traffix compact sign and stand                               | 03/18/2022   | 325.64         |            | 100-475-615 Supplies-Signs and Striping    | 322       |
| 170                                      | SILVER STATE BARRICADE            | 125364         | vests tape rivots misc.                                      | 03/21/2022   | 1,314.68       |            | 100-475-615 Supplies-Signs and Striping    | 322       |
| 170                                      | SILVER STATE BARRICADE            | 125375         | Traffic Control Plan                                         | 03/21/2022   | 150.00         |            | 100-475-320 Prof Serv-Engineering          | 322       |
| 170                                      | SILVER STATE BARRICADE            | 125383         | signs                                                        | 03/21/2022   | 1,103.42       |            | 100-475-615 Supplies-Signs and Striping    | 322       |
| Total 170:                               |                                   |                |                                                              |              | 4,134.64       |            |                                            |           |
| <b>SILVER STATE INTERNATIONAL TRUCKS</b> |                                   |                |                                                              |              |                |            |                                            |           |
| 265                                      | SILVER STATE INTERNATIONAL TRUCKS | X201069898:01  | SENSOR FOR VACTOR                                            | 03/10/2022   | 104.11         | 03/17/2022 | 100-475-430 Service-Repair and Maintenance | 322       |
| 265                                      | SILVER STATE INTERNATIONAL TRUCKS | X201070944:01  | FUEL TANK FOR DUMP TRUCK                                     | 03/23/2022   | 1,691.16       |            | 100-475-430 Service-Repair and Maintenance | 322       |
| Total 265:                               |                                   |                |                                                              |              | 1,795.27       |            |                                            |           |
| <b>SJC LIMITED</b>                       |                                   |                |                                                              |              |                |            |                                            |           |
| 8580                                     | SJC LIMITED                       | 13618          | base                                                         | 03/07/2022   | 803.74         |            | 100-575-600 General Supplies               | 322       |
| Total 8580:                              |                                   |                |                                                              |              | 803.74         |            |                                            |           |
| <b>SPARKS ELECTRIC MOTOR REPAIR</b>      |                                   |                |                                                              |              |                |            |                                            |           |
| 1291                                     | SPARKS ELECTRIC MOTOR REPAIR      | 19262          | Well 11 - 300hp Motor Rebuild                                | 03/03/2022   | 7,163.65       | 03/17/2022 | 510-810-430 Repairs & Maintenance          | 322       |
| Total 1291:                              |                                   |                |                                                              |              | 7,163.65       |            |                                            |           |
| <b>STAPLES CREDIT PLAN</b>               |                                   |                |                                                              |              |                |            |                                            |           |
| 279                                      | STAPLES CREDIT PLAN               | 3499300151     | CHAIR FOR PLANNING STAFF                                     | 02/02/2022   | 139.00         | 03/17/2022 | 100-605-601 Office Supplies                | 222       |
| 279                                      | STAPLES CREDIT PLAN               | 3503022514     | Misc Supplies                                                | 03/19/2022   | 98.31          |            | 510-810-601 Office Supplies                | 322       |
| 279                                      | STAPLES CREDIT PLAN               | 3503022514     | Misc Supplies                                                | 03/19/2022   | 98.31          |            | 520-810-601 Office Supplies                | 322       |
| 279                                      | STAPLES CREDIT PLAN               | 3503022515     | Pens                                                         | 03/19/2022   | 5.39           |            | 510-810-601 Office Supplies                | 322       |
| 279                                      | STAPLES CREDIT PLAN               | 3503022515     | Pens                                                         | 03/19/2022   | 5.40           |            | 520-810-601 Office Supplies                | 322       |
| 279                                      | STAPLES CREDIT PLAN               | 3503124323     | OFFICE SUPPLIES                                              | 03/22/2022   | 3.83           |            | 510-810-601 Office Supplies                | 322       |
| 279                                      | STAPLES CREDIT PLAN               | 3503124323     | OFFICE SUPPLIES                                              | 03/22/2022   | 3.84           |            | 520-810-601 Office Supplies                | 322       |
| 279                                      | STAPLES CREDIT PLAN               | 3503553700     | OFFICE SUPPLIES                                              | 03/26/2022   | 11.40-         |            | 510-810-601 Office Supplies                | 322       |
| 279                                      | STAPLES CREDIT PLAN               | 3503553700     | OFFICE SUPPLIES                                              | 03/26/2022   | 11.40-         |            | 520-810-601 Office Supplies                | 322       |
| Total 279:                               |                                   |                |                                                              |              | 331.28         |            |                                            |           |

| Vendor                                | Vendor Name                           | Invoice Number | Description                            | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title |                                | GL Period |
|---------------------------------------|---------------------------------------|----------------|----------------------------------------|--------------|----------------|------------|----------------------|--------------------------------|-----------|
| STATE COLLECTION & DISB. UNIT (SCaDU) |                                       |                |                                        |              |                |            |                      |                                |           |
| 176                                   | STATE COLLECTION & DISB. UNIT (SCaDU) | MAR 2022-1     | CHILD SUPPORT                          | 03/11/2022   | 101.77         | 03/10/2022 | 100-219900           | OTHER PAYROLL PAYABLES         | 322       |
| 176                                   | STATE COLLECTION & DISB. UNIT (SCaDU) | MAR 2022-2     | CHILD SUPPORT                          | 03/25/2022   | 101.77         | 03/24/2022 | 100-219900           | OTHER PAYROLL PAYABLES         | 322       |
| Total 176:                            |                                       |                |                                        |              | 203.54         |            |                      |                                |           |
| TAGGART & TAGGART LTD                 |                                       |                |                                        |              |                |            |                      |                                |           |
| 3275                                  | TAGGART & TAGGART LTD                 | 15895          | Water Rights Contract BOR 21/22        | 02/28/2022   | 20,987.17      | 03/17/2022 | 510-810-698          | Water Rights Protection        | 222       |
| Total 3275:                           |                                       |                |                                        |              | 20,987.17      |            |                      |                                |           |
| THATCHER COMPANY, INC.                |                                       |                |                                        |              |                |            |                      |                                |           |
| 8646                                  | THATCHER COMPANY, INC.                | 2022400103008  | Well 13 - Sodium Hypochlorite Delivery | 03/01/2022   | 834.90         | 03/10/2022 | 510-810-617          | Supplies-Chemical              | 322       |
| 8646                                  | THATCHER COMPANY, INC.                | 2022400103009  | Well 14 - Sodium Hypochlorite Delivery | 03/01/2022   | 834.90         | 03/10/2022 | 510-810-617          | Supplies-Chemical              | 322       |
| 8646                                  | THATCHER COMPANY, INC.                | 2022400103042  | Ferric Chloride - approx 3953 gallons  | 03/03/2022   | 13,920.00      | 03/17/2022 | 510-840-617          | Chemicals                      | 322       |
| Total 8646:                           |                                       |                |                                        |              | 15,589.80      |            |                      |                                |           |
| TSK                                   |                                       |                |                                        |              |                |            |                      |                                |           |
| 8714                                  | TSK                                   | 21-058.00_002  | Contract for design services for CRRC  | 03/21/2022   | 152,626.00     |            | 220-480-810          | ARPA                           | 322       |
| Total 8714:                           |                                       |                |                                        |              | 152,626.00     |            |                      |                                |           |
| U S POSTAL SERVICE                    |                                       |                |                                        |              |                |            |                      |                                |           |
| 7344                                  | U S POSTAL SERVICE                    | APR 2022       | PREPAID IN-HOUSE POSTAGE               | 04/01/2022   | 1,500.00       |            | 510-810-550          | Printing and Postage           | 422       |
| 7344                                  | U S POSTAL SERVICE                    | APR 2022       | PREPAID IN-HOUSE POSTAGE               | 04/01/2022   | 1,500.00       |            | 520-810-550          | Printing and Postage           | 422       |
| Total 7344:                           |                                       |                |                                        |              | 3,000.00       |            |                      |                                |           |
| VERITIV OPERATING COMPANY             |                                       |                |                                        |              |                |            |                      |                                |           |
| 8574                                  | VERITIV OPERATING COMPANY             | 626-39634601   | IN HOUSE ENVELOPES #9                  | 03/08/2022   | 650.67         |            | 510-810-550          | Printing and Postage           | 322       |
| 8574                                  | VERITIV OPERATING COMPANY             | 626-39634601   | IN HOUSE ENVELOPES #9                  | 03/08/2022   | 650.68         |            | 520-810-550          | Printing and Postage           | 322       |
| 8574                                  | VERITIV OPERATING COMPANY             | 626-39636146   | IN HOUSE BILLING PAPER                 | 03/15/2022   | 439.02         |            | 510-810-550          | Printing and Postage           | 322       |
| 8574                                  | VERITIV OPERATING COMPANY             | 626-39636146   | IN HOUSE BILLING PAPER                 | 03/15/2022   | 439.03         |            | 520-810-550          | Printing and Postage           | 322       |
| Total 8574:                           |                                       |                |                                        |              | 2,179.40       |            |                      |                                |           |
| VERIZON WIRELESS                      |                                       |                |                                        |              |                |            |                      |                                |           |
| 8495                                  | VERIZON WIRELESS                      | 9900728755     | City Hall/Facilities                   | 03/24/2022   | 772.80         | 03/17/2022 | 100-417-530          | Communications (Internet,Cell) | 322       |
| 8495                                  | VERIZON WIRELESS                      | 9900728755     | IT                                     | 03/24/2022   | 51.54          | 03/17/2022 | 100-418-530          | Communications (Internet,Cell) | 322       |
| 8495                                  | VERIZON WIRELESS                      | 9900728755     | Water Dist.                            | 03/24/2022   | 222.56         | 03/17/2022 | 510-810-530          | Communications                 | 322       |
| 8495                                  | VERIZON WIRELESS                      | 9900728755     | WTP                                    | 03/24/2022   | 497.76         | 03/17/2022 | 510-840-530          | Communications                 | 322       |
| 8495                                  | VERIZON WIRELESS                      | 9900728755     | Waste Water                            | 03/24/2022   | 246.17         | 03/17/2022 | 520-810-530          | Communications                 | 322       |
| 8495                                  | VERIZON WIRELESS                      | 9900728755     | WW Router                              | 03/24/2022   | 91.55          | 03/17/2022 | 520-810-530          | Communications                 | 322       |

| Vendor                                | Vendor Name                    | Invoice Number | Description                                | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title                       | GL Period |
|---------------------------------------|--------------------------------|----------------|--------------------------------------------|--------------|----------------|------------|--------------------------------------------|-----------|
| 8495                                  | VERIZON WIRELESS               | 9900728755     | Bldg & Safety                              | 03/24/2022   | 279.75         | 03/17/2022 | 100-417-530 Communications (Internet,Cell) | 322       |
| 8495                                  | VERIZON WIRELESS               | 9900728755     | Council                                    | 03/24/2022   | 103.08         | 03/17/2022 | 100-412-530 Communications (Internet,Cell) | 322       |
| 8495                                  | VERIZON WIRELESS               | 9900728755     | CAO                                        | 03/24/2022   | 80.02          | 03/17/2022 | 100-414-530 Communications (Internet,Cell) | 322       |
| 8495                                  | VERIZON WIRELESS               | 9900824784     | 742052267-00001 Router 775-294-1059        | 03/24/2022   | 40.03          | 03/17/2022 | 520-810-530 Communications                 | 322       |
| Total 8495:                           |                                |                |                                            |              | 2,385.26       |            |                                            |           |
| <b>VERUS ASSOCIATES NEVADA, LLC</b>   |                                |                |                                            |              |                |            |                                            |           |
| 8606                                  | VERUS ASSOCIATES NEVADA, LLC   | 1907           | Operator Panel monitor failure/replacement | 02/28/2022   | 1,453.03       | 03/17/2022 | 510-840-429 Contract Services-SCADA        | 222       |
| 8606                                  | VERUS ASSOCIATES NEVADA, LLC   | 1908           | SCADA Troobleshooting                      | 02/28/2022   | 721.80         | 03/17/2022 | 520-810-429 Contract Services-SCADA        | 222       |
| Total 8606:                           |                                |                |                                            |              | 2,174.83       |            |                                            |           |
| <b>VOYA FINANCIAL</b>                 |                                |                |                                            |              |                |            |                                            |           |
| 8591                                  | VOYA FINANCIAL                 | MAR 2022-1     | DEFERRED COMPENSATION, 457                 | 03/11/2022   | 2,764.00       | 03/11/2022 | 100-215000 457 PAYABLE                     | 322       |
| 8591                                  | VOYA FINANCIAL                 | MAR 2022-1     | ROTH IRA                                   | 03/11/2022   | 100.00         | 03/11/2022 | 100-215000 457 PAYABLE                     | 322       |
| 8591                                  | VOYA FINANCIAL                 | MAR 2022-2     | DEFERRED COMPENSATION, 457                 | 03/25/2022   | 2,764.00       | 03/25/2022 | 100-215000 457 PAYABLE                     | 322       |
| 8591                                  | VOYA FINANCIAL                 | MAR 2022-2     | ROTH IRA                                   | 03/25/2022   | 100.00         | 03/25/2022 | 100-215000 457 PAYABLE                     | 322       |
| Total 8591:                           |                                |                |                                            |              | 5,728.00       |            |                                            |           |
| <b>WALKER LAKE DISPOSAL</b>           |                                |                |                                            |              |                |            |                                            |           |
| 6118                                  | WALKER LAKE DISPOSAL           | 22-1172        | WWTP Dumpster                              | 03/22/2022   | 275.00         | 03/24/2022 | 520-810-412 Utility Service-Refuse         | 322       |
| Total 6118:                           |                                |                |                                            |              | 275.00         |            |                                            |           |
| <b>WALTHER LAW OFFICES</b>            |                                |                |                                            |              |                |            |                                            |           |
| 8875                                  | WALTHER LAW OFFICES            | APR 2022       | PUBLIC DEFENDER CONTRACT APR 2022          | 04/01/2022   | 6,666.66       |            | 100-413-322 Prof Serv-Other                | 422       |
| Total 8875:                           |                                |                |                                            |              | 6,666.66       |            |                                            |           |
| <b>WASTE MANAGEMENT</b>               |                                |                |                                            |              |                |            |                                            |           |
| 447                                   | WASTE MANAGEMENT               | 33001 MAR 22   | 11-60772-33001                             | 03/03/2022   | 103.14         | 03/10/2022 | 100-417-412 Utility Services-Refuse        | 322       |
| 447                                   | WASTE MANAGEMENT               | 33005 MAR 22   | 11-60745-33005                             | 03/03/2022   | 14.39          | 03/10/2022 | 510-840-412 Utility Service-Refuse         | 322       |
| 447                                   | WASTE MANAGEMENT               | 33009 MAR 22   | 11-60774-33009                             | 03/03/2022   | 84.39          | 03/10/2022 | 510-810-412 Utility Service-Refuse         | 322       |
| 447                                   | WASTE MANAGEMENT               | 43003 MAR 22   | 11-60760-43003                             | 03/03/2022   | 42.20          | 03/10/2022 | 520-810-412 Utility Service-Refuse         | 322       |
| Total 447:                            |                                |                |                                            |              | 244.12         |            |                                            |           |
| <b>WESTERN INDUSTRIAL PARTS, INC.</b> |                                |                |                                            |              |                |            |                                            |           |
| 8571                                  | WESTERN INDUSTRIAL PARTS, INC. | 2203-031283    | wire ties for fleet                        | 03/11/2022   | 104.59         | 03/17/2022 | 520-810-610 Supplies-Automotive            | 322       |
| 8571                                  | WESTERN INDUSTRIAL PARTS, INC. | 2203-031284    | Safety Glasses                             | 03/11/2022   | 319.15         | 03/17/2022 | 510-810-616 Supplies-Safety                | 322       |
| 8571                                  | WESTERN INDUSTRIAL PARTS, INC. | 2203-031922    | gloves for shop                            | 03/21/2022   | 47.50          |            | 100-480-600 GENERAL SUPPLIES/TOOLS         | 322       |

| Vendor                               | Vendor Name                          | Invoice Number | Description                             | Invoice Date | Invoice Amount | Date Paid  | GL Account and Title                     | GL Period |
|--------------------------------------|--------------------------------------|----------------|-----------------------------------------|--------------|----------------|------------|------------------------------------------|-----------|
| Total 8571:                          |                                      |                |                                         |              | 471.24         |            |                                          |           |
| WESTERN INSURANCE SPECIALTIES        |                                      |                |                                         |              |                |            |                                          |           |
| 881                                  | WESTERN INSURANCE SPECIALTIES        | APR 2022       | SUPPLEMENTAL INSURANCE                  | 04/01/2022   | 386.24         | 03/24/2022 | 100-218100 Western Insurance Payable     | 422       |
| Total 881:                           |                                      |                |                                         |              | 386.24         |            |                                          |           |
| WESTERN NEVADA SUPPLY CO.            |                                      |                |                                         |              |                |            |                                          |           |
| 195                                  | WESTERN NEVADA SUPPLY CO.            | 19135860-2     | Meter Service Boxes                     | 03/18/2022   | 174.33         |            | 510-810-613 Supplies-Meter Service       | 322       |
| 195                                  | WESTERN NEVADA SUPPLY CO.            | 19153220-1     | Binstock - Pipe Repair Clamps           | 03/21/2022   | 207.80         |            | 510-810-613 Supplies-Meter Service       | 322       |
| 195                                  | WESTERN NEVADA SUPPLY CO.            | 19162161       | Fire Hydrant Repair Kits                | 03/07/2022   | 428.28         | 03/17/2022 | 510-810-430 Repairs & Maintenance        | 322       |
| 195                                  | WESTERN NEVADA SUPPLY CO.            | 19169615       | Sensus Iperl Water Meters               | 03/14/2022   | 1,145.34       |            | 510-166100 Construction In Progress      | 322       |
| 195                                  | WESTERN NEVADA SUPPLY CO.            | 19170645       | Fire Hyrant Storz Fittings              | 03/02/2022   | 8,415.75       | 03/17/2022 | 510-810-430 Repairs & Maintenance        | 322       |
| 195                                  | WESTERN NEVADA SUPPLY CO.            | 19176443       | turf for batting cage # 1 little league | 03/08/2022   | 2,573.25       | 03/17/2022 | 100-575-600 General Supplies             | 322       |
| 195                                  | WESTERN NEVADA SUPPLY CO.            | 19190195       | Binstock - Brass Fittings               | 03/21/2022   | 327.70         |            | 510-810-613 Supplies-Meter Service       | 322       |
| Total 195:                           |                                      |                |                                         |              | 13,272.45      |            |                                          |           |
| WETLAB - WESTERN ENVIRON TESTING LAB |                                      |                |                                         |              |                |            |                                          |           |
| 8709                                 | WETLAB - WESTERN ENVIRON TESTING LAB | 22020267       | WWTP Monitoring Well Samples            | 03/08/2022   | 548.84         | 03/17/2022 | 520-810-423 Contract Services-ANALYTICAL | 322       |
| 8709                                 | WETLAB - WESTERN ENVIRON TESTING LAB | 22020662       | New Construction - Coliform Sample      | 03/03/2022   | 35.00          | 03/17/2022 | 510-810-423 Contract Services-ANALYTICAL | 322       |
| 8709                                 | WETLAB - WESTERN ENVIRON TESTING LAB | 22030037       | WWTP Monitoring Well Samples            | 03/16/2022   | 658.60         |            | 520-810-423 Contract Services-ANALYTICAL | 322       |
| 8709                                 | WETLAB - WESTERN ENVIRON TESTING LAB | 22030224       | March Coliform Sampling #1              | 03/11/2022   | 192.50         | 03/17/2022 | 510-810-423 Contract Services-ANALYTICAL | 322       |
| 8709                                 | WETLAB - WESTERN ENVIRON TESTING LAB | 22030226       | Quarterly Nitrate Sampling              | 03/23/2022   | 23.52          |            | 510-810-423 Contract Services-ANALYTICAL | 322       |
| 8709                                 | WETLAB - WESTERN ENVIRON TESTING LAB | 22030312       | New Construction - Coliform Sample      | 03/16/2022   | 35.00          |            | 510-810-423 Contract Services-ANALYTICAL | 322       |
| 8709                                 | WETLAB - WESTERN ENVIRON TESTING LAB | 22030359       | New Construction Coliform Sample        | 03/11/2022   | 135.00         | 03/17/2022 | 510-810-423 Contract Services-ANALYTICAL | 322       |
| Total 8709:                          |                                      |                |                                         |              | 1,628.46       |            |                                          |           |
| WOLFE, PAUL R                        |                                      |                |                                         |              |                |            |                                          |           |
| 8702                                 | WOLFE, PAUL R                        | 03112022       | Conficit Public Defender                | 03/11/2022   | 1,300.00       | 03/24/2022 | 100-425-325 PROF SERV-CONFLICT COUNS     | 322       |
| Total 8702:                          |                                      |                |                                         |              | 1,300.00       |            |                                          |           |
| WOOD RODGERS, INC.                   |                                      |                |                                         |              |                |            |                                          |           |
| 2454                                 | WOOD RODGERS, INC.                   | 155919         | Federal Lands Conveyance                | 02/28/2022   | 450.00         | 03/17/2022 | 100-413-322 Prof Serv-Other              | 222       |
| Total 2454:                          |                                      |                |                                         |              | 450.00         |            |                                          |           |
| WSP USA, INC                         |                                      |                |                                         |              |                |            |                                          |           |
| 8871                                 | WSP USA, INC                         | 5-1146002      | Travel demand model inputs and testing  | 03/14/2022   | 8,177.43       |            | 100-475-320 Prof Serv-Engineering        | 322       |

| Vendor                   | Vendor Name       | Invoice Number | Description                 | Invoice Date | Invoice Amount | Date Paid | GL Account and Title                     | GL Period |
|--------------------------|-------------------|----------------|-----------------------------|--------------|----------------|-----------|------------------------------------------|-----------|
| Total 8871:              |                   |                |                             |              | 8,177.43       |           |                                          |           |
| <b>WTR ELECTRIC, INC</b> |                   |                |                             |              |                |           |                                          |           |
| 8650                     | WTR ELECTRIC, INC | 22057          | trouble shoot power issues. | 03/17/2022   | 392.00         |           | 100-575-428 Contract Services-ELECTRICAL | 322       |
| Total 8650:              |                   |                |                             |              | 392.00         |           |                                          |           |
| Grand Totals:            |                   |                |                             |              | 842,411.66     |           |                                          |           |

Dated: \_\_\_\_\_

Mayor: \_\_\_\_\_

City Treasurer: \_\_\_\_\_

## Report Criteria:

Detail report.

Invoice detail records above \$0 included.

Paid and unpaid invoices included.

Vendor.Vendor Number = {&lt;&gt;} 2201

## Report Criteria:

License.Status = "Active"

Business.Orignation date = 03/11/2022-03/30/2022

| Business Name                     | Name                  | Location                     | Location City | Location State | Location Zip | Business Tel | Description               | Occupation                       |
|-----------------------------------|-----------------------|------------------------------|---------------|----------------|--------------|--------------|---------------------------|----------------------------------|
| Vet Mech Arms, LLC                | Steven Carrera        | 1365 Mountain Rose Dr.       | Fernley       | NV             | 89408        |              | Firearms Sales, Services  | Gunsmithing, Cerakoting, Knife   |
| Redwood Materials                 | Jeffrey Straubel, Pre | 1895 Duffy Road              | Fernley       | NV             | 89408        | 775-230-5421 | Warehouse, Industrial, Di | General storage and warehous     |
| Nijjar Hospitality LLC            | Amarjit Singh         | 1350 W. Newlands Dr.         | Fernley       | NV             | 89408        | 775-302-5319 | Hotel/Motel/B&B           | Hotel                            |
| Special Delivery/A Clown Around T | Terri E. May          | 402 Bramble Ct.              | Fernley       | NV             | 89408        | 775-294-1111 | Amusement, Entertainme    | Deliveries - party supplies/ente |
| Oasis Painting & Handyman         | Tabetha Kelly         | 750 E. Stillwater Ave. Spc18 | Fallon        | NV             | 89406        | 775-432-4004 | Handyman                  | Handyman                         |
| Daluvu Logistics Services LLC     | Yesenia D. Ortiz      | 1001 Pepper Ln               | Fernley       | NV             | 89408        |              | Trucking & Transporation  | Broker/property freight broker   |
| Shelter Insurance                 | President, Madison    | 165 W. Main St. Suite A      | Fernley       | NV             | 89408        | 800-743-5837 | Insurance Services        | Insurance                        |
| RLDJ, LLC                         | Ralph & Donna Wise    | 55 Center St. N.             | Fernley       | NV             | 89408        | 775-232-4534 | Property Rentals          | Commercial property rental       |
| Kuubix Global LLC                 | Josh Butt             | 7401 W Sunnyview Ave         | Visala        | CA             | 93291        | 559-731-1256 | Contractor                | Solar Installation Contractor #8 |
| Casey Professional Health Service | M.D., Amanda Casey    | 150 E. Main St. #110         | Fernley       | NV             | 89408        | 775-428-1005 | Medical Office or Service | Temporary skin care procedur     |
| Toe's Detail                      | Montgomery Uhlhorn    | 973 Cold Water Dr.           | Fernley       | NV             | 89408        | 775-481-4520 | Automotive Sales/Parts/S  | Automotive Detailing             |
| Keith Holtrop LLC                 | Keith Holtrop         | 902 Jones Way                | Fernley       | NV             | 89408        | 775-600-5740 | Real Estate               | Real Estate Sales                |
| Acme Texture Source, LLC          | Michael J./Melissa R. | 9732 State Route 445 #905    | Sparks        | NV             | 89441        | 775-691-1432 | Contractor                | Drywall Contractor #62954        |
| Grand Totals:                     |                       |                              |               |                |              |              |                           |                                  |
| 13                                |                       |                              |               |                |              |              |                           |                                  |

## Report Criteria:

License.Status = "Active"

Business.Orignation date = 03/11/2022-03/30/2022





# CITY OF FERNLEY

## City Council AGENDA REPORT

**Meeting Date: April 6, 2022**

**REPORT TO:** Mayor and City Council

**REPORT FROM:** Trisha Conner, Assistant to the City Manager

| FINANCIAL IMPACT: | CURRENTLY BUDGETED: | FUND/ACCOUNT: |
|-------------------|---------------------|---------------|
| Yes: X      No:   | Yes:      No: X     | 100-413-322   |

**ACTION REQUESTED:** Consent

**AGENDA ITEM: (For Possible Action):**

(For possible action) Approval of the contract between the City of Fernley and Kalbacher Associates LLC for comprehensive grant services in the amount not-to-exceed \$2,250/month from March 1, 2022 through June 30, 2022.

**AGENDA ITEM BRIEF:**

The City of Fernley, in partnership with Mark IV Capital, seeks a grant consultant to provide comprehensive grant services for the Victory Logistics project. In addition, the grant consulting services will include City capital improvement projects, and for grants that fund policing, fire and other local service needs. Kalbacher Associates, LLC (KA) is a provider of federal, state, and foundation grant services for cities, counties, community improvement districts, and non-profit organizations. KA specializes in securing state, federal, and foundation grant funding for clients. The City of Fernley and Mark IV has worked with KA in the past with DOT grants including grant research, grant writing, preparing the benefit cost analysis report, and grant advocacy.

**RECOMMENDED MOTION:**

"I move to approve the contract between the City of Fernley and Kalbacher Associates LLC for comprehensive grant services for the amount not to exceed \$2,250 a month beginning March 1, 2022 through June 30, 2022."

**BUSINESS IMPACT (per NRS Chapter 237):**

A Business Impact Statement is not required because this is not a rule (term excludes vehicles by which legislative powers are exercised under NRS Chapters 271, 278, 278A, or 278B).

**See attached report for background, analysis, alternatives.**

## **ALTERNATIVES:**

Council may request more information, direct staff to pursue other funding options, or not approve the contract.

## **BACKGROUND:**

The City of Fernley in partnership with Mark IV Capital are seeking a grant consultant to provide comprehensive grant services for the Victory Logistics project, in addition to City's capital improvement projects, and for grants that fund policing, fire and other local service needs. In February 2021, Council approved a Memorandum of Understanding (MOU) between the City of Fernley and Mark IV Capital for the specific purpose of seeking grant funding from U.S. Department of Transportation for the completion of Nevada Pacific Parkway. The MOU established the objective for Mark IV to undertake or to cause to undertake any and all work to the extent permissible in connection with drafting and submitting any applications for any Federal Grants, including without limitation, retaining the necessary consultants to generate the appropriate third-party reports as may be advisable in drafting these applications, which may include studies on environmental assessments, traffic, cost-benefit analysis, rail plans, engineering, regional air quality and vehicular safety, responding and following up with any representative's inquiries or requests, and paying for any expenses, fees and costs related to the foregoing. In September 2021, Council approved Addendum A of the MOU between City of Fernley and Mark IV Capital to expand the ability to apply for Federal Funds available beyond the Department of Transportation.

Staff has solicited three grant consulting service firms for grant consulting services proposal. Staff recommends the proposal with Kalbacher Associates LLC as they have in depth knowledge with the Victory Logistics Project and have worked with Mark IV Capital on DOT grants. KA undertook grant research, wrote the DOT grant narrative, prepared the Benefit Cost Analysis report, and provided support on grant advocacy. In addition, KA has over 30 years of technical experience in water supply, solid and hazardous waste management, investigation and remediation, water resources and hydrogeology for public and private sector clients. KA has expertise in Brownfields development at both the state and local level that support redevelopment of contaminated properties and Grayfields.

## **SCOPE OF WORK**

### **Needs Assessment and Grants Funding Guide**

KA will prepare a Grant Funding Guide to advance discussions with Fernley on current projects, primary issue areas, and future needs that may benefit from grant funding. KA will document Fernley's funding needs and produce an updated Grants Funding Guide which will recommend funding opportunities to fit each identified project. This analysis will include relevant information on eligible grant applicants, match requirements, an estimated timeline for release of funds, an assessment of the complexity and competitiveness of the grant program, and other program-specific information required to prioritize funding opportunities. KA will also provide to Fernley a companion Grants Calendar that will highlight the expected time frame of grants of interest open for competition.

### **Grant Research**

KA will identify and monitor relevant funding opportunities that meet Fernley's specific needs on a regular basis. The work product will be grant notice summaries of funding opportunities that have recently been released or are expected to be released in the near term.

### **Project Development Support**

KA's project development support will begin with working with Fernley to strategically develop project proposals to ensure that they meet identified grant and foundation eligibility criteria, and which are positioned to be highly competitive. This process often involves building new partnerships with local, regional, state, and national organizations; adding or subtracting project components to better fit the grant issuing agencies programmatic

objectives; leveraging assistance or other local/state/federal resources into the project; and recommending the development or expansion of local programs and initiatives that will bolster the success of Fernley's grant proposals. KA Project development services also include advocacy development and support for Fernley projects. Some grant programs require the applicant to complete environmental studies or economic cost-benefit analyses as part of the grant application. KA can work with Fernley to ensure these studies are completed or substantially advanced prior to the grant application deadline. KA will offer these services under a project specific bill rate.

#### **Grant Writing**

KA grant writing services will begin by developing customized checklists and schedules for Fernley and KA to follow to ensure that all submitted applications are complete and submitted 48 hours prior to deadline. These checklists and schedules include detailed timelines on 1) relevant grant information Fernley or project partners will need to provide to KA and when the information must be provided; 2) when Fernley can expect the first and second drafts of the grant narratives from KA; 3) and when Fernley and feedback is due back to KA. KA grant writing services include completing all required grant forms and drafting persuasive and compelling grant and budget narratives.

For this contract, KA will prepare two (2) grant applications for Fernley and its partners during a calendar year.

In the event a Fernley grant is not awarded; KA will arrange for a grant debrief with the funding agency to learn about the application's strengths and weaknesses.

#### **Grant Narrative Review and Editing**

KA offers Fernley grant narrative review and editing services for grant applications prepared by Fernley and partner organizations. KA will review the grant narrative against the funder's requirements, suggest content edits, and provide recommendations on how to improve the narrative.

#### **PROPOSED FEE**

KA will provide the City of Fernley all the services described in the above scope of work for a monthly fee not-to-exceed \$2,250 for 4 months beginning March 1, 2022 to June 30, 2022. KA will provide on a monthly basis to Fernley a report of activities and hours worked. The monthly fee includes all administrative and overhead costs but does not include travel expenses. In the event KA is requested to travel for Fernley travel, costs will be billed at Fernley's preference of either the city's travel rate or the state of Nevada travel and per diem rates. Fernley retains the right upon convenience to terminate this agreement and associated monthly fee upon 30 days' notice.

Should a grant be awarded, a grant agreement will be brought back to the Council to address specific grant guidelines and expectations.

#### **RELEVANT LAWS, STATUTES, AND REGULATIONS:**

None.

#### **FINANCIAL IMPLICATIONS:**

The City Manager's budget has enough funds to cover the cost for FY2022.

#### **ATTACHMENTS:**

1. 2022.04.06 Kalbacher Associates LLC contract
2. Attachment A - Scope of Work Kalbacher Associates LLC
3. 2022 Kalbacher Associates Grant Services Proposal to the City of Fernley NV 03.03.2022
4. Karl Kalbacher Qualifications and Experience

5. Copy of Fernley^J NV Infrastructure Bill Grant Opportunities GuideBookDataset

# CONTRACT FOR SERVICES OF INDEPENDENT CONTRACTOR

This contract is entered into by City of Fernley and Kalbacher Associates LLC, 1324 Roundhouse Lane, Alexandria, VA 22314.

**1. CONTRACT TERM.** This Contract shall be effective from March 1, 2022, to June 30, 2022.

**2. SCOPE OF WORK AND CONSIDERATION.** The parties agree that Contractor will provide the services specified: comprehensive grant services described in Attachment A: Scope of Work

The City will pay the Contractor a not-to-exceed (NTE) amount of \$2250.00/month for services as described based on actual time and materials.

**3. ASSENT.** The parties agree that any attachments are part of this Contract. The parties further agree the Contract provisions supersede any attachment provisions unless there is written evidence of mutual assent.

**4. CONTRACT TERMINATION.** A default or breach may be declared with or without termination. The following constitutes a default or breach: insolvency by or the Contractor's license is revoked; and/or failure of satisfactory performance within the time requirements.

**5. LIMITED LIABILITY.** Contract liability of both parties shall not be subject to punitive damages. Liquidated damages shall not apply. Damages for any default or breach by the City shall never exceed the amount of funds appropriated for payment under this Contract, but not yet paid to Contractor, for the fiscal year budget in existence at the time of the default or breach.

**6. FORCE MAJEURE.** Neither party shall be deemed to be in violation of this Contract if it is prevented from performing any of its obligations hereunder due to strikes, failure of public transportation, civil or military authority, act of public enemy, accidents, fires, explosions, or acts of God. In such an event the intervening cause must not be through the fault of the party asserting such an excuse, and the excused party is obligated to promptly perform in accordance with the terms of this Contract after the intervening cause ceases.

**7. INDEMNIFICATION.** To the fullest extent permitted by law, Contractor shall indemnify, hold harmless and defend the City from and against all liability, claims, actions, damages, losses, and expenses, including, without limitation, reasonable attorneys' fees and costs, arising out of any alleged acts or omissions or misconduct of Contractor, its officers, employees and agents, but not excluding the City's right to participate.

**8. INDEPENDENT CONTRACTOR.** Contractor is associated with the City only for the purposes and to the extent specified in this Contract, Contractor is and shall be an independent contractor. Nothing contained in this Contract shall be deemed or construed to create a partnership or joint venture, to create relationships of an employer-employee or principal-agent, or to otherwise create any liability for the City whatsoever with respect to the indebtedness, liabilities, and obligations of Contractor or any other party. Neither Contractor, nor its employees, agents, or representatives shall be considered employees, agents, or representatives of the City.

**9. LICENSES AND INSURANCE.** Prior to the start of any work, Contractor must provide a Certificate of Insurance for General Liability coverage of \$500,000.00, listed the City as an additional insured. Contractor shall also procure, pay for and maintain for the duration of this Contract any state, county, city or federal license, authorization, waiver, permit, qualification or certification required by statute, ordinance, law, or regulation to be held by Contractor to provide the goods or services required by this Contract. Contractor agrees to be responsible for payment for obligations not paid by its subcontractors during performance of this Contract.

**10. WAIVER OF BREACH.** Failure to declare a breach or the actual waiver of any particular breach of this Contract or its material or nonmaterial terms by either party shall not operate as a waiver by such party of any of its rights or remedies as to any other default or breach.

**11. SEVERABILITY.** If any provision contained in this Contract is held to be unenforceable by a court of law or equity, this Contract shall be construed as if such provision did not exist and the non-enforceability of such provision shall not be held to render any other provision or provisions of this Contract unenforceable.

**12. ASSIGNMENT/DELEGATION.** Contractor shall not assign, transfer or delegate any rights, obligations or duties under this Contract without the prior written consent of the City.

**13. PUBLIC RECORDS.** Information or documents received from Contractor may be open to public inspection and copying.

**14. GENERAL WARRANTY.** Contractor warrants that all services, deliverables, and/or work product under this Contract shall be completed in a workmanlike manner consistent with standards in the trade, profession, or industry; shall conform to or exceed the specifications set forth in the incorporated attachment; and shall be fit for ordinary use, of good quality, with no material defects.

**15. GOVERNING LAW; JURISDICTION.** This Contract shall be governed by, and construed according to, the laws of the State of Nevada. The parties hereby consent to jurisdiction in Nevada courts.

**16. ACKNOWLEDGMENT, EXECUTION & PROPER AUTHORITY.** The parties hereto represent and warrant that the person executing this Contract on behalf of each party has full power and authority to enter into this Contract.

\_\_\_\_\_  
Contractor Representative

DATE: \_\_\_\_\_

BUS LIC # \_\_\_\_\_

TITLE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

\_\_\_\_\_  
City of Fernley Originating Department

DATE: \_\_\_\_\_

\_\_\_\_\_  
City Clerk, City of Fernley

DATE: \_\_\_\_\_

\_\_\_\_\_  
Mayor, City of Fernley

DATE: \_\_\_\_\_

ATTACHMENT A: SCOPE OF WORK  
KALBACHER ASSOCIATES LLC – COMPREHENSIVE GRANT SERVICES

**Kalbacher Associates LLC Grant Services**

Kalbacher Associates LLC (KA) offers to Fernley the following grant services.

**Needs Assessment and Grants Funding Guide**

KA will prepare a Grant Funding Guide to advance discussions with Fernley on current projects, primary issue areas, and future needs that may benefit from grant funding. KA will document Fernley's funding needs and produce an updated Grants Funding Guide which will recommend funding opportunities to fit each identified project. This analysis will include relevant information on eligible grant applicants, match requirements, an estimated timeline for release of funds, an assessment of the complexity and competitiveness of the grant program, and other program-specific information required to prioritize funding opportunities. KA will also provide to Fernley a companion Grants Calendar that will highlight the expected time frame of grants of interest open for competition. Our goal in producing the Grants Funding Guide and Grants Calendar is to advance projects ahead of the grant notice announcement.

**Grant Research**

KA will identify and monitor relevant funding opportunities that meet Fernley's specific needs on a regular basis. The work product will be grant notice summaries of funding opportunities that have recently been released or are expected to be released in the near term.

**Project Development Support**

The projects that Fernley seeks federal and state grants and philanthropic foundation funding will in most cases require consulting support to screen funding opportunities and develop project elements in advance of grant submittal. Project development support sets the stage for successfully competing for grant and foundation funding.

KA's project development support will begin with working with Fernley to strategically develop project proposals to ensure that they meet identified grant and foundation eligibility criteria, and which are positioned to be highly competitive. Even the most beneficial local projects often have to be modified or supplemented in order to successfully compete at the state, foundation or federal level. This process often involves building new partnerships with local, regional, state, and national organizations; adding or subtracting project components to better fit the grant issuing agencies programmatic objectives; leveraging assistance or other local/state/federal resources into the project; and recommending the development or expansion of local programs and initiatives that will bolster the success of Fernley's grant proposals.

KA Project development services also include advocacy development and support for Fernley projects. Some grant programs require the applicant to complete environmental studies or economic cost-benefit analyses as part of the grant application. Other grant programs require projects to be formally included in State Project lists. KA can work with Fernley to ensure these studies are completed or substantially advanced prior to the grant application deadline. KA will offer these services under a project specific bill rate.

**Grant Writing**

ATTACHMENT A: SCOPE OF WORK  
KALBACHER ASSOCIATES LLC – COMPREHENSIVE GRANT SERVICES

Preparing winning grant proposals takes time, skill, and knowledge. KA grant writing services will begin by developing customized checklists and schedules for Fernley and KA to follow to ensure that all submitted applications are complete and submitted 48 hours prior to deadline. These checklists and schedules include detailed timelines on 1) relevant grant information Fernley or project partners will need to provide to KA and when the information must be provided; 2) when Fernley can expect the first and second drafts of the grant narratives from KA; 3) and when Fernley feedback is due back to KA.

KA will continually update the grant project timeline - making modifications based on issues that arise during preparing the grant application. Our goal in preparing these descriptive timelines is to maintain accountability in the collection of information and in the development of grant budget, project and budget narratives, and in collecting critically important letters of support from relevant organizations.

KA grant writing services include completing all required grant forms and drafting persuasive and compelling grant and budget narratives. For this contract, KA will prepare two (2) grant applications for Fernley and its partners.

**Grant Narrative Review and Editing**

KA offers to Fernley grant narrative review and editing services for grant applications prepared by Fernley and partner organizations. KA will review the grant narrative against the funder's requirements, suggest content edits, and provide recommendations on how to improve the narrative.



March 3, 2022

Ms. Daphne Hooper  
City Manager  
City of Fernley, NV  
595 Silver Lace Boulevard  
Fernley, Nevada 89408

**RE: Kalbacher Associates Comprehensive Grant Services**

Dear Daphne,

Kalbacher Associates, LLC (KA) appreciates the opportunity to provide comprehensive grant services, project development, and planning support to the city of Fernley. KA personnel have been pleased to have previously provided grant services to the city of Fernley and Mark IV Capital to apply for federal grant funding for the Victory Logistics Park project. We are now pleased to continue to assist Fernley with planning, identifying, and securing additional federal grant funds in connection with the \$1.2 trillion Infrastructure Investment and Jobs Act (IIJA), and other federal and state grant funding opportunities that support community needs.

**Fernley Projects**

KA understands that Fernley seeks a grant consultant to provide comprehensive grant services for the Victory Logistics project, capital improvement projects, and for grants that fund policing, fire and other local service needs.

**Infrastructure Bill Grant Programs**

The passage of the IIJA on November 6, 2021, offers a multitude of opportunities for the city of Fernley to secure federal grant funding for key projects. The IIJA will make available \$1.2 trillion in funding for infrastructure programs across the transportation, energy and water sectors, through a combination of grants, loan, and tax incentives. Of the \$1.2 trillion, \$550 billion is



new federal funds not previously authorized. The bill also reauthorizes the highway, public transportation and rail programs for five years, and establishes new programs for water supply, wastewater, and energy efficiency.

KA has completed a review of the over 300 grant funded programs offered through the IIJA and has attached a list of 31 of the more promising grants that Fernley should consider applying for funding for capital improvement projects. Provided below are descriptions for a subset of these 31 projects and other grant programs that were not included in the White House Master List of infrastructure grant programs but are also funded under the IIJA.

- *The Nationally Significant Freight and Highway Projects (INFRA)* grant (\$8 billion for highway and freight projects of national or regional significance)
- *Bridge Investment Program* (\$12.5 billion to rehabilitate or replace bridges)
- *Carbon Reduction Formula Program* (\$6.3 billion to states to reduce transportation emissions, fund trails and paths for bicyclists and pedestrians, fund diesel emission retrofits)
- *Healthy Streets Program* (\$500 million for grants to states, local governments and tribes to deploy cool pavements and porous pavements and to expand tree cover) – This grant program is not included in the attached Excel Spreadsheet.
- *Reconnecting Communities Pilot Program* (\$1 billion in grant funds available of which \$250 million is for planning grants and \$750 million is for construction grants for projects that remove, retrofit or mitigate previously constructed barriers to mobility, access or economic development to restore community connectivity)
- *SMART Grant Program* Strengthening Mobility and Revolutionizing Transportation program authorizes (\$500 million for demonstration projects that implement advanced smart city or community technologies and systems to improve transportation efficiency and safety)
- *Consolidated Rail Infrastructure and Safety Improvements Grants (CRISI)* (\$5 billion for projects that support the development or expansion of intercity passenger rail service, that address congestion challenges affecting rail service, improve short-line or regional railroad infrastructure; support highway-rail grade crossing improvement projects, rail line relocation and improvement projects, and regional rail and corridor service development plans and environmental analyses)

- **RAISE/BUILD Grant** (\$7.5 billion to implement a new competitive grant program to fund projects that will have a significant local or regional economic impact and improve transportation infrastructure)
- **Energy Efficiency and Conservation Block Grant Program** (\$550 million to finance energy efficiency and other clean energy capital investments, projects, loan programs and performance contracting programs)
- **Wastewater Efficiency Grant Pilot Program** (\$100 million for a new pilot program to create or improve waste-to-energy systems) - This grant program is not included in the attached Excel Spreadsheet.
- **Pilot Program for Alternative Water Source Projects** (\$125 million for treatment of stormwater in addition to water and wastewater to potable water)
- **Water Storage, Groundwater Storage and Conveyance Projects** (\$1.15 billion in grants for small surface water and groundwater storage projects) - This grant program is not included in the attached Excel Spreadsheet.

### Traditional Federal Grant Program Offerings

In addition to the federal funding available to the city of Fernley from the IJA, there are also many state and federal government recurring grant programs to consider. Provided below are a few of the federal grant programs that would be included in a state and federal Grant Funding Guide that KA will prepare as part of a contract deliverable. (The Grant Funding Guide is described in a later part of this letter agreement).

#### 1) US Economic Development Administration (EDA):

- a) **Public Works and Economic Adjustment Assistance**: Public Works and Economic Adjustment Assistance programs provide economically distressed communities and regions with comprehensive and flexible resources to address a wide variety of economic needs. Projects funded by these programs will support work in Opportunity Zones and will support the mission of the Department by, among other things, leading to the creation and retention of jobs and increased private investment, advancing innovation, enhancing the manufacturing capacities of regions, providing workforce development opportunities, and growing ecosystems that attract foreign direct investment. **Rolling Application**
- b) **Planning and Local Technical Assistance**: Under the Planning and Local Technical

Assistance programs, EDA assists eligible recipients in developing economic development plans and studies designed to build capacity and guide the economic prosperity and resiliency of an area or region. The Planning program helps support organizations, including District Organizations, Indian Tribes, and other eligible recipients, with Short Term and State Planning investments designed to guide the eventual creation and retention of high-quality jobs, particularly for the unemployed and underemployed in the Nation's most economically distressed regions. As part of this program, EDA supports Partnership Planning investments to facilitate the development, implementation, revision, or replacement of Comprehensive Economic Development Strategies (CEDS), which articulate and prioritize the strategic economic goals of recipients' respective regions. The Local Technical Assistance program strengthens the capacity of local or State organizations, institutions of higher education, and other eligible recipients to undertake and promote effective economic development programs through projects such as feasibility studies and impact analyses. **Rolling Application**

2) US Department of Justice

- a) COPS Hiring Program (CHP): The COPS Hiring Program (CHP) is a competitive grant program designed to provide funding directly to law enforcement agencies to hire and/or rehire additional career law enforcement officers in an effort to increase their community policing capacity and crime prevention efforts. The CHP offered approximately \$140 million in funding for Fiscal Year 2021.
- b) Community Policing Development (CPD) Program: Community Policing Development Program funds are used to develop the capacity of law enforcement to implement community policing strategies by providing guidance on promising practices through the development and testing of innovative strategies; building knowledge about effective practices and outcomes; and supporting new, creative approaches to preventing crime and promoting safe communities.

3) US Department of Agriculture

- c) Housing Assistance: USDA provides homeownership opportunities to low- and moderate-income rural Americans through several loan and grant programs. The programs also make funding available to individuals to finance vital improvements necessary to make their homes decent, safe, and sanitary. USDA Multi-Family Housing Programs offer Rural Rental Housing Loans to provide affordable multi-family rental housing for very low-, low- and moderate-income families; the elderly; and persons with disabilities. In addition,

rental assistance is available to eligible families. **Rolling Application**

- d) *Community Facilities Direct Loan & Grant Program*: This program provides affordable funding to develop essential community facilities in rural areas. An essential community facility is defined as a facility that provides an essential service to the local community for the orderly development of the community in a primarily rural area, and does not include private, commercial or business undertakings. **Rolling Application**
- a) *The Farmers Market Promotion Program (FMPP)*: The grants, authorized by the FMPP are targeted to help improve and expand domestic farmers markets, roadside stands, community-supported agriculture programs and other direct producer-to-consumer market opportunities.
- e) *Water & Waste Disposal Loans & Grants*: This program provides funding for clean and reliable drinking water systems, sanitary sewage disposal, sanitary solid waste disposal, and storm water drainage to households and businesses in eligible rural areas. **Rolling Application**
- f) *Water & Waste Disposal Predevelopment Planning Grants*: This program assists low-income communities with initial planning and development of applications for USDA Rural Development Water and Waste Disposal direct loan/grant and loan guarantee programs. **Rolling Application**
- g) *Water & Waste Disposal Technical Assistance & Training Grants*: This program helps qualified, private nonprofits provide technical assistance and training to identify and evaluate solutions to water and waste problems; helps applicants prepare applications for water and waste disposal loans/grants; and helps associations improve the operation and maintenance of water and waste facilities in eligible rural areas. **Rolling Application**
- h) *Strategic Economic and Community Development*: Strategic Economic and Community Development (SECD) funding supports regional economic and community development planning. **Rolling Application**

**KA has always believed that early planning and positioning of projects to address all grant criteria is key to advancing Fernley's goal of securing IJA discretionary grant funds and funding for all grants.**

## **Kalbacher Associates**

Kalbacher Associates, LLC (KA) is a premier provider of federal, state, and foundation grant services for cities, counties, community improvement districts, and non-profit organizations. We also offer economic development and environmental consulting services that are focused on the needs of local governments.

KA specializes in securing state, federal, and foundation grant funding for clients. Since our founding in 2015 we have achieved a 66% winning record. KA Grant Services positions clients to have the competitive advantage in state, federal, or foundation funding. We do this by identifying and implementing strategic grant opportunities and coordinating activities to improve win rates.

Since 2015, KA personnel have secured over \$400M in grant funding for public and non-profit sector clients. Since 2018, KA has won nine US DOT Infrastructure Development grants for clients totaling \$115,417,294 and three US EDA grant awards totaling \$5,420,000.

## **KA Grant Services**

KA offers to Fernley the following grant services.

### **Needs Assessment and Grants Funding Guide**

KA believes that securing grant funding begins with understanding Fernley's priorities and planning for success! KA will prepare a Grant Funding Guide to advance discussions with Fernley on current projects, primary issue areas, and future needs that may benefit from grant funding. KA will document Fernley's funding needs and produce an updated Grants Funding Guide which will recommend funding opportunities to fit each identified project. This analysis will include relevant information on eligible grant applicants, match requirements, an estimated timeline for release of funds, an assessment of the complexity and competitiveness of the grant program, and other program-specific information required to prioritize funding opportunities. KA will also provide to Fernley a companion Grants Calendar that will highlight the expected timeframe of grants of interest open for competition. Our goal in producing the Grants Funding Guide and Grants Calendar is to advance projects ahead of the grant notice announcement.

## **Grant Research**

KA will identify and monitor relevant funding opportunities that meet Fernley's specific needs on a regular basis. The work product will be grant notice summaries of funding opportunities that have recently been released or are expected to be released in the near term.

## **Project Development Support**

The projects that Fernley seeks federal and state grants, and philanthropic foundation funding will in most cases require consulting support to screen funding opportunities and develop project elements in advance of grant submittal. Project development support sets the stage for successfully competing for grant and foundation funding.

KA's project development support will begin with working with Fernley to strategically develop project proposals to ensure that they meet identified government grant and foundation eligibility criteria, and which are positioned to be highly competitive. Even the most beneficial local projects often have to be modified or supplemented in order to successfully compete at the state, foundation, or federal level. This process often involves building new partnerships with local, regional, state, and national organizations; adding or subtracting project components to better fit the grant issuing agencies programmatic objectives; leveraging assistance or other local/state/federal resources into the project; and recommending the development or expansion of local programs and initiatives that will bolster the success of Fernley's grant proposals.

## **KA Project development services also include advocacy development and support for Fernley projects**

Some grant programs require the applicant to complete environmental studies or economic cost-benefit analyses as part of the grant application. Examples include completion of a National Environmental Policy Act - Environmental Assessment or the ASTM Phase I Environmental Site Assessment (ESA). Other grant programs require projects to be formally included in State Project lists. KA can work with Fernley to ensure these studies are completed or substantially advanced prior to the grant application deadline. KA will offer these services under a separate project specific contract.

## **Grant Writing**

Preparing winning grant proposals takes time, skill, and knowledge. KA grant writing services will begin by developing customized checklists and schedules for Fernley and KA to follow to ensure that all submitted applications are complete and submitted 48 hours prior to deadline. These checklists and schedules include detailed timelines on 1) relevant grant information Fernley or project partners will need to provide to KA and when the information must be provided; 2) when Fernley can expect the first and second drafts of the grant narratives from KA; 3) and when Fernley feedback is due back to KA.

KA will continually update the grant project timeline - making modifications based on issues that arise during preparing the grant application. Our goal in preparing these descriptive timelines is to maintain accountability in the collection of information and in the development of grant budget, project and budget narratives, and in collecting critically important letters of support from relevant organizations.

KA grant writing services include completing all required grant forms and drafting persuasive and compelling grant and budget narratives.

For this contract term, KA will work with Fernley to prepare up to (2) grant applications for Fernley and its partners.

## **Grant Narrative Review and Editing**

KA offers to Fernley grant narrative review and editing services for grant applications prepared by Fernley and partner organizations. KA will review the grant narrative against the funder's requirements, suggest content edits, and provide recommendations on how to improve the narrative.

## **KA Proposed Fee**

KA offers to provide to Fernley all the services described in this proposal for a monthly fee not to exceed \$2,250 for 4 months beginning in March 2022. KA will provide on a monthly basis to Fernley a report of activities and hours worked. The monthly fee includes all administrative and overhead costs but does not include travel expenses.

In the event KA is requested to travel for Fernley services, travel costs will be billed at

Fernley's preference of either the city's travel rate or the state of Nevada travel and per diem rates. Fernley retains the right upon convenience to terminate this agreement and associated monthly fee upon 30 days' notice.

### **KA Personnel Assigned to Fernley {and Mark IV Capital}**

I will serve as your principal point of contact and lead grant writer for this contract. In addition to my grant experience, I also possess over 30 years of technical experience in water supply, solid and hazardous waste management, investigation and remediation, water resources and hydrogeology for public and private sector clients. I have also developed expertise in Brownfields redevelopment as a result of developing and managing' environmental and finance programs at both the state and local level that support the redevelopment of contaminated properties and Grayfields.

KA appreciates the opportunity to provide grant writing and related project development and planning services to Fernley. If you have any questions or require additional information, please do not hesitate to contact me directly at (703) 303-4665, or by email at [KFKalbacher@KalbacherAssociates.com](mailto:KFKalbacher@KalbacherAssociates.com)

Thank you and I look forward to continuing to provide grant services to Fernley.

Best Regards,



Karl Kalbacher, PG  
President



**ACKNOWLEDGED AND AGREED TO BY:**

Kalbacher Associate, LLC

City of Fernley, NV



Karl Kalbacher, PG  
President

Daphne Hooper  
City Manager

\_\_\_ March 3, 2022 \_\_\_ date

\_\_\_\_\_ date



## KA Qualifications and Experience



### Karl Kalbacher, P.G.

PRESIDENT

Karl Kalbacher directly manages KA's highly successful Grant Practice Group. Since 2015, Karl has achieved a 66%-win rate for grants prepared for clients. Karl's grant experience is significant, having successfully secured funding from the following federal departments: DOT, DOJ, DOC, DOE, DOD, HUD, DHS, USDA, and EPA. Karl has also prepared National Endowment for the Arts – Artworks and Our Town grant applications under the Arts' creative placemaking grants program as well as several state parks & recreation grant applications, US Fish & Wildlife Boating Infrastructure Grant, US DOT Recreational Trails Program grant, and US DOI Land and Water Conservation Fund (LWCF) grant application.

Karl possesses extensive HUD management experience that includes direct client oversight of preparing Consolidated Plan (CP), Annual Action Plan (AP), Consolidated Annual Performance and Evaluation Report (CAPER), Environment Record Reviews (ERR) as well as the Community Development Block Grant (CDBG), HOME and Emergency Solutions Grant (ESG). HUD funding can be allocated to support health and human services projects.

Karl is also a leading expert in areas of environmental regulatory compliance and economic development policy and practice. A nationally recognized Brownfields redevelopment expert, Karl has developed and managed environmental and finance programs at both the state and local level that support the redevelopment of contaminated properties and Grayfields. He has extensive experience managing economic development programs and energy conservation sustainability projects and has a proven track record of securing state and federal grants.

Since 2018, KA has won eight US DOT Infrastructure Development grants for clients totaling \$100,417,294 and three US EDA grant awards totaling \$5,420,000.

Karl has also developed a high level of proficiency and success preparing US DOT and US EDA grant applications. Since 2018, KA has won eight US DOT Infrastructure Development grants for clients totaling \$100,417,294 and three US EDA grants totaling \$5,420,000 – see the table below.

### Kalbacher Associates US DOT and US EDA Grant Awards

| Grant Project                                                           | Award Amount |
|-------------------------------------------------------------------------|--------------|
| Virgin Island Port Authority 2020 Port Infrastructure Development Grant | \$21,869,260 |
| Lexington, NC US DOT 2020 BUILD Grant                                   | \$24,960,534 |
| Jacksonville, FL Port Authority US DOT 2019 BUILD Grant                 | \$20,000,000 |

|                                                                     |              |
|---------------------------------------------------------------------|--------------|
| Mooresville, NC 2019 US DOT BUILD Grant                             | \$13,600,000 |
| Mooresville, NC 2019 US DOT CRISI Grant                             | \$4,487,500  |
| Cumberland CID 2019 INFRA Grant                                     | \$5,000,000  |
| Huntsville, AL 2019 CRISI Grant                                     | \$8,000,000  |
| Port of New Orleans, LA US DOT 2018 America's Marine Highways Grant | \$2,500,000  |
| State of Delaware 2012 US DOT TIGER Grant                           | \$10,000,000 |
| State of Delaware 2009 US DOT TIGER Planning Grant                  | \$2,250,000  |
| Vallejo, CA US EDA 2021 Economic Adjustment Assistance              | \$960,000    |
| Bowie, TX US EDA 2020 Economic Adjustment Assistance                | \$1,460,000  |
| Fairview, TX US EDA 2020 Economic Adjustment Assistance             | \$3,000,000  |

Since 2013, Karl has secured over \$400 million in federal grants and below-market fixed-rate loans for clients in the areas of economic development, housing, environmental protection, and transportation. Recent awarded grants that Karl was instrumental in writing and advising clients including the following:

### Kalbacher Associates Other Grant Awards

| Grant Project                                                                                                                               | Award Amount |
|---------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Vallejo, CA 2021 US BOR WaterSMART Water and Energy Efficiency Grant                                                                        | \$2,000,000  |
| American Public Power Association 2021 US DOL Susan Harwood Grant                                                                           | \$160,000    |
| Vallejo, CA 2021 US EPA Water Infrastructure Finance and Innovation Act (WIFIA)                                                             | \$24,000,000 |
| Port St. Joe, FL 2021 US HUD Community Development Block Grant – Disaster Recovery                                                          | \$9,799,572  |
| Southeast Rural Community Assistance Project, NC 2020 DHHS Rural Community Development (RCD) grant (Non-Profit Organization)                | \$5,781,250  |
| Campbell County, VA 2020 US DOJ Coronavirus Emergency Supplemental Funding (CESF)                                                           | \$32,416     |
| Southeast Rural Community Assistance Project, VA 2020 USDA Rural Community Development Initiative (Non-Profit Organization)                 | \$181,780    |
| St. Petersburg, FL US DOJ 2019 Enhanced Collaborative Model (ECM) Task Force to Combat Human Trafficking: Supporting Law Enforcement's Role | \$741,556    |
| St. Petersburg, FL 2019 Clean Fuel Diesel Grant                                                                                             | \$888,000    |
| Greenville, NC 2018 Lead Hazard Reduction Grant                                                                                             | \$1,600,000  |
| Ashford, NY 2018 State Consolidated Funding Application                                                                                     | \$12,500     |

|                                                                                                                        |             |
|------------------------------------------------------------------------------------------------------------------------|-------------|
| Norristown, PA 2018 Brownfield Assessment Grant                                                                        | \$300,000   |
| Southeast Rural Cooperative Assistance Project, 2017 Rural Business Development Grant (RBDG) (Non-Profit Organization) | \$60,000    |
| Los Angeles County, CA 2016 US DOJ Body-Worn Camera Grant                                                              | \$999,600   |
| Midway City Sanitary District, CA 2016 MSRC Alternative Fuel Application                                               | \$250,000   |
| Harrisburg, PA 2015 Lead Hazard Reduction Demonstration Grant                                                          | \$3,714,000 |
| High Point, NC 2014 Brownfield Assessment Grant                                                                        | \$400,000   |

Karl has prepared Comprehensive Land Use Plans for communities. KA's Comprehensive Plan document includes a complete socio-demographic analysis for communities and an analysis of current economic conditions and drivers. The Plan also identifies areas for new development and redevelopment and offers recommendations on the development and management of physical growth to ensure adequate infrastructure and services.

As the Director of Economic Development for New Castle County, DE from 2005-2012, Karl led economic development services that supported business retention, expansion, and attraction and which fostered entrepreneurship and small business development.

Karl Kalbacher served four terms on the City Council of Newark, Delaware where he acquired expertise in land use development, annexations, condemnations, re-zonings, capital improvement projects, operating budgets, land acquisition, and approved the creation of the Downtown Newark Partnership, one of five winners of the 2011 Great American Main Street Awards.

Karl holds a B.S. in Geology from Tulane University and a Master of Science Degree in Geology from Stephen F. Austin State University. Karl is a Delaware Registered Professional Geologist, and recently served as an Adjunct Professor of Geology and Climate Studies at Cecil College in Maryland. Karl can read and write Spanish and is conversant in the language. Karl works in KA's Alexandria, VA office.

## A. Highlighted US DOT Projects

Over the past three years, KA has provided grant services to eight municipal or US DOT eligible applicants who have received grant awards for infrastructure projects. The table below describes the services that were provided to these clients.

| KA Client     | US DOT Grant Project                                                                             | US DOT Project Description and Award Amount                                                                                                            | Contract Fee |
|---------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Charlotte, NC | 2021 Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant - Charlotte | The Charlotte Area Transportation System in partnership with the City of Charlotte, NC., and WPTP Brevard Holdings, LLC (collectively The Partnership) | \$12,000     |

|                               |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                 |          |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|                               | Multimodal Transit Hub                                                                                                                                     | has requested \$25,000,000 in US DOT RAISE grant funding to construct the Charlotte Multimodal Transit Hub which will replace the outdated Charlotte Transportation Center to better connect to the LYNX Blue Line (Blue Line), the CityLYNX Gold Line (Gold Line), and local and regional bus service. KA prepared the Benefit Cost Analysis report and consulted on the preparation of the grant application. |          |
| Port St. Lucie, FL            | 2021 Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant - Tradition Economic Mobility Pathway Opportunity (TEMPO) application | The City of Port St. Lucie, in partnership with Mattamy Homes, is requesting RAISE grant funding to reconstruct a multi-modal trail system that will connect to four of the six City approved Development of Regional Impact project areas that encompass 3,606 acres of land. The project incorporates the use of Autonomous Vehicle (AV) Shuttles that will travel along the TEMPO multi-modal path.          | \$12,000 |
| Virgin Islands Port Authority | 2020 Port Infrastructure Development Grant - Crown Bay Terminal Improvements Project                                                                       | \$21,869,260 – KA prepared the Benefit Cost Analysis report for the Crown Bay Terminal Improvements Project. This funding will support the reconstruction and modernization of cargo handling and storage infrastructure at the Crown Bay Terminal. The project includes bulkhead rehabilitation, concrete apron restoration,                                                                                   | \$12,000 |

|                                        |                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |
|----------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|                                        |                                                                              | reconstruction of three cargo storage areas: and security improvements including lighting, fencing and fire protection. The project will facilitate more efficient cargo movement both into and out of St. Thomas.                                                                                                                                                                                                                                                                                                                             |          |
| <b>Lexington, NC</b>                   | US DOT 2020 BUILD Grant – Lexington Train Station                            | \$24,960,534 – KA prepared the Benefit Cost Analysis report for Lexington Train Station, and provided grant advocacy before Members of Congress, US DOT and White House appointed officials. The project constructs a multimodal passenger rail and bus station in Lexington’s Depot District, replaces the 7th Avenue at-grade rail crossing with a grade-separated rail crossing at 5th Avenue, and makes track improvements between the two components.                                                                                     | \$11,500 |
| <b>Jacksonville Port Authority, FL</b> | US DOT 2019 BUILD Grant - International Cargo Terminal Modernization Project | \$20,000,000 - KA prepared the Benefit Cost Analysis report for the International Cargo Terminal Modernization Project. The project will reconstruct and modernize approximately 100 acres of the SSA Marine cargo terminal on Blount Island across six phases. In addition to repaving, the project will improve stormwater management, install new lighting, signage, and other utilities. Repaving the container yard will restore the terminal to a state of good repair, with long-term maintenance supported by port-generated revenues. | \$12,000 |

|                                |                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |
|--------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>Port of New Orleans, LA</b> | US DOT 2018 America's Marine Highway Grant - Port of New Orleans, LA - Container on Barge Project | \$2,500,000 - KA prepared the Benefit Cost Analysis and grant application narrative report for the Port of New Orleans and SEACOR AMH for the Port of New Orleans, LA - Container on Barge Project. The grant will support the current container-on-barge shuttle service operated by SEACOR AMH between New Orleans, Baton Rouge and Memphis. Funds will be used to purchase marine terminal handling equipment for efficient loading and unloading of container-on-barge operations in New Orleans.                                                                                                                                                                                                                                   | \$12,000 |
| <b>Mooreville, NC</b>          | 2019 US DOT BUILD Grant - Silicon Shores East-West Connector Road Project                         | \$13,600,000 - KA was tasked by the Town of Mooreville to prepare the BUILD grant narrative, Statement of Work, and Benefit Cost Analysis for the Silicon Shores East-West Connector Road Project. KA also prepared a NEPA Environmental Assessment and Phase I Environmental Site Assessment. The project will construct three connector roads near I-77, including: approximately 4,300 linear feet of four-lane divided highway (the "East West Connector"), approximately 2,368 linear feet of three-lane divided highway (the "RL West Connector"), and approximately 2,298 linear feet of three-lane divided highway (the "Transco Connector"). This project will improve driver safety by adding a fully signalized intersection | \$70,000 |

|                       |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |
|-----------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|                       |                                                                      | <p>that will prevent dangerous U-turns, diverting traffic away from a skewed at-grade rail crossing to a new crossing, and enabling some existing crossings to close or consolidate. The project will better accommodate planned future growth in the area and improve network efficiency. The project is expected improve traffic flow, which would lessen congestion-related emissions. Bicycle lanes will be incorporated into the new roadway as well. The project is a collaboration of the town, the State, private developers, non-projects, local business, and others.</p> |          |
| <b>Mooreville, NC</b> | 2019 US DOT CRISI Grant - Mazeppa Road Flyover Rail Crossing Project | <p>\$4,487,500 – KA was tasked by the Town of Mooreville to prepare the CRISI grant narrative, Statement of Work, Benefit Cost Analysis, and to prepare a NEPA Environmental Assessment and Phase I Environmental Site Assessment. The Mazeppa Road Flyover Rail Crossing Project is a highway-rail grade separation project will eliminate the at-grade rail crossing and build a four-lane bridge for vehicular traffic at the intersection of Mazeppa/Connector Road and North Carolina State Highway NC-115 with Norfolk Southern Railway in Mooreville.</p>                    | \$70,000 |



|                               |                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |
|-------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>Cumberland CID,<br/>GA</b> | 2019 INFRA Grant<br>– Akers Mill Ramp<br>Phase II Project           | \$5,000,000 – KA was tasked by Cumberland CID to prepare the grant application narrative and to provide grant advocacy before Members of Congress, US DOT and White House appointed officials for the Akers Mill Ramp Phase II Project. The Akers Mill Ramp is a 24-foot-wide reversible ramp that will provide an additional direct access to/from the I-75 Northwest Express Lane System. The project is in Cobb County, GA and will continue to substantially improve regional mobility and provide travel time savings.                                                                                                                                                                               | \$20,000 |
| <b>Huntsville, AL</b>         | 2019 CRISI Grant –<br>Old Highway 20<br>Grade Separation<br>Project | \$8,000,000 - KA was tasked by the City of Huntsville to prepare the CRISI grant narrative, Statement of Work, Benefit Cost Analysis, and to prepare a NEPA Environmental Assessment and Phase I Environmental Site Assessment for the Old Highway 20 Grade Separation Project. Old Highway 20 will be expanded from two lanes to four lanes on the southern border of the new Toyota-Mazda Automotive Assembly Plant that is currently under construction. The highway improvements include an overpass over the Norfolk Southern railway and expansion of the rail system to meet the needs of the automotive assembly plant. Following grant award, KA was subsequently tasked with providing contract | \$85,000 |

|  |  |                                                           |  |
|--|--|-----------------------------------------------------------|--|
|  |  | negotiation support with US DOT to implement the project. |  |
|--|--|-----------------------------------------------------------|--|

| Category                          | Program Name                         | Agency Name                        |
|-----------------------------------|--------------------------------------|------------------------------------|
| Broadband                         | Middle Mile Grants Program           | Department of Commerce             |
| Broadband                         | State Digital Equity Capacity Grant  | Department of Commerce             |
| Clean Energy and Power            | Energy Efficiency and Conservation   | Department of Energy               |
| Environmental Remediation         | Brownfields Categorical Grants       | Environmental Protection Agency    |
| Environmental Remediation         | Brownfields Projects                 | Environmental Protection Agency    |
| Passenger and Freight Rail        | Consolidated Rail Infrastructure and | Department of Transportation       |
| Passenger and Freight Rail        | Railroad Crossing Elimination Pro    | Department of Transportation       |
| Public Transportation             | Bus and Bus Facilities Competitive   | Department of Transportation       |
| Public Transportation             | Bus and Bus Facilities Formula Gra   | Department of Transportation       |
| Public Transportation             | Formula Grants for Rural Areas       | Department of Transportation       |
| Public Transportation             | Strengthening Mobility and Revolu    | Department of Transportation       |
| Resilience                        | Building Resilient Infrastructure at | Department of Homeland Security—Fe |
| Resilience                        | Flood Mitigation Assistance Grants   | Department of Homeland Security—Fe |
| Resilience                        | Volunteer Fire Assistance            | Department of Agriculture          |
| Roads, Bridges and Major Projects | Grants for Planning, Feasibility An  | Department of Transportation       |
| Roads, Bridges and Major Projects | Local and Regional Project Assista   | Department of Transportation       |
| Roads, Bridges and Major Projects | National Culvert Removal, Replace    | Department of Transportation       |
| Roads, Bridges and Major Projects | National Infrastructure Project Ass  | Department of Transportation       |
| Roads, Bridges and Major Projects | Nationally Significant Freight & Hi  | Department of Transportation       |
| Roads, Bridges and Major Projects | Reconnecting Communities Pilot P     | Department of Transportation       |
| Roads, Bridges and Major Projects | Rural Surface Transportation Gran    | Department of Transportation       |
| Resilience                        | Carbon Reduction Program             | Department of Transportation       |
| Water                             | Clean Water State Revolving Fund     | Environmental Protection Agency    |
| Water                             | Clean Water State Revolving Fund     | Environmental Protection Agency    |
| Water                             | Drinking Water State Revolving Fu    | Environmental Protection Agency    |
| Water                             | Drinking Water State Revolving Fu    | Environmental Protection Agency    |
| Water                             | Drinking Water State Revolving Fu    | Environmental Protection Agency    |
| Water                             | Water & Groundwater Storage, An      | Department of the Interior         |
| Water                             | Water Recycling                      | Department of the Interior         |
| Water                             | WaterSMART Grants                    | Department of the Interior         |

| Bureau Name                                                | Funding Amount   | Funding Amount    | Period of Availability        |
|------------------------------------------------------------|------------------|-------------------|-------------------------------|
| National Telecommunications and Information Administration | \$1,000,000,000  |                   | Fiscal Years 2022-2026        |
| National Telecommunications and Information Administration | \$1,440,000,000  |                   | Available until expended      |
| Energy Efficiency and Renewable Energy Administration      | \$550,000,000    |                   | Available until expended      |
| State and Tribal Assistance Grants                         | \$300,000,000    |                   | Available until expended      |
| State and Tribal Assistance Grants                         | \$1,200,000,000  |                   | Available until expended      |
| Federal Railroad Administration                            | \$5,000,000,000  |                   | Available until expended      |
| Federal Railroad Administration                            | \$3,000,000,000  |                   | Available until expended      |
| Federal Transit Administration                             | \$1,966,392,169  |                   | Year of Allocation plus three |
| Federal Transit Administration                             | \$3,161,294,400  |                   | Year of Apportionment plus t  |
| Federal Transit Administration                             | \$4,109,463,374  | Approximately \$5 | Year of Apportionment + 2     |
| Office of the Secretary                                    | \$500,000,000    |                   | Available until expended      |
| Disaster Relief Fund                                       | \$1,000,000,000  |                   | Available until expended      |
| National Flood Insurance Fund                              | \$3,500,000,000  |                   | Available until expended      |
| Forest Service                                             | \$20,000,000     |                   | Each annual \$4 million tran  |
| Federal Highway Administration                             | \$100,000,000    |                   | 4 year                        |
| Office of the Secretary                                    | \$7,500,000,000  |                   | 4 year                        |
| Office of the Secretary                                    | \$1,000,000,000  |                   | Available until expended      |
| Office of the Secretary                                    | \$5,000,000,000  |                   | Available until expended      |
| Federal Highway Administration                             | \$7,250,000,000  |                   | 4 year                        |
| Federal Highway Administration                             | \$1,000,000,000  |                   | Available until expended      |
| Federal Highway Administration                             | \$1,000,000,000  |                   | 4 year                        |
| Federal Highway Administration                             | \$6,419,999,998  |                   | 4 year                        |
| State and Tribal Assistance Grants                         | \$11,713,000,000 |                   | Available until expended      |
| State and Tribal Assistance Grants                         | \$1,000,000,000  |                   | Available until expended      |
| State and Tribal Assistance Grants                         | \$11,713,000,000 |                   | Available until expended      |
| State and Tribal Assistance Grants                         | \$4,000,000,000  |                   | Available until expended      |
| State and Tribal Assistance Grants                         | \$15,000,000,000 |                   | Available until expended      |
| Bureau of Reclamation                                      | \$1,150,000,000  |                   | Available until expended      |
| Bureau of Reclamation                                      | \$1,000,000,000  |                   | Available until expended      |
| Bureau of Reclamation                                      | \$400,000,000    |                   | Available until expended      |

| Funding Mechanism                                 | New Program (Yes/No) | Recipients                                        |
|---------------------------------------------------|----------------------|---------------------------------------------------|
| Grant                                             | Yes                  | States, Counties, Cities/Townships and            |
| Grant                                             | Yes                  | States, Territories, District of Columbia         |
| Block and Competitive Grants                      | Yes                  | State/Local Government/Tribes                     |
| Cooperative Agreement                             | No                   | States, Tribal Governments (Federally Recognized) |
| Cooperative Agreement                             | No                   | States, Counties, Cities/Townships, Tribes        |
| Competitive Grant                                 | No                   | -States, including the District of Columbia       |
| Competitive Grant                                 | Yes                  | -States, including the District of Columbia       |
| Competitive Grant                                 | No                   | States, Counties, Cities / Townships, Sp          |
| Formula Grant                                     | No                   | States, Counties, Cities / Townships, Sp          |
| Formula Grant                                     | No                   | States, Counties, Cities / Townships, Sp          |
| Competitive Grant                                 | Yes                  | (A) A State; (B) a political subdivision of       |
| Grant                                             | No                   | States, local, Tribal, and territorial govern     |
| Grant                                             | No                   | States, local, Tribal, territorial governm        |
| Grant, Financial Assistance, Technical Assistance | No                   | Community And State. National Association         |
| Competitive Grant                                 | Yes                  | State, Metropolitan Planning Organization         |
| Competitive Grant                                 | No                   | (A) A State; (B) the District of Columbia         |
| Competitive Grant                                 | Yes                  | (1) A State; (2) a unit of local government       |
| Competitive Grant                                 | Yes                  | (A) A State or a group of States; (B) a me        |
| Competitive Grant                                 | No                   | (A) A State or a group of States.(B) A me         |
| Competitive Grant                                 | Yes                  | Owner of an eligible facility (may partner        |
| Competitive Grant                                 | Yes                  | State, Regional transportation planning           |
| Formula Grant                                     | Yes                  | States (including District of Columbia)           |
| Loans and Grants                                  | No                   | States initially receive funding, then pro        |
| Grant                                             | No                   | States initially receive funding, then pro        |
| Loans and Grants                                  | No                   | States initially receive funding, then pro        |
| Grant                                             | No                   | States initially receive funding, then pro        |
| Loans and Grants                                  | No                   | States initially receive funding, then pro        |
| Project Funding/FA/etc.                           | No, however, the     | State, Local                                      |
| Grant, Financial Assistance                       | No, however, the     | Open                                              |
| Grant                                             | No                   | Open - meet criteria for Grant Opportun           |

| Program Description                                                                                                                                                                                                                                                       | Eligible Uses                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Establishes and funds a \$1 billion program for the construction of broadband infrastructure                                                                                                                                                                              | Broadband infrastructure deployment (e.g. construction, installation, and maintenance)                                                                      |
| As part of the Digital Equity Act programs, \$2.75 billion was allocated to assist states, local governments, and Tribes to reduce environmental justice disparities                                                                                                      | Planning (e.g. feasibility), broadband adoption, and training                                                                                               |
| To assist states, local governments, and Tribes to reduce environmental justice disparities                                                                                                                                                                               | (1) Development and implementation of environmental justice plans                                                                                           |
| Unlike many Environmental Protection Agency cleanup programs, the Environmental Protection Agency's Brownfields Program provides funding to states, local governments, and Tribes to fund projects that improve the safety, efficiency, and reliability of infrastructure | Eligible activities include, but are not limited to: (1) Development and implementation of environmental justice plans                                      |
| To fund projects that improve the safety, efficiency, and reliability of infrastructure                                                                                                                                                                                   | Eligible activities include, but are not limited to: (1) Development and implementation of environmental justice plans                                      |
| To provide funds for the mitigation or elimination of hazardous waste                                                                                                                                                                                                     | Eligible projects include a wide range of activities, including: (1) Grade separation or closure, including reconstruction of existing infrastructure       |
| Provides capital funding to replace, rehabilitate, purchase, or construct infrastructure                                                                                                                                                                                  | Capital funding for purposes described above                                                                                                                |
| Provides capital funding to replace, rehabilitate, purchase, or construct infrastructure                                                                                                                                                                                  | Capital funding for purposes described above                                                                                                                |
| To improve, initiate, or continue public transportation services                                                                                                                                                                                                          | Planning, Capital, Operating Assistance                                                                                                                     |
| The Office of the Secretary's Strengthening Mobility and Resilient Infrastructure and Communities program                                                                                                                                                                 | In general, a Strengthening Mobility and Resilient Infrastructure and Communities program                                                                   |
| The Building Resilient Infrastructure and Communities program                                                                                                                                                                                                             | Federal Emergency Management Agency                                                                                                                         |
| The Flood Mitigation Assistance program makes federal funds available to states, local governments, and Tribes                                                                                                                                                            | These grants are focused on projects that reduce the risk of loss of life and property by reducing the vulnerability of communities to future flood hazards |
| The Volunteer Fire Assistance program focuses on increasing the capacity of volunteer fire departments                                                                                                                                                                    | Excess personal property used by State and local governments                                                                                                |
| The Bridge Investment Program will support projects to improve the safety, efficiency, and reliability of bridges                                                                                                                                                         | Projects to replace, rehabilitate, preserve, or construct bridges                                                                                           |
| The RAISE program provides supplemental funding for grant projects that improve the safety, efficiency, and reliability of infrastructure                                                                                                                                 | Projects eligible under RAISE include—among others: (1) Development and implementation of environmental justice plans                                       |
| The Office of the Secretary's National Culvert Removal, Replacement, and Repair program                                                                                                                                                                                   | Establish an annual competitive grant program                                                                                                               |
| The National Infrastructure Project Assistance Program will provide supplemental funding for grant projects that improve the safety, efficiency, and reliability of infrastructure                                                                                        | Projects eligible under the Megaprojects program                                                                                                            |
| The Nationally Significant Freight & Highway Projects program                                                                                                                                                                                                             | Projects that improve safety, generate economic development, and reduce congestion                                                                          |
| Reconnecting Communities Pilot Program will restore communities that have been disconnected by infrastructure projects                                                                                                                                                    | Grants (≥\$5M) for capital construction projects                                                                                                            |
| Rural Surface Transportation Grant Program will support projects that improve the safety, efficiency, and reliability of infrastructure                                                                                                                                   | Highway, bridge, or tunnel projects eligible for funding                                                                                                    |
| The Carbon Reduction Program will provide formula grants to states to reduce greenhouse gas emissions                                                                                                                                                                     | States may use Carbon Reduction Program funds for a variety of purposes                                                                                     |
| The Clean Water State Revolving Fund program is a federal program that provides states with revolving funds to invest in water infrastructure                                                                                                                             | Capitalization grants are available to each state                                                                                                           |
| Clean Water State Revolving Fund funding as described in the Clean Water Act                                                                                                                                                                                              | States apply for a capitalization grant with the U.S. Department of the Interior                                                                            |
| The Drinking Water State Revolving Fund is a financial assistance program that provides states with revolving funds to invest in water infrastructure                                                                                                                     | Capitalization grants are available to each state                                                                                                           |
| Drinking Water State Revolving Fund funding as described in the Clean Water Act                                                                                                                                                                                           | States apply for a capitalization grant with the U.S. Department of the Interior                                                                            |
| Drinking Water State Revolving Fund funding as described in the Clean Water Act                                                                                                                                                                                           | States receive a capitalization grant with the U.S. Department of the Interior                                                                              |
| Water Storage, Groundwater Storage, and Conveyance projects                                                                                                                                                                                                               | Construction and grants                                                                                                                                     |
| Projects that reclaim and/or reuse municipal, industrial, and agricultural water                                                                                                                                                                                          | Establishment of the Soil Moisture and Salinity program                                                                                                     |
| This funding will be used for competitive grants through Water Infrastructure and Innovation Grants                                                                                                                                                                       | Grant projects that support water management                                                                                                                |

| Next Program Milestone                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------|
| Estimated application opening date, 2nd quarter 2022.                                                                        |
| Estimated application opening date; TBD                                                                                      |
| The first funding opportunity is expected for release in the Fall of 2022.                                                   |
| Estimated 3rd quarter 2022.                                                                                                  |
| Additional competitive funding opportunities will be announced this Fall.                                                    |
| Finalize selections from Fiscal Year 21 Notice of Funding Opportunity, targeting spring 2022 for announcement. Estimated     |
| Estimated released date of Fiscal Year 22 funds is TBD                                                                       |
| A Notice of Funding Opportunity for the Fiscal Year 2022 grant program is expected to be published in the first quarter      |
| Formula funds are apportioned to states and urbanized areas after appropriations are received.                               |
| Formula funds are apportioned to states and urbanized areas after appropriations are received.                               |
| A Notice of Funding Opportunity is expected in the second or third quarter of 2022.                                          |
| Applications for Fiscal Year 2022 are expected to open no later than September 30th, 2022.                                   |
| Applications for Fiscal Year 2022 are expected to open no later than September 30th, 2022                                    |
| Estimated application opening date, 2nd quarter 2022.                                                                        |
| TBD                                                                                                                          |
| Applications will open in the first quarter of 2022.                                                                         |
| TBD                                                                                                                          |
| February 2022 Selection criteria for the program will be posted on the Department of Transportation website in February      |
| Applications will open in the first quarter of 2022. Learn more about how to apply here.                                     |
| Department will issue Notice of Funding Opportunity on Grants.gov on a yet to be determined date.                            |
| TBD                                                                                                                          |
| First round of funds apportioned in December 2021. However, funding not distributed due to the continuing resolution         |
| Applicants apply through their State Revolving Fund programs. State deadlines vary.                                          |
| th no state match required. The states provide loans with principal forgiveness or grants to fund clean water infrastructure |
| Applicants apply through their State Revolving Fund program. State deadlines vary.                                           |
| Applicants apply through their State Revolving Fund program. State deadlines vary.                                           |
| Applicants apply through their State Revolving Fund program. State deadlines vary.                                           |
| Program feasibility guidelines published January 14, 2022 per statute; Application period expected calendar 2022.            |
| Funding opportunities posted January 14, 2022 to grants.gov, closes March 15, 2022, additional program criteria for          |
| Estimated application opening dates in March, April and May of 2022 for three distinct opportunities under this authority    |













# CITY OF FERNLEY

## City Council AGENDA REPORT

**Meeting Date: April 6, 2022**

**REPORT TO:** Mayor and City Council

**REPORT FROM:** Kari Weitzel

**FINANCIAL IMPACT:**

Yes:X

No:

**CURRENTLY BUDGETED:**

Yes:X

No:

**FUND/ACCOUNT:**

520-166-100

**ACTION REQUESTED:** Consent

**AGENDA ITEM: (For Possible Action):**

(For possible action) To approve a contract with Construction Materials Engineers, Inc (CME) for an amount not to exceed \$28,510.00 for inspection services for the Farm District Rd Lift Station Reconstruction and Grit Chamber removal project.

**AGENDA ITEM BRIEF:**

Staff is seeking approval to execute a contract for inspection services for the Farm District Rd Lift station and grit chamber removal with CME, Inc. CME will provide On-Site inspection and material testing as required.

**RECOMMENDED MOTION:**

"I move to approve a contract with Construction Materials Engineers, Inc (CME) for an amount not to exceed \$28,510.00 for inspection services for the Farm District Rd Lift Station Reconstruction and Grit Chamber removal project."

**BUSINESS IMPACT (per NRS Chapter 237):**

A Business Impact Statement is not required because this is not a rule (term excludes vehicles by which legislative powers are exercised under NRS Chapters 271, 278, 278A, or 278B).

**See attached report for background, analysis, alternatives.**

**ALTERNATIVES:**

Staff recommends approval of the contract for inspection services for the Farm District Rd Lift Station sewer

lines and manholes and grit chamber removal as approved at FCC 3/16/2022.

**BACKGROUND:**

During FCC 3/16/2022, a contract for the Farm District Rd. Lift Station and Removal of Grit Chamber was approved. CME has submitted a proposal based on the plans and SOW for this project to perform inspection services for on-site and materials testing inspector.

**RELEVANT LAWS, STATUTES, AND REGULATIONS:**

**FINANCIAL IMPLICATIONS:**

**ATTACHMENTS:**

1. 2022.04.06 Professional Contract - CME
2. Attachment B CME Inspection and Material Testing Proposal - City of Fernley Farm District Road LS Ph 2 Rehab
3. Attachment C ARPA FUNDING CONDITIONS

# CONTRACT

## A Contract For Design Professional Services

THIS CONTRACT is made and entered into this 6<sup>th</sup> day of April, 2022, by and between the CITY OF FERNLEY, a municipal corporation within the State of Nevada whose address is 595 Silver Lace Blvd, Fernley, Nevada 89408 (the "City"), and CME, INC, a Consultant, whose address is 300 Sierra Manor Drive, Suite 1 Reno, NV 89511 ("Contractor").

WHEREAS, Nevada Revised Statutes ("NRS") Chapter 266 authorizes the City to engage the services of independent contractors; and

WHEREAS, the services of Contractor are deemed to be both necessary and in the best interests of the City; and

WHEREAS, the City desires to retain the services of Contractor on the terms and conditions set forth in this Contract;

NOW, THEREFORE, in consideration of the aforesaid premises, the parties mutually agree as follows:

1. **CONTRACT TERM:** This Contract shall be effective from the day it is approved by the City Council (which date shall be inserted into the introductory paragraph of this Contract) and, subject to appropriation, shall remain in full force and effect until the services are completed unless terminated earlier pursuant to Section 6.

2. **CONTRACTOR'S SERVICES:**

a. **Description of Services.**

i. **Attachments:**

1. **Attachment A:** Professional Contract
2. **Attachment B:** Scope of Work with Fee Schedule. Contractor hereby agrees to provide the services set forth in the Scope of Work attached hereto as Attachment A and incorporated herein by this reference.
3. **Attachment C:** ARPA Funding
4. **Attachment D:** N/A

b. **Standard Of Care:** Notwithstanding anything to the contrary in this agreement or in any other contract document relating to the project, in

# CONTRACT

## A Contract For Design Professional Services

performing its work under this agreement Contractor shall perform its services to the standard of care of a reasonable professional that is performing the same or similar work, at the same time and locality and under the same or similar conditions faced by Contractor Cooperation with City. Contractor agrees that its officers, associates, employees and subcontractors will cooperate with the City in providing the services under this Contract and will be, with advance notice, available for consultation with the City at such reasonable times as to not conflict with the City's other responsibilities.

- c. **Notice to Proceed.** Contractor shall not commence work until the Contract is fully executed by City and Contractor and a Notice to Proceed (NTP) has been issued to the Contractor by the City.
- d. **Optional Services.** The City shall have the right to exercise its option(s) for all or any part of the OPTIONAL tasks or subtasks identified in Attachment B Fee Schedule, (and further described in Attachment A Scope of Services). The Contractor shall not commence work on any OPTIONAL task prior to issuance of a NTP for the OPTIONAL task by the City.

### 3. REQUIRED APPROVAL COMPENSATION AND TERMS OF PAYMENT:

- a. **Compensation.** The City agrees to pay Contractor for the services set forth in the Scope of Work either a lump sum fee or an hourly fee based on the Fee Schedule attached hereto as Attachment A and incorporated herein by this reference.
- b. **Reimbursable Expenses.** Contractor agrees that all of its direct and indirect expenses are included in the lump sum or hourly fee set forth in the Fee Schedule, unless the Fee Schedule specifically provides otherwise.
- c. **Payment Invoicing.** Contractor shall submit an invoice for payment for the services provided by Contractor based on the manner or method of payment set forth in Attachment A (Scope of Work and Fee Schedule).
- d. **Timeliness of Billing.** Contractor acknowledges and agrees that timeliness of billing is of the essence to this Contract and recognizes that the City is on a fiscal year ending on June 30. All invoices for services rendered prior to July 1 must be submitted to the City no later than 30 days after the end of the fiscal year
- e. **Not to Exceed.** The maximum amount payable to Contractor to complete each task is equal to the not-to-exceed amounts identified in Attachment B. Contractor may submit a written request to the City's Project Manager to reallocate not-to-exceed amounts between Tasks. The request to

## CONTRACT

### A Contract For Design Professional Services

reallocate must be accompanied by a revised fee schedule with associated revised not-to-exceed amounts and must be approved in writing by the City's Project Manager prior to performance of the work. Contractor shall not be compensated in excess of the Total not-to-exceed Contract amount:

Subtotal Professional Services: (Tasks 1.0 to 5.0) \$ 28,510.00

Subtotal OPTIONAL Professional Services: (Task X.X) \$ 0

Total NTE Amount (Including OPTIONAL Services) \$28,510.00

- f. **NOTICE:** All notices or other communications required or permitted to be given hereunder shall be deemed delivered: (i) when written notice is received by the party to whom it is directed, if delivered personally, or by email; or (ii) three (3) days after deposit with the United States Post Office, if mailed by certified mail, return receipt requested, postage prepaid and addressed to the party to be notified. Notices shall be addressed as follows:

If to the City: City Engineer Department  
City of Fernley  
595 Silverlace Blvd.  
Fernley, NV 89408

If to Contractor: Contractor  
Address  
City State

#### 4. **INSPECTION & AUDIT:**

- a. **Books and Records.** Contractor agrees to keep and maintain under general accepted accounting principles (GAAP) full, true and complete records, contracts, books, and documents as are necessary to fully disclose to the City, the State of Nevada or the United States Government, or their authorized representatives, upon audits or reviews, sufficient information to determine compliance with all state and federal regulations and statutes.
- b. **Inspection & Audit.** Contractor agrees that the relevant books, records (written, electronic, computer related or otherwise), including, without limitation, relevant accounting procedures and practices of Contractor or its subcontractors, financial statements and supporting documentation, and documentation related to the performance of this Contract shall be subject, at any reasonable time, to inspection, examination, review, audit, and copying at any office or location of Contractor where such records may be found, with or without notice by the City, and with regard to any federal



# CONTRACT

## A Contract For Design Professional Services

funding, the relevant federal agency, the Comptroller General, the General Accounting Office, the Office of the Inspector General, or any of their authorized representatives. All subcontracts shall reflect the requirements of this paragraph.

- c. **Period of Retention.** All books, records, reports, and statements relevant to this Contract must be retained a minimum three years and for five years if any federal funds are used under this Contract. The retention period runs from the date of payment for the relevant services by the City, or from the date of termination of this Contract, whichever is later. Retention time shall be extended when an audit is scheduled or in progress for a period reasonably necessary to complete an audit and/or to complete any administrative and judicial litigation which may ensue.

### 5. TERMINATION OR SUSPENSION:

- a. **Suspension.** The City may suspend, without cause, the performance by Contractor under this Contract for such period of time as the City, in its sole discretion, may prescribe by providing written notice to Contractor. The suspension shall be effective as of the date set forth in the written notice. With such suspension, the City agrees to pay Contractor the amount of compensation earned as of the effective date of the suspension.
- b. **Termination Without Cause.** The City reserves the right to terminate this Contract without cause or default on the part of Contractor with ten (10) days' prior written notice to Contractor. In the event of termination, without cause or default, the City agrees to pay Contractor for the services performed before the date that notice of termination is received by Contractor.
- c. **Termination for Non-Appropriation.** Contractor acknowledges that the City is a governmental entity and the Contract's validity is based upon the availability of public funding under its authority. The City reserves the right to reduce estimated or actual quantities, in whatever amount necessary, without prejudice or liability to the City, if funding is not available or if legal restrictions are placed upon the expenditure of monies for the services required under this Contract. In addition, without prejudice or liability to the City, if funding is not appropriated or otherwise made available to support the continuation of this Contract in any fiscal year succeeding the first fiscal year, this Contract will be deemed to have been terminated automatically when appropriated funds expire and are not available.

# CONTRACT

## A Contract For Design Professional Services

- d. **Default or Breach.** A default or breach (an “Event of Default”) may be declared with or without termination. Each of the following shall constitute an Event of Default:
- i. If Contractor fails, in the judgment of the City, to provide or satisfactorily perform any of the conditions, work, deliverables, goods, or services called for by this Contract, and such failure continues for more than fifteen (15) days after written notice is delivered to Contractor provided that if the nature of such breach is such that although curable, the breach cannot reasonably be cured within a fifteen (15) day period, an Event of Default shall not exist if Contractor shall commence to cure such breach and thereafter rectifies and cures such breach with due diligence, but in no event later than sixty (60) days after the written notice;
  - ii. If any state, county, city or federal license, authorization, waiver, permit, qualification or certification required by statute, ordinance, law, or regulation to be held by Contractor to provide the goods or services required by this Contract is for any reason denied, revoked, debarred, excluded, terminated, suspended, lapsed, or not renewed; or
  - iii. If Contractor: (i) becomes insolvent, subject to receivership, or voluntarily or involuntarily subject to the jurisdiction of the bankruptcy court; (ii) makes a general assignment for the benefit of creditors; (iii) admits in writing to the inability to pay its debts as they become due; or (iv) takes any action for the purpose of effecting any of the foregoing.
- e. **For Cause Termination and Time to Correct. For Cause Termination and Time to Correct.** This Contract may be terminated by the non-defaulting party upon a declared default or breach only after service of formal written notice as specified in paragraph (4), and the subsequent failure of the defaulting party within a reasonable time of receipt of that notice to provide evidence, satisfactory to the non-defaulting party, showing that the declared default or breach has been corrected or is being corrected as expeditiously as is prudent and practicable.
- f. **Winding Up Affairs upon Termination.** In the event that this Contract is terminated for any reason, the parties agree that the provisions of this paragraph survive termination:
- i. The parties shall account for and properly present to each other all claims for fees and expenses and pay those which are undisputed and otherwise not subject to set off under this Contract. Neither party

## CONTRACT

### A Contract For Design Professional Services

may withhold performance of winding up provisions solely based on nonpayment of fees or expenses accrued up to the time of termination.

- ii. Contractor shall satisfactorily complete work in progress at the agreed rate (or a pro rata basis if necessary) if requested by the City.
  - iii. Contractor shall execute any documents and take any actions necessary to effectuate an assignment of this Contract if requested by the City; and
  - iv. Contractor shall preserve, protect, and promptly deliver possession to the City of all proprietary information in accordance with Section 18.
  - v. In the event that dispute(s) arise during the winding up of affairs upon termination, the parties agree to meet and negotiate in good faith to resolve any such disputes(s).
6. **REMEDIES:** Except as otherwise provided for by law or this Contract, the rights and remedies of the parties shall not be exclusive and are in addition to any other rights and remedies provided by law or equity, including, without limitation, actual damages exclusive of lost profits.
7. **ATTORNEYS' FEES, COSTS, AND EXPENSES:** Unless otherwise stated herein, the parties will bear their own attorneys' fees, costs, and expenses in connection with the negotiation, execution, and performance of this Contract.
8. **LIMITED LIABILITY:** Contract liability of both parties shall not be subject to punitive damages. Liquidated damages shall not apply unless otherwise specified in the Attachments. Damages for any default or breach by the City shall never exceed the amount of funds appropriated for payment under this Contract, but not yet paid to Contractor, for the fiscal year budget in existence at the time of the default or breach.
9. **FORCE MAJEURE:** Neither party shall be deemed to be in violation of this Contract if it is prevented from performing any of its obligations hereunder due to strikes, failure of public transportation, civil or military authority, act of public enemy, accidents, fires, explosions, or acts of God, including, without limitation, earthquakes, floods, winds, or storms. In such an event the intervening cause must not be through the fault of the party asserting such an excuse, and the excused party is obligated to promptly perform in accordance with the terms of this Contract after the intervening cause ceases.
10. **INDEMNIFICATION:** The City does not require the Contractor to defend, indemnify or hold harmless the public body or the employees, officers or agents of that public

## CONTRACT

### A Contract For Design Professional Services

body from any liability, damage, loss, claim, action or proceeding caused by the negligence, errors, omissions, recklessness or intentional misconduct of the employees, officers or agents of the public body.

- a. The City does require the Contractor to indemnify and hold harmless the public body, and the employees, officers and agents of the public body from any liabilities, damages, losses, claims, actions or proceedings, including, without limitation, reasonable attorneys' fees and costs, to the extent that such liabilities, damages, losses, claims, actions or proceedings are caused by the negligence, errors, omissions, recklessness or intentional misconduct of the Contractor or the employees or agents of the Contractor in the performance of the contract.
- b. The City does not require the Contractor to defend the public body and the employees, officers and agents of the public body with respect to the liabilities, damages, losses, claims, actions or proceedings caused by the negligence, errors, omissions, recklessness or intentional misconduct of the Contractor or the employees or agents of the Contractor which are based upon or arising out of the professional services of the Contractor. If the Contractor is adjudicated to be liable by a trier of fact, the trier of fact shall award reasonable attorney's fees and costs to be paid to the public body, as reimbursement for the attorney's fees and costs incurred by the public body in defending the action, by the Contractor in an amount which is proportionate to the liability of the Contractor.
- c. The City does require the Contractor to defend the public body and the employees, officers and agents of the public body with respect to the liabilities, damages, losses, claims, actions or proceedings caused by the negligence, errors, omissions, recklessness or intentional misconduct of the Contractor or the employees or agents of the Contractor which are not based upon or arising out of the professional services of the Contractor.

**11. INDEPENDENT CONTRACTOR:** Contractor is associated with the City only for the purposes and to the extent specified in this Contract, and in respect to performance of the contracted services pursuant to this Contract, Contractor is and shall be an independent contractor and, subject only to the terms of this Contract, shall have the sole right to supervise, manage, operate, control, and direct performance of the details incident to its duties under this Contract. Nothing contained in this Contract shall be deemed or construed to create a partnership or joint venture, to create relationships of an employer-employee or principal-agent, or to otherwise create any liability for the City whatsoever with respect to the indebtedness, liabilities, and obligations of Contractor or any other party. Contractor shall be solely responsible for, and the City shall have no obligation with respect to: (1) withholding of income taxes, FICA or any other taxes or fees; (2) industrial insurance coverage; (3) participation in any group

# CONTRACT

## A Contract For Design Professional Services

insurance plans available to employees of the City; (4) participation or contributions by either Contractor or the Public Employees Retirement System; (5) accumulation of vacation leave or sick leave; or (6) unemployment compensation coverage provided by the City. Contractor shall indemnify and hold the City harmless from, and defend the City against, any and all losses, damages, claims, costs, penalties, liabilities, and expenses arising or incurred because of, incident to, or otherwise with respect to any such taxes or fees. Neither Contractor nor its employees, agents, or representatives shall be considered employees, agents, or representatives of the City.

**12. INSURANCE:** Unless expressly waived in writing by the City, Contractor shall, at Contractor's sole expense, procure, maintain and keep in force during the entire term of this Contract those policies of insurance which have been agreed to by the parties as evidenced by the parties initials in the signature spaces provided below. The City shall have no liability except as specifically provided in this Contract. Contractor shall not commence work before Contractor has provided the required evidence of insurance to the City. Any insurance or self-insurance available to the City shall be in excess of, and non-contributing with, any insurance required from Contractor. Contractor's insurance policies shall apply on a primary basis. Until such time as the insurance is no longer required by the City, Contractor shall provide the City with renewal or replacement evidence of insurance no less than thirty (30) days before the expiration or replacement of the required insurance. If at any time during the period when insurance is required by this Contract, an insurer or surety shall fail to comply with the requirements of this Contract, as soon as Contractor has knowledge of any such failure, Contractor shall immediately notify the City and immediately replace such insurance or bond with an insurer meeting the requirements.

\_\_\_\_\_  
COT

\_\_\_\_\_  
CTR

- a. **Workers' Compensation and Employer's Liability Insurance.** Industrial insurance protecting Contractor and the City from potential employee claims based upon job-related sickness, injury, or accident, during the performance of this Contract. Contractor shall provide a work certificate issued by a qualified insurer in accordance with NRS 616B.627. Prior to commencing any work, Contractor shall complete and provide the following written request to a qualified insurer: \*\*\*\*CONTACTOR NAME has entered into a contract with Owner to perform work from THE \_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_ to THE \_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_ and requests that an industrial insurance provider qualified and licensed to offer such insurance within the State of Nevada, provide to The City of Fernley, Nevada 1) a certificate of coverage issued pursuant to NRS 616B.627 and 2) notice of any lapse in coverage or nonpayment of coverage that Contractor is required to maintain. The certificate and notice should be mailed to:

City of Fernley

# CONTRACT

## A Contract For Design Professional Services

595 Silver Lace Blvd

Fernley, NV 89408

- i. Contractor may, in lieu of furnishing a certificate of an insurer, provide an affidavit indicating that Contractor is a sole proprietor and that:
  - 1. In accordance with the provisions of NRS 616B.659, Contractor has not elected to be included within the terms, conditions, and provisions of NRS chapters 616A to 616D, inclusive; and
  - 2. Contractor is otherwise in compliance with those terms, conditions and provisions.

COF

CTR

- b. **Professional Liability Insurance.** Minimum Coverage Limit required (not deductible amount): \$1,000,000 Each Claim, \$2,000,000 Aggregate.

- i. Retroactive date: Prior to commencement of the performance of this Contract
- ii. Discovery period: Three (3) years after the termination date of this Contract.

### c. General Requirements.

- i. Additional Insured: By endorsement to the general liability insurance policy evidenced by Contractor, ***the City of Fernley, its officers, employees, and immune contractors*** shall be named as additional insureds for all liability arising from this Contract.
- ii. Waiver of Subrogation: Each insurance policy shall provide for a waiver of subrogation in favor of the City.
- iii. Cross-Liability: All required liability policies shall provide cross-liability coverage as would be achieved under the standard ISO separation of insureds clause.
- iv. Deductibles and Self-Insured Retentions: Insurance maintained by Contractor shall apply on a first dollar basis without application of a deductible or self-insured retention unless otherwise specifically agreed to by the City. Such approval shall not relieve Contractor from the obligation to pay any deductible or self-insured retention. Any deductible or self-insured retention shall not exceed \$5,000 per occurrence, unless otherwise approved by the City.

## CONTRACT

### A Contract For Design Professional Services

- v. Policy Cancellation: Except for ten days' notice for non-payment of premium, each insurance policy shall be endorsed to state that; without thirty (30) days prior written notice to the City, the policy shall not be canceled, non-renewed or coverage and/or limits reduced or materially altered, and shall provide that notices required by this paragraph shall be sent by certified mail to the address shown below.
  - vi. Approved Insurer: Each insurance policy shall be issued by insurance companies: (a) authorized to do business in the State of Nevada or eligible surplus lines insurers acceptable to the City and having agents in the State of Nevada upon whom service of process may be made; and (b) currently rated by A.M. Best as "A-VII" or better.
- d. **Evidence of Insurance.** Prior to the start of any work, Contractor must provide the following documents to the City:
- i. Certificate of Insurance: The Acord 25 Certificate of Insurance form or a form substantially similar must be submitted to the City to evidence the insurance policies and coverages required of Contractor.
  - ii. Additional Insured Endorsement: An Additional Insured Endorsement (CG20 10 or C20 26), signed by an authorized insurance company representative, **must** be submitted to the City to evidence the endorsement of the City as an additional insured per General Requirements, Subsection 1) above.
  - iii. Schedule of Underlying Insurance Policies: If an Umbrella or Excess insurance policy is evidenced to comply with minimum limits, a copy of the underlying schedule from the Umbrella or Excess insurance policy may be required.
  - iv. Review and Approval: Documents specified above must be submitted for review and approval by the City prior to the commencement of work by Contractor. Neither approval by the City nor failure to disapprove the insurance furnished by Contractor shall relieve Contractor of Contractor's full responsibility to provide the insurance required by this Contract. Compliance with the insurance requirements of this Contract shall not limit the liability of Contractor or its sub-contractors, employees or agents to the City or others, and shall be in addition to and not in lieu of any other remedy available to the City under this Contract or otherwise. The City reserves the right to request and review a copy of any required insurance policy or endorsement to assure compliance with these requirements. Contractor will mail all required insurance documents to the City at the address identified in section 4 of this Contract.

# CONTRACT

## A Contract For Design Professional Services

- e. **Failure to Maintain Required Coverages.** If Contractor fails to carry the required insurance, the City may: (i) order Contractor to stop further performance of the Contract, and declare contractor in breach, terminate the Contract if such breach is not remedied; or (ii) purchase replacement insurance and withhold the costs or premium payments made from the payments due to Contractor or charge the replacement insurance costs back to Contractor.

**13. COMPLIANCE WITH LEGAL OBLIGATIONS:** Contractor shall procure and maintain for the duration of this Contract any state, county, city or federal license, authorization, waiver, permit, qualification or certification required by statute, ordinance, law, or regulation to be held by Contractor to provide the goods or services required by this Contract. Contractor will be responsible to pay all taxes, assessments, fees, premiums, permits, and licenses required by law. Real property and personal property taxes are the responsibility of Contractor in accordance with NRS 361.157 and 361.159. Contractor agrees to be responsible for payment of any such government obligations not paid by its subcontractors during performance of this Contract.

**14. WAIVER OF BREACH:** Failure to declare a breach or the actual waiver of any particular breach of this Contract or its material or nonmaterial terms by either party shall not operate as a waiver by such party of any of its rights or remedies as to any other default or breach.

**15. SEVERABILITY:** If any portion, provision, or part of this Contract is held, determined, or adjudicated by any court of competent jurisdiction to be invalid, unenforceable, or void for any reason whatsoever, each such portion, provision, or part shall be severed from the remaining portions, provisions, or parts of this Contract, and such determination or adjudication shall not affect the validity or enforceability of such remaining portions, provisions, or parts.

**16. ASSIGNMENT/DELEGATION:** To the extent that any assignment of any right under this Contract changes the duty of either party, increases the burden or risk involved, impairs the chances of obtaining the performance of this Contract, attempts to operate as a novation, or includes a waiver or abrogation of any defense to payment by the City, such offending portion of the assignment shall be void, and shall be a breach of this Contract. Contractor shall neither assign, transfer nor delegate any rights, obligations, or duties under this Contract without the prior written consent of the City.

**17. PROPRIETARY INFORMATION:** Any reports, histories, studies, tests, manuals, instructions, photographs, negatives, blue prints, plans, maps, data, system designs, computer code (which is intended to be consideration under this Contract), or any other documents or drawings, prepared or in the course of preparation by Contractor (or its subcontractors) in performance of its obligations under this Contract shall be the exclusive property of the City and all such materials shall be delivered into the possession of the City by Contractor upon completion, termination, or cancellation of



# CONTRACT

## A Contract For Design Professional Services

this Contract. Contractor shall not use, willingly allow, or cause to have such materials used for any purpose other than performance of Contractor's obligations under this Contract without the prior written consent of the City. Notwithstanding the foregoing, the City shall have no proprietary interest in any materials licensed for use by the City that are subject to patent, trademark, or copyright protection.

**18. PUBLIC RECORDS:** Pursuant to NRS 239.010, information or documents received from Contractor may be open to public inspection and copying. The City will have the duty to disclose unless a particular record is made confidential by law or a common law balancing of interests. Contractor may label specific parts of an individual document as a "trade secret" or "confidential," provided that Contractor thereby agrees to indemnify and defend the City for honoring such a designation. The failure to so label any document that is released by the City shall constitute a complete waiver of any and all claims for damages caused by any release of the records.

**19. FEDERAL FUNDING:** In the event federal funds are used for payment of all or part of this Contract:

- a. Contractor certifies, by signing this Contract, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency. This certification is made pursuant to the regulations implementing Executive Order 12549, Debarment and Suspension, 28 C.F.R. pt. 67, § 67.510, as published as pt. VII of the May 26, 1988, Federal Register (pp. 19160-19211), and any relevant program-specific regulations. This provision shall be required of every subcontractor receiving any payment in whole or in part from federal funds.
- b. Contractor and its subcontractors shall comply with all terms, conditions, and requirements of the Americans with Disabilities Act of 1990 (P.L. 101-136), 42 U.S.C. 12101, as amended, and regulations adopted thereunder contained in 28 C.F.R. 26.101-36.999, inclusive, and any relevant program-specific regulations.
- c. Contractor and its subcontractors shall comply with the requirements of the Civil Rights Act of 1964, as amended, the Rehabilitation Act of 1973, P.L. 93-112, as amended, and any relevant program-specific regulations, and shall not discriminate against any employee or offeror for employment because of race, national origin, creed, color, sex, religion, age, disability or handicap condition (including AIDS and AIDS-related conditions.)

**20. LOBBYING:** The parties agree, whether expressly prohibited by federal, state or local law, or otherwise, that no funding associated with this Contract will be used for any purpose associated with or related to lobbying or influencing or attempting to lobby or influence any of the following: (a) any federal, state, county or local agency,

# CONTRACT

## A Contract For Design Professional Services

legislature, commission, council or board; (b) any federal, state, county or local legislator, commission member, council member, board member, or other elected official; or (c) any officer or employee of any federal, state, county or local agency; legislature, commission, council or board.

**21. CERTIFICATION REQUIRED BY NEVADA SENATE BILL 26 (2017):** By signing this Agreement, the CONSULTANT provides a written certification, as a material part of this Agreement, that the CONSULTANT is not currently engaged in, and during the Term shall not engage in, a boycott of Israel. The term "boycott of Israel" has the meaning ascribed to that term in Section 3 of Nevada Senate Bill 26 (2017). The CONSULTANT shall be responsible for fines, penalties, and repayment of any State of Nevada or federal funds that may arise (including those that the CITY pays, becomes liable to pay, or becomes liable to repay) as a direct result of the CONSULTANT's non-compliance with this Section. If, at any time during the formation or duration of this Agreement, CONSUTLANT is engaged or engages in a boycott of Israel, it will constitute a material breach of this Agreement.

**22. PROPER AUTHORITY:** Contractor represents and warrants Contractor has full power and authority to enter into this Contract. Any services performed by Contractor before this Contract is effective or after it ceases to be effective are performed at the sole risk of Contractor.

**23. GOVERNING LAW; VENUE:** This Contract will be interpreted, and the rights and liabilities of the parties determined, in accordance with the laws of the State of Nevada, excluding its conflict of laws rules. In any action or proceeding arising under this Contract, each party (a) consents to the jurisdiction of Nevada Courts, and of the pertinent appellate courts, and consents to the venue of such action or proceeding in Lyon County, Nevada courts, (b) irrevocably agrees that all actions or proceedings arising out of or relating to this Contract shall be litigated in such courts, and (c) consents to personal jurisdiction within Lyon County, Nevada. Each party accepts for itself, generally and unconditionally, the exclusive jurisdiction and venue of the aforesaid courts and waives any defense of lack of personal jurisdiction, improper venue, inconvenient forum or any similar defense, and irrevocably agrees to be bound by any non-appealable judgment rendered thereby in connection with this Contract.

**24. INTEGRATED CONTRACT:** This Contract (including any addenda, exhibits, or attachments incorporated into and made a part of this contract) constitutes the entire agreement and understanding among the parties regarding the matters set forth herein and supersedes all previous negotiations, discussions, and understandings regarding such matters. The parties acknowledge and represent that they have not relied on any promise, inducement, representation, or other statement made in connection with this Contract that is not expressly contained herein. The terms of this Contract are contractual and not a mere recital.

## CONTRACT

### A Contract For Design Professional Services

- 25. COUNTERPARTS:** This Contract may be executed in multiple counterparts, each of which shall be deemed an original, and all of such counterparts together shall constitute one and the same instrument.
- 26. ADVICE OF COUNSEL:** Each party hereto represents and agrees that it has had the opportunity to seek and has sought from attorneys any such advice as it deems appropriate with respect to signing this Contract or the meaning of it. Each party has undertaken such independent investigation and evaluation as it deems appropriate and is entering into this Contract in reliance on that and not in reliance on any advice, disclosure, representation or information provided by or expected from any other party or such party's attorneys. This is an agreement of settlement and compromise, made in recognition that the parties may have different, disputed or incorrect understandings, information and contentions, as to facts and law, and with each party compromising and settling any potential correctness or incorrectness of its understandings, information and contentions as to the facts, law, claims, duties, disclosures and conduct occurring before or during the entry into this Contract. No conduct, failure, misunderstanding or misinformation and no claim of fraud or fraudulent inducement occurring prior to or in connection with the execution hereof shall be a ground for rescission hereof or for recovery of damages, except as otherwise expressly provided herein.
- 27. MODIFICATION; NO WAIVER:** The provisions of this Contract, including this paragraph, may be modified or waived only in writing signed by both parties. No waiver with respect to any portion of this Contract shall apply to any other portion of the Contract, and a waiver on one occasion shall not be deemed to be a waiver of the same or any other breach on a future occasion. No course of dealing by any party, and no failure, omission, delay, or forbearance by any party in exercising such party's rights or remedies shall be deemed a waiver of any such rights or remedies or a modification of this Contract.
- 28. INTERPRETATION OF AGREEMENT:** This Contract shall be construed without regard to the party or parties responsible for its preparation and shall be deemed to have been prepared collectively by the parties. Any ambiguity or uncertainty arising herein shall not be interpreted or construed against any party hereto on the basis that a party prepared or drafted a particular provision of this Contract.
- 29. COOPERATION OF PARTIES:** The parties agree to cooperate to accomplish the purpose of this Contract and to execute any and all supplementary documents and to take all additional actions not inconsistent with the terms set forth in this Contract that are necessary and appropriate to give full force and effect to the terms and intent of this Contract.
- 30. NON-DISCRIMINATION:** In connection with the performance of work under this Contract, Contractor agrees not to discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, sexual orientation,

## **CONTRACT**

### **A Contract For Design Professional Services**

gender identity or expression, or age, including, without limitation, with regard to employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including, without limitation, apprenticeship. Contractor further agrees to insert this provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

***REMAINDER OF PAGE INTENTIONALLY LEFT BLANK***

## CONTRACT

### A Contract For Design Professional Services

In witness whereof, the parties hereto have caused this Contract to be signed and intend to be legally bound thereby:

#### CITY OF FERNLEY

\_\_\_\_\_  
Mayor, City of Fernley                      Date

\_\_\_\_\_  
City Clerk, City of Fernley                      Date

*Approved as to form:*

\_\_\_\_\_  
City Attorney, City of Fernley                      Date

*Originating Department:*

\_\_\_\_\_  
Department Head                      Date

# CONTRACT

## A Contract For Design Professional Services

CONTRACTOR, being first duly sworn, deposes and says: That CONTRACTOR. is the Contractor; that NAME OF PERSON REPRESENTING CONTRACTOR has read the foregoing Contract; and that he understands the terms, conditions, and requirements thereof.

CONTRACTOR

BY:

TITLE:

FIRM:

BUSINESS LICENSE #:

Address:

City: State: Zip Code:

Telephone: Fax #:

E-mail Address:

\_\_\_\_\_  
(Signature of Contractor)

DATED this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

STATE OF \_\_\_\_\_ )  
County of \_\_\_\_\_ ) ss

On this \_\_\_\_\_ day of \_\_\_\_\_, in the year 20\_\_, before me, \_\_\_\_\_ / Notary Public, personally appeared \_\_\_\_\_, personally known to me or proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to this instrument, and acknowledged that he executed it.

WITNESS my hand and official seal.

\_\_\_\_\_  
Notary's Signature

My Commission Expires: \_\_\_\_\_



300 Sierra Manor Drive, Suite 1  
Reno, NV 89511

March 25, 2022

Kari Weitzel  
**CITY OF FERNLEY ENGINEERING DEPT.**  
595 Silver Lace Blvd.  
Fernley, NV 89408

**RE: City of Fernley Farm District Road Lift Station Phase 2 Rehabilitation  
Fernley, NV  
Inspection & Materials Testing Proposal**

Dear Ms. Weitzel:

CME, Inc. is pleased to provide this cost proposal for inspection and materials testing services on the referenced project.

It is understood that our scope of work is to provide part-time, on-site inspection and material testing services when required. Our inspector will provide the on-site inspections required and periodic compaction testing of bedding, backfill, subgrade, and aggregate base as well as concrete testing which includes slump, air content, concrete temperature and compressive strength cylinders. An additional technician has been included for compaction testing during periods of the project when the inspector needs to focus on inspections. All laboratory testing will be performed in our AASHTO accredited Reno laboratory.

Based upon a review of the project plans and the requirements of the Standard Specifications of Public Works Construction, we will provide inspection and material testing services during the following improvements:

- *Traffic Control Setup and Monitoring*
- *Bypass Pumping System Setup*
- *Pipeline Demo*
- *Utility Installation Including Bedding and Backfill Compaction*
- *Manhole Installation*
- *CIPP Installation*
- *Lift Station Improvements*
- *Aggregate Base Compaction*
- *Concrete Placement*
- *Asphalt Placement*
- *Laboratory Testing*

A detailed outline including total trips, hours per trip and associated fees is attached for your review.

The attached scope of work will include daily field reports describing construction and materials testing activities with transmittals to the project administrator. Individual test results for compaction testing and concrete testing will be provided verbally at the completion of each test. Daily written summaries of the inspection dialogues and materials testing results will be provided weekly.

Ms. Kari Weitzel  
**CITY OF FERNLEY**  
March 25, 2022  
Page 2

Based on the documents provided and our assumed construction schedule of 30 working days, we will provide our services on a time and expense basis not to exceed \$28,510.00. Our services are dependent on your future construction schedule and the scope of work provided. Any changes to your schedule or the anticipated scope may result in a change in cost. All services outside the attached estimate will be provided on a time and expense basis in accordance with our current standard fee schedule.

We appreciate the opportunity to provide our inspection and materials testing services. Please do not hesitate to call if you have any questions or comments.

Sincerely,

**CONSTRUCTION MATERIALS ENGINEERS, INC.**



Jon A. Del Santo, PE  
Principle  
[jdelanto@cmenv.com](mailto:jdelanto@cmenv.com)  
Direct: 775-737-7564  
Mobile: 775-846-4399

JAD

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**CITY OF FERNLEY  
FARM DISTRICT ROAD LIFT STATION PHASE 2 REHABILITATION  
INSPECTION AND MATERIALS TESTING  
FERNLEY, NV**

CITY OF FERNLEY

DATE :

3/25/2022

| ACTIVITY                         | QTY/DAYS | HRS/DAY | RATE      | TOTAL       | COMMENTS                               |
|----------------------------------|----------|---------|-----------|-------------|----------------------------------------|
| <b>PROJECT MANAGEMENT</b>        |          |         |           |             |                                        |
| <b>6 WEEKS - 30 WORKING DAYS</b> |          |         |           |             |                                        |
| PROJECT MANAGER                  | 6        | 2       | \$ 180.00 | \$ 2,160.00 | COORDINATION, CONSULTATION AND REPORTS |
| PROJECT MANAGER                  | 3        | 2       | \$ 180.00 | \$ 1,080.00 | PRE-CON/PROJECT MEETINGS               |

**UTILITIES\***

|               |     |   |           |              |         |
|---------------|-----|---|-----------|--------------|---------|
| INSPECTOR REG | 25  | 6 | \$ 110.00 | \$ 16,500.00 | 5 WEEKS |
| NUCLEAR GAUGE | 150 |   | \$ 10.00  | \$ 1,500.00  |         |
| VEHICLE       | 150 |   | \$ 10.00  | \$ 1,500.00  |         |

\*ASSUMES APPROX 200 LF PRODUCTION /DAY

**EARTHWORK****COMPACTION TESTING**

|                |   |   |           |             |                      |
|----------------|---|---|-----------|-------------|----------------------|
| TECHNICIAN REG | 4 | 4 | \$ 100.00 | \$ 1,600.00 | BEDDING AND BACKFILL |
| TECHNICIAN REG | 1 | 4 | \$ 100.00 | \$ 400.00   | AGG BASE             |
| NUCLEAR GAUGE  | 4 |   | \$ 10.00  | \$ 40.00    |                      |
| VEHICLE        | 4 |   | \$ 10.00  | \$ 40.00    |                      |

**CONCRETE\***

|                          |    |   |           |             |                   |
|--------------------------|----|---|-----------|-------------|-------------------|
| INSPECTOR/TECHNICIAN REG | 2  | 5 | \$ 110.00 | \$ 1,100.00 | CURBS AND COLLARS |
| VEHICLE                  | 10 |   | \$ 10.00  | \$ 100.00   |                   |

\* INCLUDES CYLINDER PICKUP THE NEXT DAY

**ASPHALT - MINOR PAVING****SAMPLE COLLECTED JUST TO ARCHIVE**

|                          |    |   |           |             |                              |
|--------------------------|----|---|-----------|-------------|------------------------------|
| INSPECTOR/TECHNICIAN REG | 2  | 5 | \$ 110.00 | \$ 1,100.00 | NDOT SECTION AND COF SECTION |
| NUCLEAR GAUGE            | 10 |   | \$ 10.00  | \$ 100.00   |                              |
| VEHICLE                  | 10 |   | \$ 10.00  | \$ 100.00   |                              |

**LABORATORY TESTING****SOILS**

|                                   |   |  |           |           |                                |
|-----------------------------------|---|--|-----------|-----------|--------------------------------|
| MOISTURE DENSITY CURVE - BACKFILL | 2 |  | \$ 300.00 | \$ 600.00 | BEDDING, BACKFILL AND AGG BASE |
| SIEVE ANALYSIS / PI               | 1 |  | \$ 240.00 | \$ 240.00 | BACKFILL, IF NEEDED            |

**CONCRETE**

|           |   |  |           |           |              |
|-----------|---|--|-----------|-----------|--------------|
| CYLINDERS | 2 |  | \$ 175.00 | \$ 350.00 | SETS OF FIVE |
|-----------|---|--|-----------|-----------|--------------|

**ESTIMATED TOTAL FEE:                      \$ 28,510.00**

BASED ON ASSUMED PROJECT SCHEDULE, CAN BE REFINED UPON RECEIPT OF ACTIVITY-BASED SCHEDULE

BASED ON CME PAYING NON-PREVALENT WAGE RATES

OVERTIME IS NOT INCLUDED, BUT IF NEEDED, WILL BE CHARGED AT 1.3 TIMES REGULAR RATE

UTILITIES INSPECTION INCLUDES TRAFFIC CONTROL SET UP, BY PASS PUMPING SET UP, SEWER PIPE INSTALLATION, CIPP INSTALLATION

MANHOLE CONSTRUCTION AND LIFT STATION IMPROVEMENTS

U.S. DEPARTMENT OF THE TREASURY  
CORONAVIRUS LOCAL FISCAL RECOVERY FUND  
AWARD TERMS AND CONDITIONS

1. Use of Funds.
  - a. Recipient understands and agrees that the funds disbursed under this award may only be used in compliance with section 603(c) of the Social Security Act (the Act), Treasury's regulations implementing that section, and guidance issued by Treasury regarding the foregoing.
  - b. Recipient will determine prior to engaging in any project using this assistance that it has the institutional, managerial, and financial capability to ensure proper planning, management, and completion of such project.
2. Period of Performance. The period of performance for this award begins on the date hereof and ends on December 31, 2026. As set forth in Treasury's implementing regulations, Recipient may use award funds to cover eligible costs incurred during the period that begins on March 3, 2021, and ends on December 31, 2024.
3. Reporting. Recipient agrees to comply with any reporting obligations established by Treasury as they relate to this award.
4. Maintenance of and Access to Records
  - a. Recipient shall maintain records and financial documents sufficient to evidence compliance with section 603(c) of the Act, Treasury's regulations implementing that section, and guidance issued by Treasury regarding the foregoing.
  - b. The Treasury Office of Inspector General and the Government Accountability Office, or their authorized representatives, shall have the right of access to records (electronic and otherwise) of Recipient in order to conduct audits or other investigations.
  - c. Records shall be maintained by Recipient for a period of five (5) years after all funds have been expended or returned to Treasury, whichever is later.
5. Pre-award Costs. Pre-award costs, as defined in 2 C.F.R. § 200.458, may not be paid with funding from this award.
6. Administrative Costs. Recipient may use funds provided under this award to cover both direct and indirect costs.
7. Cost Sharing. Cost sharing or matching funds are not required to be provided by Recipient.
8. Conflicts of Interest. Recipient understands and agrees it must maintain a conflict of interest policy consistent with 2 C.F.R. § 200.318(c) and that such conflict of interest policy is applicable to each activity funded under this award. Recipient and subrecipients must disclose in writing to Treasury or the pass-through entity, as appropriate, any potential conflict of interest affecting the awarded funds in accordance with 2 C.F.R. § 200.112.

9. Compliance with Applicable Law and Regulations.

- a. Recipient agrees to comply with the requirements of section 603 of the Act, regulations adopted by Treasury pursuant to section 603(f) of the Act, and guidance issued by Treasury regarding the foregoing. Recipient also agrees to comply with all other applicable federal statutes, regulations, and executive orders, and Recipient shall provide for such compliance by other parties in any agreements it enters into with other parties relating to this award.
- b. Federal regulations applicable to this award include, without limitation, the following:
  - i. Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 C.F.R. Part 200, other than such provisions as Treasury may determine are inapplicable to this Award and subject to such exceptions as may be otherwise provided by Treasury. Subpart F – Audit Requirements of the Uniform Guidance, implementing the Single Audit Act, shall apply to this award.
  - ii. Universal Identifier and System for Award Management (SAM), 2 C.F.R. Part 25, pursuant to which the award term set forth in Appendix A to 2 C.F.R. Part 25 is hereby incorporated by reference.
  - iii. Reporting Subaward and Executive Compensation Information, 2 C.F.R. Part 170, pursuant to which the award term set forth in Appendix A to 2 C.F.R. Part 170 is hereby incorporated by reference.
  - iv. OMB Guidelines to Agencies on Governmentwide Debarment and Suspension (Nonprocurement), 2 C.F.R. Part 180, including the requirement to include a term or condition in all lower tier covered transactions (contracts and subcontracts described in 2 C.F.R. Part 180, subpart B) that the award is subject to 2 C.F.R. Part 180 and Treasury's implementing regulation at 31 C.F.R. Part 19.
  - v. Recipient Integrity and Performance Matters, pursuant to which the award term set forth in 2 C.F.R. Part 200, Appendix XII to Part 200 is hereby incorporated by reference.
  - vi. Governmentwide Requirements for Drug-Free Workplace, 31 C.F.R. Part 20.
  - vii. New Restrictions on Lobbying, 31 C.F.R. Part 21.
  - viii. Uniform Relocation Assistance and Real Property Acquisitions Act of 1970 (42 U.S.C. §§ 4601-4655) and implementing regulations.
  - ix. Generally applicable federal environmental laws and regulations.
- c. Statutes and regulations prohibiting discrimination applicable to this award include, without limitation, the following:
  - i. Title VI of the Civil Rights Act of 1964 (42 U.S.C. §§ 2000d et seq.) and Treasury's implementing regulations at 31 C.F.R. Part 22, which prohibit discrimination on the basis of race, color, or national origin under programs or activities receiving federal financial assistance;

- ii. The Fair Housing Act, Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§ 3601 et seq.), which prohibits discrimination in housing on the basis of race, color, religion, national origin, sex, familial status, or disability;
  - iii. Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794), which prohibits discrimination on the basis of disability under any program or activity receiving federal financial assistance;
  - iv. The Age Discrimination Act of 1975, as amended (42 U.S.C. §§ 6101 et seq.), and Treasury's implementing regulations at 31 C.F.R. Part 23, which prohibit discrimination on the basis of age in programs or activities receiving federal financial assistance; and
  - v. Title II of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. §§ 12101 et seq.), which prohibits discrimination on the basis of disability under programs, activities, and services provided or made available by state and local governments or instrumentalities or agencies thereto.
10. Remedial Actions. In the event of Recipient's noncompliance with section 603 of the Act, other applicable laws, Treasury's implementing regulations, guidance, or any reporting or other program requirements, Treasury may impose additional conditions on the receipt of a subsequent tranche of future award funds, if any, or take other available remedies as set forth in 2 C.F.R. § 200.339. In the case of a violation of section 603(c) of the Act regarding the use of funds, previous payments shall be subject to recoupment as provided in section 603(e) of the Act.
11. Hatch Act. Recipient agrees to comply, as applicable, with requirements of the Hatch Act (5 U.S.C. §§ 1501-1508 and 7324-7328), which limit certain political activities of State or local government employees whose principal employment is in connection with an activity financed in whole or in part by this federal assistance.
12. False Statements. Recipient understands that making false statements or claims in connection with this award is a violation of federal law and may result in criminal, civil, or administrative sanctions, including fines, imprisonment, civil damages and penalties, debarment from participating in federal awards or contracts, and/or any other remedy available by law.
13. Publications. Any publications produced with funds from this award must display the following language: "This project [is being] [was] supported, in whole or in part, by federal award number [enter project FAIN] awarded to [name of Recipient] by the U.S. Department of the Treasury."
14. Debts Owed the Federal Government.
- a. Any funds paid to Recipient (1) in excess of the amount to which Recipient is finally determined to be authorized to retain under the terms of this award; (2) that are determined by the Treasury Office of Inspector General to have been misused; or (3) that are determined by Treasury to be subject to a repayment obligation pursuant to section 603(e) of the Act and have not been repaid by Recipient shall constitute a debt to the federal government.
  - b. Any debts determined to be owed the federal government must be paid promptly by

Recipient. A debt is delinquent if it has not been paid by the date specified in Treasury's initial written demand for payment, unless other satisfactory arrangements have been made or if the Recipient knowingly or improperly retains funds that are a debt as defined in paragraph 14(a). Treasury will take any actions available to it to collect such a debt.

15. Disclaimer.

- a. The United States expressly disclaims any and all responsibility or liability to Recipient or third persons for the actions of Recipient or third persons resulting in death, bodily injury, property damages, or any other losses resulting in any way from the performance of this award or any other losses resulting in any way from the performance of this award or any contract, or subcontract under this award.
- b. The acceptance of this award by Recipient does not in any way establish an agency relationship between the United States and Recipient.

16. Protections for Whistleblowers.

- a. In accordance with 41 U.S.C. § 4712, Recipient may not discharge, demote, or otherwise discriminate against an employee in reprisal for disclosing to any of the list of persons or entities provided below, information that the employee reasonably believes is evidence of gross mismanagement of a federal contract or grant, a gross waste of federal funds, an abuse of authority relating to a federal contract or grant, a substantial and specific danger to public health or safety, or a violation of law, rule, or regulation related to a federal contract (including the competition for or negotiation of a contract) or grant.
- b. The list of persons and entities referenced in the paragraph above includes the following:
  - i. A member of Congress or a representative of a committee of Congress;
  - ii. An Inspector General;
  - iii. The Government Accountability Office;
  - iv. A Treasury employee responsible for contract or grant oversight or management;
  - v. An authorized official of the Department of Justice or other law enforcement agency;
  - vi. A court or grand jury; or
  - vii. A management official or other employee of Recipient, contractor, or subcontractor who has the responsibility to investigate, discover, or address misconduct.
- c. Recipient shall inform its employees in writing of the rights and remedies provided under this section, in the predominant native language of the workforce.

17. Increasing Seat Belt Use in the United States. Pursuant to Executive Order 13043, 62 FR 19217 (Apr. 18, 1997), Recipient should encourage its contractors to adopt and enforce on-the-job seat belt policies and programs for their employees when operating company-owned, rented or personally owned vehicles.

18. Reducing Text Messaging While Driving. Pursuant to Executive Order 13513, 74 FR 51225 (Oct. 6, 2009), Recipient should encourage its employees, subrecipients, and contractors to adopt and enforce policies that ban text messaging while driving, and Recipient should establish workplace safety policies to decrease accidents caused by distracted drivers.



# CITY OF FERNLEY

## City Council AGENDA REPORT

Meeting Date: April 6, 2022

REPORT TO: Mayor and City Council

REPORT FROM:

FINANCIAL IMPACT:

Yes:

No:

CURRENTLY BUDGETED:

Yes:

No:

FUND/ACCOUNT:

ACTION REQUESTED:

AGENDA ITEM: (For Possible Action):

(For possible action) Approval of Minutes from March 2, 2022

AGENDA ITEM BRIEF:

RECOMMENDED MOTION:

BUSINESS IMPACT (per NRS Chapter 237):

See attached report for background, analysis, alternatives.

ALTERNATIVES:

BACKGROUND:

RELEVANT LAWS, STATUTES, AND REGULATIONS:

**FINANCIAL IMPLICATIONS:**

**ATTACHMENTS:**

1. 2022.03.02 Fernley City Council Minutes

**MINUTES OF THE  
FERNLEY CITY COUNCIL MEETING  
MARCH 2, 2022**

Mayor Edgington called the meeting to order at 5:01 PM, at Fernley City Hall, 595 Silver Lace Blvd, Fernley, NV.

**1. INTRODUCTORY ITEMS**

**1.1. Roll Call**

**Present:** Mayor Roy Edgington, Councilwoman Ward 2 Zoberski, Councilman Ward 3 Lau, Councilman Ward 1 Lacy via telephone, Councilwoman Ward 5 McKay, Councilman Ward 4 Torres  
City Manager Daphne Hooper, Deputy City Manager Patrick Marsh, City Attorney Brandi Jensen, Deputy City Attorney Aaron Mouritsen, Legal Secretary Wendy Mello, Legal Secretary Mary Wilson, Building Official Billy Staten, Director of Finance Denise Lewis, Planning Director Tim Thompson, Assistant Planner Nikhil, Assistant Planner Shay League, Public Works Director Dave Whalen, Attorney David Rigdon, and Human Resource Manager Shannon McKnight.

**Absent:** None.

**1.2. Public Forum**

David Stix Jr., representing TCID: Would like to talk about the future of our community, the natural resources, and his disgust and disappointment with a certain group of people in our community that stand to benefit the most from Fernley's growth. That group includes anyone in building, realtors, and any group that benefits from growth. The Stix' family is standing next to the City in the lawsuit that challenges NEPA. His goal is to talk through the City Council to the development community. They need to stand up. The future of our community is at risk and he thinks the main thing that sent him to the City Council tonight, is that a close friend of his who is a retired builder looked at a 5 acre parcel in Fernley and knew the consequences and the issues shaping Fernley with the canal and the lining of the canal. His friend asked the realtor what the issue was with the water and the realtor told his friend it was okay. They came to a compromise and the bottom of the canal would be left open for recharge. This was a lie and are the things that we need to bring to light. The developmental community needs to stand up, needs to speak, and needs to start looking out for the long-term of this community, because the short-term future may look bright, but when they line the canal it's going to be bleak. I don't have to be here tonight and I don't have to be on the side with Fernley. The latest recommendation is to line the canal. His ranch is at the end of Farm District road. This recommendation would result in his water rights being worth a lot of money, but that's not why he is here. He is here because he has an involvement with this community and wants to see the future thrive for his kids and his grandkids. It's time for the development community to stand up and help us out. If not monetarily by creating a big voice. He stated that he was taken down by the development community when he was beaten in office for the mayor when he lost his position, and knows what they are capable of. Right now they are doing very well and need to help us out.

Jason Nickel has been involved in government for a long time, and has been exposed to a great number of public employees. He would like to speak directly to items 5.1 and 5.2 on tonight's agenda. In his time in government, he has met good public employees that work hard and are stellar at their job. He can say without reservation that you have two of them in these two fine women. They are powerful, strong, smart,



they don't put up with too much crap. They are constantly making decisions in the best interest in the City of Fernley and Fernley's residents. It is his honor and privilege to work beside these two women and they are two of the finest civil servants that he has had the opportunity to work with. In your deliberations and time that you will be spending with them tonight, I encourage you to realize the thousands of things that they do for the benefit of the citizens and the city and for the fire district that you will never know, see, or hear about. He encourages the council to give them the latitude they need to do their job without interference, and on a selfish note, I encourage you to reach as far as possible in compensation. These women deserve more than what they get. They are that good and I am proud to be compatriots with them and I hope my testimonial to you will help their benefit and their evaluation.

Nick Vander Pole emailed a letter to City Council in support of City Manager Daphne Hooper, and City Attorney Brandi Jensen's evaluations.

Ron McGuinness emailed a public comment to City Council to let them know he is opposed to the city taking over the racetrack.

### **1.3. (Possible Action) Approval of Agenda**

City Manager Daphne Hooper requested that item 2.3 be pulled off the agenda and be brought to the next meeting.

**Motion:** MOVE TO APPROVE THE AGENDA WITH ITEM 2.3 PULLED AND BROUGHT BACK TO THE NEXT MEETING. **Action:** Approve, **Moved by** Councilman Ward 4 Albert Torres, **Seconded by** Councilman Ward 1 Ray Lacy. **Vote:** Passed, **Summary:** Yes 5, No 0, Abstained 0. **Yes:** Councilman Ward 1 Lacy, Councilwoman Ward 2 Zoberski, Councilman Ward 3 Lau, Councilman Ward 4 Torres, Councilwoman Ward 5 McKay, **No:** None, **Abstain:** None.

## **2. CONSENT AGENDA**

Item 2.3 was pulled.

### **2.1. (Possible Action) Approval of Voucher Report**

### **2.2. (Possible Action) Approval of Business Licenses**

### **2.3. Possible Action to approve the job description and wage scale for the Development Services Coordinator.**

### **2.4. Possible Action to Approve the Will-Serve Request from Friendly 5 Ranch Subdivision Village 1 for 77.3 ERC's for Water and 75 ERC's for Sewer for 75 Single Family Residential lots and irrigation for Lyon County Parcel 021-303-09, -47, -49, -52, -54 located at Farm District Rd. between Jessica Ln and Country Rd. Fernley, NV 89408**

Councilwoman McKay pointed out that Item 2.4 is supposed to say between Farm District Rd. and Country Ranch Rd.

### **2.5. Possible Action to Approve the Will-Serve Request from Mark IV Capital (Victory Logistics Build A Irrigation) for 1.25 ERC's for Water and 0 ERC's for Sewer for landscaping at building A, Lyon County Parcel 021-242-22 located at 1895 Duffy Road, Fernley, NV 89408**

### **2.6. Possible Action to Approve the Will-Serve Request from The Meadows at Inglewood, 1032 Inglewood Dr. Unit #110- 115 for .35 ERC's for Water and .94 ERC's for Sewer for Lyon County Parcel 020-341-01 located at 1032 Inglewood Drive Unit #110-115, Fernley, NV 89408**

**Motion:** MOVE TO APPROVE THE CONSENT AGENDA WITH ITEM 2.3 BEING PULLED.

**Action:** Approve, **Moved by** Councilman Ward 3 Stan Lau, **Seconded by** Councilman Ward 1 Ray Lacy. **Vote:** Passed, **Summary:** Yes 5, No 0, Abstained 0. **Yes:** Councilman Ward 1 Lacy, Councilwoman Ward 2 Zoberski, Councilman Ward 3 Lau, Councilman Ward 4 Torres, Councilwoman Ward 5 McKay, **No:** None, **Abstain:** None.

**3. REPORTS This item is for various public entity representatives to provide general information to the Council and public. No action will be taken.**

Mayor Edgington reported that he talked to Sheriff Hunewill. The Sheriff's Department has had staffing problems so the Mayor will read the sub-station report.

**3.1. Reports by City Staff, City Council, and the Mayor, including but not limited to monthly statistical reports by city departments.**

City Manager Daphne Hooper: March 3rd graduation for leadership academy with presentations from the Fire District, Sheriff's Office, School District and Human Services, as well as a couple of other folks. Community meetings for the Fernley Community Economic Development Strategy. They will be held March 11 from 5-8 PM and March 12th from 10 AM - 1 PM, located at City Hall. Flyers are available at the front of the Chambers. Daphne welcomed the new employees Maintenance Worker in Streets Javier Jimenez, Municipal Court Marshal Daniel Lynch, and a Water Treatment Plant Chief Operator Patrick Sparks.

Building Official Billy Staten provided the monthly stats for the Building Department for the month of February.

City Clerk Kim Swanson informed everyone that the candidacy filing starts Monday and runs through March 18th. Seats up for election are Ward 1, Ward 3, and Mayor.

Mayor Edgington reported that it is National Reading week. He read to 2nd graders at East Valley Elementary. Encourage kids to read. He said a meeting on the comprehensive strategy area for downtown March 11th from 5-8 PM at City Hall, March 12th from 10 AM-1 PM. Property Owner's meeting will be held March 18th from 5-8 PM and 19th from 10 AM- 1 PM. STEM judging is tonight during the current meeting, but they will be hosting an event tomorrow.

Councilman Torres reported the Fernley Senior Citizen Advisory Committee will be meeting March 11th at 9 AM in the City Council Chambers.

Councilwoman Zoberski reported the Chamber has the Speak Easy Galla coming up on March 19th at 5:00 PM. Tickets are still available. It is a fancy and fun event. There will be awards handed out.

**4. PROCLAMATIONS BY THE MAYOR There were none**

**5. STAFF REPORTS**

**5.1. Discussion and Possible Action to approve the City Attorney, Brandi Jensen's past year's employment performance, and the City Council and Mayor's satisfaction with the City Attorney's employment performance including but not limited to:**

- a. City Attorney Contract Compliance**
- b. General Performance as the City Attorney**

### c. Compensation

Shannon McKnight provided an overview of the evaluation process and scores.

**Motion:** MOVE TO APPROVE THE CITY ATTORNEY, BRANDI JENSEN'S EVALUATION .  
**Action:** Approve, **Moved by** Councilwoman Ward 5 Fran McKay, **Seconded by** Councilman Ward 4 Albert Torres. **Vote:** Passed, **Summary:** Yes 5, No 0, Abstained 0. **Yes:** Councilman Ward 1 Lacy, Councilwoman Ward 2 Zoberski, Councilman Ward 3 Lau, Councilman Ward 4 Torres, Councilwoman Ward 5 McKay, **No:** None, **Abstain:** None.

**Motion:** MOVE TO APPROVE A 2% INCREASE FOR THE CITY ATTORNEY, BRANDI JENSEN, EFFECTIVE MARCH 19, 2022, AND ALLOW HER TO CONTINUE WITH HER FLEXIBLE WORK SCHEDULE. **Action:** Approve, **Moved by** Councilwoman Ward 5 McKay, **Seconded by** Councilman Ward 4 Torres. **Vote:** Passed, **Summary:** **Yes:** Councilman Ward 1 Lacy, Councilwoman Ward 2 Zoberski, Councilman Ward 3 Lau, Councilman Ward 4 Torres, Councilwoman Ward 5 McKay, **No:** None, **Abstain:** None.

**5.2. A. Discussion and Possible Action to approve the City Manager, Daphne Hooper's annual employment performance, established goals, and the City Council and Mayor's satisfaction with the City Manager's employment performance and general performance as the City Manager.**

#### **B. Discussion and Possible Action to approve City Manager Daphne Hooper's salary.**

Human Resource Manager Shannon McKnight provided an overview of the evaluation process, and City Manager Daphne Hooper's score.

City Manager Daphne Hooper presented the status of current goals and the goals for the upcoming year.

Mayor Edgington read a letter that was submitted from Stan Thomas at EDawn. Mayor said he has seen her ability to change gears. She is usually right and I just didn't see it. She is the face of the city and he is proud of her work and ethics.

**Motion:** MOVE TO APPROVE THE CITY MANAGER, DAPHNE HOOPER'S EVALUATION.  
**Action:** Approve, **Moved by** Councilwoman Ward 5 Fran McKay, **Seconded by** Councilwoman Ward 2 Felicity Zoberski. **Vote:** Passed, **Summary:** Yes 3, No 2, Abstained 0. **Yes:** Councilwoman Ward 2 Zoberski, Councilman Ward 3 Lau, Councilwoman Ward 5 McKay, **No:** Councilman Ward 1 Lacy, Councilman Ward 4 Torres, **Abstain:** None.

**Motion:** MOVE TO APPROVE A WAGE INCREASE EQUIVALENT TO WHAT THE OTHER EMPLOYEES RECEIVE FOR THE CITY MANAGER, DAPHNE HOOPER, EFFECTIVE, JULY 1ST, 2022. **Action:** Approve, **Moved by** Councilwoman Ward 5 McKay, **Seconded by** Councilman Ward 3 Lau. **Vote:** Passed, **Summary:** Yes 3, No 2, Abstained 0. **Yes:** Councilwoman Ward 2 Zoberski, Councilman Ward 3 Lau, Councilwoman Ward 5 McKay, **No:** Councilman Ward 1 Lacy, Councilman Ward 4 Torres, **Abstain:** None.

Councilman Torres asked if there is any way to readdress the evaluations every 6 months instead of waiting for a year. This will be discussed during item 8, address request(s) for future agenda items.

Human Resource Manager Shannon McKnight stated that Council can discuss any issues with any of the

appointed positions being that they are the appointed positions' supervisor.

**5.3. (For possible action) Approval to include \$30,000 total for Fireworks for July 2022. (Mayor Edgington)**

Mayor Edgington asked for this item to be placed on the agenda. The 4th of July committee was offered the same price as last year for fireworks with no increase if they can lock in the contract within 60 days. He is asking the Council to support providing \$30K to the 4th of July Committee for the 2022 fireworks.

**Motion:** MOVE TO INCLUDE \$17K TOTAL FOR FIREWORKS FOR JULY 2022. **Action:** Approve, **Moved by** Councilman Ward 4 Albert Torres, **Seconded by** Councilman Ward 3 Stan Lau. **Vote:** Passed, **Summary:** Yes 5, No 0, Abstained 0. **Yes:** Councilman Ward 1 Lacy, Councilwoman Ward 2 Zoberiski, Councilman Ward 3 Lau, Councilman Ward 4 Torres, Councilwoman Ward 5 McKay, **No:** None, **Abstain:** None.

**5.4. Possible action to approve City of Fernley Election Sign Policy**

City Clerk, Kim Swanson, presented the sign policy.

**Motion:** MOVE TO APPROVE THE CITY OF FERNLEY ELECTION SIGN POLICY AND AMEND THE POLICY ON PAGES 1 AND 3 TO ALLOW THE CAMPAIGN SIGNS TO BE POSTED 60 DAYS PRIOR TO THE MAIL - IN BALLOTS BEING DISTRIBUTED. THIS DATE WILL BE DEFINED BY THE PRIMARY ELECTION, AS THE DATE TO MAIL - IN, BALLOT MAILINGS. **Action:** Approve, **Moved by** Councilman Ward 4 Albert Torres, **Seconded by** Councilman Ward 3 Stan Lau. **Vote:** Passed, **Summary:** Yes 5, No 0, Abstained 0. **Yes:** Councilman Ward 1 Lacy, Councilwoman Ward 2 Zoberiski, Councilman Ward 3 Lau, Councilman Ward 4 Torres, Councilwoman Ward 5 McKay, **No:** None, **Abstain:** None.

**6. RESOLUTIONS**

**6.1. Discussion and possible action to approve resolutions 22-005, 22-006, 22-007 and 22-008 increasing the wastewater and water utility rate schedules and connection fees.**

Public Works Director Dave Whalen discussed the effect that inflation has had on the cost of supplies and his experience with the Water Treatment Plant, since working for the City of Fernley. He provided an overview of the current water and sewer infrastructure and discussed what infrastructure will be needed in the future. Every year staff takes a diligent look at the infrastructure and the current funds available to maintain it.

Katheryn Hansford of Hansford Economic Consulting presented the findings of her study. These findings included a suggested fee schedule to maintain and provide the needed infrastructure for City water and sewer services.

**Motion:** MOVE TO APPROVE RESOLUTIONS 22-005, 22-006, 22-007 AND 22-008, INCREASING THE WASTEWATER AND WATER UTILITY RATES SCHEDULES AND CONNECTION FEES ACCORDINGLY. THE COUNCIL WILL REVIEW THE RATES EVERY 2 YEARS AND THE STAFF WILL REVEIW THE RATES EVERY YEAR. **Action:** Approve, **Moved by** Councilwoman Ward 2 Felicity Zoberiski, **Seconded by** Councilwoman Ward 5 Fran McKay. **Vote:** Passed, **Summary:** Yes 3, No 2, Abstained 0. **Yes:** Councilman Ward 1 Lacy, Councilwoman Ward 2 Zoberiski, Councilwoman Ward 5 McKay, **No:** Councilman Ward 3 Lau, Councilman Ward 4 Torres, **Abstain:** None.

Bill Meyer a Fernley resident, pointed out that this conversation took place 10 or 15 years ago and the City discussed selling the utilities. If we went that route and decided to sell it because we couldn't keep up with inflation, then someone would buy it to make more money off of the people of Fernley. If you make a deal for the seniors, then everyone else will pick up the slack. The rates must go up. It's a double-edged sword.

Ann Payne, a Fernley resident, asked if there had been any other studies or models done? What if the developers pay more in the connection fees? Would that help the residents?  
Kathryn Hansford stated the connection fees must be justified with costs.

Councilman Lacy moved to look at a discount rate for seniors and for seniors to receive a 3K gallon credit on their bill each month, after it is determined who will qualify as a senior. Councilman Lau seconded the motion. After a brief discussion, Councilman Lau withdrew his second and the motion died.

## 7. ITEMS REQUESTED BY MAYOR OR CITY COUNCIL MEMBERS

### 7.1. Discussion and possible action requesting a future agenda item addressing updating the Master Plan for retention ponds and parks. (Mayor Edgington's request)

Mayor Edgington reported retention ponds have been maintained by residents before and then given back to the city. If HOA's cannot maintain the retention ponds and the ponds are given to the City, the City should receive the HOA fees to maintain the retention ponds.

**Motion:** MOVE TO APPROVE A FUTURE AGENDA ITEM TO ADDRESS AND UPDATE THE MASTER PLAN FOR RETENTION PONDS AND PARKS. **Action:** Approve, **Moved by** Councilman Ward 3 Stan Lau, **Seconded by** Councilman Ward 1 Ray Lacy. **Vote:** Passed, **Summary:** Yes 5, No 0, Abstained 0. **Yes:** Councilman Ward 1 Lacy, Councilwoman Ward 2 Zoberski, Councilman Ward 3 Lau, Councilman Ward 4 Torres, Councilwoman Ward 5 McKay, **No:** None, **Abstain:** None.

### 7.2. Discussion and possible action requesting a future agenda item regarding future ideas for the Fernley Depot.

**Motion:** MOVE TO APPROVE A FUTURE AGENDA ITEM TO DISCUSS THE FUTURE DIRECTION OF THE DEPOT AS VARIOUS REPORTS COME IN. **Action:** Approve, **Moved by** Councilwoman Ward 5 Fran McKay, **Seconded by** Councilman Ward 3 Stan Lau. **Vote:** Passed, **Summary:** Yes 5, No 0, Abstained 0. **Yes:** Councilman Ward 1 Lacy, Councilwoman Ward 2 Zoberski, Councilman Ward 3 Lau, Councilman Ward 4 Torres, Councilwoman Ward 5 McKay, **No:** None, **Abstain:** None.

## 8. ADDRESS REQUEST(S) FOR FUTURE AGENDA ITEMS

Councilman Torres would like to be able to readdress not only Ms. Hooper's evaluation, but as a general practice of the evaluation that this Council does at 6 month intervals, including a 360 evaluation as well.

## 9. PUBLIC FORUM

There were none.

## 10. ADJOURNMENT

The next Fernley Senior Citizen Advisory Committee will be held on March 11th, at 9:00 AM in the City Council chambers.

The next Fernley City Council meeting will be held on March 16th, at 5:00 pm, in the City Council chambers.

There being no further business to come before it, the meeting adjourned at 8:23 PM.

Approved by the City Council on April 6, 2022, by a vote of:

AYES: \_\_\_\_\_ NAYS: \_\_\_\_\_ ABSTENTIONS: \_\_\_\_\_ ABSENT: \_\_\_\_\_

\_\_\_\_\_  
ATTEST:



# CITY OF FERNLEY

## City Council AGENDA REPORT

**Meeting Date: April 6, 2022**

**REPORT TO:** Mayor and City Council

**REPORT FROM:** Denise Lewis, Finance Director

**FINANCIAL IMPACT:**

Yes: No: x

**CURRENTLY BUDGETED:**

Yes: No: x

**FUND/ACCOUNT:**

N/A

**ACTION REQUESTED:** Receive/File

**AGENDA ITEM: (For Possible Action):**

Presentation by Jim Womack of Atlanta Capital Investment Management Company regarding the City's investment portfolio.

**AGENDA ITEM BRIEF:**

The City holds an investment account, which is managed by Atlanta Capital Management Company. This account is the least liquid of the City's accounts and holds approximately 66% of the City's money.

**RECOMMENDED MOTION:**

**BUSINESS IMPACT (per NRS Chapter 237):**

N/A

See attached report for background, analysis, alternatives.

**ALTERNATIVES:**

**BACKGROUND:**

Previously known as the City's "NVEST" account or the Nevada Enhanced Savings Term Program. The City is

now directly contracted with Atlanta Capital for investment advisory services.

The securities in this portfolio typically offer lower risk and lower returns than common stock and other similar investment vehicles. They are comprised mainly of Government Money Market Funds, United States Treasury and agency obligations, commercial paper, negotiable certificates of deposit, time certificates of deposit, corporate debt instruments, municipal bonds, collateralized mortgage obligations (CMOs), mortgage-backed securities (MBS), asset-backed securities (ABS), and U.S. Small Business Administration Pools (SBAs).

**RELEVANT LAWS, STATUTES, AND REGULATIONS:**

NRS Chapter 355 (Investments and Loans by Local Governments) limits the types of securities that may be purchased and concentrations may also be limited in certain instances.

**FINANCIAL IMPLICATIONS:**

Fluctuations in earnings are a result of the market, maturities, types of investments, etc.

**ATTACHMENTS:**

1. Atlanta Capital Portfolio Presentation 4.6.22





# City of Fernley, Nevada Portfolio Review

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**Jim Womack, CFA**  
Managing Director, Fixed Income

April 6, 2022

For exclusive use with the City of Fernley, Nevada. Not for further distribution.

# What Sets Atlanta Capital Apart?

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## Our Belief



- Securities with stable and predictable cash flows, and low credit and event risk are more likely to produce consistent returns and preserve capital during times of capital market uncertainty.

## Our Strategy



- Add value through issue selection & yield curve management
- Emphasize low-volatility securitized debt to enhance yield
- Exclude corporate bonds due to credit & event risk
- Manage risk in terms of the 'relative safety of principal'

## Our Objective



- To seek higher return alternatives to low yielding money market funds and government debentures
- Seek to obtain income and credit stability through high quality securitized debt instruments
- Seek to provide liquidity in all market conditions

# A Focus on Securitized Debt Instruments

- Portfolios are well diversified among 'AAA' rated and Government backed issues to minimize security specific risk.
- Stable and predictable cash flows, and low credit and event risk criteria results in securitized debt instruments of 30 – 70%.

|              | Typical Allocation | As of 12/31/2021 |
|--------------|--------------------|------------------|
| Securitized* | 30 - 70%           | 39.5%            |
| Treasury     | 10 - 60%           | 27.0%            |
| Agency       | 0 - 30%            | 33.4%            |
| Corporate    | 0 - 0%             | 0.0%             |

## Preferred Habitat

- collateralized mortgage obligations (CMOs)
- asset-backed securities (ABSs)
- out-of-the-money, seasoned mortgage pass-throughs (MBS)

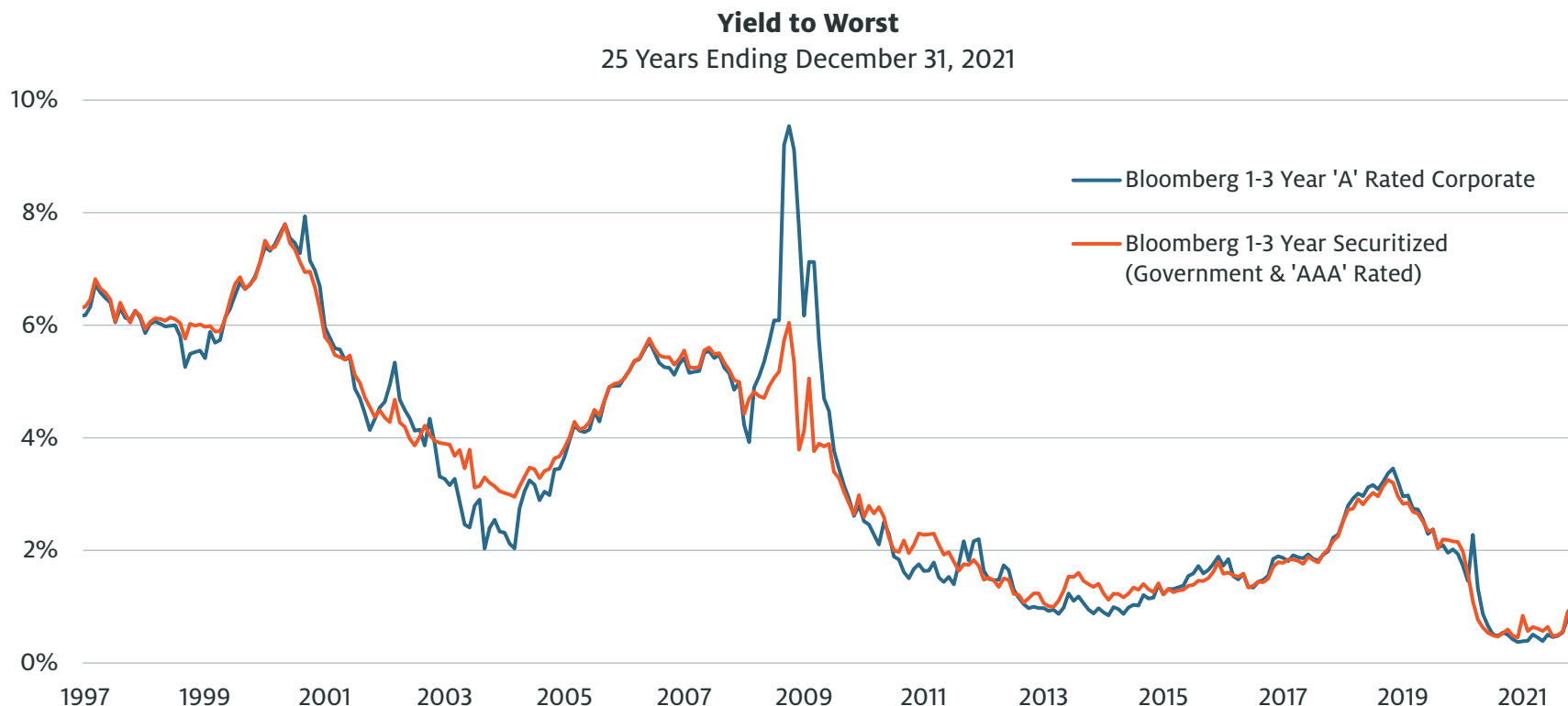
## Advantages of Securitized Debt

- attractive relative yields
- monthly coupon / principal payments
- bonds backed by many borrowers
- greater average life stability vs. other callable debt

\*Securitized instruments includes mortgage-backed, asset-backed and collateralized mortgage obligations.

# Securitized Bonds vs. Corporate Credit

Similar Yields Over Time, But With Significantly Higher Credit Quality



Source: Bloomberg. As of December 31, 2021.

The Bloomberg 1-3 Year Securitized (Government & 'AAA' Rated) Index measures the AAA-rated component of the Bloomberg 1-3 Year Securitized Index and includes mortgage-backed, asset-backed and collateralized mortgage-backed securities. The Bloomberg 1-3 Year 'A' Rated Corporate Index measures the A-rated component of the Bloomberg 1-3 Year Corporate Index and includes only corporate industrial, utility and financial issuers. Indexes are unmanaged and do not incur management fees, transaction costs or other expenses associated with managed accounts. It is not possible to directly invest in an index. This information is shown for illustrative purposes only, is subject to change at any time and should not be considered investment advice or a recommendation to invest in any particular security, sector or strategy. Past performance does not predict future results.

# High Quality Short Duration 1-3 Year Composite

How can taking advantage of modest maturity extension and income from high quality securitized debt instruments benefit investors?

## Relative Yield



## Credit & Event Risk



## Cash Flow Stability

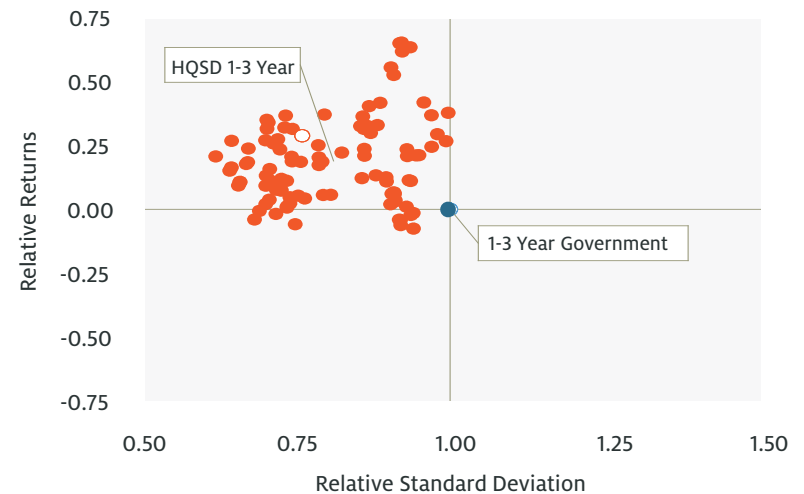


## Liquidity



## Long-Term Results

Trailing 5-Year Periods  
January 1, 1992 – December 31, 2021 – Gross of Fees



Source: ICE BofA, Atlanta Capital

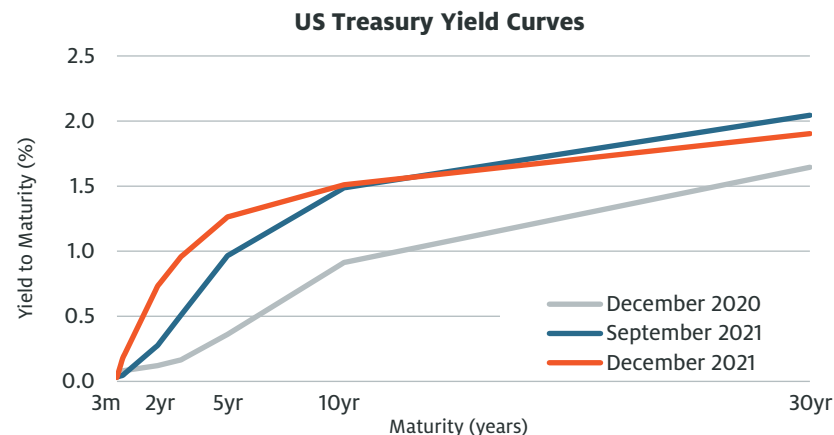
High Quality Short Duration 1-3 Year Composite versus the benchmark, ICE BofA 1-3 Year Government Index, since composite inception date of January 1, 1992.

The information for the High Quality Short Duration 1-3 Year Composite is based upon all fee-paying discretionary accounts comprising such composite as of December 31, 2021. Composite performance shown is gross of investment advisory and custody fees, and a client's return will be reduced by these and other expenses. Individual client results will vary due to customized client investment guidelines and/or restrictions. The index is unmanaged and does not incur management fees, transaction costs or other expenses associated with managed accounts. It is not possible to directly invest in an index. Please see the Composite's GIPS® Report included at the end of this presentation for important additional information and disclosure. Past performance does not predict future results.

# Fixed Income Market Review

As of December 31, 2021

| Treasury Bellwethers | Yield | 3-Month Yield Change | 3-Month Total Return | 12-Month Yield Change | 12-Month Total Return |
|----------------------|-------|----------------------|----------------------|-----------------------|-----------------------|
| <b>Maturity</b>      |       |                      |                      |                       |                       |
| 3-Month T-Bill       | 0.03% | +0 bps               | 0.01%                | -3 bps                | 0.04%                 |
| 1-Year T-Bill        | 0.38% | +31 bps              | -0.10%               | +27 bps               | 0.04%                 |
| 2-Year T-Note        | 0.73% | +46 bps              | -0.53%               | +61 bps               | -0.57%                |
| 3-Year T-Note        | 0.96% | +45 bps              | -0.84%               | +79 bps               | -1.16%                |
| 5-Year T-Note        | 1.26% | +30 bps              | -0.90%               | +90 bps               | -2.80%                |
| 10-Year T-Note       | 1.51% | +2 bps               | 0.67%                | +60 bps               | -3.60%                |
| 30-Year T-Note       | 1.90% | -14 bps              | 4.70%                | +26 bps               | -4.62%                |



| Excess Return vs. Treasuries | 3-Month | 12-Month |
|------------------------------|---------|----------|
|------------------------------|---------|----------|

## Return Premium by Sector

|                            |        |        |
|----------------------------|--------|--------|
| Agencies                   | -0.24% | 0.00%  |
| Asset-Backed Securities    | -0.12% | 0.31%  |
| Mortgage-Backed Securities | -0.26% | -0.68% |
| Commercial MBS             | -0.18% | 1.05%  |
| Credit                     | -0.24% | 1.51%  |

## Return Premium by Quality

|           |        |        |
|-----------|--------|--------|
| AAA Rated | -0.11% | -0.23% |
| AA Rated  | -0.30% | 1.23%  |
| A Rated   | -0.32% | 0.85%  |
| BBB Rated | -0.17% | 2.29%  |

| Market Total Returns | 3-Month | 12-Month |
|----------------------|---------|----------|
|----------------------|---------|----------|

## Fixed Income Indices

|                                     |        |        |
|-------------------------------------|--------|--------|
| ICE BofA 1-Year Treasury Note Index | -0.18% | -0.07% |
| ICE BofA 1-3 Year Government Index  | -0.53% | -0.55% |
| ICE BofA 1-5 Year Treasury Index    | -0.68% | -1.10% |
| Bloomberg Intermediate G/C Index    | -0.57% | -1.44% |
| Bloomberg Intermediate Agg. Index   | -0.51% | -1.29% |
| Bloomberg Aggregate Index           | 0.02%  | -1.54% |

Source: Bloomberg and ICE® BofA®. As of December 31, 2021. Excess Return data are represented by the corresponding sectors within the Bloomberg Aggregate Index. Indexes are unmanaged and do not incur management fees, transaction costs or other expenses associated with managed accounts. It is not possible to directly invest in an index. This data is shown for informational use only and is subject to change at any time. Past performance does not predict future results.

# Annualized Performance

## City of Fernley

| Total Returns (%) | Preliminary<br>Jan-Feb 2022 | QTD   | FYTD  | 1 Yr  | 3 Yrs* | 5 Yrs* | 7 Yrs* | 10 Yrs* | Since<br>Inception* |
|-------------------|-----------------------------|-------|-------|-------|--------|--------|--------|---------|---------------------|
| Portfolio         | -0.87                       | -0.33 | -0.31 | -0.28 | 1.67   | 1.59   | 1.31   | 1.08    | 1.45                |
| Benchmark**       | -1.03                       | -0.53 | -0.47 | -0.55 | 1.42   | 1.34   | 1.08   | 0.83    | 1.30                |

\*\*ICE BofA ML 1-3 Year Govt ~ ICE BofA ML 1-Year T-Note (2/22/10)

| Account Summary               |                   |
|-------------------------------|-------------------|
| Performance Inception Date:   | November 30, 2007 |
| Net Investment Contributions: | \$48,492,630      |
| Investment Dollars Earned:    | \$2,657,223       |
| Market Value (12/31/21):      | \$51,149,853      |

Fiscal Year End: June 30

\*Performance returns over one year are annualized.

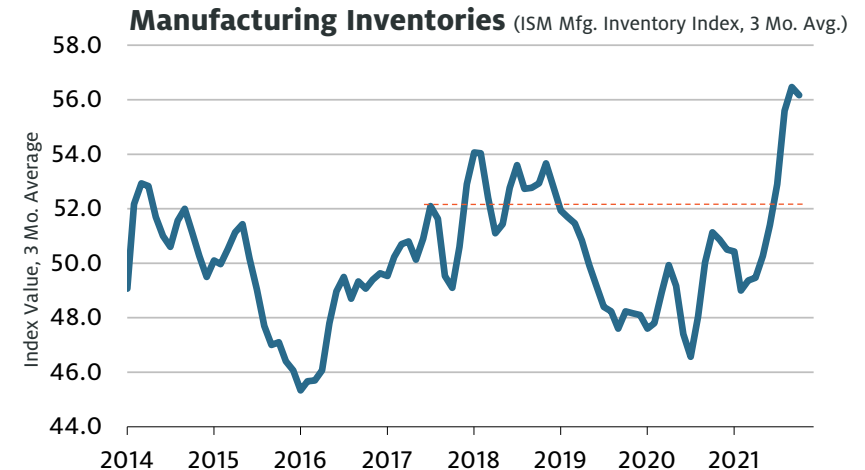
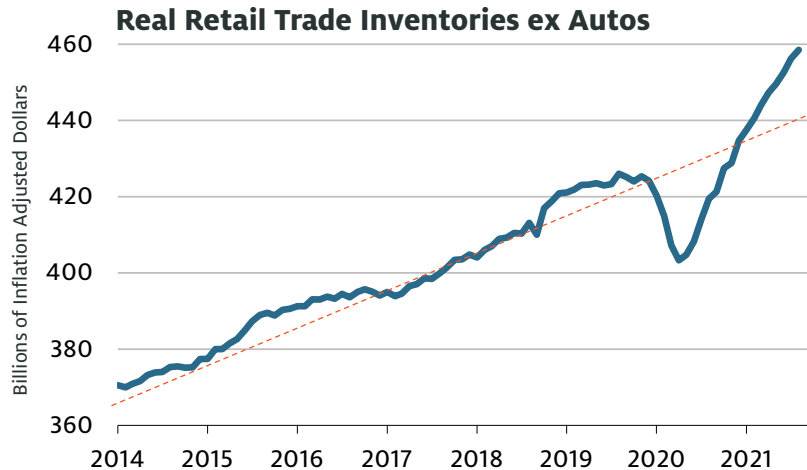
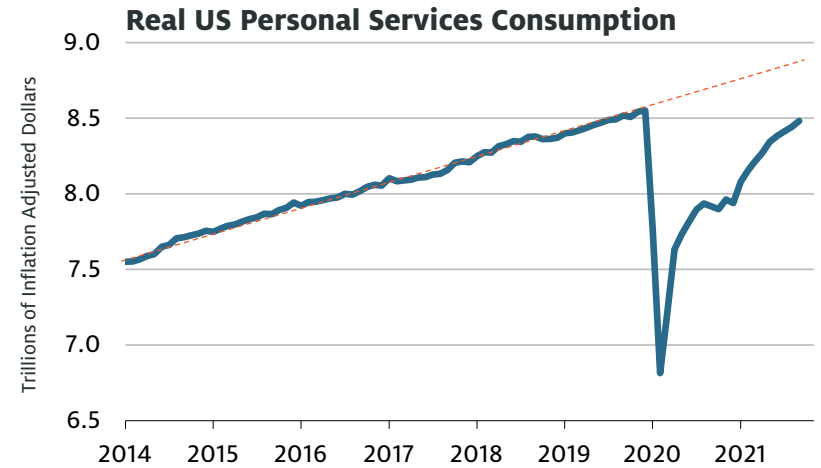
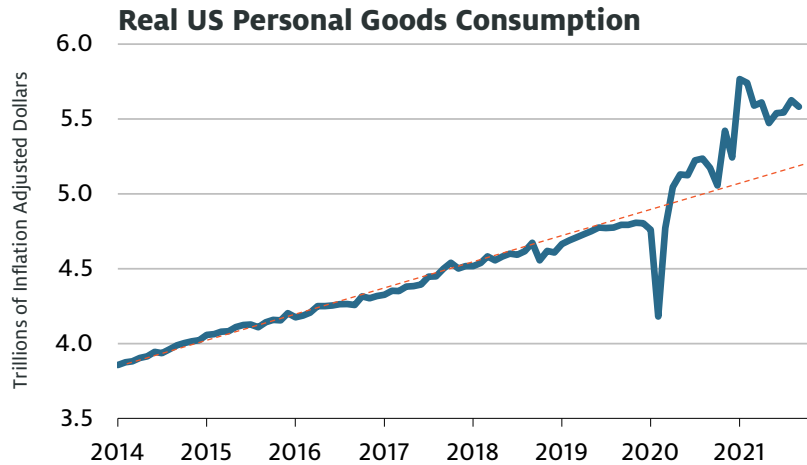
The unmanaged benchmark index returns are shown for comparative purposes only and do not reflect the subtraction of any fees or transaction costs. It is not possible to directly invest in an index. Portfolio returns are gross of management fees unless otherwise noted. The deduction of an advisory fee would reduce an investor's return.

Past performance is not indicative of future results. All investments subject to loss. Please refer to the disclosures at the end of this presentation.

Source: ICE Data Services and Atlanta Capital as of December 31, 2021.

# Economic Review and Outlook

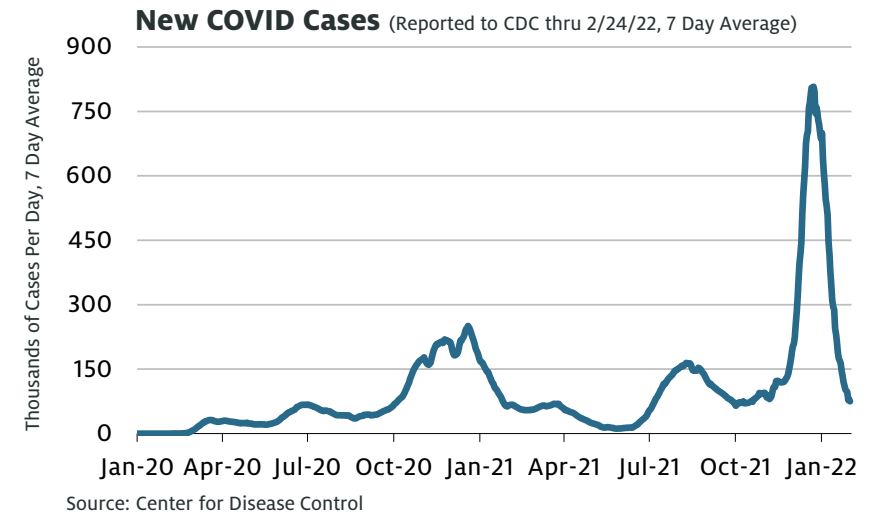
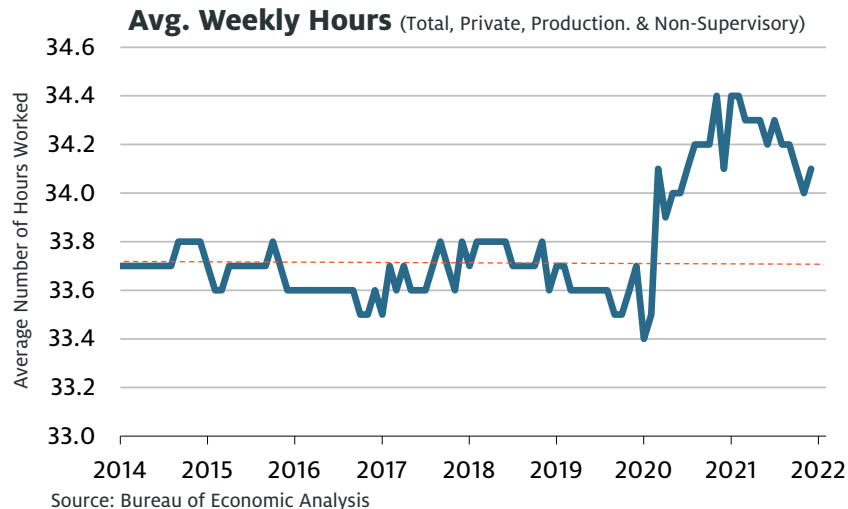
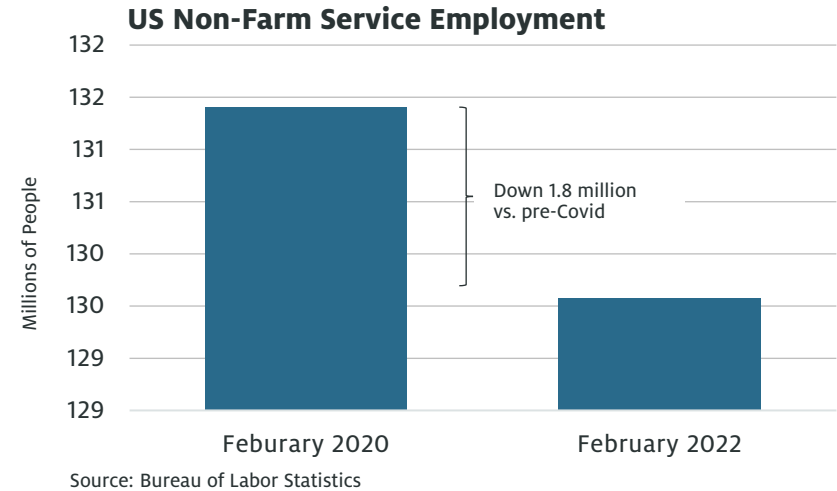
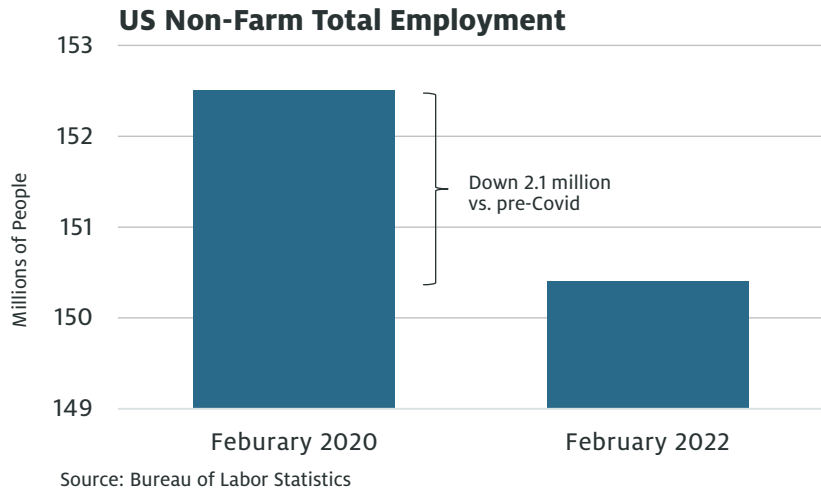
Covid Prompted Surge in Goods Consumption, Backlogs Industry Specific For Now





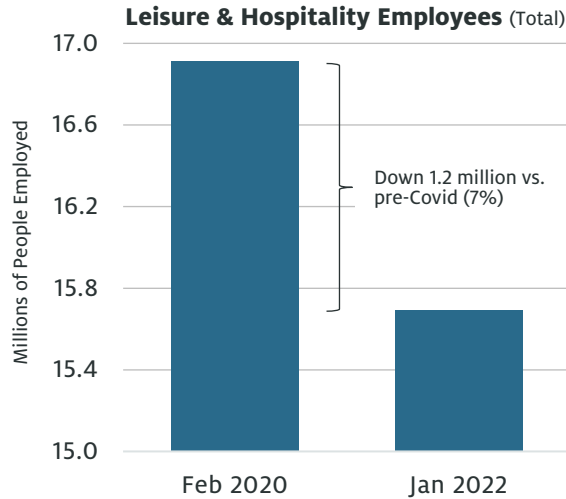
# Economic Review and Outlook

## Service Sector Employment Impacted the Most, Progress Depends On The Virus



# Economic Review and Outlook

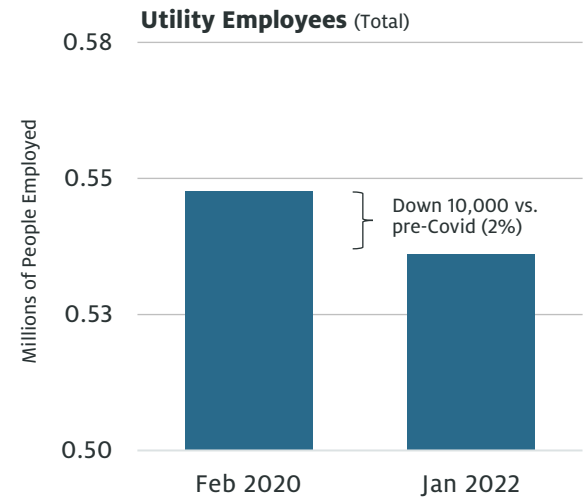
## Labor Market: Services Offering Low Pay & Little Flexibility Are Most Disrupted



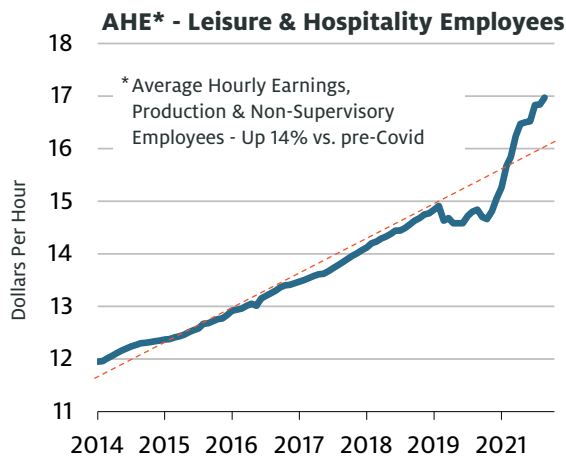
Source: Bureau of Labor Statistics



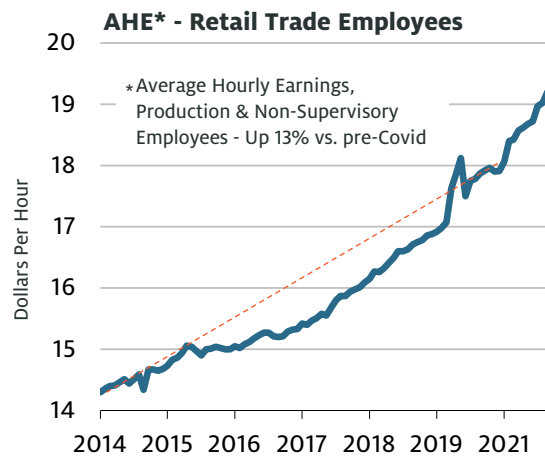
Source: Bureau of Labor Statistics



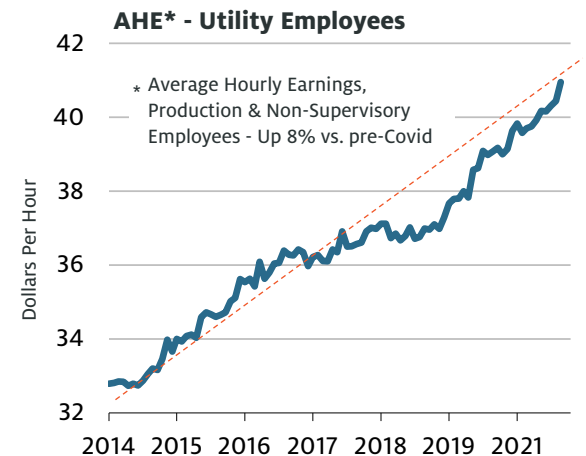
Source: Bureau of Labor Statistics



Source: Bureau of Labor Statistics



Source: Bureau of Labor Statistics



Source: Bureau of Labor Statistics

# Economic Review and Outlook

## Summary

- The Fed stopped buying bonds in February and lifted rates at its March meeting and indicated that further rate hikes were warranted. Geopolitical unrest could impact the pace of rate hikes going forward.
- The tailwinds from fiscal and monetary stimulus are becoming headwinds as massive government spending recedes and easy monetary policies are reversing.
- Inflation may still move up before receding over the next 12 months. Progress on labor market imbalances and supply chain bottlenecks should help ease inflation pressures, but war in Europe is creating new shortages and price increases.
- Headwinds and Tailwinds we are keeping our eye on:

### Headwinds

- Geopolitical Conflict
- Goods Demand Pulled Forward
- Higher Prices (Inflation)
- Elevated Inventories (ex Autos)
- Global Central Bank Tightening
- Slowing Global Growth (G8 & EM)

### Tailwinds

- Record Job Openings (and pre-Covid jobless claims)
- Covid/Delta/Omicron Fading
- Rising Wages
- Gridlock in Washington (usually eco/market positive)

- We continue to focus on security selection in seeking to add yield and minimize performance volatility. We are favoring 'AAA' rated ABS and Agency issued MBS backed by seasoned loans, low loan balance loans and other characteristics that limit prepayment risk.

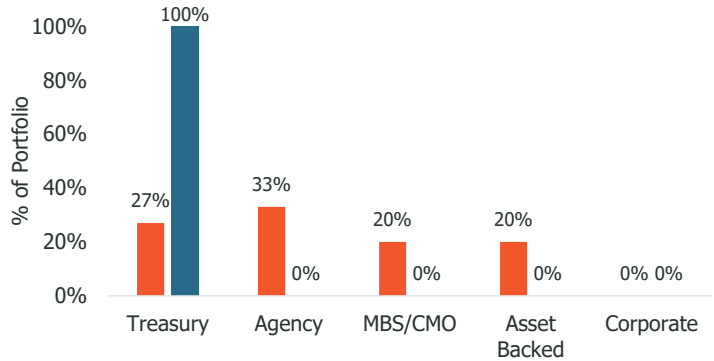
## Appendix & Background Information

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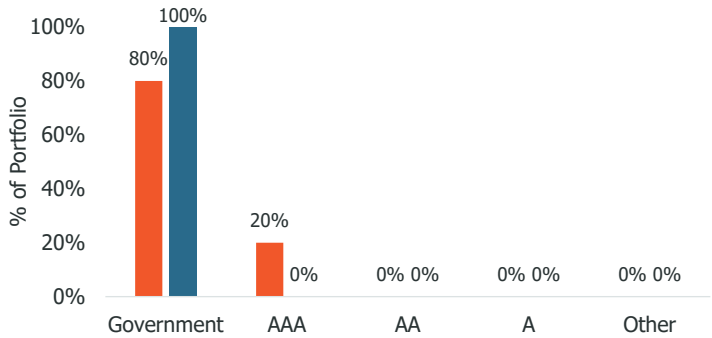
# Portfolio Structure

## City of Fernley

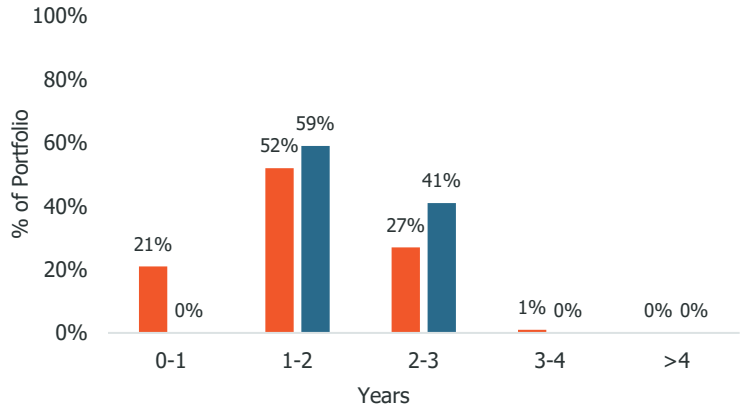
### Sector Allocation



### Quality Distribution



### Duration Distribution



### Additional Characteristics

|                              |           |
|------------------------------|-----------|
| Weighted Average Maturity    | 1.6 Years |
| Modified Duration            | 1.6 Years |
| Yield-to-Maturity            | 0.7%      |
| Benchmark* Maturity          | 1.9 Years |
| Benchmark* Modified Duration | 1.9 Years |
| Benchmark* Yield-to-Maturity | 0.7%      |

As of December 31, 2021

Source: ICE BofA, Bloomberg, Atlanta Capital

\* Benchmark: ICE BofA ML 1-3 Year Govt ~ ICE BofA ML 1-Year T-Note (2/22/10)

Portfolio Benchmark\*

# Mortgage-Backed Securities and CMOs

## City of Fernley

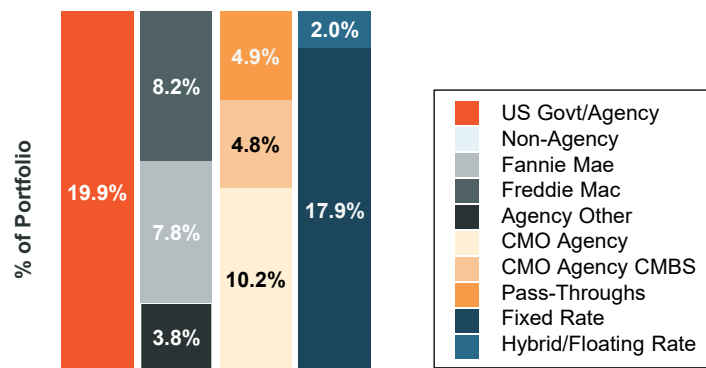
### Out-of-the-Money, Story Bonds and “Seasoned” Mortgage Pass-Throughs

- Favor bonds that have less sensitivity to interest rate changes (higher convexity)
- Bonds backed by low fixed rate loans; 10-year and 15-year mortgages are emphasized
- Bonds backed by “seasoned” and “low loan balance” loans provide greater prepayment stability

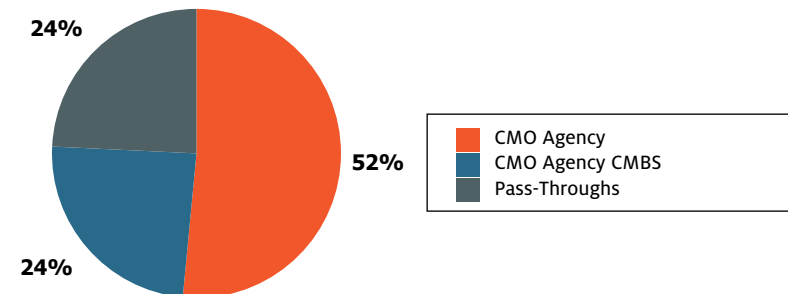
### Collateralized Mortgage Obligations

- Used to increase cash flow stability vs. traditional 30-year mortgage securities
- Sequential, Preplanned (PAC) and Targeted (TAC) Amortization Classes are emphasized
- No IOs, POs, Z-Tranches, Inverse Floaters or other volatile classes
- Agency multi-family loans include terms that provide payment stability

### Detailed Mortgage Holdings – As of December 31, 2021



Sub-Sectors Sum to 19.9%



# Asset-Backed Securities

## City of Fernley

### Our Distinctive Elements

- Shorter loan-terms than other real estate backed loans more likely to make monthly coupon and principal payments more stable and predictable
- Larger deal sizes from issuers that regularly issue bonds increases liquidity; no non-US loans, no private placements
- Emphasis on bonds backed by secured loans (i.e., auto loans, equipment receivables, etc.)
- Bottom up/top down approach to analyzing deal fundamentals:

#### Overcollateralization

##### Subordination

##### Underlying Loan Characteristics

- Fico scores (credit profile of borrowers)
- Loan terms (length, LTV, etc.)
- Distribution of loan terms
- Geographic distribution

#### Collateral Characteristics

- New vs. used, cars vs. SUVs

##### Sponsor/Servicer (e.g., Ford, GM, etc.)

- Experience, financial condition

##### Deal Specific Credit Metrics

- Delinquencies (30, 60, 90+ days)
- Cumulative net losses
- Changes in credit enhancement

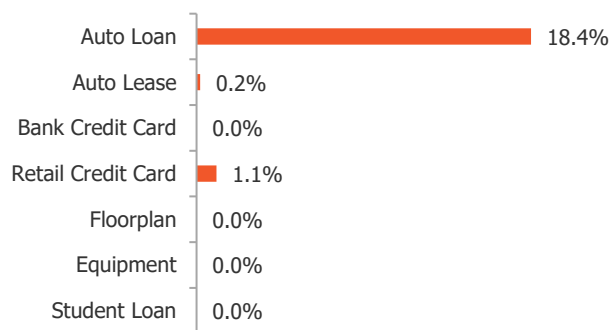
#### Economic Fundamentals

- Collateral values (i.e., used auto prices)
- Economic environment
- Fleet age

##### Financial Market Conditions

- ABS spreads
- Equity performance (of issuer/servicers)
- Corporate debt performance

### Detailed Asset-Backed Holdings – As of December 31, 2021

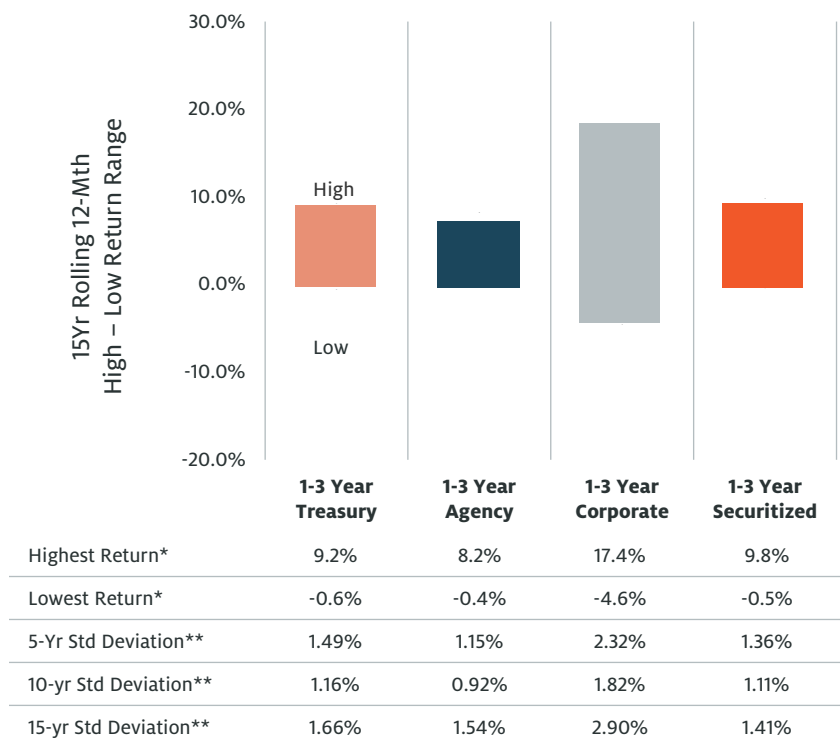


|                    | % as of<br>12/31/21 | % as of<br>09/30/21 |
|--------------------|---------------------|---------------------|
| Auto Loan          | 18.4                | 18.4                |
| Auto Lease         | 0.2                 | 0.3                 |
| Bank Credit Card   | 0.0                 | 0.0                 |
| Retail Credit Card | 1.1                 | 1.1                 |
| Floorplan          | 0.0                 | 0.0                 |
| Equipment          | 0.0                 | 0.0                 |
| Student Loan       | 0.0                 | 0.0                 |
| Total              | 19.7%               | 19.8%               |

# Risk Overview by Sector and Credit Quality

As of December 31, 2021

## By Sector



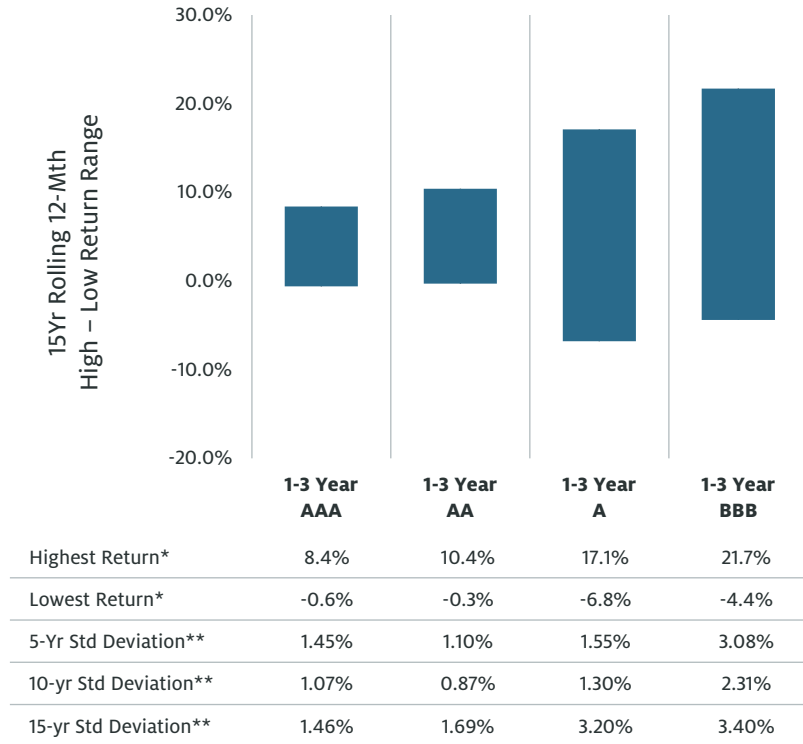
\* Highest and Lowest rolling 12-month return over the trailing 15-year period

\*\* 5, 10 and 15-year standard deviation is reported as annualized standard deviation of quarterly returns for the specified period.

Source: Bloomberg, ICE® BofA®. As of 12/31/21.

"Treasury" is represented by ICE BofA 1-3 Year Treasury Index. "Agency" is represented by ICE BofA 1-3 Year Agency Index. "Corporate" is represented by ICE BofA 1-3 Year Corporate Index. "Securitized" is represented by Bloomberg 1-3 Year Securitized Index and includes MBS, CMBS & ABS). "AAA" is represented by the AAA-rated component of the Bloomberg 1-3 Year Aggregate. "AA" is represented by the AA-rated component of the Bloomberg 1-3 Year Aggregate. "A" is represented by the A-rated component of the Bloomberg 1-3 Year Aggregate. "BBB" is represented by the BBB-rated component of the Bloomberg 1-3 Year Aggregate. Indexes are unmanaged and do not incur management fees, transaction costs or other expenses associated with managed accounts. It is not possible to directly invest in an index. This data is shown for informational use only and is subject to change at any time. Past performance does not predict future results.

## By Credit Quality





# Seasoned & Stable Investment Team

As of December 31, 2021

A focused team that combines the benefit of conducting independent fundamental research with the ability to make timely investment decisions.



Jim Womack, CFA  
Managing Director  
27 Yrs | 1994



Brad Buie, CFA  
Executive Director  
28 Yrs | 2009



Kyle Johns, CFA  
Executive Director  
14 Yrs | 2007

- Portfolio managers are responsible for developing and implementing all investment strategies
- Each portfolio manager conducts his own research while decisions are made on a consensus basis

Years industry experience as of December 31, 2021 | year joined Atlanta Capital

# Additional Important Information and Disclosures

**For exclusive use with City of Fernley, Nevada only. Not for further distribution.**

Founded in 1969, Atlanta Capital Management Company, LLC is an SEC-registered investment advisory firm that specializes in managing high quality stock and bond portfolios on behalf of institutional and individual investors. The Firm became a majority-owned subsidiary of Eaton Vance Corp. in 2001. On March 1, 2021, Eaton Vance and its affiliates which included Atlanta Capital Management became a part of Morgan Stanley Investment Management, a division of Morgan Stanley.

The firm continues to operate as Atlanta Capital Management Company, LLC and is located in Atlanta, Georgia. Atlanta Capital claims compliance with the Global Investment Performance Standards (GIPS®). Please contact the Performance Department at 404-876-9411 to request a complete list and descriptions of Atlanta Capital's composites and/or a GIPS Report that adheres to the GIPS® standards.

This material is presented for informational and illustrative purposes only and should not be construed as investment advice, a recommendation to purchase or sell specific instruments, or to adopt any particular investment strategy. Opinions and estimates offered constitute our judgment and are subject to change without notice, as are statements of financial market trends, which are based on current market conditions. This material has been prepared on the basis of publicly available information, internally developed data and other third-party sources believed to be reliable, however, no assurances are provided and Atlanta Capital has not sought to independently verify information taken from public and third-party sources. Information contained in this material is current as of the date indicated and is subject to change at any time without notice. Please contact Atlanta Capital if you require further clarification on the source or calculation methodology of any data or information presented within this material. Future results may differ significantly from those stated, depending on factors such as changes in instruments or financial markets or general economic conditions. Investing entails risks and there can be no assurance that Atlanta Capital will achieve profits or avoid incurring losses. Atlanta Capital does not provide legal, tax and/or accounting advice or services. Clients should consult with their own tax or legal advisor prior to entering into any transaction or strategy described herein.

Specific securities, sectors and portfolio characteristics mentioned are included only to provide a snap-shot illustrative sample based upon the portfolio management team's current investment strategy as of the date indicated. There is no assurance that any securities or portfolio characteristics mentioned in this document are currently held or will remain in the portfolio at the time you receive this report or that securities have not been sold or repurchased. The specific securities mentioned are not representative of all the securities purchased, sold or recommended for advisory clients. It should not be assumed that any of the securities/sectors were or will be profitable, or that any recommendations in the future will be profitable or will equal the performance of the listed securities. Actual portfolio holdings and performance will vary for each client. This is no guarantee that a particular client's account will hold any, or all, of the securities/sectors mentioned.

**NOT FDIC INSURED | OFFER NO BANK GUARANTEE | MAY LOSE VALUE | NOT INSURED BY ANY FEDERAL GOVERNMENT AGENCY | NOT A DEPOSIT**

# Additional Important Information and Disclosures

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# CITY OF FERNLEY

## City Council AGENDA REPORT

Meeting Date: April 6, 2022

**REPORT TO:** Mayor and City Council

**REPORT FROM:** Tim Thompson, Planning Director

| FINANCIAL IMPACT:             | CURRENTLY BUDGETED:           | FUND/ACCOUNT: |
|-------------------------------|-------------------------------|---------------|
| Yes:                      No: | Yes:                      No: | N/A           |

**ACTION REQUESTED:** Ordinance

### AGENDA ITEM: (For Possible Action):

#### (For possible action) First Reading, Introduction of Bill #307 Zoning Map Amendment – ZMA22002

Consideration and possible action to introduce Bill #307 as an ordinance for a Zoning Map Amendment request associated with ZMA22002, to change the zoning on two parcels of land from C2 (General Commercial) and SF6 (Single Family, 6,000 sq. ft. minimum lot size) to MU (Mixed Use). The project site is approximately ±28.42 acres in size and is located at 590 & 600 W. Main Street (APN's: 021-071-02, and 021-072-03).

### AGENDA ITEM BRIEF:

The proposed project is on two parcels of vacant land (APN's: 021-071-02 and 021-171-03), at 590 and 600 W. Main Street. The applicant has filed for a Zoning Map Amendment (**ZMA22002**) and Tentative Subdivision Map request (**TSM22001**) for a 9-lot Mixed Use project. The applicant is proposing a rezone of the parcels at 590 & 600 W. Main Street from C2 (General Commercial) and SF6 (Single Family, 6,000 square foot minimum size), to MU (Mixed Use). Consideration and possible final action on both the Zoning Map Amendment and Tentative Subdivision Map is scheduled for the April 20th, 2022, City Council meeting.

### RECOMMENDED MOTION:

Read Bill by title and schedule 2nd Reading and public hearing on Bill #307 for the regularly scheduled City Council meeting on April 20th, 2022.

### BUSINESS IMPACT (per NRS Chapter 237):

A Business Impact Statement is not required because this is not a rule (term excludes vehicles by which legislative powers are exercised under NRS Chapters 271, 278, 278A, or 278B).

See attached report for background, analysis, alternatives.

**ALTERNATIVES:**

**BACKGROUND:**

See Attached Staff Report for Background/Analysis/Findings

**RELEVANT LAWS, STATUTES, AND REGULATIONS:**

**FINANCIAL IMPLICATIONS:**

N/A

**ATTACHMENTS:**

1. TSM22001 - CC Report - Introduction
2. Attachment 1 - Vicinity Map
3. Attachment 2 - Ex\_Pro\_Zoning Exhibit
4. Attachment 3 - Bill# 307 – Ordinance for Zoning Map Amendment
5. Attachment 4 - Tentative Map Plan Set
6. Attachment 5 - Preliminary Landscaping Plan
7. Attachment 6 - Traffic Study
8. Attachment 7 - TSM22001 Conditions of Approval

City Council Meeting April 6, 2022  
Zoning Map Amendment (ZMA22002)

**PROJECT SUMMARY**

- CASE NUMBER(S):** • ZMA22002 & TSM22001
- REQUESTED ACTION(S):** • Zoning Map Amendment and Tentative Subdivision Map
- PROJECT DESCRIPTION:** • The proposed development will consist of a 9-lot subdivision located within the Mixed Use Zoning district, on an approximately 28.42 acre project site. The project is expected to contain both Residential and Commercial uses. The Zoning Map Amendment aims to bring the project site's zoning into conformance with the Master Plan Land Use designation of SMU (Suburban Mixed Use), whereas the Subdivision Map aims to divide the project site into individual lots, based on the proposed land uses.
- PROPERTY OWNER:** • Betty Jackson Trust
- APPLICANT:** • Phelps Engineering Services
- LOCATION:** • 590 & 600 West W. Main Street
- SITE SIZE:** • ±28.42 Acres
- EXISTING ZONING:** • **Split Zoned** - C2 (General Commercial) and SF6 (Single Family, 6,000 sq. ft. minimum lot size)
- PROPOSED ZONING** • MU (Mixed Use)
- EXISTING LAND USE:** • SMU (Suburban Mixed Use)
- WARD INFORMATION:** • Ward 1 – Councilman Lacy

**\*A PUBLIC HEARING IS REQUIRED**

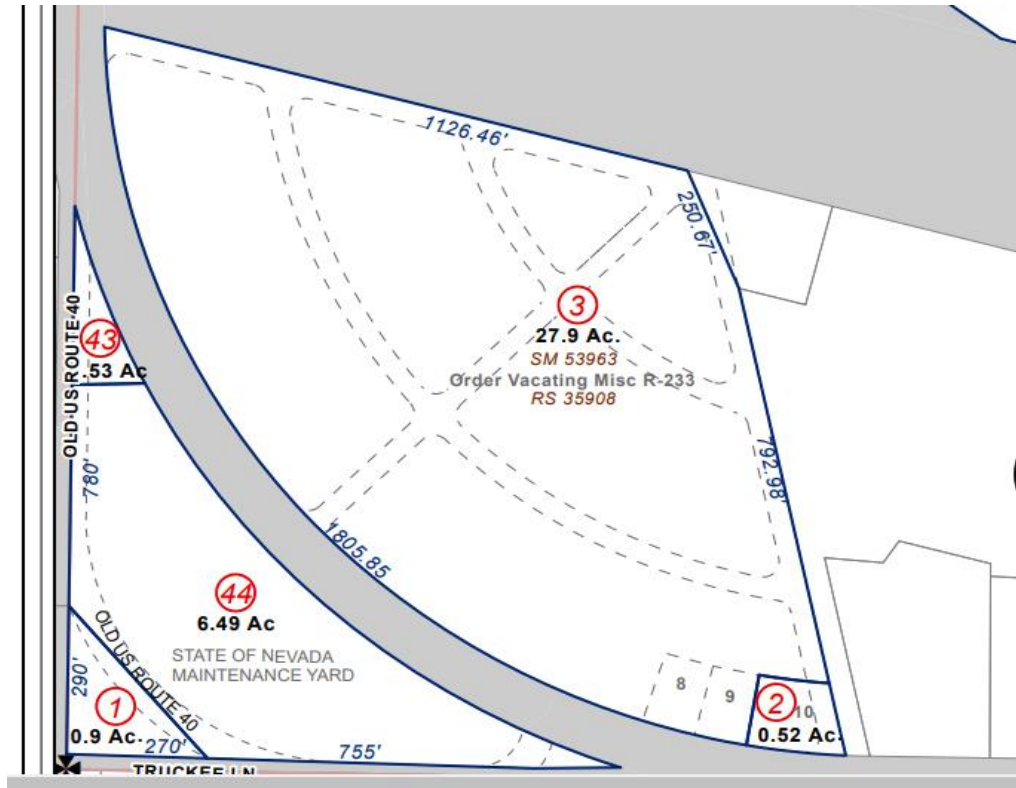
**POLICY REFERENCE**

|                                          |                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Nevada Statutes:</i>                  | <i>NRS 278A</i>                                                                                                                                                                                                                                                                                                                                                                                                     |
| <i>Fernley Municipal Code:</i>           | <i>Title 32</i>                                                                                                                                                                                                                                                                                                                                                                                                     |
| <i>Policies &amp; Procedure Manual:</i>  | <i>N/A</i>                                                                                                                                                                                                                                                                                                                                                                                                          |
| <i>Community Assessment:</i>             | <i>N/A</i>                                                                                                                                                                                                                                                                                                                                                                                                          |
| <i>City of Fernley Development Code:</i> | <a href="#"><u>§32.03.040(e) (Zoning Map Amendments)</u></a><br><a href="#"><u>§32.03.060(f) (Subdivision Maps)</u></a><br><a href="#"><u>§32.06.090 (MU -Mixed Use)</u></a><br><a href="#"><u>§32.09.090 (Landscaping and Screening)</u></a><br><a href="#"><u>§32.09.035 (Dedication of Water)</u></a><br><a href="#"><u>§30.09.140 (Streets (roadways))</u></a><br><a href="#"><u>§32.09.150 (Utilities)</u></a> |

City Council Meeting April 6, 2022  
Zoning Map Amendment (ZMA22002)

**BACKGROUND**

The project site has been under the ownership of the Betty Jackson Trust since the early 1950's (Lyon County Records – Document 37-141). Throughout this time period, the property has generally remained vacant, with no fixed development or registered personal property located on either of the project parcels. A Greenbelt had been approved on the parcels in May of 1999 and records do indicate that the property was utilized for herding livestock. The current project site shows no evidence of agricultural usage. Although no official record of subdividing the property exists on the County Assessor's website, the official Plat Map indicates that the land may have been proposed to be subdivided at one point for housing development, as shown by the dotted lines on the project parcels below:



The project site itself consists of two parcels (APN's 021-071-02, 021-071-03) and a combined project area of approximately 28.42 acres. The project site is generally surrounded by similar land uses, with every parcel one (1) mile east of the project site sharing the same land use designation (SMU – Suburban Mixed Use). There is additionally future residential development directly south of the project site on the other side of W. Main Street, which is designated for medium to higher density MR (Mixed Residential) and SF (Single Family) development. Additionally, the project area lies directly north/east of S.R. 427 (W. Main Street) and directly south of the Union Pacific Railroad Right-of-Way.

It is important to note that the majority of the project area is currently split-zoned. While the smaller ±0.52 acre parcel (APN: 021-071-02) is currently zoned C2 (General Commercial), the larger ±27.9 acre parcel (APN: 021-071-03) is currently split-zoned C2 and SF6 (Single Family, 6,000 sq. ft. minimum lot size). The split zoning very likely occurred due to a parcel map or reversion to acreage map that may have taken place in the past and gave the new parcel properties of both zoning codes. The proposed Zone change will bring the parcel into conformance with the City's Comprehensive Master Plan and ensure that the split zoning is removed and resolved.

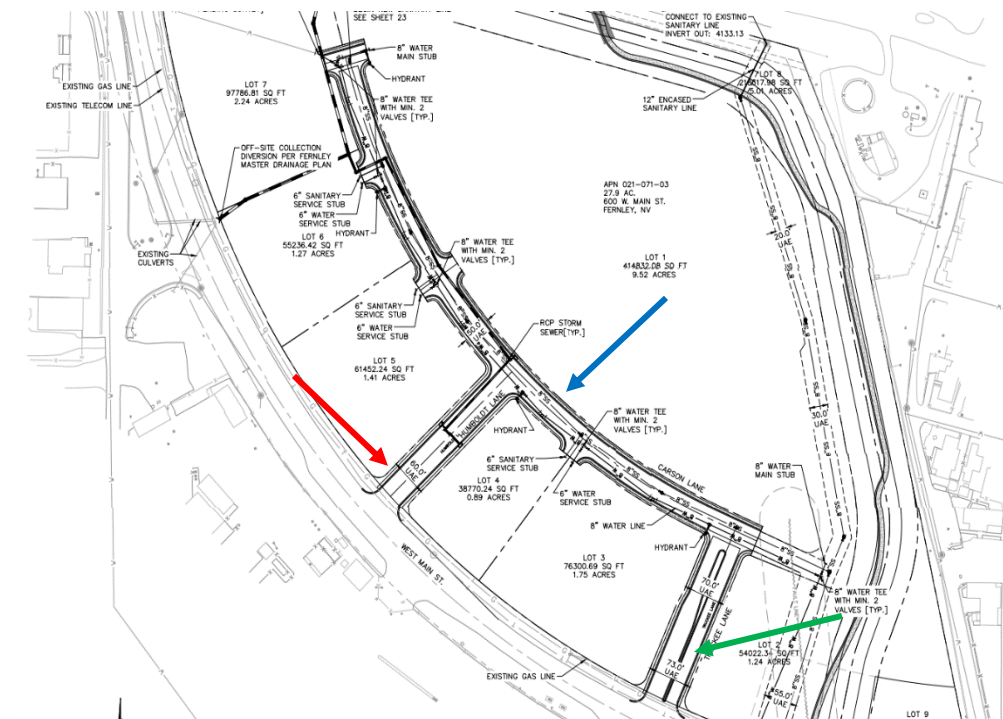


City Council Meeting April 6, 2022  
Zoning Map Amendment (ZMA22002)

**ANALYSIS**

The project site currently has a Land Use designation of SMU (Suburban Mixed Use), and a split zoning of SF6 (Single Family, 6,000 sq. ft. lot size) and C2 (General Commercial). To bring this project into compliance with the goals and policies of the 2018 Comprehensive Master Plan, the applicant has filed a Zoning Map Amendment request to change the existing Split Zoning of C2 and SF6 to MU (Mixed Use). The MU zoning is an equivalent zoning code classification within the SMU land use designated areas and allows for appropriate medium to high density development along the W. Main Street corridor. Currently, the parcels of land directly surrounding the project site are zoned either C2 or SF6, with a high density manufactured home park located directly east of the project site. A residential development is proposed south of the project site, although W. Main Street will act as a buffer between the two developments, creating some degree of separation between the projects.

The project site is located northwest of the Intersection of (S.R. 427) W. Main Street and Marie Drive and is directly southeast of the W. Main Street Railroad bridge. Marie Drive is currently a private easement under the ownership of the nearby manufactured home facility (APN: 020-113-10). W. Main Street will provide ingress and egress to the project site, via two proposed driveways – **Humboldt Lane** and an **extension of Truckee Lane**. The developer is required to work with the City Engineer and the Nevada Department of Transportation on the final location of the driveways to meet access management standards. The Truckee Lane extension will serve as the main access way into the project site, with Humboldt Lane serving secondary and emergency access, as a right-in/right-out only driveway. A separate internal roadway, **Carson Lane**, will circulate traffic throughout the project site, providing access to the individual lots. This can be seen in the Site Plan below:



Lots 2, 3, 4, 5, 6, 7, and 9 are proposed to contain a variety of commercial/mixed use spaces, and Lot 1 is expected to accommodate a multi-family residential development. Lot 8 serves as the main irrigation and drainage for the project site and will run along the northern and eastern project boundaries. At this time,



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Zoning Map Amendment (ZMA22002)

the proposed roadways are not expected to be dedicated to the city and will likely be maintained by a property owners association within the development. Any roadway development will comply with the City of Fernley Development standards, along with any regulations identified by the City's Engineering Department, Public Works Department, and the Nevada Department of Transportation.

Sewer and Water discoveries were made by the applicant during the development process. Given that the project is proposed to be rezoned to the MU (Mixed Use) district, connecting to City water and sewer services are required, as is stated within the City of Fernley Development code. The development will utilize the existing 12" diameter sewer main located along the north property line, adjacent to the Union Pacific Railroad right-of-way. It is understood that this Sewer Line has existing capacity to serve the development, though future upgrades and improvements may be required in the near future. Sewage collected from the project site will flow east, first to the West Lift Station, and ultimately to the East Wastewater Treatment Plant. An 8-inch sanitary sewer main is proposed to connect to the 12-inch main at the northern property line and run down the eastern property boundary, adjacent to the irrigation/drainage ditch. From there, the 8-inch sewer line will be undergrounded through the project's interior roadway and branch out into each individual lot. Both 6-inch and 4-inch sewer laterals will serve each individual lot, with sewer line diameter depending on the specific land use and occupancy for each lot. Water connections will also be utilized through an existing water main. An 8-inch main will connect to the 12-inch water line located underneath W. Main Street and will then be routed northwards to the projects' interior roadway, whereby it will travel east-west through the project site, and branch out at various lot entryways, to serve each lot. The proposed water line will be 'looped', ensuring that the branched line reconnects to back on to W. Main Street, to the 20-inch main further west. The specific diameter of each water line within the lots will be dependent on the specific land use and occupancy of the parcel.

Given that the project area is located within Flood Zone level AE, a drainage and hydrology report was provided by the applicant as well. Drainage and retention for the project site will generally be handled via the aforementioned drainage channel that will run along the northern and eastern project boundaries. The project area has a gentle slope, with an approximate gradient of 0.5% to the west-northwest of the site. Flows and runoff collected by the channel will flow to the northwestern site of the project, where a retention pond will be constructed to hold runoff, as well as allow infiltration of runoff into the soil. The proposed retention pond will be approximately 57,350 cubic feet in volume and will be constructed according to the City of Fernley Public Works Design Standards. It is estimated that infiltration will occur at an approximate rate of 8.0 inches per hour. Given the large size of the project area, Storm Drains and additional piping will also be constructed to provide additional runoff for the project area. These additions will tie into some of the goals and strategies outlined within the City of Fernley's Storm Drain Master Plan.

A Traffic Study was provided by the applicant as it was expected that the proposed development would generate greater than 100 peak hour trips. The project is expected to generate an additional 322 AM peak hour trips, and 584 additional PM peak hour trips. These values were generated according to the ITE (Institute of Transportation Engineers) 2018 Land Use standards, and it was found that an additional 6,623 Average Daily Trips would be generated as a result of this project. Both the City of Fernley as well as the Nevada Department of Transportation identify LOS (Level of Service) D as the minimum service threshold for which traffic and roadway improvements need to be made. Level of Service D is generally defined as:

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Zoning Map Amendment (ZMA22002)

*“Approaching unstable flow. Speeds slightly decrease as traffic volume slightly increase. Freedom to maneuver within the traffic stream is much more limited and driver comfort levels decrease. Vehicles are spaced about 160 ft(50m) or 8 car lengths. Minor incidents are expected to create delays. Examples are a busy shopping corridor in the middle of a weekday, or a functional urban highway during commuting hours. It is a common goal for urban streets during peak hours, as attaining LOS C would require prohibitive cost and societal impact in bypass roads and lane additions.”*

This means that any roadway intersection equal to or higher than LOS D (D, C, B, A) will not require any significant infrastructure improvements, while those below LOS D (E, F) will require improvements. While some of the intersections around W. Main Street are not anticipated to be overly impacted by the project, the 2 new access driveways (Truckee Lane extension and Humboldt Lane) are expected to create significant traffic conditions at the point where they intersect with W. Main Street. The traffic study identified that the project would require some level of infrastructure improvements, related to signage, striping, and traffic control improvements. The full recommendations of the provided traffic study for the 600 W. Main Street development are stated below:

*“ - Traffic generated by the 600 W. W. Main Street Development will have some impact on the adjacent street network. The following recommendations are made to mitigate project traffic impacts.”*

*- “It is recommended that any required signage, striping, or traffic control improvements comply with the Nevada Department of Transportation and City of Fernley Requirements.”*

*- “It is recommended that the West Main/Truckee Lane East Driveway intersection be designed to include a minimum of one left turn lane and one shared through-right turn lane at both the north driveway and south Truckee Lane approaches and an exclusive right turn lane with a minimum of 215 feet of deceleration length at the east approach. It is recommended that a traffic signal be installed at the West W. Main Street/Truckee Lane -East Driveway intersection when warranted.”*

*- “It is recommended that the West W. Main Street/West Driveway (Humboldt Lane) intersection be designed to operate with limited left-in/right-in/right-out movements and contain stop sign control at the driveway approach and an exclusive right turn lane with a minimum of 215 feet to deceleration length at the east approach.”*

**Should the Planning Commission determine the project, as submitted and conditioned, is consistent with the development code, will not have a significant adverse impact on the existing surrounding uses, promotes the public health, safety, and general welfare, and can make the applicable Findings, the Planning Commission can forward a recommendation for approval to the City Council.**

**If the Planning Commission cannot make some or all the applicable Findings and determines the project, as submitted and conditioned, is not consistent with the development, will have a significant adverse impact on the existing uses, and/or does not promote the public health, safety and general welfare, the Planning Commission can deny the application. The motion to deny should be based on information**

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Zoning Map Amendment (ZMA22002)

received in written materials and at the public hearings on this matter and the Planning Commission's inability to make any Finding(s) should be explicitly described.

**FINDINGS**

**Zoning Map Amendment**

**Z1: Consistency with the City's Master Plan and otherwise consistent with State & Federal Law.**

Relationship to the Master Plan

1. MU (Mixed Use)

The proposed development is located within an area designated SMU (Suburban Mixed Use) in the City of Fernley's Comprehensive Master Plan. The description of the Suburban Mixed Use land use states that the equivalent zoning districts are MDR14 (Medium-density residential, 7-14 dwelling units per acre), MF30 (Multi-family residential, 21-30 dwelling units per acre), MU (Mixed Use, 30 max. dwelling units per acre), and C1 (Neighborhood Commercial, 10-21 dwelling units per acre). Per the Comprehensive Master Plan document, the Suburban Mixed Use land use consists of mixed commercial and residential areas in close proximity to one another, with general medium to high density residential development (7-30 dwelling units per acre).

The Comprehensive Master plan additionally states that Municipal services are required in Suburban Mixed Use designations, and that they are located in/around larger arterial or collector streets, such as Main Street. The vertical and horizontal mixing of uses is also encouraged to create a distinct sense of location or 'place'. Land uses within the SMU generally consist of Commercial development such as General Retail, Food & Beverage Sales, Small-Scale Personal Services, and Office space. Residential developments such as Condominiums, Townhomes, and Apartment buildings are also common land uses within the SMU designation. The maximum density associated with the Mixed Use zoning district is 30 dwelling units per acre.

2. The Land Use Plan Goals and Action Strategies in the 2018 Comprehensive Master Plan that are relevant to this proposal include:

**Population, Housing, and Employment**

**HP.1.1 Enhance Fernley's vitality as a community by providing a variety of housing types, density, and costs that accommodate the needs, desires, and financial abilities of the current and future households.**

- HP.1.1.1 Encourage higher densities in the downtown core and as part of master planned communities that also provide a mixture of job-generating and commercial land uses within the overall development.
- HP.1.1.2 Encourage large-scale housing development that incorporates efficient land use techniques and creates a distinct sense of place and neighborhood diversity.

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- HP.1.1.4 Encourage the efficient use of land and existing infrastructure by focusing on achieving good design in new housing or redeveloped housing on either vacant and infill parcels and/or under-developed parcels.
- HP.1.2 Encourage housing that supports sustainable development patterns by promoting the efficient use of land, conservation of natural resources, easy access to services and public facilities such as parks, and resource-efficient design and construction.**
  - HP.1.2.1 Foster flexibility in the division of land and the siting of buildings and other improvements to reduce new development's impact on environmentally sensitive areas.
- HP.1.4 Provide opportunities for high-density residential development near the downtown core and elsewhere in the community where appropriate.**
  - HP.1.4.1 Multi-family land use should be dispersed throughout the community near employment centers and transportation corridors rather than concentrated in a few areas.
- HP.1.8 Coordinate population growth with the availability of water, sanitary sewer, streets and highways and other public facilities and services.**
  - HP.1.8.1 The City of Fernley Department of Community Development staff will document the demands for public services and facilities relative to existing and planned population in staff reports prepared in conjunction with applications to amend the Comprehensive Master Plan.

Land Use

- LU.1.1 Encourage and plan for new development in areas where adequate public services and facilities can be provided efficiently.**
  - LU.1.1.1 Require new development to provide its proportionate share of improvements to avoid a degradation of services for existing residents. This requirement will be applied regardless of project size in order to avoid incremental erosion of services and facilities.
  - LU.1.1.2 Encourage development of vacant or underutilized lands within the community core where adequate infrastructure and facilities currently exists.
  - LU.1.1.3 Require new development to provide certified, stamped studies demonstrating the impact proposed development will have on existing infrastructure and to provide improvements and/or funding in lieu of improvements in proportion to the impacts of the proposed projects on the city's roadway, sewer and water systems.
- LU.1.2 Encourage new development to be in accordance with the Comprehensive Master Plan land use category, and other land use controls to accomplish community principles.**
  - LU.1.2.1 Monitor development applications that intend to utilize the underlying zoning. Modify the Development Code as necessary to ensure development that reflects the community goals envisioned in the Comprehensive Master Plan.
- LU.1.3 Provide a balanced distribution of employment and population**

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Zoning Map Amendment (ZMA22002)

- LU.1.3.1 Encourage land uses and development, which maintains a balance of population, housing, and employment.
- LU.1.3.2 Maintain adequate supplies of developable land for both residential and commercial land uses.
- LU.1.4 Ensure existing and future land uses are compatible.**
  - LU.1.4.1 Projects shall be evaluated with the intent to promote land use compatibility; community design measures can increase compatibility among adjoining land uses.
  - LU.1.4.5 Require development plans to address conditions unique to the developing area and minimize impacts to adjacent properties.
  - LU.1.4.6 Review all projects in relation to their geographic location, impacts to adjacent communities, fiscal impact and mitigation measures to protect natural and cultural resources. Apply specific conditions of approval tailored for each development proposal.
- LU.1.5 Promote infill development.**
  - LU.1.5.1 Encourage the intensification of land use in the existing community core.
  - LU.1.5.4 Adopt development regulations that recognize the relationship between land use timing and the provision of services and facilities.
- LU.1.6 Create a growth pattern that assures flexible, feasible and efficient projects.**
  - LU.1.6.1 Support for developmental approval of projects that provide an appropriate balance of population.
  - LU.1.6.2 The land use designations include minimum service standards that shall apply to proposed developments and land use changes.
- LU.1.12 It is the intent of the City of Fernley to provide timely, orderly, and efficient arrangement of adequate public facilities and infrastructure that support existing and planned land use patterns and densities.**
  - LU.1.12.1 Subdivision or intensification of land without adequate public facilities available to serve the new development as it occurs shall not be allowed.

Transportation

- T.1.1 Require that roadway facilities be maintained and constructed as needed to ensure high quality and safe travel on major streets and at major intersections.**
  - T.1.1.1 The minimum Level of Service on all city maintained roadways shall be LOS D. The City will work with representatives from NDOT to ensure timely improvements are planned when NDOT roadways are forecast to fall below LOS D.
  - T.1.1.6 Require all new development to be consistent with the access right-of-way dedication and improvement standards as specified in the Public Works Design Manual and pursuant to the functional classification as defined in this chapter.
- T.1.3 Implement street design and access standards to provide for safe and efficient movement of goods and people.**

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Zoning Map Amendment (ZMA22002)

- T.1.3.1 Assure that access to all new individual residential lots and/or units is provided only from collectors or local streets.
- T.1.3.2 Require stub streets in developments adjacent to undeveloped parcels that are planned for development to ensure street connectivity between projects.
- T.1.3.4 Require proposed new development that intends to connect with an NDOT roadway to incorporate the NDOT Access Management System and Standards into the project design. These standards regulate access onto the roadway network in order to protect health, safety and welfare of the public, maintain the rights-of-way, and to preserve the functional classification level of the roadway network while meeting the needs of the motoring public.
- T.1.3.5 Neighborhood streets should be designed to incorporate traffic calming techniques to discourage through traffic and minimize excessive speed.

Public Services and Facilities

**PSF.1.1 To provide and maintain a reliable and adequate water supply and delivery system.**

PSF.1.1.3 Final maps and building permits will only be approved when adequate water rights have been dedicated to the City of Fernley, and the applicable service and connection fees have been paid.

PSF.1.1.4 Areas planned for urban or suburban development (residential densities of one or more dwelling units per acre or comparable non-residential development will be served by a community water supply system consistent with adopted policies in the Land Use Chapter of the Fernley Comprehensive Master Plan.

**PSF.1.2 To the maximum extent possible, the costs of improvement, extension and construction of public facilities should be borne by those whose land development and redevelopment actions made such improvement, extension and construction necessary. A procedure is to be established that defines the responsibility for improvements of individual projects.**

**PSF.1.4 Reduce water demand through xeriscape project landscaping, reclamation and reuse of treated wastewater for golf courses, medians, parkways and other appropriate application uses.**

PSF.1.4.1 The Department of Community Development will include provisions for reclamation of water resources and appropriate uses for wastewater application in the City of Fernley Development Code.

**PSF.2.1 Insure an efficient, adequate and self-supporting wastewater collection treatment and disposal system that will meet the needs of the public and comply with federal, state and local clean water requirements.**

PSF.2.1.1 All new development within the City limits with lot sizes equal to or smaller than 1.0 acre shall be required to connect to the municipal sewer system. New development with residential densities lower than one dwelling unit per acre shall be allowed to utilize individual septic systems

City Council Meeting April 6, 2022  
Zoning Map Amendment (ZMA22002)

with acceptable sub-surface disposal, if sewer is not available.

PSF.2.1.2 Final maps and building permits will be approved only when adequate sewer capacity is secured and applicable service and connections fees have been paid.

PSF.2.1.3 Sewer costs directly attributable to new development shall be paid for by the new development. The cost of providing service shall include the cost of extending service lines or other necessary facilities to the individual project site.

PSF.2.1.4 The City will maintain and improve the existing sanitary sewer system through preventive maintenance and on-going appraisal.

PSF.2.1.5 The City shall establish sewer use fees as required to support operations.

**PSF.3.3 Ensure appropriate levels of public services and facilities are continually provided.**

PSF.3.3.1 Coordinate the provision of public services with growth and development in Fernley.

PSF.3.3.2 Consider the financial impacts in all growth management decisions.

**Z2. Consistency with the surrounding land uses.**

The Zoning Map Amendment request conforms with the underlying Master Plan designation and is compatible with the character of the adjacent area. The project site is just off of Main Street, a major Commercial thoroughfare within the city of Fernley. The properties adjacent to the project site include a Recreational vehicle/Manufactured home park, a recreation and commercial center further east along W. Main Street, and a proposed medium – high density residential development on the other side of Main Street, directly south of the project site. The properties directly east of the project site have a Master Plan Land Use Designation of Suburban Mixed Use. Furthermore, all of the properties adjacent to W. Main Street near Highway 95A are within the SMU land use designation. Given that the Mixed Use zoning district is compatible with the SMU land use, the proposed zone change would be consistent with the surrounding land uses.

**Z3. Public notice was given, and a public hearing has been scheduled per the requirements of the Development Code and Nevada Revised Statutes.**

Public notice was given, and a public hearing was scheduled per the provisions outlined in the City's Municipal Code and Nevada Revised Statutes.

**Tentative Subdivision Map**

**TM1: Compliance with environmental and health laws and regulation concerning water and air pollution, solid waste disposal, water supply facilities, community or public sewage disposal, and where applicable, individual systems for sewer disposal.**

The developer shall comply with all standards, codes, and requirements regarding connection to the City's sanitary sewer and potable water systems, including but not limited to, associated fees, easements, design

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standards, system looping, development code requirements, and state requirements. Prior to the recordation of a final map for the project, the developer shall provide the City with a utility plan for water and sanitary sewer that is in conformance with the City of Fernley's Municipal Code and Public Works Design Manual to the approval of the City Engineer, Public Works Director, and Administrator. The Map must be reviewed and approved by the Nevada Department of Environmental Protection prior to construction.

**TM2: Availability of water that meets the applicable health standards and is sufficient for the reasonably foreseeable needs of the subdivision.**

The developer shall comply with all City of Fernley municipal codes regarding the dedication of water rights, including associated fees, for the connection to the city's municipal water system in the amount that is required prior to the issuance of a building permit for the project.

The developer shall pay all fees and provide all the information necessary to complete water and sewer modeling of the project. Modeling will be performed by the City of Fernley's consultant and any additional infrastructure or capacity identified by the modeling shall be included in the improvement plans and constructed by the developer.

**TM3: Availability and accessibility of utilities.**

The applicant proposes to utilize City Water via an existing water line located within W. Main Street. The water connection shall be looped to ensure that the connection does not end up in a stub or dead end. The developer is required to dedicate a sufficient amount of water rights to serve the project prior to approval and the recordation of a final map. A retention basin and storm drainage piping system have been proposed as a part of this development, both of which will address storm water and drainage concerns. Gas and power are provided by Southwest Gas and NV Energy respectively.

The project proposes a connection to the City's existing sewer infrastructure located at the northern boundary of the project site, adjacent to the Union Pacific Railroad. An 8-inch main will then be connected and routed south through the projects' interior roadway, and a series of 4 and 6-inch mains will serve each individual lot. Sewage that has been collected is transferred east out of the project area, through the West Lift Station and finally on to the Wastewater Treatment Plant.

The utilities necessary to serve this project currently exist adjacent to the project site. These existing utilities currently have the capacity to serve the project site, and no significant off-site improvements are required at this time.

**TM4: Availability and accessibility of public services such as schools, police, and fire protection, transportation, recreation facilities, and parks.**

Schools:

The proposed multifamily project within this development is expected to contain 276 units and will be processed through a separate Conditional Use Permit application, CUP 22001. The multifamily complex will be the only residential portion of the project and is expected to contribute a significant number of students to the existing schools within the Fernley area. The development will be served by Fernley Elementary School, Fernley Intermediate School, Silverland Middle School, and Fernley High School. According to the 2016 LCSD (Lyon County School District) Master Facilities Plan, the most recent data available for the Lyon County School District, most of Fernley's Schools are expected to reach or exceed 95-100% capacity by 2025. For this development however, the Fernley High School will be the only school



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Zoning Map Amendment (ZMA22002)

that is expected to exceed 100% capacity by 2025, with a projected utilization rate of 106%. The other three schools that are expected to serve this project, Fernley Elementary, Fernley Intermediate, and Silverland Middle School are expected to have 2025 utilization rates of 91%, 96%, and 86% respectively.

Parks:

The tentative plan for the project highlights parcel 9, in the southeastern corner of the project site, as a potential dog park. Additionally, the In-Town Skate Park is located towards the east, roughly 0.6 miles from the project site.

Police & Fire:

The Lyon County Sheriff's office provides police protection and the North Lyon County Fire Protection District provides fire protection. The proposed development is located approximately 0.6 miles from the North Lyon County Fire Protection station and approximately 1.0 mile from the Lyon County sheriff's Office. The development is additionally proposed to have three (3) fire hydrants located along the backbone roadway for easy access.

Transportation:

The project will have two access points off of West Main Street, one of which will serve as the main access (Truckee Lane extension), and another that serves as the project's secondary access (Humboldt Lane). Both accessways will incorporate the necessary improvements outlined within the provided Traffic Study, including but not limited to signage, striping, signaling, and specific turn lanes for access as may be necessary.

**TM5: Consistency with the zoning district regulations**

The proposed zoning for this development is MU (Mixed Use). This zoning allows for a maximum density of 30 dwelling units per acre. The proposed multifamily residential building **(To be approved via a separate Conditional Use Permit Application)** will have ±276 units and will be located on an approximately 9.52 acre parcel. This provides an overall density of ±28.99 dwelling units per acre, which is less than the 30 du/acre specified for the MU zoning district. The proposed development is also required to comply with all development code requirements including but not limited to dimensional standards (§32.06.070), design standards (§32.06.070), and development standards (Chapter 32.09).

**TM6: Conformity with the Master Streets & Highways Plan.**

Any roadway construction additions or improvements required to serve the project conform to the Master Streets and Highways Plan, and be approved by the City Engineer, Administrator, and Public Works Director. The main arterial or collector road that will serve this development is State Route 427, or W. Main Street. It is expected that the W. Main Street corridor will exceed its capacity by 2040, as development occurs within the Downtown Fernley area. Any improvements made to the Main Street Right of Way by the developer will need to ensure adequate capacity on the Main Street corridor for future development in the surrounding area.

**TM7: Effect of the proposed subdivision on existing public streets, and the need for new streets or highways to serve the subdivision.**

City Council Meeting April 6, 2022  
Zoning Map Amendment (ZMA22002)

Any roadway construction additions or improvements required to serve the project conform to the Master Streets and Highways Plan, and be approved by the City Engineer, Administrator, and Public Works Director. Based on the Traffic Study provided by the applicant, the proposed development is expected to create an additional 6,623 additional daily trips – 322 during peak AM hours, and 584 during peak PM hours. The traffic study additionally provided a series of recommendations for improvements to be made, regarding road signage, turn lanes, striping, and signaling, which would benefit the proposed development.

**TM8: Physical Land Characteristics, such as floodplain, slope, soil, and elevation differentials with abutting properties.**

The project site is surrounded by Commercial-Residential development directly east (Fernley RV Park), future residential development directly south (Red Hawk Ranch), commercial property to the west (Fernley Self Storage), and both commercial + industrial properties to the north (Vacant commercial property, + Valley Joist LLC warehouse). The residential properties directly south and west of the project site are also buffered by the Main Street Right of way, which provides some degree of separation between the project area and the surrounding uses. The Union Pacific Railroad right-of-way additionally provides an approximately 360 foot wide buffer between the project site and the commercial/industrial properties to the north.

The project site has a very gentle slope of approximately 0.5% to west-northwest. The project area does lie within Flood Zone area AE, as depicted in the Flood Insurance Rate Map (FIRM) number 32019C0082E. This essentially means that there is a 1% chance that the site could flood each year. The developer has addressed this issue via a drainage and hydrology report, which proposes the development of a drainage channel and retention basin along the northern and southern property boundaries to control runoff into the project site. Additional storm drain piping has also been proposed as a means of controlling runoff in multiple areas of the project site. These measures will ideally allow for the Tentative Map to go through the CLOMR (Conditional Letter of Map Revision) process with FEMA to remove the proposed lots from the Flood Zone area.

**TM9: Recommendations and comments of Review Bodies**

The application was distributed to the City's Public Works Department, City Engineer, and several outside agencies for comment. Comments were received and provided to the applicant. The application has been conditioned such that all comments and recommendations of reviewing bodies shall be addressed prior to Final Map Approval.

**TM10: Conformity to the Master Sewer and Water utility plan**

The developer shall comply with all standards, codes, and requirements regarding connection to the City's sanitary sewer and potable water systems, including but not limited to: associated fees, easements, design standards, system looping, development code requirements, and state requirements. Prior to the recordation of a final map for the project, the developer shall provide the City with a utility plan for water and sanitary sewer that is in conformance with the City of Fernley's Municipal Code and Public Works Design Manual to the approval of the City Engineer, Public Works Director, and Zoning Administrator. The project must also be reviewed and approved by the Nevada Department of Environmental Protection prior to construction.

City Council Meeting April 6, 2022  
Zoning Map Amendment (ZMA22002)

**TM11: Compliance with this code and all other applicable regulations**

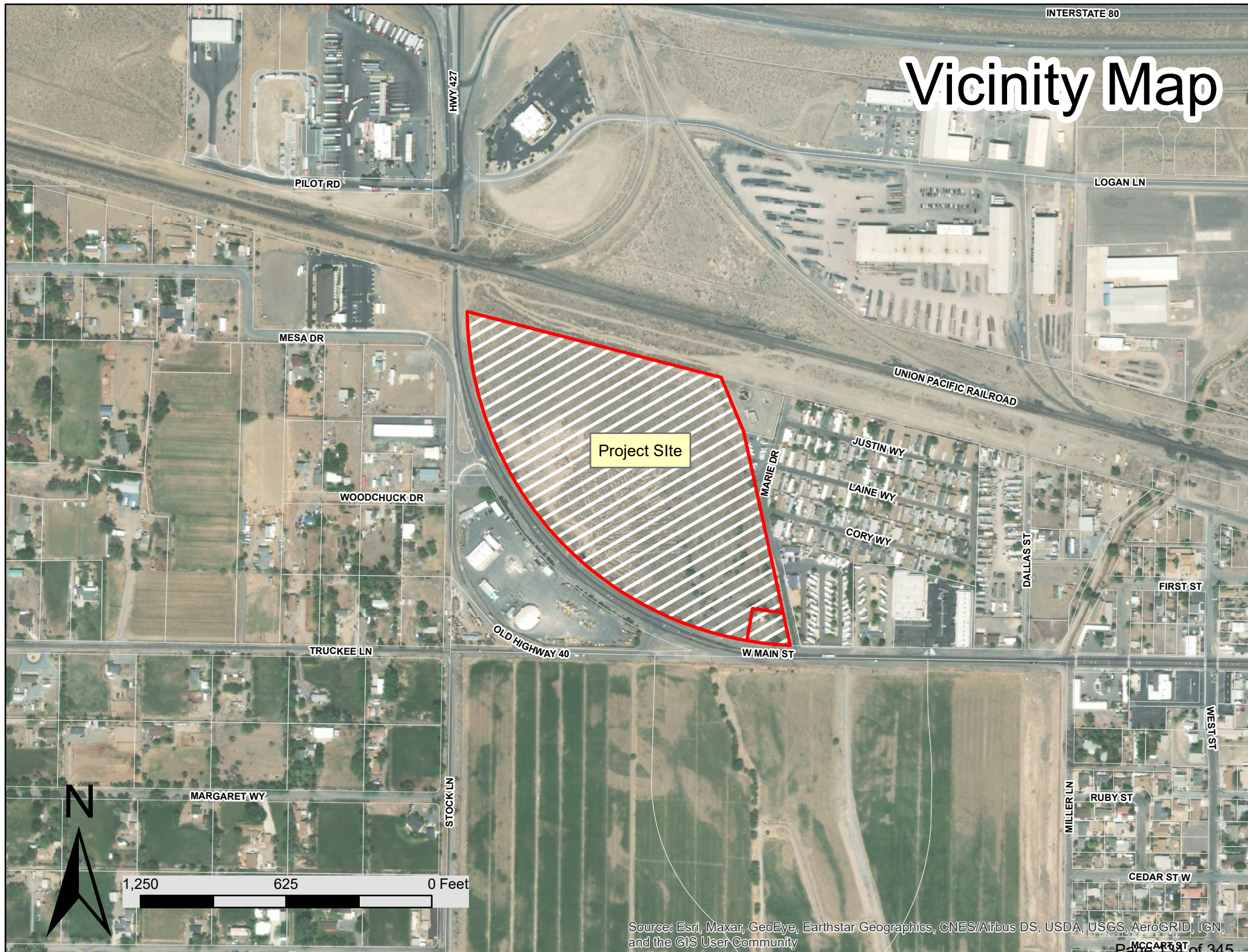
The developer shall comply with the design standards and regulations as set forth in the City of Fernley's Development Code and Public Works Design Manual unless in conflict with the local, state, or federal regulations, in which case the more stringent regulation will take precedence. The developer shall comply with all engineering requirements within the City's Municipal Code Title 32, including but not limited to: Compliance with Site Development Standards, Floodplain Management, Roadways, Undergrounding of Utilities, and Water & Wastewater Facilities to the approval of the Zoning Administrator, City Engineer, and Public Works Director, prior to the recordation of a Final Map for the project.

**ATTACHMENTS**

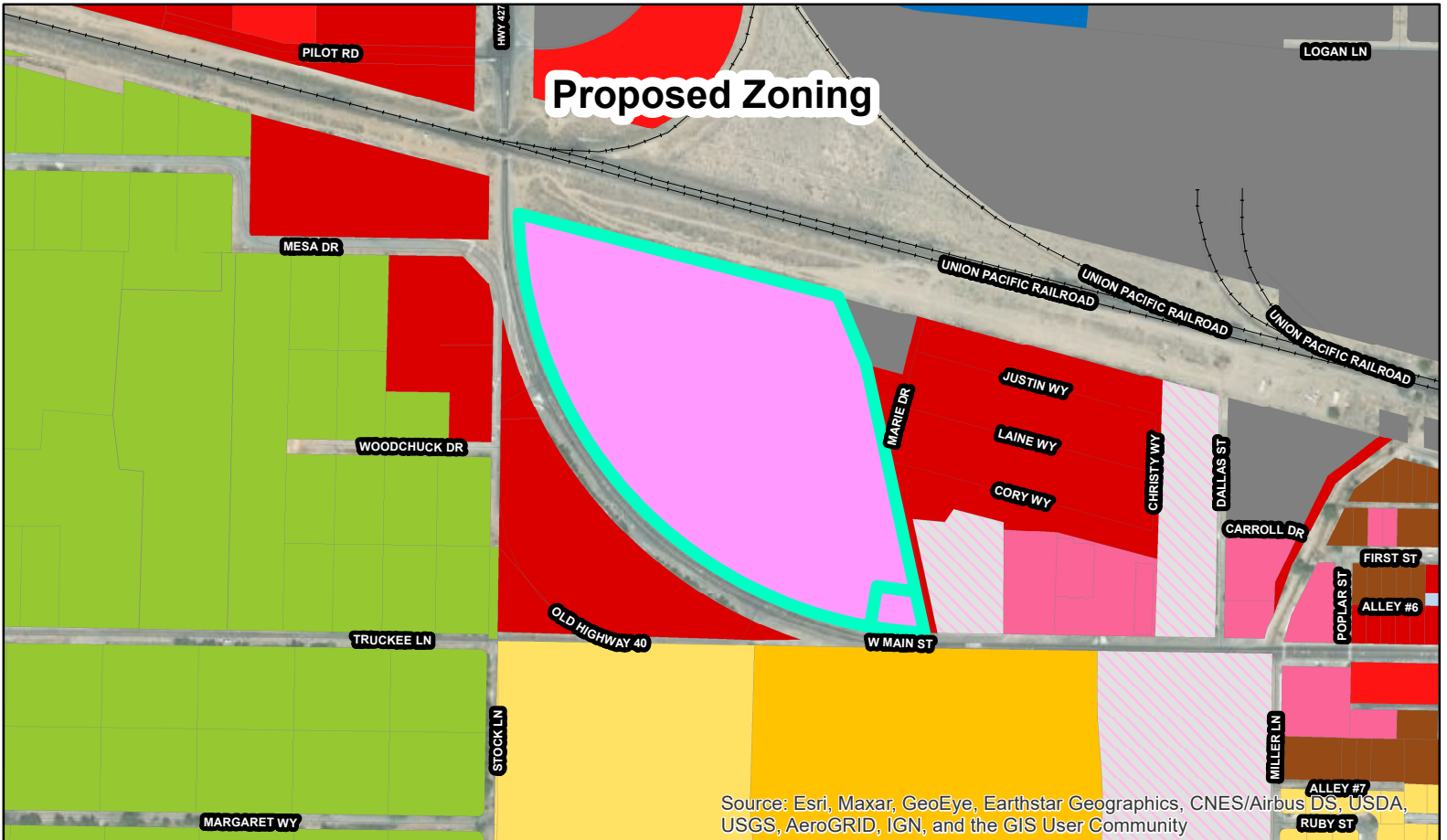
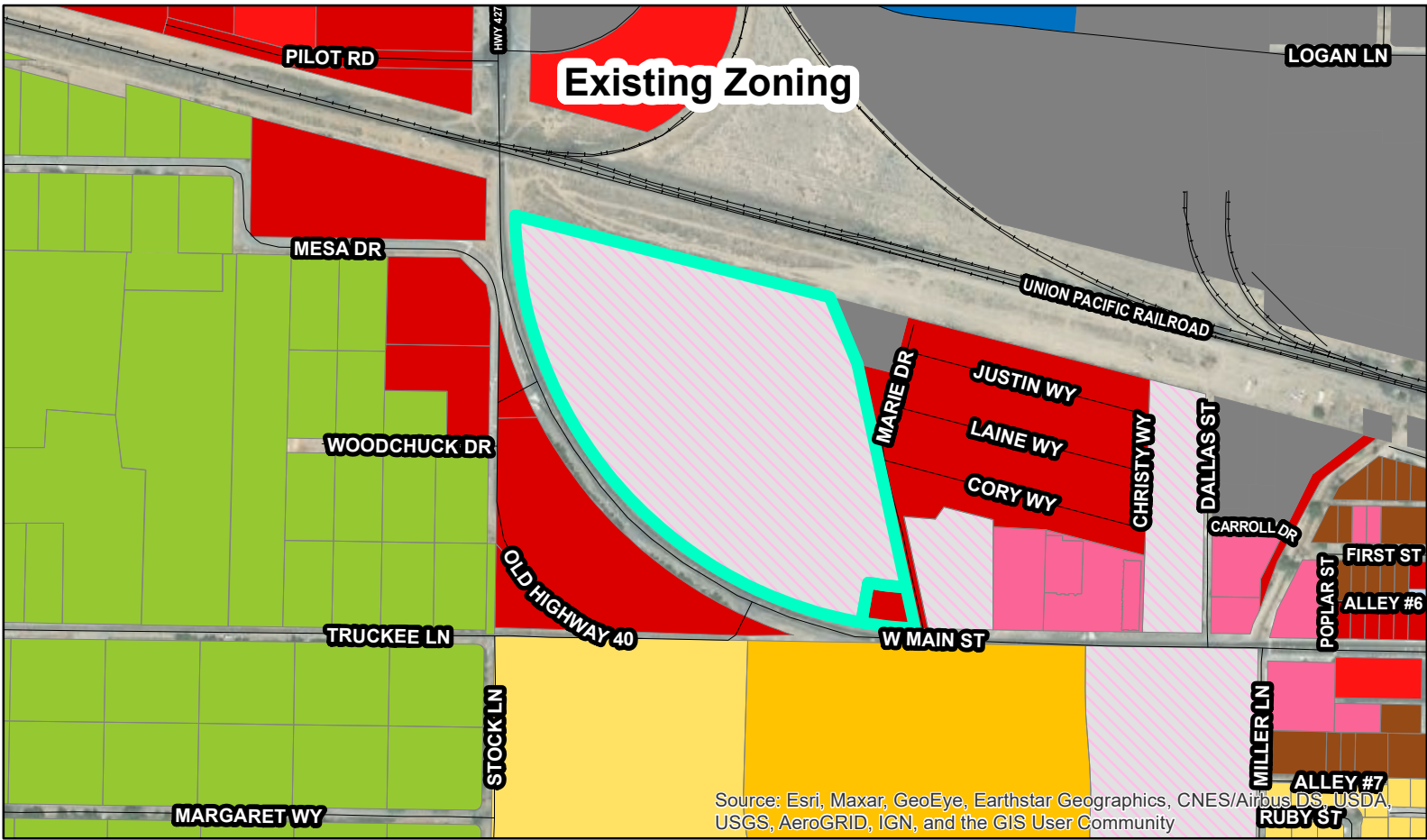
1. Vicinity Map
2. Existing & Proposed Zoning Exhibit
3. Bill #307 – Ordinance + Legal Description + Boundary Map
4. Tentative Map Plan Set
5. Preliminary Landscaping Plan
6. Traffic Study
7. Conditions of Approval – TSM22001



# Vicinity Map







NOTE: The scale and configuration of all information shown hereon are approximate only and are NOT intended as a guide for design or survey work. Reproduction is NOT permitted without prior written permission from the City of Fernley



|  |          |  |      |  |     |  |     |  |       |  |     |  |     |  |      |  |       |  |    |  |      |  |      |  |    |  |    |  |    |  |    |  |   |  |    |  |     |
|--|----------|--|------|--|-----|--|-----|--|-------|--|-----|--|-----|--|------|--|-------|--|----|--|------|--|------|--|----|--|----|--|----|--|----|--|---|--|----|--|-----|
|  | 600_Main |  | GR20 |  | RR5 |  | RR1 |  | RR1/2 |  | SF9 |  | SF6 |  | SF12 |  | MDR14 |  | MU |  | MF21 |  | MF30 |  | C1 |  | C2 |  | TC |  | EC |  | I |  | PF |  | OSP |
|--|----------|--|------|--|-----|--|-----|--|-------|--|-----|--|-----|--|------|--|-------|--|----|--|------|--|------|--|----|--|----|--|----|--|----|--|---|--|----|--|-----|

#### Legend

When recorded, mail to:  
City Clerk  
City of Fernley  
595 Silver Lace Boulevard  
Fernley, NV 89408

**BILL # 307**  
**CITY OF FERNLEY**  
**ORDINANCE # 2022-004**

**A GENERAL ORDINANCE FOR A ZONING MAP AMENDMENT, ASSOCIATED WITH ZMA22002, TO CHANGE THE ZONING FROM C2 (GENERAL COMMERCIAL) AND SF6 (SINGLE FAMILY, 6,000 SQ. FT. MINIMUM LOT SIZE) TO MU (MIXED USE) ON A SITE APPROXIMATELY ±28.42 ACRES IN SIZE LOCATED AT 590 AND 600 W. MAIN STREET, FERNLEY, NV, ASSESSOR'S PARCEL NUMBERS 021-071-02, AND 021-071-03, AND PROVIDING OTHER MATTERS PROPERLY RELATING THERETO.**

THE CITY COUNCIL OF THE CITY OF FERNLEY, hereinafter "the Council", DO HEREBY ORDAIN:

**Section 1:** The zoning of property described in Exhibit "A" and shown in Exhibit "B", which is attached hereto and incorporated herein by reference, situated in the City of Fernley, County Of Lyon, State Of Nevada, Is Hereby Changed from C2 (General Commercial) and SF6 (Single Family, 6,000 sq. ft. minimum lot size) to MU (Mixed Use) on a site approximately ±28.42 acres in size located at 590 and 600 W. Main Street, Fernley, NV (APN: 021-071-02, and 021-071-03).

**SECTION 2:** The zoning map of the City of Fernley is hereby amended in accordance with the zoning map amendment herein.

**SECTION 3:** All ordinances or parts of ordinances in conflict herewith are hereby repealed.

**SECTION 4:** The City Clerk is instructed and authorized to publish the title to this ordinance as provided by law and to record the plan certified herein as provided by law.

**SECTION 5:** This ordinance shall become effective upon passage, approval, and publication.

**SECTION 6:** The provisions of this ordinance shall be liberally construed to effectively carry out its purposes in the interest of the public health, safety, welfare and convenience.

**SECTION 7:** If any subsection, phrase, sentence or portion of this section is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision, and such holding shall not affect the validity of the remaining portions.

**SECTION 8:** The City Council finds that this ordinance is not likely to impose a direct and significant economic burden upon a business or directly restrict the formation, operation or expansion of a business, or is otherwise exempt from Nevada Revised Statutes Chapter 237.

BILL # 307 BEING HEREBY PROPOSED on the 6<sup>th</sup> day of April 2022.

BILL # 307 BEING HEREBY PASSED, APPROVED and ADOPTED this 20<sup>th</sup> day of April 2022, by the following vote of the Council:

Ayes: \_\_\_\_\_ Nays: \_\_\_\_\_ Abstentions: \_\_\_\_\_ Absent: \_\_\_\_\_

FERNLEY CITY COUNCIL

By: \_\_\_\_\_  
Roy Edgington, Mayor

Date: \_\_\_\_\_

Attest By: \_\_\_\_\_  
Kim Swanson, City Clerk

Date: \_\_\_\_\_

**EXHIBIT "A"**  
**600 WEST MAIN**

A PART OF THE SOUTHWEST QUARTER (SW¼) OF SECTION 11, TOWNSHIP 20 NORTH, RANGE 24 EAST, MOUNT DIABLO MERIDIAN, SITUATE IN THE CITY OF FERNLEY, LYON COUNTY, NEVADA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

ALL OF THAT SUBDIVISION KNOWN AS "**HARTSOCK SUBDIVISION**" FOUND IN DOCUMENT NO. 53963M, PUBLIC RECORDS OF LYON COUNTY, NEVADA, TOGETHER WITH BILLINGSLEY AVENUE, CENTRAL AVENUE, HARTSOCK AVENUE, HURSH AVENUE, AND MAIN STREET AS SHOWN ON SAID SUBDIVISION.

LESS THAT PORTION SHOWN ON THE RECORD OF SURVEY FOR "**FERNLEY UTILITIES**" FOUND IN DOCUMENT NO. 153335, PUBLIC RECORDS OF LYON COUNTY, NEVADA.

CONTAINING 28.42 ACRES, MORE OR LESS.

**BEARING BASE:** THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW¼) OF SAID SECTION 11 IS ASSUMED TO BEAR NORTH 89°10'30" WEST AND ALL BEARINGS CITED IN SAID SUBDIVISION MAP ARE RELATIVE THERETO.

*For the firm, by:*

**Richard A. Pedraza**

PLS #21076

State of Nevada



155 Country Estates Circle  
Reno, NV 89511



# 600 W. MAIN - EXHIBIT "B"

SCALE 1"=250'

HARTSOCK SUBDIVISION

FERNLEY, NEVADA

# 53963 9/16/46 #2  
OFFICIAL PLAT

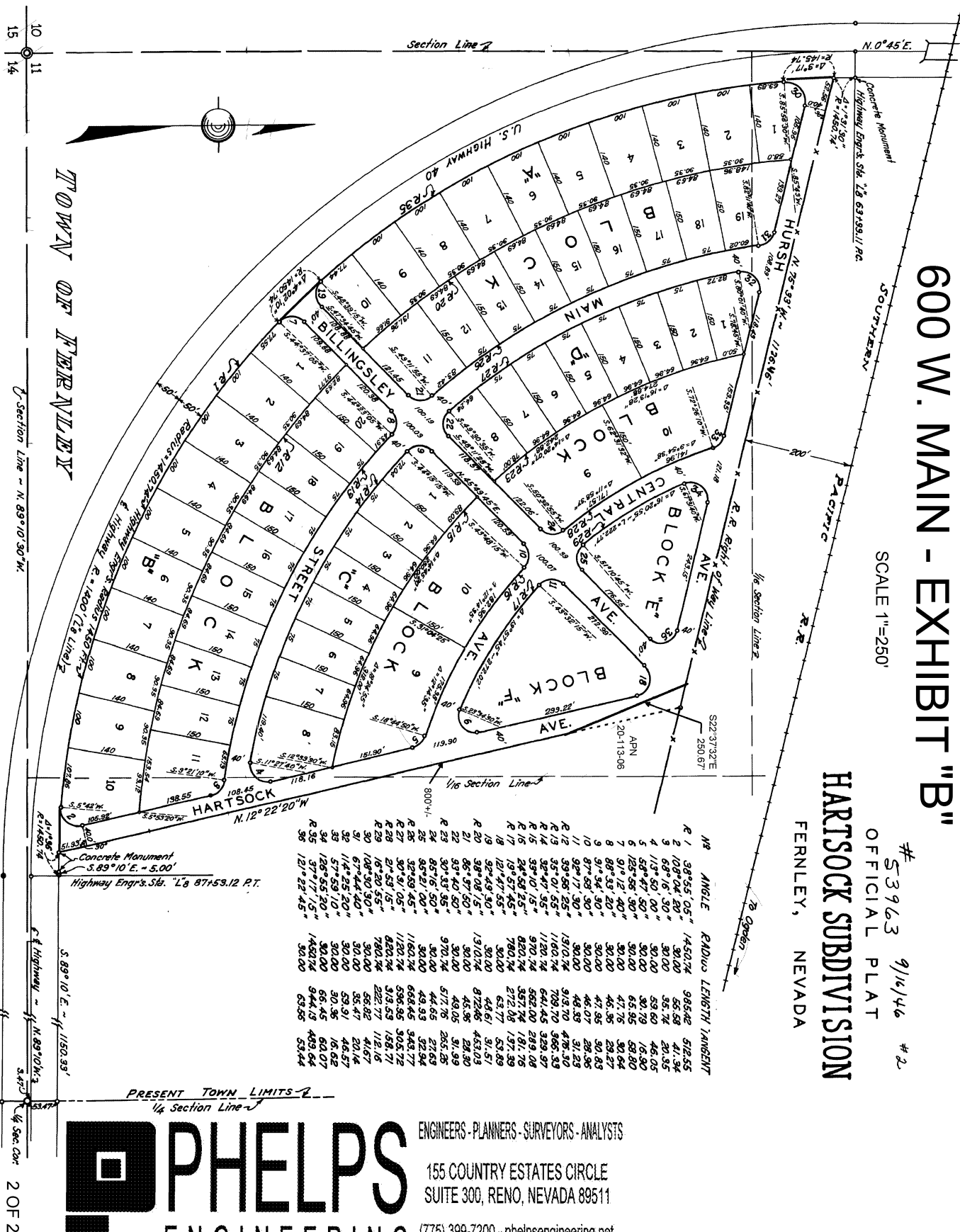
| NR | ANGLE      | RADIUS  | LENGTH | INCHES |
|----|------------|---------|--------|--------|
| 1  | 39°55'05"  | 1450.74 | 985.82 | 518.55 |
| 2  | 109°04'00" | 30.00   | 55.45  | 31.24  |
| 3  | 69°16'30"  | 30.00   | 35.74  | 20.35  |
| 4  | 118°50'00" | 30.00   | 59.60  | 33.65  |
| 5  | 58°47'50"  | 30.00   | 30.79  | 17.50  |
| 6  | 125°56'30" | 30.00   | 65.95  | 36.80  |
| 7  | 91°12'40"  | 30.00   | 47.76  | 26.84  |
| 8  | 89°43'20"  | 30.00   | 45.35  | 25.27  |
| 9  | 91°41'30"  | 30.00   | 47.95  | 26.83  |
| 10 | 87°58'30"  | 30.00   | 46.07  | 25.95  |
| 11 | 99°17'30"  | 30.00   | 48.59  | 27.23  |
| 12 | 59°58'25"  | 1510.74 | 918.70 | 476.30 |
| 13 | 35°01'55"  | 1160.74 | 709.70 | 395.37 |
| 14 | 38°47'35"  | 1120.74 | 644.45 | 359.97 |
| 15 | 39°10'15"  | 970.74  | 552.00 | 299.08 |
| 16 | 24°58'25"  | 820.74  | 357.74 | 191.75 |
| 17 | 19°57'45"  | 780.74  | 272.08 | 137.39 |
| 18 | 12°47'55"  | 30.00   | 53.77  | 29.89  |
| 19 | 32°49'30"  | 30.00   | 48.61  | 26.51  |
| 20 | 39°08'15"  | 1310.74 | 872.65 | 453.03 |
| 21 | 66°47'50"  | 30.00   | 45.35  | 25.30  |
| 22 | 39°40'50"  | 30.00   | 48.05  | 26.67  |
| 23 | 30°33'35"  | 970.74  | 517.75 | 285.25 |
| 24 | 85°16'50"  | 30.00   | 44.65  | 24.83  |
| 25 | 32°59'45"  | 1160.74 | 668.45 | 343.77 |
| 26 | 30°31'05"  | 1120.74 | 596.95 | 305.72 |
| 27 | 27°53'15"  | 820.74  | 313.53 | 158.71 |
| 28 | 20°51'05"  | 780.74  | 222.77 | 112.16 |
| 29 | 16°20'55"  | 30.00   | 55.82  | 31.46  |
| 30 | 10°50'30"  | 30.00   | 35.47  | 20.14  |
| 31 | 67°44'40"  | 30.00   | 59.91  | 33.17  |
| 32 | 11°25'20"  | 30.00   | 30.35  | 16.82  |
| 33 | 57°59'10"  | 30.00   | 66.45  | 36.07  |
| 34 | 12°43'20"  | 1450.74 | 944.13 | 493.64 |
| 35 | 51°11'15"  | 30.00   | 53.44  | 29.44  |
| 36 | 12°22'45"  | 30.00   | 53.44  | 29.44  |

**PHHELPS**  
ENGINEERING

ENGINEERS - PLANNERS - SURVEYORS - ANALYSTS

155 COUNTRY ESTATES CIRCLE  
SUITE 300, RENO, NEVADA 89511

(775) 399-7200 - phelpsenengineering.net  
info@phelpsenengineering.net









GENERAL NOTE FOR ALL DETAILS

1. ALL MATERIALS FURNISHED AND WORK PERFORMED SHALL BE DONE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS" CONSTRUCTION (SSPWC OR ORANGE BOOK).

GENERAL NOTES FOR WATER SERVICE

1. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE PROVISIONS OF OSHA AND CHAPTER 618 OF NRS, IN THE CONSTRUCTION PRACTICES FOR ALL EMPLOYEES DIRECTLY ENGAGED IN THE COMPLETION OF THIS PROJECT.

2. THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS AT THE JOB SITE, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY DURING THE PERFORMANCE OF THE WORK ACCORDING TO GENERALLY ACCEPTED CONSTRUCTION PRACTICES.

3. ALL UNDERGROUND VALVES LARGER THAN 2", TEES, ETC., SHALL BE COATED IN MASTIC.

4. NOTIFY CITY OF FERNLEY 48 HOURS PRIOR TO THE START OF CONSTRUCTION.

5. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS; MIN 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45; AIR ENTRAINMENT 6% ± 1.5%; SLUMP AT 1 TO 4 INCHES; ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURERS RECOMMENDATIONS.

6. NO OTHER UTILITIES MAY BE PLACED IN A WATER OR SEWER TRENCH.

7. BACKFLOW PREVENTION IS REQUIRED PER DETAILS # 31 THRU # 40. RESIDENTIAL SUBDIVISIONS DO NOT TYPICALLY REQUIRE DETAILS # 31 THRU # 40. CITY OF FERNLEY WILL NOTIFY WHEN THESE SHEETS ARE REQUIRED.

8. CONTRACTORS SHALL COMPLY WITH HOST EMPLOYER (CITY OF FERNLEY) SAFETY PROGRAM

9. CONTRACTOR IS RESPONSIBLE FOR REVIEWING HOST EMPLOYER'S SAFETY PROGRAM. CONTRACTOR AT PRE-BID SHALL FURNISH CITY OF FERNLEY SAFETY RECORDS FROM THE LAST THREE YEAR PERIOD AND A COPY OF ITS OWN COMPANY SAFETY PROGRAM.

10. ALL VALVE BOXES, MANHOLE STRUCTURES, AND CLEANOUTS SHALL BE MARKED AND ACCESSIBLE AT ALL TIMES.

11.FOR DETAILS NOT SHOWN, CONTACT CITY OF FERNLEY @ 775-784-9910, FAX 775-784-9966.

12. THE OWNER IS RESPONSIBLE FOR FURNISHING QUALIFIED SITE INSPECTIONS DURING CONSTRUCTION OF PUBLIC IMPROVEMENTS.

13.CITY OF FERNLEY SHALL APPROVE OF THE INSPECTOR & TESTING FIRM PRIOR TO CONSTRUCTION.

14. THE INSPECTOR SHALL INVENTORY ALL CONSTRUCTION MATERIALS TO ENSURE QUALITY CONTROL. REJECTION OF DEFECTIVE MATERIALS MUST BE COORDINATED WITH CITY OF FERNLEY.

15.PERFORM PLASTIC PIPE BALL AND MANDREL TESTS ON NEWLY INSTALLED SEWER PIPE IN ACCORDANCE WITH SECTION 336.03.09 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

16.PERFORM AIR PRESSURE TESTING ON NEWLY INSTALLED SEWER PIPE IN ACCORDANCE WITH SECTION 336.03.07.04 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

17. ALL NEW PUBLIC WATER MAINS SHALL BE 8" OR LARGER.

18. CONTRACTOR IS RESPONSIBLE TO MAKE FIELD MEASUREMENTS TO LOCATE AND SIZE EXISTING FACILITIES OR UNDERGROUND UTILITIES.

19.PLACE CHLORINE TABLETS IN WATER LINES AS FOLLOWS:  
3 TABLETS PER 6" DIAMETER OF LINE;  
4 TABLETS PER 8" DIAMETER LENGTH OF LINE;  
5 TABLETS PER 10" DIAMETER LENGTH OF LINE;  
6 TABLETS PER 12" OR GREATER DIAMETER LENGTH OF LINE;  
TABLETS MUST BE GLUED AT EQUALLY SPACED INTERVALS TO INSIDE OF PIPE USING APPROVED ADHESIVE. DISINFECTION SHALL MEET AWWA STANDARD C651.

20.CONTRACTOR SHALL SUBMIT CUT SHEETS & SHOP DRAWINGS FOR REVIEW TO THE PROJECT ENGINEER, AND/OR THE UTILITY ENGINEER PRIOR TO ORDERING CONSTRUCTION MATERIALS. A SIGNED SET OF DRAWINGS MUST ALWAYS BE AVAILABLE ONSITE DURING CONSTRUCTION.

21.PER THE CITY OF FERNLEY RULES AND REGULATIONS, SECTION 1.04.054, A BOND MUST BE IN PLACE PRIOR TO THE START OF CONSTRUCTION.

Detail No.

1

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

GENERAL NOTES FOR SANITARY SEWER

1. SEWER LINE CLEANING SHALL BE PERFORMED WITH HYDRAULICALLY PROPELLED, HIGH-VELOCITY JET, MECHANICALLY POWERED EQUIPMENT, OR OTHER PUBLIC WORKS APPROVED DEVICES. THE CLEANING SHALL RESTORE THE SEWER LINES TO A MINIMUM OF 95% OF THE LINES ORIGINAL CARRYING CAPACITY. FINAL ACCEPTANCE SHALL BE MADE AFTER SUCCESSFUL INSPECTION TO THE PUBLIC WORKS INSPECTORS SATISFACTION THAT THE CONDITIONS ABOVE HAVE BEEN MET.

2. SEWER GRADES SHALL BE VERIFIED AT EACH MANHOLE. INSPECTOR SHALL VERIFY PROPER OPERATION OF LEVELING EQUIPMENT AND PROCEDURE.

3. ALL NEW PUBLIC COLLECTOR SEWERS SHALL BE 8 INCHES OR LARGER.

GENERAL NOTES FOR E-ONE SEWER

1. MINIMUM BURY DEPTH IS 30 INCHES.

2. ALL LOW PRESSURE FORCE MAIN PIPING SHALL BE SDR 21 PVC FOR 2" AND 3" MAINS AND C900 PVC FOR 4" AND LARGER MAINS.

3. INSTALL AIR-RELEASE VALVES AT SYSTEM HIGH POINTS OR EVERY 2000 FT OF PIPE RUN.

4. INSTALL FLUSHING STATIONS AND ISOLATION VALVES AT EVERY 1500 FT OF PIPE RUN AND WHENEVER TWO OR MORE MAINS COME TOGETHER.

5. "LOOPED" SYSTEMS ARE NOT ALLOWED.

6. SIZE SEWER MAINS IN ACCORDANCE WITH TABLES 4 AND 7 (MAXIMUM NUMBER OF GRINDER PUMP CORES OPERATING DAILY AND SCH 40 PVC PIPE FLUID DYNAMICS) FROM THE ENVIRONMENT-ONE CATALOG.

7. USE OF ENVIRONMENT-ONE SYSTEM COMPONENTS HAS BEEN AUTHORIZED BY THE UTILITY. ALTERNATE SYSTEM WILL BE REVIEWED ON A CASE-BY CASE BASIS.

8. "FLAPPER" TYPE STOP-CHECK VALVES SHALL BE INSTALLED AS CLOSE TO THE MAIN LINE AS FEASIBLE.

GEOTECHNICAL NOTE:

1. BACKFILL OF L.P. SEWER TRENCHES SHALL BE IN ACCORDANCE WITH THE DETAIL ON PAGE ONE OF THESE CITY OF FERNLEY STANDARDS. THE REQUIREMENT FOR CLASS 'A' BEDDING SAND MAY BE WAIVED IF THE TRENCH IS IN A NON-STRUCTURAL LOCATION AND THE NATIVE MATERIAL HAS A PLASTICITY INDEX OF LESS THAN 20.

SYSTEM TESTING:

1. THE CITY OF FERNLEY OR IT'S AUTHORIZED INSPECTOR SHALL INSPECT ALL SYSTEMS PRIOR TO BURIAL.

2. COMPACTION TESTING (≥90% ASTM D1557A) IS REQUIRED IN ALL STRUCTURAL AREAS.

3. HYDROSTATIC ALLY TEST THE LINE TO 150% OF DEAD HEAD PRESSURE (90 psi) FOR 2 HOURS. SYSTEM SHALL NOT LOSE MORE THAN 5 psi WITHIN THIS TESTING PERIOD.

Detail No.

4

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

WATER MAIN PRESSURE & BACTERIA TESTING

1. CONTRACTOR SHALL MAINTAIN TEST PRESSURE WITHIN 5 PSI FOR A PERIOD OF 2 HOURS. TEST PRESSURE SHALL BE 150 AND 200 PSI, PER PRESSURE ZONE, AS INDICATED ON PLANS.

2. ALLOWABLE LEAKAGE SHALL BE DETERMINED BY THE FOLLOWING:  
$$\text{ALLOWABLE LEAKAGE (GALLONS PER HOUR)} = \frac{SD \sqrt{P}}{133,200}$$
WHERE S = LENGTH OF PIPE IN TEST SECTION (FEET)  
D = PIPE DIAMETER (INCHES)  
P = TEST PRESSURE (PSIG)

3. LEAKAGE SHALL BE MEASURED BY THE VOLUME OF WATER REQUIRED TO MAINTAIN THE TEST PRESSURE WITHIN 5 PSI FOR THE TEST PERIOD, NOT THE DROP IN PRESSURE.

4. INSPECTOR IS RESPONSIBLE FOR OBTAINING AND DELIVERING TESTING LAB SAMPLE BOTTLES AND COLLECTING SAMPLES FOR BACTERIA TESTING. INSPECTOR SHALL PRESENT TEST RESULTS TO THE UTILITY.

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY (RP):

1. THE RP SHALL ALWAYS BE INSTALLED ABOVE GRADE AND WILL NOT BE ALLOWED IN BASEMENTS.

2. A DRAIN SHALL BE INSTALLED IN THE BOX FOR OUTDOOR INSTALLATIONS AND A DAYLIGHT DRAIN AND A FLOOR DRAIN SHALL BE INSTALLED FOR INDOOR INSTALLATIONS. REFER TO TABLE A FOR MINIMUM REQUIRED DRAIN SIZES.

3. AN AIR GAP (VERTICAL PHYSICAL SEPARATION) OF AT LEAST 2 TIMES THE DIAMETER OF THE RELIEF VALVE OPENING, WITH A MINIMUM OF 1", SHALL BE MAINTAINED BETWEEN THE WATER DISCHARGE POINT ON THE RELIEF VALVE AND THE DRAIN OR 1" ABOVE THE MINIMUM FLOOD LEVEL, WHICHEVER IS HIGHEST.

DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY (DC):

1. BELOW GROUND VAULTS SHALL REMAIN DRY THROUGHOUT THE YEAR.

PRESSURE VACUUM BREAKER (PVB) SPILL RESISTANT PRESSURE VACUUM BREAKER (SVB) BACKFLOW PREVENTION ASSEMBLY:

1. THE PVB SHALL NOT BE SUBJECT TO ANY BACK PRESSURE FROM: ELEVATED DOWNSTREAM PIPING, INJECTION SYSTEMS, COMPRESSED AIR, PUMPS, OR OTHER MEANS. IF BACK PRESSURE EXISTS, AN RP MUST BE INSTALLED.

DC, RP, AND PVB/SVB ASSEMBLIES:

1. SUPPORTS SHALL BE PROVIDED AS NECESSARY.

2. ELECTRIC SUPPLY SOCKETS SHALL BE AWAY FROM RELIEF VALVE & TEST COCK.

3. FREEZE PROOF INSULATION BOX AND 1 TYPE OF HEAT ARE REQUIRED. 2 TYPES ARE STRONGLY RECOMMENDED.

4. PLACE WATERTIGHT, FLEXIBLE SEALANT AT PIPE PENETRATIONS.

5. INSULATED BOX SHALL EITHER SWING CLEAR OF ASSEMBLY OR BE SIZED TO PROVIDE CLEARANCES SHOWN IN THE DETAILS.

6. SPRING LOADED LID IS REQUIRED ON LARGE BOXES.

7. EITHER VALVE BOXES OR PIPE RISERS MAY BE USED FOR THE SHUT OFF VALVES.

8. MANUAL SHUTOFF VALVES SHALL BE BRASS GLOBE OR CURB VALVE SIZED THE SAME AS SERVICE LINE.

9. DRAIN CONFIGURATION SHALL BE AN INLINE TEE TO BRASS SHUTOFF VALVE WITH A RUBBER SEAT & SCHEDULE 80 1/2" 90° ELBOW WITH FEMALE THREADS. ADD 1/2" RED FREEZE KING DRAIN.

10. USE 2 FULL TURNS OF TEFLON TAPE ON ALL THREADED JOINTS.

11. NO STOP AND WASTE VALVES.

12. ADEQUATE CLEARANCE MUST BE PROVIDED FOR OPERATION OF VALVES AND REPAIR AND TESTING OF THE ASSEMBLIES.

13. NO OUTLET, TEE, OR AN CONNECTION MAY BE MADE TO THE SERVICE LINE BETWEEN THE METER AND THE ASSEMBLY.

14. ALL ASSEMBLIES MUST BE INSTALLED IN THE HORIZONTAL ORIENTATION UNLESS USC APPROVED IN A DIFFERENT ORIENTATION.

15. ASSEMBLIES MUST BE INSTALLED AS CLOSELY AS PRACTICAL TO THE WATER METER.

16. CITY OF FERNLEY RECOMMENDS PROTECTING THE ASSEMBLIES FROM VANDALISM IN SUSCEPTIBLE AREAS. REQUIRED CLEARANCES MUST STILL BE MET AND UTILITY ACCESS MUST BE PROVIDED.

17. ASSEMBLIES LESS THAN 2" REQUIRE 1 CU. FT OF CLEAN GRAVEL AND ASSEMBLIES GREATER THAN OR EQUAL TO 2" REQUIRE 8 CU. FT OF CLEAN GRAVEL FOR ALL DRAINS.

Detail No.

2

GEN NOTES

DATE

05/08

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RELOCATED NOTES WITH DETAIL ID

BY

AIR GAP SEPARATION

1. THE TANK AND PUMP SHALL BE DESIGNED TO SUIT CUSTOMER'S NEEDS.

2. AN AIR GAP (THE DISTANCE BETWEEN THE LOWEST POINT OF THE SUPPLY LINE AND/OVERFLOW ELEVATION OF THE RECEIVING TANK) MUST BE AT LEAST 2 TIMES THE DIAMETER OF THE SUPPLY LINE, WITH A MINIMUM AIR GAP OF 1'.

3. FREEZE PROTECTION SHALL BE PROVIDED FOR THE SUPPLY PIPE AND THE RECEIVING TANK WHERE NECESSARY.

4. THE WATER METER SHALL BE LOCATED UPSTREAM OF THE AIR GAP.

5. AIR GAP BYPASSES MUST BE AUTHORIZED BY THE UTILITY.

TYPICAL LOCATIONS WHERE RP ASSEMBLIES ARE REQUIRED  
(THIS LIST IS ACCORDING TO NAC 445A.67195, CITY OF FERNLEY MAY REQUIRE AN RP FOR APPLICATIONS NOT LISTED HERE):

A BUILDING THAT:

- CONTAINS A HOTEL, MOTEL, CASINO, CONDOMINIUM OR TOWNHOUSE, OR ANY APARTMENTS;
- IS USED FOR UNIDENTIFIED COMMERCIAL PURPOSES;
- UTILIZES ANY SEWAGE PUMPS OR EJECTORS;
- UTILIZES A HYDRONIC HEATING SYSTEM WITH A CHEMICAL ADDITIVE;
- HAS A BAPTISMAL FONT;
- UTILIZES A BOTTLING SYSTEM;
- IS A BREWERY, CANNERY, PACKING HOUSE, DAIRY PROCESSING FACILITY, RESTAURANT, OR OTHER FACILITY WHERE FOOD IS PROCESSED OR SERVED, DENTAL CLINIC, MEDICAL FACILITY, HOSPITAL, CONVALESCENT HOME, SANITARIUM, MORGUE, MORTUARY, FACILITY FOR CONDUCTING AUTOPSIES, LABORATORY, SCHOOL, COLLEGE, UNIVERSITY, PUBLISHING OR PRINTING FACILITY, VETERINARY CLINIC, PET SHOP, PET GROOMING FACILITY, LAUNDRY OR DRY CLEANING FACILITY, DYEING FACILITY, ANY ELECTROCHEMICAL, PLATING FACILITY, FACILITY THAT HAS A POOL OR SPA, A PARK FOR MOBILE HOMES OR RECREATIONAL VEHICLES, FACILITY FOR PRODUCTION OF POWER, FACILITY THAT HANDLES, PROCESSES OR STORES RADIOACTIVE MATERIALS, FACILITY THAT PROCESSES SAND OR GRAVEL, FACILITY THAT MANUFACTURES OR UTILIZES CHEMICALS, FACILITY FOR THE MANUFACTURING, REPAIR, OR WASHING OF MOTOR VEHICLES, FACILITY FOR MANUF. OR PROCESSING OF FILM, FACILITY FOR MANUFACTURING OF ICE, A FACILITY FOR MANUF., PROCESSING OR CLEANING OF METAL, FACILITY FOR MANUF. OF ANY RUBBER, FACILITY FOR MANUF. OF ANY PAPER, ANY FACILITY FOR MANUF., PROCESSING OR FABRICATION, CLASS 4, CLASS 5, OR CLASS 6 FIRE SPRINKLER SYSTEMS, IRRIGATION SYSTEMS WHERE CHEMICALS ARE INJECTED OR BOOSTER PUMPS ARE ADDED.

TYPICAL LOCATIONS WHERE DC OR PVB/SVB ASSEMBLIES OR AIR GAPS ARE REQUIRED  
(THIS LIST IS ACCORDING TO NAC 445A.67195, CITY OF FERNLEY MAY REQUIRE A DC, PVB/SVB OR AG FOR APPLICATIONS NOT LISTED HERE):

A DC IS REQUIRED FOR A BUILDING WITH CLASS 1, CLASS 2, OR CLASS 3 FIRE SPRINKLER SYSTEMS, A SITE WITH AN AUXILIARY WATER SUPPLY, AND A SITE WITH TWO METERS. A PVB/SVB IS REQUIRED FOR IRRIGATION SYSTEMS WITH NO PUMPS OR CHEMICAL INJECTION SYSTEMS. AN AIR GAP IS REQUIRED FOR STORM DRAINAGE SYSTEMS, SEWAGE COLLECTION, DISTRIBUTION, OR TREATMENT SYSTEMS, AND FILL LOCATIONS FOR PORTABLE SPRAYING OR CLEANING EQUIPMENT.

CITY OF FERNLEY CROSS-CONNECTION CONTROL PROGRAM REQUIREMENTS

1. ALL BACKFLOW PREVENTION ASSEMBLIES MUST BE INSPECTED BY A UTILITY REPRESENTATIVE AND A TEST FORM (COMPLETED BY A HEALTH DISTRICT CERTIFIED TESTER) MUST BE SUBMITTED TO CITY OF FERNLEY BEFORE SERVICE IS ACTIVATED.

2. THE TEST FORM MUST BE SUBMITTED TO CITY OF FERNLEY ANNUALLY WITHIN 30 DAYS OF THE ASSEMBLY INSTALLATION ANNIVERSARY DATE.

3. CITY OF FERNLEY MAY TEST THE ASSEMBLY AT ANY TIME AT ITS OWN EXPENSE.

4. THE CUSTOMER IS RESPONSIBLE TO PROTECT HIS/HER SYSTEM FROM THERMAL EXPANSION BY INSTALLING EITHER AN EXPANSION TANK OR PRESSURE RELIEF VALVE IN THE FEED LINE TO THE WATER HEATER (NO PROTECTION COULD RESULT IN SERIOUS DAMAGE AND/OR INJURY).

5. ALL ASSEMBLIES MUST BE USC APPROVED.

6. ALL WATER USED DURING CONSTRUCTION SHALL BE METERED AND SHALL FLOW THROUGHAN APPROVED BACKFLOW PREVENTION ASSEMBLY. UNAUTHORIZED FIRE HYDRANT USAGE SHALL RESULT IN COLLECTION OF FEES, FINES, POSSIBLE LEGAL ACTION, AND INVOLVEMENT OF STATE/LOCAL LICENSING BOARDS.

7. IF A CONTINUOUS WATER SUPPLY IS CRITICAL TO A PREMISE, PARALLEL ASSEMBLIES SHOULD BE INSTALLED.

8. IT IS THE CUSTOMER'S RESPONSIBILITY TO ACCOUNT FOR PRESSURE LOSSES FROM THE ASSEMBLY.

9. BACKFLOW PREVENTION SHALL NOT BE RELOCATED, REMOVED, OR REPLACED WITHOUT PRIOR APPROVAL FROM CITY OF FERNLEY.

10. PLEASE NOTE THAT THE REQUIRED ASSEMBLIES PROTECT THE PUBLIC WATER SYSTEM ONLY.

11. ENGINEER TO PROVIDE DOCUMENTATION THAT THE ASSEMBLIES ARE USC APPROVED.

Detail No.

3

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

GENERAL NOTES FOR CONCRETE WORK

1. NO CONCRETE SHALL BE PLACED UNTIL FORMS AND SUBGRADE ARE INSPECTED BY THE CITY EXCAVATION PERMIT INSPECTOR OR APPLICABLE ENGINEER OF RECORD.

2. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS. MIN 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45. AIR ENTRAINMENT 6% ± 1.5%. SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURERS RECOMMENDATIONS.

3. COMMERCIAL DRIVEWAYS SHALL HAVE #4 BARS AT 18" ON-CENTER LONGITUDINAL AND TRANSVERSE EXTENDING INTO GUTTER PAN AND DRIVEWAY WINGS. MINIMUM 2" CONCRETE COVER FOR ALL REINFORCING BARS.

4. IF EXPANSION JOINT EXISTS WITHIN 4 FEET OF DRIVEWAY, REMOVE SIDEWALK AND CURB AND GUTTER TO THAT JOINT.

5. CONCRETE REMOVAL SHALL BE TO NEAT SAWCUT LINES

6. REMOVE CONCRETE WHEN CONSTRUCTING DRIVEWAY WHERE CURB AND GUTTER EXIST

7. DEPRESSED CURB LENGTH TO MATCH DRIVEWAY WIDTH

8. WEAKENED PLAIN JOINTS AT 5'-0" O.C. WITH EXPANSION JOINT IF NECESSARY

Detail No.

6

GEN NOTES

DATE

05/08

REVISIONS

RELOCATED NOTES WITH DETAIL ID

BY

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811

Know what's below.  
Call 811 before you dig.

NOT TO SCALE IF SHEET  
SIZE OTHER THAN 24"x36"

DESIGNED BY: JJP

DRAWN BY: JJP

CHECKED BY: LEP

GENERAL NOTES

600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

12/09/2021  
PROJECT NO.: 21103

2 of 23

REVISIONS

DATE

BY

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Drawing name: S:\Entitlement Engineering\2103 - 600 West Main\08 - CAD\Engineering\Sheets\Tentative Map\2103 - EX COND.dwg 3 EXISTING CONDITIONS (OVERALL MAP) Jan 10, 2022 3:14pm by JPucillo



EXISTING CONDITIONS LEGEND:

- PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINE
- EXISTING EASEMENT LINE
- EXISTING ROAD CENTER LINE
- EDGE OF PAVEMENT
- CURB & GUTTER
- PARKING/TRAFFIC SIGN
- DRAINAGE FLOWLINE
- EXISTING STORM SEWER
- EXISTING STORM MANHOLE
- EXISTING WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
- EXISTING SANITARY SEWER W/MANHOLE
- EXISTING RAW WATER LINE
- EXISTING TELEPHONE
- EXISTING COMMUNICATION LINE
- EXISTING TRANSFORMER
- EXISTING GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC
- EXISTING POWER POLE
- EXISTING LIGHT POLE
- EXISTING FENCE
- EXISTING UNPAVED ROAD
- EXISTING VEGETATION TO REMAIN

KEY NOTES:

- EXISTING DITCH TO REMAIN
- EXISTING DITCH TO BE REGRADED
- STRUCTURE TO BE DEMOLISHED
- TRAIL SYSTEM TO BE REMOVED
- EXISTING STORM SEWER INLET TO BE REMOVED
- EXISTING 18" STORM PIPE TO BE REMOVED
- REMOVE EXISTING PAVEMENT AND CURB AND GUTTER
- EXISTING FENCE TO BE DEMOLISHED
- EXISTING VEGETATION TO BE REMOVED

DEMOLITION NOTES:

ALL ON SITE STRUCTURES, UTILITIES, VEGETATION, WALLS, FENCES AND OTHER ITEMS TO BE REMOVED UNLESS OTHERWISE NOTED .

EXISTING DIRT PILES TO BE UTILIZED FOR ON-SITE GRADING

811

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DESIGNED BY: JJP

DRAWN BY: JJP

CHECKED BY: LEP

EXISTING CONDITIONS  
(OVERALL MAP)

600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

12/09/2021

PROJECT NO.: 21103

3 of 23

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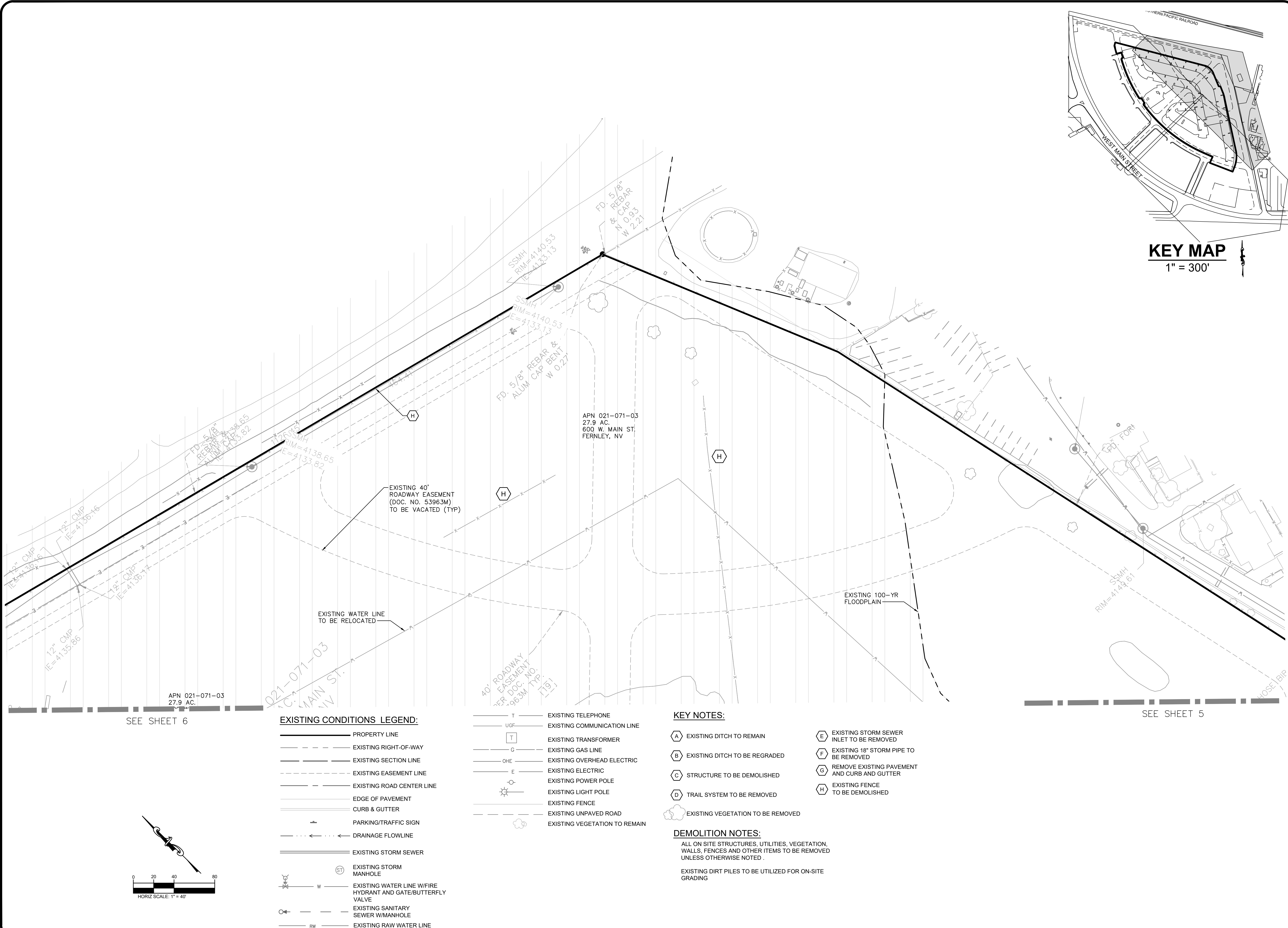
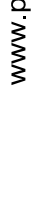
REVISIONS

DATE

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# EXISTING CONDITIONS & DEMO PLAN

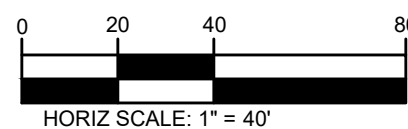
600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

12/09/2021

PROJECT NO.: 21103

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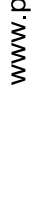


|     |                                                             |
|-----|-------------------------------------------------------------|
|     | PROPERTY LINE                                               |
|     | EXISTING RIGHT-OF-WAY                                       |
|     | EXISTING SECTION LINE                                       |
|     | EXISTING EASEMENT LINE                                      |
|     | EXISTING ROAD CENTER LINE                                   |
|     | EDGE OF PAVEMENT                                            |
|     | CURB & GUTTER                                               |
|     | PARKING/TRAFFIC SIGN                                        |
|     | DRAINAGE FLOWLINE                                           |
|     | EXISTING STORM SEWER                                        |
|     | EXISTING STORM MANHOLE                                      |
| W   | EXISTING WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE |
| S   | EXISTING SANITARY SEWER W/MANHOLE                           |
| RW  | EXISTING RAW WATER LINE                                     |
| T   | EXISTING TELEPHONE                                          |
| UGF | EXISTING COMMUNICATION LINE                                 |
|     | EXISTING TRANSFORMER                                        |
| G   | EXISTING GAS LINE                                           |
| OHE | EXISTING OVERHEAD ELECTRIC                                  |
| E   | EXISTING ELECTRIC                                           |
|     | EXISTING POWER POLE                                         |
|     | EXISTING LIGHT POLE                                         |
|     | EXISTING FENCE                                              |
|     | EXISTING UNPAVED ROAD                                       |
|     | EXISTING VEGETATION TO REMAIN                               |

|                                                                                         |                                   |                                                                                         |                                                 |
|-----------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------|
|  A | EXISTING DITCH TO REMAIN          |  E | EXISTING STORM SEWER<br>INLET TO BE REMOVED     |
|  B | EXISTING DITCH TO BE REGRADED     |  F | EXISTING 18" STORM PIPE TO<br>BE REMOVED        |
|  C | STRUCTURE TO BE DEMOLISHED        |  G | REMOVE EXISTING PAVEMENT<br>AND CURB AND GUTTER |
|  D | TRAIL SYSTEM TO BE REMOVED        |  H | EXISTING FENCE<br>TO BE DEMOLISHED              |
|    | EXISTING VEGETATION TO BE REMOVED |                                                                                         |                                                 |

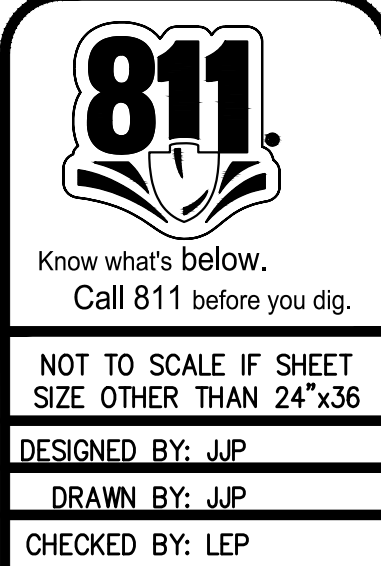
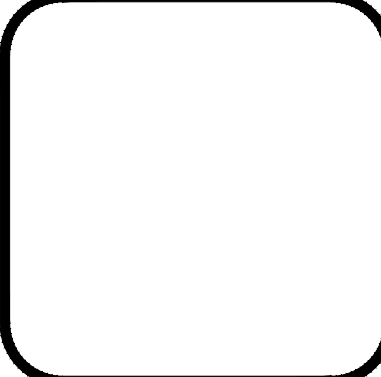
ALL ON SITE STRUCTURES, UTILITIES, VEGETATION,  
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UNLESS OTHERWISE NOTED .

### EXISTING DIRT PILES TO BE UTILIZED FOR ON-SITE GRADING



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## EXISTING CONDITIONS & DEMO PLAN

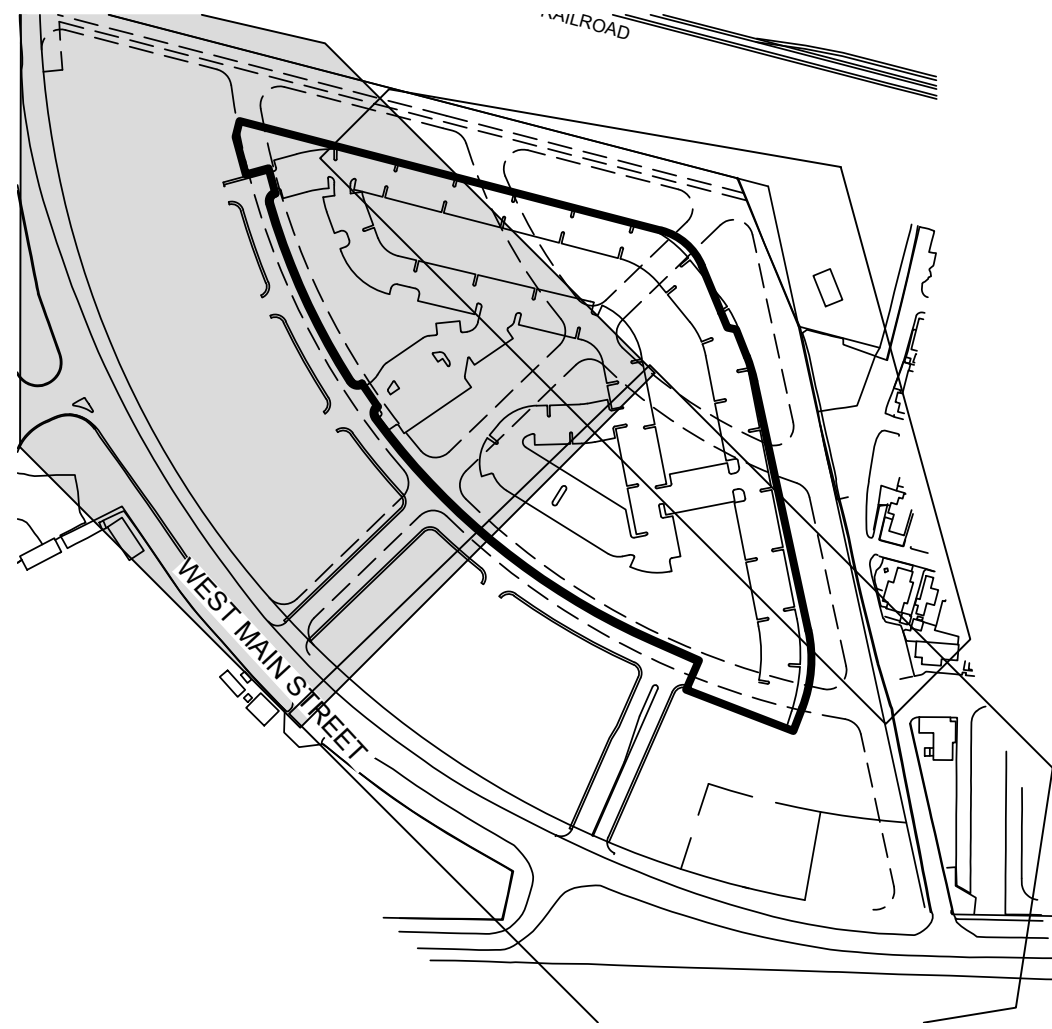
600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

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| 12/09/2021         |
| PROJECT NO.: 21103 |

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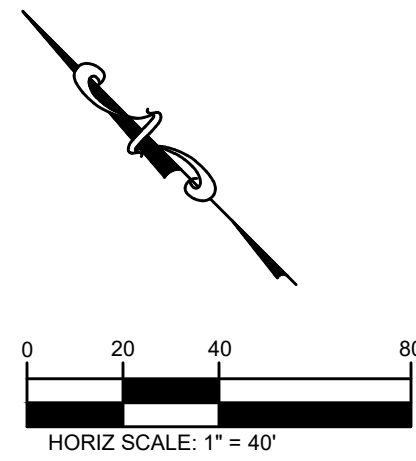


Drawing name: S:\entitlement Engineering\2103 - 600 West Main\08 - CAD\Engineering\Sheets\Tentative Map\2103 - EX COND.dwg 6 EXISTING CONDITIONS & DEMO PLAN Jan 10, 2022 3:14pm by: JPucillo



## KEY MAP

1" = 300'



### EXISTING CONDITIONS LEGEND:

- |  |                                                             |
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|  | PROPERTY LINE                                               |
|  | EXISTING RIGHT-OF-WAY                                       |
|  | EXISTING SECTION LINE                                       |
|  | EXISTING EASEMENT LINE                                      |
|  | EXISTING ROAD CENTER LINE                                   |
|  | EDGE OF PAVEMENT                                            |
|  | CURB & GUTTER                                               |
|  | PARKING/TRAFFIC SIGN                                        |
|  | DRAINAGE FLOWLINE                                           |
|  | EXISTING STORM SEWER                                        |
|  | EXISTING STORM MANHOLE                                      |
|  | EXISTING WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE |
|  | EXISTING SANITARY SEWER W/MANHOLE                           |
|  | EXISTING RAW WATER LINE                                     |
|  | EXISTING TELEPHONE                                          |
|  | EXISTING COMMUNICATION LINE                                 |
|  | EXISTING TRANSFORMER                                        |
|  | EXISTING GAS LINE                                           |
|  | EXISTING OVERHEAD ELECTRIC                                  |
|  | EXISTING ELECTRIC                                           |
|  | EXISTING POWER POLE                                         |
|  | EXISTING LIGHT POLE                                         |
|  | EXISTING FENCE                                              |
|  | EXISTING UNPAVED ROAD                                       |
|  | EXISTING VEGETATION TO REMAIN                               |

### KEY NOTES:

- |  |                               |
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|  | EXISTING DITCH TO REMAIN      |
|  | EXISTING DITCH TO BE REGRADED |
|  | STRUCTURE TO BE DEMOLISHED    |
|  | TRAIL SYSTEM TO BE REMOVED    |

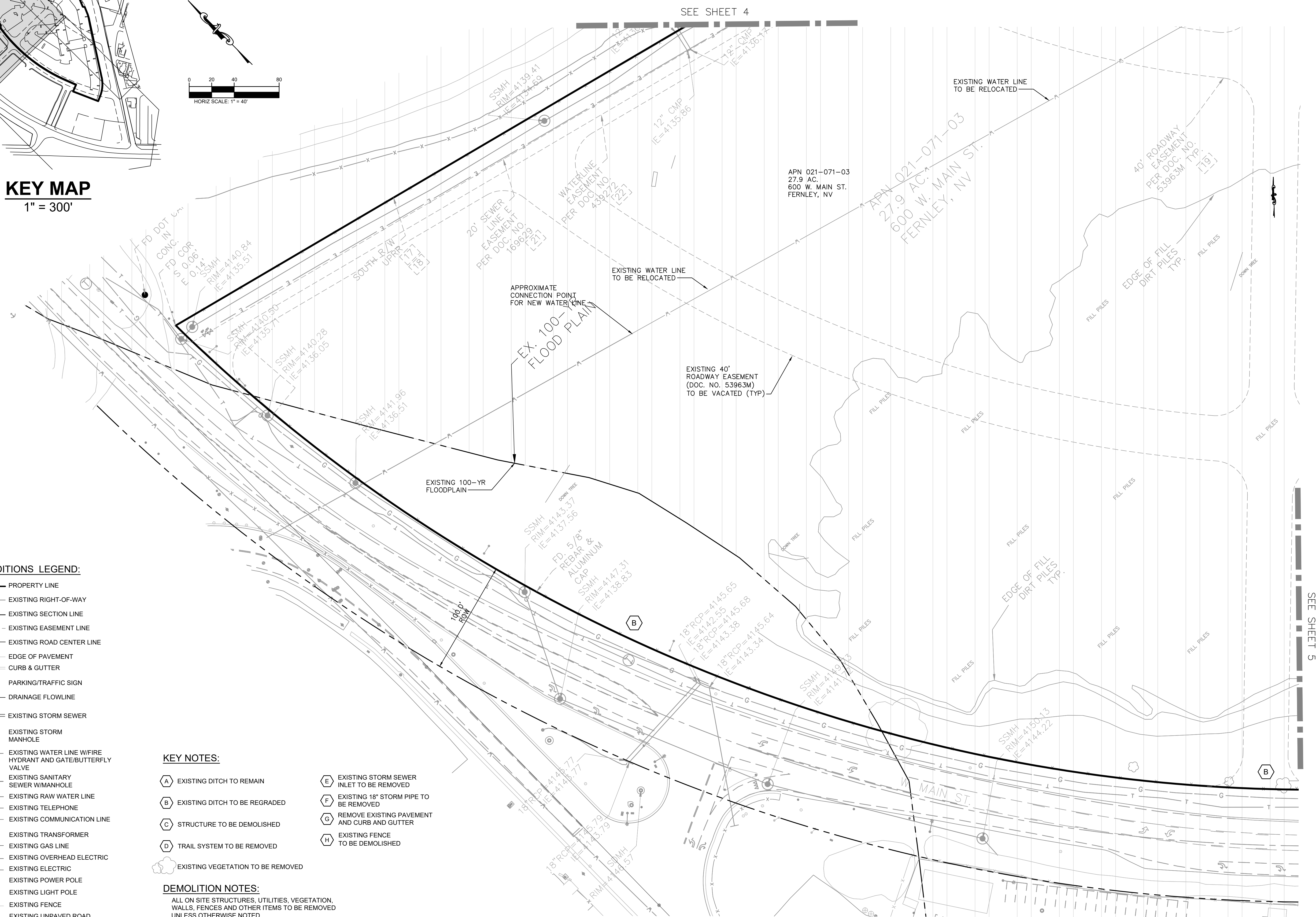


### DEMOLITION NOTES:

ALL ON SITE STRUCTURES, UTILITIES, VEGETATION, WALLS, FENCES AND OTHER ITEMS TO BE REMOVED UNLESS OTHERWISE NOTED.

EXISTING DIRT PILES TO BE UTILIZED FOR ON-SITE GRADING

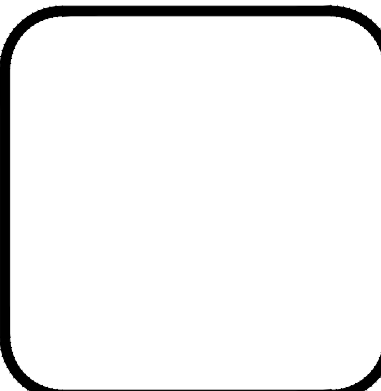
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|  | EXISTING STORM SEWER INLET TO BE REMOVED     |
|  | EXISTING 18" STORM PIPE TO BE REMOVED        |
|  | REMOVE EXISTING PAVEMENT AND CURB AND GUTTER |
|  | EXISTING FENCE TO BE DEMOLISHED              |



| REVISIONS |  | DATE | BY |
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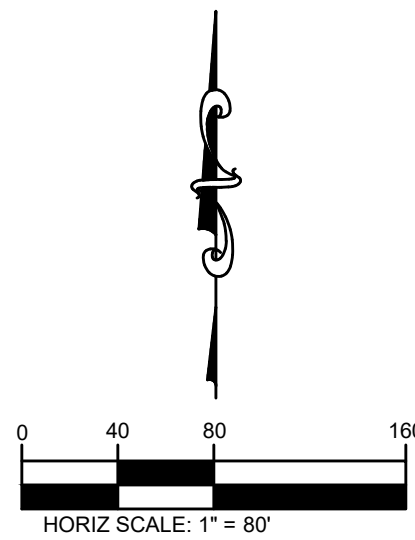
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| NOT TO SCALE IF SHEET SIZE OTHER THAN 24"x36" |  |
| DESIGNED BY: JJP                              |  |
| DRAWN BY: JJP                                 |  |
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## EXISTING CONDITIONS & DEMO PLAN

600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

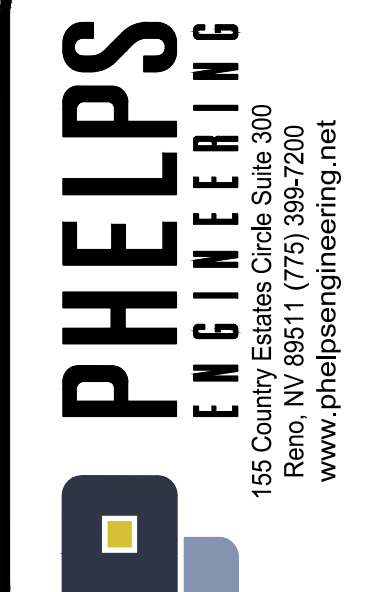
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| 12/09/2021         |
| PROJECT NO.: 21103 |
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|  |                                                                   |
|--|-------------------------------------------------------------------|
|  | PROPERTY LINE                                                     |
|  | LOT LINE                                                          |
|  | UTILITY ACCESS EASEMENT [UAE]                                     |
|  | EXISTING RIGHT-OF-WAY                                             |
|  | EXISTING SECTION LINE                                             |
|  | EASEMENT LINE                                                     |
|  | EXISTING EASEMENT LINE                                            |
|  | ROAD CENTER LINE                                                  |
|  | EXISTING ROAD CENTER LINE                                         |
|  | TRACT                                                             |
|  | EDGE OF PAVEMENT                                                  |
|  | CURB & GUTTER                                                     |
|  | DRAINAGE FLOWLINE                                                 |
|  | STORM SEWER<br>WINLET AND FES                                     |
|  | EXISTING STORM SEWER                                              |
|  | EXISTING STORM<br>MANHOLE                                         |
|  | EXISTING WATER LINE W/FIRE<br>HYDRANT AND GATE/BUTTERFLY<br>VALVE |
|  | WATER LINE W/FIRE HYDRANT AND<br>GATE/BUTTERFLY VALVE             |
|  | WATER METER                                                       |
|  | PLUG W/ 2" BLOWOFF                                                |
|  | AIR RELEASE VALVE                                                 |
|  | EXISTING SANITARY<br>SEWER W/MANHOLE                              |
|  | 8"SS 8-INCH Ø SANITARY SEWER W/MANHOLE                            |
|  | EXISTING GAS LINE                                                 |
|  | NATURAL GAS LINE                                                  |
|  | EXISTING OVERHEAD ELECTRIC                                        |
|  | EXISTING ELECTRIC                                                 |
|  | ELECTRIC LINE                                                     |
|  | EXISTING POWER / LIGHT POLE                                       |
|  | PROPOSED LIGHT POLE                                               |

**NOTES:**  
MINIMUM COVER ON SANITARY SEWER IS 3.5' UNLESS  
PREVIOUSLY APPROVED BY DESIGN ENGINEER AND CITY OF  
FERNLEY.  
PVC PIPE FOR WATER DISTRIBUTION SHALL BE IN  
CONFORMANCE WITH 8" DIAMETER AWWA C900.  
PVC PIPE FOR SANITARY SEWER SHALL BE 8" SDR 35  
UNLESS OTHERWISE NOTED.  
REFER TO CITY OF FERNLEY STANDARD NOTES ON SHEET 2  
FOR ADDITIONAL INFORMATION.

[illegible]

NOT TO SCALE IF SHEET  
SIZE OTHER THAN 24"x36

|                  |
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| DESIGNED BY: JJP |
| DRAWN BY: JJP    |
| CHECKED BY: LEP  |

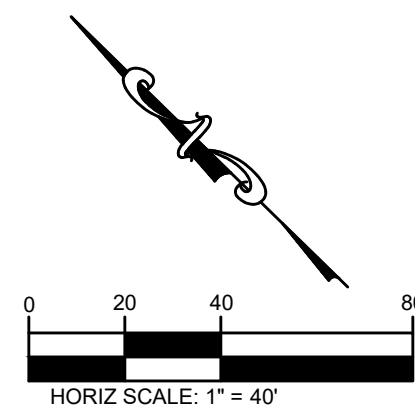
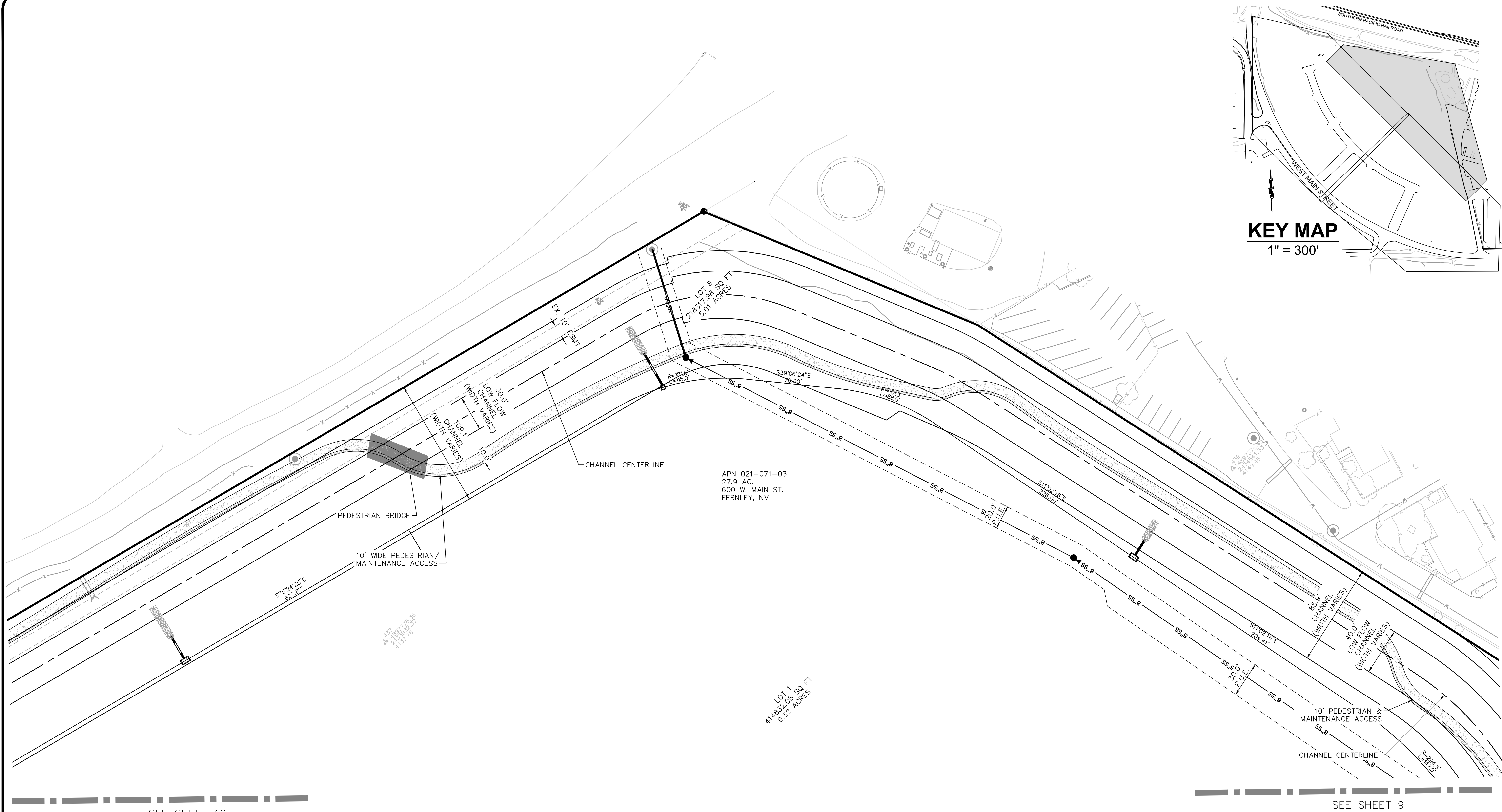
## SITE PLAN (OVERALL MAP)

600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

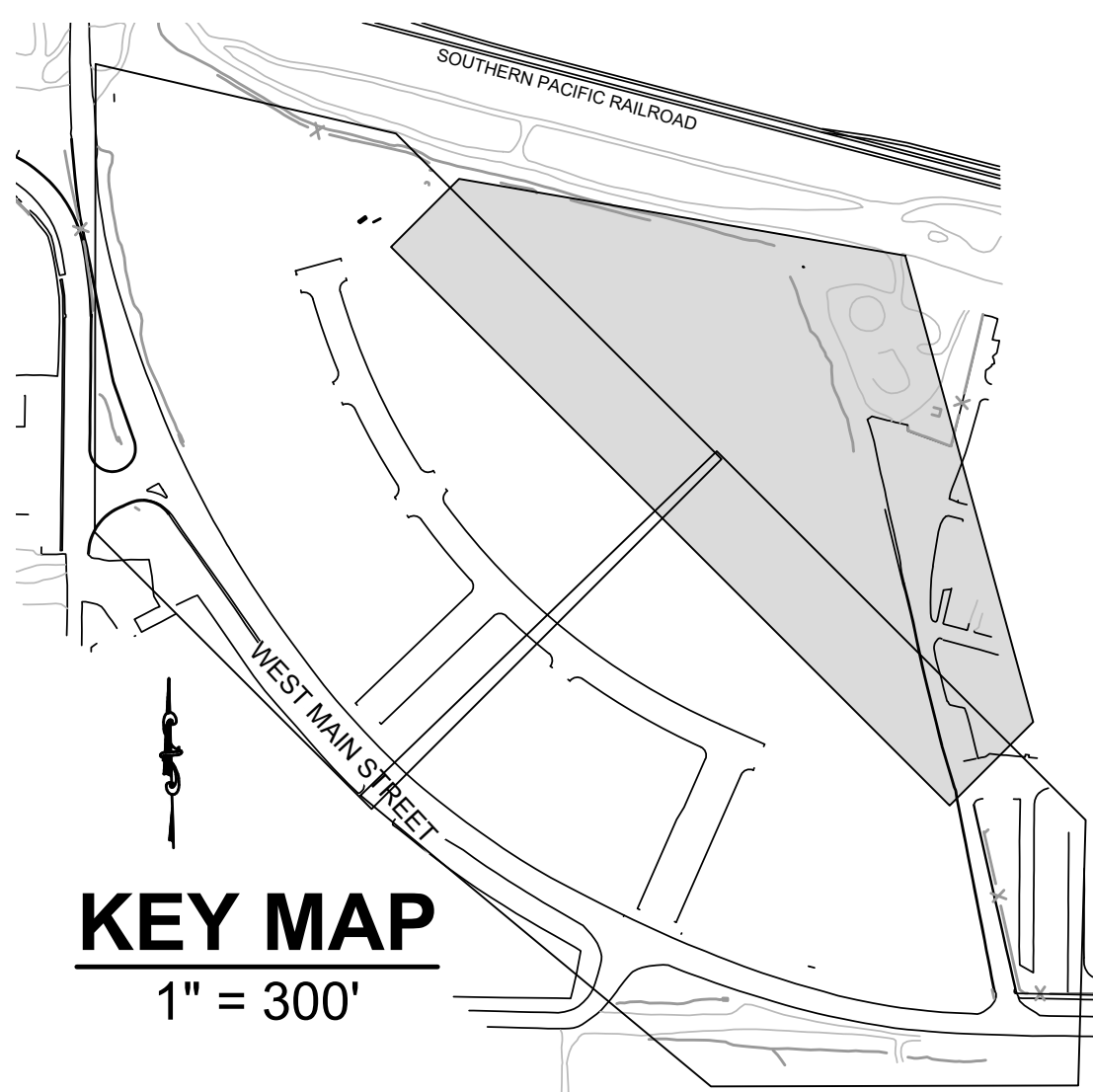
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- |                |                                |                                                                   |
|----------------|--------------------------------|-------------------------------------------------------------------|
| <b>LEGEND:</b> |                                |                                                                   |
|                | PROPERTY LINE                  |                                                                   |
|                | LOT LINE                       |                                                                   |
|                | UTILITY ACCESS EASEMENT [UAE]  |                                                                   |
|                | EXISTING RIGHT-OF-WAY          |                                                                   |
|                | EXISTING SECTION LINE          |                                                                   |
|                | EASEMENT LINE                  |                                                                   |
|                | EXISTING EASEMENT LINE         |                                                                   |
|                | ROAD CENTER LINE               |                                                                   |
|                | EXISTING ROAD CENTER LINE      |                                                                   |
|                | TRACT                          |                                                                   |
|                | EDGE OF PAVEMENT               |                                                                   |
|                | CURB & GUTTER                  |                                                                   |
|                | DRAINAGE FLOWLINE              |                                                                   |
|                | STORM SEWER<br>WINLET AND FES  |                                                                   |
|                | EXISTING STORM SEWER           |                                                                   |
|                | (SM) EXISTING STORM<br>MANHOLE |                                                                   |
|                | W                              | EXISTING WATER LINE W/FIRE<br>HYDRANT AND GATE/BUTTERFLY<br>VALVE |
|                |                                | WATER LINE W/FIRE HYDRANT AND<br>GATE/BUTTERFLY VALVE             |
|                |                                | WATER METER                                                       |
|                |                                | PLUG W/ 2" BLOWOFF                                                |
|                |                                | AIR RELEASE VALVE                                                 |
| (SS)           | s s                            | EXISTING SANITARY<br>SEWER W/MANHOLE                              |
| ●              | 8"SS                           | 8-INCH Ø SANITARY SEWER W/MANHOLE                                 |
| G              |                                | EXISTING GAS LINE                                                 |
| G              |                                | NATURAL GAS LINE                                                  |
| OHE            |                                | EXISTING OVERHEAD ELECTRIC                                        |
| E              |                                | EXISTING ELECTRIC                                                 |
| E              |                                | ELECTRIC LINE                                                     |
|                |                                | EXISTING POWER / LIGHT POLE                                       |

[illegible]

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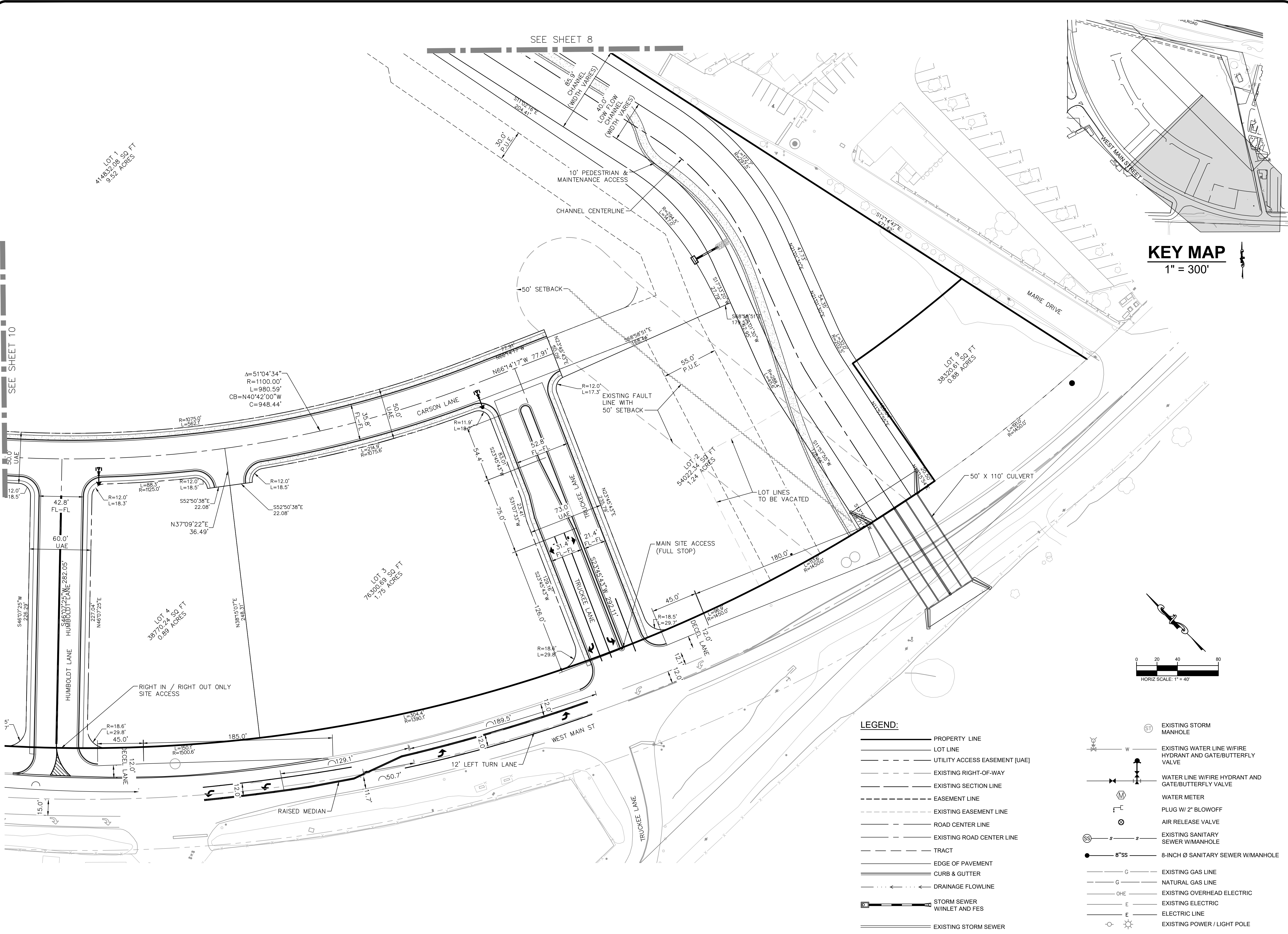


# SITE PLAN

600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

12/09/2021  
PROJECT NO.: 21103  
8 of 23





LEGEND:

- PROPERTY LINE
- LOT LINE
- UTILITY ACCESS EASEMENT [UAE]
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINE
- EASEMENT LINE
- EXISTING EASEMENT LINE
- ROAD CENTER LINE
- EXISTING ROAD CENTER LINE
- TRACT
- EDGE OF PAVEMENT
- CURB & GUTTER
- DRAINAGE FLOWLINE
- STORM SEWER WINLET AND FES
- EXISTING STORM SEWER

- EXISTING STORM MANHOLE
- EXISTING WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
- WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
- WATER METER
- PLUG W/ 2" BLOWOFF
- AIR RELEASE VALVE
- EXISTING SANITARY SEWER W/MANHOLE
- 8-INCH Ø SANITARY SEWER W/MANHOLE
- EXISTING GAS LINE
- NATURAL GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC
- ELECTRIC LINE
- EXISTING POWER / LIGHT POLE

811

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SIZE OTHER THAN 24"x36"

DESIGNED BY: JJP  
DRAWN BY: JJP  
CHECKED BY: LEP

EXISTING CONDITIONS  
(OVERALL MAP)

600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

12/09/2021  
PROJECT NO: 21103

3 of 23

PHelps

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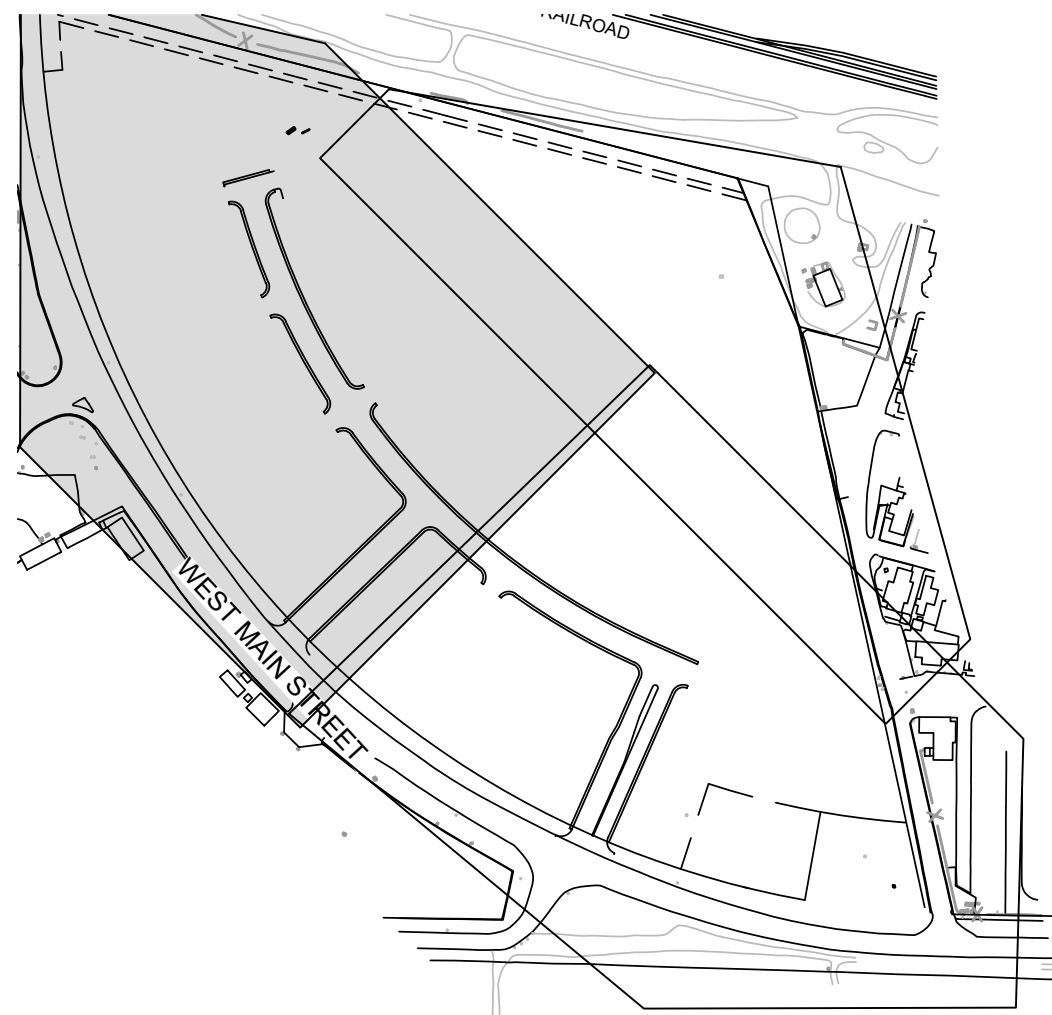
No.

DATE

REVISIONS



Drawing name: S:\Entitlement Engineering\2103 - 600 West Main\08 - CAD\Engineering\Sheets\Tentative Map\21103 - SITE PLAN.dwg 10 SITE PLAN.dwg Jan 10, 2022 3:14pm by: JPucillo



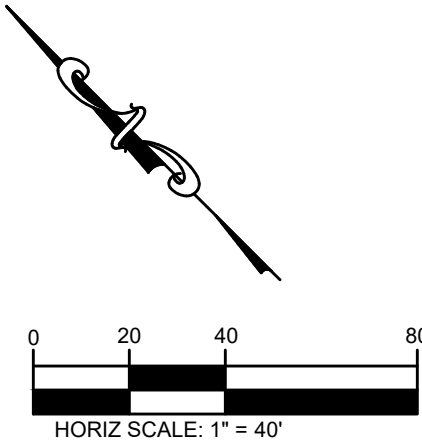
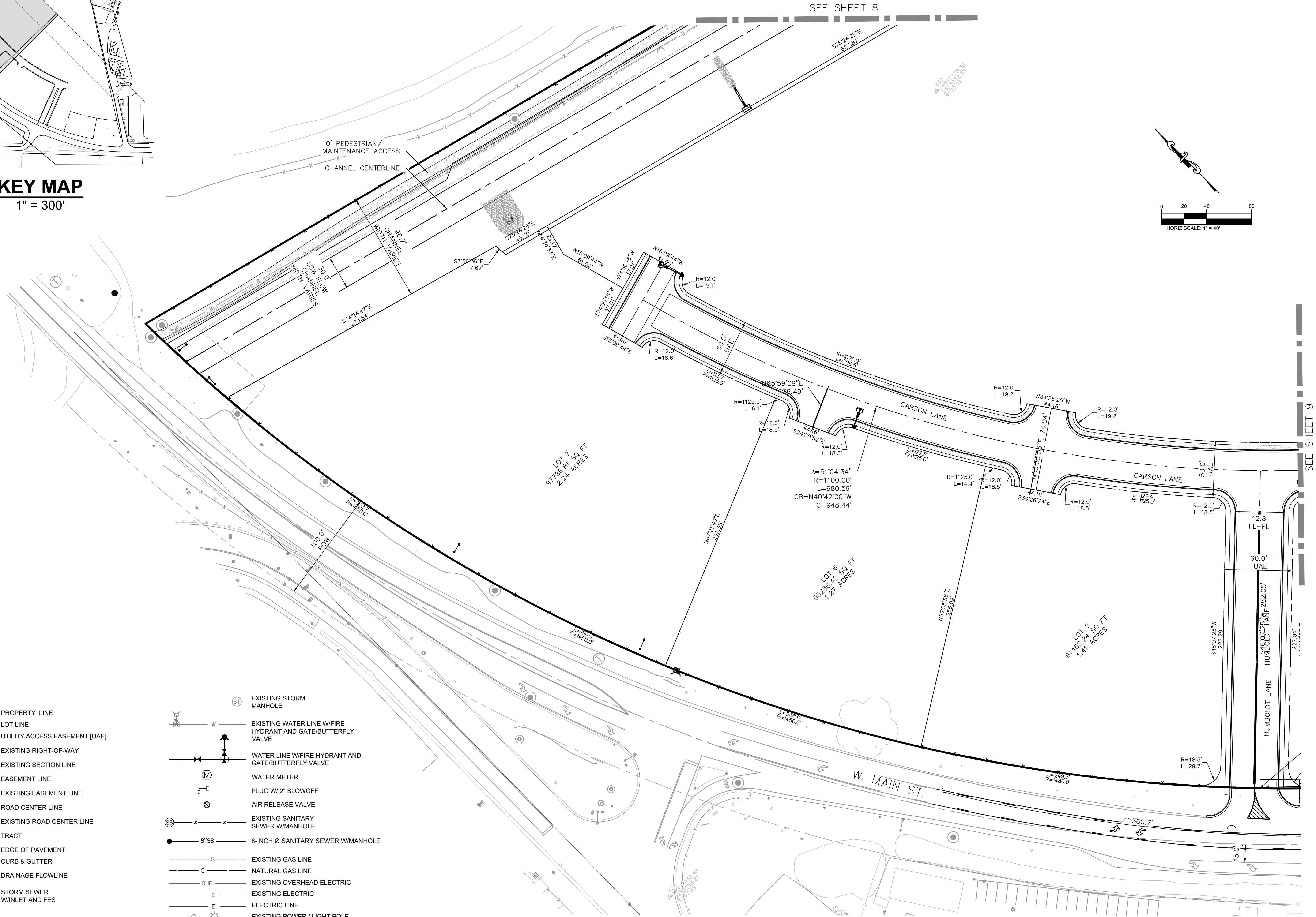
## KEY MAP

1" = 300'

### LEGEND:

- PROPERTY LINE
- LOT LINE
- UTILITY ACCESS EASEMENT [UAE]
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINE
- EASEMENT LINE
- EXISTING EASEMENT LINE
- ROAD CENTER LINE
- EXISTING ROAD CENTER LINE
- TRACT
- EDGE OF PAVEMENT
- CURB & GUTTER
- DRAINAGE FLOWLINE
- STORM SEWER WINLET AND FES
- EXISTING STORM SEWER

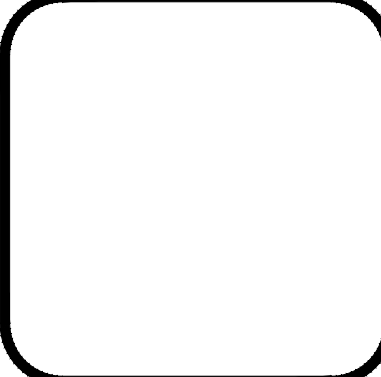
- EXISTING STORM MANHOLE
- EXISTING WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
- WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
- WATER METER
- PLUG W/ 2" BLOWOFF
- AIR RELEASE VALVE
- EXISTING SANITARY SEWER W/MANHOLE
- 8-INCH Ø SANITARY SEWER W/MANHOLE
- EXISTING GAS LINE
- NATURAL GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC
- ELECTRIC LINE
- EXISTING POWER / LIGHT POLE



| No. | REVISIONS | DATE | BY |
|-----|-----------|------|----|
|     |           |      |    |
|     |           |      |    |
|     |           |      |    |
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CHECKED BY: LEP

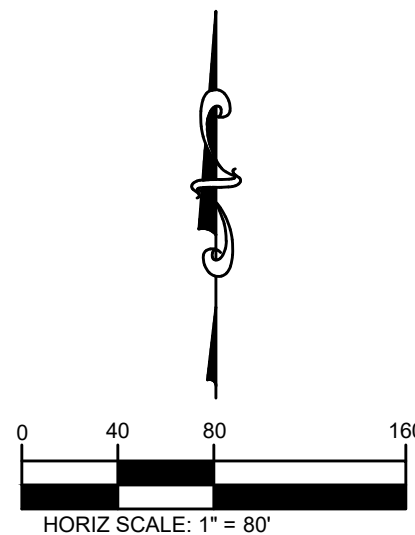
## SITE PLAN

600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

12/09/2021  
PROJECT NO.: 21103

10 of 23

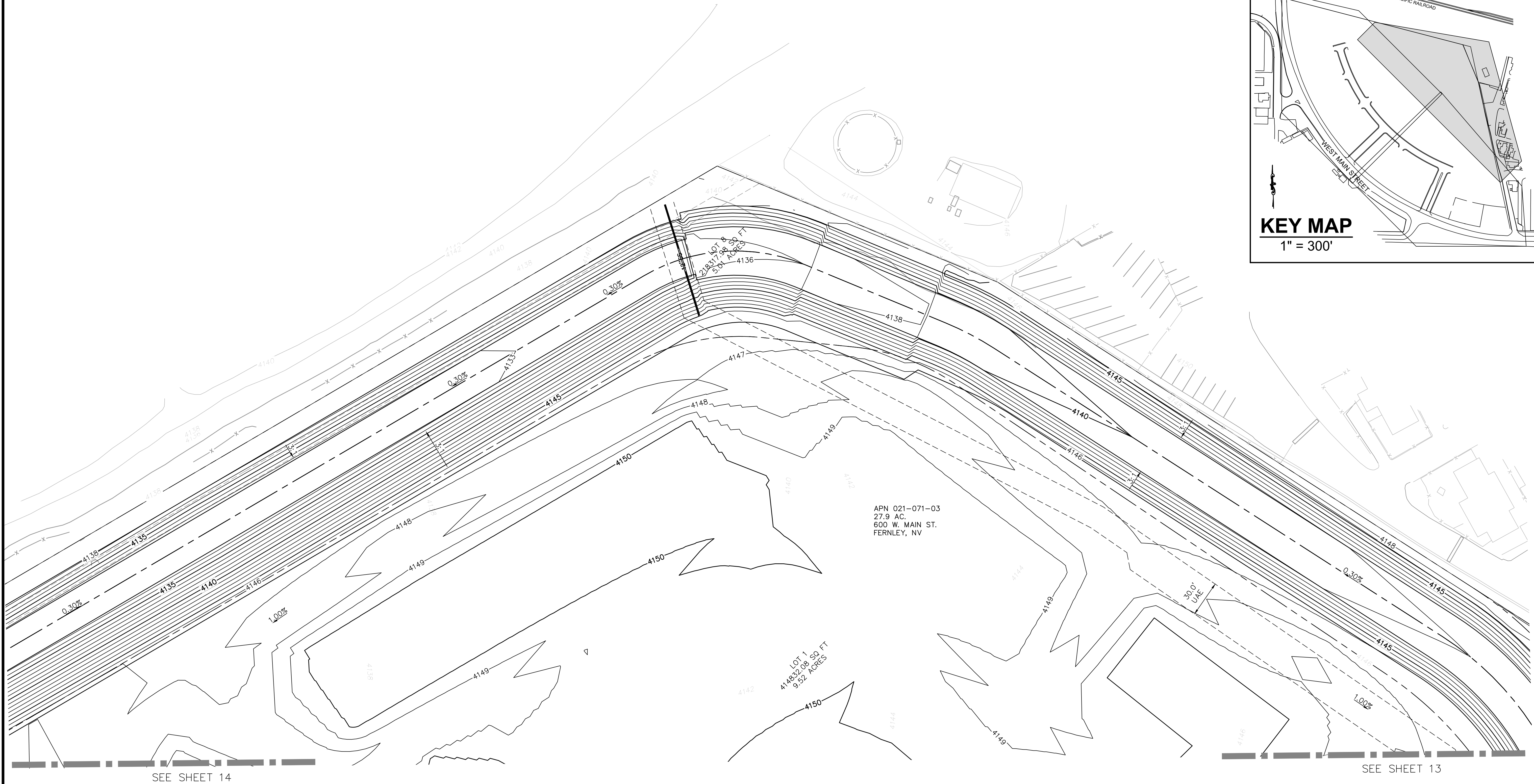




| Name           | Cut Factor   | Fill Factor | 2d Area    | Cut              | Fill              | Net                     |
|----------------|--------------|-------------|------------|------------------|-------------------|-------------------------|
| Volume Surface | <b>1.000</b> | 1.070       | 25.31acres | 20651.16 Cu. Yd. | 182424.69 Cu. Yd. | 161773.53 Cu. Yd.<Fill> |
| Totals         |              |             | 25.31acres | 20651.16 Cu. Yd. | 182424.69 Cu. Yd. | 161773.53 Cu. Yd.<Fill> |

11 of 23





LEGEND:

Legend:

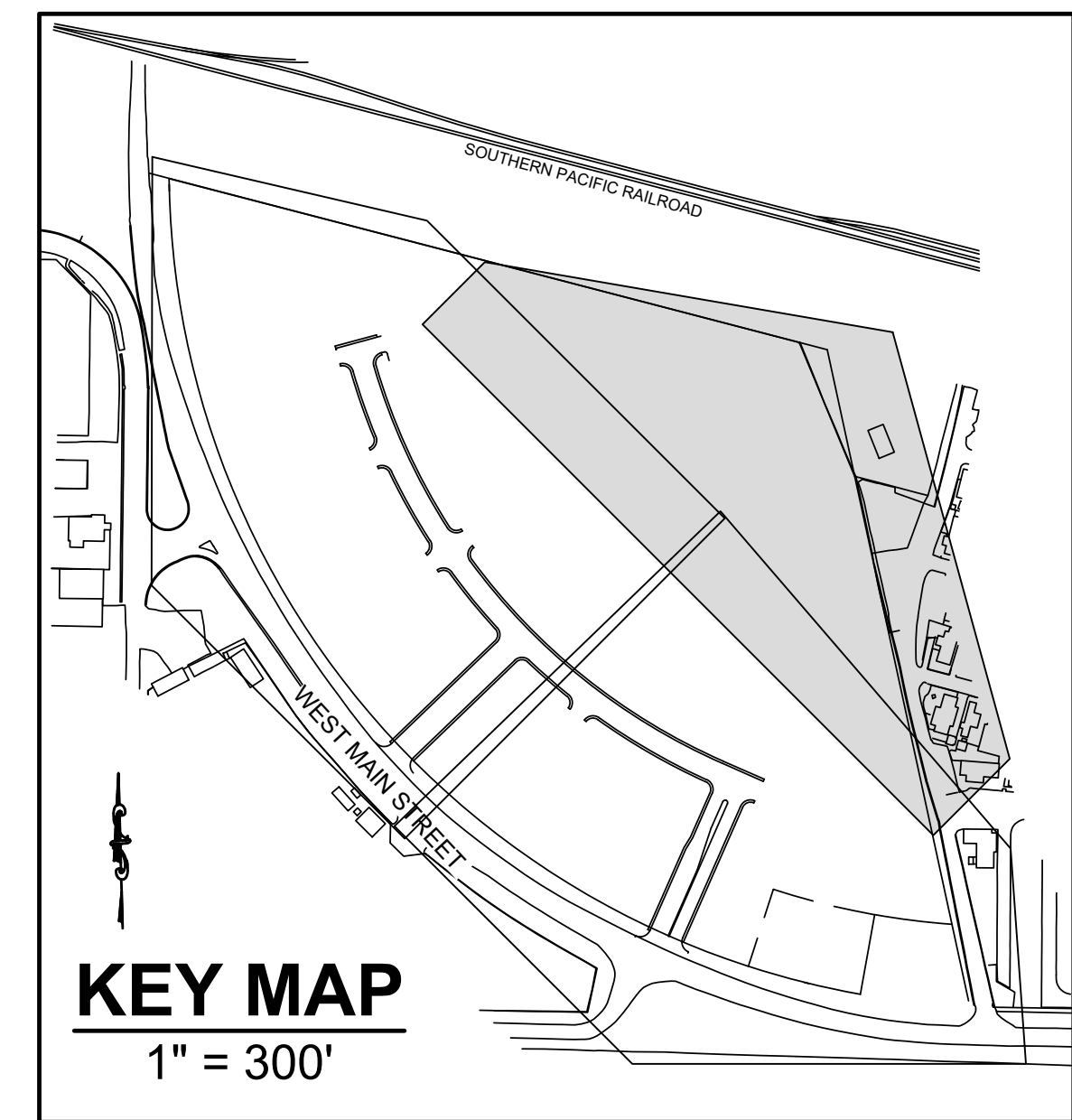
- 8600 EXISTING CONTOURS
- 8600 PROPOSED CONTOURS
- LOT LINE
- SETBACK LINE
- RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- PROPERTY LINE
- EXISTING BOUNDARY LINE
- EXISTING SECTION LINE

Legend:

- TRACT
- EASEMENT LINE
- EXISTING EASEMENT LINE
- ALIGNMENT CENTER LINE
- EXISTING ROAD CENTER LINE
- EDGE OF PAVEMENT
- PROPOSED CURB & GUTTER
- STORM SEWER WIN/LET AND FES
- DRAINAGE FLOWLINE
- 100-YR FLOOD PLAIN
- EXISTING 100-YR FLOOD PLAIN

### Cut/Fill Summary

| Name           | Cut Factor   | Fill Factor | 2d Area    | Cut              | Fill              | Net                     |
|----------------|--------------|-------------|------------|------------------|-------------------|-------------------------|
| Volume Surface | <b>1.000</b> | 1.070       | 25.31acres | 20651.16 Cu. Yd. | 182424.69 Cu. Yd. | 161773.53 Cu. Yd.<Fill> |
| Totals         |              |             | 25.31acres | 20651.16 Cu. Yd. | 182424.69 Cu. Yd. | 161773.53 Cu. Yd.<Fill> |

[illegible]

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DRAWN BY: JJP  
CHECKED BY: LEP

## GRADING PLAN

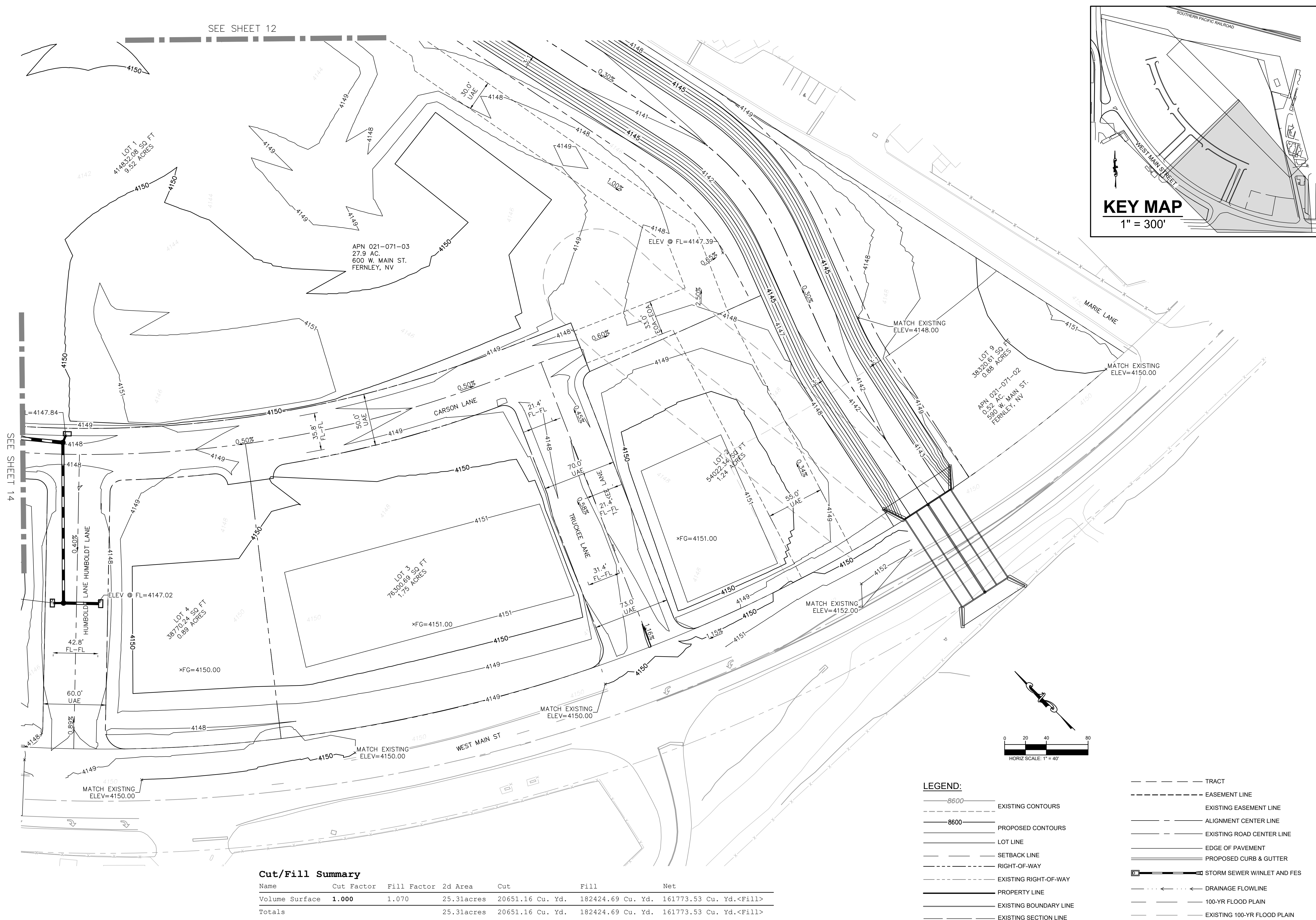
600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

12/09/2021

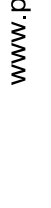
PROJECT NO.: 21103

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| Cut/Fill Summary |              |             |            |                  |                   |                   |        |
|------------------|--------------|-------------|------------|------------------|-------------------|-------------------|--------|
| Name             | Cut Factor   | Fill Factor | 2d Area    | Cut              | Fill              | Net               |        |
| Volume Surface   | <b>1.000</b> | 1.070       | 25.31acres | 20651.16 Cu. Yd. | 182424.69 Cu. Yd. | 161773.53 Cu. Yd. | <Fill> |
| Totals           |              |             | 25.31acres | 20651.16 Cu. Yd. | 182424.69 Cu. Yd. | 161773.53 Cu. Yd. | <Fill> |

[illegible]

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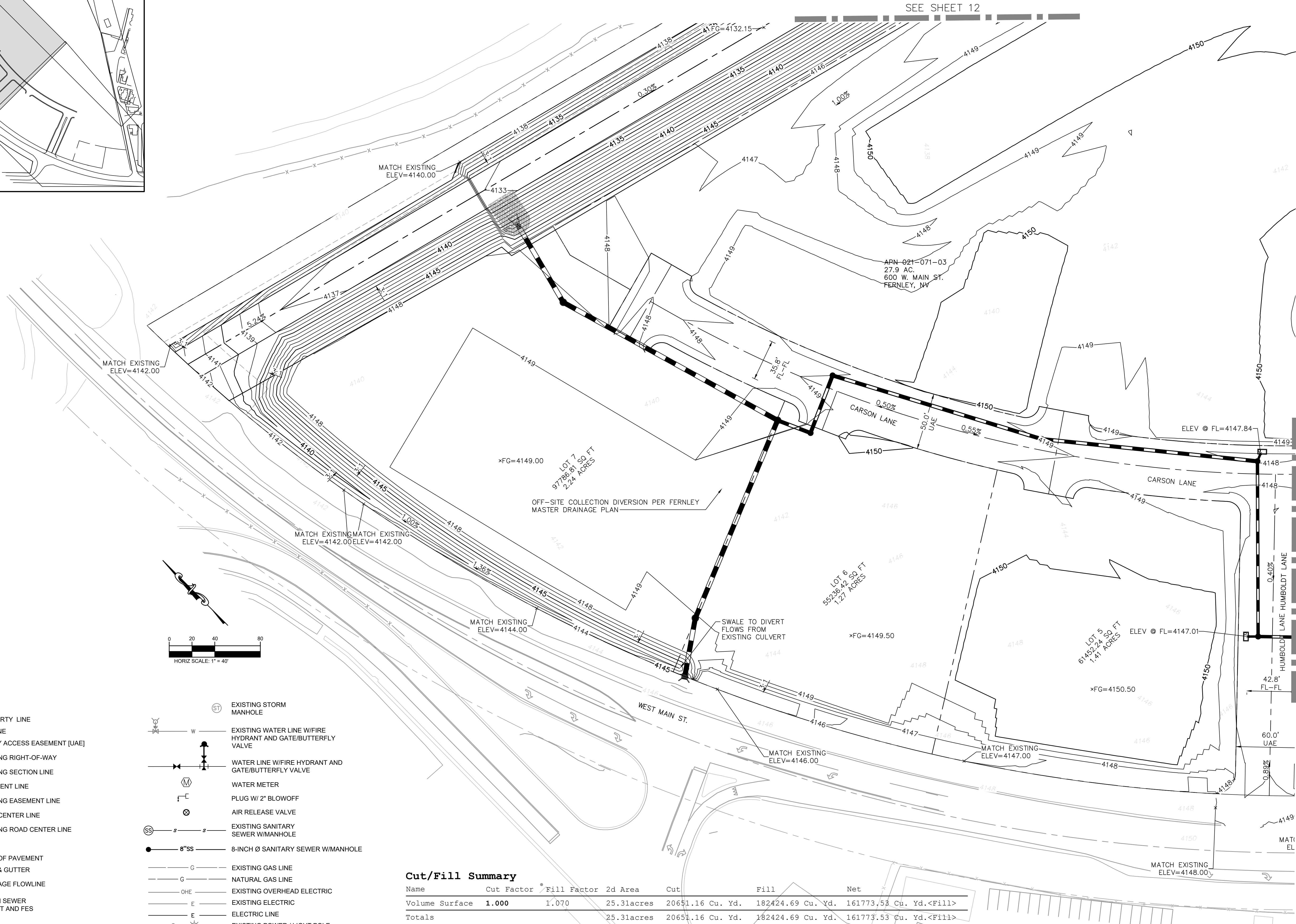
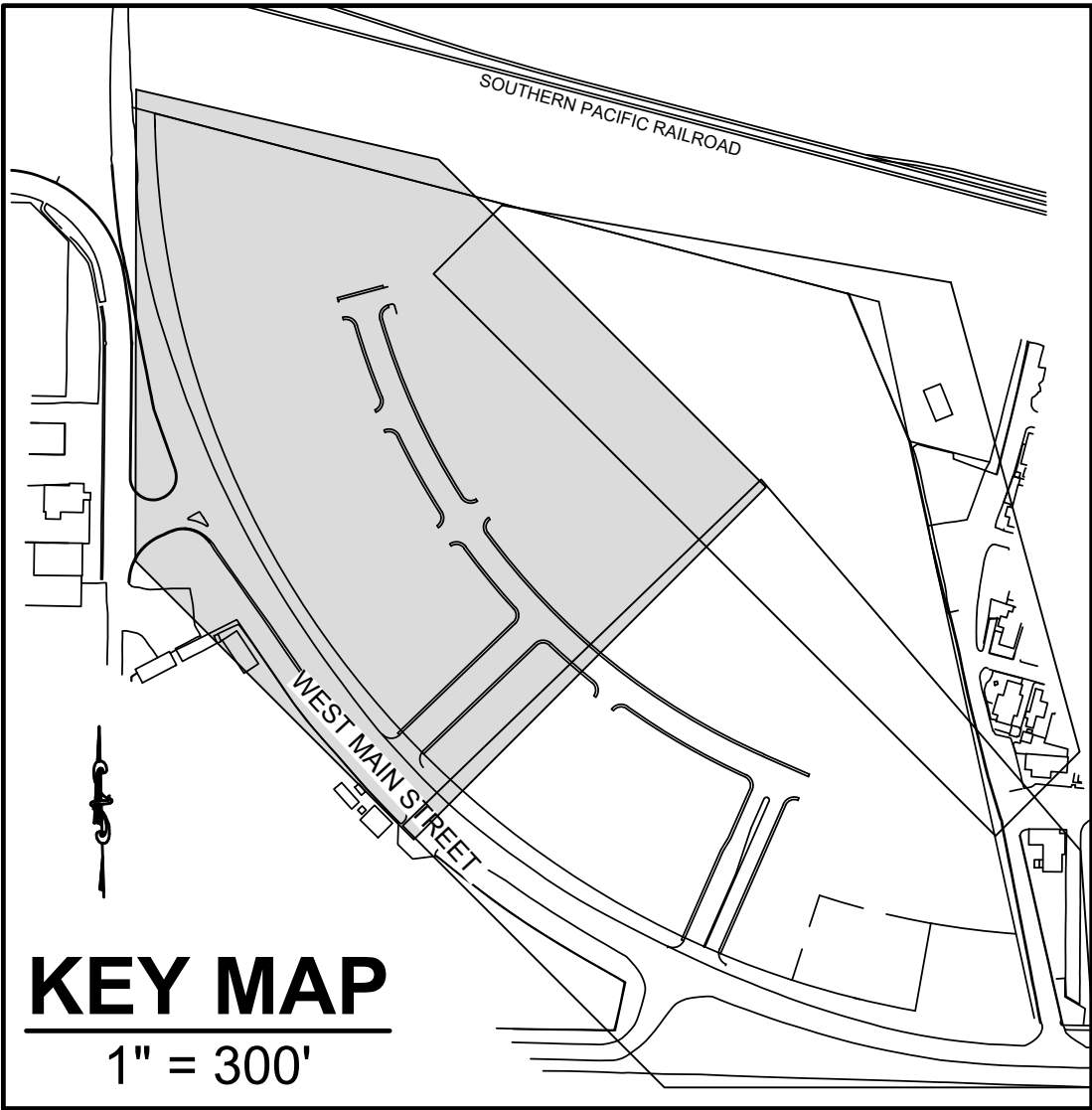
DRAWN BY: JJP

CHECKED BY: LEP

|                                                                  |              |
|------------------------------------------------------------------|--------------|
| 600 WEST MAIN<br>TENTATIVE MAP<br>LYON COUNTY<br>FERNLEY, NEVADA | GRADING PLAN |
| 12/09/2021<br>PROJECT NO.: 21103                                 |              |
| 13 of 23                                                         |              |



Drawing name: S:\Entitlement Engineering\2103 - 600 West Main\08 - CAD\Engineering\Sheets\Tentative Map\21103 - GRADING PLAN.dwg Jan 10, 2022 3:15pm by: JPucillo



LEGEND:

- PROPERTY LINE
- LOT LINE
- UTILITY ACCESS EASEMENT [UAE]
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINE
- EASEMENT LINE
- EXISTING EASEMENT LINE
- ROAD CENTER LINE
- EXISTING ROAD CENTER LINE
- TRACT
- EDGE OF PAVEMENT
- CURB & GUTTER
- DRAINAGE FLOWLINE
- STORM SEWER
- WINLET AND FES
- EXISTING STORM SEWER

- EXISTING STORM MANHOLE
- EXISTING WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
- WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
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- EXISTING SANITARY SEWER W/MANHOLE
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- EXISTING GAS LINE
- NATURAL GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC
- ELECTRIC LINE
- EXISTING POWER / LIGHT POLE

Cut/Fill Summary

| Name           | Cut Factor | Fill Factor | 2d Area    | Cut              | Fill              | Net                     |
|----------------|------------|-------------|------------|------------------|-------------------|-------------------------|
| Volume Surface | 1.000      | 1.070       | 25.31acres | 20651.16 Cu. Yd. | 182424.69 Cu. Yd. | 161773.53 Cu. Yd.<Fill> |
| Totals         |            |             | 25.31acres | 20651.16 Cu. Yd. | 182424.69 Cu. Yd. | 161773.53 Cu. Yd.<Fill> |



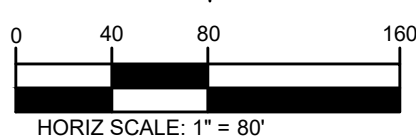
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DRAWN BY: JWP  
CHECKED BY: LEP

GRADING PLAN

600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

12/09/2021  
PROJECT NO: 21103





### LEGEND:

|  |                                                                                                         |
|--|---------------------------------------------------------------------------------------------------------|
|  | PROPERTY LINE                                                                                           |
|  | EXISTING OFFSITE WATER MAIN                                                                             |
|  | 8" WATER LINE W/FIRE HYDRANT GATE/BUTTERFLY VALVE. LINE TO FIRE HYDRANT TO BE 6" DIP TOWN DETAIL 700-06 |
|  | EXISTING 8" OR 12" (AS NOTED) WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE                        |
|  | EXISTING SANITARY SEWER W/MANHOLE                                                                       |
|  | 8" SANITARY SEWER W/MANHOLE WITH 4" SERVICE                                                             |
|  | PROPOSED STORM SEWER LINE                                                                               |
|  | STORM SEWER MANHOLE, INLET AND FES                                                                      |
|  | RIPRAP                                                                                                  |
|  | LOT LINE                                                                                                |
|  | RIGHT-OF-WAY                                                                                            |
|  | EXISTING RIGHT-OF-WAY                                                                                   |
|  | EXISTING SECTION LINE                                                                                   |
|  | EASEMENT LINE                                                                                           |
|  | EXISTING EASEMENT LINE                                                                                  |
|  | ROAD CENTER LINE                                                                                        |
|  | EXISTING ROAD CENTER LINE                                                                               |
|  | TRACT                                                                                                   |
|  | EDGE OF PAVEMENT                                                                                        |
|  | CURB & GUTTER                                                                                           |
|  | 100-YR FLOOD PLAIN                                                                                      |
|  | EXISTING 100-YR FLOOD PLAIN                                                                             |

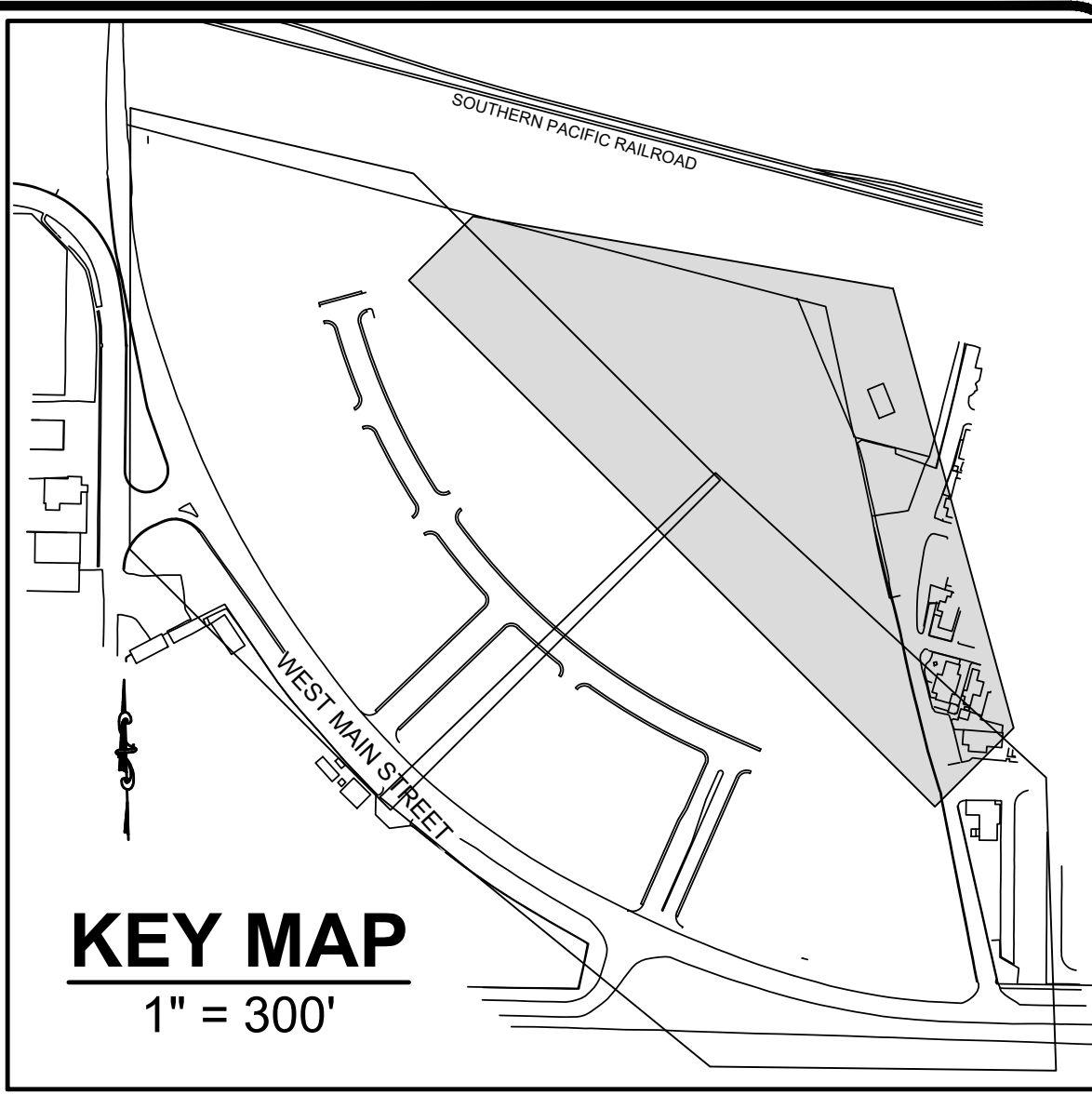
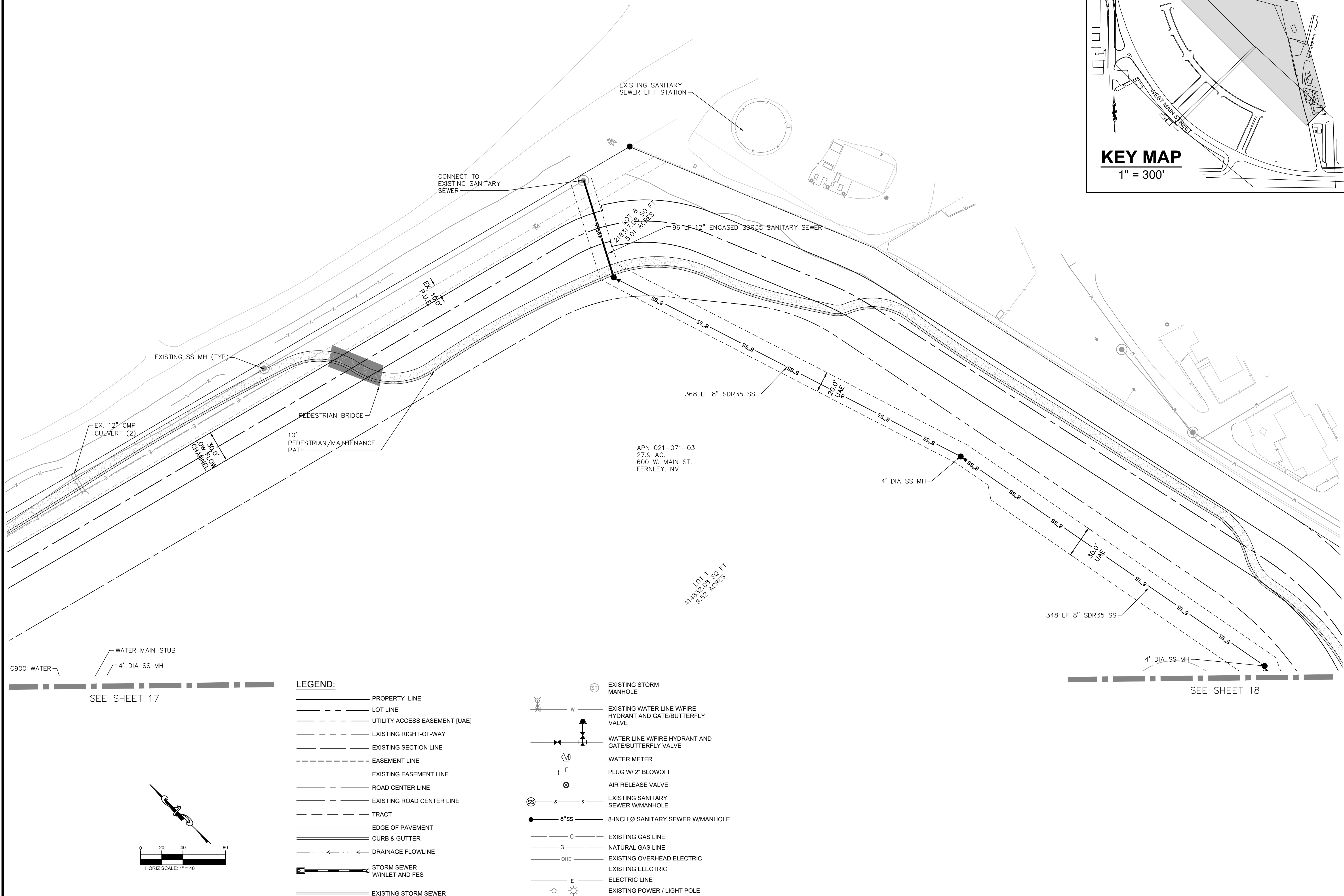
600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

12/09/2021

PROJECT NO.: 21103

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[illegible]

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## UTILITY PLAN

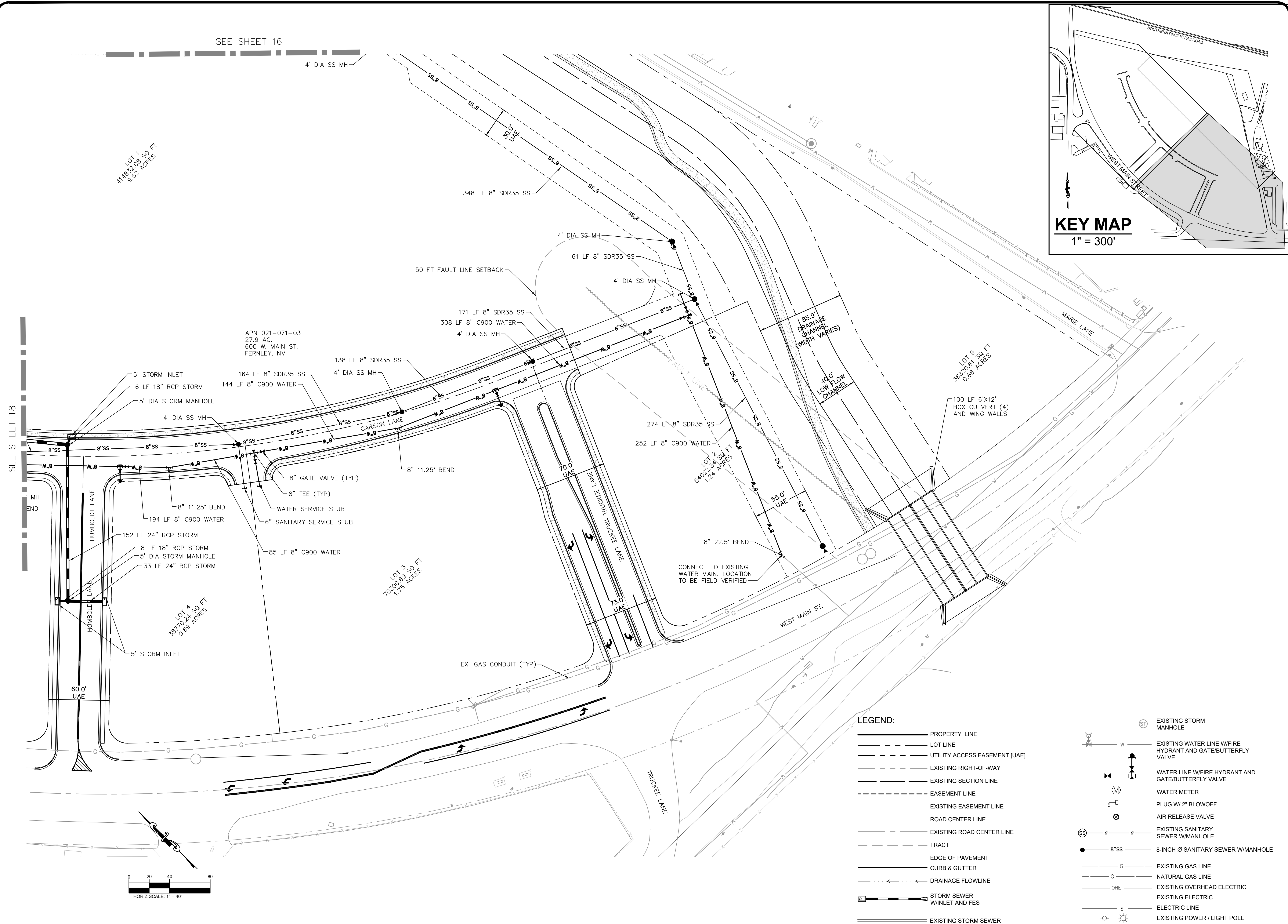
600 WEST MAIN  
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LYON COUNTY  
FERNLEY, NEVADA

12/09/2021

PROJECT NO.: 21103

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[illegible]

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The 811 logo is a black and white graphic. The number '811' is large and bold, with a period after the last '1'. The number is contained within a stylized outline of a shovel, where the top of the shovel forms the upper part of the '8' and the handle forms the lower part. Below the shovel graphic, the text 'Know what's below.' is written in a sans-serif font. Below that, 'Call 811 before you dig.' is written in a similar font. At the bottom of the logo is a table with three rows and two columns. The first row is the header: 'DESIGNED BY: JJP' and 'DRAWN BY: JJP'. The second row is: 'CHECKED BY: LEP' and 'NOT TO SCALE IF SHEET SIZE OTHER THAN 24"x36'. The third row is: 'NOT TO SCALE IF SHEET SIZE OTHER THAN 24"x36' and 'NOT TO SCALE IF SHEET SIZE OTHER THAN 24"x36'.

## UTILITY PLAN

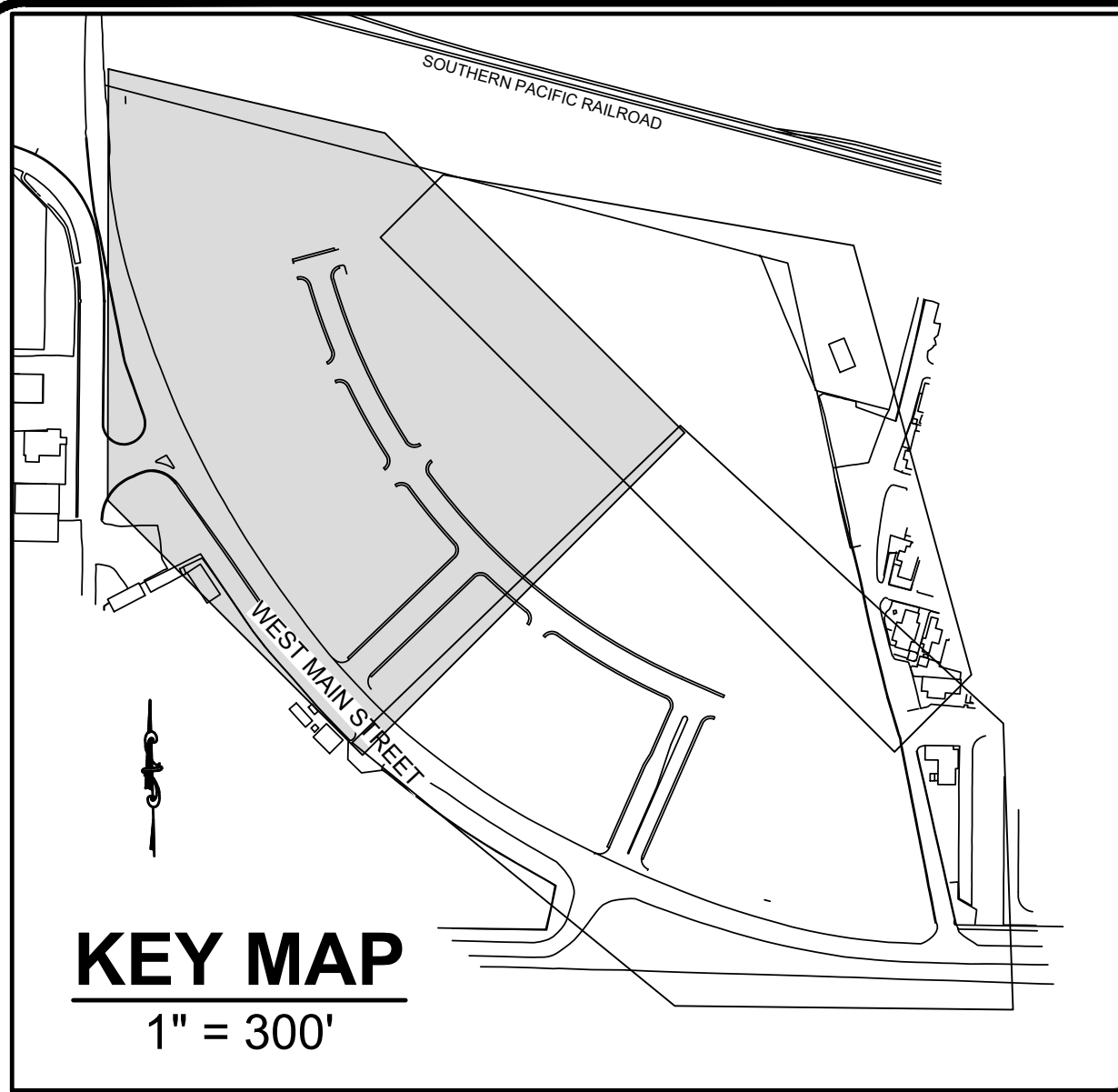
600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

|                    |
|--------------------|
| 12/09/2021         |
| PROJECT NO.: 21103 |

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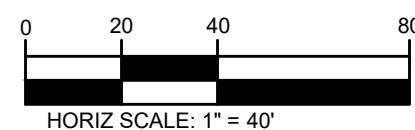
Drawing name: S:\Entitlement Engineering\2103 - 600 West Main\08 - CAD\Engineering\Sheets\Tentative Map\2103 - UTILITY PLAN.dwg 18 UTILITY PLAN Jan 10, 2022 3:15pm by: JPucillo



LEGEND:

- PROPERTY LINE
- LOT LINE
- UTILITY ACCESS EASEMENT [UAE]
- EXISTING RIGHT-OF-WAY
- EXISTING SECTION LINE
- EASEMENT LINE
- EXISTING EASEMENT LINE
- ROAD CENTER LINE
- EXISTING ROAD CENTER LINE
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- EDGE OF PAVEMENT
- CURB & GUTTER
- DRAINAGE FLOWLINE
- STORM SEWER W/INLET AND FES
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- EXISTING WATER LINE W/FIRE HYDRANT AND GATE/BUTTERFLY VALVE
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- EXISTING GAS LINE
- NATURAL GAS LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ELECTRIC
- ELECTRIC LINE
- EXISTING POWER / LIGHT POLE



SEE SHEET 16

APN 021-071-03  
27.9 AC.  
600 W. MAIN ST.  
FERNLEY, NV

SEE SHEET 15



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UTILITY PLAN

600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

12/09/2021

PROJECT NO: 21103

18 of 23

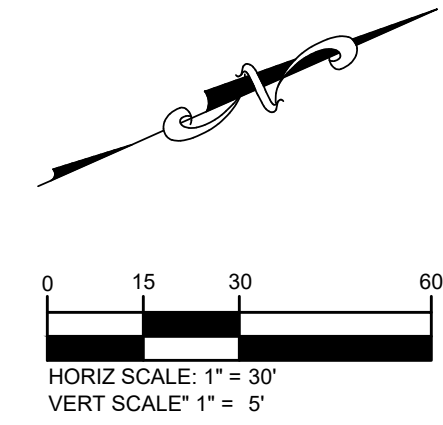
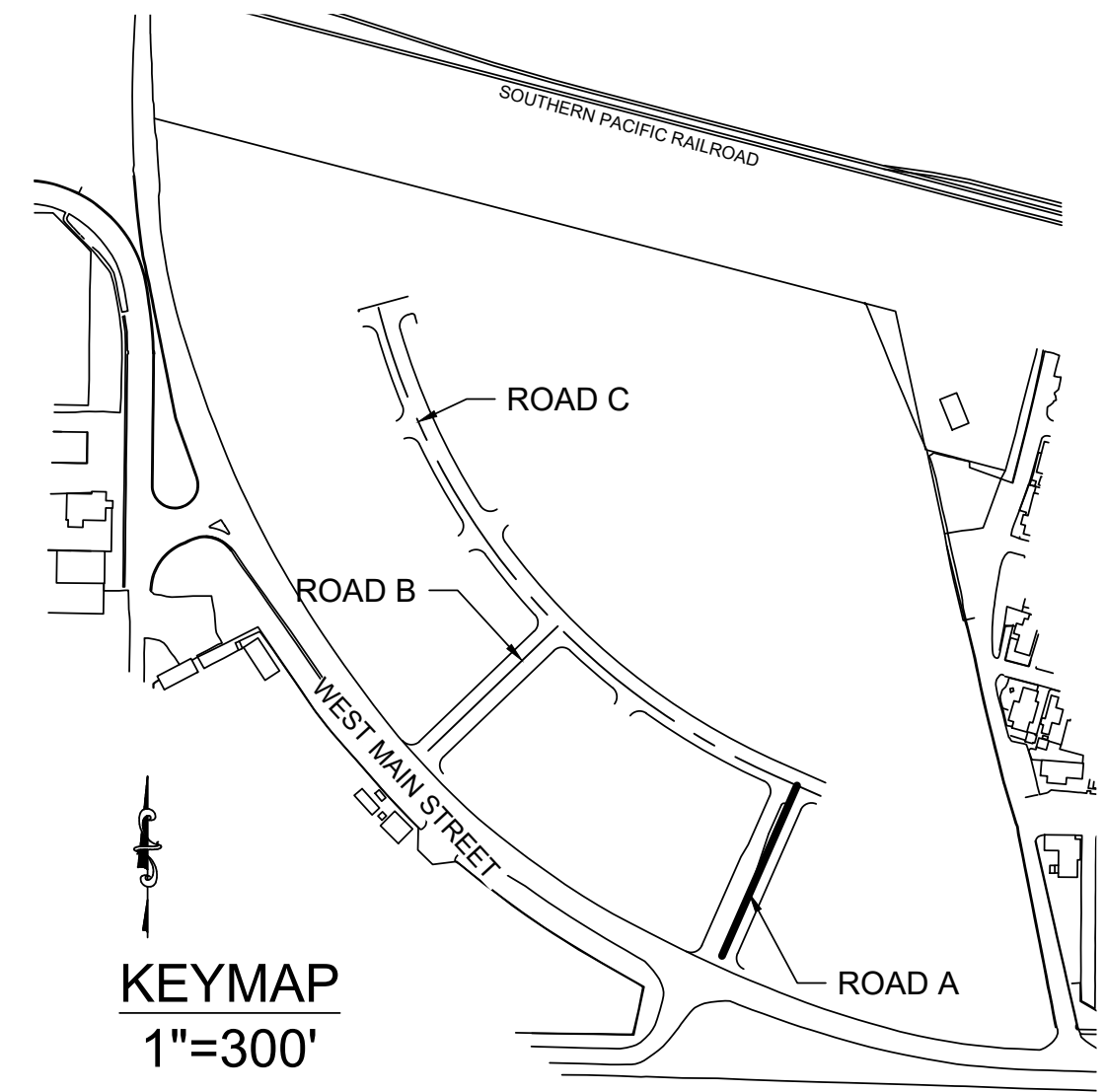
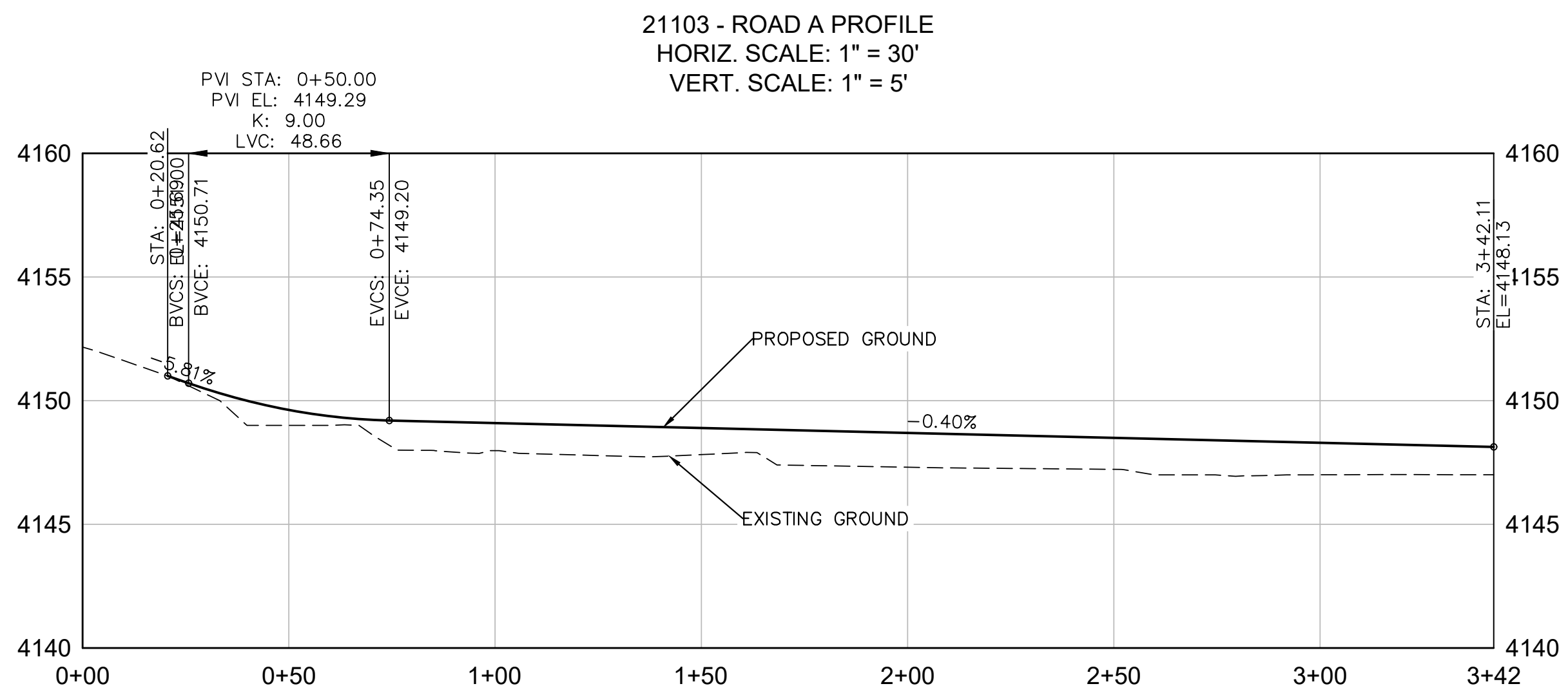
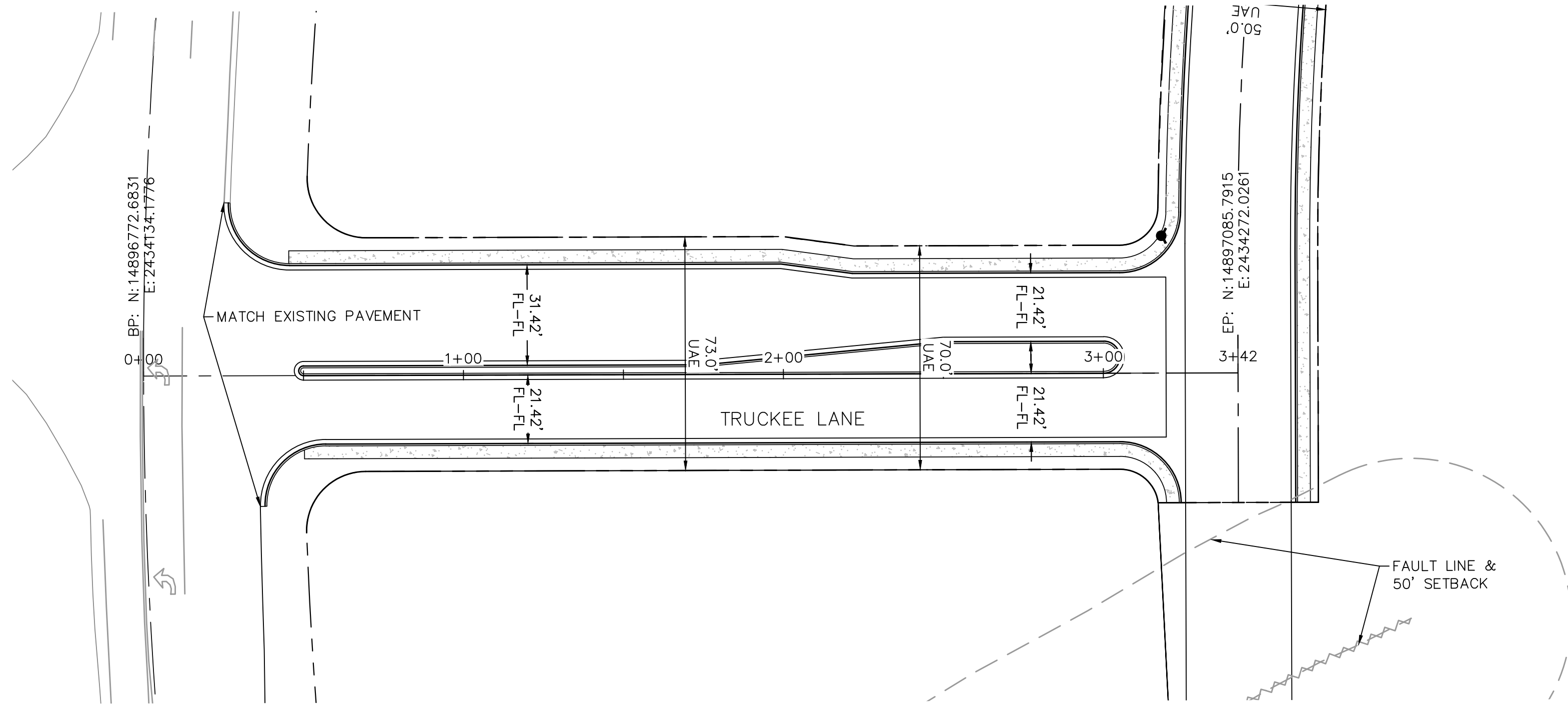
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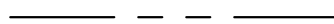
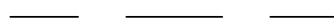
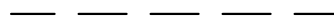
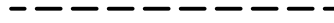
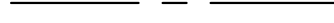
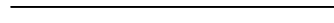
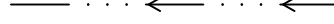


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No. REVISIONS BY DATE





- LEGEND:**
-  EXISTING CONTOURS
  -  PROPOSED CONTOURS
  -  LOT LINE
  -  SETBACK LINE
  -  RIGHT-OF-WAY
  -  EXISTING RIGHT-OF-WAY
  -  PROPERTY LINE
  -  EXISTING BOUNDARY LINE
  -  EXISTING SECTION LINE
  -  TRACT
  -  EASEMENT LINE
  -  EXISTING EASEMENT LINE
  -  ALIGNMENT CENTER LINE
  -  EXISTING ROAD CENTER LINE
  -  EDGE OF PAVEMENT
  -  PROPOSED CURB & GUTTER
  -  STORM SEWER INLET AND FES
  -  DRAINAGE FLOWLINE
  -  100-YR FLOOD PLAIN
  -  EXISTING 100-YR FLOOD PLAIN



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**DRAWN BY: JJP**

CHECKED BY: LEP

ROAD A P&amp;P

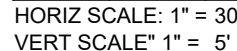
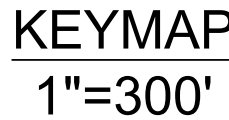
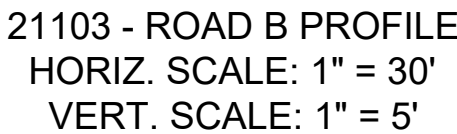
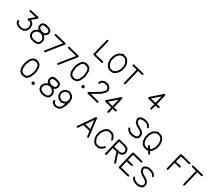
600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

12/09/2021

PROJECT NO.: 21103

19 of 23





- 8600
- EXISTING CONTOURS
- PROPOSED CONTOURS
- LOT LINE
- SETBACK LINE
- RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY
- PROPERTY LINE
- EXISTING BOUNDARY LINE
- EXISTING SECTION LINE
- TRACT
- EASEMENT LINE
- EXISTING EASEMENT LINE
- ALIGNMENT CENTER LINE
- EXISTING ROAD CENTER LINE
- EDGE OF PAVEMENT
- PROPOSED CURB & GUTTER
- STORM SEWER WINLET AND FES
- DRAINAGE FLOWLINE
- 100-YR FLOOD PLAIN
- EXISTING 100-YR FLOOD PLAIN

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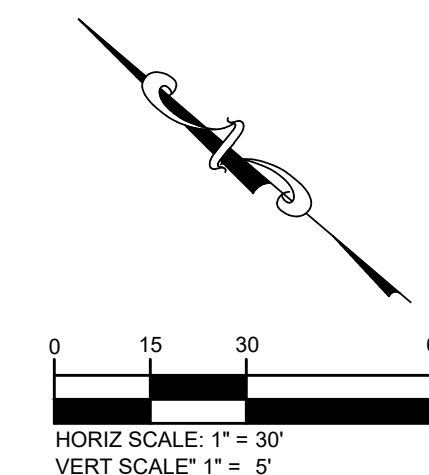
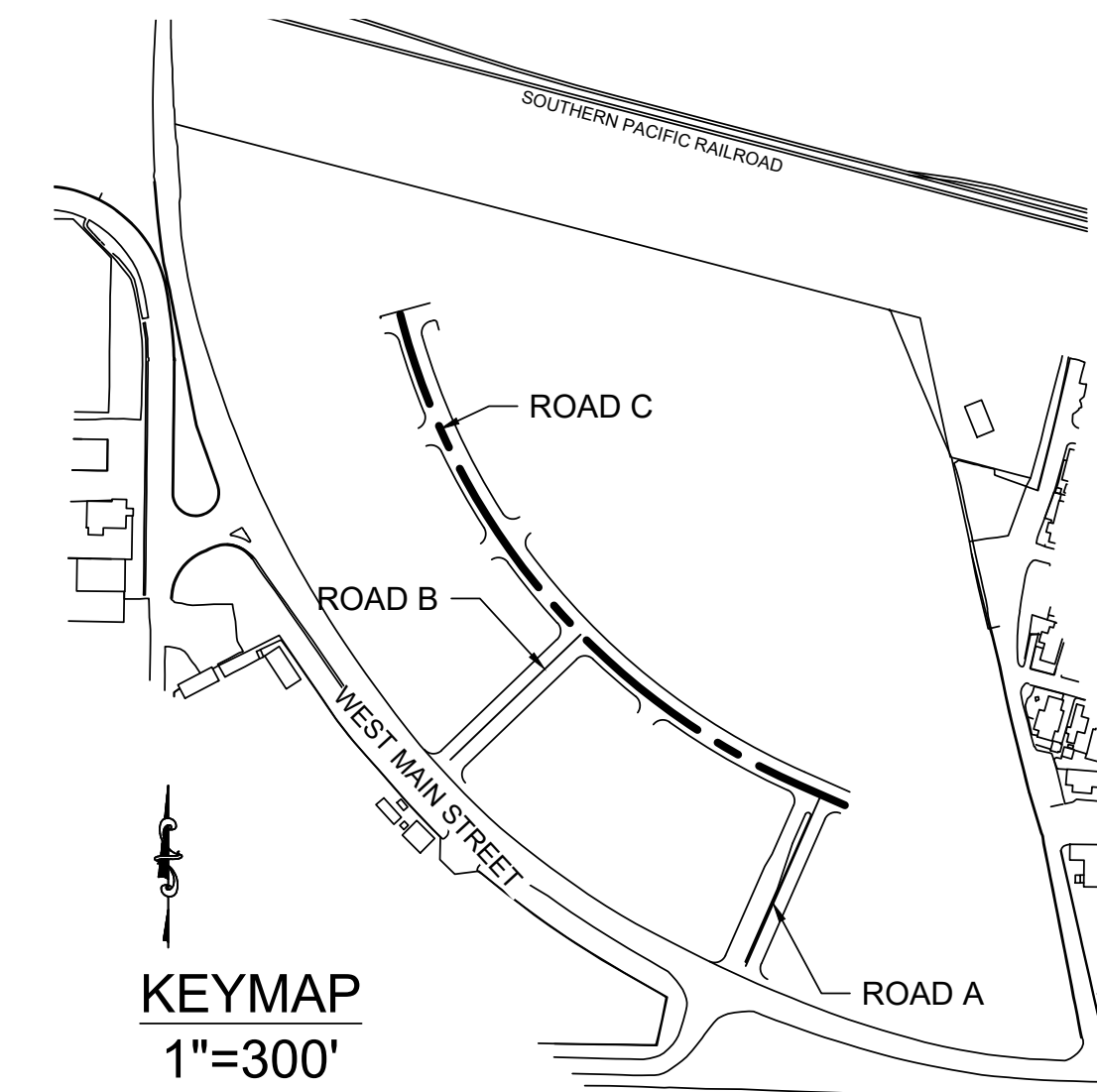
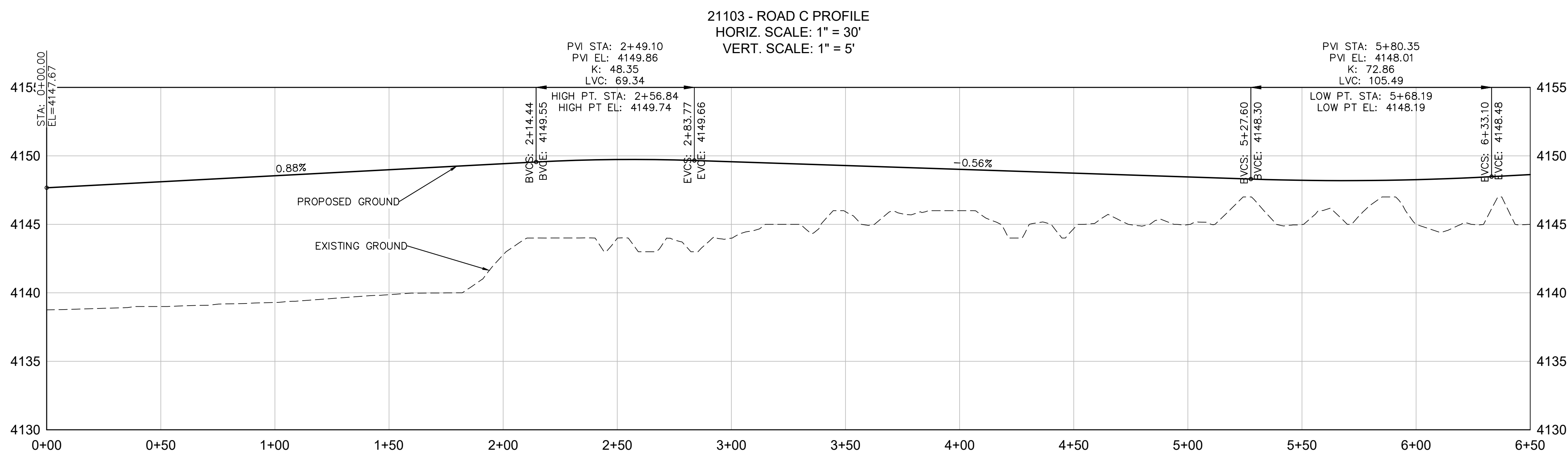
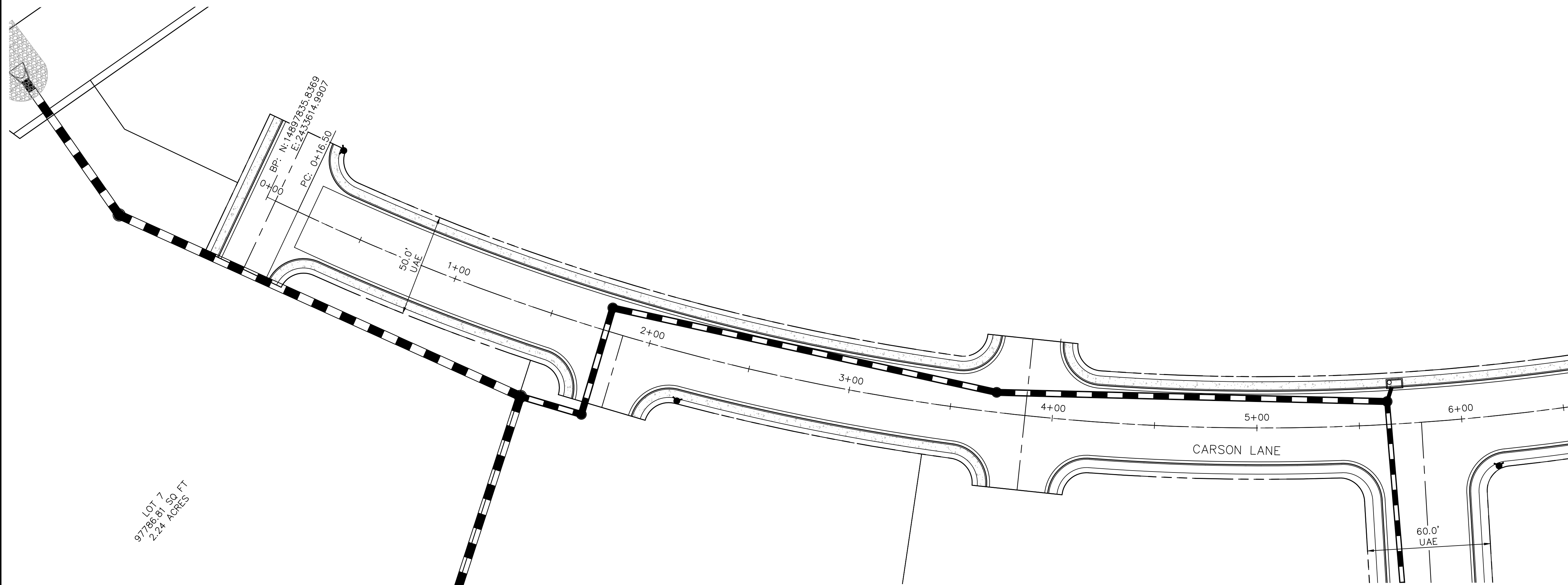
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600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

12/09/2021  
PROJECT NO.: 21103

20 of 23





- LEGEND:**
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|  | EXISTING CONTOURS           |
|  | PROPOSED CONTOURS           |
|  | LOT LINE                    |
|  | SETBACK LINE                |
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|  | EXISTING ROAD CENTER LINE   |
|  | EDGE OF PAVEMENT            |
|  | PROPOSED CURB & GUTTER      |
|  | STORM SEWER W/INLET AND FES |
|  | DRAINAGE FLOWLINE           |
|  | 100-YR FLOOD PLAIN          |
|  | EXISTING 100-YR FLOOD PLAIN |

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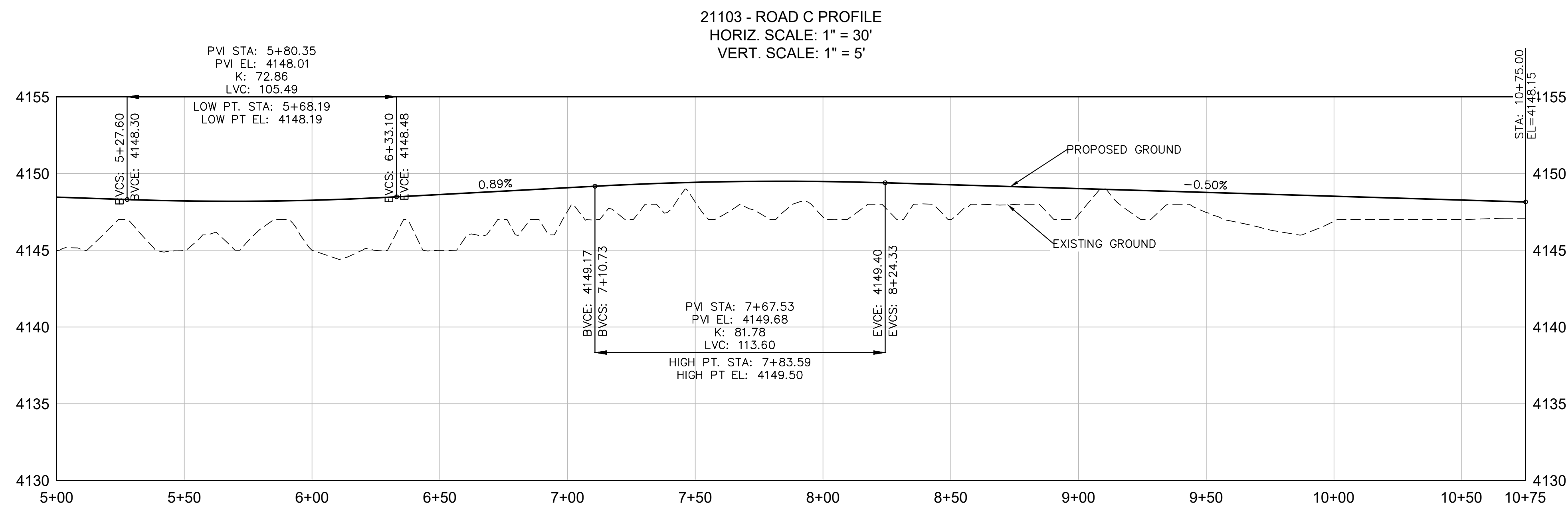
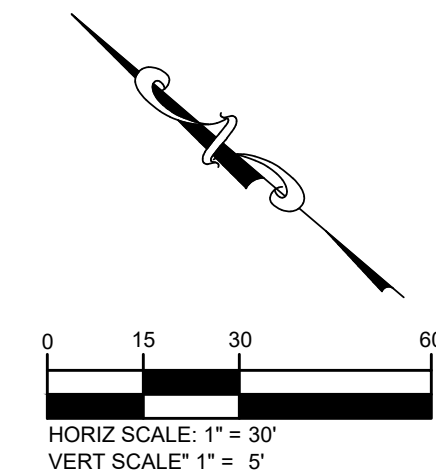
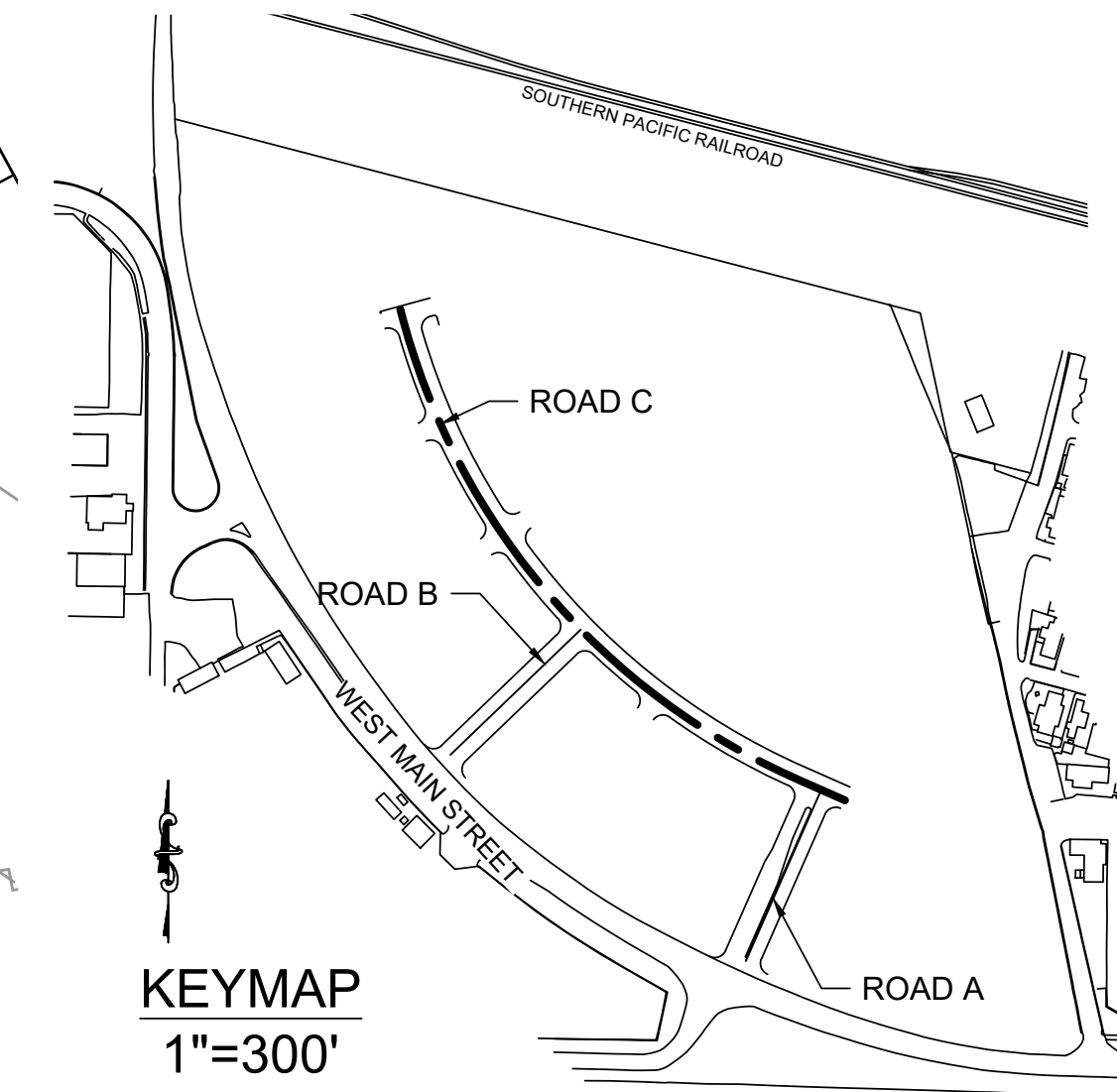
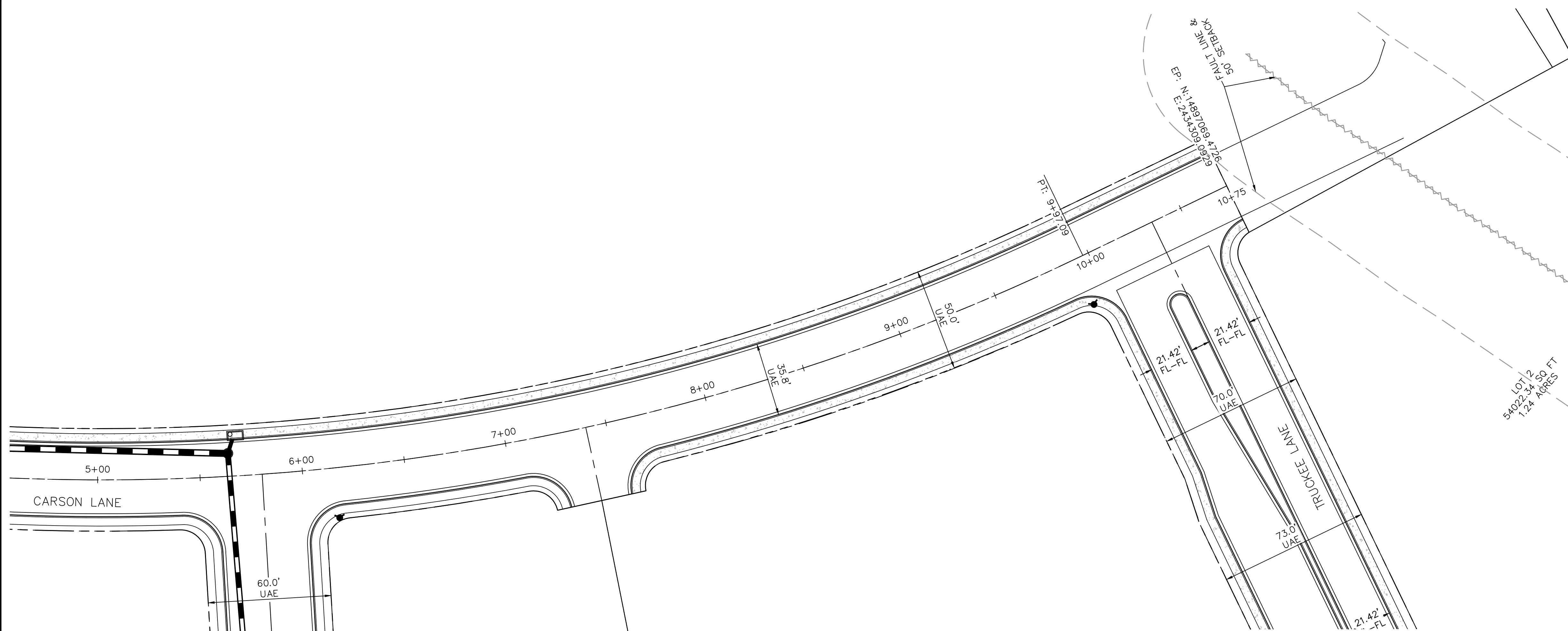


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600 WEST MAIN  
TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

12/09/2021  
PROJECT NO.: 21103





- LEGEND:**
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|  | EXISTING CONTOURS           |
|  | PROPOSED CONTOURS           |
|  | LOT LINE                    |
|  | SETBACK LINE                |
|  | RIGHT-OF-WAY                |
|  | EXISTING RIGHT-OF-WAY       |
|  | PROPERTY LINE               |
|  | EXISTING BOUNDARY LINE      |
|  | EXISTING SECTION LINE       |
|  | TRACT                       |
|  | EASEMENT LINE               |
|  | EXISTING EASEMENT LINE      |
|  | ALIGNMENT CENTER LINE       |
|  | EXISTING ROAD CENTER LINE   |
|  | EDGE OF PAVEMENT            |
|  | PROPOSED CURB & GUTTER      |
|  | STORM SEWER WIN/LET AND FES |
|  | DRAINAGE FLOWLINE           |
|  | 100-YR FLOOD PLAIN          |
|  | EXISTING 100-YR FLOOD PLAIN |

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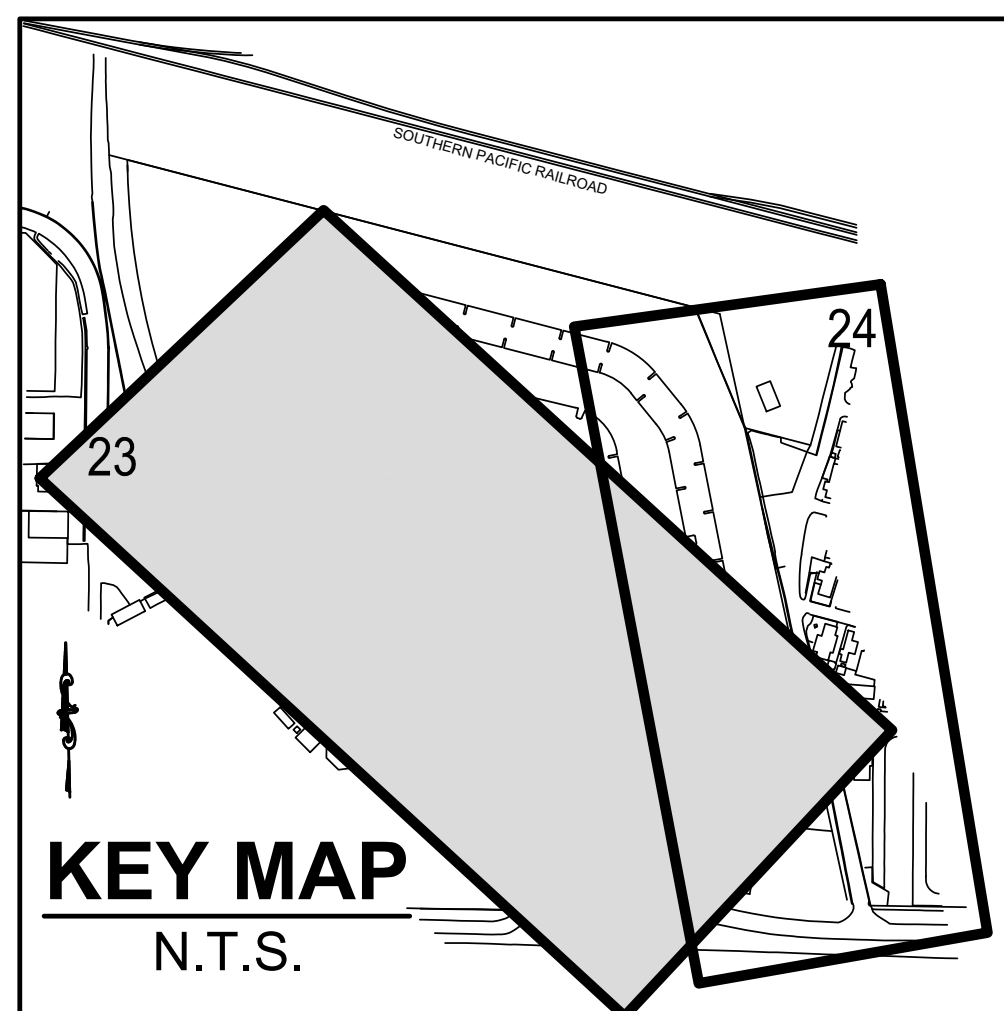
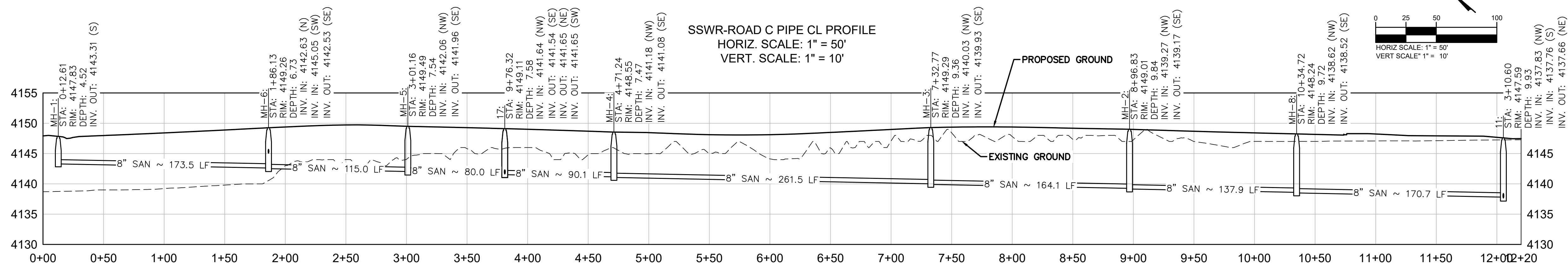
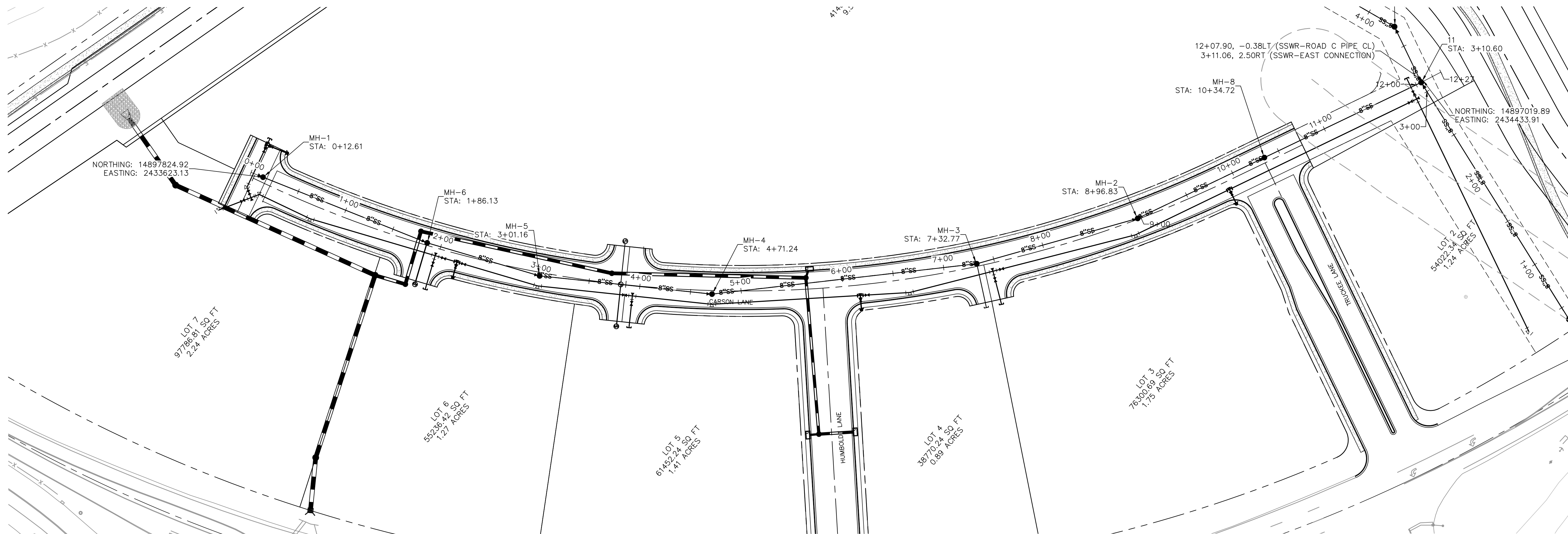
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| <b>CHECKED BY: LEP</b>  |

ROAD C P&amp;P 5+00 - 10+75

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TENTATIVE MAP  
LYON COUNTY  
FERNLEY, NEVADA

12/09/2021  
PROJECT NO.: 21103



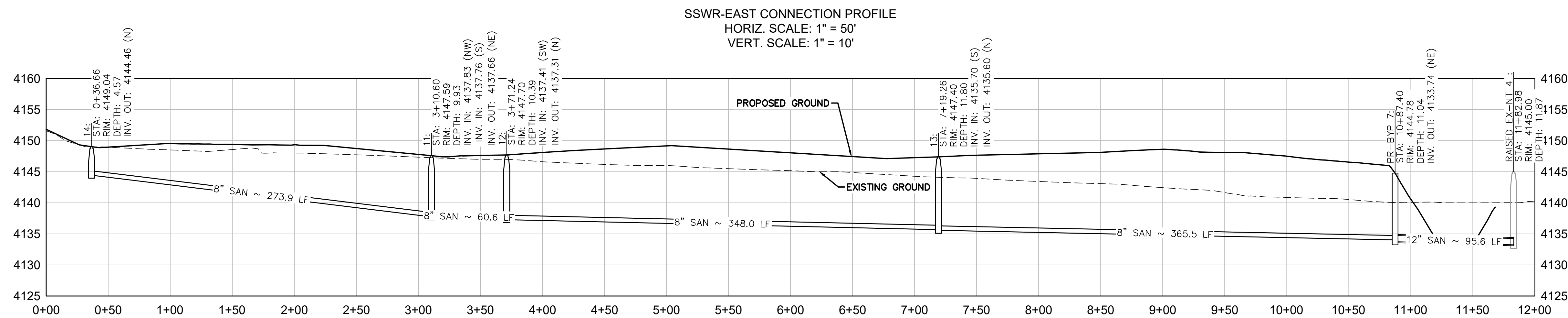
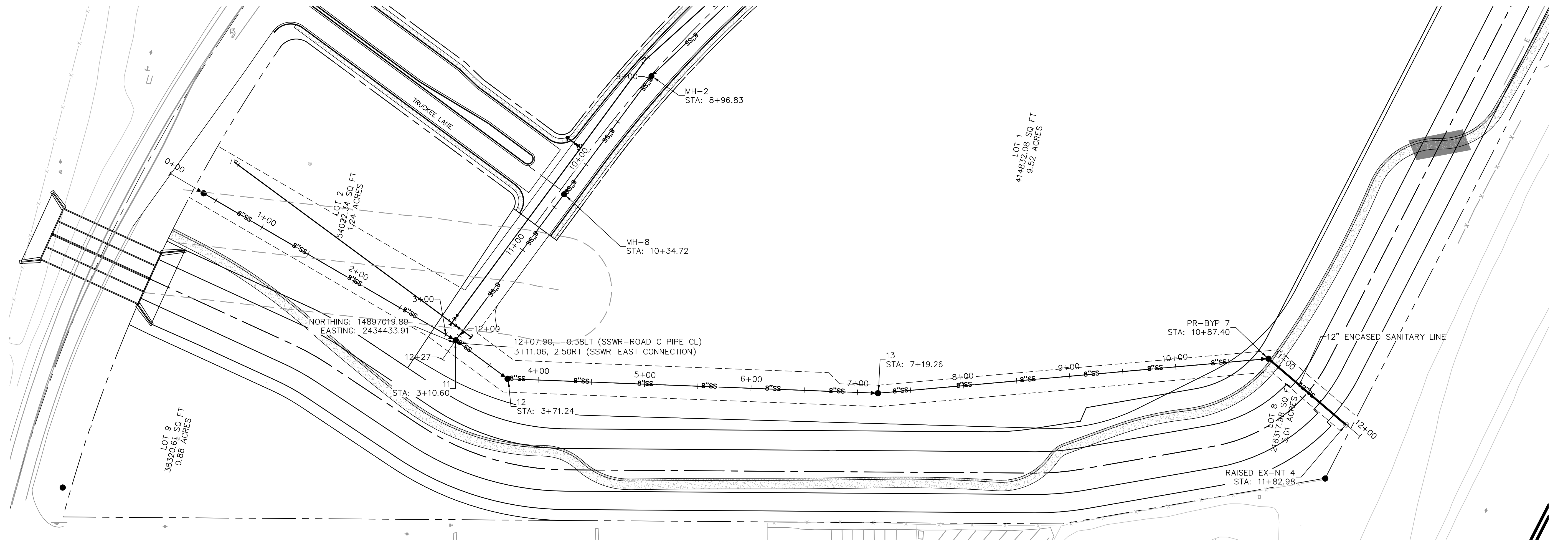
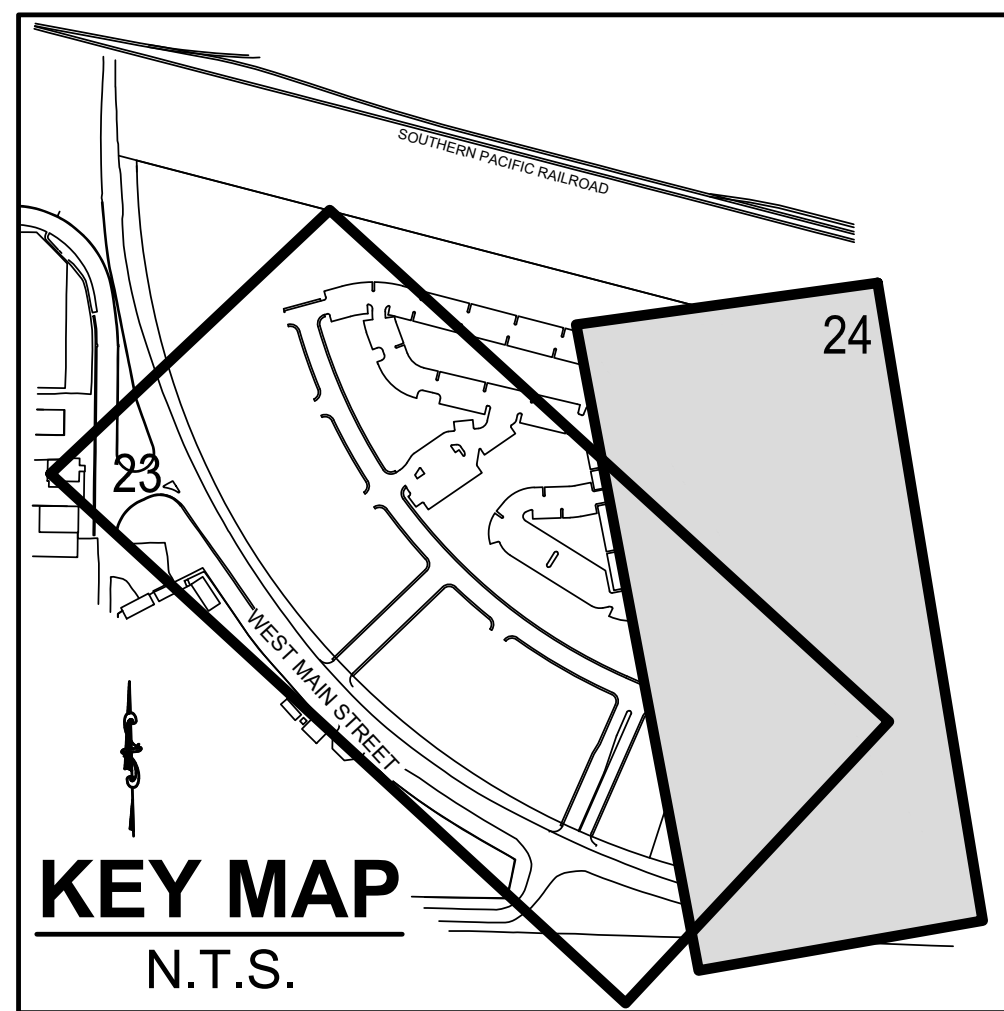


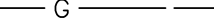
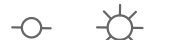
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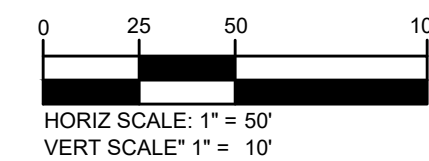
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- |  |                                |
|--|--------------------------------|
|  | PROPERTY LINE                  |
|  | LOT LINE                       |
|  | UTILITY ACCESS EASEMENT (UAE)  |
|  | EXISTING RIGHT-OF-WAY          |
|  | EXISTING SECTION LINE          |
|  | EASEMENT LINE                  |
|  | EXISTING EASEMENT LINE         |
|  | ROAD CENTER LINE               |
|  | EXISTING ROAD CENTER LINE      |
|  | TRACT                          |
|  | EDGE OF PAVEMENT               |
|  | CURB & GUTTER                  |
|  | DRAINAGE FLOWLINE              |
|  | STORM SEWER<br>W/INLET AND FES |
|  | EXISTING STORM SEWER           |

- |                                                                                       |                           |                                                                   |
|---------------------------------------------------------------------------------------|---------------------------|-------------------------------------------------------------------|
|  | EXISTING STORM<br>MANHOLE |                                                                   |
|  | W                         | EXISTING WATER LINE W/FIRE<br>HYDRANT AND GATE/BUTTERFLY<br>VALVE |
|  |                           | WATER LINE W/FIRE HYDRANT AND<br>GATE/BUTTERFLY VALVE             |
|  |                           | WATER METER                                                       |
|  |                           | PLUG W/ 2" BLOWOFF                                                |
|  |                           | AIR RELEASE VALVE                                                 |
|  | s s                       | EXISTING SANITARY<br>SEWER W/MANHOLE                              |
|  | 8"SS                      | 8-INCH Ø SANITARY SEWER W/MANHOLE                                 |
|  | G                         | EXISTING GAS LINE                                                 |
|  | G                         | NATURAL GAS LINE                                                  |
|  | OHE                       | EXISTING OVERHEAD ELECTRIC                                        |
|  | E                         | EXISTING ELECTRIC                                                 |
|  | E                         | ELECTRIC LINE                                                     |
|  |                           | EXISTING POWER / LIGHT POLE                                       |





- |                                                                                       |                                                                   |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------|
|  | EXISTING STORM<br>MANHOLE                                         |
|  | EXISTING WATER LINE W/FIRE<br>HYDRANT AND GATE/BUTTERFLY<br>VALVE |
|  | WATER LINE W/FIRE HYDRANT AND<br>GATE/BUTTERFLY VALVE             |
|  | WATER METER                                                       |
|  | PLUG W/ 2" BLOWOFF                                                |
|  | AIR RELEASE VALVE                                                 |
|  | EXISTING SANITARY<br>SEWER W/MANHOLE                              |
|  | 8" - INCH Ø SANITARY SEWER W/MANHOLE                              |
|  | EXISTING GAS LINE                                                 |
|  | NATURAL GAS LINE                                                  |
|  | EXISTING OVERHEAD ELECTRIC                                        |
|  | EXISTING ELECTRIC                                                 |
|  | ELECTRIC LINE                                                     |
|  | EXISTING POWER / LIGHT POLE                                       |





REQUIRED LANDSCAPE AREA: 90,124 SF MIN. (2 AC.)

- 15% OF SITE AREA
- NOT CALCULATED IN THIS FIGURE -
  - LOT 1 (414,832 SF, 9.52 AC) - C.U.P SUBMITTED
  - LOT 8 (218,317 SF, 5.01 AC) - NO STRUCTURES, DRAINAGE CHANNEL WITH WALKING TRAIL PER SEC. 32.09.09.D 1, LOT 8 WILL BE REVEGETATED WITH NATIVE PLANTS.

TREES REQUIRED: 368

- 1 TREE PER 500 SF OF REQ. LANDSCAPE AREA = 175
- 1 TREE PER 10 PARKING SPACES (383 SPACES PROVIDED) = 38
- 1 TREE PER 30 LF STREET FRONTAGE = 155

SHRUBS REQUIRED: 1,747 MIN  
• 1 SHRUB PER 50 SF

LAWN AREA MAXIMUM ALLOWED: 69,861 SF  
• 80% OF REQ'D LANDSCAPE AREA

GENERAL NOTES:

1. ALL PLANTING AND IRRIGATION SHALL BE INSTALLED PER LOCAL GOVERNING CODES.

- ## 2. TREES:

A. SECTION 32.03.030, D.5 "EVERGREEN TREES SHALL BE AT LEAST 6 FEET IN HEIGHT AT TIME OF PLANTING. FIFTY PERCENT (50%) OF DECIDUOUS TREES SHALL BE A MINIMUM CALIPER OF ONE INCH AND 50% SHALL BE A MINIMUM CALIPER OF TWO INCHES AT TIME OF PLANTING"

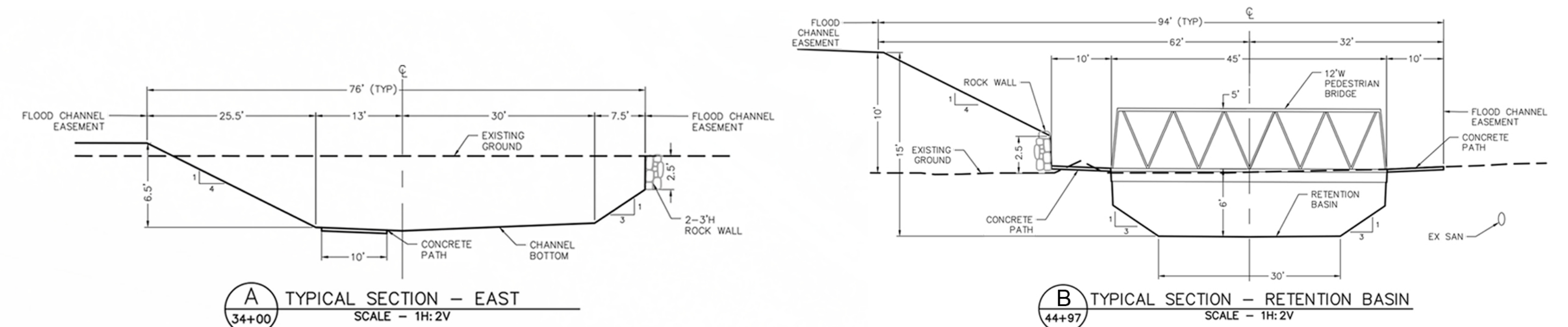
B. ADDITIONAL TREES, BEYOND THOSE REQUIRED BY CODE, MAY BE REDUCED IN SIZE AT INSTALLATION.

3. FINAL PLANT SELECTION AND LAYOUT WILL BE BASED ON SOUND HORTICULTURAL PRACTICES RELATING TO MICRO-CLIMATE, SOIL AND WATER REGIMES. ALL TREES WILL BE STAKED SO AS TO REMAIN UPRIGHT AND PLUMB FOLLOWING INSTALLATION. PLANT SIZE AND QUALITY AT TIME OF PLANTING WILL BE PER THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-1990).

4. ALL SHRUB BEDS WILL RECEIVE 3" DEPTH MULCH WITH WEED CONTROL.

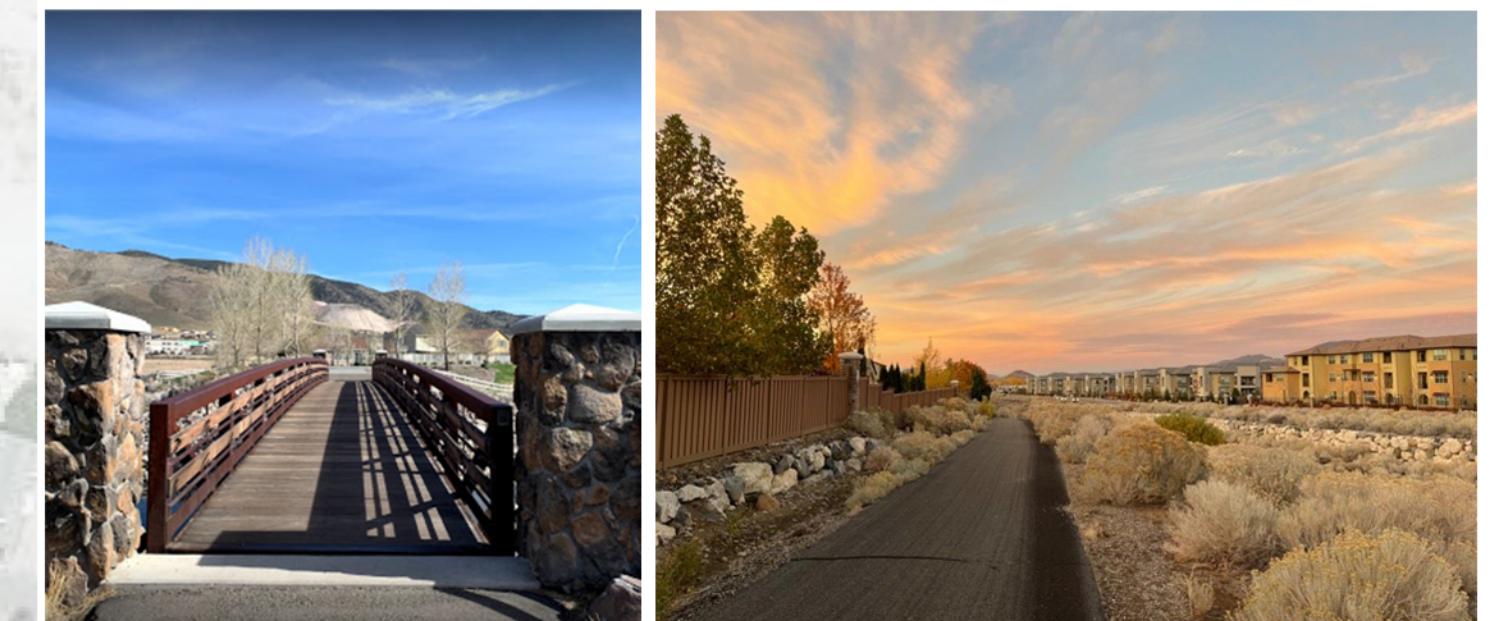
5. WITH THE EXCEPTION OF LOT 8, ALL LANDSCAPING WILL BE AUTOMATICALLY IRRIGATED. CONTAINER PLANTINGS WILL BE DRIP IRRIGATED BASED ON THE SPECIFIC HORTICULTURAL REQUIREMENTS OF EACH SPECIES. A REDUCED-PRESSURE-TYPE BACKFLOW PREVENTOR WILL BE PROVIDED ON THE IRRIGATION SYSTEM AS REQUIRED PER CODE. LOT 8 WILL BE TEMPORARILY IRRIGATED UNTIL REVEGETATION IS ESTABLISHED (APPROX. 2-3 YEARS).

6. PLAN IS CONCEPTUAL. PLANT QUANTITIES INDICATED ARE PER CITY OF FERNLEY CODE REQUIREMENTS. PLANT LOCATION, FINAL SPECIES SELECTION AND SIZE AT PLANTING SHALL BE DETERMINED DURING DEVELOPMENT OF THE FINAL CONSTRUCTION DOCUMENTS.



## TYPICAL DRAINAGE CHANNEL SECTIONS

### EXAMPLE DRAINAGE CHANNEL



ENLARGEMENT OF TYPICAL LOT



LOT 5 - 61,452 SF  
REQUIRED LANDSCAPE AREA: 9,218 SF  
- 15% OF TOTAL AREA  
TREES REQUIRED: 49  
- 1 TREE PER 500 SF OF REQ LANDSCAPE AREA = 18  
- 1 TREE PER 10 PARKING SPACES (50) = 5  
- 1 TREE PER 30 LF STREET FRONTAGE = 26  
SHRUBS REQUIRED: 184  
- 1 SHRUB PER 50 SF OF REQ LANDSCAPE AREA



**1" = 100'**



## PLANTING KEY



DECIDUOUS TREES



## EVERGREEN TREES

ORNAMENTAL LANDSCAPE/LAWN AREAS



600 WEST MAIN STREET  
TRAFFIC STUDY

MAY 2021



Prepared by:  
Solaegui Engineers, Ltd.  
715 H Street  
Sparks, Nevada 89431  
(775) 358-1004

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# 600 WEST MAIN STREET

## TRAFFIC STUDY

### EXECUTIVE SUMMARY

The proposed 600 West Main Street development will be located in the City of Fernley, Nevada. The project site is located on the northeast side of West Main Street west of Marie Drive and south of Logan Lane. The project site is currently undeveloped land. The purpose of this study is to address the project's impact upon the adjacent street network. The West Main Street intersections with US-95A, Miller Lane, Truckee Lane, Mesa Drive, Logan Lane-Pilot Road, the I-80 eastbound and westbound on and off ramps, and the proposed project driveways have been identified for AM and PM peak hour capacity analysis for the existing, existing plus project, 2041 base, and 2041 base plus project scenarios.

The proposed 600 West Main Street development will consist of the construction of 201 multi-family dwelling units, a 100 room hotel, a 15,000 square foot pharmacy with drive-through lane, an 8,000 square foot sit-down restaurant, and retail buildings containing a total floor area of 47,000 square feet. Project access is proposed from two driveways on West Main Street. The 600 West Main Street development is anticipated to generate 6,623 average daily trips with 322 trips occurring during the AM peak hour and 584 trips occurring during the PM peak hour.

Traffic generated by the 600 West Main Street development will have some impact on the adjacent street network. The following recommendations are made to mitigate project traffic impacts.

It is recommended that any required signing, striping, or traffic control improvements comply with Nevada Department of Transportation and City of Fernley requirements.

It is recommended that the West Main Street/Truckee Lane-East Driveway intersection be designed to include a minimum of one left turn lane and one shared through-right turn lane at both the north driveway and south Truckee Lane approaches and an exclusive right turn lane with a minimum of 215 feet of deceleration length at the east approach. It is recommended that a traffic signal be installed at the West Main Street/Truckee Lane-East Driveway intersection when warranted.

It is recommended that the West Main Street/West Driveway intersection be designed to operate with limited left-in/right-in/right-out movements and contain stop sign control at the driveway approach and an exclusive right turn lane with a minimum of 215 feet of deceleration length at the east approach.

## INTRODUCTION

### STUDY AREA

The proposed 600 West Main Street development will be located in the City of Fernley, Nevada. The project site is located on the northeast side of West Main Street west of Marie Drive and south of Logan Lane. Figure 1 shows the approximate location of the project site. The purpose of this study is to address the project's impact upon the adjacent street network. The West Main Street intersections with US-95A, Miller Lane, Truckee Lane, Mesa Drive, Logan Lane-Pilot Road, the I-80 eastbound and westbound on and off ramps, and the proposed project driveways have been identified for AM and PM peak hour capacity analysis for the existing, existing plus project, 2041 base, and 2041 base plus project scenarios.

### EXISTING AND PROPOSED LAND USES

The project site is currently undeveloped land. Adjacent properties generally include the Union Pacific railroad tracks to the north, agricultural land to the south, a Nevada Department of Transportation maintenance facility to the west, and residential development to the east. The proposed 600 West Main Street development will consist of the construction of 201 multi-family dwelling units, a 100 room hotel, a 15,000 square foot pharmacy with drive-through lane, an 8,000 square foot sit-down restaurant, and 47,000 square feet of retail buildings. Project access is proposed from two driveways on West Main Street.

### EXISTING AND PROPOSED ROADWAYS AND INTERSECTIONS

West Main Street (SR-427) is generally a two-lane roadway with one through lane in each direction near the key intersections. The speed limit is posted for 45 miles per hour north of the I-80 westbound off-ramp, 35 miles per hour between the I-80 westbound off-ramp and Miller Lane, and 25 miles per hour east of Miller Lane. Roadway improvements west of Miller Lane include paved and graded shoulders with striped edgelines and a striped centerline. A raised center island with median openings exists at the interchange. Roadway improvements east of Miller Lane include curb, gutter, and sidewalk on both sides of the street with a striped center two-way left turn lane.

US-95A is a two-lane roadway with one through lane in each direction south of West Main Street. The speed limit is posted for 25 miles per hour. Roadway improvements generally include paved or graded shoulders with striped edgelines and a striped centerline.

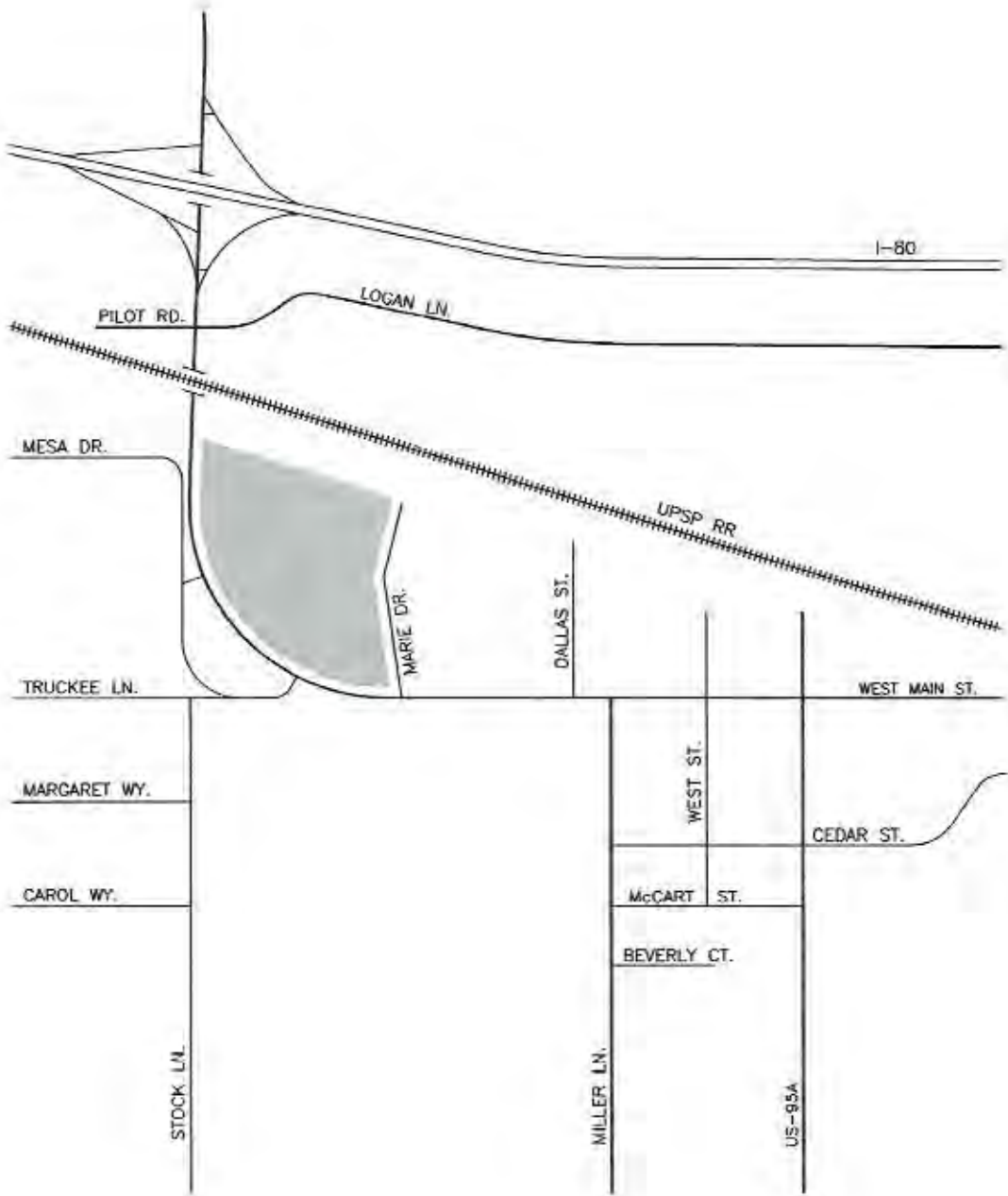
Miller Lane is a two-lane roadway with one through lane in each direction south of West Main Street. The speed limit is not posted but assumed to be 25 miles per hour. Roadway improvements generally include graded shoulders.

Truckee Lane is a two-lane roadway with one through lane in each direction south of West Main Street. The speed limit is posted for 25 miles per hour. Roadway improvements generally include graded shoulders with a striped centerline.



LEGEND

PROJECT SITE



600 WEST MAIN STREET

VICINITY MAP

FIGURE 1

Mesa Drive is a two-lane roadway with one through lane in each direction west of West Main Street. The speed limit is posted for 25 miles per hour. Roadway improvements generally include curb and gutter on both sides of the street with a striped centerline.

Logan Lane is a two-lane roadway with one through lane in each direction east of West Main Street. The speed limit is not posted. Roadway improvements generally include graded shoulders with a striped centerline. Some curb, gutter, and sidewalk improvements exist in developed areas. Pilot Road aligns with Logan Lane on the opposite side of West Main Street.

Pilot Road is a two-lane roadway with one through lane in each direction west of West Main Street. The speed limit is not posted. Roadway improvements generally include curb and gutter on both sides of the street. Logan Lane aligns with Pilot Road on the opposite side of West Main Street.

The West Main Street/US-95A intersection is a signalized four-leg intersection with protected left turn phasing at the east and west approaches and split phasing at the north and south approaches. The east, west, and south approaches each contain one left turn lane and one shared through-right turn lane. The north approach (East Street) contains one shared left turn-through-right turn lane. Pedestrian crosswalks exist at the east, west, and south approaches.

The West Main Street/Miller Lane intersection is an unsignalized three-leg intersection with stop sign control at the south approach. The west approach contains one shared through-right turn lane. The east approach contains one left turn lane and one through lane. The south approach contains one shared left turn-right turn lane. A pedestrian crosswalk exists at the east approach.

The West Main Street/Truckee Lane intersection is an unsignalized three-leg intersection with stop sign control at the south approach. The west approach contains one shared through-right turn lane. The east approach contains one left turn lane and one through lane. The south approach contains one shared left turn-right turn lane. With development of the project the intersection will be improved as an unsignalized four-leg intersection with stop sign control at the new north approach and existing south approach. The project's east driveway will form the north leg. At a minimum, the four-leg intersection will include one left turn lane and one shared through-right turn lane at the east and west approaches and one shared left turn-through-right turn lane at the north and south approaches.

The West Main Street/West Driveway intersection does not currently exist but is anticipated to be constructed as an unsignalized three-leg intersection with stop control at the north approach (west driveway) with development of the project. At a minimum, the intersection will include one left turn lane and one through lane at the west approach, one shared through-right turn lane at the east approach, and one shared left turn-right turn lane at the north driveway approach.

The West Main Street/Mesa Drive intersection is an unsignalized three-leg intersection with stop sign control at the west approach. The north approach contains one through lane and one right turn lane. The south approach contains one left turn lane and one through lane. The west approach contains one left turn lane and one right turn lane.

The West Main Street/Logan Lane-Pilot Road intersection is an unsignalized four-leg intersection with stop sign control at the east and west approaches. The north approach contains one left turn lane, one through lane, and one right turn lane. The south approach contains one left turn lane and one shared through-right turn lane. The east approach contains one left turn lane and one shared through-right turn lane with a striped corner island. The west approach contains one shared left turn-through-right turn lane.

The West Main Street/I-80 Eastbound On-Ramp intersection is an unsignalized three-leg intersection with yield sign control at the south approach for only the right turn movement. The north approach contains one left turn lane and two through lanes. The south approach contains one through lane and one right turn lane. The east leg is the on-ramp to eastbound I-80.

The West Main Street/I-80 Eastbound Off-Ramp intersection is an unsignalized three-leg intersection with stop sign control at the west approach for only the left turn movement. The north and south approaches each contain one through lane. The west approach contains one left turn lane and one free right turn lane. A second northbound through lane exists north of the intersection that functions as an acceleration lane for the eastbound left turn movement.

The West Main Street/I-80 Westbound On-Ramp intersection is an unsignalized three-leg intersection with no traffic control. The north approach contains one through lane and one right turn lane. The south approach contains one left turn lane and two through lanes. The west leg is the on-ramp to westbound I-80.

The West Main Street/I-80 Westbound Off-Ramp intersection is an unsignalized three-leg intersection with stop sign control at the east approach for only the left turn movement. The north and south approaches each contain two through lanes. The east approach generally contains one shared left turn-right turn lane with a striped corner island that has a yield sign for the right turn movement.

## TRIP GENERATION

In order to assess the magnitude of traffic impacts of the proposed 600 West Main Street development on the adjacent street network, trip generation rates and peak hours had to be determined. Trip generation rates and equations were obtained from the Tenth Edition of *ITE Trip Generation* (2018) for Land Uses 220: Multifamily Housing (Low-Rise), 310: Hotel, 820: Shopping Center, 881: Pharmacy/Drugstore with Drive-Through Window, and 932: High-Turnover (Sit-Down) Restaurant. The proposed 600 West Main Street development will consist of the construction of 201 multi-family dwelling units, a hotel with 100 rooms, a 15,000 square foot pharmacy with drive-through lane, an 8,000 square foot sit-down restaurant, and 47,000 square feet of retail buildings.

The *ITE Trip Generation Manual* provides guidelines for quantifying pass-by trips for the shopping center, pharmacy, and restaurant land uses. Pass-by trips are made as intermediate stops on the way from an origin to a primary trip destination and are attracted directly from the adjacent street traffic stream (West Main Street). The *Trip Generation Manual* indicates that 34% of the PM peak hour trips generated by the shopping center land use are pass-by trips, 49% of the PM peak hour trips generated by the pharmacy land use are pass-by trips, and 43% of the PM peak hour trips generated by the high-turnover restaurant land use are pass-by trips.

Trip generation was calculated for an average weekday and the weekday peak hours occurring between 7:00 AM and 9:00 AM and 4:00 PM and 6:00 PM. These timeframes correspond to the peak hours of adjacent street traffic. Table 1 shows a summary of the average daily traffic (ADT) and peak hour volumes generated by the proposed 600 West Main Street development. The trip generation worksheets are included in the Appendix.

| LAND USE                            | ADT   | AM PEAK HOUR |     |       | PM PEAK HOUR |     |       |
|-------------------------------------|-------|--------------|-----|-------|--------------|-----|-------|
|                                     |       | IN           | OUT | TOTAL | IN           | OUT | TOTAL |
| Multi-Family Housing (201 D.U.)     | 1,479 | 21           | 72  | 93    | 71           | 42  | 113   |
| Hotel (100 Rooms)                   | 836   | 28           | 19  | 47    | 31           | 29  | 60    |
| Shopping Center (47,000 S.F.)       | 1,774 | 27           | 17  | 44    | 86           | 93  | 179   |
| Pharmacy w/Drive-Thru (15,000 S.F.) | 1,637 | 31           | 27  | 58    | 77           | 77  | 154   |
| Sit-Down Restaurant (8,000 S.F.)    | 897   | 44           | 36  | 80    | 48           | 30  | 78    |
| Total Trips                         | 6,623 | 151          | 171 | 322   | 313          | 271 | 584   |
| Pass-By Trips                       | N/A   | 0            | 0   | 0     | -85          | -85 | -170  |
| New Trips                           | N/A   | 151          | 171 | 322   | 228          | 228 | 414   |

As shown in Table 1, the 600 West Main Street development is anticipated to generate 6,623 average daily trips with 322 trips occurring during the AM peak hour and 584 trips occurring during the PM peak hour.



## TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of new trips to the key intersections was based on existing peak hour traffic patterns and the locations of existing and future attractions and productions in the area. Separate directions of approach are anticipated for the residential, hotel and commercial land uses. The distribution of the pass-by trips was based on directional peak hour through traffic volumes on West Main Street adjacent to the site. The trip distribution for the new and pass-by trips are shown in Figure 2.

## EXISTING AND PROJECTED TRAFFIC VOLUMES

Existing peak hour traffic volumes at the key intersections were obtained from weekday traffic counts conducted in May of 2021. Figure 4A shows the existing traffic volumes (raw counts) during the AM and PM peak hours.

The existing traffic counts were conducted during the COVID-19 pandemic which may have resulted in reduced traffic on the area streets. In order to more closely represent normal traffic conditions the existing traffic counts were compared with pre-pandemic traffic counts conducted by the Nevada Department of Transportation (NDOT) and obtained from the Traffic Records Information Access (TRINA) application for count stations on West Main Street, US-95A, Truckee Lane, and the I-80 on and off-ramps at the Wadsworth-West Fernley interchange. Pre-pandemic counts at the West Main Street/US-95A intersection were also obtained from the City of Fernley Transportation Master Plan (Draft) dated May 2020. The existing traffic counts were subsequently adjusted based on the traffic count comparison. Figure 4B shows the existing traffic volumes (adjusted counts) during the AM and PM peak hours. The adjusted traffic volumes were utilized in the analysis.

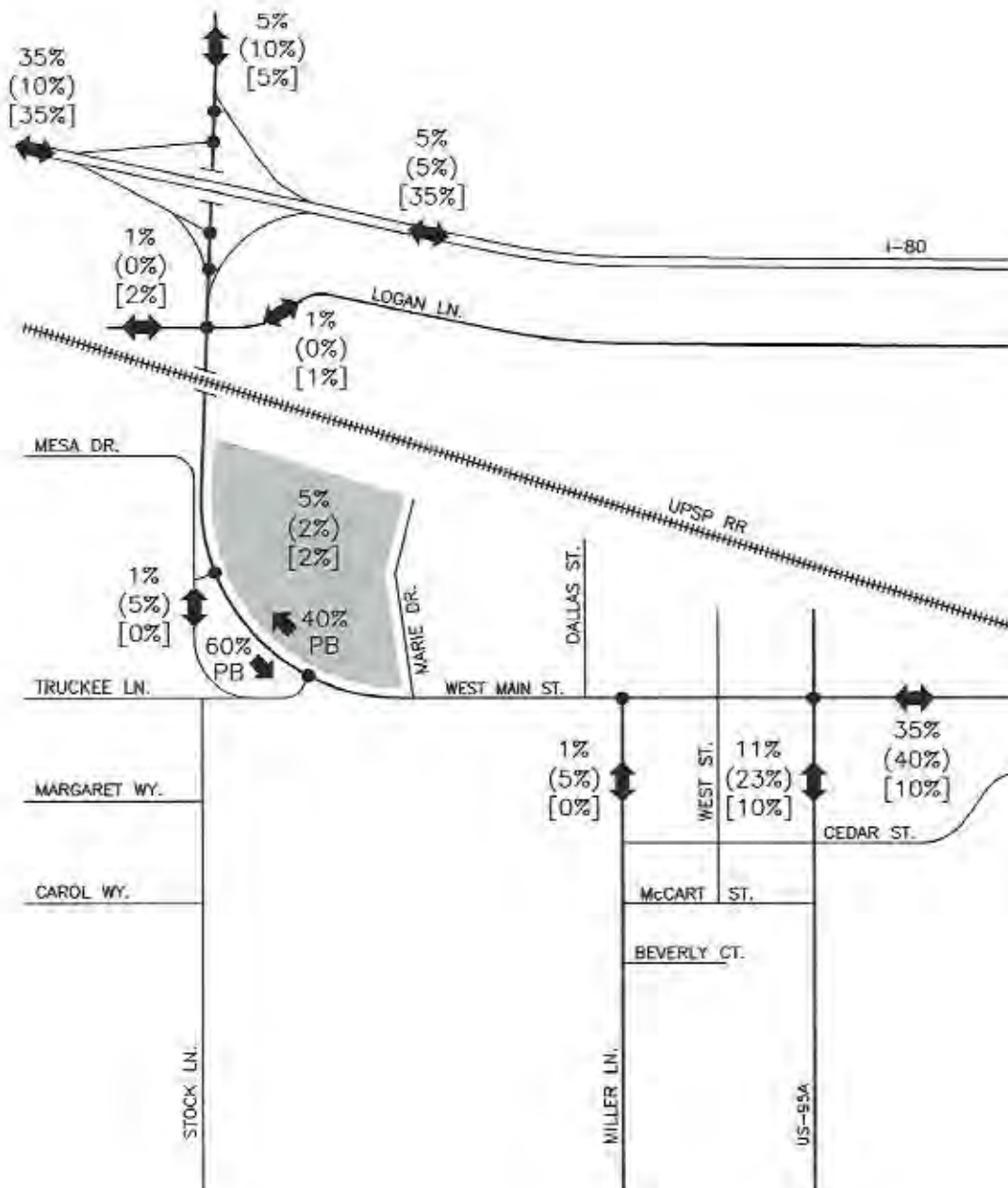
Figure 5 shows the existing plus project traffic volumes at the key intersections during the AM and PM peak hours. The existing plus project traffic volumes were obtained by adding the trip assignment volumes shown on Figure 3 to the existing traffic volumes (adjusted counts) shown on Figure 4B.

Figure 6 shows the 2041 base traffic volumes at the key intersections during the AM and PM peak hours. The 2041 base volumes were estimated by applying a  $\pm 1.4\%$  average annual growth rate to the existing traffic volumes (adjusted counts) shown on Figure 4B. This growth rate was derived from 20-year historic traffic count data obtained from NDOT's Annual Traffic Reports for count stations on West Main Street, US-95A, Truckee Lane in the vicinity of the site and at the I-80 on and off-ramps at the Wadsworth-West Fernley interchange.

Figure 7 shows the 2041 base plus project traffic volumes at the key intersections during the AM and PM peak hours. The 2041 base plus project traffic volumes were obtained by adding the trip assignment volumes shown on Figure 3 to the 2041 base traffic volumes shown on Figure 6.

**LEGEND**

- RESIDENTIAL
- (-) RETAIL
- [ ] HOTEL

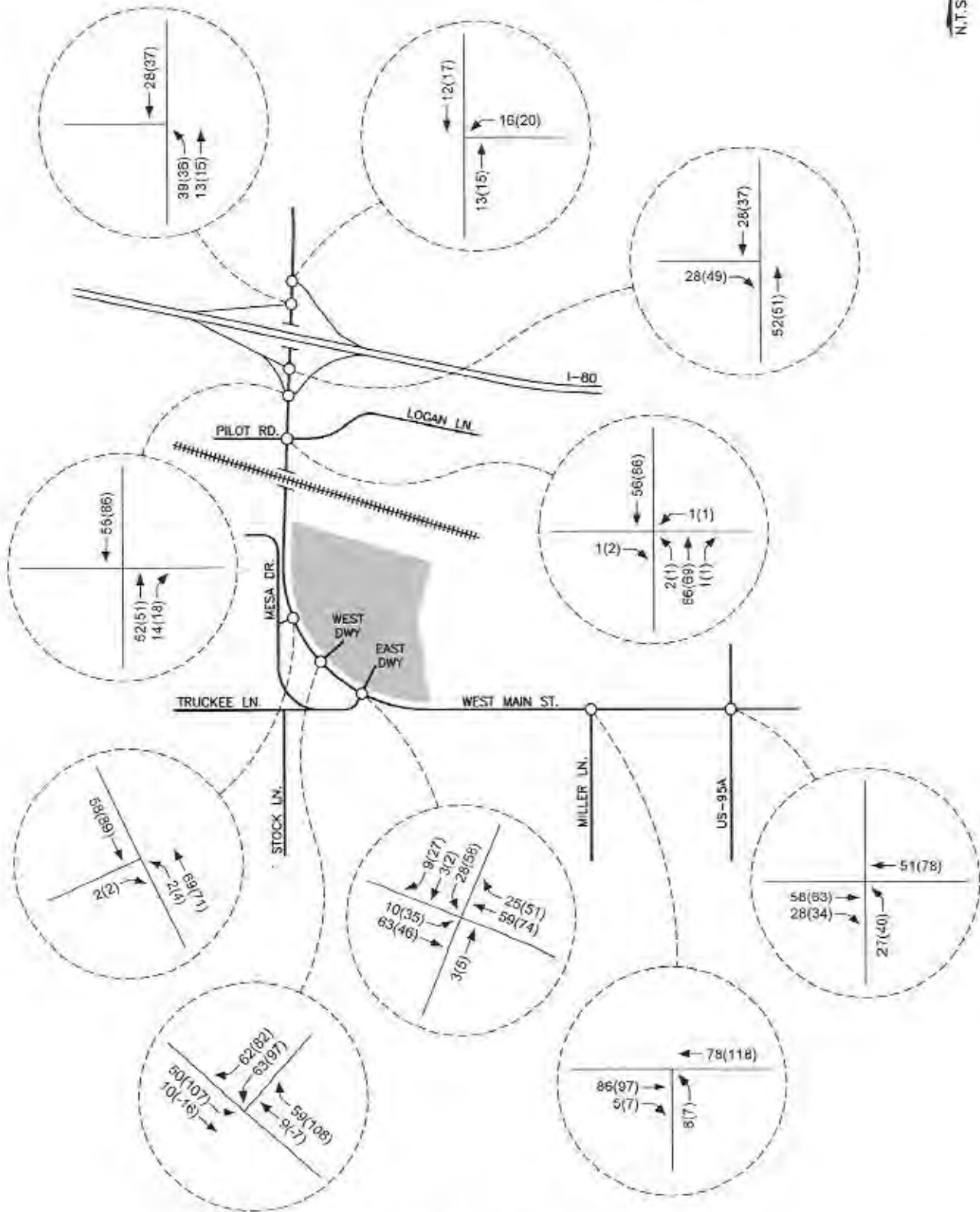


**600 WEST MAIN STREET**  
**TRIP DISTRIBUTION**  
**FIGURE 2**

**LEGEND**

— AM PEAK HOUR  
(-) PM PEAK HOUR

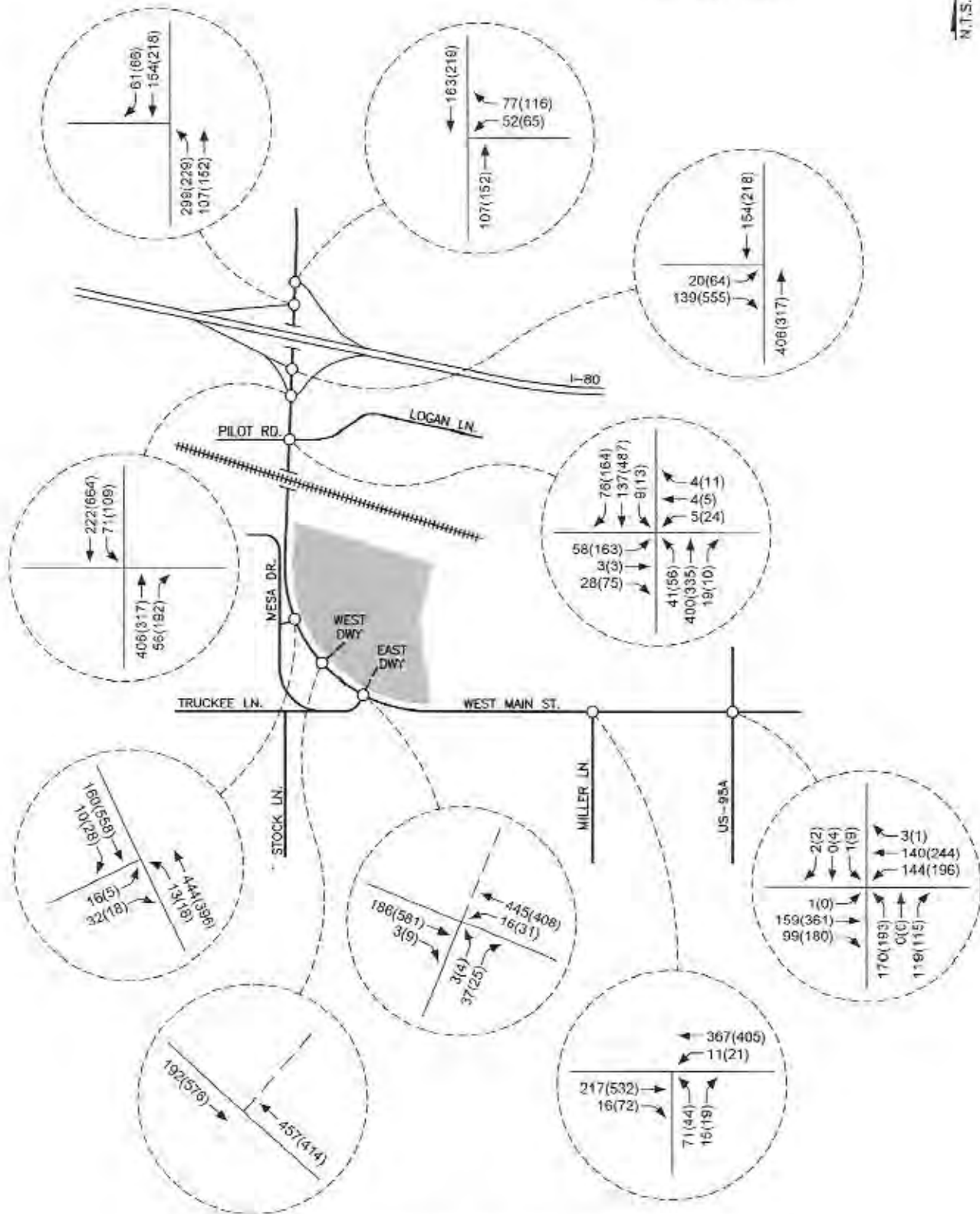
N.T.S.



**600 WEST MAIN STREET**  
**TRIP ASSIGNMENT**  
**FIGURE 3**

**LEGEND**

— AM PEAK HOUR  
(-) PM PEAK HOUR



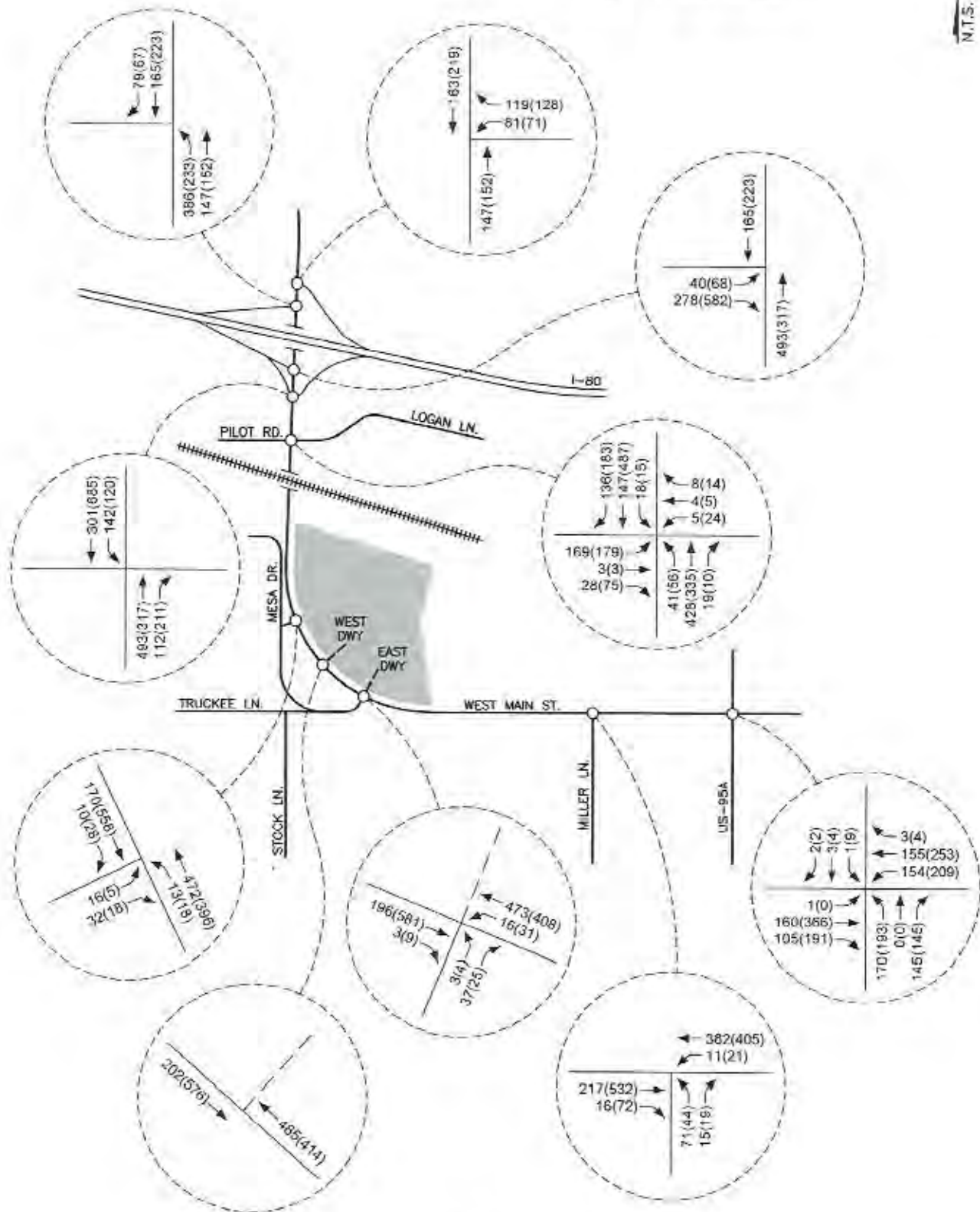
**600 WEST MAIN STREET**  
**EXISTING TRAFFIC VOLUMES (RAW COUNTS)**  
**FIGURE 4A**



**LEGEND**

— AM PEAK HOUR  
(-) PM PEAK HOUR

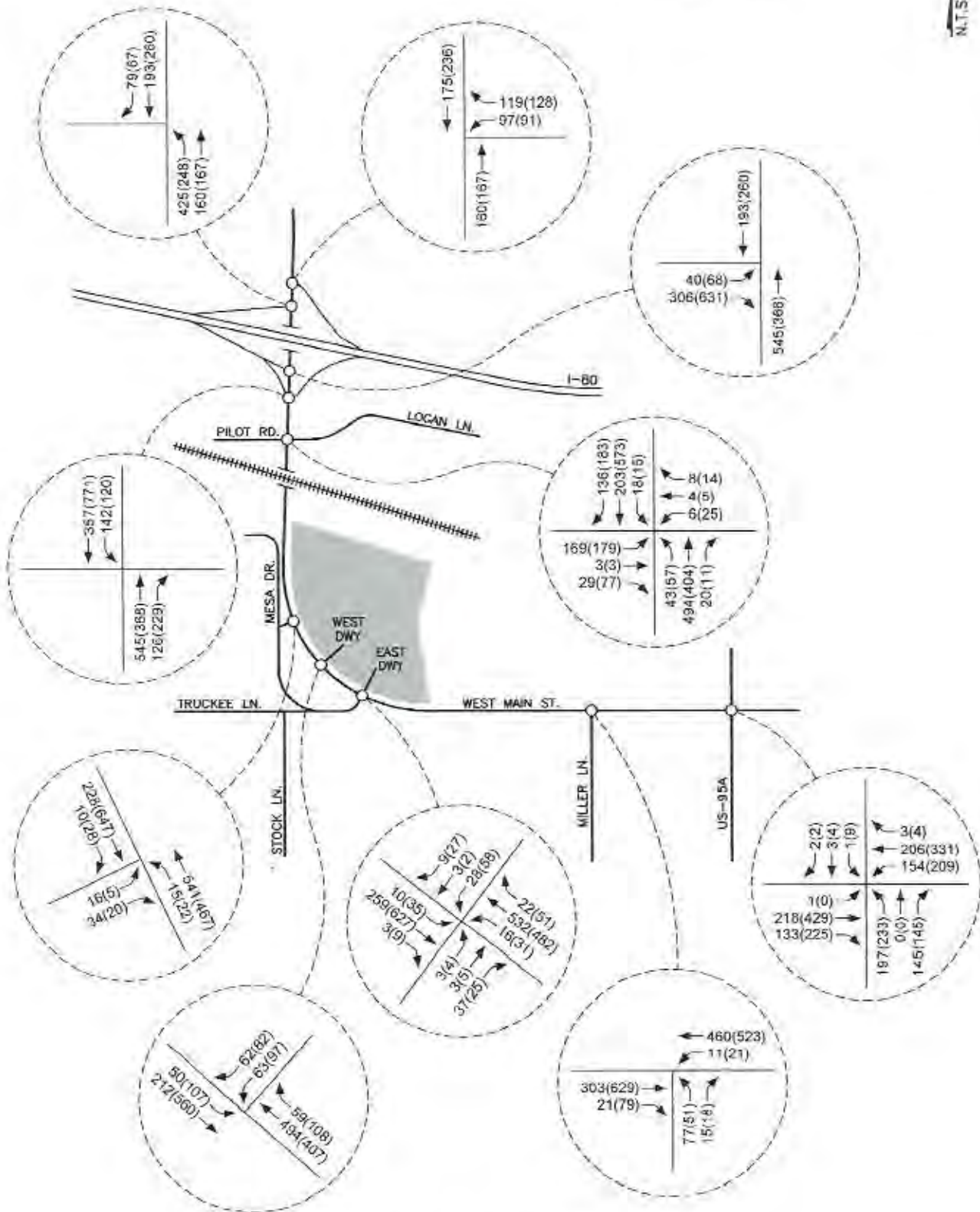
N.T.S.



**600 WEST MAIN STREET**  
**EXISTING TRAFFIC VOLUMES (ADJUSTED COUNTS)**  
**FIGURE 4B**

**LEGEND**

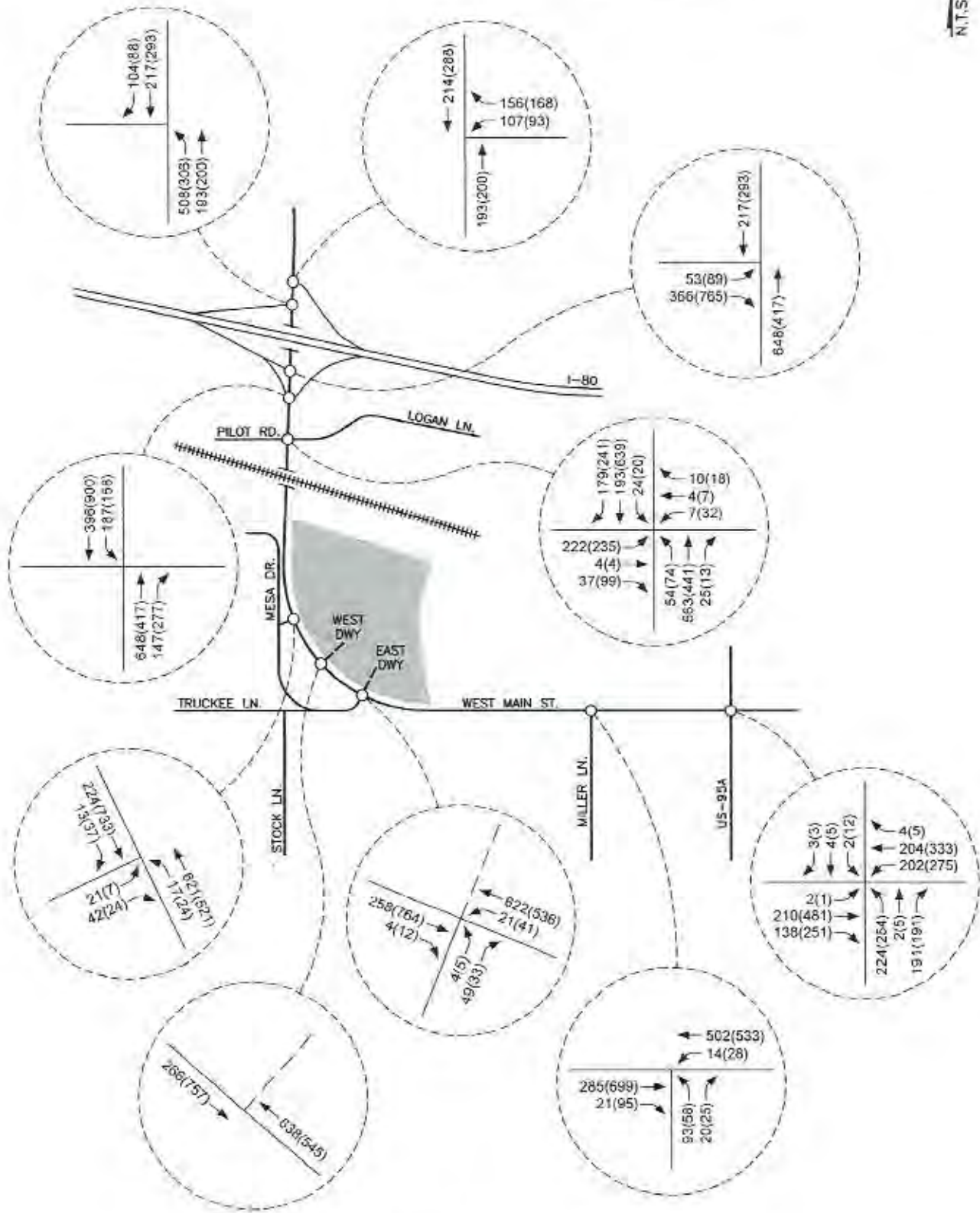
- AM PEAK HOUR  
(-) PM PEAK HOUR



**600 WEST MAIN STREET**  
**EXISTING PLUS PROJECT TRAFFIC VOLUMES**  
**FIGURE 5**

**LEGEND**

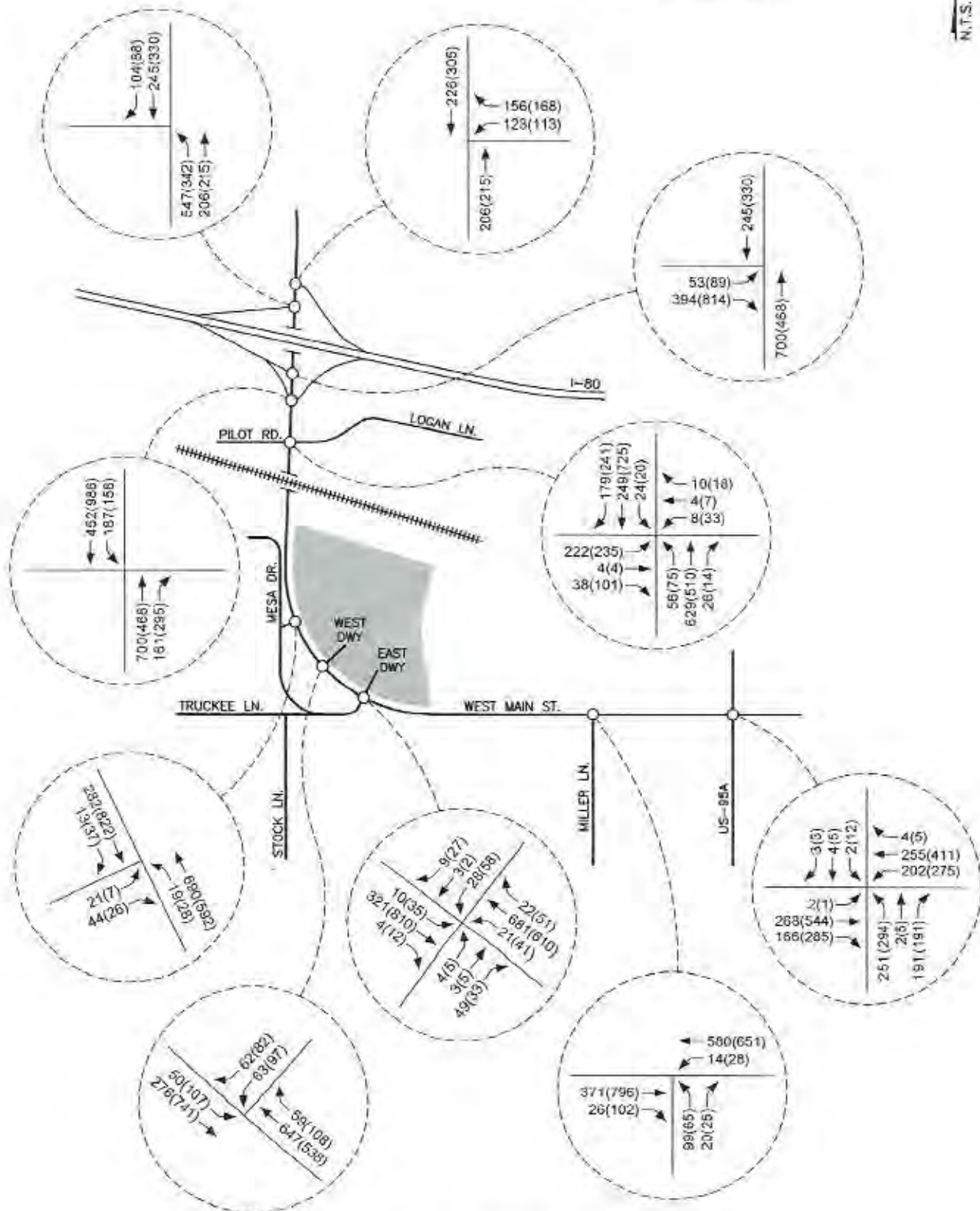
— AM PEAK HOUR  
(-) PM PEAK HOUR





**LEGEND**

— AM PEAK HOUR  
(-) PM PEAK HOUR



**600 WEST MAIN STREET**

**2041 BASE PLUS PROJECT TRAFFIC VOLUMES  
FIGURE 7**



## INTERSECTION CAPACITY ANALYSIS

The key intersections were analyzed for capacity based on procedures presented in the *Highway Capacity Manual (6th Edition)*, prepared by the Transportation Research Board, for unsignalized and signalized intersections using the latest version of the Highway Capacity software.

The result of capacity analysis is a level of service (LOS) rating for each signalized intersection or minor movement at partial stop controlled intersections. Level of service is a qualitative measure of traffic operating conditions where a letter grade "A" through "F", corresponding to progressively worsening traffic operation, is assigned to the intersection or minor movement.

The *Highway Capacity Manual* defines level of service for partial stop controlled intersections in terms of computed or measured control delay for each minor movement. Level of service is not defined for a partial stop controlled intersection as a whole. The unsignalized intersection level of service criteria are shown in Table 2.

| TABLE 2<br>LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS |                       |
|---------------------------------------------------------------------|-----------------------|
| LEVEL OF SERVICE                                                    | DELAY RANGE (SEC/VEH) |
| A                                                                   | $\leq 10$             |
| B                                                                   | $>10$ and $\leq 15$   |
| C                                                                   | $>15$ and $\leq 25$   |
| D                                                                   | $>25$ and $\leq 35$   |
| E                                                                   | $>35$ and $\leq 50$   |
| F                                                                   | $>50$                 |

Level of service for signalized intersections is stated in terms of the average control delay per vehicle for a peak 15 minute analysis period. The level of service criteria for signalized intersections is shown in Table 3.

| TABLE 3<br>LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS |                                 |
|-------------------------------------------------------------------|---------------------------------|
| LEVEL OF SERVICE                                                  | CONTROL DELAY PER VEHICLE (SEC) |
| A                                                                 | $\leq 10$                       |
| B                                                                 | $>10$ and $\leq 20$             |
| C                                                                 | $>20$ and $\leq 35$             |
| D                                                                 | $>35$ and $\leq 55$             |
| E                                                                 | $>55$ and $\leq 80$             |
| F                                                                 | $>80$                           |

West Main Street (SR-427) is maintained by the Nevada Department of Transportation and therefore LOS D is the policy level of service standard for the key intersections.

Table 4 shows a summary of the AM and PM peak hour level of service and delay results at the key intersections for the existing, existing plus project, 2041 base, and 2041 base plus project scenarios. The intersection capacity worksheets are included in the Appendix.

| TABLE 4<br>INTERSECTION LEVEL OF SERVICE AND DELAY RESULTS |          |       |                    |       |           |       |                     |       |
|------------------------------------------------------------|----------|-------|--------------------|-------|-----------|-------|---------------------|-------|
| INTERSECTION                                               | EXISTING |       | EXISTING + PROJECT |       | 2041 BASE |       | 2041 BASE + PROJECT |       |
|                                                            | AM       | PM    | AM                 | PM    | AM        | PM    | AM                  | PM    |
| W. Main/US-95A (Signal)                                    | C25.3    | C29.7 | C25.8              | C33.2 | C27.2     | D40.9 | C28.3               | D50.2 |
| W. Main/Miller (Stop at South Leg)                         |          |       |                    |       |           |       |                     |       |
| Westbound Left                                             | A7.8     | A9.0  | A8.0               | A9.4  | A8.0      | A9.8  | A8.2                | B10.4 |
| Northbound Left-Right                                      | C15.2    | C22.7 | C19.3              | D34.7 | C21.5     | E47.9 | D30.8               | F104  |
| W. Main/Truckee (Stop at South Leg)                        |          |       |                    |       |           |       |                     |       |
| Westbound Left                                             | A7.7     | A8.8  | N/A                | N/A   | A7.9      | A9.8  | N/A                 | N/A   |
| Northbound Left-Right                                      | B10.1    | B14.9 | N/A                | N/A   | B11.0     | C19.4 | N/A                 | N/A   |
| W. Main/Truckee/East Dwy (Stop at North and South Legs)    |          |       |                    |       |           |       |                     |       |
| Eastbound Left                                             | N/A      | N/A   | A8.8               | A8.8  | N/A       | N/A   | A9.3                | A9.3  |
| Westbound Left                                             | N/A      | N/A   | A7.9               | A9.2  | N/A       | N/A   | A8.1                | B10.1 |
| Northbound Left-Thru-Right                                 | N/A      | N/A   | B11.7              | C21.6 | N/A       | N/A   | B13.3               | D34.2 |
| Southbound Left-Thru-Right                                 | N/A      | N/A   | C22.1              | F77.3 | N/A       | N/A   | D33.1               | F320  |
| W. Main/West Dwy (Stop at North Leg)                       |          |       |                    |       |           |       |                     |       |
| Eastbound Left                                             | N/A      | N/A   | A8.9               | A9.0  | N/A       | N/A   | A9.6                | A9.6  |
| Southbound Left-Right                                      | N/A      | N/A   | C20.3              | F76.8 | N/A       | N/A   | D30.2               | F261  |
| W. Main/Mesa (Stop at West Leg)                            |          |       |                    |       |           |       |                     |       |
| Eastbound Left                                             | B14.8    | C20.6 | C17.0              | D25.3 | C18.9     | D31.1 | C22.3               | E39.6 |
| Eastbound Right                                            | A9.4     | B12.6 | A9.8               | B13.7 | A9.8      | C15.0 | B10.3               | C16.6 |
| Northbound Left                                            | A7.7     | A8.9  | A7.8               | A9.3  | A7.8      | A9.7  | A8.0                | B10.2 |
| W. Main/Logan-Pilot (Stop East/West)                       |          |       |                    |       |           |       |                     |       |
| Eastbound Left-Thru-Right                                  | E42.6    | F238  | F79.3              | F436  | F262      | F999+ | F429                | F999+ |
| Westbound Left                                             | C19.4    | E40.2 | C23.7              | F58.5 | D28.6     | F132  | E35.5               | F247  |
| Westbound Thru-Right                                       | A9.7     | B11.2 | B10.7              | B13.1 | B11.2     | C17.9 | B12.6               | C22.2 |
| Northbound Left                                            | A8.0     | A9.4  | A8.2               | A9.9  | A8.3      | B10.7 | A8.5                | B11.2 |
| Southbound Left                                            | A8.4     | A8.1  | A8.6               | A8.3  | A8.9      | A8.5  | A9.2                | A8.7  |
| W. Main/EB On-Ramp (No Control)                            |          |       |                    |       |           |       |                     |       |
| Southbound Left                                            | A9.9     | A8.9  | B10.3              | A9.1  | B11.6     | A9.6  | B12.1               | A9.9  |
| W. Main/EB Off-Ramp (Stop at West Leg)                     |          |       |                    |       |           |       |                     |       |
| Eastbound Left                                             | B12.4    | B12.5 | B13.1              | B13.4 | B14.5     | B14.9 | C15.5               | C16.1 |
| W. Main/WB On-Ramp (No Control)                            |          |       |                    |       |           |       |                     |       |
| Northbound Left                                            | B10.0    | A9.3  | B10.5              | A9.6  | B12.1     | B10.4 | B13.2               | B11.1 |
| W. Main/WB Off-Ramp (Stop at East Leg)                     |          |       |                    |       |           |       |                     |       |
| Westbound Left-Right                                       | A7.8     | A8.1  | A8.0               | A8.1  | A8.1      | A9.9  | A8.7                | B10.3 |

#### West Main Street/US-95A Intersection

The West Main Street/US-95A intersection was analyzed as a signalized four-leg intersection with the existing signal phasing for all scenarios. The intersection currently operates at LOS C with a delay of 25.3 seconds per vehicle during the AM peak hour and 29.7 seconds per vehicle during the PM peak hour. For the existing plus project traffic volumes the intersection continues to operate at LOS C with delays slightly increasing to 25.8 seconds per vehicle during the AM peak hour and 33.2 seconds per vehicle during the PM peak hour. For the 2041 base traffic volumes the intersection is anticipated to operate at LOS C with a delay of 27.2 seconds per vehicle during the AM peak hour and LOS D with a delay of 40.9 seconds per vehicle during the PM peak hour. For the 2041 base plus project traffic volumes the intersection operates at LOS C with a delay of 28.3 seconds per vehicle during the AM peak hour and LOS D with a delay of 50.2 seconds per vehicle during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/US-95A intersection meets NDOT's policy LOS D standard for all study scenarios.

#### West Main Street/Miller Lane Intersection

The West Main Street/Miller Lane intersection was analyzed as an unsignalized three-leg intersection with stop control at the south approach for all scenarios. The intersection minor movements currently operate at LOS C or better during the AM and PM peak hours. For the existing plus project traffic volumes the intersection minor movements operate at LOS C or better during the AM peak hour and LOS D or better during the PM peak hour. For the 2041 base traffic volumes the intersection minor movements are anticipated to operate at LOS C or better during the AM and PM peak hours with the exception of the northbound left turn movement which operates at LOS E during the PM peak hour. For the 2041 base plus project traffic volumes the intersection minor movements are anticipated to operate at LOS D or better during the AM and PM peak hours with the exception of the northbound left turn movement which operates at LOS F during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/Miller Lane intersection meets NDOT's policy LOS D standard for the existing and existing plus project traffic volumes but not for the 2041 base and 2041 base plus project traffic volumes.

#### West Main Street/Truckee Lane-East Driveway Intersection

The West Main Street/Truckee Lane intersection was initially analyzed as an unsignalized three-leg intersection with the existing approach lanes and stop control at the south approach for the existing and 2041 base scenarios. The intersection minor movements currently operate at LOS B or better during the AM and PM peak hours. For the 2041 base traffic volumes the intersection minor movements are anticipated to operate at LOS C or better during the AM and PM peak hours. The West Main Street/Truckee Lane intersection meets NDOT's policy LOS D standard for the existing and 2041 base traffic volumes.

The West Main Street/Truckee Lane-East Driveway intersection was analyzed as an unsignalized four-leg intersection with stop control at the north south approach for the existing plus project and 2041 base plus project scenarios. For the existing plus project traffic volumes the intersection minor movements are anticipated to operate at LOS C or better during the AM and PM peak hours with the exception of the southbound movement which operates at LOS F during the PM peak hour. For the 2041 base plus project traffic volumes the intersection minor movements are anticipated to operate at LOS D or better during the AM and PM peak hours with the exception of the southbound movement which continues to operate at LOS F during the PM peak hour. The four-leg intersection was analyzed with one left turn lane and one shared through-right turn lane at the east and west approaches and one shared left turn-through-right turn lane at the north and south approaches. The West Main Street/Truckee Lane-East Driveway intersection does not meet NDOT's policy LOS D standard for the existing plus project and 2041 base plus project traffic volumes.

#### West Main Street/West Driveway Intersection

The West Main Street/West Driveway intersection was analyzed as an unsignalized three-leg intersection with stop control at the north approach (west driveway) for the existing plus project and 2041 base plus project scenarios. For the existing plus project traffic volumes the intersection minor movements are anticipated to operate at LOS C or better during the AM and PM peak hours with the exception of the southbound left turn movement which operates at LOS F during the PM peak hour. For the 2041 base plus project traffic volumes the intersection minor movements are anticipated to operate at LOS D or better during the AM and PM peak hours except for the southbound left turn movement which operates at LOS F during the PM peak hour. The intersection was analyzed with one left turn lane and one through lane at the west approach, one shared through-right turn lane at the east approach, and one shared left turn-right turn lane at the north approach. The West Main Street/West Driveway intersection does not meet NDOT's policy LOS D standard for the existing plus project and 2041 base plus project traffic volumes.

#### West Main Street/Mesa Drive Intersection

The West Main Street/Mesa Drive intersection was analyzed as an unsignalized three-leg intersection with stop control at the west approach for all scenarios. The intersection minor movements currently operate at LOS B or better during the AM peak hour and LOS C or better during the PM peak hour. For the existing plus project traffic volumes the intersection minor movements operate at LOS C or better during the AM peak hour and LOS D or better during the PM peak hour. For the 2041 base traffic volumes the intersection minor movements are anticipated to operate at LOS C or better during the AM peak hour and LOS D or better during the PM peak hour. For the 2041 base plus project traffic volumes the intersection minor movements are anticipated to operate at LOS C or better during the AM and PM peak hours with the exception of the eastbound left turn movement which operates at LOS E during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/Mesa Drive intersection meets NDOT's policy LOS D standard for the existing, existing plus project, and 2041 base traffic volumes but just exceeds the standard for the 2041 base plus project traffic volumes.



### West Main Street/Logan Lane-Pilot Road Intersection

The West Main Street/Logan Lane-Pilot Road intersection was analyzed as an unsignalized four-leg intersection with stop control at the east and west approaches for all scenarios. The intersection minor movements currently operate at LOS C or better during the AM and PM peak hours with the exception of the eastbound left turn movement which operates at LOS F during the AM and PM peak hours and the westbound left turn movement which operates at LOS E during the PM peak hour. For the existing plus project traffic volumes the eastbound left turn movement continues to operate at LOS F during the AM and PM peak hours and the westbound left turn movement operates at LOS F during the PM peak hour. For the 2041 base traffic volumes the eastbound left turn movement operates at LOS F during the AM and PM peak hours and the westbound left turn movement operates at LOS F during the PM peak hour. For the 2041 base plus project traffic volumes the eastbound left turn movement continues to operate at LOS F during the AM and PM peak hours and the westbound left turn movement operates at LOS E during the AM peak hour and LOS F during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/Logan Lane-Pilot Road intersection does not meet NDOT's policy LOS D standard for any of the study scenarios.

### West Main Street/I-80 Eastbound On-Ramp Intersection

The West Main Street/I-80 Eastbound On-Ramp intersection was analyzed as an unsignalized three-leg intersection with no traffic control for all scenarios. The southbound left turn movement currently operates at LOS A during the AM and PM peak hours. For the existing plus project traffic volumes the southbound left turn movement operates at LOS B during the AM peak hour and LOS A during the PM peak hour. For the 2041 base traffic volumes the southbound left turn movement is anticipated to operate at LOS B during the AM peak hour and LOS A during the PM peak hour. For the 2041 base plus project traffic volumes the southbound left turn movement continues to operate at LOS B during the AM peak hour and LOS A during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/I-80 Eastbound On-Ramp intersection meets NDOT's policy LOS D standard for all study scenarios.

### West Main Street/I-80 Eastbound Off-Ramp Intersection

The West Main Street/I-80 Eastbound Off-Ramp intersection was analyzed as an unsignalized three-leg intersection with stop sign control at the west approach for all scenarios. The eastbound left turn movement currently operates at LOS B during the AM and PM peak hours. For the existing plus project traffic volumes the eastbound left turn movement continues to operate at LOS B during the AM and PM peak hours. For the 2041 base traffic volumes the eastbound left turn movement is anticipated to operate at LOS B during the AM and PM peak hours. For the 2041 base plus project traffic volumes the eastbound left turn movement operates at LOS C during the AM and PM peak hours. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/I-80 Eastbound Off-Ramp intersection meets NDOT's policy LOS D standard for all study scenarios.

#### West Main Street/I-80 Westbound On-Ramp Intersection

The West Main Street/I-80 Westbound On-Ramp intersection was analyzed as an unsignalized three-leg intersection with no traffic control for all scenarios. The northbound left turn movement currently operate at LOS B during the AM peak hour and LOS A during the PM peak hour. For the existing plus project traffic volumes the northbound left turn movement continues to operate at LOS B during the AM peak hour and LOS A during the PM peak hour. For the 2041 base traffic volumes the northbound left turn movement is anticipated to operate at LOS B during the AM and PM peak hours. For the 2041 base plus project traffic volumes the northbound left turn movement continues to operate at LOS B or better during the AM and PM peak hours. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/I-80 Westbound On-Ramp intersection meets NDOT's policy LOS D standard for all scenarios.

#### West Main Street/I-80 Westbound Off-Ramp Intersection

The West Main Street/I-80 Westbound Off-Ramp intersection was analyzed as an unsignalized three-leg intersection with stop sign control at the east approach for all scenarios. The westbound left turn movement currently operates at LOS A during the AM and PM peak hours. For the existing plus project traffic volumes the westbound left turn movement continues to operate at LOS A during the AM and PM peak hours. For the 2041 base traffic volumes the westbound left turn movement is anticipated to operate at LOS A during the AM and PM peak hours. For the 2041 base plus project traffic volumes the westbound left turn movement operates at LOS A during the AM peak hour and LOS B during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. The West Main Street/I-80 Westbound Off-Ramp intersection meets NDOT's policy LOS D standard for all scenarios.

### IMPROVEMENT ANALYSIS

As discussed above, the signalized West Main Street/US-95A intersection and the unsignalized on and off-ramp intersections at the I-80/West Fernley interchange currently meet NDOT's policy LOS D standard and will continue to do so for the existing plus project, 2041 base, and 2041 base plus project traffic volumes. However, minor Street left turn movements at the remaining key intersections are anticipated to operate at unacceptable LOS E or F for one or more of the study scenarios. These intersections were subsequently re-evaluated for improvements that would meet NDOT's policy LOS D standard. The improvement analysis at these intersections is discussed below.

#### West Main Street/Logan Lane-Pilot Road Intersection

Minor street left turn movements at the West Main Street/Logan Lane-Pilot Road intersection currently operate at LOS F and will continue to do so for the existing plus project, 2041 base, and 2041 base plus project traffic volumes. Peak hour traffic signal warrant 3 per the *2009 Manual on Uniform Traffic Control Devices (MUTCD)* was reviewed at the intersection.

Warrant 3 appears to be met at the West Main Street/Logan Lane-Pilot Road intersection for the existing plus project, 2041 base, and 2041 base plus project traffic volumes. The West Main Street/Logan Lane-Pilot Road intersection was subsequently analyzed with traffic signal control and is anticipated to operate at LOS C during the AM and PM peak hours for all study scenarios which meets NDOT's policy LOS D standard. The capacity worksheets are included in the Appendix. It should be noted that the MUTCD states that peak hour warrant 3 should be applied only in unusual cases such as office complexes, manufacturing plants, industrial complexes, or other high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. The MUTCD has eight additional warrants that should also be evaluated when considering the need for the installation of a traffic signal. It should also be noted that the City of Fernley Transportation Master Plan (Draft) dated May 2020 states that the West Main Street/Logan Lane-Pilot Road intersection should be monitored for traffic growth as it may ultimately warrant a traffic signal or other intersection control improvements.

#### West Main Street/Project Driveway Intersections

The left turn egress movements at the north approach of the West Main Street/Truckee Lane-East Driveway intersection and north approach of the West Main Street/West Driveway intersection are anticipated to operate at an unacceptable LOS F for the existing plus project and 2041 base plus project traffic volumes. The preferred improvement alternative for the project driveways is to ultimately prohibit the left turn egress movement at the West Main Street/West Driveway intersection and provide signalization at West Main Street/Truckee Lane-East Driveway since Truckee Lane is an existing public street.

Prohibiting the left turn egress movement at the West Main Street/West Driveway intersection will result in LOS C operation for the existing plus project and 2041 base plus project traffic volumes. Re-routing the left turn egress volume at the West Main Street/West Driveway intersection to the proposed signalized West Main Street/Truckee Lane-East Driveway intersection will also result in LOS C operation for the existing plus project and 2041 base plus project traffic volumes. The capacity worksheets are included in the Appendix. Peak hour traffic signal warrant 3 per the *2009 Manual on Uniform Traffic Control Devices* (MUTCD) appears to be met for the existing plus project traffic volumes. Again, it should be noted that the MUTCD states that peak hour warrant 3 should be applied only in unusual cases such as office complexes, manufacturing plants, industrial complexes, or other high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. The MUTCD has eight additional warrants that should also be evaluated when considering the need for the installation of a traffic signal.

Signal spacing was subsequently reviewed for the West Main Street/Truckee Lane-East Driveway intersection based on NDOT's *Access Management System and Standards*. West Main Street (SR-427) is designated as a minor arterial on NDOT's *Roadway Functional Classification* maps. The access management standards indicate that signalized intersections on minor arterials that have posted speed limits of 35 miles per hour shall have uniform spacing of 1,320 feet. The standards indicate that uniform spacing is the exact spacing to be achieved.



The preferred improvement alternative of providing a traffic signal at West Main Street/Truckee Lane-East Driveway intersection results in spacing of  $\pm 3,100$  feet from the signalized West Main Street/US-95A intersection and  $\pm 2,200$  feet from the West Main Street/Logan Lane-Pilot Road intersection which may ultimately be signalized. The proposed West Main Street/Truckee Lane-East Driveway signalized intersection will easily exceed the signal spacing standard but does not exactly meet the uniform spacing standard.

Unsignalized spacing was also reviewed for the West Main Street/West Driveway intersection based on NDOT's *Access Management System and Standards*. The access management standards indicate that unsignalized access spacing on minor arterials that have posted speed limits of 35 miles per hour shall be a minimum of 660 feet for limited left-in/right-in/right-out movements and 300 feet for limited right-in/right-out movements as measured from the center of the accesses. The site plan indicates that the west project driveway will be located  $\pm 515$  feet southeast of Mesa Drive and  $\pm 550$  feet northwest of Truckee Lane. The West Main Street/West Driveway intersection will not meet the 660 feet minimum spacing requirement for limited left-in/right-in/right-out movements but does meet the 300 feet minimum spacing requirement for limited right-in/right-out movements. It should be noted that an NDOT maintenance facility driveway exists southeast of the proposed west driveway. The spacing between the NDOT maintenance facility driveway and west driveway will not meet the 660 feet minimum spacing requirement for limited left-in/right-in/right-out movements or the 300 feet minimum spacing requirement for limited right-in/right-out movements.

West Main Street currently contains a center two-way left turn lane along the project frontage from Mesa Drive to east of Truckee Lane. Left turn storage and deceleration requirements were subsequently reviewed on West Main Street at the project driveways as well as at Mesa Drive and the NDOT maintenance facility driveway in order to determine if adequate length exists. NDOT's *Access Management System and Standards (2017 Edition)* state that storage shall be based on operational analysis. The existing plus project and 2041 base plus project capacity results indicate 95th percentile queue lengths of 25 feet for the eastbound left turn movement at the West Main Street/Truckee Lane-East Driveway intersection, the eastbound left turn movement at the West Main Street/West Driveway intersection, and northbound left turn ingress movement at Mesa Drive. It is anticipated that 25 feet of storage is also needed for the left turn ingress at the existing NDOT maintenance facility driveway. In addition to storage, a minimum of 215 feet of deceleration length is needed for the left turn lanes based on the 35 mile per hour speed limit on West Main Street. The left turn lanes at all four locations will therefore require a minimum of 240 feet of combined storage/deceleration length with 50 foot bay tapers included in the deceleration lengths. However, if the 50 foot taper is shared then a minimum of 430 feet of shared length is needed on West Main Street between Mesa Drive and the west driveway and between the NDOT maintenance facility driveway and the east driveway. As previously discussed, the centerline spacing between Mesa Drive and the west driveway is  $\pm 515$  feet which should provide the minimum 430 feet required storage/deceleration length. However,  $\pm 350$  feet of length is available between the NDOT maintenance facility driveway and the east driveway which will not provide the full storage/deceleration length at each location.



The need for exclusive right turn lanes on West Main Street at the project driveways was reviewed based on NDOT's *Access Management System and Standards (2017 Edition)*. The access management standards provide warrants for the implementation of right turn lanes on two-lane roadways at unsignalized intersections. The turn lane warrants are evaluated based on through and turning movements as well as the 35 mile per hour speed limit on West Main Street. The results of the warrant review indicates that exclusive right turn lanes are required at the east and west project driveways based on the existing plus project traffic volumes. Storage and deceleration requirements were subsequently reviewed for the warranted right turn lanes. The operational analysis indicates no queue storage length is needed for the free right turn ingress movements. NDOT's access management standards indicate that 215 feet of deceleration length is needed for the right turn lanes based on the 35 mile per hour speed limit on West Main Street. The lane addition taper is included in the deceleration length.

In summary, a traffic signal at the West Main Street/Truckee Lane-East Driveway intersection is anticipated to provide acceptable level of service operation. However, the intersection will not meet exact uniform signal spacing requirements nor will enough length be available from the existing NDOT maintenance facility driveway to provide full left turn storage and deceleration length at both locations. Prohibiting the left turn egress movement at the unsignalized West Main Street/West Driveway intersection will also result in acceptable level of service operation. In addition, sufficient length exists between the west driveway and Mesa Drive to provide minimum left turn storage and deceleration length at both locations. However, the west driveway will not meet spacing requirements for left-in/right-in/right-out movement accesses from Mesa Drive and the east driveway. Deviations to NDOT's *Access Management System and Standards* may be required.

#### West Main Street/Miller Lane Intersection

The West Main Street/Miller Lane intersection currently meets NDOT's policy LOS D standard and will continue to do so for the existing plus project traffic volumes. However, the minor street left turn egress movement is anticipated to operate at unacceptable LOS E for the 2041 base traffic volumes and LOS F for the 2041 base plus project traffic volumes. Traffic signal warrant 3 per the *2009 Manual on Uniform Traffic Control Devices (MUTCD)* was subsequently reviewed at the intersection due to the poor unsignalized level of service operation. Warrant 3 for peak hour volumes is not met for any of the study scenarios. It should again be noted that the MUTCD has eight additional warrants that should be evaluated when considering the need for the installation of a traffic signal. As with other intersections identified in the City of Fernley Transportation Master Plan (Draft) dated May 2020, it is suggested that this intersection be monitored for traffic growth as it may ultimately warrant capacity or traffic control improvements. It is anticipated that a traffic signal at the West Main Street/Truckee Lane-East Driveway intersection will create additional gaps on West Main Street and ultimately decrease delay for the minor street left turn egress movement at Miller Lane.

### West Main Street/Mesa Drive Intersection

The West Main Street/Mesa Drive intersection currently meets NDOT's policy LOS D standard and will continue to do so for the existing plus project and 2041 base traffic volumes. However, the minor street left turn movement is anticipated to just exceed the policy LOS D standard for the 2041 base plus project traffic volumes. Traffic signal warrant are not met at this intersection. However, it is anticipated that a traffic signal at the West Main Street/Truckee Lane-East Driveway intersection as well as a potential traffic signal at the West Main Street/Logan Lane-Pilot Road intersection will create additional gaps on West Main Street and ultimately decrease delay for the minor street left turn egress movement at Mesa Drive.

## RECOMMENDATIONS

Traffic generated by the 600 West Main Street development will have some impact on the adjacent street network. The following recommendations are made to mitigate project traffic impacts.

It is recommended that any required signing, striping, or traffic control improvements comply with Nevada Department of Transportation and City of Fernley requirements.

It is recommended that the West Main Street/Truckee Lane-East Driveway intersection be designed to include a minimum of one left turn lane and one shared through-right turn lane at both the north driveway and south Truckee Lane approaches and an exclusive right turn lane with a minimum of 215 feet of deceleration length at the east approach. It is recommended that a traffic signal be installed at the West Main Street/Truckee Lane-East Driveway intersection when warranted.

It is recommended that the West Main Street/West Driveway intersection be designed to operate with limited left-in/right-in/right-out movements and contain stop sign control at the driveway approach and an exclusive right turn lane with a minimum of 215 feet of deceleration length at the east approach.

## APPENDIX

# Multifamily Housing (Low-Rise) (220)

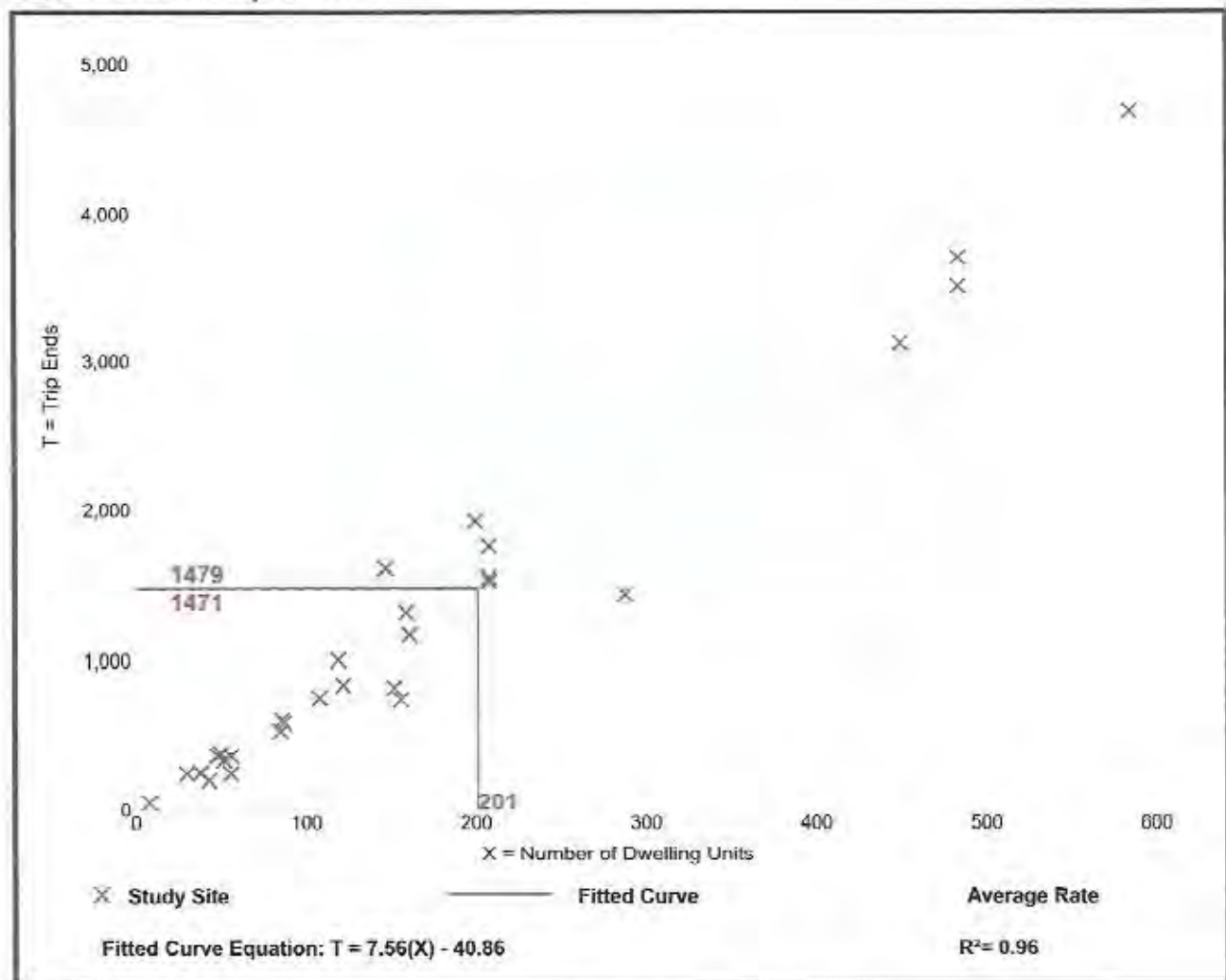
Vehicle Trip Ends vs: Dwelling Units  
On a: Weekday

Setting/Location: General Urban/Suburban  
Number of Studies: 29  
Avg. Num. of Dwelling Units: 168  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 7.32         | 4.45 - 10.97   | 1.31               |

## Data Plot and Equation





## Multifamily Housing (Low-Rise) (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,  
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 42

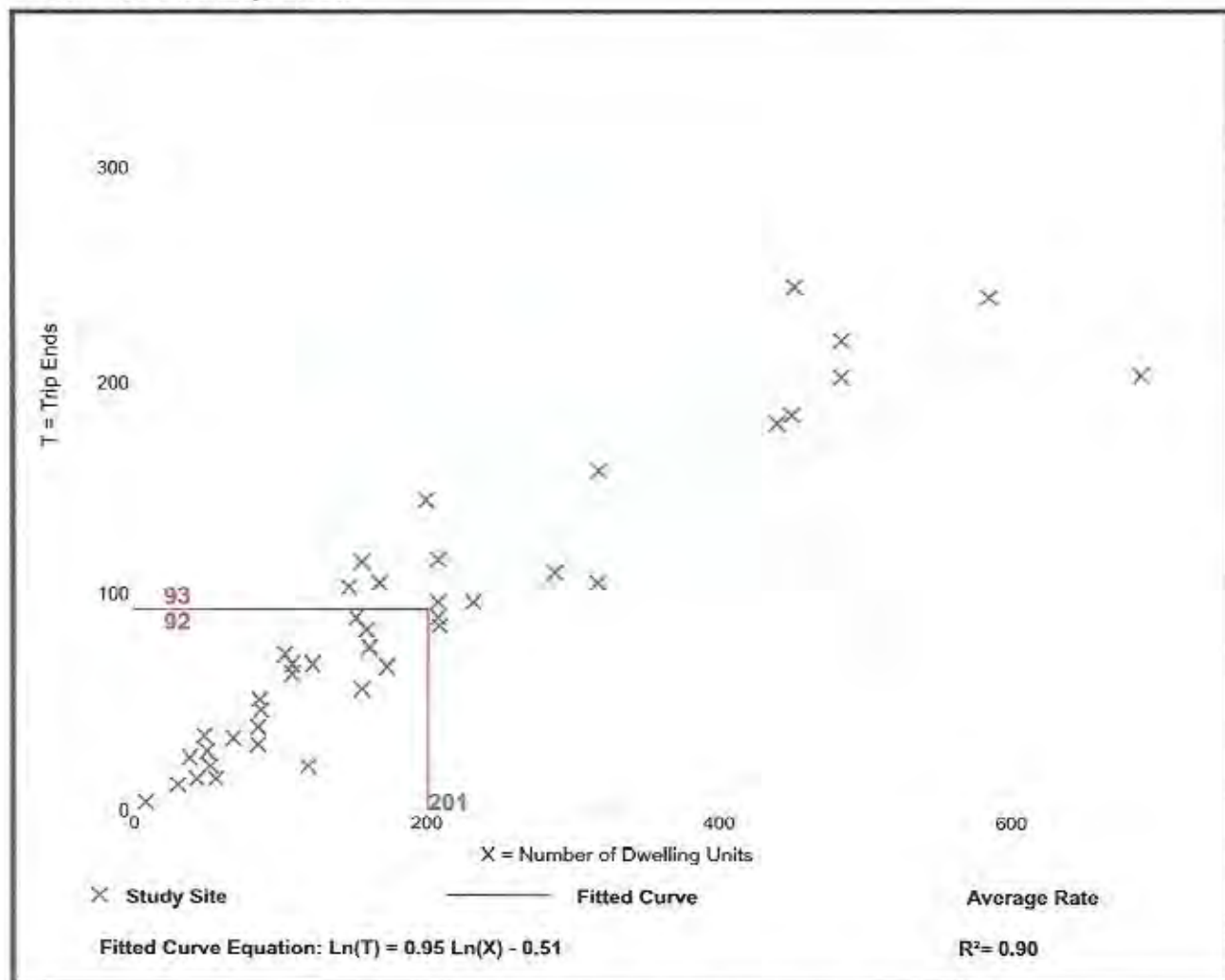
Avg. Num. of Dwelling Units: 199

Directional Distribution: 23% entering, 77% exiting

### Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.46         | 0.18 - 0.74    | 0.12               |

### Data Plot and Equation



## Multifamily Housing (Low-Rise) (220)

**Vehicle Trip Ends vs: Dwelling Units**

**On a: Weekday,**

**Peak Hour of Adjacent Street Traffic,**

**One Hour Between 4 and 6 p.m.**

**Setting/Location: General Urban/Suburban**

Number of Studies: 50

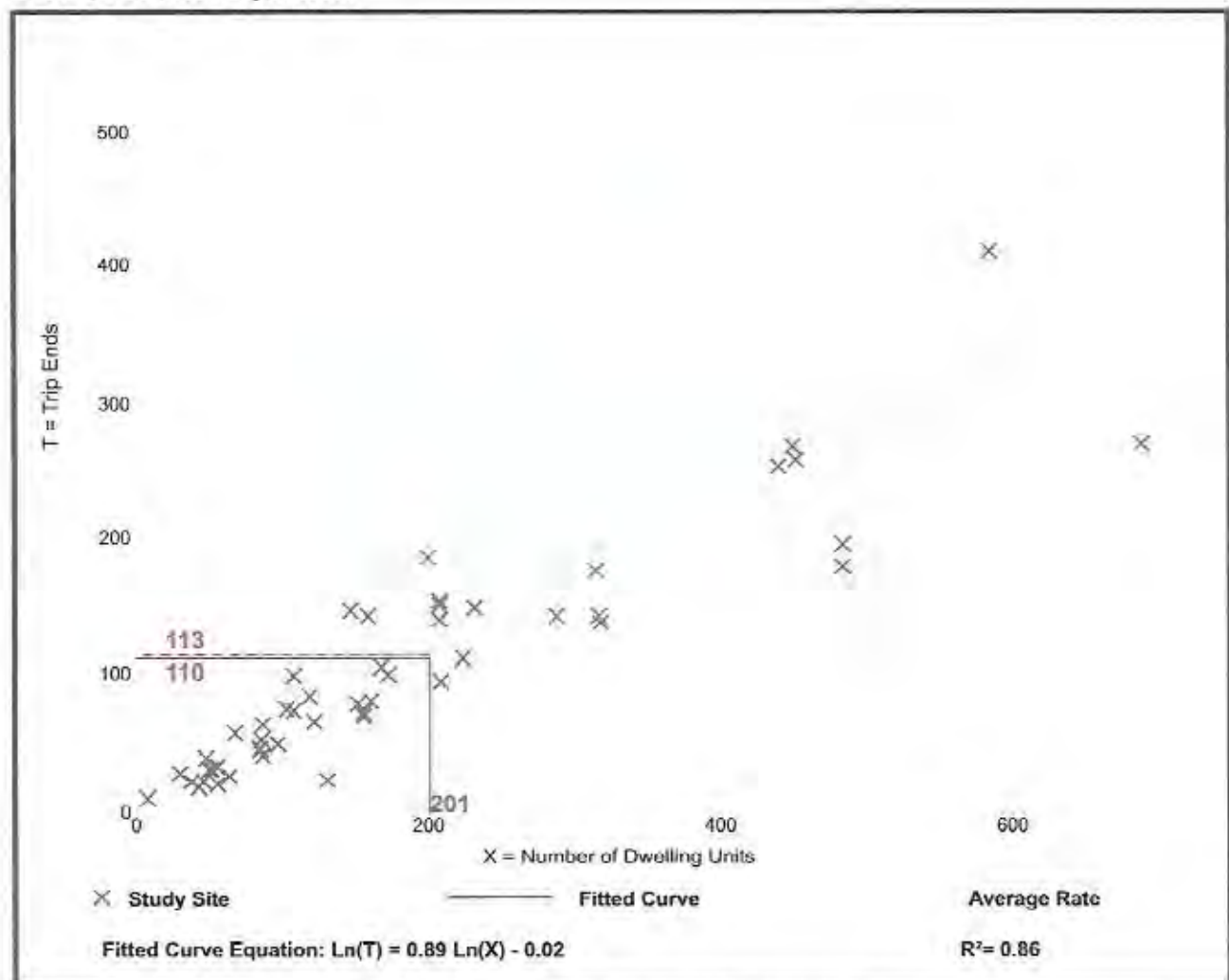
Avg. Num. of Dwelling Units: 187

Directional Distribution: 63% entering, 37% exiting

### Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.56         | 0.18 - 1.25    | 0.16               |

### Data Plot and Equation



## Hotel (310)

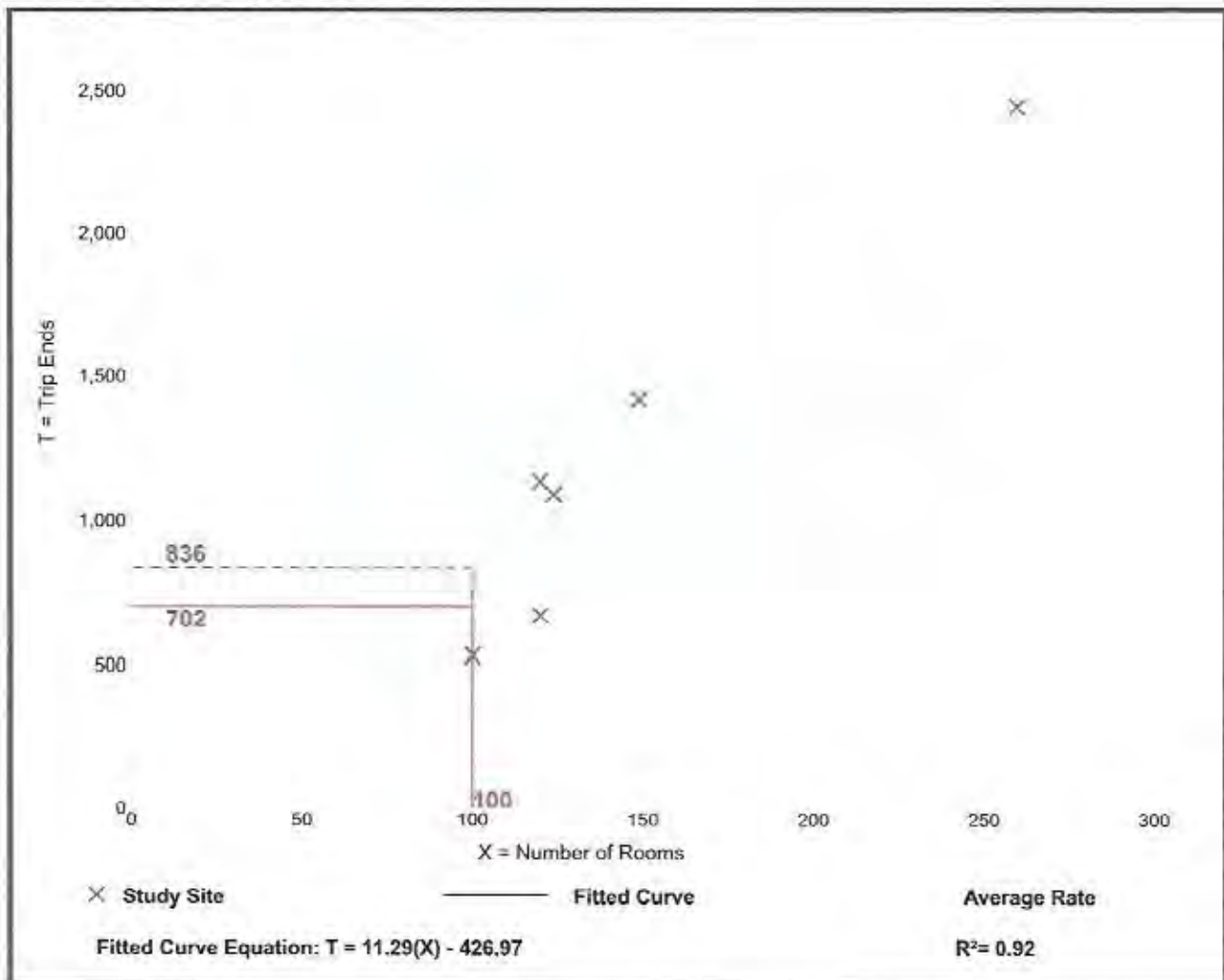
Vehicle Trip Ends vs: Rooms  
On a: Weekday

Setting/Location: General Urban/Suburban  
Number of Studies: 8  
Avg. Num. of Rooms: 146  
Directional Distribution: 50% entering, 50% exiting

### Vehicle Trip Generation per Room

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 8.36         | 5.31 - 9.53    | 1.86               |

### Data Plot and Equation



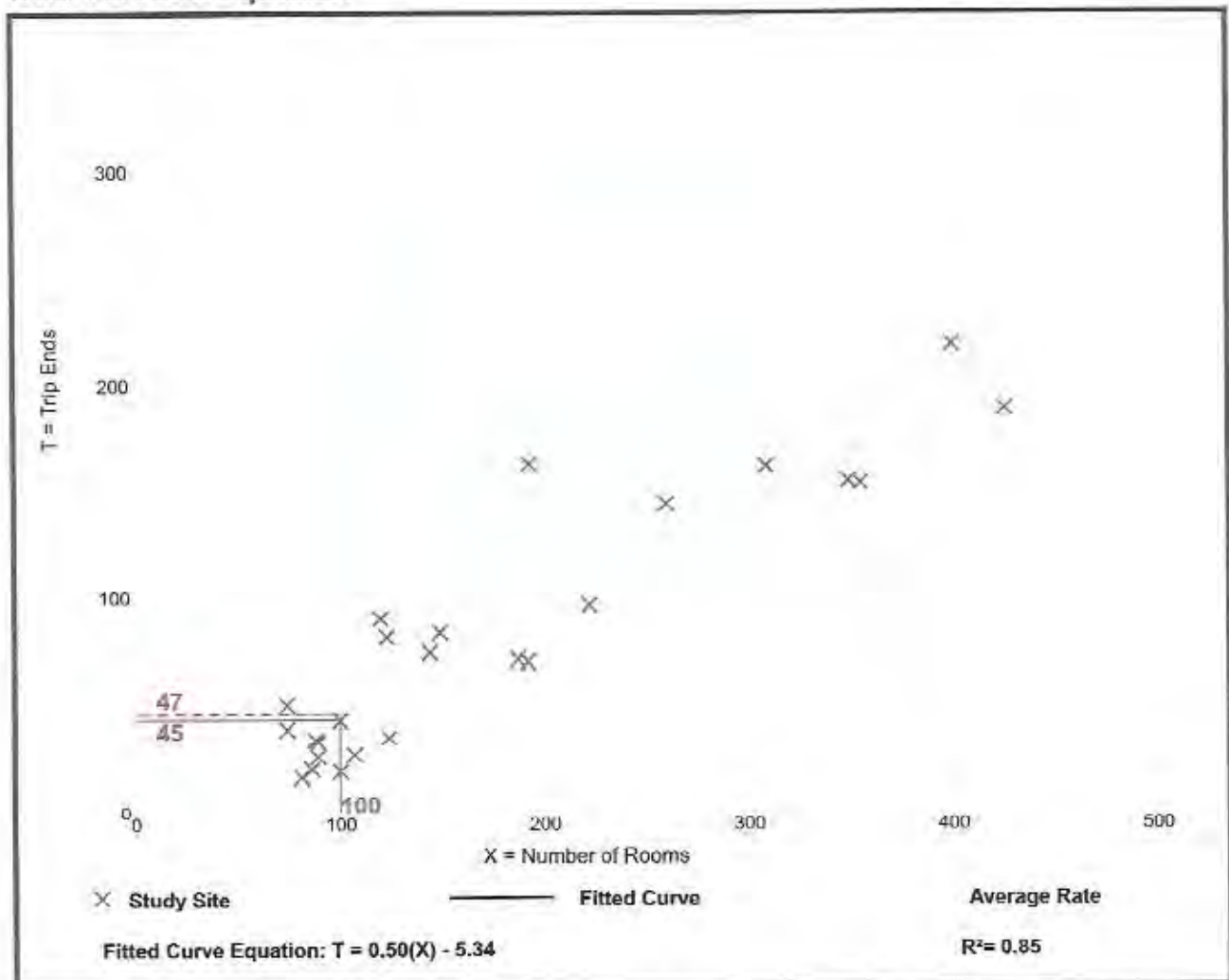
## Hotel (310)

Vehicle Trip Ends vs: Rooms  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 7 and 9 a.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 25  
 Avg. Num. of Rooms: 178  
 Directional Distribution: 59% entering, 41% exiting

### Vehicle Trip Generation per Room

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.47         | 0.20 - 0.84    | 0.14               |

### Data Plot and Equation





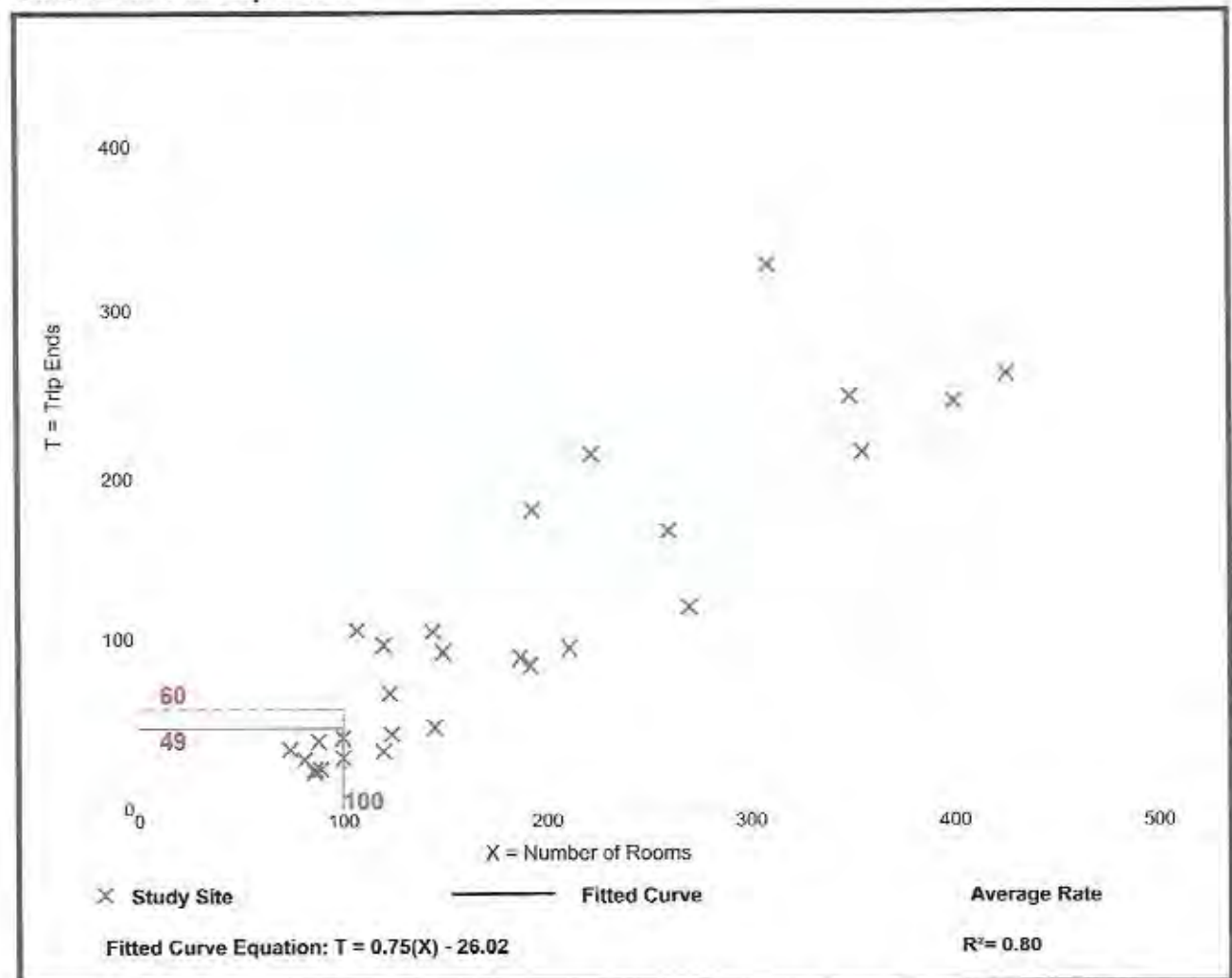
## Hotel (310)

Vehicle Trip Ends vs: Rooms  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 4 and 6 p.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 28  
 Avg. Num. of Rooms: 183  
 Directional Distribution: 51% entering, 49% exiting

### Vehicle Trip Generation per Room

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.60         | 0.26 - 1.06    | 0.22               |

### Data Plot and Equation



## Shopping Center (820)

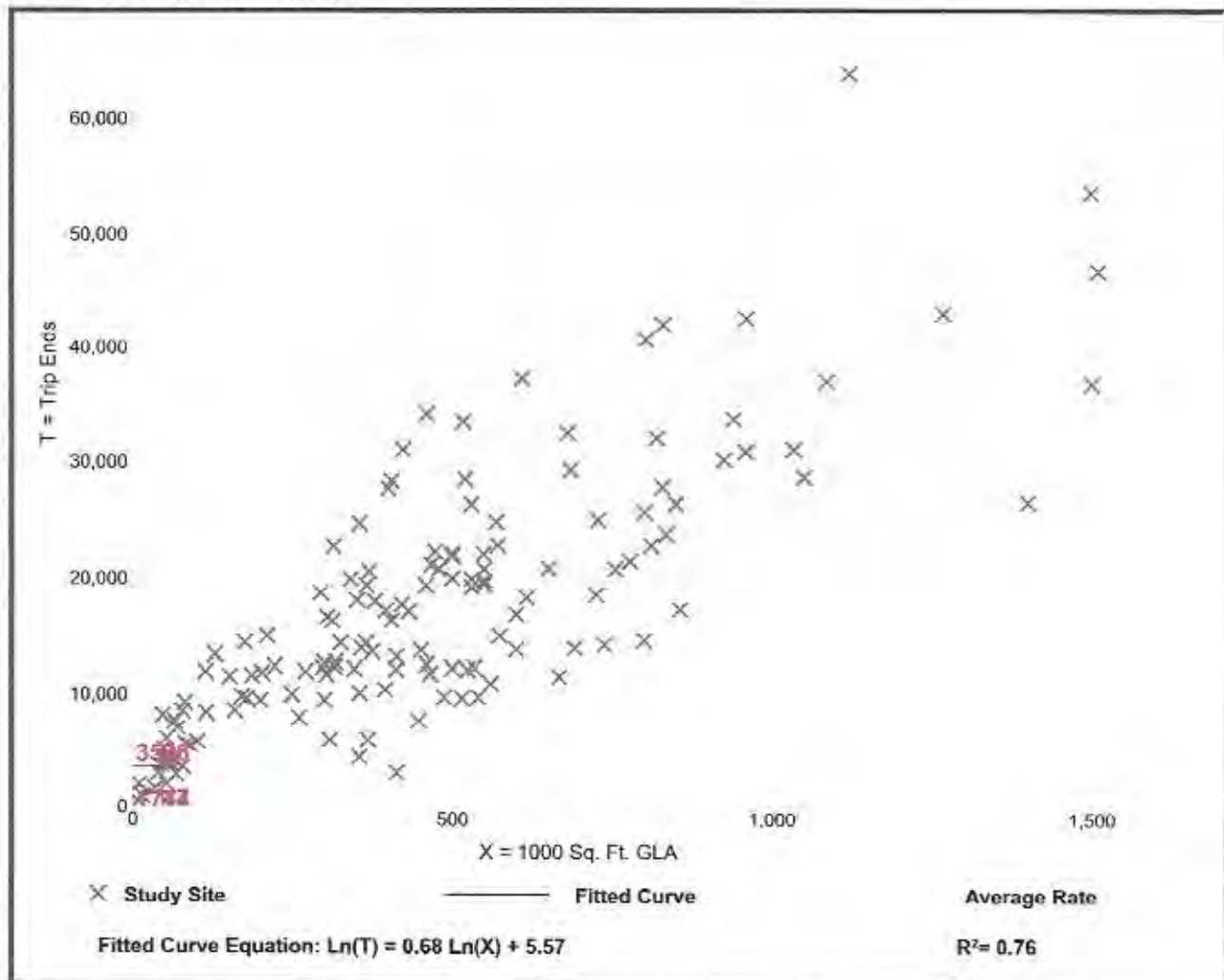
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA  
On a: Weekday

**Setting/Location:** General Urban/Suburban  
Number of Studies: 147  
Avg. 1000 Sq. Ft. GLA: 453  
Directional Distribution: 50% entering, 50% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 37.75        | 7.42 - 207.98  | 18.41              |

### Data Plot and Equation



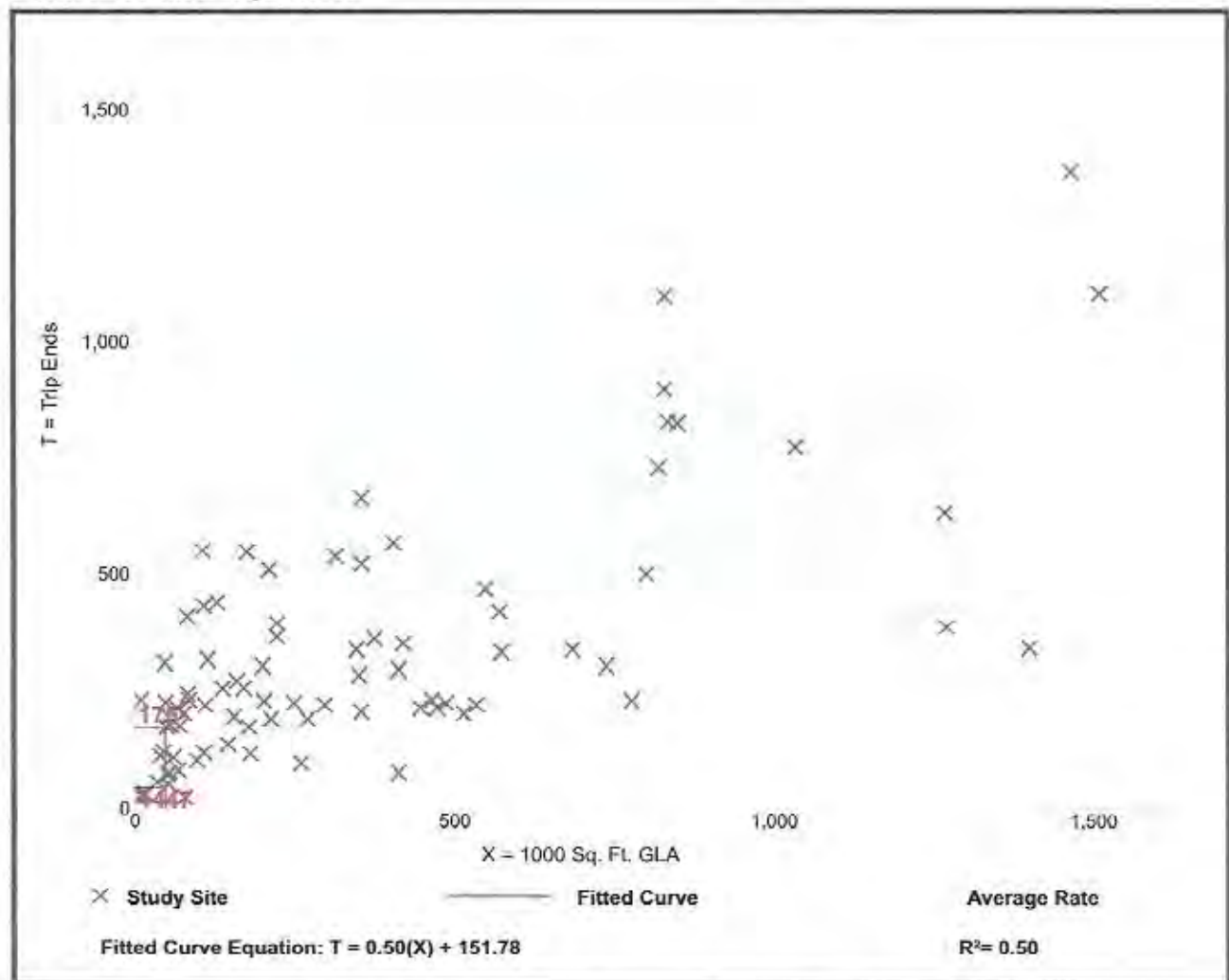
## Shopping Center (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 7 and 9 a.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 84  
 Avg. 1000 Sq. Ft. GLA: 351  
 Directional Distribution: 62% entering, 38% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.94         | 0.18 - 23.74   | 0.87               |

### Data Plot and Equation



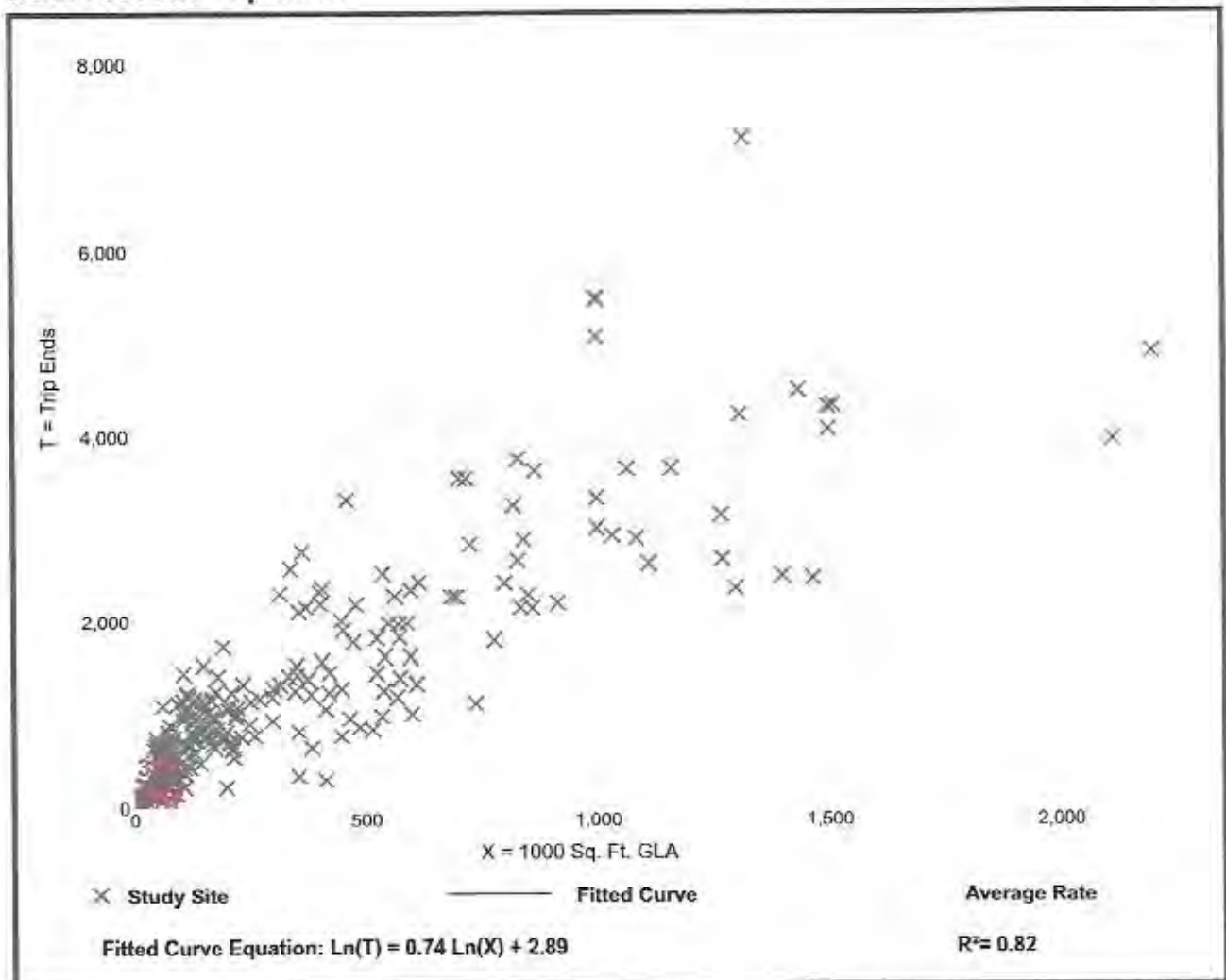
## Shopping Center (820)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 4 and 6 p.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 261  
 Avg. 1000 Sq. Ft. GLA: 327  
 Directional Distribution: 48% entering, 52% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GLA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 3.81         | 0.74 - 18.69   | 2.04               |

### Data Plot and Equation





# Pharmacy/Drugstore with Drive-Through Window (881)

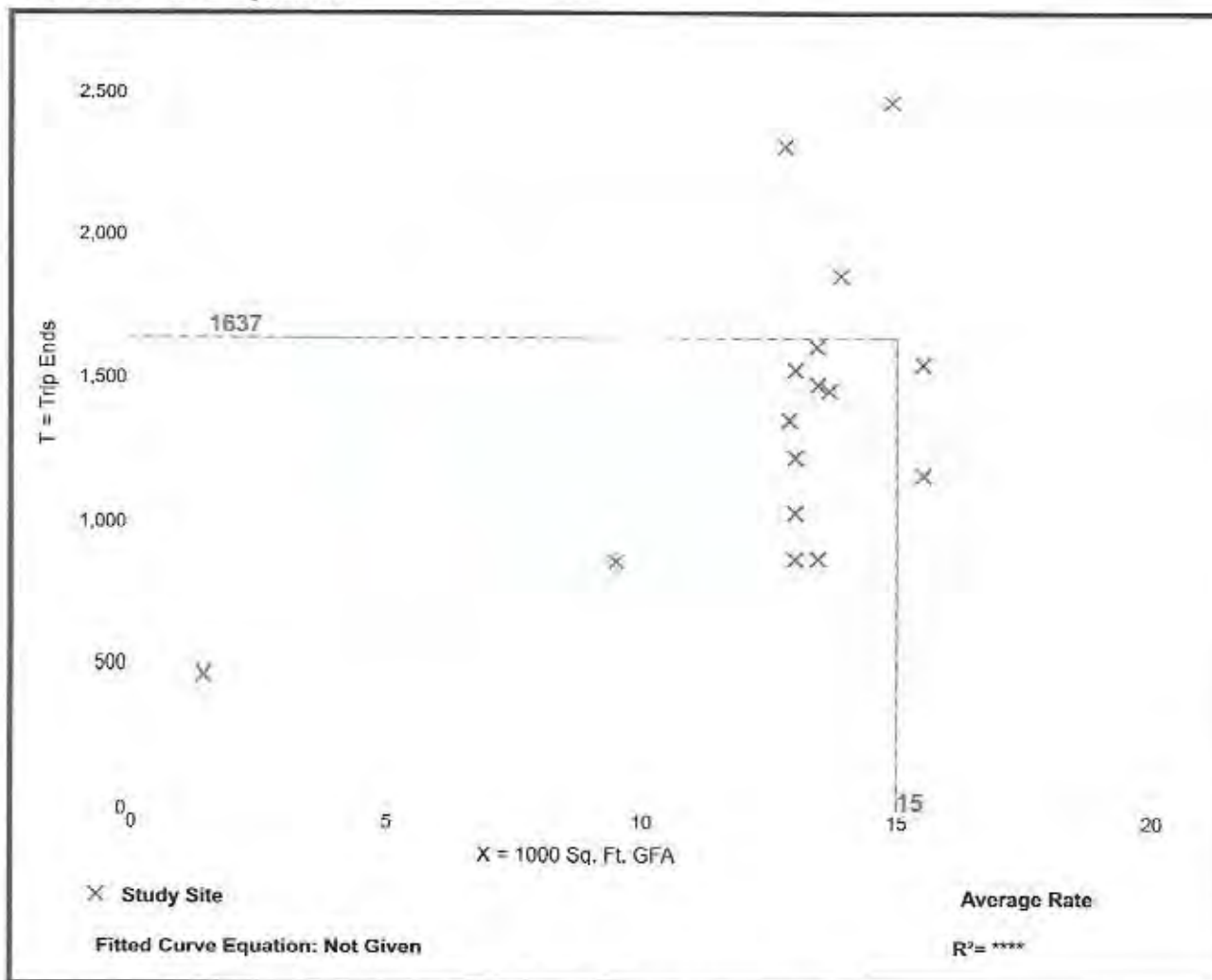
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Weekday

Setting/Location: General Urban/Suburban  
Number of Studies: 16  
Avg, 1000 Sq. Ft. GFA: 13  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 109.16       | 65.05 - 329.35 | 38.33              |

## Data Plot and Equation



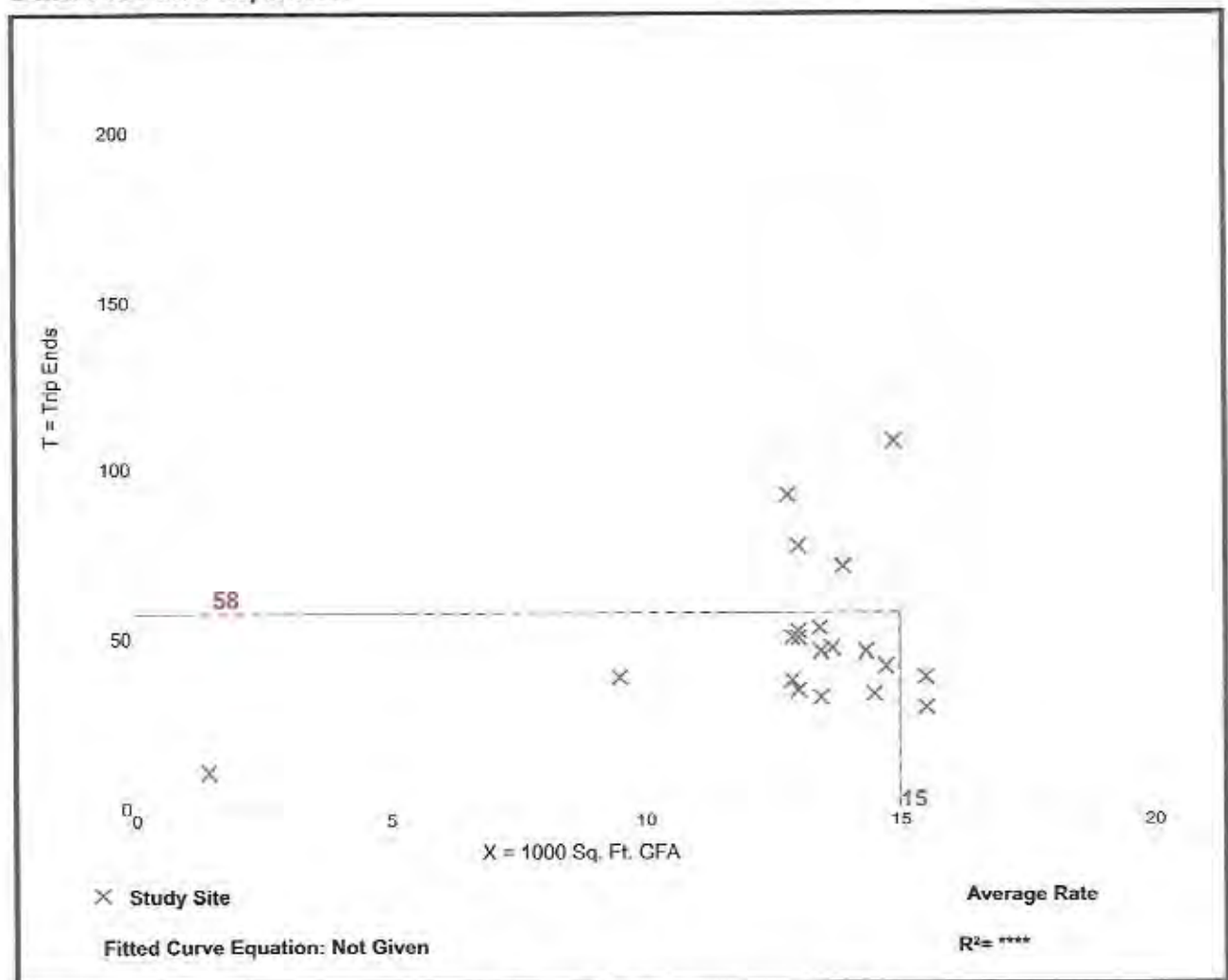
## Pharmacy/Drugstore with Drive-Through Window (881)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 7 and 9 a.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 20  
 Avg. 1000 Sq. Ft. GFA: 13  
 Directional Distribution: 53% entering, 47% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 3.84         | 1.93 - 7.74    | 1.58               |

### Data Plot and Equation



## Pharmacy/Drugstore with Drive-Through Window (881)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,  
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 38

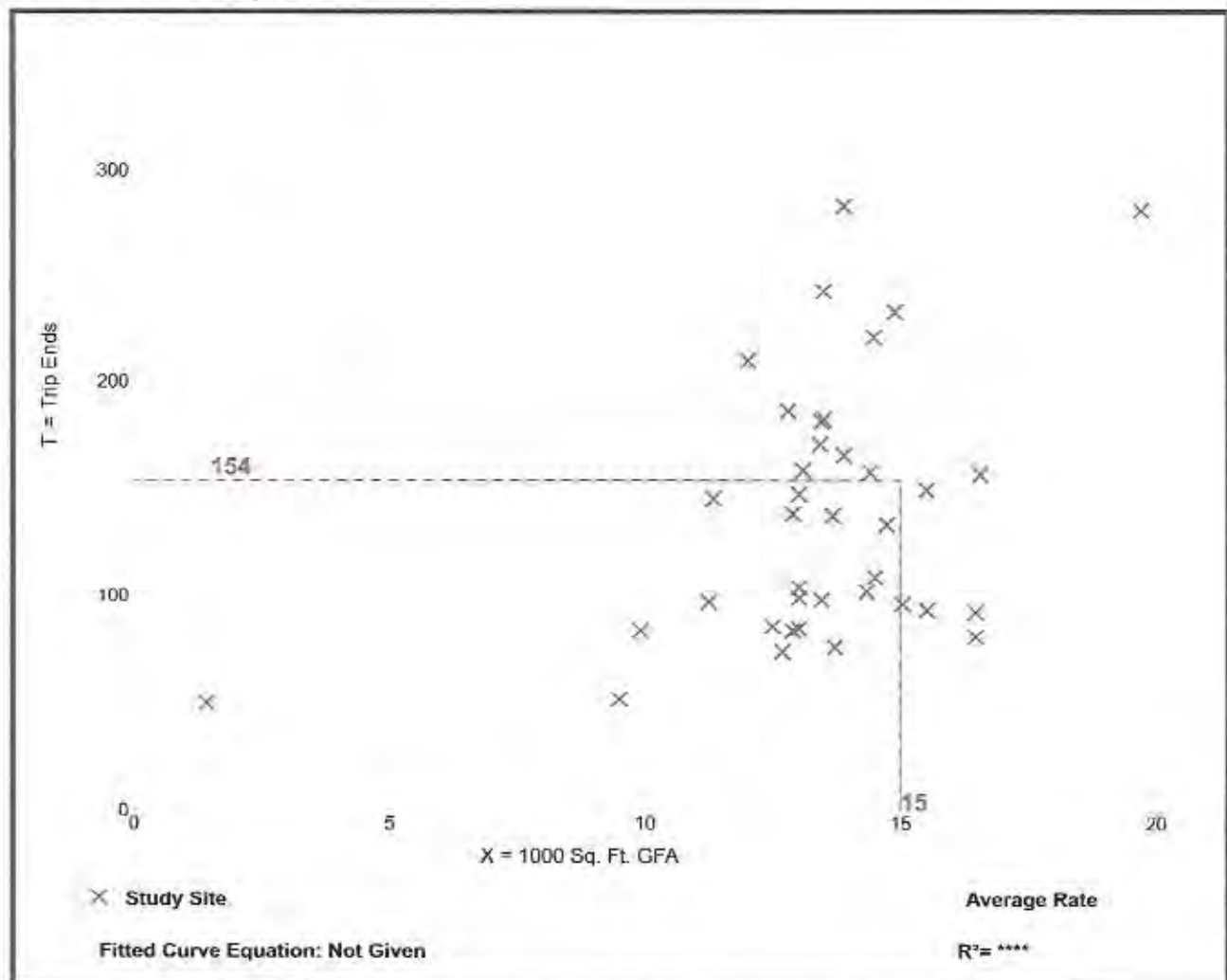
Avg. 1000 Sq. Ft. GFA: 13

Directional Distribution: 50% entering, 50% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 10.29        | 4.86 - 35.19   | 4.25               |

### Data Plot and Equation



# High-Turnover (Sit-Down) Restaurant (932)

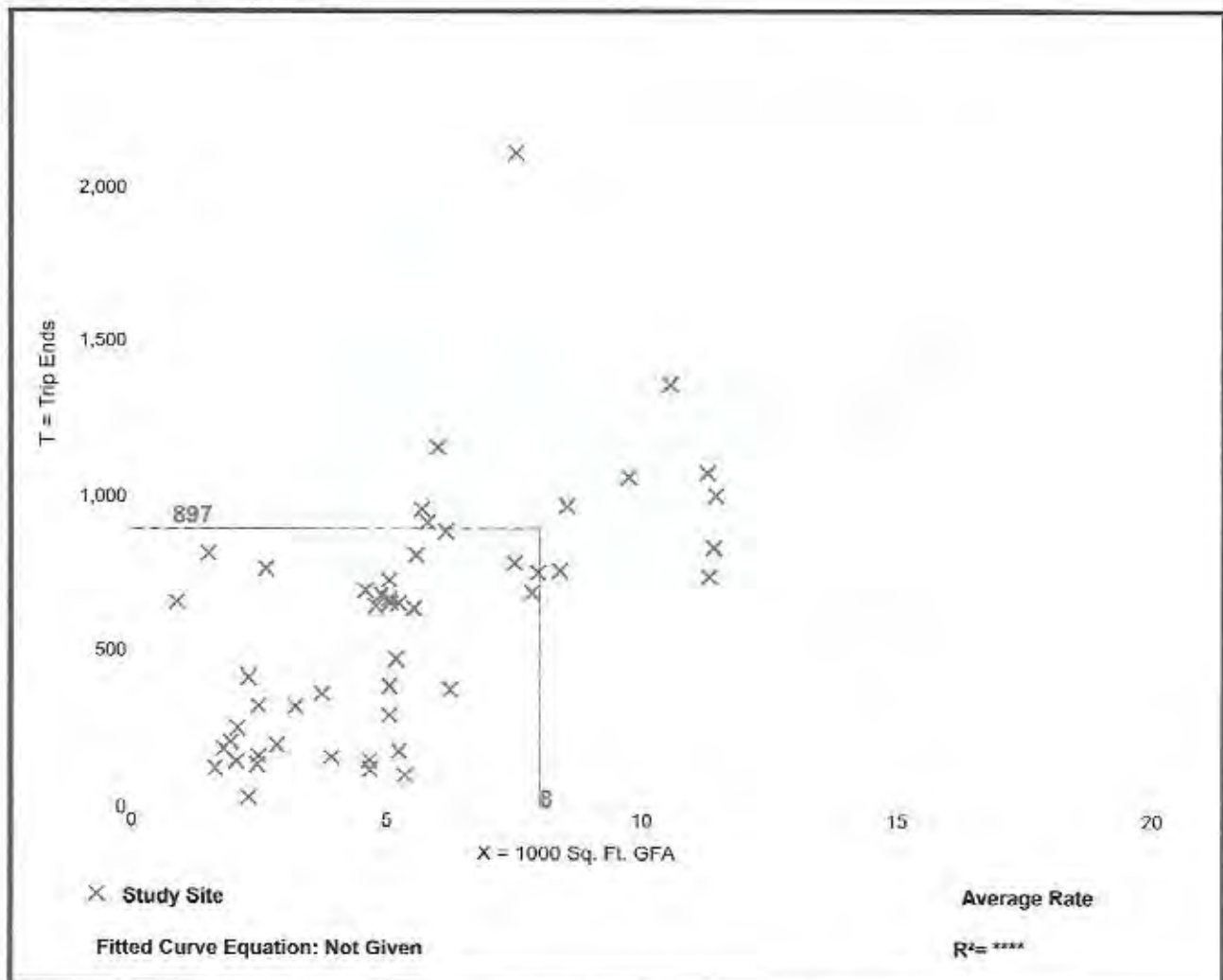
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Weekday

Setting/Location: General Urban/Suburban  
Number of Studies: 50  
Avg. 1000 Sq. Ft. GFA: 5  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 112.18       | 13.04 - 742.41 | 72.51              |

## Data Plot and Equation





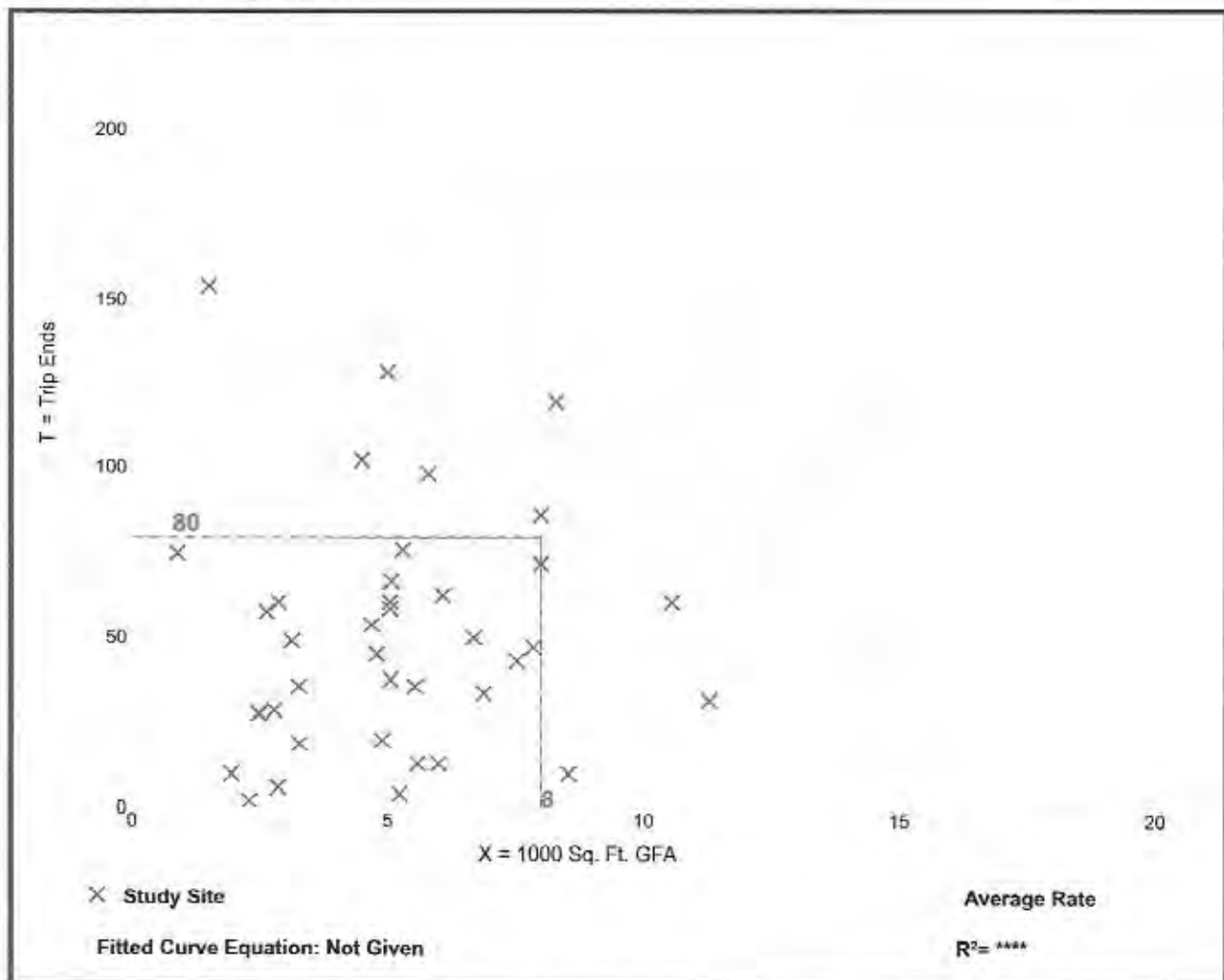
## High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 7 and 9 a.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 39  
 Avg. 1000 Sq. Ft. GFA: 5  
 Directional Distribution: 55% entering, 45% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 9.94         | 0.76 - 102.39  | 11.33              |

### Data Plot and Equation



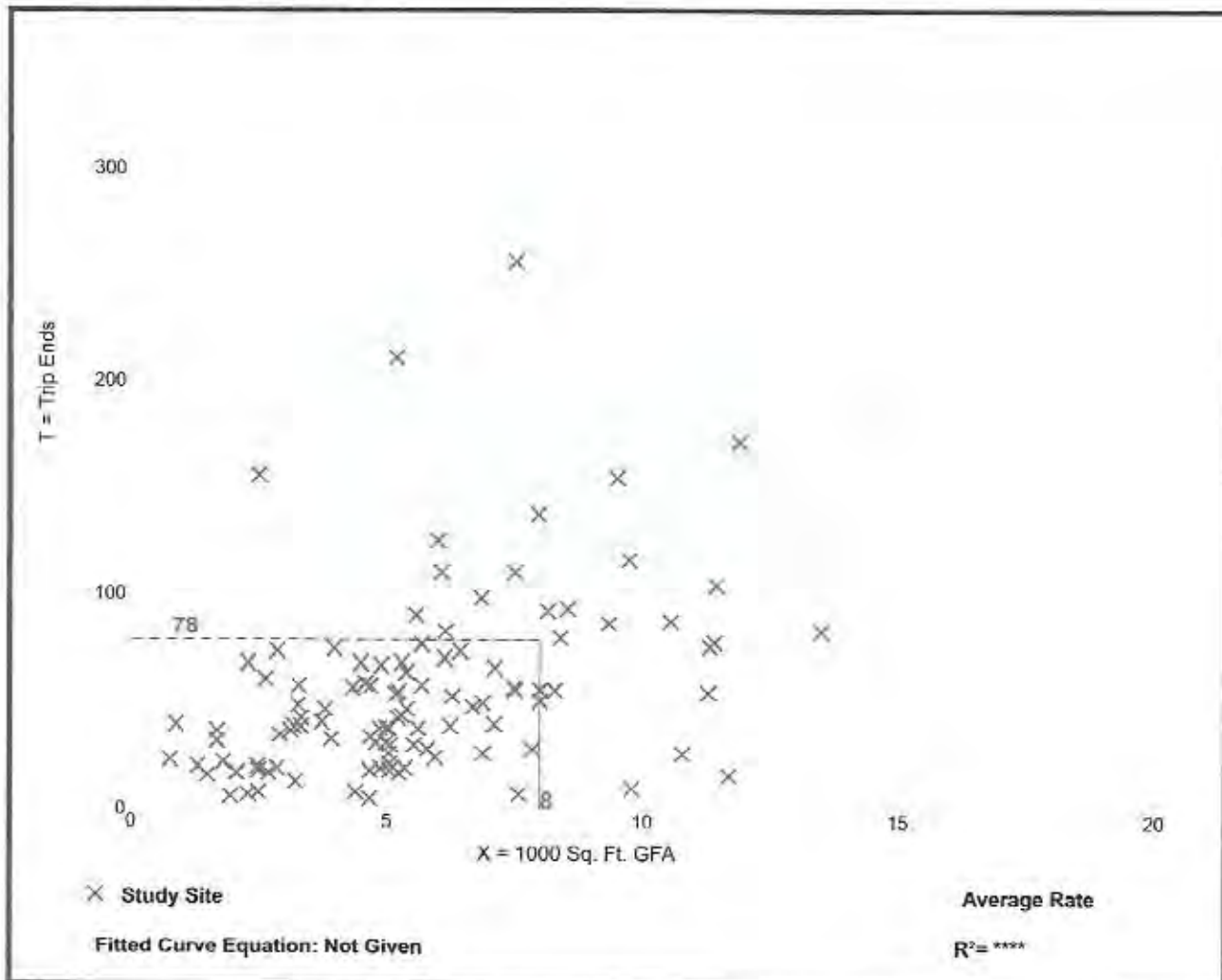
## High-Turnover (Sit-Down) Restaurant (932)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 4 and 6 p.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 107  
 Avg. 1000 Sq. Ft. GFA: 6  
 Directional Distribution: 62% entering, 38% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 9.77         | 0.92 - 62.00   | 7.37               |

### Data Plot and Equation

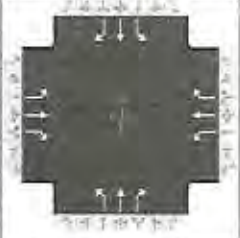


# HCS7 Signalized Intersection Results Summary

## General Information

|                     |                    |               |              |                 |         |
|---------------------|--------------------|---------------|--------------|-----------------|---------|
| Agency              | Solaegui Engineers |               |              | Duration, h     | 0.250   |
| Analyst             | MSH                | Analysis Date | May 19, 2021 | Area Type       | Other   |
| Jurisdiction        | NDOT               | Time Period   | AM Peak Hour | PHF             | 0.92    |
| Urban Street        |                    | Analysis Year | Existing     | Analysis Period | 1> 7:00 |
| Intersection        | Min & US-95A       | File Name     | MaUs21ax.xus |                 |         |
| Project Description |                    |               |              |                 |         |

## Intersection Information



## Demand Information

|                   | EB |     |     | WB  |     |   | NB  |   |     | SB |   |   |
|-------------------|----|-----|-----|-----|-----|---|-----|---|-----|----|---|---|
| Approach Movement | L  | T   | R   | L   | T   | R | L   | T | R   | L  | T | R |
| Demand (v), veh/h | 1  | 160 | 105 | 154 | 155 | 3 | 170 | 1 | 145 | 1  | 3 | 2 |

## Signal Information

|               |       |                 |     |        |     |     |      |      |      |     |  |  |
|---------------|-------|-----------------|-----|--------|-----|-----|------|------|------|-----|--|--|
| Cycle, s      | 80.0  | Reference Phase | 2   |        |     |     |      |      |      |     |  |  |
| Offset, s     | 0     | Reference Point | End |        |     |     |      |      |      |     |  |  |
| Uncoordinated | Yes   | Simult. Gap E/W | On  | Green  | 6.0 | 4.0 | 20.0 | 10.0 | 20.0 | 0.0 |  |  |
| Force Mode    | Fixed | Simult. Gap N/S | On  | Yellow | 4.0 | 0.0 | 4.0  | 4.0  | 4.0  | 0.0 |  |  |
|               |       |                 |     | Red    | 1.0 | 0.0 | 1.0  | 1.0  | 1.0  | 0.0 |  |  |

## Timer Results

|                                           | EBL  | EBT  | WBL  | WBT  | NBL | NBT  | SBL | SBT  |
|-------------------------------------------|------|------|------|------|-----|------|-----|------|
| Assigned Phase                            | 5    | 2    | 1    | 6    |     | 8    |     | 4    |
| Case Number                               | 2.0  | 3.0  | 2.0  | 3.0  |     | 9.0  |     | 9.0  |
| Phase Duration, s                         | 11.0 | 25.0 | 15.0 | 29.0 |     | 25.0 |     | 15.0 |
| Change Period, (Y+R <sub>c</sub> ), s     | 5.0  | 5.0  | 0.0  | 5.0  |     | 5.0  |     | 5.0  |
| Max Allow Headway (MAH), s                | 3.3  | 3.2  | 3.3  | 3.2  |     | 3.4  |     | 3.3  |
| Queue Clearance Time (g <sub>s</sub> ), s | 2.0  | 8.3  | 8.8  | 7.7  |     | 9.8  |     | 2.1  |
| Green Extension Time (g <sub>e</sub> ), s | 0.0  | 0.6  | 0.2  | 0.8  |     | 0.5  |     | 0.0  |
| Phase Call Probability                    | 1.00 | 1.00 | 1.00 | 1.00 |     | 1.00 |     | 1.00 |
| Max Out Probability                       | 0.09 | 0.11 | 0.05 | 0.00 |     | 0.01 |     | 0.00 |

## Movement Group Results

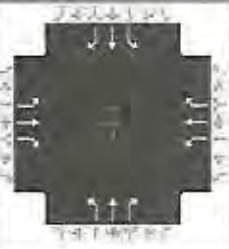
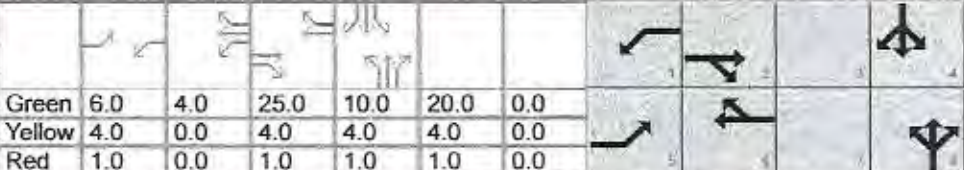
|                                                 | EB    |       |       | WB    |       |       | NB    |       |       | SB    |       |       |
|-------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Approach Movement                               | L     | T     | R     | L     | T     | R     | L     | T     | R     | L     | T     | R     |
| Assigned Movement                               | 5     | 2     | 12    | 1     | 6     | 16    | 3     | 8     | 18    | 7     | 4     | 14    |
| Adjusted Flow Rate (v), veh/h                   | 1     | 174   | 87    | 167   | 168   | 3     | 185   | 1     | 120   | 1     | 3     | 2     |
| Adjusted Saturation Flow Rate (s), veh/h/in     | 1767  | 1826  | 1369  | 1767  | 1826  | 1519  | 1598  | 1856  | 1514  | 1767  | 1856  | 1487  |
| Queue Service Time (g <sub>s</sub> ), s         | 0.0   | 6.3   | 4.1   | 6.8   | 5.7   | 0.1   | 7.8   | 0.0   | 5.1   | 0.0   | 0.1   | 0.1   |
| Cycle Queue Clearance Time (g <sub>c</sub> ), s | 0.0   | 6.3   | 4.1   | 6.8   | 5.7   | 0.1   | 7.8   | 0.0   | 5.1   | 0.0   | 0.1   | 0.1   |
| Green Ratio (g/C)                               | 0.08  | 0.25  | 0.25  | 0.19  | 0.30  | 0.30  | 0.25  | 0.25  | 0.25  | 0.12  | 0.12  | 0.12  |
| Capacity (c), veh/h                             | 133   | 456   | 342   | 331   | 548   | 456   | 399   | 464   | 379   | 221   | 232   | 186   |
| Volume-to-Capacity Ratio (X)                    | 0.008 | 0.381 | 0.254 | 0.505 | 0.308 | 0.007 | 0.463 | 0.002 | 0.316 | 0.005 | 0.014 | 0.012 |
| Back of Queue (Q), ft/in (95 th percentile)     | 0.9   | 127.3 | 66.3  | 133   | 112.8 | 2     | 148.9 | 0.7   | 84.6  | 0.8   | 2.6   | 1.7   |
| Back of Queue (Q), veh/in (95 th percentile)    | 0.0   | 4.9   | 2.4   | 5.2   | 4.3   | 0.1   | 5.3   | 0.0   | 3.3   | 0.0   | 0.1   | 0.1   |
| Queue Storage Ratio (RQ) (95 th percentile)     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Uniform Delay (d <sub>1</sub> ), s/veh          | 34.2  | 24.9  | 24.0  | 29.2  | 21.6  | 19.6  | 25.4  | 22.5  | 24.4  | 30.6  | 30.7  | 30.7  |
| Incremental Delay (d <sub>2</sub> ), s/veh      | 0.0   | 0.2   | 0.1   | 0.5   | 0.1   | 0.0   | 0.3   | 0.0   | 0.2   | 0.0   | 0.0   | 0.0   |
| Initial Queue Delay (d <sub>3</sub> ), s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Control Delay (d), s/veh                        | 34.3  | 25.1  | 24.2  | 29.7  | 21.7  | 19.6  | 25.8  | 22.5  | 24.6  | 30.6  | 30.7  | 30.7  |
| Level of Service (LOS)                          | C     | C     | C     | C     | C     | B     | C     | C     | C     | C     | C     | C     |
| Approach Delay, s/veh / LOS                     | 24.8  |       | C     | 25.6  |       | C     | 25.3  |       | C     | 30.7  |       | C     |
| Intersection Delay, s/veh / LOS                 | 25.3  |       |       |       |       |       | C     |       |       |       |       |       |

## Multimodal Results

|                            | EB   |  |   | WB   |  |   | NB   |  |   | SB   |  |   |
|----------------------------|------|--|---|------|--|---|------|--|---|------|--|---|
| Pedestrian LOS Score / LOS | 2.16 |  | B | 2.11 |  | B | 2.14 |  | B | 2.15 |  | B |
| Bicycle LOS Score / LOS    | 0.92 |  | A | 1.05 |  | A | 0.99 |  | A | 0.50 |  | A |



## HCS7 Signalized Intersection Results Summary

| General Information                             |  |                    |  |                 |  | Intersection Information |       |                 |       |         |       |  |       |       |       |       |       |
|-------------------------------------------------|--|--------------------|--|-----------------|--|--------------------------|-------|-----------------|-------|---------|-------|-------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|
| Agency                                          |  | Solaegui Engineers |  |                 |  | Duration, h              |       | 0.250           |       |         |       |                                                                                     |       |       |       |       |       |
| Analyst                                         |  | MSH                |  | Analysis Date   |  | May 19, 2021             |       | Area Type       |       | Other   |       |                                                                                     |       |       |       |       |       |
| Jurisdiction                                    |  | NDOT               |  | Time Period     |  | AM Peak Hour             |       | PHF             |       | 0.92    |       |                                                                                     |       |       |       |       |       |
| Urban Street                                    |  |                    |  | Analysis Year   |  | Existing                 |       | Analysis Period |       | 1> 7:00 |       |                                                                                     |       |       |       |       |       |
| Intersection                                    |  | Main & US-95A      |  | File Name       |  | MaUs21px.xus             |       |                 |       |         |       |                                                                                     |       |       |       |       |       |
| Project Description                             |  |                    |  |                 |  |                          |       |                 |       |         |       |                                                                                     |       |       |       |       |       |
| Demand Information                              |  |                    |  |                 |  | EB                       |       |                 | WB    |         |       | NB                                                                                  |       |       | SB    |       |       |
| Approach Movement                               |  |                    |  |                 |  | L                        | T     | R               | L     | T       | R     | L                                                                                   | T     | R     | L     | T     | R     |
| Demand ( v ), veh/h                             |  |                    |  |                 |  | 1                        | 366   | 191             | 209   | 253     | 4     | 193                                                                                 | 4     | 145   | 9     | 4     | 2     |
| Signal Information                              |  |                    |  |                 |  |                          |       |                 |       |         |       |   |       |       |       |       |       |
| Cycle, s                                        |  | 85.0               |  | Reference Phase |  | 2                        |       |                 |       |         |       |                                                                                     |       |       |       |       |       |
| Offset, s                                       |  | 0                  |  | Reference Point |  | End                      |       |                 |       |         |       |                                                                                     |       |       |       |       |       |
| Uncoordinated                                   |  | Yes                |  | Simult. Gap E/W |  | On                       |       | Green           |       | 6.0     |       | 4.0                                                                                 |       | 25.0  |       | 10.0  |       |
|                                                 |  |                    |  |                 |  |                          |       | Yellow          |       | 4.0     |       | 0.0                                                                                 |       | 4.0   |       | 4.0   |       |
| Force Mode                                      |  | Fixed              |  | Simult. Gap N/S |  | On                       |       | Red             |       | 1.0     |       | 0.0                                                                                 |       | 1.0   |       | 1.0   |       |
| Timer Results                                   |  |                    |  |                 |  | EBL                      |       | EBT             |       | WBL     |       | WBT                                                                                 |       | NBL   |       | NBT   |       |
| Assigned Phase                                  |  |                    |  |                 |  | 5                        |       | 2               |       | 1       |       | 6                                                                                   |       |       |       | 8     |       |
| Case Number                                     |  |                    |  |                 |  | 2.0                      |       | 3.0             |       | 2.0     |       | 3.0                                                                                 |       |       |       | 9.0   |       |
| Phase Duration, s                               |  |                    |  |                 |  | 11.0                     |       | 30.0            |       | 15.0    |       | 34.0                                                                                |       |       |       | 25.0  |       |
| Change Period, ( Y+R c ), s                     |  |                    |  |                 |  | 5.0                      |       | 5.0             |       | 0.0     |       | 5.0                                                                                 |       |       |       | 5.0   |       |
| Max Allow Headway ( MAH ), s                    |  |                    |  |                 |  | 3.3                      |       | 3.2             |       | 3.3     |       | 3.2                                                                                 |       |       |       | 3.4   |       |
| Queue Clearance Time ( g s ), s                 |  |                    |  |                 |  | 2.0                      |       | 18.7            |       | 12.3    |       | 11.9                                                                                |       |       |       | 11.8  |       |
| Green Extension Time ( g e ), s                 |  |                    |  |                 |  | 0.0                      |       | 0.4             |       | 0.1     |       | 1.7                                                                                 |       |       |       | 0.5   |       |
| Phase Call Probability                          |  |                    |  |                 |  | 1.00                     |       | 1.00            |       | 1.00    |       | 1.00                                                                                |       |       |       | 1.00  |       |
| Max Out Probability                             |  |                    |  |                 |  | 0.09                     |       | 1.00            |       | 1.00    |       | 0.01                                                                                |       |       |       | 0.03  |       |
| Movement Group Results                          |  |                    |  |                 |  | EB                       |       |                 | WB    |         |       | NB                                                                                  |       |       | SB    |       |       |
| Approach Movement                               |  |                    |  |                 |  | L                        | T     | R               | L     | T       | R     | L                                                                                   | T     | R     | L     | T     | R     |
| Assigned Movement                               |  |                    |  |                 |  | 5                        | 2     | 12              | 1     | 6       | 16    | 3                                                                                   | 8     | 18    | 7     | 4     | 14    |
| Adjusted Flow Rate ( v ), veh/h                 |  |                    |  |                 |  | 1                        | 398   | 153             | 227   | 275     | 4     | 210                                                                                 | 4     | 114   | 10    | 4     | 2     |
| Adjusted Saturation Flow Rate ( s ), veh/h/ln   |  |                    |  |                 |  | 1767                     | 1826  | 1373            | 1767  | 1826    | 1521  | 1598                                                                                | 1856  | 1512  | 1767  | 1856  | 1484  |
| Queue Service Time ( g s ), s                   |  |                    |  |                 |  | 0.0                      | 16.7  | 7.5             | 10.3  | 9.9     | 0.2   | 9.8                                                                                 | 0.2   | 5.3   | 0.4   | 0.2   | 0.1   |
| Cycle Queue Clearance Time ( g c ), s           |  |                    |  |                 |  | 0.0                      | 16.7  | 7.5             | 10.3  | 9.9     | 0.2   | 9.8                                                                                 | 0.2   | 5.3   | 0.4   | 0.2   | 0.1   |
| Green Ratio ( g/C )                             |  |                    |  |                 |  | 0.07                     | 0.29  | 0.29            | 0.18  | 0.34    | 0.34  | 0.24                                                                                | 0.24  | 0.24  | 0.12  | 0.12  | 0.12  |
| Capacity ( c ), veh/h                           |  |                    |  |                 |  | 125                      | 537   | 404             | 312   | 623     | 519   | 376                                                                                 | 437   | 356   | 208   | 218   | 175   |
| Volume-to-Capacity Ratio ( X )                  |  |                    |  |                 |  | 0.009                    | 0.741 | 0.380           | 0.728 | 0.441   | 0.008 | 0.558                                                                               | 0.010 | 0.321 | 0.047 | 0.020 | 0.012 |
| Back of Queue ( Q ), ft/ln ( 95 th percentile)  |  |                    |  |                 |  | 1                        | 323.4 | 123.1           | 222.1 | 196.7   | 2.6   | 193                                                                                 | 3.1   | 88.4  | 8.3   | 3.7   | 1.8   |
| Back of Queue ( Q ), veh/ln ( 95 th percentile) |  |                    |  |                 |  | 0.0                      | 12.4  | 4.4             | 8.7   | 7.6     | 0.1   | 6.9                                                                                 | 0.1   | 3.5   | 0.3   | 0.1   | 0.1   |
| Queue Storage Ratio ( RQ ) ( 95 th percentile)  |  |                    |  |                 |  | 0.00                     | 0.00  | 0.00            | 0.00  | 0.00    | 0.00  | 0.00                                                                                | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Uniform Delay ( d 1 ), s/veh                    |  |                    |  |                 |  | 36.7                     | 27.1  | 23.8            | 33.1  | 21.7    | 18.5  | 28.6                                                                                | 24.9  | 26.9  | 33.3  | 33.2  | 33.1  |
| Incremental Delay ( d 2 ), s/veh                |  |                    |  |                 |  | 0.0                      | 4.8   | 0.2             | 7.3   | 0.2     | 0.0   | 1.1                                                                                 | 0.0   | 0.2   | 0.0   | 0.0   | 0.0   |
| Initial Queue Delay ( d 3 ), s/veh              |  |                    |  |                 |  | 0.0                      | 0.0   | 0.0             | 0.0   | 0.0     | 0.0   | 0.0                                                                                 | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Control Delay ( d ), s/veh                      |  |                    |  |                 |  | 36.7                     | 31.9  | 24.1            | 40.4  | 21.9    | 18.5  | 29.7                                                                                | 24.9  | 27.1  | 33.3  | 33.2  | 33.1  |
| Level of Service ( LOS )                        |  |                    |  |                 |  | D                        | C     | C               | D     | C       | B     | C                                                                                   | C     | C     | C     | C     | C     |
| Approach Delay, s/veh / LOS                     |  |                    |  |                 |  | 29.7                     | C     |                 | 30.2  | C       |       | 28.7                                                                                | C     |       | 33.3  | C     |       |
| Intersection Delay, s/veh / LOS                 |  |                    |  |                 |  | 29.7                     |       |                 |       |         |       | C                                                                                   |       |       |       |       |       |
| Multimodal Results                              |  |                    |  |                 |  | EB                       |       |                 | WB    |         |       | NB                                                                                  |       |       | SB    |       |       |
| Pedestrian LOS Score / LOS                      |  |                    |  |                 |  | 2.17                     | B     |                 | 2.11  | B       |       | 2.14                                                                                | B     |       | 2.19  | B     |       |
| Bicycle LOS Score / LOS                         |  |                    |  |                 |  | 1.40                     | A     |                 | 1.32  | A       |       | 1.03                                                                                | A     |       | 0.51  | A     |       |



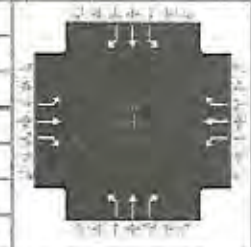
# HCS7 Signalized Intersection Results Summary

## General Information

|                     |                    |               |                    |
|---------------------|--------------------|---------------|--------------------|
| Agency              | Solaegui Engineers | Duration, h   | 0.250              |
| Analyst             | MSH                | Analysis Date | May 19, 2021       |
| Jurisdiction        | NDOT               | Time Period   | AM Peak Hour       |
| Urban Street        |                    | Analysis Year | Existing + Project |
| Intersection        | Min & US-95A       | File Name     | MaUs21aw.xus       |
| Project Description |                    |               |                    |

## Intersection Information

|                 |         |
|-----------------|---------|
| Duration, h     | 0.250   |
| Area Type       | Other   |
| PHF             | 0.92    |
| Analysis Period | 1> 7:00 |



## Demand Information

|                   | EB |     |     | WB  |     |   | NB  |   |     | SB |   |   |
|-------------------|----|-----|-----|-----|-----|---|-----|---|-----|----|---|---|
| Approach Movement | L  | T   | R   | L   | T   | R | L   | T | R   | L  | T | R |
| Demand (v), veh/h | 1  | 218 | 133 | 154 | 206 | 3 | 197 | 1 | 145 | 1  | 3 | 2 |

## Signal Information

|               |       |                 |     |        |     |     |      |      |      |     |  |  |  |
|---------------|-------|-----------------|-----|--------|-----|-----|------|------|------|-----|--|--|--|
| Cycle, s      | 80.0  | Reference Phase | 2   |        |     |     |      |      |      |     |  |  |  |
| Offset, s     | 0     | Reference Point | End | Green  | 6.0 | 4.0 | 20.0 | 10.0 | 20.0 | 0.0 |  |  |  |
| Uncoordinated | Yes   | Simult. Gap E/W | On  | Yellow | 4.0 | 0.0 | 4.0  | 4.0  | 4.0  | 0.0 |  |  |  |
| Force Mode    | Fixed | Simult. Gap N/S | On  | Red    | 1.0 | 0.0 | 1.0  | 1.0  | 1.0  | 0.0 |  |  |  |

## Timer Results

|                                           | EBL  | EBT  | WBL  | WBT  | NBL | NBT  | SBL | SBT  |
|-------------------------------------------|------|------|------|------|-----|------|-----|------|
| Assigned Phase                            | 5    | 2    | 1    | 6    |     | 8    |     | 4    |
| Case Number                               | 2.0  | 3.0  | 2.0  | 3.0  |     | 9.0  |     | 9.0  |
| Phase Duration, s                         | 11.0 | 25.0 | 15.0 | 29.0 |     | 25.0 |     | 15.0 |
| Change Period, (Y+R), s                   | 5.0  | 5.0  | 0.0  | 5.0  |     | 5.0  |     | 5.0  |
| Max Allow Headway (MAH), s                | 3.3  | 3.2  | 3.3  | 3.2  |     | 3.4  |     | 3.3  |
| Queue Clearance Time (g <sub>s</sub> ), s | 2.0  | 10.9 | 8.8  | 9.8  |     | 11.3 |     | 2.1  |
| Green Extension Time (g <sub>e</sub> ), s | 0.0  | 0.6  | 0.2  | 1.1  |     | 0.5  |     | 0.0  |
| Phase Call Probability                    | 1.00 | 1.00 | 1.00 | 1.00 |     | 1.00 |     | 1.00 |
| Max Out Probability                       | 0.09 | 0.66 | 0.05 | 0.00 |     | 0.02 |     | 0.00 |

## Movement Group Results

|                                                 | EB    |       |       | WB    |       |       | NB    |       |       | SB    |       |       |
|-------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Approach Movement                               | L     | T     | R     | L     | T     | R     | L     | T     | R     | L     | T     | R     |
| Assigned Movement                               | 5     | 2     | 12    | 1     | 6     | 16    | 3     | 8     | 18    | 7     | 4     | 14    |
| Adjusted Flow Rate (v), veh/h                   | 1     | 237   | 117   | 167   | 224   | 3     | 214   | 1     | 120   | 1     | 3     | 2     |
| Adjusted Saturation Flow Rate (s), veh/h/ln     | 1767  | 1826  | 1369  | 1767  | 1826  | 1519  | 1598  | 1856  | 1514  | 1767  | 1856  | 1487  |
| Queue Service Time (g <sub>s</sub> ), s         | 0.0   | 8.9   | 5.6   | 6.8   | 7.8   | 0.1   | 9.3   | 0.0   | 5.1   | 0.0   | 0.1   | 0.1   |
| Cycle Queue Clearance Time (g <sub>c</sub> ), s | 0.0   | 8.9   | 5.6   | 6.8   | 7.8   | 0.1   | 9.3   | 0.0   | 5.1   | 0.0   | 0.1   | 0.1   |
| Green Ratio (g/C)                               | 0.08  | 0.25  | 0.25  | 0.19  | 0.30  | 0.30  | 0.25  | 0.25  | 0.25  | 0.12  | 0.12  | 0.12  |
| Capacity (c), veh/h                             | 133   | 456   | 342   | 331   | 548   | 456   | 399   | 464   | 379   | 221   | 232   | 186   |
| Volume-to-Capacity Ratio (X)                    | 0.008 | 0.519 | 0.343 | 0.505 | 0.409 | 0.007 | 0.536 | 0.002 | 0.316 | 0.005 | 0.014 | 0.012 |
| Back of Queue (Q), ft/ln (95 th percentile)     | 0.9   | 181.6 | 91.8  | 133   | 155   | 2     | 178.4 | 0.7   | 84.6  | 0.8   | 2.6   | 1.7   |
| Back of Queue (Q), veh/ln (95 th percentile)    | 0.0   | 7.0   | 3.3   | 5.2   | 6.0   | 0.1   | 6.4   | 0.0   | 3.3   | 0.0   | 0.1   | 0.1   |
| Queue Storage Ratio (RQ) (95 th percentile)     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Uniform Delay (d <sub>1</sub> ), s/veh          | 34.2  | 25.9  | 24.6  | 29.2  | 22.3  | 19.6  | 26.0  | 22.5  | 24.4  | 30.6  | 30.7  | 30.7  |
| Incremental Delay (d <sub>2</sub> ), s/veh      | 0.0   | 0.5   | 0.2   | 0.5   | 0.2   | 0.0   | 0.8   | 0.0   | 0.2   | 0.0   | 0.0   | 0.0   |
| Initial Queue Delay (d <sub>3</sub> ), s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Control Delay (d'), s/veh                       | 34.3  | 26.3  | 24.8  | 29.7  | 22.5  | 19.6  | 26.7  | 22.5  | 24.6  | 30.6  | 30.7  | 30.7  |
| Level of Service (LOS)                          | C     | C     | C     | C     | C     | B     | C     | C     | C     | C     | C     | C     |
| Approach Delay, s/veh / LOS                     | 25.9  |       | C     | 25.5  |       | C     | 26.0  |       | C     | 30.7  |       | C     |
| Intersection Delay, s/veh / LOS                 | 25.8  |       |       |       |       |       | C     |       |       |       |       |       |

## Multimodal Results

|                            | EB   |  |   | WB   |  |   | NB   |  |   | SB   |  |   |
|----------------------------|------|--|---|------|--|---|------|--|---|------|--|---|
| Pedestrian LOS Score / LOS | 2.16 |  | B | 2.11 |  | B | 2.14 |  | B | 2.15 |  | B |
| Bicycle LOS Score / LOS    | 1.07 |  | A | 1.14 |  | A | 1.04 |  | A | 0.50 |  | A |

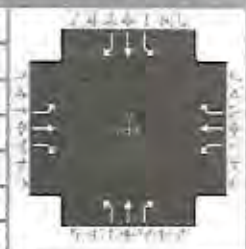


# HCS7 Signalized Intersection Results Summary

## General Information

|                     |                    |               |                    |                 |         |
|---------------------|--------------------|---------------|--------------------|-----------------|---------|
| Agency              | Solaegui Engineers |               |                    | Duration, h     | 0.250   |
| Analyst             | MSH                | Analysis Date | May 19, 2021       | Area Type       | Other   |
| Jurisdiction        | NDOT               | Time Period   | AM Peak Hour       | PHF             | 0.92    |
| Urban Street        |                    | Analysis Year | Existing + Project | Analysis Period | 1> 7:00 |
| Intersection        | Main & US-95A      | File Name     | MaUs21pw.xus       |                 |         |
| Project Description |                    |               |                    |                 |         |

## Intersection Information



## Demand Information

|                   | EB |     |     | WB  |     |   | NB  |   |     | SB |   |   |
|-------------------|----|-----|-----|-----|-----|---|-----|---|-----|----|---|---|
| Approach Movement | L  | T   | R   | L   | T   | R | L   | T | R   | L  | T | R |
| Demand (v), veh/h | 1  | 429 | 225 | 209 | 331 | 4 | 233 | 4 | 145 | 9  | 4 | 2 |

## Signal Information

|               |       |                 |     |        |     |     |      |      |      |     |  |  |
|---------------|-------|-----------------|-----|--------|-----|-----|------|------|------|-----|--|--|
| Cycle, s      | 85.0  | Reference Phase | 2   |        |     |     |      |      |      |     |  |  |
| Offset, s     | 0     | Reference Point | End |        |     |     |      |      |      |     |  |  |
| Uncoordinated | Yes   | Simult. Gap E/W | On  | Green  | 6.0 | 4.0 | 25.0 | 10.0 | 20.0 | 0.0 |  |  |
| Force Mode    | Fixed | Simult. Gap N/S | On  | Yellow | 4.0 | 0.0 | 4.0  | 4.0  | 4.0  | 0.0 |  |  |
|               |       |                 |     | Red    | 1.0 | 0.0 | 1.0  | 1.0  | 1.0  | 0.0 |  |  |

## Timer Results

|                                           | EBL  | EBT  | WBL  | WBT  | NBL | NBT  | SBL | SBT  |
|-------------------------------------------|------|------|------|------|-----|------|-----|------|
| Assigned Phase                            | 5    | 2    | 1    | 6    |     | 8    |     | 4    |
| Case Number                               | 2.0  | 3.0  | 2.0  | 3.0  |     | 9.0  |     | 9.0  |
| Phase Duration, s                         | 11.0 | 30.0 | 15.0 | 34.0 |     | 25.0 |     | 15.0 |
| Change Period, (Y+R), s                   | 5.0  | 5.0  | 0.0  | 5.0  |     | 5.0  |     | 5.0  |
| Max Allow Headway (MAH), s                | 3.3  | 3.2  | 3.3  | 3.2  |     | 3.4  |     | 3.3  |
| Queue Clearance Time (g <sub>c</sub> ), s | 2.0  | 22.6 | 12.3 | 15.7 |     | 14.2 |     | 2.4  |
| Green Extension Time (g <sub>e</sub> ), s | 0.0  | 0.0  | 0.1  | 2.1  |     | 0.5  |     | 0.0  |
| Phase Call Probability                    | 1.00 | 1.00 | 1.00 | 1.00 |     | 1.00 |     | 1.00 |
| Max Out Probability                       | 0.09 | 1.00 | 1.00 | 0.04 |     | 0.20 |     | 0.00 |

## Movement Group Results

|                                                 | EB    |       |       | WB    |       |       | NB    |       |       | SB    |       |       |
|-------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Approach Movement                               | L     | T     | R     | L     | T     | R     | L     | T     | R     | L     | T     | R     |
| Assigned Movement                               | 5     | 2     | 12    | 1     | 6     | 16    | 3     | 8     | 18    | 7     | 4     | 14    |
| Adjusted Flow Rate (v), veh/h                   | 1     | 466   | 190   | 227   | 360   | 4     | 253   | 4     | 114   | 10    | 4     | 2     |
| Adjusted Saturation Flow Rate (s), veh/h/ln     | 1767  | 1826  | 1373  | 1767  | 1826  | 1521  | 1598  | 1856  | 1512  | 1767  | 1856  | 1484  |
| Queue Service Time (g <sub>s</sub> ), s         | 0.0   | 20.6  | 9.7   | 10.3  | 13.7  | 0.2   | 12.2  | 0.2   | 5.3   | 0.4   | 0.2   | 0.1   |
| Cycle Queue Clearance Time (g <sub>c</sub> ), s | 0.0   | 20.6  | 9.7   | 10.3  | 13.7  | 0.2   | 12.2  | 0.2   | 5.3   | 0.4   | 0.2   | 0.1   |
| Green Ratio (g/C)                               | 0.07  | 0.29  | 0.29  | 0.18  | 0.34  | 0.34  | 0.24  | 0.24  | 0.24  | 0.12  | 0.12  | 0.12  |
| Capacity (c), veh/h                             | 125   | 537   | 404   | 312   | 623   | 519   | 376   | 437   | 356   | 208   | 218   | 175   |
| Volume-to-Capacity Ratio (X)                    | 0.009 | 0.868 | 0.471 | 0.728 | 0.578 | 0.008 | 0.674 | 0.010 | 0.321 | 0.047 | 0.020 | 0.012 |
| Back of Queue (Q), ft/ln (95 th percentile)     | 1     | 421.4 | 157.9 | 222.1 | 257.6 | 2.6   | 243.9 | 3.1   | 88.4  | 8.3   | 3.7   | 1.8   |
| Back of Queue (Q), veh/ln (95 th percentile)    | 0.0   | 16.2  | 5.6   | 8.7   | 9.9   | 0.1   | 8.7   | 0.1   | 3.5   | 0.3   | 0.1   | 0.1   |
| Queue Storage Ratio (RQ) (95 th percentile)     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Uniform Delay (d <sub>1</sub> ), s/veh          | 36.7  | 28.4  | 24.6  | 33.1  | 23.0  | 18.5  | 29.5  | 24.9  | 26.9  | 33.3  | 33.2  | 33.1  |
| Incremental Delay (d <sub>2</sub> ), s/veh      | 0.0   | 13.6  | 0.3   | 7.3   | 0.9   | 0.0   | 3.8   | 0.0   | 0.2   | 0.0   | 0.0   | 0.0   |
| Initial Queue Delay (d <sub>3</sub> ), s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Control Delay (d), s/veh                        | 36.7  | 42.1  | 24.9  | 40.4  | 23.9  | 18.5  | 33.4  | 24.9  | 27.1  | 33.3  | 33.2  | 33.1  |
| Level of Service (LOS)                          | D     | D     | C     | D     | C     | B     | C     | C     | C     | C     | C     | C     |
| Approach Delay, s/veh / LOS                     | 37.1  |       | D     | 30.2  |       | C     | 31.3  |       | C     | 33.3  |       | C     |
| Intersection Delay, s/veh / LOS                 | 33.2  |       |       |       |       |       | C     |       |       |       |       |       |

## Multimodal Results

|                            | EB   |  |   | WB   |  |   | NB   |  |   | SB   |  |   |
|----------------------------|------|--|---|------|--|---|------|--|---|------|--|---|
| Pedestrian LOS Score / LOS | 2.17 |  | B | 2.11 |  | B | 2.14 |  | B | 2.19 |  | B |
| Bicycle LOS Score / LOS    | 1.57 |  | B | 1.46 |  | A | 1.10 |  | A | 0.51 |  | A |



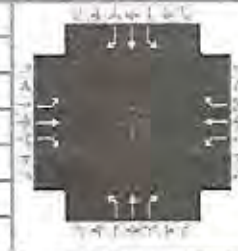
## HCS7 Signalized Intersection Results Summary

### General Information

|                     |                    |               |              |
|---------------------|--------------------|---------------|--------------|
| Agency              | Solaegui Engineers |               |              |
| Analyst             | MSH                | Analysis Date | May 19, 2021 |
| Jurisdiction        | NDOT               | Time Period   | AM Peak Hour |
| Urban Street        |                    | Analysis Year | 2041 Base    |
| Intersection        | Min & US-95A       | File Name     | MaUs41ax.xus |
| Project Description |                    |               |              |

### Intersection Information

|                 |         |
|-----------------|---------|
| Duration, h     | 0.250   |
| Area Type       | Other   |
| PHF             | 0.92    |
| Analysis Period | 1> 7:00 |



### Demand Information

|                   | EB |     |     | WB  |     |   | NB  |   |     | SB |   |   |
|-------------------|----|-----|-----|-----|-----|---|-----|---|-----|----|---|---|
| Approach Movement | L  | T   | R   | L   | T   | R | L   | T | R   | L  | T | R |
| Demand (v), veh/h | 2  | 210 | 138 | 202 | 204 | 4 | 224 | 2 | 191 | 2  | 4 | 3 |

### Signal Information

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### Timer Results

|                                           | EBL  | EBT  | WBL  | WBT  | NBL | NBT  | SBL | SBT  |
|-------------------------------------------|------|------|------|------|-----|------|-----|------|
| Assigned Phase                            | 5    | 2    | 1    | 6    |     | 8    |     | 4    |
| Case Number                               | 2.0  | 3.0  | 2.0  | 3.0  |     | 9.0  |     | 9.0  |
| Phase Duration, s                         | 11.0 | 25.0 | 15.0 | 29.0 |     | 25.0 |     | 15.0 |
| Change Period, (Y+R <sub>c</sub> ), s     | 5.0  | 5.0  | 0.0  | 5.0  |     | 5.0  |     | 5.0  |
| Max Allow Headway (MAH), s                | 3.3  | 3.2  | 3.3  | 3.2  |     | 3.4  |     | 3.3  |
| Queue Clearance Time (g <sub>s</sub> ), s | 2.1  | 10.6 | 11.2 | 9.7  |     | 12.8 |     | 2.2  |
| Green Extension Time (g <sub>e</sub> ), s | 0.0  | 0.6  | 0.2  | 1.1  |     | 0.6  |     | 0.0  |
| Phase Call Probability                    | 1.00 | 1.00 | 1.00 | 1.00 |     | 1.00 |     | 1.00 |
| Max Out Probability                       | 0.13 | 0.54 | 0.62 | 0.00 |     | 0.10 |     | 0.00 |

### Movement Group Results

|                                                 | EB    |       |       | WB    |       |       | NB    |       |       | SB    |       |       |
|-------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Approach Movement                               | L     | T     | R     | L     | T     | R     | L     | T     | R     | L     | T     | R     |
| Assigned Movement                               | 5     | 2     | 12    | 1     | 6     | 16    | 3     | 8     | 18    | 7     | 4     | 14    |
| Adjusted Flow Rate (v), veh/h                   | 2     | 228   | 123   | 220   | 222   | 4     | 243   | 2     | 170   | 2     | 4     | 3     |
| Adjusted Saturation Flow Rate (s), veh/h/ln     | 1767  | 1826  | 1369  | 1767  | 1826  | 1519  | 1598  | 1856  | 1514  | 1767  | 1856  | 1487  |
| Queue Service Time (g <sub>s</sub> ), s         | 0.1   | 8.6   | 5.9   | 9.2   | 7.7   | 0.2   | 10.8  | 0.1   | 7.6   | 0.1   | 0.2   | 0.2   |
| Cycle Queue Clearance Time (g <sub>c</sub> ), s | 0.1   | 8.6   | 5.9   | 9.2   | 7.7   | 0.2   | 10.8  | 0.1   | 7.6   | 0.1   | 0.2   | 0.2   |
| Green Ratio (g/C)                               | 0.08  | 0.25  | 0.25  | 0.19  | 0.30  | 0.30  | 0.25  | 0.25  | 0.25  | 0.12  | 0.12  | 0.12  |
| Capacity (c), veh/h                             | 133   | 456   | 342   | 331   | 548   | 456   | 399   | 464   | 379   | 221   | 232   | 186   |
| Volume-to-Capacity Ratio (X)                    | 0.016 | 0.500 | 0.359 | 0.663 | 0.405 | 0.010 | 0.610 | 0.005 | 0.448 | 0.010 | 0.019 | 0.018 |
| Back of Queue (Q), ft/ln (95 th percentile)     | 1.8   | 173.1 | 96.4  | 194.2 | 153.5 | 2.6   | 213.1 | 1.4   | 124.6 | 1.7   | 3.4   | 2.6   |
| Back of Queue (Q), veh/ln (95 th percentile)    | 0.1   | 6.7   | 3.4   | 7.6   | 5.9   | 0.1   | 7.6   | 0.1   | 4.9   | 0.1   | 0.1   | 0.1   |
| Queue Storage Ratio (RQ) (95 th percentile)     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Uniform Delay (d <sub>1</sub> ), s/veh          | 34.3  | 25.7  | 24.7  | 30.2  | 22.3  | 19.7  | 26.5  | 22.5  | 25.3  | 30.7  | 30.7  | 30.7  |
| Incremental Delay (d <sub>2</sub> ), s/veh      | 0.0   | 0.3   | 0.2   | 3.9   | 0.2   | 0.0   | 2.0   | 0.0   | 0.3   | 0.0   | 0.0   | 0.0   |
| Initial Queue Delay (d <sub>3</sub> ), s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Control Delay (d), s/veh                        | 34.3  | 26.0  | 25.0  | 34.1  | 22.5  | 19.7  | 28.5  | 22.5  | 25.6  | 30.7  | 30.7  | 30.7  |
| Level of Service (LOS)                          | C     | C     | C     | C     | C     | B     | C     | C     | C     | C     | C     | C     |
| Approach Delay, s/veh / LOS                     | 25.7  |       | C     | 28.2  |       | C     | 27.3  |       | C     | 30.7  |       | C     |
| Intersection Delay, s/veh / LOS                 | 27.2  |       |       |       |       |       | C     |       |       |       |       |       |

### Multimodal Results

|                            | EB   |  |   | WB   |  |   | NB   |  |   | SB   |  |   |
|----------------------------|------|--|---|------|--|---|------|--|---|------|--|---|
| Pedestrian LOS Score / LOS | 2.16 |  | B | 2.11 |  | B | 2.14 |  | B | 2.15 |  | B |
| Bicycle LOS Score / LOS    | 1.07 |  | A | 1.22 |  | A | 1.17 |  | A | 0.50 |  | A |



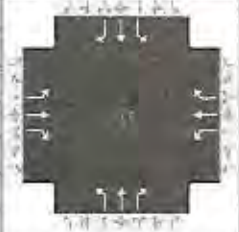
# HCS7 Signalized Intersection Results Summary

## General Information

|                     |                    |               |              |
|---------------------|--------------------|---------------|--------------|
| Agency              | Solaegui Engineers |               |              |
| Analyst             | MSH                | Analysis Date | May 19, 2021 |
| Jurisdiction        | NDOT               | Time Period   | PM Peak Hour |
| Urban Street        |                    | Analysis Year | 2041 Base    |
| Intersection        | Main & US-95A      | File Name     | MaUs41px.xus |
| Project Description |                    |               |              |

## Intersection Information

|                 |         |
|-----------------|---------|
| Duration, h     | 0.250   |
| Area Type       | Other   |
| PHF             | 0.92    |
| Analysis Period | 1> 7:00 |



## Demand Information

|                   | EB |     |     | WB  |     |   | NB  |   |     | SB |   |   |
|-------------------|----|-----|-----|-----|-----|---|-----|---|-----|----|---|---|
| Approach Movement | L  | T   | R   | L   | T   | R | L   | T | R   | L  | T | R |
| Demand (v), veh/h | 1  | 481 | 251 | 275 | 333 | 5 | 254 | 5 | 191 | 12 | 5 | 3 |

## Signal Information

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## Timer Results

|                                           | EBL  | EBT  | WBL  | WBT  | NBL | NBT  | SBL | SBT  |
|-------------------------------------------|------|------|------|------|-----|------|-----|------|
| Assigned Phase                            | 5    | 2    | 1    | 6    |     | 8    |     | 4    |
| Case Number                               | 2.0  | 3.0  | 2.0  | 3.0  |     | 9.0  |     | 9.0  |
| Phase Duration, s                         | 12.0 | 34.0 | 16.0 | 38.0 |     | 25.0 |     | 15.0 |
| Change Period, (Y+R <sub>c</sub> ), s     | 5.0  | 5.0  | 0.0  | 5.0  |     | 5.0  |     | 5.0  |
| Max Allow Headway (MAH), s                | 3.3  | 3.2  | 3.3  | 3.2  |     | 3.4  |     | 3.3  |
| Queue Clearance Time (g <sub>s</sub> ), s | 2.1  | 26.5 | 17.1 | 16.1 |     | 16.6 |     | 2.6  |
| Green Extension Time (g <sub>e</sub> ), s | 0.0  | 0.0  | 0.0  | 2.4  |     | 0.4  |     | 0.0  |
| Phase Call Probability                    | 1.00 | 1.00 | 1.00 | 1.00 |     | 1.00 |     | 1.00 |
| Max Out Probability                       | 0.00 | 1.00 | 1.00 | 0.02 |     | 1.00 |     | 0.00 |

## Movement Group Results

|                                                 | EB    |       |       | WB    |       |       | NB    |       |       | SB    |       |       |
|-------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Approach Movement                               | L     | T     | R     | L     | T     | R     | L     | T     | R     | L     | T     | R     |
| Assigned Movement                               | 5     | 2     | 12    | 1     | 6     | 16    | 3     | 8     | 18    | 7     | 4     | 14    |
| Adjusted Flow Rate (v), veh/h                   | 1     | 523   | 229   | 299   | 362   | 5     | 276   | 5     | 164   | 13    | 5     | 3     |
| Adjusted Saturation Flow Rate (s), veh/h/ln     | 1767  | 1826  | 1374  | 1767  | 1826  | 1523  | 1598  | 1856  | 1511  | 1767  | 1856  | 1481  |
| Queue Service Time (g <sub>s</sub> ), s         | 0.1   | 24.5  | 12.2  | 15.1  | 14.1  | 0.2   | 14.6  | 0.2   | 8.5   | 0.6   | 0.2   | 0.2   |
| Cycle Queue Clearance Time (g <sub>c</sub> ), s | 0.1   | 24.5  | 12.2  | 15.1  | 14.1  | 0.2   | 14.6  | 0.2   | 8.5   | 0.6   | 0.2   | 0.2   |
| Green Ratio (g/C)                               | 0.08  | 0.32  | 0.32  | 0.18  | 0.37  | 0.37  | 0.22  | 0.22  | 0.22  | 0.11  | 0.11  | 0.11  |
| Capacity (c), veh/h                             | 137   | 588   | 443   | 314   | 669   | 558   | 355   | 412   | 336   | 196   | 206   | 165   |
| Volume-to-Capacity Ratio (X)                    | 0.008 | 0.889 | 0.518 | 0.951 | 0.541 | 0.010 | 0.778 | 0.013 | 0.489 | 0.066 | 0.026 | 0.020 |
| Back of Queue (Q), ft/ln (95 th percentile)     | 1     | 489   | 201.5 | 379.6 | 261.6 | 3.3   | 300.6 | 4.2   | 144   | 12    | 5     | 3     |
| Back of Queue (Q), veh/ln (95 th percentile)    | 0.0   | 18.8  | 7.2   | 14.8  | 10.1  | 0.1   | 10.7  | 0.2   | 5.6   | 0.5   | 0.2   | 0.1   |
| Queue Storage Ratio (RQ) (95 th percentile)     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Uniform Delay (d <sub>1</sub> ), s/veh          | 38.3  | 29.0  | 24.8  | 36.6  | 22.5  | 18.1  | 32.9  | 27.3  | 30.5  | 35.8  | 35.7  | 35.6  |
| Incremental Delay (d <sub>2</sub> ), s/veh      | 0.0   | 15.0  | 0.5   | 37.6  | 0.5   | 0.0   | 9.6   | 0.0   | 0.4   | 0.1   | 0.0   | 0.0   |
| Initial Queue Delay (d <sub>3</sub> ), s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Control Delay (d), s/veh                        | 38.3  | 43.9  | 25.3  | 74.2  | 23.0  | 18.1  | 42.5  | 27.3  | 31.0  | 35.9  | 35.7  | 35.7  |
| Level of Service (LOS)                          | D     | D     | C     | E     | C     | B     | D     | C     | C     | D     | D     | D     |
| Approach Delay, s/veh / LOS                     | 38.2  |       | D     | 45.9  |       | D     | 38.0  |       | D     | 35.8  |       | D     |
| Intersection Delay, s/veh / LOS                 | 40.9  |       |       |       |       |       | D     |       |       |       |       |       |

## Multimodal Results

|                            | EB   |  |   | WB   |  |   | NB   |  |   | SB   |  |   |
|----------------------------|------|--|---|------|--|---|------|--|---|------|--|---|
| Pedestrian LOS Score / LOS | 2.17 |  | B | 2.10 |  | B | 2.15 |  | B | 2.18 |  | B |
| Bicycle LOS Score / LOS    | 1.73 |  | B | 1.59 |  | B | 1.22 |  | A | 0.52 |  | A |



# HCS7 Signalized Intersection Results Summary

## General Information

|                     |                    |               |                     |
|---------------------|--------------------|---------------|---------------------|
| Agency              | Solaegui Engineers |               |                     |
| Analyst             | MSH                | Analysis Date | May 19, 2021        |
| Jurisdiction        | NDOT               | Time Period   | AM Peak Hour        |
| Urban Street        |                    | Analysis Year | 2041 Base + Project |
| Intersection        | Min & US-95A       | File Name     | MaUs41aw.xus        |
| Project Description |                    |               |                     |



## Demand Information

|                   | EB |     |     | WB  |     |   | NB  |   |     | SB |   |   |
|-------------------|----|-----|-----|-----|-----|---|-----|---|-----|----|---|---|
| Approach Movement | L  | T   | R   | L   | T   | R | L   | T | R   | L  | T | R |
| Demand (v), veh/h | 2  | 268 | 166 | 202 | 255 | 4 | 251 | 2 | 191 | 2  | 4 | 3 |

## Signal Information

|               |       |                 |     |        |     |     |      |      |      |     |  |  |
|---------------|-------|-----------------|-----|--------|-----|-----|------|------|------|-----|--|--|
| Cycle, s      | 80.0  | Reference Phase | 2   |        |     |     |      |      |      |     |  |  |
| Offset, s     | 0     | Reference Point | End |        |     |     |      |      |      |     |  |  |
| Uncoordinated | Yes   | Simult. Gap E/W | On  | Green  | 6.0 | 4.0 | 20.0 | 10.0 | 20.0 | 0.0 |  |  |
| Force Mode    | Fixed | Simult. Gap N/S | On  | Yellow | 4.0 | 0.0 | 4.0  | 4.0  | 4.0  | 0.0 |  |  |
|               |       |                 |     | Red    | 1.0 | 0.0 | 1.0  | 1.0  | 1.0  | 0.0 |  |  |

## Timer Results

|                                           | EBL  | EBT  | WBL  | WBT  | NBL | NBT  | SBL | SBT  |
|-------------------------------------------|------|------|------|------|-----|------|-----|------|
| Assigned Phase                            | 5    | 2    | 1    | 6    |     | 8    |     | 4    |
| Case Number                               | 2.0  | 3.0  | 2.0  | 3.0  |     | 9.0  |     | 9.0  |
| Phase Duration, s                         | 11.0 | 25.0 | 15.0 | 29.0 |     | 25.0 |     | 15.0 |
| Change Period, (Y+R <sub>c</sub> ), s     | 5.0  | 5.0  | 0.0  | 5.0  |     | 5.0  |     | 5.0  |
| Max Allow Headway (MAH), s                | 3.3  | 3.2  | 3.3  | 3.2  |     | 3.4  |     | 3.3  |
| Queue Clearance Time (g <sub>s</sub> ), s | 2.1  | 13.4 | 11.2 | 12.0 |     | 14.4 |     | 2.2  |
| Green Extension Time (g <sub>e</sub> ), s | 0.0  | 0.4  | 0.2  | 1.4  |     | 0.6  |     | 0.0  |
| Phase Call Probability                    | 1.00 | 1.00 | 1.00 | 1.00 |     | 1.00 |     | 1.00 |
| Max Out Probability                       | 0.13 | 1.00 | 0.62 | 0.02 |     | 0.27 |     | 0.00 |

## Movement Group Results

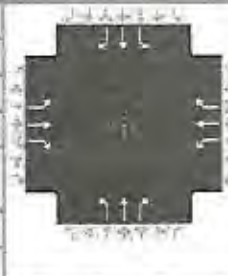
| Approach Movement                                 | L     | T     | R     | L     | T     | R     | L     | T     | R     | L     | T     | R     |
|---------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Assigned Movement                                 | 5     | 2     | 12    | 1     | 6     | 16    | 3     | 8     | 18    | 7     | 4     | 14    |
| Adjusted Flow Rate ( $v$ ), veh/h                 | 2     | 291   | 153   | 220   | 277   | 4     | 273   | 2     | 170   | 2     | 4     | 3     |
| Adjusted Saturation Flow Rate ( $s$ ), veh/h/ln   | 1767  | 1826  | 1369  | 1767  | 1826  | 1519  | 1598  | 1856  | 1514  | 1767  | 1856  | 1487  |
| Queue Service Time ( $g_s$ ), s                   | 0.1   | 11.4  | 7.6   | 9.2   | 10.0  | 0.2   | 12.4  | 0.1   | 7.6   | 0.1   | 0.2   | 0.2   |
| Cycle Queue Clearance Time ( $g_c$ ), s           | 0.1   | 11.4  | 7.6   | 9.2   | 10.0  | 0.2   | 12.4  | 0.1   | 7.6   | 0.1   | 0.2   | 0.2   |
| Green Ratio ( $g/C$ )                             | 0.08  | 0.25  | 0.25  | 0.19  | 0.30  | 0.30  | 0.25  | 0.25  | 0.25  | 0.12  | 0.12  | 0.12  |
| Capacity ( $c$ ), veh/h                           | 133   | 456   | 342   | 331   | 548   | 456   | 399   | 464   | 379   | 221   | 232   | 186   |
| Volume-to-Capacity Ratio ( $X$ )                  | 0.016 | 0.638 | 0.448 | 0.663 | 0.506 | 0.010 | 0.683 | 0.005 | 0.448 | 0.010 | 0.019 | 0.018 |
| Back of Queue ( $Q$ ), ft/ln ( 95 th percentile)  | 1.8   | 230.5 | 123.5 | 194.2 | 198.7 | 2.6   | 244.1 | 1.4   | 124.6 | 1.7   | 3.4   | 2.6   |
| Back of Queue ( $Q$ ), veh/ln ( 95 th percentile) | 0.1   | 8.9   | 4.4   | 7.6   | 7.6   | 0.1   | 8.7   | 0.1   | 4.9   | 0.1   | 0.1   | 0.1   |
| Queue Storage Ratio ( $RQ$ ) ( 95 th percentile)  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Uniform Delay ( $d_1$ ), s/veh                    | 34.3  | 26.8  | 25.3  | 30.2  | 23.1  | 19.7  | 27.1  | 22.5  | 25.3  | 30.7  | 30.7  | 30.7  |
| Incremental Delay ( $d_2$ ), s/veh                | 0.0   | 2.3   | 0.3   | 3.9   | 0.3   | 0.0   | 3.9   | 0.0   | 0.3   | 0.0   | 0.0   | 0.0   |
| Initial Queue Delay ( $d_3$ ), s/veh              | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Control Delay ( $d$ ), s/veh                      | 34.3  | 29.1  | 25.7  | 34.1  | 23.4  | 19.7  | 31.1  | 22.5  | 25.6  | 30.7  | 30.7  | 30.7  |
| Level of Service (LOS)                            | C     | C     | C     | C     | C     | B     | C     | C     | C     | C     | C     | C     |
| Approach Delay, s/veh / LOS                       | 27.9  | C     |       | 28.1  | C     |       | 29.0  | C     |       | 30.7  | C     |       |
| Intersection Delay, s/veh / LOS                   | 28.3  |       |       |       |       |       | C     |       |       |       |       |       |

## Multimodal Results

|                            | EB   |   | WB   |   | NB   |   | SB   |   |
|----------------------------|------|---|------|---|------|---|------|---|
| Pedestrian LOS Score / LOS | 2.16 | B | 2.11 | B | 2.14 | B | 2.15 | B |
| Bicycle LOS Score / LOS    | 1.22 | A | 1.31 | A | 1.22 | A | 0.50 | A |



## HCS7 Signalized Intersection Results Summary

| General Information                             |  |                    |                 |                     | Intersection Information                                                            |                 |       |         |       |  |       |       |       |       |       |       |
|-------------------------------------------------|--|--------------------|-----------------|---------------------|-------------------------------------------------------------------------------------|-----------------|-------|---------|-------|-------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|
| Agency                                          |  | Solaegui Engineers |                 |                     | Duration, h                                                                         |                 | 0.250 |         |       |                                                                                     |       |       |       |       |       |       |
| Analyst                                         |  | MSH                | Analysis Date   | May 19, 2021        |                                                                                     | Area Type       |       | Other   |       |                                                                                     |       |       |       |       |       |       |
| Jurisdiction                                    |  | NDOT               | Time Period     | PM Peak Hour        |                                                                                     | PHF             |       | 0.92    |       |                                                                                     |       |       |       |       |       |       |
| Urban Street                                    |  |                    | Analysis Year   | 2041 Base + Project |                                                                                     | Analysis Period |       | 1> 7:00 |       |                                                                                     |       |       |       |       |       |       |
| Intersection                                    |  | Main & US-95A      |                 | File Name           | MaUs41pw.xus                                                                        |                 |       |         |       |                                                                                     |       |       |       |       |       |       |
| Project Description                             |  |                    |                 |                     |                                                                                     |                 |       |         |       |                                                                                     |       |       |       |       |       |       |
| Demand Information                              |  |                    |                 |                     | EB                                                                                  |                 |       | WB      |       |                                                                                     | NB    |       |       | SB    |       |       |
| Approach Movement                               |  |                    |                 |                     | L                                                                                   | T               | R     | L       | T     | R                                                                                   | L     | T     | R     | L     | T     | R     |
| Demand ( v ), veh/h                             |  |                    |                 |                     | 1                                                                                   | 544             | 285   | 275     | 411   | 5                                                                                   | 294   | 5     | 191   | 12    | 5     | 3     |
| Signal Information                              |  |                    |                 |                     |  |                 |       |         |       |                                                                                     |       |       |       |       |       |       |
| Cycle, s                                        |  | 90.0               | Reference Phase |                     |                                                                                     |                 |       |         |       |                                                                                     |       |       |       |       | 2     |       |
| Offset, s                                       |  | 0                  | Reference Point |                     |                                                                                     |                 |       |         |       |                                                                                     |       |       |       |       | End   |       |
| Uncoordinated                                   |  | Yes                | Simult. Gap E/W |                     |                                                                                     |                 |       |         |       |                                                                                     |       |       |       |       | On    |       |
| Force Mode                                      |  | Fixed              | Simult. Gap N/S |                     |                                                                                     |                 |       |         |       |                                                                                     |       |       |       |       | On    |       |
|                                                 |  |                    |                 |                     | Green                                                                               | 7.0             | 4.0   | 29.0    | 10.0  | 20.0                                                                                | 0.0   |       |       |       |       |       |
|                                                 |  |                    |                 |                     | Yellow                                                                              | 4.0             | 0.0   | 4.0     | 4.0   | 4.0                                                                                 | 0.0   |       |       |       |       |       |
|                                                 |  |                    |                 |                     | Red                                                                                 | 1.0             | 0.0   | 1.0     | 1.0   | 1.0                                                                                 | 0.0   |       |       |       |       |       |
| Timer Results                                   |  |                    |                 |                     | EBL                                                                                 | EBT             | WBL   | WBT     | NBL   | NBT                                                                                 | SBL   | SBT   |       |       |       |       |
| Assigned Phase                                  |  |                    |                 |                     | 5                                                                                   | 2               | 1     | 6       |       | 8                                                                                   |       | 4     |       |       |       |       |
| Case Number                                     |  |                    |                 |                     | 2.0                                                                                 | 3.0             | 2.0   | 3.0     |       | 9.0                                                                                 |       | 9.0   |       |       |       |       |
| Phase Duration, s                               |  |                    |                 |                     | 12.0                                                                                | 34.0            | 16.0  | 38.0    |       | 25.0                                                                                |       | 15.0  |       |       |       |       |
| Change Period, ( Y+R c ), s                     |  |                    |                 |                     | 5.0                                                                                 | 5.0             | 0.0   | 5.0     |       | 5.0                                                                                 |       | 5.0   |       |       |       |       |
| Max Allow Headway ( MAH ), s                    |  |                    |                 |                     | 3.3                                                                                 | 3.2             | 3.3   | 3.2     |       | 3.4                                                                                 |       | 3.3   |       |       |       |       |
| Queue Clearance Time ( g s ), s                 |  |                    |                 |                     | 2.1                                                                                 | 31.0            | 17.1  | 20.5    |       | 19.5                                                                                |       | 2.6   |       |       |       |       |
| Green Extension Time ( g e ), s                 |  |                    |                 |                     | 0.0                                                                                 | 0.0             | 0.0   | 2.8     |       | 0.1                                                                                 |       | 0.0   |       |       |       |       |
| Phase Call Probability                          |  |                    |                 |                     | 1.00                                                                                | 1.00            | 1.00  | 1.00    |       | 1.00                                                                                |       | 1.00  |       |       |       |       |
| Max Out Probability                             |  |                    |                 |                     | 0.00                                                                                | 1.00            | 1.00  | 0.12    |       | 1.00                                                                                |       | 0.00  |       |       |       |       |
| Movement Group Results                          |  |                    |                 |                     | EB                                                                                  |                 |       | WB      |       |                                                                                     | NB    |       |       | SB    |       |       |
| Approach Movement                               |  |                    |                 |                     | L                                                                                   | T               | R     | L       | T     | R                                                                                   | L     | T     | R     | L     | T     | R     |
| Assigned Movement                               |  |                    |                 |                     | 5                                                                                   | 2               | 12    | 1       | 6     | 16                                                                                  | 3     | 8     | 18    | 7     | 4     | 14    |
| Adjusted Flow Rate ( v ), veh/h                 |  |                    |                 |                     | 1                                                                                   | 591             | 266   | 299     | 447   | 5                                                                                   | 320   | 5     | 164   | 13    | 5     | 3     |
| Adjusted Saturation Flow Rate ( s ), veh/h/ln   |  |                    |                 |                     | 1767                                                                                | 1826            | 1374  | 1767    | 1826  | 1523                                                                                | 1598  | 1856  | 1511  | 1767  | 1856  | 1481  |
| Queue Service Time ( g s ), s                   |  |                    |                 |                     | 0.1                                                                                 | 29.0            | 14.7  | 15.1    | 18.5  | 0.2                                                                                 | 17.5  | 0.2   | 8.5   | 0.6   | 0.2   | 0.2   |
| Cycle Queue Clearance Time ( g c ), s           |  |                    |                 |                     | 0.1                                                                                 | 29.0            | 14.7  | 15.1    | 18.5  | 0.2                                                                                 | 17.5  | 0.2   | 8.5   | 0.6   | 0.2   | 0.2   |
| Green Ratio ( g/C )                             |  |                    |                 |                     | 0.08                                                                                | 0.32            | 0.32  | 0.18    | 0.37  | 0.37                                                                                | 0.22  | 0.22  | 0.22  | 0.11  | 0.11  | 0.11  |
| Capacity ( c ), veh/h                           |  |                    |                 |                     | 137                                                                                 | 588             | 443   | 314     | 669   | 558                                                                                 | 355   | 412   | 336   | 196   | 206   | 165   |
| Volume-to-Capacity Ratio ( X )                  |  |                    |                 |                     | 0.008                                                                               | 1.005           | 0.601 | 0.951   | 0.667 | 0.010                                                                               | 0.900 | 0.013 | 0.489 | 0.066 | 0.026 | 0.020 |
| Back of Queue ( Q ), ft/ln ( 95 th percentile)  |  |                    |                 |                     | 1                                                                                   | 672             | 239.6 | 379.6   | 334.1 | 3.3                                                                                 | 393   | 4.2   | 144   | 12    | 5     | 3     |
| Back of Queue ( Q ), veh/ln ( 95 th percentile) |  |                    |                 |                     | 0.0                                                                                 | 25.8            | 8.6   | 14.8    | 12.9  | 0.1                                                                                 | 14.0  | 0.2   | 5.6   | 0.5   | 0.2   | 0.1   |
| Queue Storage Ratio ( RQ ) ( 95 th percentile)  |  |                    |                 |                     | 0.00                                                                                | 0.00            | 0.00  | 0.00    | 0.00  | 0.00                                                                                | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Uniform Delay ( d 1 ), s/veh                    |  |                    |                 |                     | 38.3                                                                                | 30.5            | 25.6  | 36.6    | 23.9  | 18.1                                                                                | 34.0  | 27.3  | 30.5  | 35.8  | 35.7  | 35.6  |
| Incremental Delay ( d 2 ), s/veh                |  |                    |                 |                     | 0.0                                                                                 | 38.3            | 1.6   | 37.6    | 2.1   | 0.0                                                                                 | 24.2  | 0.0   | 0.4   | 0.1   | 0.0   | 0.0   |
| Initial Queue Delay ( d 3 ), s/veh              |  |                    |                 |                     | 0.0                                                                                 | 0.0             | 0.0   | 0.0     | 0.0   | 0.0                                                                                 | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Control Delay ( d ), s/veh                      |  |                    |                 |                     | 38.3                                                                                | 68.8            | 27.3  | 74.2    | 26.0  | 18.1                                                                                | 58.2  | 27.3  | 31.0  | 35.9  | 35.7  | 35.7  |
| Level of Service (LOS)                          |  |                    |                 |                     | D                                                                                   | F               | C     | E       | C     | B                                                                                   | E     | C     | C     | D     | D     | D     |
| Approach Delay, s/veh / LOS                     |  |                    |                 |                     | 55.9                                                                                |                 | E     | 45.1    |       | D                                                                                   | 48.7  |       | D     | 35.8  |       | D     |
| Intersection Delay, s/veh / LOS                 |  |                    |                 |                     | 50.2                                                                                |                 |       |         |       |                                                                                     | D     |       |       |       |       |       |
| Multimodal Results                              |  |                    |                 |                     | EB                                                                                  |                 |       | WB      |       |                                                                                     | NB    |       |       | SB    |       |       |
| Pedestrian LOS Score / LOS                      |  |                    |                 |                     | 2.17                                                                                |                 | B     | 2.10    |       | B                                                                                   | 2.15  |       | B     | 2.18  |       | B     |
| Bicycle LOS Score / LOS                         |  |                    |                 |                     | 1.90                                                                                |                 | B     | 1.73    |       | B                                                                                   | 1.29  |       | A     | 0.52  |       | A     |

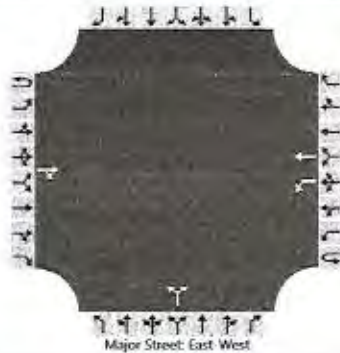


# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |                            |             |
|--------------------------|--------------------|----------------------------|-------------|
| Analyst                  | MSH                | Intersection               | Main/Miller |
| Agency/Co.               | Solaegui Engineers | Jurisdiction               | NDOT        |
| Date Performed           | 5/19/2021          | East/West Street           | Main Street |
| Analysis Year            | 2021               | North/South Street         | Miller Lane |
| Time Analyzed            | AM Existing        | Peak Hour Factor           | 0.92        |
| Intersection Orientation | East-West          | Analysis Time Period (hrs) | 0.25        |
| Project Description      |                    |                            |             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |   |     |    | Westbound |    |     |   | Northbound |    |    |    | Southbound |    |    |    |
|----------------------------|-----------|---|-----|----|-----------|----|-----|---|------------|----|----|----|------------|----|----|----|
| Movement                   | U         | L | T   | R  | U         | L  | T   | R | U          | L  | T  | R  | U          | L  | T  | R  |
| Priority                   | 1U        | 1 | 2   | 3  | 4U        | 4  | 5   | 6 |            | 7  | 8  | 9  |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 0 | 1   | 0  | 0         | 1  | 1   | 0 |            | 0  | 1  | 0  |            | 0  | 0  | 0  |
| Configuration              |           |   |     | TR |           | L  | T   |   |            |    | LR |    |            |    |    |    |
| Volume (veh/h)             |           |   | 217 | 16 |           | 11 | 382 |   |            | 71 |    | 15 |            |    |    |    |
| Percent Heavy Vehicles (%) |           |   |     |    |           | 3  |     |   |            | 3  |    | 3  |            |    |    |    |
| Proportion Time Blocked    |           |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |
| Percent Grade (%)          |           |   |     |    |           |    |     |   | 0          |    |    |    |            |    |    |    |
| Right Turn Channelized     |           |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |
| Median Type   Storage      |           |   |     |    | Undivided |    |     |   |            |    |    |    |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |  |  |      |  |      |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 4.1  |  |  |  | 7.1  |  | 6.2  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 4.13 |  |  |  | 6.43 |  | 6.23 |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 2.2  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 2.23 |  |  |  | 3.53 |  | 3.33 |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |     |      |  |  |      |  |      |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|-----|------|--|--|------|--|------|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |     | 12   |  |  |      |  | 93   |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |     | 1306 |  |  |      |  | 447  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |     | 0.01 |  |  |      |  | 0.21 |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |     | 0.0  |  |  |      |  | 0.8  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |     | 7.8  |  |  |      |  | 15.2 |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |     | A    |  |  |      |  | C    |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  | 0.2 |      |  |  | 15.2 |  |      |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |     |      |  |  | C    |  |      |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2021               |
| Time Analyzed            | PM Existing        |
| Intersection Orientation | East-West          |
| Project Description      |                    |

## Site Information

|                            |             |
|----------------------------|-------------|
| Intersection               | Main/Miller |
| Jurisdiction               | NDOT        |
| East/West Street           | Main Street |
| North/South Street         | Miller Lane |
| Peak Hour Factor           | 0.92        |
| Analysis Time Period (hrs) | 0.25        |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |   |     |    | Westbound |    |     |   | Northbound |    |    |    | Southbound |    |    |    |
|----------------------------|-----------|---|-----|----|-----------|----|-----|---|------------|----|----|----|------------|----|----|----|
| Movement                   | U         | L | T   | R  | U         | L  | T   | R | U          | L  | T  | R  | U          | L  | T  | R  |
| Priority                   | 1U        | 1 | 2   | 3  | 4U        | 4  | 5   | 6 |            | 7  | 8  | 9  |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 0 | 1   | 0  | 0         | 1  | 1   | 0 |            | 0  | 1  | 0  |            | 0  | 0  | 0  |
| Configuration              |           |   |     | TR |           | L  | T   |   |            |    | LR |    |            |    |    |    |
| Volume (veh/h)             |           |   | 532 | 72 |           | 21 | 405 |   |            | 44 |    | 19 |            |    |    |    |
| Percent Heavy Vehicles (%) |           |   |     |    |           | 3  |     |   |            | 3  |    | 3  |            |    |    |    |
| Proportion Time Blocked    |           |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |
| Percent Grade (%)          |           |   |     |    |           |    |     |   |            | 0  |    |    |            |    |    |    |
| Right Turn Channelized     |           |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |
| Median Type   Storage      | Undivided |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |  |  |      |  |      |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 4.1  |  |  |  | 7.1  |  | 6.2  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 4.13 |  |  |  | 6.43 |  | 6.23 |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 2.2  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 2.23 |  |  |  | 3.53 |  | 3.33 |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |     |      |  |  |      |  |      |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|-----|------|--|--|------|--|------|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |     | 23   |  |  |      |  | 68   |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |     | 926  |  |  |      |  | 271  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |     | 0.02 |  |  |      |  | 0.25 |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |     | 0.1  |  |  |      |  | 1.0  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |     | 9.0  |  |  |      |  | 22.7 |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |     | A    |  |  |      |  | C    |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  | 0.4 |      |  |  | 22.7 |  |      |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |     |      |  |  | C    |  |      |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | AM Existing + Project |
| Intersection Orientation | East-West             |
| Project Description      |                       |

## Site Information

|                            |             |
|----------------------------|-------------|
| Intersection               | Main/Miller |
| Jurisdiction               | NDOT        |
| East/West Street           | Main Street |
| North/South Street         | Miller Lane |
| Peak Hour Factor           | 0.92        |
| Analysis Time Period (hrs) | 0.25        |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |   |     |    | Westbound |    |           |   | Northbound |    |    |    | Southbound |    |    |    |
|----------------------------|-----------|---|-----|----|-----------|----|-----------|---|------------|----|----|----|------------|----|----|----|
| Movement                   | U         | L | T   | R  | U         | L  | T         | R | U          | L  | T  | R  | U          | L  | T  | R  |
| Priority                   | 1U        | 1 | 2   | 3  | 4U        | 4  | 5         | 6 |            | 7  | 8  | 9  |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 0 | 1   | 0  | 0         | 1  | 1         | 0 |            | 0  | 1  | 0  |            | 0  | 0  | 0  |
| Configuration              |           |   |     | TR |           | L  | T         |   |            |    | LR |    |            |    |    |    |
| Volume (veh/h)             |           |   | 303 | 21 |           | 11 | 460       |   |            | 77 |    | 15 |            |    |    |    |
| Percent Heavy Vehicles (%) |           |   |     |    |           | 3  |           |   |            | 3  |    | 3  |            |    |    |    |
| Proportion Time Blocked    |           |   |     |    |           |    |           |   |            |    |    |    |            |    |    |    |
| Percent Grade (%)          |           |   |     |    |           |    |           |   |            | 0  |    |    |            |    |    |    |
| Right Turn Channelized     |           |   |     |    |           |    |           |   |            |    |    |    |            |    |    |    |
| Median Type   Storage      |           |   |     |    |           |    | Undivided |   |            |    |    |    |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |  |  |      |  |      |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 4.1  |  |  |  | 7.1  |  | 6.2  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 4.13 |  |  |  | 6.43 |  | 6.23 |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 2.2  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 2.23 |  |  |  | 3.53 |  | 3.33 |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |      |     |  |  |  |      |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|------|-----|--|--|--|------|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  | 12   |     |  |  |  | 100  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  | 1201 |     |  |  |  | 351  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  | 0.01 |     |  |  |  | 0.29 |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  | 0.0  |     |  |  |  | 1.2  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  | 8.0  |     |  |  |  | 19.3 |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  | A    |     |  |  |  | C    |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |      | 0.2 |  |  |  | 19.3 |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  |      |     |  |  |  | C    |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | PM Existing + Project |
| Intersection Orientation | East-West             |
| Project Description      |                       |

## Site Information

|                            |             |
|----------------------------|-------------|
| Intersection               | Main/Miller |
| Jurisdiction               | NDOT        |
| East/West Street           | Main Street |
| North/South Street         | Miller Lane |
| Peak Hour Factor           | 0.92        |
| Analysis Time Period (hrs) | 0.25        |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |   |     |    | Westbound |    |     |   | Northbound |    |    |    | Southbound |    |    |    |
|----------------------------|-----------|---|-----|----|-----------|----|-----|---|------------|----|----|----|------------|----|----|----|
| Movement                   | U         | L | T   | R  | U         | L  | T   | R | U          | L  | T  | R  | U          | L  | T  | R  |
| Priority                   | 1U        | 1 | 2   | 3  | 4U        | 4  | 5   | 6 |            | 7  | 8  | 9  |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 0 | 1   | 0  | 0         | 1  | 1   | 0 |            | 0  | 1  | 0  |            | 0  | 0  | 0  |
| Configuration              |           |   |     | TR |           | L  | T   |   |            |    | LR |    |            |    |    |    |
| Volume (veh/h)             |           |   | 629 | 79 |           | 21 | 526 |   |            | 51 |    | 19 |            |    |    |    |
| Percent Heavy Vehicles (%) |           |   |     |    |           | 3  |     |   |            | 2  |    | 2  |            |    |    |    |
| Proportion Time Blocked    |           |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |
| Percent Grade (%)          |           |   |     |    |           |    |     |   |            | 0  |    |    |            |    |    |    |
| Right Turn Channelized     |           |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |
| Median Type   Storage      | Undivided |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |  |  |      |  |      |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 4.1  |  |  |  | 7.1  |  | 6.2  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 4.13 |  |  |  | 6.42 |  | 6.22 |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 2.2  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 2.23 |  |  |  | 3.52 |  | 3.32 |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |     |      |  |  |      |  |      |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|-----|------|--|--|------|--|------|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |     | 23   |  |  |      |  | 76   |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |     | 840  |  |  |      |  | 195  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |     | 0.03 |  |  |      |  | 0.39 |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |     | 0.1  |  |  |      |  | 1.7  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |     | 9.4  |  |  |      |  | 34.7 |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |     | A    |  |  |      |  | D    |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  | 0.4 |      |  |  | 34.7 |  |      |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |     |      |  |  | D    |  |      |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | AM Base            |
| Intersection Orientation | East-West          |
| Project Description      |                    |

## Site Information

|                            |             |
|----------------------------|-------------|
| Intersection               | Main/Miller |
| Jurisdiction               | NDOT        |
| East/West Street           | Main Street |
| North/South Street         | Miller Lane |
| Peak Hour Factor           | 0.92        |
| Analysis Time Period (hrs) | 0.25        |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |   |     |    | Westbound |    |     |   | Northbound |    |    |    | Southbound |    |    |    |
|----------------------------|-----------|---|-----|----|-----------|----|-----|---|------------|----|----|----|------------|----|----|----|
| Movement                   | U         | L | T   | R  | U         | L  | T   | R | U          | L  | T  | R  | U          | L  | T  | R  |
| Priority                   | 1U        | 1 | 2   | 3  | 4U        | 4  | 5   | 6 |            | 7  | 8  | 9  |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 0 | 1   | 0  | 0         | 1  | 1   | 0 |            | 0  | 1  | 0  |            | 0  | 0  | 0  |
| Configuration              |           |   |     | TR |           | L  | T   |   |            |    | LR |    |            |    |    |    |
| Volume (veh/h)             |           |   | 285 | 21 |           | 14 | 502 |   |            | 93 |    | 20 |            |    |    |    |
| Percent Heavy Vehicles (%) |           |   |     |    |           | 3  |     |   |            | 3  |    | 3  |            |    |    |    |
| Proportion Time Blocked    |           |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |
| Percent Grade (%)          |           |   |     |    |           |    |     |   |            | 0  |    |    |            |    |    |    |
| Right Turn Channelized     |           |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |
| Median Type   Storage      |           |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |  |  |      |  |      |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 4.1  |  |  |  | 7.1  |  | 6.2  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 4.13 |  |  |  | 6.43 |  | 6.23 |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 2.2  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 2.23 |  |  |  | 3.53 |  | 3.33 |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |      |     |  |  |  |      |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|------|-----|--|--|--|------|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  | 15   |     |  |  |  | 123  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  | 1221 |     |  |  |  | 340  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  | 0.01 |     |  |  |  | 0.36 |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  | 0.0  |     |  |  |  | 1.6  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  | 8.0  |     |  |  |  | 21.5 |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  | A    |     |  |  |  | C    |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |      | 0.2 |  |  |  | 21.5 |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  |      |     |  |  |  | C    |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |                            |             |
|--------------------------|--------------------|----------------------------|-------------|
| Analyst                  | MSH                | Intersection               | Main/Miller |
| Agency/Co.               | Solaegui Engineers | Jurisdiction               | NDOT        |
| Date Performed           | 5/19/2021          | East/West Street           | Main Street |
| Analysis Year            | 2041               | North/South Street         | Miller Lane |
| Time Analyzed            | PM Base            | Peak Hour Factor           | 0.92        |
| Intersection Orientation | East-West          | Analysis Time Period (hrs) | 0.25        |
| Project Description      |                    |                            |             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |   |     |    | Westbound |    |     |   | Northbound |    |    |    | Southbound |    |    |    |
|----------------------------|-----------|---|-----|----|-----------|----|-----|---|------------|----|----|----|------------|----|----|----|
| Movement                   | U         | L | T   | R  | U         | L  | T   | R | U          | L  | T  | R  | U          | L  | T  | R  |
| Priority                   | 1U        | 1 | 2   | 3  | 4U        | 4  | 5   | 6 |            | 7  | 8  | 9  |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 0 | 1   | 0  | 0         | 1  | 1   | 0 |            | 0  | 1  | 0  |            | 0  | 0  | 0  |
| Configuration              |           |   |     | TR |           | L  | T   |   |            |    | LR |    |            |    |    |    |
| Volume (veh/h)             |           |   | 699 | 95 |           | 28 | 533 |   |            | 58 |    | 25 |            |    |    |    |
| Percent Heavy Vehicles (%) |           |   |     |    |           | 3  |     |   |            | 3  |    | 3  |            |    |    |    |
| Proportion Time Blocked    |           |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |
| Percent Grade (%)          |           |   |     |    |           |    |     |   | 0          |    |    |    |            |    |    |    |
| Right Turn Channelized     |           |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |
| Median Type   Storage      | Undivided |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |  |  |      |  |      |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 4.1  |  |  |  | 7.1  |  | 6.2  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 4.13 |  |  |  | 6.43 |  | 6.23 |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 2.2  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 2.23 |  |  |  | 3.53 |  | 3.33 |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |     |      |  |  |      |  |      |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|-----|------|--|--|------|--|------|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |     | 30   |  |  |      |  | 90   |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |     | 775  |  |  |      |  | 170  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |     | 0.04 |  |  |      |  | 0.53 |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |     | 0.1  |  |  |      |  | 2.7  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |     | 9.8  |  |  |      |  | 47.9 |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |     | A    |  |  |      |  | E    |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  | 0.5 |      |  |  | 47.9 |  |      |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |     |      |  |  | E    |  |      |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | AM Base + Project  |
| Intersection Orientation | East-West          |
| Project Description      |                    |

## Site Information

|                            |             |
|----------------------------|-------------|
| Intersection               | Main/Miller |
| Jurisdiction               | NDOT        |
| East/West Street           | Main Street |
| North/South Street         | Miller Lane |
| Peak Hour Factor           | 0.92        |
| Analysis Time Period (hrs) | 0.25        |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |   |     |    | Westbound |    |     |   | Northbound |    |    |    | Southbound |    |    |    |
|----------------------------|-----------|---|-----|----|-----------|----|-----|---|------------|----|----|----|------------|----|----|----|
| Movement                   | U         | L | T   | R  | U         | L  | T   | R | U          | L  | T  | R  | U          | L  | T  | R  |
| Priority                   | 1U        | 1 | 2   | 3  | 4U        | 4  | 5   | 6 |            | 7  | 8  | 9  |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 0 | 1   | 0  | 0         | 1  | 1   | 0 |            | 0  | 1  | 0  |            | 0  | 0  | 0  |
| Configuration              |           |   |     | TR |           | L  | T   |   |            |    | LR |    |            |    |    |    |
| Volume (veh/h)             |           |   | 371 | 26 |           | 14 | 580 |   |            | 99 |    | 20 |            |    |    |    |
| Percent Heavy Vehicles (%) |           |   |     |    |           | 3  |     |   |            | 3  |    | 3  |            |    |    |    |
| Proportion Time Blocked    |           |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |
| Percent Grade (%)          |           |   |     |    |           |    |     |   |            | 0  |    |    |            |    |    |    |
| Right Turn Channelized     |           |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |
| Median Type   Storage      |           |   |     |    |           |    |     |   |            |    |    |    |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |  |  |      |  |      |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 4.1  |  |  |  | 7.1  |  | 6.2  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 4.13 |  |  |  | 6.43 |  | 6.23 |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 2.2  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 2.23 |  |  |  | 3.53 |  | 3.33 |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |      |  |  |  |      |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|------|--|--|--|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  | 15   |  |  |  | 129  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  | 1123 |  |  |  | 266  |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  | 0.01 |  |  |  | 0.49 |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  | 0.0  |  |  |  | 2.5  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  | 8.3  |  |  |  | 30.8 |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  | A    |  |  |  | D    |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  | 0.2  |  |  |  | 30.8 |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  |      |  |  |  | D    |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base + Project  |
| Intersection Orientation | East-West          |
| Project Description      |                    |

## Site Information

|                            |             |
|----------------------------|-------------|
| Intersection               | Main/Miller |
| Jurisdiction               | NDOT        |
| East/West Street           | Main Street |
| North/South Street         | Miller Lane |
| Peak Hour Factor           | 0.92        |
| Analysis Time Period (hrs) | 0.25        |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |   |     |     | Westbound |    |           |   | Northbound |    |    |    | Southbound |    |    |    |
|----------------------------|-----------|---|-----|-----|-----------|----|-----------|---|------------|----|----|----|------------|----|----|----|
| Movement                   | U         | L | T   | R   | U         | L  | T         | R | U          | L  | T  | R  | U          | L  | T  | R  |
| Priority                   | 1U        | 1 | 2   | 3   | 4U        | 4  | 5         | 6 |            | 7  | 8  | 9  |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 0 | 1   | 0   | 0         | 1  | 1         | 0 |            | 0  | 1  | 0  |            | 0  | 0  | 0  |
| Configuration              |           |   |     | TR  |           | L  | T         |   |            |    | LR |    |            |    |    |    |
| Volume (veh/h)             |           |   | 796 | 102 |           | 28 | 651       |   |            | 65 |    | 25 |            |    |    |    |
| Percent Heavy Vehicles (%) |           |   |     |     |           | 3  |           |   |            | 3  |    | 3  |            |    |    |    |
| Proportion Time Blocked    |           |   |     |     |           |    |           |   |            |    |    |    |            |    |    |    |
| Percent Grade (%)          |           |   |     |     |           |    |           |   |            | 0  |    |    |            |    |    |    |
| Right Turn Channelized     |           |   |     |     |           |    |           |   |            |    |    |    |            |    |    |    |
| Median Type   Storage      |           |   |     |     |           |    | Undivided |   |            |    |    |    |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |  |  |      |  |      |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 4.1  |  |  |  | 7.1  |  | 6.2  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 4.13 |  |  |  | 6.43 |  | 6.23 |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 2.2  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 2.23 |  |  |  | 3.53 |  | 3.33 |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |      |  |  |  |  |       |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|------|--|--|--|--|-------|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  | 30   |  |  |  |  | 98    |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  | 703  |  |  |  |  | 121   |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  | 0.04 |  |  |  |  | 0.81  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  | 0.1  |  |  |  |  | 4.8   |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  | 10.4 |  |  |  |  | 103.5 |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  | B    |  |  |  |  | F     |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  | 0.4  |  |  |  |  | 103.5 |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  |      |  |  |  |  | F     |  |  |  |  |  |

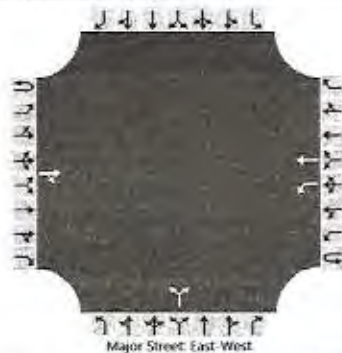


# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |                            |              |
|--------------------------|--------------------|----------------------------|--------------|
| Analyst                  | MSH                | Intersection               | Main/Truckee |
| Agency/Co.               | Solaegui Engineers | Jurisdiction               | NDOT         |
| Date Performed           | 5/19/2021          | East/West Street           | Main Street  |
| Analysis Year            | 2021               | North/South Street         | Truckee Lane |
| Time Analyzed            | AM Existing        | Peak Hour Factor           | 0.92         |
| Intersection Orientation | East-West          | Analysis Time Period (hrs) | 0.25         |
| Project Description      |                    |                            |              |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |   |     |    | Westbound |    |           |   | Northbound |   |    |    | Southbound |    |    |    |
|----------------------------|-----------|---|-----|----|-----------|----|-----------|---|------------|---|----|----|------------|----|----|----|
| Movement                   | U         | L | T   | R  | U         | L  | T         | R | U          | L | T  | R  | U          | L  | T  | R  |
| Priority                   | 1U        | 1 | 2   | 3  | 4U        | 4  | 5         | 6 |            | 7 | 8  | 9  |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 0 | 1   | 0  | 0         | 1  | 1         | 0 |            | 0 | 1  | 0  |            | 0  | 0  | 0  |
| Configuration              |           |   |     | TR |           | L  | T         |   |            |   | LR |    |            |    |    |    |
| Volume (veh/h)             |           |   | 196 | 3  |           | 16 | 473       |   |            | 3 |    | 37 |            |    |    |    |
| Percent Heavy Vehicles (%) |           |   |     |    |           | 3  |           |   |            | 3 |    | 3  |            |    |    |    |
| Proportion Time Blocked    |           |   |     |    |           |    |           |   |            |   |    |    |            |    |    |    |
| Percent Grade (%)          |           |   |     |    |           |    |           |   |            | 0 |    |    |            |    |    |    |
| Right Turn Channelized     |           |   |     |    |           |    |           |   |            |   |    |    |            |    |    |    |
| Median Type   Storage      |           |   |     |    |           |    | Undivided |   |            |   |    |    |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |  |  |      |  |      |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 4.1  |  |  |  | 7.1  |  | 6.2  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 4.13 |  |  |  | 6.43 |  | 6.23 |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 2.2  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 2.23 |  |  |  | 3.53 |  | 3.33 |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |      |  |  |  |  |      |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|------|--|--|--|--|------|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  | 17   |  |  |  |  | 43   |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  | 1348 |  |  |  |  | 752  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  | 0.01 |  |  |  |  | 0.06 |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  | 0.0  |  |  |  |  | 0.2  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  | 7.7  |  |  |  |  | 10.1 |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  | A    |  |  |  |  | B    |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  | 0.3  |  |  |  |  | 10.1 |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  |      |  |  |  |  | B    |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |                            |              |
|--------------------------|--------------------|----------------------------|--------------|
| Analyst                  | MSH                | Intersection               | Main/Truckee |
| Agency/Co.               | Solaegui Engineers | Jurisdiction               | NDOT         |
| Date Performed           | 5/19/2021          | East/West Street           | Main Street  |
| Analysis Year            | 2021               | North/South Street         | Truckee Lane |
| Time Analyzed            | PM Existing        | Peak Hour Factor           | 0.92         |
| Intersection Orientation | East-West          | Analysis Time Period (hrs) | 0.25         |
| Project Description      |                    |                            |              |

## Site Information

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |   |     |    | Westbound |   |           |   | Northbound |   |    |    | Southbound |    |    |    |
|----------------------------|-----------|---|-----|----|-----------|---|-----------|---|------------|---|----|----|------------|----|----|----|
| Movement                   | U         | L | T   | R  | U         | L | T         | R | U          | L | T  | R  | U          | L  | T  | R  |
| Priority                   | 1U        | 1 | 2   | 3  | 4U        | 4 | 5         | 6 |            | 7 | 8  | 9  |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 0 | 1   | 0  | 0         | 1 | 1         | 0 |            | 0 | 1  | 0  |            | 0  | 0  | 0  |
| Configuration              |           |   |     | TR |           | L | T         |   |            |   | LR |    |            |    |    |    |
| Volume (veh/h)             |           |   | 581 | 9  |           | 3 | 409       |   |            | 5 |    | 17 |            |    |    |    |
| Percent Heavy Vehicles (%) |           |   |     |    |           | 3 |           |   |            | 3 |    | 3  |            |    |    |    |
| Proportion Time Blocked    |           |   |     |    |           |   |           |   |            |   |    |    |            |    |    |    |
| Percent Grade (%)          |           |   |     |    |           |   |           |   |            | 0 |    |    |            |    |    |    |
| Right Turn Channelized     |           |   |     |    |           |   |           |   |            |   |    |    |            |    |    |    |
| Median Type   Storage      |           |   |     |    |           |   | Undivided |   |            |   |    |    |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |  |  |      |  |      |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 4.1  |  |  |  | 7.1  |  | 6.2  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 4.13 |  |  |  | 6.43 |  | 6.23 |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 2.2  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 2.23 |  |  |  | 3.53 |  | 3.33 |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |      |     |  |  |  |      |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|------|-----|--|--|--|------|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  | 3    |     |  |  |  | 24   |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  | 938  |     |  |  |  | 387  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  | 0.00 |     |  |  |  | 0.06 |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  | 0.0  |     |  |  |  | 0.2  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  | 8.8  |     |  |  |  | 14.9 |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  | A    |     |  |  |  | B    |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |      | 0.1 |  |  |  | 14.9 |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  |      |     |  |  |  | B    |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | AM Existing + Project |
| Intersection Orientation | East-West             |
| Project Description      |                       |

## Site Information

|                            |                          |
|----------------------------|--------------------------|
| Intersection               | Main/Truckee-Access      |
| Jurisdiction               | NDOT                     |
| East/West Street           | Main Street              |
| North/South Street         | Truckee Lane-East Access |
| Peak Hour Factor           | 0.92                     |
| Analysis Time Period (hrs) | 0.25                     |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |     |    | Westbound |    |     |    | Northbound |   |     |    | Southbound |    |     |    |
|----------------------------|-----------|----|-----|----|-----------|----|-----|----|------------|---|-----|----|------------|----|-----|----|
| Movement                   | U         | L  | T   | R  | U         | L  | T   | R  | U          | L | T   | R  | U          | L  | T   | R  |
| Priority                   | 1U        | 1  | 2   | 3  | 4U        | 4  | 5   | 6  |            | 7 | 8   | 9  |            | 10 | 11  | 12 |
| Number of Lanes            | 0         | 1  | 1   | 0  | 0         | 1  | 1   | 0  |            | 0 | 1   | 0  |            | 0  | 1   | 0  |
| Configuration              |           | L  |     | TR |           | L  |     | TR |            |   | LTR |    |            |    | LTR |    |
| Volume (veh/h)             |           | 10 | 259 | 3  |           | 16 | 532 | 25 |            | 3 | 3   | 37 |            | 28 | 3   | 9  |
| Percent Heavy Vehicles (%) |           | 3  |     |    |           | 3  |     |    |            | 3 | 3   | 3  |            | 3  | 3   | 3  |
| Proportion Time Blocked    |           |    |     |    |           |    |     |    |            |   |     |    |            |    |     |    |
| Percent Grade (%)          |           |    |     |    |           |    |     |    | 0          |   |     |    | 0          |    |     |    |
| Right Turn Channelized     |           |    |     |    |           |    |     |    |            |   |     |    |            |    |     |    |
| Median Type   Storage      | Undivided |    |     |    |           |    |     |    |            |   |     |    |            |    |     |    |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |      |  |  |  |      |      |      |  |      |      |      |
|------------------------------|--|------|--|--|--|------|--|--|--|------|------|------|--|------|------|------|
| Base Critical Headway (sec)  |  | 4.1  |  |  |  | 4.1  |  |  |  | 7.1  | 6.5  | 6.2  |  | 7.1  | 6.5  | 6.2  |
| Critical Headway (sec)       |  | 4.13 |  |  |  | 4.13 |  |  |  | 7.13 | 6.53 | 6.23 |  | 7.13 | 6.53 | 6.23 |
| Base Follow-Up Headway (sec) |  | 2.2  |  |  |  | 2.2  |  |  |  | 3.5  | 4.0  | 3.3  |  | 3.5  | 4.0  | 3.3  |
| Follow-Up Headway (sec)      |  | 2.23 |  |  |  | 2.23 |  |  |  | 3.53 | 4.03 | 3.33 |  | 3.53 | 4.03 | 3.33 |

## Delay, Queue Length, and Level of Service

|                                         |     |      |  |  |     |      |  |  |      |  |      |  |      |  |      |  |
|-----------------------------------------|-----|------|--|--|-----|------|--|--|------|--|------|--|------|--|------|--|
| Flow Rate, v (veh/h)                    |     | 11   |  |  |     | 17   |  |  |      |  | 47   |  |      |  | 43   |  |
| Capacity, c (veh/h)                     |     | 968  |  |  |     | 1272 |  |  |      |  | 582  |  |      |  | 254  |  |
| v/c Ratio                               |     | 0.01 |  |  |     | 0.01 |  |  |      |  | 0.08 |  |      |  | 0.17 |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |     | 0.0  |  |  |     | 0.0  |  |  |      |  | 0.3  |  |      |  | 0.6  |  |
| Control Delay (s/veh)                   |     | 8.8  |  |  |     | 7.9  |  |  |      |  | 11.7 |  |      |  | 22.1 |  |
| Level of Service (LOS)                  |     | A    |  |  |     | A    |  |  |      |  | B    |  |      |  | C    |  |
| Approach Delay (s/veh)                  | 0.3 |      |  |  | 0.2 |      |  |  | 11.7 |  |      |  | 22.1 |  |      |  |
| Approach LOS                            |     |      |  |  |     |      |  |  | B    |  |      |  | C    |  |      |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |                            |                          |
|--------------------------|-----------------------|----------------------------|--------------------------|
| Analyst                  | MSH                   | Intersection               | Main/Truckee Access      |
| Agency/Co.               | Solaegui Engineers    | Jurisdiction               | NDOT                     |
| Date Performed           | 5/19/2021             | East/West Street           | Main Street              |
| Analysis Year            | 2021                  | North/South Street         | Truckee Lane-East Access |
| Time Analyzed            | PM Existing + Project | Peak Hour Factor           | 0.92                     |
| Intersection Orientation | East-West             | Analysis Time Period (hrs) | 0.25                     |
| Project Description      |                       |                            |                          |

## Site Information

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |     |    | Westbound |    |     |    | Northbound |   |     |    | Southbound |    |     |    |
|----------------------------|-----------|----|-----|----|-----------|----|-----|----|------------|---|-----|----|------------|----|-----|----|
| Movement                   | U         | L  | T   | R  | U         | L  | T   | R  | U          | L | T   | R  | U          | L  | T   | R  |
| Priority                   | 1U        | 1  | 2   | 3  | 4U        | 4  | 5   | 6  |            | 7 | 8   | 9  |            | 10 | 11  | 12 |
| Number of Lanes            | 0         | 1  | 1   | 0  | 0         | 1  | 1   | 0  |            | 0 | 1   | 0  |            | 0  | 1   | 0  |
| Configuration              |           | L  |     | TR |           | L  |     | TR |            |   | LTR |    |            |    | LTR |    |
| Volume (veh/h)             |           | 35 | 627 | 9  |           | 31 | 482 | 51 |            | 4 | 5   | 25 |            | 58 | 2   | 27 |
| Percent Heavy Vehicles (%) |           | 3  |     |    |           | 3  |     |    |            | 3 | 3   | 3  |            | 3  | 3   | 3  |
| Proportion Time Blocked    |           |    |     |    |           |    |     |    |            |   |     |    |            |    |     |    |
| Percent Grade (%)          |           |    |     |    |           |    |     |    | 0          |   |     |    | 0          |    |     |    |
| Right Turn Channelized     |           |    |     |    |           |    |     |    |            |   |     |    |            |    |     |    |
| Median Type   Storage      | Undivided |    |     |    |           |    |     |    |            |   |     |    |            |    |     |    |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |      |  |  |  |      |      |      |  |      |      |      |
|------------------------------|--|------|--|--|--|------|--|--|--|------|------|------|--|------|------|------|
| Base Critical Headway (sec)  |  | 4.1  |  |  |  | 4.1  |  |  |  | 7.1  | 6.5  | 6.2  |  | 7.1  | 6.5  | 6.2  |
| Critical Headway (sec)       |  | 4.13 |  |  |  | 4.13 |  |  |  | 7.13 | 6.53 | 6.23 |  | 7.13 | 6.53 | 6.23 |
| Base Follow-Up Headway (sec) |  | 2.2  |  |  |  | 2.2  |  |  |  | 3.5  | 4.0  | 3.3  |  | 3.5  | 4.0  | 3.3  |
| Follow-Up Headway (sec)      |  | 2.23 |  |  |  | 2.23 |  |  |  | 3.53 | 4.03 | 3.33 |  | 3.53 | 4.03 | 3.33 |

## Delay, Queue Length, and Level of Service

|                                         |     |      |  |  |     |      |  |  |      |  |      |  |      |  |      |  |
|-----------------------------------------|-----|------|--|--|-----|------|--|--|------|--|------|--|------|--|------|--|
| Flow Rate, v (veh/h)                    |     | 38   |  |  |     | 34   |  |  |      |  | 37   |  |      |  | 95   |  |
| Capacity, c (veh/h)                     |     | 990  |  |  |     | 899  |  |  |      |  | 254  |  |      |  | 136  |  |
| v/c Ratio                               |     | 0.04 |  |  |     | 0.04 |  |  |      |  | 0.15 |  |      |  | 0.70 |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |     | 0.1  |  |  |     | 0.1  |  |  |      |  | 0.5  |  |      |  | 3.9  |  |
| Control Delay (s/veh)                   |     | 8.8  |  |  |     | 9.2  |  |  |      |  | 21.6 |  |      |  | 77.3 |  |
| Level of Service (LOS)                  |     | A    |  |  |     | A    |  |  |      |  | C    |  |      |  | F    |  |
| Approach Delay (s/veh)                  | 0.5 |      |  |  | 0.5 |      |  |  | 21.6 |  |      |  | 77.3 |  |      |  |
| Approach LOS                            |     |      |  |  |     |      |  |  | C    |  |      |  | F    |  |      |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | AM Base            |
| Intersection Orientation | East-West          |
| Project Description      |                    |

## Site Information

|                            |              |
|----------------------------|--------------|
| Intersection               | Main/Truckee |
| Jurisdiction               | NDOT         |
| East/West Street           | Main Street  |
| North/South Street         | Truckee Lane |
| Peak Hour Factor           | 0.92         |
| Analysis Time Period (hrs) | 0.25         |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |   |     |    | Westbound |    |     |   | Northbound |   |    |    | Southbound |    |    |    |
|----------------------------|-----------|---|-----|----|-----------|----|-----|---|------------|---|----|----|------------|----|----|----|
| Movement                   | U         | L | T   | R  | U         | L  | T   | R | U          | L | T  | R  | U          | L  | T  | R  |
| Priority                   | 1U        | 1 | 2   | 3  | 4U        | 4  | 5   | 6 |            | 7 | 8  | 9  |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 0 | 1   | 0  | 0         | 1  | 1   | 0 |            | 0 | 1  | 0  |            | 0  | 0  | 0  |
| Configuration              |           |   |     | TR |           | L  | T   |   |            |   | LR |    |            |    |    |    |
| Volume (veh/h)             |           |   | 258 | 4  |           | 21 | 622 |   |            | 4 |    | 49 |            |    |    |    |
| Percent Heavy Vehicles (%) |           |   |     |    |           | 3  |     |   |            | 3 |    | 3  |            |    |    |    |
| Proportion Time Blocked    |           |   |     |    |           |    |     |   |            |   |    |    |            |    |    |    |
| Percent Grade (%)          |           |   |     |    |           |    |     |   |            | 0 |    |    |            |    |    |    |
| Right Turn Channelized     |           |   |     |    |           |    |     |   |            |   |    |    |            |    |    |    |
| Median Type   Storage      | Undivided |   |     |    |           |    |     |   |            |   |    |    |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |  |  |      |  |      |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 4.1  |  |  |  | 7.1  |  | 6.2  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 4.13 |  |  |  | 6.43 |  | 6.23 |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 2.2  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 2.23 |  |  |  | 3.53 |  | 3.33 |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |     |      |  |  |      |  |      |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|-----|------|--|--|------|--|------|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |     | 23   |  |  |      |  | 58   |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |     | 1272 |  |  |      |  | 660  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |     | 0.02 |  |  |      |  | 0.09 |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |     | 0.1  |  |  |      |  | 0.3  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |     | 7.9  |  |  |      |  | 11.0 |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |     | A    |  |  |      |  | B    |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  | 0.3 |      |  |  | 11.0 |  |      |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |     |      |  |  | B    |  |      |  |  |  |  |  |



# HC57 Two-Way Stop-Control Report

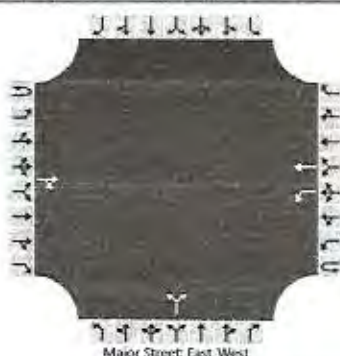
## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base            |
| Intersection Orientation | East-West          |
| Project Description      |                    |

## Site Information

|                            |              |
|----------------------------|--------------|
| Intersection               | Main/Truckee |
| Jurisdiction               | NDOT         |
| East/West Street           | Main Street  |
| North/South Street         | Truckee Lane |
| Peak Hour Factor           | 0.92         |
| Analysis Time Period (hrs) | 0.25         |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |   |     |    | Westbound |    |     |   | Northbound |   |    |    | Southbound |    |    |    |
|----------------------------|-----------|---|-----|----|-----------|----|-----|---|------------|---|----|----|------------|----|----|----|
| Movement                   | U         | L | T   | R  | U         | L  | T   | R | U          | L | T  | R  | U          | L  | T  | R  |
| Priority                   | 1U        | 1 | 2   | 3  | 4U        | 4  | 5   | 6 |            | 7 | 8  | 9  |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 0 | 1   | 0  | 0         | 1  | 1   | 0 |            | 0 | 1  | 0  |            | 0  | 0  | 0  |
| Configuration              |           |   |     | TR |           | L  | T   |   |            |   | LR |    |            |    |    |    |
| Volume (veh/h)             |           |   | 764 | 12 |           | 41 | 536 |   |            | 5 |    | 33 |            |    |    |    |
| Percent Heavy Vehicles (%) |           |   |     |    |           | 3  |     |   |            | 3 |    | 3  |            |    |    |    |
| Proportion Time Blocked    |           |   |     |    |           |    |     |   |            |   |    |    |            |    |    |    |
| Percent Grade (%)          |           |   |     |    |           |    |     |   |            | 0 |    |    |            |    |    |    |
| Right Turn Channelized     |           |   |     |    |           |    |     |   |            |   |    |    |            |    |    |    |
| Median Type   Storage      |           |   |     |    |           |    |     |   |            |   |    |    |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |  |  |      |  |      |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|--|--|------|--|------|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 4.1  |  |  |  | 7.1  |  | 6.2  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 4.13 |  |  |  | 6.43 |  | 6.23 |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 2.2  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 2.23 |  |  |  | 3.53 |  | 3.33 |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                  |  |  |  |  |  |      |  |  |  |  |      |  |  |  |  |  |
|----------------------------------|--|--|--|--|--|------|--|--|--|--|------|--|--|--|--|--|
| Flow Rate, v (veh/h)             |  |  |  |  |  | 45   |  |  |  |  | 41   |  |  |  |  |  |
| Capacity, c (veh/h)              |  |  |  |  |  | 788  |  |  |  |  | 291  |  |  |  |  |  |
| v/c Ratio                        |  |  |  |  |  | 0.06 |  |  |  |  | 0.14 |  |  |  |  |  |
| 95% Queue Length, $Q_{95}$ (veh) |  |  |  |  |  | 0.2  |  |  |  |  | 0.5  |  |  |  |  |  |
| Control Delay (s/veh)            |  |  |  |  |  | 9.8  |  |  |  |  | 19.4 |  |  |  |  |  |
| Level of Service (LOS)           |  |  |  |  |  | A    |  |  |  |  | C    |  |  |  |  |  |
| Approach Delay (s/veh)           |  |  |  |  |  | 0.7  |  |  |  |  | 19.4 |  |  |  |  |  |
| Approach LOS                     |  |  |  |  |  |      |  |  |  |  | C    |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |                            |                          |
|--------------------------|--------------------|----------------------------|--------------------------|
| Analyst                  | MSH                | Intersection               | Main/Truckee-Access      |
| Agency/Co.               | Solaegui Engineers | Jurisdiction               | NDOT                     |
| Date Performed           | 5/19/2021          | East/West Street           | Main Street              |
| Analysis Year            | 2041               | North/South Street         | Truckee Lane-East Access |
| Time Analyzed            | AM Base + Project  | Peak Hour Factor           | 0.92                     |
| Intersection Orientation | East-West          | Analysis Time Period (hrs) | 0.25                     |
| Project Description      |                    |                            |                          |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |     |    | Westbound |    |     |    | Northbound |   |     |    | Southbound |    |     |    |
|----------------------------|-----------|----|-----|----|-----------|----|-----|----|------------|---|-----|----|------------|----|-----|----|
| Movement                   | U         | L  | T   | R  | U         | L  | T   | R  | U          | L | T   | R  | U          | L  | T   | R  |
| Priority                   | 1U        | 1  | 2   | 3  | 4U        | 4  | 5   | 6  |            | 7 | 8   | 9  |            | 10 | 11  | 12 |
| Number of Lanes            | 0         | 1  | 1   | 0  | 0         | 1  | 1   | 0  |            | 0 | 1   | 0  |            | 0  | 1   | 0  |
| Configuration              |           | L  |     | TR |           | L  |     | TR |            |   | LTR |    |            |    | LTR |    |
| Volume (veh/h)             |           | 10 | 321 | 4  |           | 21 | 681 | 25 |            | 4 | 3   | 49 |            | 28 | 3   | 9  |
| Percent Heavy Vehicles (%) |           | 3  |     |    |           | 3  |     |    |            | 3 | 3   | 3  |            | 3  | 3   | 3  |
| Proportion Time Blocked    |           |    |     |    |           |    |     |    |            |   |     |    |            |    |     |    |
| Percent Grade (%)          |           |    |     |    |           |    |     |    | 0          |   |     |    | 0          |    |     |    |
| Right Turn Channelized     |           |    |     |    |           |    |     |    |            |   |     |    |            |    |     |    |
| Median Type   Storage      | Undivided |    |     |    |           |    |     |    |            |   |     |    |            |    |     |    |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |      |  |  |  |      |      |      |  |      |      |      |
|------------------------------|--|------|--|--|--|------|--|--|--|------|------|------|--|------|------|------|
| Base Critical Headway (sec)  |  | 4.1  |  |  |  | 4.1  |  |  |  | 7.1  | 6.5  | 6.2  |  | 7.1  | 6.5  | 6.2  |
| Critical Headway (sec)       |  | 4.13 |  |  |  | 4.13 |  |  |  | 7.13 | 6.53 | 6.23 |  | 7.13 | 6.53 | 6.23 |
| Base Follow-Up Headway (sec) |  | 2.2  |  |  |  | 2.2  |  |  |  | 3.5  | 4.0  | 3.3  |  | 3.5  | 4.0  | 3.3  |
| Follow-Up Headway (sec)      |  | 2.23 |  |  |  | 2.23 |  |  |  | 3.53 | 4.03 | 3.33 |  | 3.53 | 4.03 | 3.33 |

## Delay, Queue Length, and Level of Service

|                                         |     |      |  |  |     |      |  |  |      |  |      |  |      |  |      |  |
|-----------------------------------------|-----|------|--|--|-----|------|--|--|------|--|------|--|------|--|------|--|
| Flow Rate, v (veh/h)                    |     | 11   |  |  |     | 23   |  |  |      |  | 61   |  |      |  | 43   |  |
| Capacity, c (veh/h)                     |     | 842  |  |  |     | 1200 |  |  |      |  | 495  |  |      |  | 171  |  |
| v/c Ratio                               |     | 0.01 |  |  |     | 0.02 |  |  |      |  | 0.12 |  |      |  | 0.25 |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |     | 0.0  |  |  |     | 0.1  |  |  |      |  | 0.4  |  |      |  | 1.0  |  |
| Control Delay (s/veh)                   |     | 9.3  |  |  |     | 8.1  |  |  |      |  | 13.3 |  |      |  | 33.1 |  |
| Level of Service (LOS)                  |     | A    |  |  |     | A    |  |  |      |  | B    |  |      |  | D    |  |
| Approach Delay (s/veh)                  | 0.3 |      |  |  | 0.2 |      |  |  | 13.3 |  |      |  | 33.1 |  |      |  |
| Approach LOS                            |     |      |  |  |     |      |  |  | B    |  |      |  | D    |  |      |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base + Project  |
| Intersection Orientation | East-West          |
| Project Description      |                    |

## Site Information

|                            |                          |
|----------------------------|--------------------------|
| Intersection               | Main/Truckee-Access      |
| Jurisdiction               | NDOT                     |
| East/West Street           | Main Street              |
| North/South Street         | Truckee Lane-East Access |
| Peak Hour Factor           | 0.92                     |
| Analysis Time Period (hrs) | 0.25                     |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |     |    | Westbound |    |     |    | Northbound |   |     |    | Southbound |    |     |    |
|----------------------------|-----------|----|-----|----|-----------|----|-----|----|------------|---|-----|----|------------|----|-----|----|
| Movement                   | U         | L  | T   | R  | U         | L  | T   | R  | U          | L | T   | R  | U          | L  | T   | R  |
| Priority                   | 1U        | 1  | 2   | 3  | 4U        | 4  | 5   | 6  |            | 7 | 8   | 9  |            | 10 | 11  | 12 |
| Number of Lanes            | 0         | 1  | 1   | 0  | 0         | 1  | 1   | 0  |            | 0 | 1   | 0  |            | 0  | 1   | 0  |
| Configuration              |           | L  |     | TR |           | L  |     | TR |            |   | LTR |    |            |    | LTR |    |
| Volume (veh/h)             |           | 35 | 810 | 12 |           | 41 | 610 | 51 |            | 5 | 5   | 33 |            | 58 | 2   | 27 |
| Percent Heavy Vehicles (%) |           | 3  |     |    |           | 3  |     |    |            | 3 | 3   | 3  |            | 3  | 3   | 3  |
| Proportion Time Blocked    |           |    |     |    |           |    |     |    |            |   |     |    |            |    |     |    |
| Percent Grade (%)          |           |    |     |    |           |    |     |    |            | 0 |     |    |            | 0  |     |    |
| Right Turn Channelized     |           |    |     |    |           |    |     |    |            |   |     |    |            |    |     |    |
| Median Type   Storage      |           |    |     |    |           |    |     |    |            |   |     |    |            |    |     |    |

## Critical and Follow-up Headways

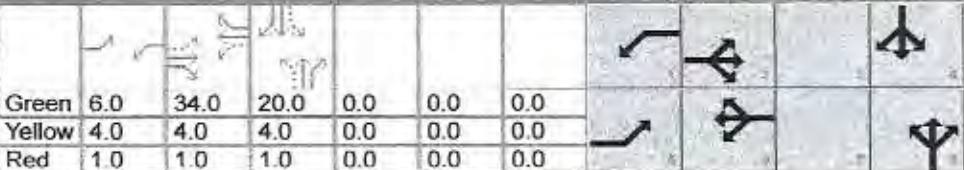
|                              |  |      |  |  |  |      |  |  |  |      |      |      |  |      |      |      |
|------------------------------|--|------|--|--|--|------|--|--|--|------|------|------|--|------|------|------|
| Base Critical Headway (sec)  |  | 4.1  |  |  |  | 4.1  |  |  |  | 7.1  | 6.5  | 6.2  |  | 7.1  | 6.5  | 6.2  |
| Critical Headway (sec)       |  | 4.13 |  |  |  | 4.13 |  |  |  | 7.13 | 6.53 | 6.23 |  | 7.13 | 6.53 | 6.23 |
| Base Follow-Up Headway (sec) |  | 2.2  |  |  |  | 2.2  |  |  |  | 3.5  | 4.0  | 3.3  |  | 3.5  | 4.0  | 3.3  |
| Follow-Up Headway (sec)      |  | 2.23 |  |  |  | 2.23 |  |  |  | 3.53 | 4.03 | 3.33 |  | 3.53 | 4.03 | 3.33 |

## Delay, Queue Length, and Level of Service

|                                         |     |      |  |  |     |      |  |  |      |  |      |  |       |  |       |  |
|-----------------------------------------|-----|------|--|--|-----|------|--|--|------|--|------|--|-------|--|-------|--|
| Flow Rate, v (veh/h)                    |     | 38   |  |  |     | 45   |  |  |      |  | 47   |  |       |  | 95    |  |
| Capacity, c (veh/h)                     |     | 878  |  |  |     | 755  |  |  |      |  | 169  |  |       |  | 71    |  |
| v/c Ratio                               |     | 0.04 |  |  |     | 0.06 |  |  |      |  | 0.28 |  |       |  | 1.33  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |     | 0.1  |  |  |     | 0.2  |  |  |      |  | 1.1  |  |       |  | 7.6   |  |
| Control Delay (s/veh)                   |     | 9.3  |  |  |     | 10.1 |  |  |      |  | 34.2 |  |       |  | 320.0 |  |
| Level of Service (LOS)                  |     | A    |  |  |     | B    |  |  |      |  | D    |  |       |  | F     |  |
| Approach Delay (s/veh)                  | 0.4 |      |  |  | 0.6 |      |  |  | 34.2 |  |      |  | 320.0 |  |       |  |
| Approach LOS                            |     |      |  |  |     |      |  |  | D    |  |      |  | F     |  |       |  |



# HCS7 Signalized Intersection Results Summary

| General Information                             |                            |                 |               |                    |  | Intersection Information                                                           |         |      |       |       |       |  |       |    |       |       |    |
|-------------------------------------------------|----------------------------|-----------------|---------------|--------------------|--|------------------------------------------------------------------------------------|---------|------|-------|-------|-------|-------------------------------------------------------------------------------------|-------|----|-------|-------|----|
| Agency                                          | Solaegui Engineers         |                 |               |                    |  | Duration, h                                                                        | 0.250   |      |       |       |       |                                                                                     |       |    |       |       |    |
| Analyst                                         | MSH                        |                 | Analysis Date | May 19, 2021       |  | Area Type                                                                          | Other   |      |       |       |       |                                                                                     |       |    |       |       |    |
| Jurisdiction                                    | NDOT                       |                 | Time Period   | AM Peak Hour       |  | PHF                                                                                | 0.92    |      |       |       |       |                                                                                     |       |    |       |       |    |
| Urban Street                                    |                            |                 | Analysis Year | Existing + Project |  | Analysis Period                                                                    | 1> 7:00 |      |       |       |       |                                                                                     |       |    |       |       |    |
| Intersection                                    | Main & Truckee-East Dri... |                 | File Name     | MaTr21aw.xus       |  |                                                                                    |         |      |       |       |       |                                                                                     |       |    |       |       |    |
| Project Description                             |                            |                 |               |                    |  |                                                                                    |         |      |       |       |       |                                                                                     |       |    |       |       |    |
| Demand Information                              |                            |                 |               |                    |  | EB                                                                                 |         |      | WB    |       |       | NB                                                                                  |       |    | SB    |       |    |
| Approach Movement                               |                            |                 |               |                    |  | L                                                                                  | T       | R    | L     | T     | R     | L                                                                                   | T     | R  | L     | T     | R  |
| Demand ( v ), veh/h                             |                            |                 |               |                    |  | 10                                                                                 | 196     | 3    | 16    | 532   | 25    | 3                                                                                   | 3     | 37 | 91    | 3     | 9  |
| Signal Information                              |                            |                 |               |                    |  |  |         |      |       |       |       |                                                                                     |       |    |       |       |    |
| Cycle, s                                        | 75.0                       | Reference Phase | 2             |                    |  |                                                                                    |         |      |       |       |       |                                                                                     |       |    |       |       |    |
| Offset, s                                       | 0                          | Reference Point | End           |                    |  |                                                                                    |         |      |       |       |       |                                                                                     |       |    |       |       |    |
| Uncoordinated                                   | Yes                        | Simult. Gap E/W | On            |                    |  |                                                                                    |         |      |       |       |       |                                                                                     |       |    |       |       |    |
| Force Mode                                      | Fixed                      | Simult. Gap N/S | On            |                    |  |                                                                                    |         |      |       |       |       |                                                                                     |       |    |       |       |    |
|                                                 |                            |                 |               |                    |  | Green                                                                              | 6.0     | 34.0 | 20.0  | 0.0   | 0.0   | 0.0                                                                                 |       |    |       |       |    |
|                                                 |                            |                 |               |                    |  | Yellow                                                                             | 4.0     | 4.0  | 4.0   | 0.0   | 0.0   | 0.0                                                                                 |       |    |       |       |    |
|                                                 |                            |                 |               |                    |  | Red                                                                                | 1.0     | 1.0  | 1.0   | 0.0   | 0.0   | 0.0                                                                                 |       |    |       |       |    |
| Timer Results                                   |                            |                 |               |                    |  | EBL                                                                                | EBT     | WBL  | WBT   | NBL   | NBT   | SBL                                                                                 | SBT   |    |       |       |    |
| Assigned Phase                                  |                            |                 |               |                    |  | 5                                                                                  | 2       | 1    | 6     |       | 8     |                                                                                     | 4     |    |       |       |    |
| Case Number                                     |                            |                 |               |                    |  | 1.1                                                                                | 4.0     | 1.1  | 3.0   |       | 6.0   |                                                                                     | 6.0   |    |       |       |    |
| Phase Duration, s                               |                            |                 |               |                    |  | 11.0                                                                               | 39.0    | 11.0 | 39.0  |       | 25.0  |                                                                                     | 25.0  |    |       |       |    |
| Change Period, ( Y+R c ), s                     |                            |                 |               |                    |  | 5.0                                                                                | 5.0     | 5.0  | 5.0   |       | 5.0   |                                                                                     | 5.0   |    |       |       |    |
| Max Allow Headway ( MAH ), s                    |                            |                 |               |                    |  | 3.3                                                                                | 3.2     | 3.3  | 3.2   |       | 3.4   |                                                                                     | 3.4   |    |       |       |    |
| Queue Clearance Time ( g s ), s                 |                            |                 |               |                    |  | 2.2                                                                                | 7.5     | 2.3  | 21.0  |       | 3.6   |                                                                                     | 8.1   |    |       |       |    |
| Green Extension Time ( g e ), s                 |                            |                 |               |                    |  | 0.0                                                                                | 1.8     | 0.0  | 1.6   |       | 0.3   |                                                                                     | 0.2   |    |       |       |    |
| Phase Call Probability                          |                            |                 |               |                    |  | 1.00                                                                               | 1.00    | 1.00 | 1.00  |       | 1.00  |                                                                                     | 1.00  |    |       |       |    |
| Max Out Probability                             |                            |                 |               |                    |  | 0.29                                                                               | 0.00    | 0.43 | 0.02  |       | 0.00  |                                                                                     | 0.00  |    |       |       |    |
| Movement Group Results                          |                            |                 |               |                    |  | EB                                                                                 |         |      | WB    |       |       | NB                                                                                  |       |    | SB    |       |    |
| Approach Movement                               |                            |                 |               |                    |  | L                                                                                  | T       | R    | L     | T     | R     | L                                                                                   | T     | R  | L     | T     | R  |
| Assigned Movement                               |                            |                 |               |                    |  | 5                                                                                  | 2       | 12   | 1     | 6     | 16    | 3                                                                                   | 8     | 18 | 7     | 4     | 14 |
| Adjusted Flow Rate ( v ), veh/h                 |                            |                 |               |                    |  | 11                                                                                 | 216     |      | 17    | 578   | 27    | 3                                                                                   | 43    |    | 99    | 13    |    |
| Adjusted Saturation Flow Rate ( s ), veh/h/ln   |                            |                 |               |                    |  | 1767                                                                               | 1820    |      | 1767  | 1826  | 1526  | 1377                                                                                | 1537  |    | 1341  | 1588  |    |
| Queue Service Time ( g s ), s                   |                            |                 |               |                    |  | 0.2                                                                                | 5.5     |      | 0.3   | 19.0  | 0.7   | 0.1                                                                                 | 1.6   |    | 4.5   | 0.5   |    |
| Cycle Queue Clearance Time ( g c ), s           |                            |                 |               |                    |  | 0.2                                                                                | 5.5     |      | 0.3   | 19.0  | 0.7   | 0.6                                                                                 | 1.6   |    | 6.1   | 0.5   |    |
| Green Ratio ( g/C )                             |                            |                 |               |                    |  | 0.53                                                                               | 0.45    |      | 0.53  | 0.45  | 0.45  | 0.27                                                                                | 0.27  |    | 0.27  | 0.27  |    |
| Capacity ( c ), veh/h                           |                            |                 |               |                    |  | 381                                                                                | 825     |      | 645   | 828   | 692   | 455                                                                                 | 410   |    | 425   | 424   |    |
| Volume-to-Capacity Ratio ( X )                  |                            |                 |               |                    |  | 0.029                                                                              | 0.262   |      | 0.027 | 0.699 | 0.039 | 0.007                                                                               | 0.106 |    | 0.233 | 0.031 |    |
| Back of Queue ( Q ), ft/ln ( 95 th percentile)  |                            |                 |               |                    |  | 3.6                                                                                | 100.8   |      | 5.7   | 324.6 | 11.2  | 1.9                                                                                 | 26.2  |    | 64.9  | 7.7   |    |
| Back of Queue ( Q ), veh/ln ( 95 th percentile) |                            |                 |               |                    |  | 0.1                                                                                | 3.9     |      | 0.2   | 12.5  | 0.4   | 0.1                                                                                 | 1.0   |    | 2.5   | 0.3   |    |
| Queue Storage Ratio ( RQ ) ( 95 th percentile)  |                            |                 |               |                    |  | 0.00                                                                               | 0.00    |      | 0.00  | 0.00  | 0.00  | 0.00                                                                                | 0.00  |    | 0.00  | 0.00  |    |
| Uniform Delay ( d 1 ), s/veh                    |                            |                 |               |                    |  | 11.2                                                                               | 12.7    |      | 8.6   | 16.4  | 11.4  | 20.6                                                                                | 20.8  |    | 23.1  | 20.3  |    |
| Incremental Delay ( d 2 ), s/veh                |                            |                 |               |                    |  | 0.0                                                                                | 0.1     |      | 0.0   | 2.2   | 0.0   | 0.0                                                                                 | 0.0   |    | 0.1   | 0.0   |    |
| Initial Queue Delay ( d 3 ), s/veh              |                            |                 |               |                    |  | 0.0                                                                                | 0.0     |      | 0.0   | 0.0   | 0.0   | 0.0                                                                                 | 0.0   |    | 0.0   | 0.0   |    |
| Control Delay ( d ), s/veh                      |                            |                 |               |                    |  | 11.2                                                                               | 12.8    |      | 8.6   | 18.6  | 11.4  | 20.6                                                                                | 20.8  |    | 23.2  | 20.3  |    |
| Level of Service ( LOS )                        |                            |                 |               |                    |  | B                                                                                  | B       |      | A     | B     | B     | C                                                                                   | C     |    | C     | C     |    |
| Approach Delay, s/veh / LOS                     |                            |                 |               |                    |  | 12.7                                                                               |         | B    | 18.0  |       | B     | 20.8                                                                                |       | C  | 22.8  |       | C  |
| Intersection Delay, s/veh / LOS                 |                            |                 |               |                    |  | 17.5                                                                               |         |      |       |       |       | B                                                                                   |       |    |       |       |    |
| Multimodal Results                              |                            |                 |               |                    |  | EB                                                                                 |         |      | WB    |       |       | NB                                                                                  |       |    | SB    |       |    |
| Pedestrian LOS Score / LOS                      |                            |                 |               |                    |  | 1.89                                                                               |         | B    | 1.89  |       | B     | 2.11                                                                                |       | B  | 1.92  |       | B  |
| Bicycle LOS Score / LOS                         |                            |                 |               |                    |  | 0.86                                                                               |         | A    | 1.52  |       | B     | 0.56                                                                                |       | A  | 0.67  |       | A  |

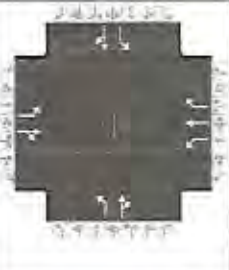


# HCS7 Signalized Intersection Results Summary

| General Information                             |  |                            |                 |               |     | Intersection Information |       |                 |       |         |       |       |       |     |       |       |    |     |  |      |  |
|-------------------------------------------------|--|----------------------------|-----------------|---------------|-----|--------------------------|-------|-----------------|-------|---------|-------|-------|-------|-----|-------|-------|----|-----|--|------|--|
| Agency                                          |  | Solaegui Engineers         |                 |               |     | Duration, h              |       | 0.250           |       |         |       |       |       |     |       |       |    |     |  |      |  |
| Analyst                                         |  | MSH                        |                 | Analysis Date |     | May 19, 2021             |       | Area Type       |       | Other   |       |       |       |     |       |       |    |     |  |      |  |
| Jurisdiction                                    |  | NDOT                       |                 | Time Period   |     | PM Peak Hour             |       | PHF             |       | 0.92    |       |       |       |     |       |       |    |     |  |      |  |
| Urban Street                                    |  |                            |                 | Analysis Year |     | Existing + Project       |       | Analysis Period |       | 1> 7:00 |       |       |       |     |       |       |    |     |  |      |  |
| Intersection                                    |  | Main & Truckee-East Dri... |                 |               |     | File Name                |       | MaTr21pw.xus    |       |         |       |       |       |     |       |       |    |     |  |      |  |
| Project Description                             |  |                            |                 |               |     |                          |       |                 |       |         |       |       |       |     |       |       |    |     |  |      |  |
| Demand Information                              |  |                            |                 |               |     | EB                       |       |                 | WB    |         |       | NB    |       |     | SB    |       |    |     |  |      |  |
| Approach Movement                               |  |                            |                 |               |     | L                        | T     | R               | L     | T       | R     | L     | T     | R   | L     | T     | R  |     |  |      |  |
| Demand ( v ), veh/h                             |  |                            |                 |               |     | 35                       | 530   | 9               | 31    | 482     | 51    | 4     | 5     | 25  | 155   | 2     | 27 |     |  |      |  |
| Signal Information                              |  |                            |                 |               |     |                          |       |                 |       |         |       |       |       |     |       |       |    |     |  |      |  |
| Cycle, s                                        |  | 75.0                       | Reference Phase |               | 2   |                          |       |                 |       |         |       |       |       |     |       |       |    |     |  |      |  |
| Offset, s                                       |  | 0                          | Reference Point |               | End |                          |       |                 |       |         |       |       |       |     |       |       |    |     |  |      |  |
| Uncoordinated                                   |  | Yes                        | Simult. Gap E/W |               | On  | Green                    | 6.0   | 34.0            | 20.0  | 0.0     | 0.0   | 0.0   |       |     |       |       |    |     |  |      |  |
|                                                 |  |                            |                 |               |     | Yellow                   | 4.0   | 4.0             | 4.0   | 0.0     | 0.0   | 0.0   |       |     |       |       |    |     |  |      |  |
| Force Mode                                      |  | Fixed                      | Simult. Gap N/S |               | On  | Red                      | 1.0   | 1.0             | 1.0   | 0.0     | 0.0   | 0.0   |       |     |       |       |    |     |  |      |  |
| Timer Results                                   |  |                            |                 |               |     | EBL                      |       | EBT             |       | WBL     |       | WBT   |       | NBL |       | NBT   |    | SBL |  | SBT  |  |
| Assigned Phase                                  |  |                            |                 |               |     | 5                        |       | 2               |       | 1       |       | 6     |       |     |       | 8     |    |     |  | 4    |  |
| Case Number                                     |  |                            |                 |               |     | 1.1                      |       | 4.0             |       | 1.1     |       | 3.0   |       |     |       | 6.0   |    |     |  | 6.0  |  |
| Phase Duration, s                               |  |                            |                 |               |     | 11.0                     |       | 39.0            |       | 11.0    |       | 39.0  |       |     |       | 25.0  |    |     |  | 25.0 |  |
| Change Period, ( Y+R c ), s                     |  |                            |                 |               |     | 5.0                      |       | 5.0             |       | 5.0     |       | 5.0   |       |     |       | 5.0   |    |     |  | 5.0  |  |
| Max Allow Headway ( MAH ), s                    |  |                            |                 |               |     | 3.3                      |       | 3.2             |       | 3.3     |       | 3.2   |       |     |       | 3.4   |    |     |  | 3.4  |  |
| Queue Clearance Time ( g s ), s                 |  |                            |                 |               |     | 2.8                      |       | 21.5            |       | 2.7     |       | 18.5  |       |     |       | 3.3   |    |     |  | 11.2 |  |
| Green Extension Time ( g e ), s                 |  |                            |                 |               |     | 0.0                      |       | 2.4             |       | 0.0     |       | 2.5   |       |     |       | 0.4   |    |     |  | 0.3  |  |
| Phase Call Probability                          |  |                            |                 |               |     | 1.00                     |       | 1.00            |       | 1.00    |       | 1.00  |       |     |       | 1.00  |    |     |  | 1.00 |  |
| Max Out Probability                             |  |                            |                 |               |     | 1.00                     |       | 0.08            |       | 0.88    |       | 0.04  |       |     |       | 0.00  |    |     |  | 0.01 |  |
| Movement Group Results                          |  |                            |                 |               |     | EB                       |       |                 | WB    |         |       | NB    |       |     | SB    |       |    |     |  |      |  |
| Approach Movement                               |  |                            |                 |               |     | L                        | T     | R               | L     | T       | R     | L     | T     | R   | L     | T     | R  |     |  |      |  |
| Assigned Movement                               |  |                            |                 |               |     | 5                        | 2     | 12              | 1     | 6       | 16    | 3     | 8     | 18  | 7     | 4     | 14 |     |  |      |  |
| Adjusted Flow Rate ( v ), veh/h                 |  |                            |                 |               |     | 38                       | 586   |                 | 34    | 524     | 55    | 4     | 33    |     | 168   | 32    |    |     |  |      |  |
| Adjusted Saturation Flow Rate ( s ), veh/h/ln   |  |                            |                 |               |     | 1767                     | 1819  |                 | 1767  | 1826    | 1526  | 1355  | 1563  |     | 1354  | 1535  |    |     |  |      |  |
| Queue Service Time ( g s ), s                   |  |                            |                 |               |     | 0.8                      | 19.5  |                 | 0.7   | 16.5    | 1.5   | 0.2   | 1.2   |     | 8.0   | 1.2   |    |     |  |      |  |
| Cycle Queue Clearance Time ( g c ), s           |  |                            |                 |               |     | 0.8                      | 19.5  |                 | 0.7   | 16.5    | 1.5   | 1.3   | 1.2   |     | 9.2   | 1.2   |    |     |  |      |  |
| Green Ratio ( g/C )                             |  |                            |                 |               |     | 0.53                     | 0.45  |                 | 0.53  | 0.45    | 0.45  | 0.27  | 0.27  |     | 0.27  | 0.27  |    |     |  |      |  |
| Capacity ( c ), veh/h                           |  |                            |                 |               |     | 418                      | 825   |                 | 375   | 828     | 692   | 436   | 417   |     | 436   | 409   |    |     |  |      |  |
| Volume-to-Capacity Ratio ( X )                  |  |                            |                 |               |     | 0.091                    | 0.710 |                 | 0.090 | 0.633   | 0.080 | 0.010 | 0.078 |     | 0.387 | 0.077 |    |     |  |      |  |
| Back of Queue ( Q ), ft/ln ( 95 th percentile)  |  |                            |                 |               |     | 12.7                     | 331.9 |                 | 11.2  | 283.9   | 23.2  | 2.6   | 19.5  |     | 115.9 | 18.8  |    |     |  |      |  |
| Back of Queue ( Q ), veh/ln ( 95 th percentile) |  |                            |                 |               |     | 0.5                      | 12.8  |                 | 0.4   | 10.9    | 0.9   | 0.1   | 0.8   |     | 4.5   | 0.7   |    |     |  |      |  |
| Queue Storage Ratio ( RQ ) ( 95 th percentile)  |  |                            |                 |               |     | 0.00                     | 0.00  |                 | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  |     | 0.00  | 0.00  |    |     |  |      |  |
| Uniform Delay ( d 1 ), s/veh                    |  |                            |                 |               |     | 10.7                     | 16.5  |                 | 11.5  | 15.7    | 11.6  | 21.1  | 20.6  |     | 24.0  | 20.6  |    |     |  |      |  |
| Incremental Delay ( d 2 ), s/veh                |  |                            |                 |               |     | 0.0                      | 2.5   |                 | 0.0   | 1.2     | 0.0   | 0.0   | 0.0   |     | 0.2   | 0.0   |    |     |  |      |  |
| Initial Queue Delay ( d 3 ), s/veh              |  |                            |                 |               |     | 0.0                      | 0.0   |                 | 0.0   | 0.0     | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   |    |     |  |      |  |
| Control Delay ( d ), s/veh                      |  |                            |                 |               |     | 10.8                     | 19.0  |                 | 11.6  | 16.9    | 11.6  | 21.1  | 20.6  |     | 24.2  | 20.6  |    |     |  |      |  |
| Level of Service (LOS)                          |  |                            |                 |               |     | B                        | B     |                 | B     | B       | B     | C     | C     |     | C     | C     |    |     |  |      |  |
| Approach Delay, s/veh / LOS                     |  |                            |                 |               |     | 18.5                     | B     |                 | 16.2  | B       |       | 20.7  | C     |     | 23.7  | C     |    |     |  |      |  |
| Intersection Delay, s/veh / LOS                 |  |                            |                 |               |     | 18.3                     |       |                 |       |         |       | B     |       |     |       |       |    |     |  |      |  |
| Multimodal Results                              |  |                            |                 |               |     | EB                       |       |                 | WB    |         |       | NB    |       |     | SB    |       |    |     |  |      |  |
| Pedestrian LOS Score / LOS                      |  |                            |                 |               |     | 1.89                     | B     |                 | 1.89  | B       |       | 2.11  | B     |     | 1.92  | B     |    |     |  |      |  |
| Bicycle LOS Score / LOS                         |  |                            |                 |               |     | 1.52                     | B     |                 | 1.50  | A       |       | 0.55  | A     |     | 0.82  | A     |    |     |  |      |  |

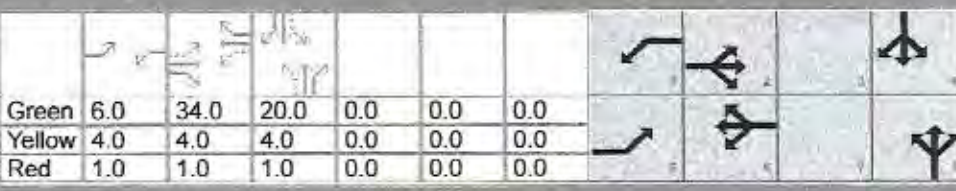


# HCS7 Signalized Intersection Results Summary

| General Information                              |  |                            |                 |               |     | Intersection Information |       |                 |       |         |       |  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |  |      |  |
|--------------------------------------------------|--|----------------------------|-----------------|---------------|-----|--------------------------|-------|-----------------|-------|---------|-------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----|--|------|--|
| Agency                                           |  | Solaegui Engineers         |                 |               |     | Duration, h              |       | 0.250           |       |         |       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |  |      |  |
| Analyst                                          |  | MSH                        |                 | Analysis Date |     | May 19, 2021             |       | Area Type       |       | Other   |       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |  |      |  |
| Jurisdiction                                     |  | NDOT                       |                 | Time Period   |     | AM Peak Hour             |       | PHF             |       | 0.92    |       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |  |      |  |
| Urban Street                                     |  |                            |                 | Analysis Year |     | 2041 Base + Project      |       | Analysis Period |       | 1> 7:00 |       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |  |      |  |
| Intersection                                     |  | Main & Truckee-East Dri... |                 | File Name     |     | MaTr41aw.xus             |       |                 |       |         |       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |  |      |  |
| Project Description                              |  |                            |                 |               |     |                          |       |                 |       |         |       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |  |      |  |
| Demand Information                               |  |                            |                 |               |     | EB                       |       |                 | WB    |         |       | NB                                                                                  |                                                                                     |                                                                                     | SB                                                                                  |                                                                                     |                                                                                     |     |  |      |  |
| Approach Movement                                |  |                            |                 |               |     | L                        | T     | R               | L     | T       | R     | L                                                                                   | T                                                                                   | R                                                                                   | L                                                                                   | T                                                                                   | R                                                                                   |     |  |      |  |
| Demand ( v ), veh/h                              |  |                            |                 |               |     | 10                       | 258   | 4               | 21    | 681     | 25    | 4                                                                                   | 3                                                                                   | 49                                                                                  | 91                                                                                  | 3                                                                                   | 9                                                                                   |     |  |      |  |
| Signal Information                               |  |                            |                 |               |     |                          |       |                 |       |         |       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |  |      |  |
| Cycle, s                                         |  | 75.0                       | Reference Phase |               | 2   |                          |       |                 |       |         |       |  |                                                                                     |  |                                                                                     |  |                                                                                     |     |  |      |  |
| Offset, s                                        |  | 0                          | Reference Point |               | End |                          |       |                 |       |         |       |  |                                                                                     |  |                                                                                     |  |                                                                                     |     |  |      |  |
| Uncoordinated                                    |  | Yes                        | Simult. Gap E/W |               | On  | Green                    | 6.0   | 34.0            | 20.0  | 0.0     | 0.0   | 0.0                                                                                 |  |                                                                                     |  |                                                                                     |  |     |  |      |  |
| Force Mode                                       |  | Fixed                      | Simult. Gap N/S |               | On  | Yellow                   | 4.0   | 4.0             | 4.0   | 0.0     | 0.0   | 0.0                                                                                 |  |                                                                                     |  |                                                                                     |  |     |  |      |  |
|                                                  |  |                            |                 |               |     | Red                      | 1.0   | 1.0             | 1.0   | 0.0     | 0.0   | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |  |      |  |
| Timer Results                                    |  |                            |                 |               |     | EBL                      |       | EBT             |       | WBL     |       | WBT                                                                                 |                                                                                     | NBL                                                                                 |                                                                                     | NBT                                                                                 |                                                                                     | SBL |  | SBT  |  |
| Assigned Phase                                   |  |                            |                 |               |     | 5                        |       | 2               |       | 1       |       | 6                                                                                   |                                                                                     |                                                                                     |                                                                                     | 8                                                                                   |                                                                                     |     |  | 4    |  |
| Case Number                                      |  |                            |                 |               |     | 1.1                      |       | 4.0             |       | 1.1     |       | 3.0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 6.0                                                                                 |                                                                                     |     |  | 6.0  |  |
| Phase Duration, s                                |  |                            |                 |               |     | 11.0                     |       | 39.0            |       | 11.0    |       | 39.0                                                                                |                                                                                     |                                                                                     |                                                                                     | 25.0                                                                                |                                                                                     |     |  | 25.0 |  |
| Change Period, ( Y+R <sub>c</sub> ), s           |  |                            |                 |               |     | 5.0                      |       | 5.0             |       | 5.0     |       | 5.0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 5.0                                                                                 |                                                                                     |     |  | 5.0  |  |
| Max Allow Headway ( MAH ), s                     |  |                            |                 |               |     | 3.3                      |       | 3.2             |       | 3.3     |       | 3.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 3.4                                                                                 |                                                                                     |     |  | 3.4  |  |
| Queue Clearance Time ( g <sub>s</sub> ), s       |  |                            |                 |               |     | 2.2                      |       | 9.6             |       | 2.5     |       | 30.0                                                                                |                                                                                     |                                                                                     |                                                                                     | 4.1                                                                                 |                                                                                     |     |  | 8.7  |  |
| Green Extension Time ( g <sub>e</sub> ), s       |  |                            |                 |               |     | 0.0                      |       | 2.4             |       | 0.0     |       | 1.2                                                                                 |                                                                                     |                                                                                     |                                                                                     | 0.3                                                                                 |                                                                                     |     |  | 0.3  |  |
| Phase Call Probability                           |  |                            |                 |               |     | 1.00                     |       | 1.00            |       | 1.00    |       | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     |     |  | 1.00 |  |
| Max Out Probability                              |  |                            |                 |               |     | 0.29                     |       | 0.00            |       | 0.56    |       | 0.77                                                                                |                                                                                     |                                                                                     |                                                                                     | 0.00                                                                                |                                                                                     |     |  | 0.00 |  |
| Movement Group Results                           |  |                            |                 |               |     | EB                       |       |                 | WB    |         |       | NB                                                                                  |                                                                                     |                                                                                     | SB                                                                                  |                                                                                     |                                                                                     |     |  |      |  |
| Approach Movement                                |  |                            |                 |               |     | L                        | T     | R               | L     | T       | R     | L                                                                                   | T                                                                                   | R                                                                                   | L                                                                                   | T                                                                                   | R                                                                                   |     |  |      |  |
| Assigned Movement                                |  |                            |                 |               |     | 5                        | 2     | 12              | 1     | 6       | 16    | 3                                                                                   | 8                                                                                   | 18                                                                                  | 7                                                                                   | 4                                                                                   | 14                                                                                  |     |  |      |  |
| Adjusted Flow Rate ( v ), veh/h                  |  |                            |                 |               |     | 11                       | 285   |                 | 23    | 740     | 27    | 4                                                                                   | 57                                                                                  |                                                                                     | 99                                                                                  | 13                                                                                  |                                                                                     |     |  |      |  |
| Adjusted Saturation Flow Rate ( s ), veh/h/ln    |  |                            |                 |               |     | 1767                     | 1820  |                 | 1767  | 1826    | 1526  | 1377                                                                                | 1532                                                                                |                                                                                     | 1325                                                                                | 1588                                                                                |                                                                                     |     |  |      |  |
| Queue Service Time ( g <sub>s</sub> ), s         |  |                            |                 |               |     | 0.2                      | 7.6   |                 | 0.5   | 28.0    | 0.7   | 0.2                                                                                 | 2.1                                                                                 |                                                                                     | 4.6                                                                                 | 0.5                                                                                 |                                                                                     |     |  |      |  |
| Cycle Queue Clearance Time ( g <sub>c</sub> ), s |  |                            |                 |               |     | 0.2                      | 7.6   |                 | 0.5   | 28.0    | 0.7   | 0.6                                                                                 | 2.1                                                                                 |                                                                                     | 6.7                                                                                 | 0.5                                                                                 |                                                                                     |     |  |      |  |
| Green Ratio ( g/C )                              |  |                            |                 |               |     | 0.53                     | 0.45  |                 | 0.53  | 0.45    | 0.45  | 0.27                                                                                | 0.27                                                                                |                                                                                     | 0.27                                                                                | 0.27                                                                                |                                                                                     |     |  |      |  |
| Capacity ( c ), veh/h                            |  |                            |                 |               |     | 276                      | 825   |                 | 591   | 828     | 692   | 455                                                                                 | 409                                                                                 |                                                                                     | 412                                                                                 | 424                                                                                 |                                                                                     |     |  |      |  |
| Volume-to-Capacity Ratio ( X )                   |  |                            |                 |               |     | 0.039                    | 0.345 |                 | 0.039 | 0.894   | 0.039 | 0.010                                                                               | 0.138                                                                               |                                                                                     | 0.240                                                                               | 0.031                                                                               |                                                                                     |     |  |      |  |
| Back of Queue ( Q ), ft/ln ( 95 th percentile)   |  |                            |                 |               |     | 3.6                      | 138.7 |                 | 7.5   | 510.3   | 11.2  | 2.6                                                                                 | 34.4                                                                                |                                                                                     | 65.7                                                                                | 7.7                                                                                 |                                                                                     |     |  |      |  |
| Back of Queue ( Q ), veh/ln ( 95 th percentile)  |  |                            |                 |               |     | 0.1                      | 5.3   |                 | 0.3   | 19.6    | 0.4   | 0.1                                                                                 | 1.3                                                                                 |                                                                                     | 2.6                                                                                 | 0.3                                                                                 |                                                                                     |     |  |      |  |
| Queue Storage Ratio ( RQ ) ( 95 th percentile)   |  |                            |                 |               |     | 0.00                     | 0.00  |                 | 0.00  | 0.00    | 0.00  | 0.00                                                                                | 0.00                                                                                |                                                                                     | 0.00                                                                                | 0.00                                                                                |                                                                                     |     |  |      |  |
| Uniform Delay ( d <sub>1</sub> ), s/veh          |  |                            |                 |               |     | 14.3                     | 13.3  |                 | 8.9   | 18.8    | 11.4  | 20.6                                                                                | 20.9                                                                                |                                                                                     | 23.5                                                                                | 20.3                                                                                |                                                                                     |     |  |      |  |
| Incremental Delay ( d <sub>2</sub> ), s/veh      |  |                            |                 |               |     | 0.0                      | 0.1   |                 | 0.0   | 11.9    | 0.0   | 0.0                                                                                 | 0.1                                                                                 |                                                                                     | 0.1                                                                                 | 0.0                                                                                 |                                                                                     |     |  |      |  |
| Initial Queue Delay ( d <sub>3</sub> ), s/veh    |  |                            |                 |               |     | 0.0                      | 0.0   |                 | 0.0   | 0.0     | 0.0   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |     |  |      |  |
| Control Delay ( d ), s/veh                       |  |                            |                 |               |     | 14.3                     | 13.4  |                 | 8.9   | 30.7    | 11.4  | 20.6                                                                                | 21.0                                                                                |                                                                                     | 23.6                                                                                | 20.3                                                                                |                                                                                     |     |  |      |  |
| Level of Service ( LOS )                         |  |                            |                 |               |     | B                        | B     |                 | A     | C       | B     | C                                                                                   | C                                                                                   |                                                                                     | C                                                                                   | C                                                                                   |                                                                                     |     |  |      |  |
| Approach Delay, s/veh / LOS                      |  |                            |                 |               |     | 13.4                     |       | B               | 29.4  |         | C     | 21.0                                                                                |                                                                                     | C                                                                                   | 23.2                                                                                |                                                                                     | C                                                                                   |     |  |      |  |
| Intersection Delay, s/veh / LOS                  |  |                            |                 |               |     | 24.7                     |       |                 |       |         |       | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |  |      |  |
| Multimodal Results                               |  |                            |                 |               |     | EB                       |       |                 | WB    |         |       | NB                                                                                  |                                                                                     |                                                                                     | SB                                                                                  |                                                                                     |                                                                                     |     |  |      |  |
| Pedestrian LOS Score / LOS                       |  |                            |                 |               |     | 1.89                     |       | B               | 1.89  |         | B     | 2.11                                                                                |                                                                                     | B                                                                                   | 1.92                                                                                |                                                                                     | B                                                                                   |     |  |      |  |
| Bicycle LOS Score / LOS                          |  |                            |                 |               |     | 0.98                     |       | A               | 1.79  |         | B     | 0.59                                                                                |                                                                                     | A                                                                                   | 0.67                                                                                |                                                                                     | A                                                                                   |     |  |      |  |



# HCS7 Signalized Intersection Results Summary

| General Information                             |                            |                 |               |                                                                                    | Intersection Information |                 |         |       |       |  |       |     |       |       |     |
|-------------------------------------------------|----------------------------|-----------------|---------------|------------------------------------------------------------------------------------|--------------------------|-----------------|---------|-------|-------|-------------------------------------------------------------------------------------|-------|-----|-------|-------|-----|
| Agency                                          | Solaegui Engineers         |                 |               |                                                                                    |                          | Duration, h     | 0.250   |       |       |                                                                                     |       |     |       |       |     |
| Analyst                                         | MSH                        |                 | Analysis Date | May 19, 2021                                                                       |                          | Area Type       | Other   |       |       |                                                                                     |       |     |       |       |     |
| Jurisdiction                                    | NDOT                       |                 | Time Period   | PM Peak Hour                                                                       |                          | PHF             | 0.92    |       |       |                                                                                     |       |     |       |       |     |
| Urban Street                                    |                            |                 | Analysis Year | 2041 Base + Project                                                                |                          | Analysis Period | 1> 7:00 |       |       |                                                                                     |       |     |       |       |     |
| Intersection                                    | Main & Truckee-East Dri... |                 | File Name     | MaTr41pw.xus                                                                       |                          |                 |         |       |       |                                                                                     |       |     |       |       |     |
| Project Description                             |                            |                 |               |                                                                                    |                          |                 |         |       |       |                                                                                     |       |     |       |       |     |
| Demand Information                              |                            |                 |               | EB                                                                                 |                          |                 | WB      |       |       | NB                                                                                  |       |     | SB    |       |     |
| Approach Movement                               |                            |                 |               | L                                                                                  | T                        | R               | L       | T     | R     | L                                                                                   | T     | R   | L     | T     | R   |
| Demand ( v ), veh/h                             |                            |                 |               | 35                                                                                 | 713                      | 12              | 41      | 610   | 51    | 5                                                                                   | 5     | 33  | 155   | 2     | 27  |
| Signal Information                              |                            |                 |               |  |                          |                 |         |       |       |                                                                                     |       |     |       |       |     |
| Cycle, s                                        | 75.0                       | Reference Phase | 2             |                                                                                    |                          |                 |         |       |       |                                                                                     |       |     |       |       |     |
| Offset, s                                       | 0                          | Reference Point | End           |                                                                                    |                          |                 |         |       |       |                                                                                     |       |     |       |       |     |
| Uncoordinated                                   | Yes                        | Simult. Gap E/W | On            |                                                                                    |                          |                 |         |       |       |                                                                                     |       |     |       |       |     |
| Force Mode                                      | Fixed                      | Simult. Gap N/S | On            |                                                                                    |                          |                 |         |       |       |                                                                                     |       |     |       |       |     |
| Green                                           | 6.0                        | 34.0            | 20.0          | 0.0                                                                                | 0.0                      | 0.0             | 0.0     | 0.0   | 0.0   | 0.0                                                                                 | 0.0   | 0.0 | 0.0   | 0.0   | 0.0 |
| Yellow                                          | 4.0                        | 4.0             | 4.0           | 0.0                                                                                | 0.0                      | 0.0             | 0.0     | 0.0   | 0.0   | 0.0                                                                                 | 0.0   | 0.0 | 0.0   | 0.0   | 0.0 |
| Red                                             | 1.0                        | 1.0             | 1.0           | 0.0                                                                                | 0.0                      | 0.0             | 0.0     | 0.0   | 0.0   | 0.0                                                                                 | 0.0   | 0.0 | 0.0   | 0.0   | 0.0 |
| Timer Results                                   |                            |                 |               | EBL                                                                                | EBT                      | WBL             | WBT     | NBL   | NBT   | SBL                                                                                 | SBT   |     |       |       |     |
| Assigned Phase                                  |                            |                 |               | 5                                                                                  | 2                        | 1               | 6       |       | 8     |                                                                                     | 4     |     |       |       |     |
| Case Number                                     |                            |                 |               | 1.1                                                                                | 4.0                      | 1.1             | 3.0     |       | 6.0   |                                                                                     | 6.0   |     |       |       |     |
| Phase Duration, s                               |                            |                 |               | 11.0                                                                               | 39.0                     | 11.0            | 39.0    |       | 25.0  |                                                                                     | 25.0  |     |       |       |     |
| Change Period, ( Y+R c ), s                     |                            |                 |               | 5.0                                                                                | 5.0                      | 5.0             | 5.0     |       | 5.0   |                                                                                     | 5.0   |     |       |       |     |
| Max Allow Headway ( MAH ), s                    |                            |                 |               | 3.3                                                                                | 3.2                      | 3.3             | 3.2     |       | 3.4   |                                                                                     | 3.4   |     |       |       |     |
| Queue Clearance Time ( g s ), s                 |                            |                 |               | 2.8                                                                                | 33.3                     | 2.9             | 25.4    |       | 3.5   |                                                                                     | 11.6  |     |       |       |     |
| Green Extension Time ( g e ), s                 |                            |                 |               | 0.0                                                                                | 0.4                      | 0.0             | 2.9     |       | 0.5   |                                                                                     | 0.3   |     |       |       |     |
| Phase Call Probability                          |                            |                 |               | 1.00                                                                               | 1.00                     | 1.00            | 1.00    |       | 1.00  |                                                                                     | 1.00  |     |       |       |     |
| Max Out Probability                             |                            |                 |               | 1.00                                                                               | 1.00                     | 1.00            | 0.36    |       | 0.00  |                                                                                     | 0.02  |     |       |       |     |
| Movement Group Results                          |                            |                 |               | EB                                                                                 |                          |                 | WB      |       |       | NB                                                                                  |       |     | SB    |       |     |
| Approach Movement                               |                            |                 |               | L                                                                                  | T                        | R               | L       | T     | R     | L                                                                                   | T     | R   | L     | T     | R   |
| Assigned Movement                               |                            |                 |               | 5                                                                                  | 2                        | 12              | 1       | 6     | 16    | 3                                                                                   | 8     | 18  | 7     | 4     | 14  |
| Adjusted Flow Rate ( v ), veh/h                 |                            |                 |               | 38                                                                                 | 788                      |                 | 45      | 663   | 55    | 5                                                                                   | 41    |     | 168   | 32    |     |
| Adjusted Saturation Flow Rate ( s ), veh/h/ln   |                            |                 |               | 1767                                                                               | 1819                     |                 | 1767    | 1826  | 1526  | 1355                                                                                | 1553  |     | 1343  | 1535  |     |
| Queue Service Time ( g s ), s                   |                            |                 |               | 0.8                                                                                | 31.3                     |                 | 0.9     | 23.4  | 1.5   | 0.2                                                                                 | 1.5   |     | 8.1   | 1.2   |     |
| Cycle Queue Clearance Time ( g c ), s           |                            |                 |               | 0.8                                                                                | 31.3                     |                 | 0.9     | 23.4  | 1.5   | 1.4                                                                                 | 1.5   |     | 9.6   | 1.2   |     |
| Green Ratio ( g/C )                             |                            |                 |               | 0.53                                                                               | 0.45                     |                 | 0.53    | 0.45  | 0.45  | 0.27                                                                                | 0.27  |     | 0.27  | 0.27  |     |
| Capacity ( c ), veh/h                           |                            |                 |               | 325                                                                                | 825                      |                 | 243     | 828   | 692   | 436                                                                                 | 414   |     | 427   | 409   |     |
| Volume-to-Capacity Ratio ( X )                  |                            |                 |               | 0.117                                                                              | 0.955                    |                 | 0.183   | 0.801 | 0.080 | 0.012                                                                               | 0.100 |     | 0.394 | 0.077 |     |
| Back of Queue ( Q ), ft/ln ( 95 th percentile)  |                            |                 |               | 12.8                                                                               | 615.1                    |                 | 15.1    | 404.2 | 23.2  | 3.3                                                                                 | 24.8  |     | 117   | 18.8  |     |
| Back of Queue ( Q ), veh/ln ( 95 th percentile) |                            |                 |               | 0.5                                                                                | 23.7                     |                 | 0.6     | 15.5  | 0.9   | 0.1                                                                                 | 1.0   |     | 4.6   | 0.7   |     |
| Queue Storage Ratio ( RQ ) ( 95 th percentile)  |                            |                 |               | 0.00                                                                               | 0.00                     |                 | 0.00    | 0.00  | 0.00  | 0.00                                                                                | 0.00  |     | 0.00  | 0.00  |     |
| Uniform Delay ( d 1 ), s/veh                    |                            |                 |               | 12.9                                                                               | 19.8                     |                 | 16.0    | 17.6  | 11.6  | 21.1                                                                                | 20.7  |     | 24.3  | 20.6  |     |
| Incremental Delay ( d 2 ), s/veh                |                            |                 |               | 0.1                                                                                | 21.0                     |                 | 0.1     | 5.2   | 0.0   | 0.0                                                                                 | 0.0   |     | 0.2   | 0.0   |     |
| Initial Queue Delay ( d 3 ), s/veh              |                            |                 |               | 0.0                                                                                | 0.0                      |                 | 0.0     | 0.0   | 0.0   | 0.0                                                                                 | 0.0   |     | 0.0   | 0.0   |     |
| Control Delay ( d ), s/veh                      |                            |                 |               | 12.9                                                                               | 40.8                     |                 | 16.2    | 22.8  | 11.6  | 21.1                                                                                | 20.8  |     | 24.6  | 20.6  |     |
| Level of Service ( LOS )                        |                            |                 |               | B                                                                                  | D                        |                 | B       | C     | B     | C                                                                                   | C     |     | C     | C     |     |
| Approach Delay, s/veh / LOS                     |                            |                 |               | 39.5                                                                               |                          | D               | 21.6    |       | C     | 20.8                                                                                |       | C   | 23.9  |       | C   |
| Intersection Delay, s/veh / LOS                 |                            |                 |               | 29.9                                                                               |                          |                 |         |       |       | C                                                                                   |       |     |       |       |     |
| Multimodal Results                              |                            |                 |               | EB                                                                                 |                          |                 | WB      |       |       | NB                                                                                  |       |     | SB    |       |     |
| Pedestrian LOS Score / LOS                      |                            |                 |               | 1.89                                                                               |                          | B               | 1.89    |       | B     | 2.11                                                                                |       | B   | 1.92  |       | B   |
| Bicycle LOS Score / LOS                         |                            |                 |               | 1.85                                                                               |                          | B               | 1.75    |       | B     | 0.56                                                                                |       | A   | 0.82  |       | A   |

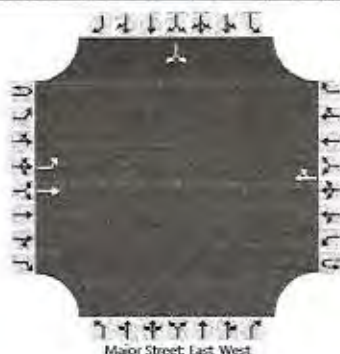


# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |                            |                  |
|--------------------------|-----------------------|----------------------------|------------------|
| Analyst                  | MSH                   | Intersection               | Main/West Access |
| Agency/Co.               | Solaegui Engineers    | Jurisdiction               | NDOT             |
| Date Performed           | 5/19/2021             | East/West Street           | Main Street      |
| Analysis Year            | 2021                  | North/South Street         | West Access      |
| Time Analyzed            | AM Existing + Project | Peak Hour Factor           | 0.92             |
| Intersection Orientation | East-West             | Analysis Time Period (hrs) | 0.25             |
| Project Description      |                       |                            |                  |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |     |   | Westbound |   |           |    | Northbound |   |   |   | Southbound |    |    |    |
|----------------------------|-----------|----|-----|---|-----------|---|-----------|----|------------|---|---|---|------------|----|----|----|
| Movement                   | U         | L  | T   | R | U         | L | T         | R  | U          | L | T | R | U          | L  | T  | R  |
| Priority                   | 1U        | 1  | 2   | 3 | 4U        | 4 | 5         | 6  |            | 7 | 8 | 9 |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 1  | 1   | 0 | 0         | 0 | 1         | 0  |            | 0 | 0 | 0 |            | 0  | 1  | 0  |
| Configuration              |           | L  | T   |   |           |   |           | TR |            |   |   |   |            |    | LR |    |
| Volume (veh/h)             |           | 50 | 212 |   |           |   | 494       | 59 |            |   |   |   |            | 63 |    | 62 |
| Percent Heavy Vehicles (%) |           | 3  |     |   |           |   |           |    |            |   |   |   |            | 3  |    | 3  |
| Proportion Time Blocked    |           |    |     |   |           |   |           |    |            |   |   |   |            |    |    |    |
| Percent Grade (%)          |           |    |     |   |           |   |           |    |            |   |   |   |            | 0  |    |    |
| Right Turn Channelized     |           |    |     |   |           |   |           |    |            |   |   |   |            |    |    |    |
| Median Type   Storage      |           |    |     |   |           |   | Undivided |    |            |   |   |   |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |      |  |      |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|------|
| Base Critical Headway (sec)  |  | 4.1  |  |  |  |  |  |  |  |  |  |  |  | 7.1  |  | 6.2  |
| Critical Headway (sec)       |  | 4.13 |  |  |  |  |  |  |  |  |  |  |  | 6.43 |  | 6.23 |
| Base Follow-Up Headway (sec) |  | 2.2  |  |  |  |  |  |  |  |  |  |  |  | 3.5  |  | 3.3  |
| Follow-Up Headway (sec)      |  | 2.23 |  |  |  |  |  |  |  |  |  |  |  | 3.53 |  | 3.33 |

## Delay, Queue Length, and Level of Service

|                                         |  |      |  |  |  |  |  |  |  |  |  |  |  |      |      |  |
|-----------------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|------|------|--|
| Flow Rate, v (veh/h)                    |  | 54   |  |  |  |  |  |  |  |  |  |  |  |      | 136  |  |
| Capacity, c (veh/h)                     |  | 971  |  |  |  |  |  |  |  |  |  |  |  |      | 369  |  |
| v/c Ratio                               |  | 0.06 |  |  |  |  |  |  |  |  |  |  |  |      | 0.37 |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  | 0.2  |  |  |  |  |  |  |  |  |  |  |  |      | 1.7  |  |
| Control Delay (s/veh)                   |  | 8.9  |  |  |  |  |  |  |  |  |  |  |  |      | 20.3 |  |
| Level of Service (LOS)                  |  | A    |  |  |  |  |  |  |  |  |  |  |  |      | C    |  |
| Approach Delay (s/veh)                  |  | 1.7  |  |  |  |  |  |  |  |  |  |  |  | 20.3 |      |  |
| Approach LOS                            |  |      |  |  |  |  |  |  |  |  |  |  |  |      | C    |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | PM Existing + Project |
| Intersection Orientation | East-West             |
| Project Description      |                       |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/West Access |
| Jurisdiction               | NDOT             |
| East/West Street           | Main Street      |
| North/South Street         | West Access      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |     |     |   | Westbound |   |           |     | Northbound |   |   |   | Southbound |    |    |    |
|----------------------------|-----------|-----|-----|---|-----------|---|-----------|-----|------------|---|---|---|------------|----|----|----|
| Movement                   | U         | L   | T   | R | U         | L | T         | R   | U          | L | T | R | U          | L  | T  | R  |
| Priority                   | 1U        | 1   | 2   | 3 | 4U        | 4 | 5         | 6   |            | 7 | 8 | 9 |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 1   | 1   | 0 | 0         | 0 | 1         | 0   |            | 0 | 0 | 0 |            | 0  | 1  | 0  |
| Configuration              |           | L   | T   |   |           |   |           | TR  |            |   |   |   |            |    | LR |    |
| Volume (veh/h)             |           | 107 | 560 |   |           |   | 407       | 108 |            |   |   |   |            | 97 |    | 82 |
| Percent Heavy Vehicles (%) |           | 3   |     |   |           |   |           |     |            |   |   |   |            | 3  |    | 3  |
| Proportion Time Blocked    |           |     |     |   |           |   |           |     |            |   |   |   |            |    |    |    |
| Percent Grade (%)          |           |     |     |   |           |   |           |     |            |   |   |   |            | 0  |    |    |
| Right Turn Channelized     |           |     |     |   |           |   |           |     |            |   |   |   |            |    |    |    |
| Median Type   Storage      |           |     |     |   |           |   | Undivided |     |            |   |   |   |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |      |  |      |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|------|
| Base Critical Headway (sec)  |  | 4.1  |  |  |  |  |  |  |  |  |  |  |  | 7.1  |  | 6.2  |
| Critical Headway (sec)       |  | 4.13 |  |  |  |  |  |  |  |  |  |  |  | 6.43 |  | 6.23 |
| Base Follow-Up Headway (sec) |  | 2.2  |  |  |  |  |  |  |  |  |  |  |  | 3.5  |  | 3.3  |
| Follow-Up Headway (sec)      |  | 2.23 |  |  |  |  |  |  |  |  |  |  |  | 3.53 |  | 3.33 |

## Delay, Queue Length, and Level of Service

|                                         |  |      |  |  |  |  |  |  |  |  |  |  |  |  |      |  |
|-----------------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|------|--|
| Flow Rate, v (veh/h)                    |  | 116  |  |  |  |  |  |  |  |  |  |  |  |  | 195  |  |
| Capacity, c (veh/h)                     |  | 1006 |  |  |  |  |  |  |  |  |  |  |  |  | 223  |  |
| v/c Ratio                               |  | 0.12 |  |  |  |  |  |  |  |  |  |  |  |  | 0.87 |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  | 0.4  |  |  |  |  |  |  |  |  |  |  |  |  | 6.9  |  |
| Control Delay (s/veh)                   |  | 9.0  |  |  |  |  |  |  |  |  |  |  |  |  | 76.8 |  |
| Level of Service (LOS)                  |  | A    |  |  |  |  |  |  |  |  |  |  |  |  | F    |  |
| Approach Delay (s/veh)                  |  | 1.5  |  |  |  |  |  |  |  |  |  |  |  |  | 76.8 |  |
| Approach LOS                            |  |      |  |  |  |  |  |  |  |  |  |  |  |  | F    |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | AM Base + Project  |
| Intersection Orientation | East-West          |
| Project Description      |                    |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/West Access |
| Jurisdiction               | NDOT             |
| East/West Street           | Main Street      |
| North/South Street         | West Access      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |     |   | Westbound |   |     |    | Northbound |   |   |   | Southbound |    |    |    |
|----------------------------|-----------|----|-----|---|-----------|---|-----|----|------------|---|---|---|------------|----|----|----|
| Movement                   | U         | L  | T   | R | U         | L | T   | R  | U          | L | T | R | U          | L  | T  | R  |
| Priority                   | 1U        | 1  | 2   | 3 | 4U        | 4 | 5   | 6  |            | 7 | 8 | 9 |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 1  | 1   | 0 | 0         | 0 | 1   | 0  |            | 0 | 0 | 0 |            | 0  | 1  | 0  |
| Configuration              |           | L  | T   |   |           |   |     | TR |            |   |   |   |            |    | LR |    |
| Volume (veh/h)             |           | 50 | 276 |   |           |   | 647 | 59 |            |   |   |   |            | 63 |    | 62 |
| Percent Heavy Vehicles (%) |           | 3  |     |   |           |   |     |    |            |   |   |   |            | 3  |    | 3  |
| Proportion Time Blocked    |           |    |     |   |           |   |     |    |            |   |   |   |            |    |    |    |
| Percent Grade (%)          |           |    |     |   |           |   |     |    |            |   |   |   |            | 0  |    |    |
| Right Turn Channelized     |           |    |     |   |           |   |     |    |            |   |   |   |            |    |    |    |
| Median Type   Storage      | Undivided |    |     |   |           |   |     |    |            |   |   |   |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |      |  |      |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|------|
| Base Critical Headway (sec)  |  | 4.1  |  |  |  |  |  |  |  |  |  |  |  | 7.1  |  | 6.2  |
| Critical Headway (sec)       |  | 4.13 |  |  |  |  |  |  |  |  |  |  |  | 6.43 |  | 6.23 |
| Base Follow-Up Headway (sec) |  | 2.2  |  |  |  |  |  |  |  |  |  |  |  | 3.5  |  | 3.3  |
| Follow-Up Headway (sec)      |  | 2.23 |  |  |  |  |  |  |  |  |  |  |  | 3.53 |  | 3.33 |

## Delay, Queue Length, and Level of Service

|                                         |     |      |  |  |  |  |  |  |  |  |  |  |      |  |      |  |
|-----------------------------------------|-----|------|--|--|--|--|--|--|--|--|--|--|------|--|------|--|
| Flow Rate, v (veh/h)                    |     | 54   |  |  |  |  |  |  |  |  |  |  |      |  | 136  |  |
| Capacity, c (veh/h)                     |     | 842  |  |  |  |  |  |  |  |  |  |  |      |  | 275  |  |
| v/c Ratio                               |     | 0.06 |  |  |  |  |  |  |  |  |  |  |      |  | 0.49 |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |     | 0.2  |  |  |  |  |  |  |  |  |  |  |      |  | 2.6  |  |
| Control Delay (s/veh)                   |     | 9.6  |  |  |  |  |  |  |  |  |  |  |      |  | 30.2 |  |
| Level of Service (LOS)                  |     | A    |  |  |  |  |  |  |  |  |  |  |      |  | D    |  |
| Approach Delay (s/veh)                  | 1.5 |      |  |  |  |  |  |  |  |  |  |  | 30.2 |  |      |  |
| Approach LOS                            |     |      |  |  |  |  |  |  |  |  |  |  | D    |  |      |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |                            |                  |
|--------------------------|--------------------|----------------------------|------------------|
| Analyst                  | MSH                | Intersection               | Main/West Access |
| Agency/Co.               | Solaegui Engineers | Jurisdiction               | NDOT             |
| Date Performed           | 5/19/2021          | East/West Street           | Main Street      |
| Analysis Year            | 2041               | North/South Street         | West Access      |
| Time Analyzed            | PM Base + Project  | Peak Hour Factor           | 0.92             |
| Intersection Orientation | East-West          | Analysis Time Period (hrs) | 0.25             |
| Project Description      |                    |                            |                  |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |     |     |   | Westbound |   |           |     | Northbound |   |   |   | Southbound |    |    |    |
|----------------------------|-----------|-----|-----|---|-----------|---|-----------|-----|------------|---|---|---|------------|----|----|----|
| Movement                   | U         | L   | T   | R | U         | L | T         | R   | U          | L | T | R | U          | L  | T  | R  |
| Priority                   | 1U        | 1   | 2   | 3 | 4U        | 4 | 5         | 6   |            | 7 | 8 | 9 |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 1   | 1   | 0 | 0         | 0 | 1         | 0   |            | 0 | 0 | 0 |            | 0  | 1  | 0  |
| Configuration              |           | L   | T   |   |           |   |           | TR  |            |   |   |   |            |    | LR |    |
| Volume (veh/h)             |           | 107 | 741 |   |           |   | 538       | 108 |            |   |   |   |            | 97 |    | 82 |
| Percent Heavy Vehicles (%) |           | 3   |     |   |           |   |           |     |            |   |   |   |            | 3  |    | 3  |
| Proportion Time Blocked    |           |     |     |   |           |   |           |     |            |   |   |   |            |    |    |    |
| Percent Grade (%)          |           |     |     |   |           |   |           |     |            |   |   |   |            | 0  |    |    |
| Right Turn Channelized     |           |     |     |   |           |   |           |     |            |   |   |   |            |    |    |    |
| Median Type   Storage      |           |     |     |   |           |   | Undivided |     |            |   |   |   |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |      |  |      |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|------|
| Base Critical Headway (sec)  |  | 4.1  |  |  |  |  |  |  |  |  |  |  |  | 7.1  |  | 6.2  |
| Critical Headway (sec)       |  | 4.13 |  |  |  |  |  |  |  |  |  |  |  | 6.43 |  | 6.23 |
| Base Follow-Up Headway (sec) |  | 2.2  |  |  |  |  |  |  |  |  |  |  |  | 3.5  |  | 3.3  |
| Follow-Up Headway (sec)      |  | 2.23 |  |  |  |  |  |  |  |  |  |  |  | 3.53 |  | 3.33 |

## Delay, Queue Length, and Level of Service

|                                         |  |      |  |  |  |  |  |  |  |  |  |  |  |       |       |  |
|-----------------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|-------|-------|--|
| Flow Rate, v (veh/h)                    |  | 116  |  |  |  |  |  |  |  |  |  |  |  |       | 195   |  |
| Capacity, c (veh/h)                     |  | 891  |  |  |  |  |  |  |  |  |  |  |  |       | 143   |  |
| v/c Ratio                               |  | 0.13 |  |  |  |  |  |  |  |  |  |  |  |       | 1.36  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  | 0.4  |  |  |  |  |  |  |  |  |  |  |  |       | 12.4  |  |
| Control Delay (s/veh)                   |  | 9.6  |  |  |  |  |  |  |  |  |  |  |  |       | 260.6 |  |
| Level of Service (LOS)                  |  | A    |  |  |  |  |  |  |  |  |  |  |  |       | F     |  |
| Approach Delay (s/veh)                  |  | 1.2  |  |  |  |  |  |  |  |  |  |  |  | 260.6 |       |  |
| Approach LOS                            |  |      |  |  |  |  |  |  |  |  |  |  |  |       | F     |  |



# HC57 Two-Way Stop-Control Report

## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | AM Existing + Project |
| Intersection Orientation | East-West             |
| Project Description      | No SBL                |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/West Access |
| Jurisdiction               | NDOT             |
| East/West Street           | Main Street      |
| North/South Street         | West Access      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |     |   | Westbound |   |           |    | Northbound |   |   |   | Southbound |    |    |    |
|----------------------------|-----------|----|-----|---|-----------|---|-----------|----|------------|---|---|---|------------|----|----|----|
| Movement                   | U         | L  | T   | R | U         | L | T         | R  | U          | L | T | R | U          | L  | T  | R  |
| Priority                   | 1U        | 1  | 2   | 3 | 4U        | 4 | 5         | 6  |            | 7 | 8 | 9 |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 1  | 1   | 0 | 0         | 0 | 1         | 0  |            | 0 | 0 | 0 |            | 0  | 0  | 1  |
| Configuration              |           | L  | T   |   |           |   |           | TR |            |   |   |   |            |    |    | R  |
| Volume (veh/h)             |           | 50 | 212 |   |           |   | 494       | 59 |            |   |   |   |            |    |    | 62 |
| Percent Heavy Vehicles (%) |           | 3  |     |   |           |   |           |    |            |   |   |   |            |    |    | 3  |
| Proportion Time Blocked    |           |    |     |   |           |   |           |    |            |   |   |   |            |    |    |    |
| Percent Grade (%)          |           |    |     |   |           |   |           |    |            |   |   |   |            | 0  |    |    |
| Right Turn Channelized     |           |    |     |   |           |   |           |    |            |   |   |   |            | No |    |    |
| Median Type   Storage      |           |    |     |   |           |   | Undivided |    |            |   |   |   |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| Base Critical Headway (sec)  |  | 4.1  |  |  |  |  |  |  |  |  |  |  |  |  |  | 6.2  |
| Critical Headway (sec)       |  | 4.13 |  |  |  |  |  |  |  |  |  |  |  |  |  | 6.23 |
| Base Follow-Up Headway (sec) |  | 2.2  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3.3  |
| Follow-Up Headway (sec)      |  | 2.23 |  |  |  |  |  |  |  |  |  |  |  |  |  | 3.33 |

## Delay, Queue Length, and Level of Service

|                                         |  |      |  |  |  |  |  |  |  |  |  |  |  |      |  |      |
|-----------------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|------|
| Flow Rate, v (veh/h)                    |  | 54   |  |  |  |  |  |  |  |  |  |  |  |      |  | 67   |
| Capacity, c (veh/h)                     |  | 971  |  |  |  |  |  |  |  |  |  |  |  |      |  | 520  |
| v/c Ratio                               |  | 0.06 |  |  |  |  |  |  |  |  |  |  |  |      |  | 0.13 |
| 95% Queue Length, Q <sub>95</sub> (veh) |  | 0.2  |  |  |  |  |  |  |  |  |  |  |  |      |  | 0.4  |
| Control Delay (s/veh)                   |  | 8.9  |  |  |  |  |  |  |  |  |  |  |  |      |  | 13.0 |
| Level of Service (LOS)                  |  | A    |  |  |  |  |  |  |  |  |  |  |  |      |  | B    |
| Approach Delay (s/veh)                  |  | 1.7  |  |  |  |  |  |  |  |  |  |  |  | 13.0 |  |      |
| Approach LOS                            |  |      |  |  |  |  |  |  |  |  |  |  |  | B    |  |      |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | PM Existing + Project |
| Intersection Orientation | East-West             |
| Project Description      | No SBL                |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/West Access |
| Jurisdiction               | NDOT             |
| East/West Street           | Main Street      |
| North/South Street         | West Access      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |     |     |   | Westbound |   |           |     | Northbound |   |   |   | Southbound |    |    |    |
|----------------------------|-----------|-----|-----|---|-----------|---|-----------|-----|------------|---|---|---|------------|----|----|----|
| Movement                   | U         | L   | T   | R | U         | L | T         | R   | U          | L | T | R | U          | L  | T  | R  |
| Priority                   | 1U        | 1   | 2   | 3 | 4U        | 4 | 5         | 6   |            | 7 | 8 | 9 |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 1   | 1   | 0 | 0         | 0 | 1         | 0   |            | 0 | 0 | 0 |            | 0  | 0  | 1  |
| Configuration              |           | L   | T   |   |           |   |           | TR  |            |   |   |   |            |    |    | R  |
| Volume (veh/h)             |           | 107 | 560 |   |           |   | 407       | 108 |            |   |   |   |            |    |    | 82 |
| Percent Heavy Vehicles (%) |           | 3   |     |   |           |   |           |     |            |   |   |   |            |    |    | 3  |
| Proportion Time Blocked    |           |     |     |   |           |   |           |     |            |   |   |   |            |    |    |    |
| Percent Grade (%)          |           |     |     |   |           |   |           |     |            |   |   |   |            |    | 0  |    |
| Right Turn Channelized     |           |     |     |   |           |   |           |     |            |   |   |   |            |    | No |    |
| Median Type   Storage      |           |     |     |   |           |   | Undivided |     |            |   |   |   |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| Base Critical Headway (sec)  |  | 4.1  |  |  |  |  |  |  |  |  |  |  |  |  |  | 6.2  |
| Critical Headway (sec)       |  | 4.13 |  |  |  |  |  |  |  |  |  |  |  |  |  | 6.23 |
| Base Follow-Up Headway (sec) |  | 2.2  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3.3  |
| Follow-Up Headway (sec)      |  | 2.23 |  |  |  |  |  |  |  |  |  |  |  |  |  | 3.33 |

## Delay, Queue Length, and Level of Service

|                                         |  |      |     |  |  |  |  |  |  |  |  |  |  |  |      |      |
|-----------------------------------------|--|------|-----|--|--|--|--|--|--|--|--|--|--|--|------|------|
| Flow Rate, v (veh/h)                    |  | 116  |     |  |  |  |  |  |  |  |  |  |  |  |      | 89   |
| Capacity, c (veh/h)                     |  | 1006 |     |  |  |  |  |  |  |  |  |  |  |  |      | 568  |
| v/c Ratio                               |  | 0.12 |     |  |  |  |  |  |  |  |  |  |  |  |      | 0.16 |
| 95% Queue Length, Q <sub>95</sub> (veh) |  | 0.4  |     |  |  |  |  |  |  |  |  |  |  |  |      | 0.6  |
| Control Delay (s/veh)                   |  | 9.0  |     |  |  |  |  |  |  |  |  |  |  |  |      | 12.5 |
| Level of Service (LOS)                  |  | A    |     |  |  |  |  |  |  |  |  |  |  |  |      | B    |
| Approach Delay (s/veh)                  |  |      | 1.5 |  |  |  |  |  |  |  |  |  |  |  | 12.5 |      |
| Approach LOS                            |  |      |     |  |  |  |  |  |  |  |  |  |  |  |      | B    |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |                            |                  |
|--------------------------|--------------------|----------------------------|------------------|
| Analyst                  | MSH                | Intersection               | Main/West Access |
| Agency/Co.               | Solaegui Engineers | Jurisdiction               | NDOT             |
| Date Performed           | 5/19/2021          | East/West Street           | Main Street      |
| Analysis Year            | 2041               | North/South Street         | West Access      |
| Time Analyzed            | AM Base + Project  | Peak Hour Factor           | 0.92             |
| Intersection Orientation | East-West          | Analysis Time Period (hrs) | 0.25             |
| Project Description      | No SBL             |                            |                  |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |     |   | Westbound |   |           |    | Northbound |   |   |   | Southbound |    |    |    |
|----------------------------|-----------|----|-----|---|-----------|---|-----------|----|------------|---|---|---|------------|----|----|----|
| Movement                   | U         | L  | T   | R | U         | L | T         | R  | U          | L | T | R | U          | L  | T  | R  |
| Priority                   | 1U        | 1  | 2   | 3 | 4U        | 4 | 5         | 6  |            | 7 | 8 | 9 |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 1  | 1   | 0 | 0         | 0 | 1         | 0  |            | 0 | 0 | 0 |            | 0  | 0  | 1  |
| Configuration              |           | L  | T   |   |           |   |           | TR |            |   |   |   |            |    |    | R  |
| Volume (veh/h)             |           | 50 | 276 |   |           |   | 647       | 59 |            |   |   |   |            |    |    | 62 |
| Percent Heavy Vehicles (%) |           | 3  |     |   |           |   |           |    |            |   |   |   |            |    |    | 3  |
| Proportion Time Blocked    |           |    |     |   |           |   |           |    |            |   |   |   |            |    |    |    |
| Percent Grade (%)          |           |    |     |   |           |   |           |    |            |   |   |   |            |    | 0  |    |
| Right Turn Channelized     |           |    |     |   |           |   |           |    |            |   |   |   |            |    | No |    |
| Median Type   Storage      |           |    |     |   |           |   | Undivided |    |            |   |   |   |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| Base Critical Headway (sec)  |  | 4.1  |  |  |  |  |  |  |  |  |  |  |  |  |  | 6.2  |
| Critical Headway (sec)       |  | 4.13 |  |  |  |  |  |  |  |  |  |  |  |  |  | 6.23 |
| Base Follow-Up Headway (sec) |  | 2.2  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3.3  |
| Follow-Up Headway (sec)      |  | 2.23 |  |  |  |  |  |  |  |  |  |  |  |  |  | 3.33 |

## Delay, Queue Length, and Level of Service

|                                         |  |      |     |  |  |  |  |  |  |  |  |  |  |  |      |      |
|-----------------------------------------|--|------|-----|--|--|--|--|--|--|--|--|--|--|--|------|------|
| Flow Rate, v (veh/h)                    |  | 54   |     |  |  |  |  |  |  |  |  |  |  |  |      | 67   |
| Capacity, c (veh/h)                     |  | 842  |     |  |  |  |  |  |  |  |  |  |  |  |      | 418  |
| v/c Ratio                               |  | 0.06 |     |  |  |  |  |  |  |  |  |  |  |  |      | 0.16 |
| 95% Queue Length, Q <sub>95</sub> (veh) |  | 0.2  |     |  |  |  |  |  |  |  |  |  |  |  |      | 0.6  |
| Control Delay (s/veh)                   |  | 9.6  |     |  |  |  |  |  |  |  |  |  |  |  |      | 15.3 |
| Level of Service (LOS)                  |  | A    |     |  |  |  |  |  |  |  |  |  |  |  |      | C    |
| Approach Delay (s/veh)                  |  |      | 1.5 |  |  |  |  |  |  |  |  |  |  |  | 15.3 |      |
| Approach LOS                            |  |      |     |  |  |  |  |  |  |  |  |  |  |  |      | C    |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base + Project  |
| Intersection Orientation | East-West          |
| Project Description      | No SBL             |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/West Access |
| Jurisdiction               | NDOT             |
| East/West Street           | Main Street      |
| North/South Street         | West Access      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |     |     |   | Westbound |   |           |     | Northbound |   |   |   | Southbound |    |    |    |
|----------------------------|-----------|-----|-----|---|-----------|---|-----------|-----|------------|---|---|---|------------|----|----|----|
| Movement                   | U         | L   | T   | R | U         | L | T         | R   | U          | L | T | R | U          | L  | T  | R  |
| Priority                   | 1U        | 1   | 2   | 3 | 4U        | 4 | 5         | 6   |            | 7 | 8 | 9 |            | 10 | 11 | 12 |
| Number of Lanes            | 0         | 1   | 1   | 0 | 0         | 0 | 1         | 0   |            | 0 | 0 | 0 |            | 0  | 0  | 1  |
| Configuration              |           | L   | T   |   |           |   |           | TR  |            |   |   |   |            |    |    | R  |
| Volume (veh/h)             |           | 107 | 741 |   |           |   | 538       | 108 |            |   |   |   |            |    |    | 82 |
| Percent Heavy Vehicles (%) |           | 3   |     |   |           |   |           |     |            |   |   |   |            |    |    | 3  |
| Proportion Time Blocked    |           |     |     |   |           |   |           |     |            |   |   |   |            |    |    |    |
| Percent Grade (%)          |           |     |     |   |           |   |           |     |            |   |   |   |            | 0  |    |    |
| Right Turn Channelized     |           |     |     |   |           |   |           |     |            |   |   |   |            | No |    |    |
| Median Type   Storage      |           |     |     |   |           |   | Undivided |     |            |   |   |   |            |    |    |    |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |      |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| Base Critical Headway (sec)  |  | 4.1  |  |  |  |  |  |  |  |  |  |  |  |  |  | 6.2  |
| Critical Headway (sec)       |  | 4.13 |  |  |  |  |  |  |  |  |  |  |  |  |  | 6.23 |
| Base Follow-Up Headway (sec) |  | 2.2  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3.3  |
| Follow-Up Headway (sec)      |  | 2.23 |  |  |  |  |  |  |  |  |  |  |  |  |  | 3.33 |

## Delay, Queue Length, and Level of Service

|                                  |  |      |  |  |  |  |  |  |  |  |  |  |  |      |  |      |
|----------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|------|
| Flow Rate, v (veh/h)             |  | 116  |  |  |  |  |  |  |  |  |  |  |  |      |  | 89   |
| Capacity, c (veh/h)              |  | 891  |  |  |  |  |  |  |  |  |  |  |  |      |  | 471  |
| v/c Ratio                        |  | 0.13 |  |  |  |  |  |  |  |  |  |  |  |      |  | 0.19 |
| 95% Queue Length, $Q_{95}$ (veh) |  | 0.4  |  |  |  |  |  |  |  |  |  |  |  |      |  | 0.7  |
| Control Delay (s/veh)            |  | 9.6  |  |  |  |  |  |  |  |  |  |  |  |      |  | 14.4 |
| Level of Service (LOS)           |  | A    |  |  |  |  |  |  |  |  |  |  |  |      |  | B    |
| Approach Delay (s/veh)           |  | 1.2  |  |  |  |  |  |  |  |  |  |  |  | 14.4 |  |      |
| Approach LOS                     |  |      |  |  |  |  |  |  |  |  |  |  |  | B    |  |      |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2021               |
| Time Analyzed            | AM Existing        |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |             |
|----------------------------|-------------|
| Intersection               | Main/Mesa   |
| Jurisdiction               | NDOT        |
| East/West Street           | Mesa Drive  |
| North/South Street         | Main Street |
| Peak Hour Factor           | 0.92        |
| Analysis Time Period (hrs) | 0.25        |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |    |     |   | Southbound |   |     |    |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|----|-----|---|------------|---|-----|----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L  | T   | R | U          | L | T   | R  |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 1U         | 1  | 2   | 3 | 4U         | 4 | 5   | 6  |
| Number of Lanes            |           | 1  | 0  | 1  |           | 0 | 0 | 0 | 0          | 1  | 1   | 0 | 0          | 0 | 1   | 1  |
| Configuration              |           | L  |    | R  |           |   |   |   |            | L  | T   |   |            |   | T   | R  |
| Volume (veh/h)             |           | 16 |    | 32 |           |   |   |   |            | 13 | 472 |   |            |   | 170 | 10 |
| Percent Heavy Vehicles (%) |           | 3  |    | 3  |           |   |   |   |            | 3  |     |   |            |   |     |    |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Percent Grade (%)          | 0         |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Right Turn Channelized     | No        |    |    |    |           |   |   |   |            |    |     |   | No         |   |     |    |
| Median Type   Storage      | Undivided |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |

## Critical and Follow-up Headways

|                              |  |      |  |      |  |  |  |  |  |      |  |  |  |  |  |  |
|------------------------------|--|------|--|------|--|--|--|--|--|------|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  | 6.2  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.43 |  | 6.23 |  |  |  |  |  | 4.13 |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  | 3.3  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.53 |  | 3.33 |  |  |  |  |  | 2.23 |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |      |      |  |      |  |  |  |  |     |      |  |  |  |  |  |  |
|-----------------------------------------|------|------|--|------|--|--|--|--|-----|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |      | 17   |  | 35   |  |  |  |  |     | 14   |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |      | 386  |  | 855  |  |  |  |  |     | 1371 |  |  |  |  |  |  |
| v/c Ratio                               |      | 0.05 |  | 0.04 |  |  |  |  |     | 0.01 |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |      | 0.1  |  | 0.1  |  |  |  |  |     | 0.0  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |      | 14.8 |  | 9.4  |  |  |  |  |     | 7.7  |  |  |  |  |  |  |
| Level of Service (LOS)                  |      | B    |  | A    |  |  |  |  |     | A    |  |  |  |  |  |  |
| Approach Delay (s/veh)                  | 11.2 |      |  |      |  |  |  |  | 0.2 |      |  |  |  |  |  |  |
| Approach LOS                            | B    |      |  |      |  |  |  |  |     |      |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |                            |             |
|--------------------------|--------------------|----------------------------|-------------|
| Analyst                  | MSH                | Intersection               | Main/Mesa   |
| Agency/Co.               | Solaegui Engineers | Jurisdiction               | NDOT        |
| Date Performed           | 5/19/2021          | East/West Street           | Mesa Drive  |
| Analysis Year            | 2021               | North/South Street         | Main Street |
| Time Analyzed            | PM Existing        | Peak Hour Factor           | 0.92        |
| Intersection Orientation | North-South        | Analysis Time Period (hrs) | 0.25        |
| Project Description      |                    |                            |             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |    |     |   | Southbound |   |     |    |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|----|-----|---|------------|---|-----|----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L  | T   | R | U          | L | T   | R  |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 1U         | 1  | 2   | 3 | 4U         | 4 | 5   | 6  |
| Number of Lanes            |           | 1  | 0  | 1  |           | 0 | 0 | 0 | 0          | 1  | 1   | 0 | 0          | 0 | 1   | 1  |
| Configuration              |           | L  |    | R  |           |   |   |   |            | L  | T   |   |            |   | T   | R  |
| Volume (veh/h)             |           | 5  |    | 18 |           |   |   |   |            | 18 | 396 |   |            |   | 558 | 28 |
| Percent Heavy Vehicles (%) |           | 3  |    | 3  |           |   |   |   |            | 3  |     |   |            |   |     |    |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Percent Grade (%)          | 0         |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Right Turn Channelized     | No        |    |    |    |           |   |   |   |            |    |     |   | No         |   |     |    |
| Median Type   Storage      | Undivided |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |

## Critical and Follow-up Headways

|                              |  |      |  |      |  |  |  |  |  |      |  |  |  |  |  |  |
|------------------------------|--|------|--|------|--|--|--|--|--|------|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  | 6.2  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.43 |  | 6.23 |  |  |  |  |  | 4.13 |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  | 3.3  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.53 |  | 3.33 |  |  |  |  |  | 2.23 |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |      |      |  |      |  |  |  |  |     |      |  |  |  |  |  |  |
|-----------------------------------------|------|------|--|------|--|--|--|--|-----|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |      | 5    |  | 20   |  |  |  |  |     | 20   |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |      | 237  |  | 495  |  |  |  |  |     | 942  |  |  |  |  |  |  |
| v/c Ratio                               |      | 0.02 |  | 0.04 |  |  |  |  |     | 0.02 |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |      | 0.1  |  | 0.1  |  |  |  |  |     | 0.1  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |      | 20.6 |  | 12.6 |  |  |  |  |     | 8.9  |  |  |  |  |  |  |
| Level of Service (LOS)                  |      | C    |  | B    |  |  |  |  |     | A    |  |  |  |  |  |  |
| Approach Delay (s/veh)                  | 14.3 |      |  |      |  |  |  |  | 0.4 |      |  |  |  |  |  |  |
| Approach LOS                            | B    |      |  |      |  |  |  |  |     |      |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

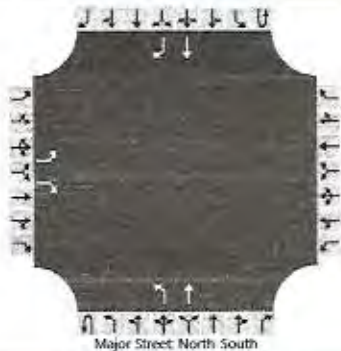
## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | AM Existing + Project |
| Intersection Orientation | North-South           |
| Project Description      |                       |

## Site Information

|                            |             |
|----------------------------|-------------|
| Intersection               | Main/Mesa   |
| Jurisdiction               | NDOT        |
| East/West Street           | Mesa Drive  |
| North/South Street         | Main Street |
| Peak Hour Factor           | 0.92        |
| Analysis Time Period (hrs) | 0.25        |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |    |     |   | Southbound |   |     |    |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|----|-----|---|------------|---|-----|----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L  | T   | R | U          | L | T   | R  |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1  | 2   | 3 | 4          | 5 | 6   |    |
| Number of Lanes            |           | 1  | 0  | 1  |           | 0 | 0 | 0 | 0          | 1  | 1   | 0 | 0          | 0 | 1   | 1  |
| Configuration              |           | L  |    | R  |           |   |   |   |            | L  | T   |   |            |   | T   | R  |
| Volume (veh/h)             |           | 16 |    | 34 |           |   |   |   |            | 15 | 541 |   |            |   | 228 | 10 |
| Percent Heavy Vehicles (%) |           | 3  |    | 3  |           |   |   |   |            | 3  |     |   |            |   |     |    |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Percent Grade (%)          | 0         |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Right Turn Channelized     | No        |    |    |    |           |   |   |   |            |    |     |   | No         |   |     |    |
| Median Type   Storage      | Undivided |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |

## Critical and Follow-up Headways

|                              |  |      |  |      |  |  |  |  |  |      |  |  |  |  |  |  |
|------------------------------|--|------|--|------|--|--|--|--|--|------|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  | 6.2  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.43 |  | 6.23 |  |  |  |  |  | 4.13 |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  | 3.3  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.53 |  | 3.33 |  |  |  |  |  | 2.23 |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |      |  |      |  |  |  |  |  |      |  |  |  |  |  |  |
|-----------------------------------------|--|------|--|------|--|--|--|--|--|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  | 17   |  | 37   |  |  |  |  |  | 16   |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  | 317  |  | 788  |  |  |  |  |  | 1300 |  |  |  |  |  |  |
| v/c Ratio                               |  | 0.05 |  | 0.05 |  |  |  |  |  | 0.01 |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  | 0.2  |  | 0.1  |  |  |  |  |  | 0.0  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  | 17.0 |  | 9.8  |  |  |  |  |  | 7.8  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  | C    |  | A    |  |  |  |  |  | A    |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  | 12.1 |  |      |  |  |  |  |  | 0.2  |  |  |  |  |  |  |
| Approach LOS                            |  | B    |  |      |  |  |  |  |  |      |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                      |
|--------------------------|----------------------|
| Analyst                  | MSH                  |
| Agency/Co.               | Solaegui Engineers   |
| Date Performed           | 5/19/2021            |
| Analysis Year            | 2021                 |
| Time Analyzed            | PM Existing+ Project |
| Intersection Orientation | North-South          |
| Project Description      |                      |

## Site Information

|                            |             |
|----------------------------|-------------|
| Intersection               | Main/Mesa   |
| Jurisdiction               | NDOT        |
| East/West Street           | Mesa Drive  |
| North/South Street         | Main Street |
| Peak Hour Factor           | 0.92        |
| Analysis Time Period (hrs) | 0.25        |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |    |     |   | Southbound |   |     |    |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|----|-----|---|------------|---|-----|----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L  | T   | R | U          | L | T   | R  |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1  | 2   | 3 | 40         | 4 | 5   | 6  |
| Number of Lanes            |           | 1  | 0  | 1  |           | 0 | 0 | 0 | 0          | 1  | 1   | 0 | 0          | 0 | 1   | 1  |
| Configuration              |           | L  |    | R  |           |   |   |   |            | L  | T   |   |            |   | T   | R  |
| Volume (veh/h)             |           | 5  |    | 20 |           |   |   |   |            | 22 | 467 |   |            |   | 647 | 28 |
| Percent Heavy Vehicles (%) |           | 3  |    | 3  |           |   |   |   |            | 3  |     |   |            |   |     |    |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Percent Grade (%)          | 0         |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Right Turn Channelized     | No        |    |    |    |           |   |   |   |            |    |     |   | No         |   |     |    |
| Median Type   Storage      | Undivided |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |

## Critical and Follow-up Headways

|                              |  |      |  |      |  |  |  |  |  |      |  |  |  |  |  |  |  |
|------------------------------|--|------|--|------|--|--|--|--|--|------|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  | 6.2  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.43 |  | 6.23 |  |  |  |  |  | 4.13 |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  | 3.3  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.53 |  | 3.33 |  |  |  |  |  | 2.23 |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                  |  |      |  |      |  |  |  |  |  |      |  |  |  |  |  |  |  |
|----------------------------------|--|------|--|------|--|--|--|--|--|------|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)             |  | 5    |  | 22   |  |  |  |  |  | 24   |  |  |  |  |  |  |  |
| Capacity, c (veh/h)              |  | 182  |  | 436  |  |  |  |  |  | 867  |  |  |  |  |  |  |  |
| v/c Ratio                        |  | 0.03 |  | 0.05 |  |  |  |  |  | 0.03 |  |  |  |  |  |  |  |
| 95% Queue Length, $Q_{95}$ (veh) |  | 0.1  |  | 0.2  |  |  |  |  |  | 0.1  |  |  |  |  |  |  |  |
| Control Delay (s/veh)            |  | 25.3 |  | 13.7 |  |  |  |  |  | 9.3  |  |  |  |  |  |  |  |
| Level of Service (LOS)           |  | D    |  | B    |  |  |  |  |  | A    |  |  |  |  |  |  |  |
| Approach Delay (s/veh)           |  | 16.0 |  |      |  |  |  |  |  | 0.4  |  |  |  |  |  |  |  |
| Approach LOS                     |  | C    |  |      |  |  |  |  |  |      |  |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | AM Base            |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |             |
|----------------------------|-------------|
| Intersection               | Main/Mesa   |
| Jurisdiction               | NDOT        |
| East/West Street           | Mesa Drive  |
| North/South Street         | Main Street |
| Peak Hour Factor           | 0.92        |
| Analysis Time Period (hrs) | 0.25        |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |    |     |   | Southbound |   |     |    |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|----|-----|---|------------|---|-----|----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L  | T   | R | U          | L | T   | R  |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1  | 2   | 3 | 4          | 5 | 6   |    |
| Number of Lanes            |           | 1  | 0  | 1  |           | 0 | 0 | 0 | 0          | 1  | 1   | 0 | 0          | 0 | 1   | 1  |
| Configuration              |           | L  |    | R  |           |   |   |   |            | L  | T   |   |            |   | T   | R  |
| Volume (veh/h)             |           | 21 |    | 42 |           |   |   |   |            | 17 | 621 |   |            |   | 224 | 13 |
| Percent Heavy Vehicles (%) |           | 3  |    | 3  |           |   |   |   |            | 3  |     |   |            |   |     |    |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Percent Grade (%)          | 0         |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Right Turn Channelized     | No        |    |    |    |           |   |   |   |            |    |     |   | No         |   |     |    |
| Median Type   Storage      | Undivided |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |

## Critical and Follow-up Headways

|                              |  |      |  |      |  |  |  |  |  |      |  |  |  |  |  |  |
|------------------------------|--|------|--|------|--|--|--|--|--|------|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  | 6.2  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.43 |  | 6.23 |  |  |  |  |  | 4.13 |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  | 3.3  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.53 |  | 3.33 |  |  |  |  |  | 2.23 |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |      |  |      |  |  |  |  |  |      |  |  |  |  |  |  |
|-----------------------------------------|--|------|--|------|--|--|--|--|--|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  | 23   |  | 46   |  |  |  |  |  | 18   |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  | 281  |  | 793  |  |  |  |  |  | 1301 |  |  |  |  |  |  |
| v/c Ratio                               |  | 0.08 |  | 0.06 |  |  |  |  |  | 0.01 |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  | 0.3  |  | 0.2  |  |  |  |  |  | 0.0  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  | 18.9 |  | 9.8  |  |  |  |  |  | 7.8  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  | C    |  | A    |  |  |  |  |  | A    |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  | 12.9 |  |      |  |  |  |  |  | 0.2  |  |  |  |  |  |  |
| Approach LOS                            |  | B    |  |      |  |  |  |  |  |      |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base            |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |             |
|----------------------------|-------------|
| Intersection               | Main/Mesa   |
| Jurisdiction               | NDOT        |
| East/West Street           | Mesa Drive  |
| North/South Street         | Main Street |
| Peak Hour Factor           | 0.92        |
| Analysis Time Period (hrs) | 0.25        |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |    |     |   | Southbound |   |     |    |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|----|-----|---|------------|---|-----|----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L  | T   | R | U          | L | T   | R  |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1  | 2   | 3 | 4          | 4 | 5   | 6  |
| Number of Lanes            |           | 1  | 0  | 1  |           | 0 | 0 | 0 | 0          | 1  | 1   | 0 | 0          | 0 | 1   | 1  |
| Configuration              |           | L  |    | R  |           |   |   |   |            | L  | T   |   |            |   | T   | R  |
| Volume (veh/h)             |           | 7  |    | 24 |           |   |   |   |            | 24 | 521 |   |            |   | 733 | 37 |
| Percent Heavy Vehicles (%) |           | 3  |    | 3  |           |   |   |   |            | 3  |     |   |            |   |     |    |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Percent Grade (%)          | 0         |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Right Turn Channelized     | No        |    |    |    |           |   |   |   |            |    |     |   | No         |   |     |    |
| Median Type   Storage      | Undivided |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |

## Critical and Follow-up Headways

|                              |  |      |  |      |  |  |  |  |  |      |  |  |  |  |  |  |
|------------------------------|--|------|--|------|--|--|--|--|--|------|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  | 6.2  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.43 |  | 6.23 |  |  |  |  |  | 4.13 |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  | 3.3  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.53 |  | 3.33 |  |  |  |  |  | 2.23 |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |      |      |  |      |  |  |  |  |     |      |  |  |  |  |  |  |
|-----------------------------------------|------|------|--|------|--|--|--|--|-----|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |      | 8    |  | 26   |  |  |  |  |     | 26   |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |      | 146  |  | 385  |  |  |  |  |     | 793  |  |  |  |  |  |  |
| v/c Ratio                               |      | 0.05 |  | 0.07 |  |  |  |  |     | 0.03 |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |      | 0.2  |  | 0.2  |  |  |  |  |     | 0.1  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |      | 31.1 |  | 15.0 |  |  |  |  |     | 9.7  |  |  |  |  |  |  |
| Level of Service (LOS)                  |      | D    |  | C    |  |  |  |  |     | A    |  |  |  |  |  |  |
| Approach Delay (s/veh)                  | 18.6 |      |  |      |  |  |  |  | 0.4 |      |  |  |  |  |  |  |
| Approach LOS                            | C    |      |  |      |  |  |  |  |     |      |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | AM Base + Project  |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |             |
|----------------------------|-------------|
| Intersection               | Main/Mesa   |
| Jurisdiction               | NDOT        |
| East/West Street           | Mesa Drive  |
| North/South Street         | Main Street |
| Peak Hour Factor           | 0.92        |
| Analysis Time Period (hrs) | 0.25        |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |    |     |   | Southbound |   |     |    |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|----|-----|---|------------|---|-----|----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L  | T   | R | U          | L | T   | R  |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1  | 2   | 3 | 4          | 4 | 5   | 6  |
| Number of Lanes            |           | 1  | 0  | 1  |           | 0 | 0 | 0 | 0          | 1  | 1   | 0 | 0          | 0 | 1   | 1  |
| Configuration              |           | L  |    | R  |           |   |   |   |            | L  | T   |   |            |   | T   | R  |
| Volume (veh/h)             |           | 21 |    | 44 |           |   |   |   |            | 19 | 690 |   |            |   | 282 | 13 |
| Percent Heavy Vehicles (%) |           | 3  |    | 3  |           |   |   |   |            | 3  |     |   |            |   |     |    |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Percent Grade (%)          | 0         |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Right Turn Channelized     | No        |    |    |    |           |   |   |   |            |    |     |   | No         |   |     |    |
| Median Type   Storage      | Undivided |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |

## Critical and Follow-up Headways

|                              |  |      |  |      |  |  |  |  |  |      |  |  |  |  |  |  |
|------------------------------|--|------|--|------|--|--|--|--|--|------|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  | 6.2  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.43 |  | 6.23 |  |  |  |  |  | 4.13 |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  | 3.3  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.53 |  | 3.33 |  |  |  |  |  | 2.23 |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |      |      |  |      |  |  |  |  |     |      |  |  |  |  |  |  |
|-----------------------------------------|------|------|--|------|--|--|--|--|-----|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |      | 23   |  | 48   |  |  |  |  |     | 21   |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |      | 231  |  | 731  |  |  |  |  |     | 1234 |  |  |  |  |  |  |
| v/c Ratio                               |      | 0.10 |  | 0.07 |  |  |  |  |     | 0.02 |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |      | 0.3  |  | 0.2  |  |  |  |  |     | 0.1  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |      | 22.3 |  | 10.3 |  |  |  |  |     | 8.0  |  |  |  |  |  |  |
| Level of Service (LOS)                  |      | C    |  | B    |  |  |  |  |     | A    |  |  |  |  |  |  |
| Approach Delay (s/veh)                  | 14.2 |      |  |      |  |  |  |  | 0.2 |      |  |  |  |  |  |  |
| Approach LOS                            | B    |      |  |      |  |  |  |  |     |      |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base + Project  |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |             |
|----------------------------|-------------|
| Intersection               | Main/Mesa   |
| Jurisdiction               | NDOT        |
| East/West Street           | Mesa Drive  |
| North/South Street         | Main Street |
| Peak Hour Factor           | 0.92        |
| Analysis Time Period (hrs) | 0.25        |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |    |     |   | Southbound |   |     |    |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|----|-----|---|------------|---|-----|----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L  | T   | R | U          | L | T   | R  |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1  | 2   | 3 | 4          | 4 | 5   | 6  |
| Number of Lanes            |           | 1  | 0  | 1  |           | 0 | 0 | 0 | 0          | 1  | 1   | 0 | 0          | 0 | 1   | 1  |
| Configuration              |           | L  |    | R  |           |   |   |   |            | L  | T   |   |            |   | T   | R  |
| Volume (veh/h)             |           | 7  |    | 26 |           |   |   |   |            | 28 | 592 |   |            |   | 822 | 37 |
| Percent Heavy Vehicles (%) |           | 3  |    | 3  |           |   |   |   |            | 3  |     |   |            |   |     |    |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Percent Grade (%)          | 0         |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |
| Right Turn Channelized     | No        |    |    |    |           |   |   |   |            |    |     |   | No         |   |     |    |
| Median Type   Storage      | Undivided |    |    |    |           |   |   |   |            |    |     |   |            |   |     |    |

## Critical and Follow-up Headways

|                              |  |      |  |      |  |  |  |  |  |      |  |  |  |  |  |  |
|------------------------------|--|------|--|------|--|--|--|--|--|------|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  | 6.2  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.43 |  | 6.23 |  |  |  |  |  | 4.13 |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  | 3.3  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.53 |  | 3.33 |  |  |  |  |  | 2.23 |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |      |      |  |      |  |  |  |  |     |      |  |  |  |  |  |  |
|-----------------------------------------|------|------|--|------|--|--|--|--|-----|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |      | 8    |  | 28   |  |  |  |  |     | 30   |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |      | 112  |  | 339  |  |  |  |  |     | 729  |  |  |  |  |  |  |
| v/c Ratio                               |      | 0.07 |  | 0.08 |  |  |  |  |     | 0.04 |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |      | 0.2  |  | 0.3  |  |  |  |  |     | 0.1  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |      | 39.6 |  | 16.6 |  |  |  |  |     | 10.2 |  |  |  |  |  |  |
| Level of Service (LOS)                  |      | E    |  | C    |  |  |  |  |     | B    |  |  |  |  |  |  |
| Approach Delay (s/veh)                  | 21.5 |      |  |      |  |  |  |  | 0.5 |      |  |  |  |  |  |  |
| Approach LOS                            | C    |      |  |      |  |  |  |  |     |      |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2021               |
| Time Analyzed            | AM Existing        |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                       |
|----------------------------|-----------------------|
| Intersection               | Main/Logan-Pilot      |
| Jurisdiction               | NDOT                  |
| East/West Street           | Logan Lane-Pilot Road |
| North/South Street         | Main Street           |
| Peak Hour Factor           | 0.92                  |
| Analysis Time Period (hrs) | 0.25                  |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |     |     |    | Westbound |   |   |    | Northbound |    |     |    | Southbound |    |     |     |
|----------------------------|-----------|-----|-----|----|-----------|---|---|----|------------|----|-----|----|------------|----|-----|-----|
| Movement                   | U         | L   | T   | R  | U         | L | T | R  | U          | L  | T   | R  | U          | L  | T   | R   |
| Priority                   |           | 10  | 11  | 12 |           | 7 | 8 | 9  | 10         | 1  | 2   | 3  | 4          | 5  | 6   |     |
| Number of Lanes            |           | 0   | 1   | 0  |           | 1 | 1 | 0  | 0          | 1  | 1   | 0  | 0          | 1  | 1   | 1   |
| Configuration              |           |     | LTR |    |           | L |   | TR |            | L  |     | TR |            | L  | T   | R   |
| Volume (veh/h)             |           | 169 | 3   | 28 |           | 5 | 4 | 8  |            | 41 | 428 | 19 |            | 18 | 147 | 136 |
| Percent Heavy Vehicles (%) |           | 25  | 3   | 3  |           | 3 | 3 | 3  |            | 3  |     |    |            | 3  |     |     |
| Proportion Time Blocked    |           |     |     |    |           |   |   |    |            |    |     |    |            |    |     |     |
| Percent Grade (%)          | 0         |     |     |    | 0         |   |   |    |            |    |     |    |            |    |     |     |
| Right Turn Channelized     |           |     |     |    |           |   |   |    |            |    |     |    | No         |    |     |     |
| Median Type   Storage      | Undivided |     |     |    |           |   |   |    |            |    |     |    |            |    |     |     |

## Critical and Follow-up Headways

|                              |  |      |      |      |  |      |      |      |  |      |  |  |  |      |  |  |
|------------------------------|--|------|------|------|--|------|------|------|--|------|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  | 7.1  | 6.5  | 6.2  |  | 7.1  | 6.5  | 6.2  |  | 4.1  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  | 7.35 | 6.53 | 6.23 |  | 7.13 | 6.53 | 6.23 |  | 4.13 |  |  |  | 4.13 |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  | 4.0  | 3.3  |  | 3.5  | 4.0  | 3.3  |  | 2.2  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 | 4.03 | 3.33 |  | 3.53 | 4.03 | 3.33 |  | 2.23 |  |  |  | 2.23 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |      |  |      |  |      |      |  |      |     |      |  |  |     |      |  |  |
|-----------------------------------------|------|--|------|--|------|------|--|------|-----|------|--|--|-----|------|--|--|
| Flow Rate, v (veh/h)                    |      |  | 217  |  |      | 5    |  | 13   |     | 45   |  |  |     | 20   |  |  |
| Capacity, c (veh/h)                     |      |  | 301  |  |      | 255  |  | 775  |     | 1247 |  |  |     | 1072 |  |  |
| v/c Ratio                               |      |  | 0.72 |  |      | 0.02 |  | 0.02 |     | 0.04 |  |  |     | 0.02 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |      |  | 5.2  |  |      | 0.1  |  | 0.1  |     | 0.1  |  |  |     | 0.1  |  |  |
| Control Delay (s/veh)                   |      |  | 42.6 |  |      | 19.4 |  | 9.7  |     | 8.0  |  |  |     | 8.4  |  |  |
| Level of Service (LOS)                  |      |  | E    |  |      | C    |  | A    |     | A    |  |  |     | A    |  |  |
| Approach Delay (s/veh)                  | 42.6 |  |      |  | 12.6 |      |  |      | 0.7 |      |  |  | 0.5 |      |  |  |
| Approach LOS                            | E    |  |      |  | B    |      |  |      |     |      |  |  |     |      |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |                            |                       |
|--------------------------|--------------------|----------------------------|-----------------------|
| Analyst                  | MSH                | Intersection               | Main/Logan-Pilot      |
| Agency/Co.               | Solaegui Engineers | Jurisdiction               | NDOT                  |
| Date Performed           | 5/19/2021          | East/West Street           | Logan Lane-Pilot Road |
| Analysis Year            | 2021               | North/South Street         | Main Street           |
| Time Analyzed            | PM Existing        | Peak Hour Factor           | 0.92                  |
| Intersection Orientation | North-South        | Analysis Time Period (hrs) | 0.25                  |
| Project Description      |                    |                            |                       |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |     |     |    | Westbound |    |   |    | Northbound |    |     |    | Southbound |    |     |     |
|----------------------------|-----------|-----|-----|----|-----------|----|---|----|------------|----|-----|----|------------|----|-----|-----|
| Movement                   | U         | L   | T   | R  | U         | L  | T | R  | U          | L  | T   | R  | U          | L  | T   | R   |
| Priority                   |           | 10  | 11  | 12 |           | 7  | 8 | 9  | 1U         | 1  | 2   | 3  | 4U         | 4  | 5   | 6   |
| Number of Lanes            |           | 0   | 1   | 0  |           | 1  | 1 | 0  | 0          | 1  | 1   | 0  | 0          | 1  | 1   | 1   |
| Configuration              |           |     | LTR |    |           | L  |   | TR |            | L  |     | TR |            | L  | T   | R   |
| Volume (veh/h)             |           | 179 | 3   | 75 |           | 24 | 5 | 14 |            | 56 | 335 | 10 |            | 15 | 487 | 183 |
| Percent Heavy Vehicles (%) |           | 25  | 3   | 3  |           | 3  | 3 | 3  |            | 3  |     |    |            | 3  |     |     |
| Proportion Time Blocked    |           |     |     |    |           |    |   |    |            |    |     |    |            |    |     |     |
| Percent Grade (%)          | 0         |     |     |    | 0         |    |   |    |            |    |     |    |            |    |     |     |
| Right Turn Channelized     |           |     |     |    |           |    |   |    |            |    |     |    | No         |    |     |     |
| Median Type   Storage      | Undivided |     |     |    |           |    |   |    |            |    |     |    |            |    |     |     |

## Critical and Follow-up Headways

|                              |  |      |      |      |  |      |      |      |  |      |  |  |  |      |  |  |
|------------------------------|--|------|------|------|--|------|------|------|--|------|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  | 7.1  | 6.5  | 6.2  |  | 7.1  | 6.5  | 6.2  |  | 4.1  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  | 7.35 | 6.53 | 6.23 |  | 7.13 | 6.53 | 6.23 |  | 4.13 |  |  |  | 4.13 |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  | 4.0  | 3.3  |  | 3.5  | 4.0  | 3.3  |  | 2.2  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 | 4.03 | 3.33 |  | 3.53 | 4.03 | 3.33 |  | 2.23 |  |  |  | 2.23 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |       |  |       |  |      |      |  |      |     |      |  |  |     |      |  |  |
|-----------------------------------------|-------|--|-------|--|------|------|--|------|-----|------|--|--|-----|------|--|--|
| Flow Rate, v (veh/h)                    |       |  | 279   |  |      | 26   |  | 21   |     | 61   |  |  |     | 16   |  |  |
| Capacity, c (veh/h)                     |       |  | 205   |  |      | 128  |  | 598  |     | 871  |  |  |     | 1178 |  |  |
| v/c Ratio                               |       |  | 1.37  |  |      | 0.20 |  | 0.03 |     | 0.07 |  |  |     | 0.01 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |       |  | 15.9  |  |      | 0.7  |  | 0.1  |     | 0.2  |  |  |     | 0.0  |  |  |
| Control Delay (s/veh)                   |       |  | 237.5 |  |      | 40.2 |  | 11.2 |     | 9.4  |  |  |     | 8.1  |  |  |
| Level of Service (LOS)                  |       |  | F     |  |      | E    |  | B    |     | A    |  |  |     | A    |  |  |
| Approach Delay (s/veh)                  | 237.5 |  |       |  | 27.4 |      |  |      | 1.3 |      |  |  | 0.2 |      |  |  |
| Approach LOS                            | F     |  |       |  | D    |      |  |      |     |      |  |  |     |      |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | AM Existing + Project |
| Intersection Orientation | North-South           |
| Project Description      |                       |

## Site Information

|                            |                       |
|----------------------------|-----------------------|
| Intersection               | Main/Logan-Pilot      |
| Jurisdiction               | NDOT                  |
| East/West Street           | Logan Lane-Pilot Road |
| North/South Street         | Main Street           |
| Peak Hour Factor           | 0.92                  |
| Analysis Time Period (hrs) | 0.25                  |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |     |     |    | Westbound |   |   |    | Northbound |    |     |    | Southbound |    |     |     |
|----------------------------|-----------|-----|-----|----|-----------|---|---|----|------------|----|-----|----|------------|----|-----|-----|
| Movement                   | U         | L   | T   | R  | U         | L | T | R  | U          | L  | T   | R  | U          | L  | T   | R   |
| Priority                   |           | 10  | 11  | 12 |           | 7 | 8 | 9  | 10         | 1  | 2   | 3  | 40         | 4  | 5   | 6   |
| Number of Lanes            |           | 0   | 1   | 0  |           | 1 | 1 | 0  | 0          | 1  | 1   | 0  | 0          | 1  | 1   | 1   |
| Configuration              |           |     | LTR |    |           | L |   | TR |            | L  |     | TR |            | L  | T   | R   |
| Volume (veh/h)             |           | 169 | 3   | 39 |           | 6 | 4 | 8  |            | 43 | 494 | 20 |            | 18 | 203 | 136 |
| Percent Heavy Vehicles (%) |           | 25  | 3   | 3  |           | 3 | 3 | 3  |            | 3  |     |    |            | 3  |     |     |
| Proportion Time Blocked    |           |     |     |    |           |   |   |    |            |    |     |    |            |    |     |     |
| Percent Grade (%)          | 0         |     |     |    | 0         |   |   |    |            |    |     |    |            |    |     |     |
| Right Turn Channelized     |           |     |     |    |           |   |   |    |            |    |     |    | No         |    |     |     |
| Median Type   Storage      | Undivided |     |     |    |           |   |   |    |            |    |     |    |            |    |     |     |

## Critical and Follow-up Headways

|                              |  |      |      |      |  |      |      |      |  |      |  |  |  |      |  |  |
|------------------------------|--|------|------|------|--|------|------|------|--|------|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  | 7.1  | 6.5  | 6.2  |  | 7.1  | 6.5  | 6.2  |  | 4.1  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  | 7.35 | 6.53 | 6.23 |  | 7.13 | 6.53 | 6.23 |  | 4.13 |  |  |  | 4.13 |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  | 4.0  | 3.3  |  | 3.5  | 4.0  | 3.3  |  | 2.2  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 | 4.03 | 3.33 |  | 3.53 | 4.03 | 3.33 |  | 2.23 |  |  |  | 2.23 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |      |  |      |  |      |      |  |      |     |      |  |  |     |      |  |  |
|-----------------------------------------|------|--|------|--|------|------|--|------|-----|------|--|--|-----|------|--|--|
| Flow Rate, v (veh/h)                    |      |  | 229  |  |      | 7    |  | 13   |     | 47   |  |  |     | 20   |  |  |
| Capacity, c (veh/h)                     |      |  | 251  |  |      | 199  |  | 640  |     | 1185 |  |  |     | 1007 |  |  |
| v/c Ratio                               |      |  | 0.91 |  |      | 0.03 |  | 0.02 |     | 0.04 |  |  |     | 0.02 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |      |  | 8.0  |  |      | 0.1  |  | 0.1  |     | 0.1  |  |  |     | 0.1  |  |  |
| Control Delay (s/veh)                   |      |  | 79.3 |  |      | 23.7 |  | 10.7 |     | 8.2  |  |  |     | 8.6  |  |  |
| Level of Service (LOS)                  |      |  | F    |  |      | C    |  | B    |     | A    |  |  |     | A    |  |  |
| Approach Delay (s/veh)                  | 79.3 |  |      |  | 15.1 |      |  |      | 0.6 |      |  |  | 0.4 |      |  |  |
| Approach LOS                            | F    |  |      |  | C    |      |  |      |     |      |  |  |     |      |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | PM Existing + Project |
| Intersection Orientation | North-South           |
| Project Description      |                       |

## Site Information

|                            |                       |
|----------------------------|-----------------------|
| Intersection               | Main/Logan-Pilot      |
| Jurisdiction               | NDOT                  |
| East/West Street           | Logan Lane-Pilot Road |
| North/South Street         | Main Street           |
| Peak Hour Factor           | 0.92                  |
| Analysis Time Period (hrs) | 0.25                  |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |     |     |    | Westbound |           |   |    | Northbound |    |     |    | Southbound |    |     |     |
|----------------------------|-----------|-----|-----|----|-----------|-----------|---|----|------------|----|-----|----|------------|----|-----|-----|
| Movement                   | U         | L   | T   | R  | U         | L         | T | R  | U          | L  | T   | R  | U          | L  | T   | R   |
| Priority                   |           | 10  | 11  | 12 |           | 7         | 8 | 9  | 10         | 1  | 2   | 3  | 4          | 5  | 6   |     |
| Number of Lanes            |           | 0   | 1   | 0  |           | 1         | 1 | 0  | 0          | 1  | 1   | 0  | 0          | 1  | 1   | 1   |
| Configuration              |           |     | LTR |    |           | L         |   | TR |            | L  |     | TR |            | L  | T   | R   |
| Volume (veh/h)             |           | 179 | 3   | 77 |           | 25        | 5 | 14 |            | 57 | 404 | 11 |            | 15 | 573 | 183 |
| Percent Heavy Vehicles (%) |           | 25  | 3   | 3  |           | 3         | 3 | 3  |            | 3  |     |    |            | 3  |     |     |
| Proportion Time Blocked    |           |     |     |    |           |           |   |    |            |    |     |    |            |    |     |     |
| Percent Grade (%)          |           | 0   |     |    |           | 0         |   |    |            |    |     |    |            |    |     |     |
| Right Turn Channelized     |           |     |     |    |           |           |   |    |            |    |     |    |            | No |     |     |
| Median Type   Storage      |           |     |     |    |           | Undivided |   |    |            |    |     |    |            |    |     |     |

## Critical and Follow-up Headways

|                              |  |      |      |      |  |      |      |      |  |      |  |  |  |      |  |  |
|------------------------------|--|------|------|------|--|------|------|------|--|------|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  | 7.1  | 6.5  | 6.2  |  | 7.1  | 6.5  | 6.2  |  | 4.1  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  | 7.35 | 6.53 | 6.23 |  | 7.13 | 6.53 | 6.23 |  | 4.13 |  |  |  | 4.13 |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  | 4.0  | 3.3  |  | 3.5  | 4.0  | 3.3  |  | 2.2  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 | 4.03 | 3.33 |  | 3.53 | 4.03 | 3.33 |  | 2.23 |  |  |  | 2.23 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |       |  |  |      |  |      |  |      |  |  |  |      |  |  |
|-----------------------------------------|--|--|-------|--|--|------|--|------|--|------|--|--|--|------|--|--|
| Flow Rate, v (veh/h)                    |  |  | 282   |  |  | 27   |  | 21   |  | 62   |  |  |  | 16   |  |  |
| Capacity, c (veh/h)                     |  |  | 156   |  |  | 94   |  | 467  |  | 803  |  |  |  | 1104 |  |  |
| v/c Ratio                               |  |  | 1.81  |  |  | 0.29 |  | 0.04 |  | 0.08 |  |  |  | 0.01 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  | 20.8  |  |  | 1.1  |  | 0.1  |  | 0.3  |  |  |  | 0.0  |  |  |
| Control Delay (s/veh)                   |  |  | 436.3 |  |  | 58.5 |  | 13.1 |  | 9.9  |  |  |  | 8.3  |  |  |
| Level of Service (LOS)                  |  |  | F     |  |  | F    |  | B    |  | A    |  |  |  | A    |  |  |
| Approach Delay (s/veh)                  |  |  | 436.3 |  |  | 38.9 |  |      |  | 1.2  |  |  |  | 0.2  |  |  |
| Approach LOS                            |  |  | F     |  |  | E    |  |      |  |      |  |  |  |      |  |  |



# HCS7 Two-Way Stop-Control Report

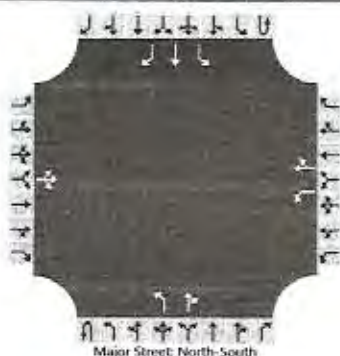
## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | AM Base            |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                       |
|----------------------------|-----------------------|
| Intersection               | Main/Logan-Pilot      |
| Jurisdiction               | NDOT                  |
| East/West Street           | Logan Lane-Pilot Road |
| North/South Street         | Main Street           |
| Peak Hour Factor           | 0.92                  |
| Analysis Time Period (hrs) | 0.25                  |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |     |     |    | Westbound |   |   |    | Northbound |    |     |    | Southbound |    |     |     |
|----------------------------|-----------|-----|-----|----|-----------|---|---|----|------------|----|-----|----|------------|----|-----|-----|
| Movement                   | U         | L   | T   | R  | U         | L | T | R  | U          | L  | T   | R  | U          | L  | T   | R   |
| Priority                   |           | 10  | 11  | 12 |           | 7 | 8 | 9  | 10         | 1  | 2   | 3  | 4          | 5  | 6   |     |
| Number of Lanes            |           | 0   | 1   | 0  |           | 1 | 1 | 0  | 0          | 1  | 1   | 0  | 0          | 1  | 1   | 1   |
| Configuration              |           |     | LTR |    |           | L |   | TR |            | L  |     | TR |            | L  | T   | R   |
| Volume (veh/h)             |           | 222 | 4   | 37 |           | 7 | 4 | 10 |            | 54 | 563 | 25 |            | 24 | 193 | 179 |
| Percent Heavy Vehicles (%) |           | 25  | 3   | 3  |           | 3 | 3 | 3  |            | 3  |     |    |            | 3  |     |     |
| Proportion Time Blocked    |           |     |     |    |           |   |   |    |            |    |     |    |            |    |     |     |
| Percent Grade (%)          | 0         |     |     |    | 0         |   |   |    |            |    |     |    |            |    |     |     |
| Right Turn Channelized     |           |     |     |    |           |   |   |    |            |    |     |    | No         |    |     |     |
| Median Type   Storage      | Undivided |     |     |    |           |   |   |    |            |    |     |    |            |    |     |     |

## Critical and Follow-up Headways

|                              |  |      |      |      |  |      |      |      |  |      |  |  |  |      |  |  |
|------------------------------|--|------|------|------|--|------|------|------|--|------|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  | 7.1  | 6.5  | 6.2  |  | 7.1  | 6.5  | 6.2  |  | 4.1  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  | 7.35 | 6.53 | 6.23 |  | 7.13 | 6.53 | 6.23 |  | 4.13 |  |  |  | 4.13 |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  | 4.0  | 3.3  |  | 3.5  | 4.0  | 3.3  |  | 2.2  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 | 4.03 | 3.33 |  | 3.53 | 4.03 | 3.33 |  | 2.23 |  |  |  | 2.23 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |       |  |       |  |      |      |  |      |     |      |  |  |     |      |  |  |
|-----------------------------------------|-------|--|-------|--|------|------|--|------|-----|------|--|--|-----|------|--|--|
| Flow Rate, v (veh/h)                    |       |  | 286   |  |      | 8    |  | 15   |     | 59   |  |  |     | 26   |  |  |
| Capacity, c (veh/h)                     |       |  | 201   |  |      | 160  |  | 595  |     | 1149 |  |  |     | 940  |  |  |
| v/c Ratio                               |       |  | 1.42  |  |      | 0.05 |  | 0.03 |     | 0.05 |  |  |     | 0.03 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |       |  | 17.0  |  |      | 0.1  |  | 0.1  |     | 0.2  |  |  |     | 0.1  |  |  |
| Control Delay (s/veh)                   |       |  | 262.0 |  |      | 28.6 |  | 11.2 |     | 8.3  |  |  |     | 8.9  |  |  |
| Level of Service (LOS)                  |       |  | F     |  |      | D    |  | B    |     | A    |  |  |     | A    |  |  |
| Approach Delay (s/veh)                  | 262.0 |  |       |  | 17.0 |      |  |      | 0.7 |      |  |  | 0.5 |      |  |  |
| Approach LOS                            | F     |  |       |  | C    |      |  |      |     |      |  |  |     |      |  |  |



# HCS7 Two-Way Stop-Control Report

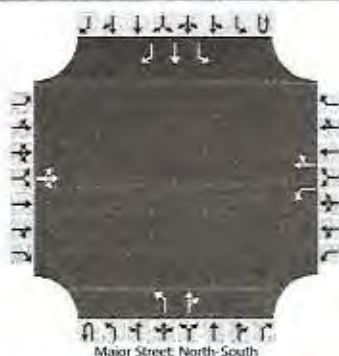
## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base            |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                       |
|----------------------------|-----------------------|
| Intersection               | Main/Logan-Pilot      |
| Jurisdiction               | NDOT                  |
| East/West Street           | Logan Lane-Pilot Road |
| North/South Street         | Main Street           |
| Peak Hour Factor           | 0.92                  |
| Analysis Time Period (hrs) | 0.25                  |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |     |     |    | Westbound |    |   |    | Northbound |    |     |    | Southbound |    |     |     |
|----------------------------|-----------|-----|-----|----|-----------|----|---|----|------------|----|-----|----|------------|----|-----|-----|
| Movement                   | U         | L   | T   | R  | U         | L  | T | R  | U          | L  | T   | R  | U          | L  | T   | R   |
| Priority                   |           | 10  | 11  | 12 |           | 7  | 8 | 9  | 1U         | 1  | 2   | 3  | 4U         | 4  | 5   | 6   |
| Number of Lanes            |           | 0   | 1   | 0  |           | 1  | 1 | 0  | 0          | 1  | 1   | 0  | 0          | 1  | 1   | 1   |
| Configuration              |           |     | LTR |    |           | L  |   | TR |            | L  |     | TR |            | L  | T   | R   |
| Volume (veh/h)             |           | 235 | 4   | 99 |           | 32 | 7 | 18 |            | 74 | 441 | 13 |            | 20 | 639 | 241 |
| Percent Heavy Vehicles (%) |           | 25  | 3   | 3  |           | 3  | 3 | 3  |            | 3  |     |    |            | 3  |     |     |
| Proportion Time Blocked    |           |     |     |    |           |    |   |    |            |    |     |    |            |    |     |     |
| Percent Grade (%)          | 0         |     |     |    | 0         |    |   |    |            |    |     |    |            |    |     |     |
| Right Turn Channelized     |           |     |     |    |           |    |   |    |            |    |     |    | No         |    |     |     |
| Median Type   Storage      | Undivided |     |     |    |           |    |   |    |            |    |     |    |            |    |     |     |

## Critical and Follow-up Headways

|                              |  |      |      |      |  |      |      |      |  |      |  |  |  |      |  |  |
|------------------------------|--|------|------|------|--|------|------|------|--|------|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  | 7.1  | 6.5  | 6.2  |  | 7.1  | 6.5  | 6.2  |  | 4.1  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  | 7.35 | 6.53 | 6.23 |  | 7.13 | 6.53 | 6.23 |  | 4.13 |  |  |  | 4.13 |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  | 4.0  | 3.3  |  | 3.5  | 4.0  | 3.3  |  | 2.2  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 | 4.03 | 3.33 |  | 3.53 | 4.03 | 3.33 |  | 2.23 |  |  |  | 2.23 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |        |  |        |  |      |       |  |      |     |      |  |  |     |      |  |  |
|-----------------------------------------|--------|--|--------|--|------|-------|--|------|-----|------|--|--|-----|------|--|--|
| Flow Rate, v (veh/h)                    |        |  | 367    |  |      | 35    |  | 27   |     | 80   |  |  |     | 22   |  |  |
| Capacity, c (veh/h)                     |        |  | 112    |  |      | 59    |  | 306  |     | 715  |  |  |     | 1065 |  |  |
| v/c Ratio                               |        |  | 3.27   |  |      | 0.59  |  | 0.09 |     | 0.11 |  |  |     | 0.02 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |        |  | 35.7   |  |      | 2.4   |  | 0.3  |     | 0.4  |  |  |     | 0.1  |  |  |
| Control Delay (s/veh)                   |        |  | 1103.9 |  |      | 131.4 |  | 17.9 |     | 10.7 |  |  |     | 8.5  |  |  |
| Level of Service (LOS)                  |        |  | F      |  |      | F     |  | C    |     | B    |  |  |     | A    |  |  |
| Approach Delay (s/veh)                  | 1103.9 |  |        |  | 81.6 |       |  |      | 1.5 |      |  |  | 0.2 |      |  |  |
| Approach LOS                            | F      |  |        |  | F    |       |  |      |     |      |  |  |     |      |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |                            |                       |
|--------------------------|--------------------|----------------------------|-----------------------|
| Analyst                  | MSH                | Intersection               | Main/Logan-Pilot      |
| Agency/Co.               | Solaegui Engineers | Jurisdiction               | NDOT                  |
| Date Performed           | 5/19/2021          | East/West Street           | Logan Lane-Pilot Road |
| Analysis Year            | 2041               | North/South Street         | Main Street           |
| Time Analyzed            | AM Base + Project  | Peak Hour Factor           | 0.92                  |
| Intersection Orientation | North-South        | Analysis Time Period (hrs) | 0.25                  |
| Project Description      |                    |                            |                       |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |     |     |    | Westbound |   |   |    | Northbound |    |     |    | Southbound |    |     |     |
|----------------------------|-----------|-----|-----|----|-----------|---|---|----|------------|----|-----|----|------------|----|-----|-----|
| Movement                   | U         | L   | T   | R  | U         | L | T | R  | U          | L  | T   | R  | U          | L  | T   | R   |
| Priority                   |           | 10  | 11  | 12 |           | 7 | 8 | 9  | 1U         | 1  | 2   | 3  | 4U         | 4  | 5   | 6   |
| Number of Lanes            |           | 0   | 1   | 0  |           | 1 | 1 | 0  | 0          | 1  | 1   | 0  | 0          | 1  | 1   | 1   |
| Configuration              |           |     | LTR |    |           | L |   | TR |            | L  |     | TR |            | L  | T   | R   |
| Volume (veh/h)             |           | 222 | 4   | 38 |           | 8 | 4 | 10 |            | 56 | 629 | 26 |            | 24 | 249 | 179 |
| Percent Heavy Vehicles (%) |           | 25  | 3   | 3  |           | 3 | 3 | 3  |            | 3  |     |    |            | 3  |     |     |
| Proportion Time Blocked    |           |     |     |    |           |   |   |    |            |    |     |    |            |    |     |     |
| Percent Grade (%)          | 0         |     |     |    | 0         |   |   |    |            |    |     |    |            |    |     |     |
| Right Turn Channelized     |           |     |     |    |           |   |   |    |            |    |     |    | No         |    |     |     |
| Median Type   Storage      | Undivided |     |     |    |           |   |   |    |            |    |     |    |            |    |     |     |

## Critical and Follow-up Headways

|                              |  |      |      |      |  |      |      |      |  |      |  |  |  |      |  |  |
|------------------------------|--|------|------|------|--|------|------|------|--|------|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  | 7.1  | 6.5  | 6.2  |  | 7.1  | 6.5  | 6.2  |  | 4.1  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  | 7.35 | 6.53 | 6.23 |  | 7.13 | 6.53 | 6.23 |  | 4.13 |  |  |  | 4.13 |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  | 4.0  | 3.3  |  | 3.5  | 4.0  | 3.3  |  | 2.2  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 | 4.03 | 3.33 |  | 3.53 | 4.03 | 3.33 |  | 2.23 |  |  |  | 2.23 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |       |  |       |  |      |      |  |      |     |      |  |  |     |      |  |  |
|-----------------------------------------|-------|--|-------|--|------|------|--|------|-----|------|--|--|-----|------|--|--|
| Flow Rate, v (veh/h)                    |       |  | 287   |  |      | 9    |  | 15   |     | 61   |  |  |     | 26   |  |  |
| Capacity, c (veh/h)                     |       |  | 160   |  |      | 127  |  | 489  |     | 1091 |  |  |     | 883  |  |  |
| v/c Ratio                               |       |  | 1.79  |  |      | 0.07 |  | 0.03 |     | 0.06 |  |  |     | 0.03 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |       |  | 21.0  |  |      | 0.2  |  | 0.1  |     | 0.2  |  |  |     | 0.1  |  |  |
| Control Delay (s/veh)                   |       |  | 429.0 |  |      | 35.5 |  | 12.6 |     | 8.5  |  |  |     | 9.2  |  |  |
| Level of Service (LOS)                  |       |  | F     |  |      | E    |  | B    |     | A    |  |  |     | A    |  |  |
| Approach Delay (s/veh)                  | 429.0 |  |       |  | 20.9 |      |  |      | 0.7 |      |  |  | 0.5 |      |  |  |
| Approach LOS                            | F     |  |       |  | C    |      |  |      |     |      |  |  |     |      |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |                            |                       |
|--------------------------|--------------------|----------------------------|-----------------------|
| Analyst                  | MSH                | Intersection               | Main/Logan-Pilot      |
| Agency/Co.               | Solaegui Engineers | Jurisdiction               | NDOT                  |
| Date Performed           | 5/19/2021          | East/West Street           | Logan Lane-Pilot Road |
| Analysis Year            | 2041               | North/South Street         | Main Street           |
| Time Analyzed            | PM Base + Project  | Peak Hour Factor           | 0.92                  |
| Intersection Orientation | North-South        | Analysis Time Period (hrs) | 0.25                  |
| Project Description      |                    |                            |                       |

## Site Information

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |     |     |     | Westbound |    |   |    | Northbound |    |     |    | Southbound |    |     |     |
|----------------------------|-----------|-----|-----|-----|-----------|----|---|----|------------|----|-----|----|------------|----|-----|-----|
| Movement                   | U         | L   | T   | R   | U         | L  | T | R  | U          | L  | T   | R  | U          | L  | T   | R   |
| Priority                   |           | 10  | 11  | 12  |           | 7  | 8 | 9  | 10         | 1  | 2   | 3  | 40         | 4  | 5   | 6   |
| Number of Lanes            |           | 0   | 1   | 0   |           | 1  | 1 | 0  | 0          | 1  | 1   | 0  | 0          | 1  | 1   | 1   |
| Configuration              |           |     | LTR |     |           | L  |   | TR |            | L  |     | TR |            | L  | T   | R   |
| Volume (veh/h)             |           | 235 | 4   | 101 |           | 33 | 7 | 18 |            | 75 | 510 | 14 |            | 20 | 725 | 241 |
| Percent Heavy Vehicles (%) |           | 25  | 3   | 3   |           | 3  | 3 | 3  |            | 3  |     |    |            | 3  |     |     |
| Proportion Time Blocked    |           |     |     |     |           |    |   |    |            |    |     |    |            |    |     |     |
| Percent Grade (%)          | 0         |     |     |     | 0         |    |   |    |            |    |     |    |            |    |     |     |
| Right Turn Channelized     |           |     |     |     |           |    |   |    |            |    |     |    | No         |    |     |     |
| Median Type   Storage      | Undivided |     |     |     |           |    |   |    |            |    |     |    |            |    |     |     |

## Critical and Follow-up Headways

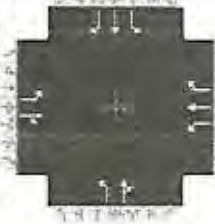
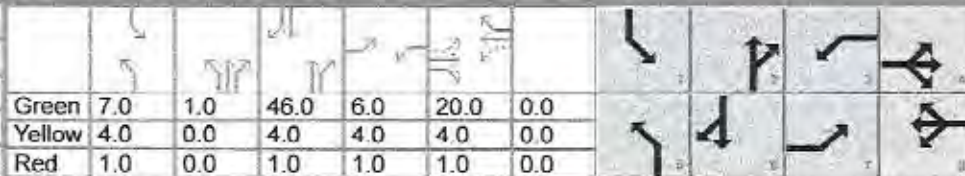
|                              |  |      |      |      |  |      |      |      |  |      |  |  |  |      |  |  |
|------------------------------|--|------|------|------|--|------|------|------|--|------|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  | 7.1  | 6.5  | 6.2  |  | 7.1  | 6.5  | 6.2  |  | 4.1  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  | 7.35 | 6.53 | 6.23 |  | 7.13 | 6.53 | 6.23 |  | 4.13 |  |  |  | 4.13 |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  | 4.0  | 3.3  |  | 3.5  | 4.0  | 3.3  |  | 2.2  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 | 4.03 | 3.33 |  | 3.53 | 4.03 | 3.33 |  | 2.23 |  |  |  | 2.23 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |        |  |        |  |       |       |  |      |     |      |  |  |     |      |  |  |
|-----------------------------------------|--------|--|--------|--|-------|-------|--|------|-----|------|--|--|-----|------|--|--|
| Flow Rate, v (veh/h)                    |        |  | 370    |  |       | 36    |  | 27   |     | 82   |  |  |     | 22   |  |  |
| Capacity, c (veh/h)                     |        |  | 83     |  |       | 42    |  | 237  |     | 659  |  |  |     | 998  |  |  |
| v/c Ratio                               |        |  | 4.44   |  |       | 0.86  |  | 0.11 |     | 0.12 |  |  |     | 0.02 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |        |  | 39.3   |  |       | 3.3   |  | 0.4  |     | 0.4  |  |  |     | 0.1  |  |  |
| Control Delay (s/veh)                   |        |  | 1650.5 |  |       | 246.9 |  | 22.2 |     | 11.2 |  |  |     | 8.7  |  |  |
| Level of Service (LOS)                  |        |  | F      |  |       | F     |  | C    |     | B    |  |  |     | A    |  |  |
| Approach Delay (s/veh)                  | 1650.5 |  |        |  | 150.0 |       |  |      | 1.4 |      |  |  | 0.2 |      |  |  |
| Approach LOS                            | F      |  |        |  | F     |       |  |      |     |      |  |  |     |      |  |  |

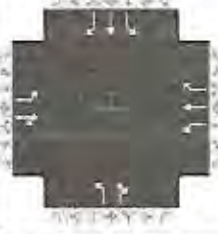
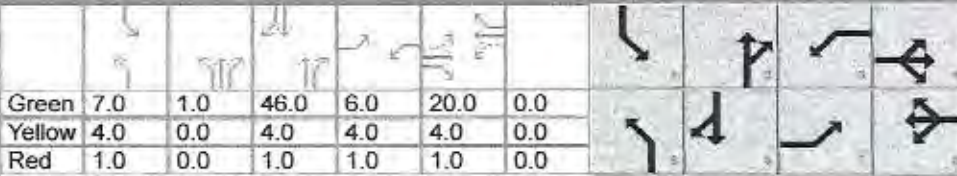


# HCS7 Signalized Intersection Results Summary

| General Information                             |  |                    |                 |               |     | Intersection Information                                                           |       |                 |       |         |       |  |       |    |       |       |       |
|-------------------------------------------------|--|--------------------|-----------------|---------------|-----|------------------------------------------------------------------------------------|-------|-----------------|-------|---------|-------|-------------------------------------------------------------------------------------|-------|----|-------|-------|-------|
| Agency                                          |  | Solaegui Engineers |                 |               |     | Duration, h                                                                        |       | 0.250           |       |         |       |                                                                                     |       |    |       |       |       |
| Analyst                                         |  | MSH                |                 | Analysis Date |     | May 20, 2021                                                                       |       | Area Type       |       | Other   |       |                                                                                     |       |    |       |       |       |
| Jurisdiction                                    |  | NDOT               |                 | Time Period   |     | AM Peak Hour                                                                       |       | PHF             |       | 0.92    |       |                                                                                     |       |    |       |       |       |
| Urban Street                                    |  |                    |                 | Analysis Year |     | Existing + Project                                                                 |       | Analysis Period |       | 1> 7:00 |       |                                                                                     |       |    |       |       |       |
| Intersection                                    |  | Main & Logan-Pilot |                 | File Name     |     | MaLo21aw.xus                                                                       |       |                 |       |         |       |                                                                                     |       |    |       |       |       |
| Project Description                             |  |                    |                 |               |     |                                                                                    |       |                 |       |         |       |                                                                                     |       |    |       |       |       |
| Demand Information                              |  |                    |                 |               |     | EB                                                                                 |       |                 | WB    |         |       | NB                                                                                  |       |    | SB    |       |       |
| Approach Movement                               |  |                    |                 |               |     | L                                                                                  | T     | R               | L     | T       | R     | L                                                                                   | T     | R  | L     | T     | R     |
| Demand ( v ), veh/h                             |  |                    |                 |               |     | 169                                                                                | 3     | 29              | 6     | 4       | 8     | 43                                                                                  | 494   | 20 | 18    | 203   | 136   |
| Signal Information                              |  |                    |                 |               |     |  |       |                 |       |         |       |  |       |    |       |       |       |
| Cycle, s                                        |  | 100.0              | Reference Phase |               | 2   |                                                                                    |       |                 |       |         |       |                                                                                     |       |    |       |       |       |
| Offset, s                                       |  | 0                  | Reference Point |               | End |                                                                                    |       |                 |       |         |       |                                                                                     |       |    |       |       |       |
| Uncoordinated                                   |  | Yes                | Simult. Gap E/W |               | On  |                                                                                    |       |                 |       |         |       |                                                                                     |       |    |       |       |       |
| Force Mode                                      |  | Fixed              | Simult. Gap N/S |               | On  |                                                                                    |       |                 |       |         |       |                                                                                     |       |    |       |       |       |
|                                                 |  |                    |                 |               |     | Green                                                                              | 7.0   | 1.0             | 46.0  | 6.0     | 20.0  | 0.0                                                                                 |       |    |       |       |       |
|                                                 |  |                    |                 |               |     | Yellow                                                                             | 4.0   | 0.0             | 4.0   | 4.0     | 4.0   | 0.0                                                                                 |       |    |       |       |       |
|                                                 |  |                    |                 |               |     | Red                                                                                | 1.0   | 0.0             | 1.0   | 1.0     | 1.0   | 0.0                                                                                 |       |    |       |       |       |
| Timer Results                                   |  |                    |                 |               |     | EBL                                                                                | EBT   | WBL             | WBT   | NBL     | NBT   | SBL                                                                                 | SBT   |    |       |       |       |
| Assigned Phase                                  |  |                    |                 |               |     | 7                                                                                  | 4     | 3               | 8     | 5       | 2     | 1                                                                                   | 6     |    |       |       |       |
| Case Number                                     |  |                    |                 |               |     | 1.1                                                                                | 4.0   | 1.1             | 3.0   | 2.0     | 4.0   | 2.0                                                                                 | 3.0   |    |       |       |       |
| Phase Duration, s                               |  |                    |                 |               |     | 11.0                                                                               | 25.0  | 11.0            | 25.0  | 13.0    | 52.0  | 12.0                                                                                | 51.0  |    |       |       |       |
| Change Period, ( Y+R c ), s                     |  |                    |                 |               |     | 5.0                                                                                | 5.0   | 5.0             | 5.0   | 5.0     | 5.0   | 5.0                                                                                 | 5.0   |    |       |       |       |
| Max Allow Headway ( MAH ), s                    |  |                    |                 |               |     | 3.1                                                                                | 3.3   | 3.1             | 3.3   | 3.1     | 3.1   | 3.1                                                                                 | 3.1   |    |       |       |       |
| Queue Clearance Time ( g s ), s                 |  |                    |                 |               |     | 8.0                                                                                | 3.5   | 2.3             | 2.4   | 4.5     | 25.1  | 3.0                                                                                 | 9.3   |    |       |       |       |
| Green Extension Time ( g e ), s                 |  |                    |                 |               |     | 0.0                                                                                | 0.0   | 0.0             | 0.0   | 0.0     | 1.8   | 0.0                                                                                 | 1.5   |    |       |       |       |
| Phase Call Probability                          |  |                    |                 |               |     | 1.00                                                                               | 1.00  | 1.00            | 1.00  | 1.00    | 1.00  | 1.00                                                                                | 1.00  |    |       |       |       |
| Max Out Probability                             |  |                    |                 |               |     | 1.00                                                                               | 0.00  | 0.20            | 0.00  | 0.53    | 0.00  | 0.17                                                                                | 0.06  |    |       |       |       |
| Movement Group Results                          |  |                    |                 |               |     | EB                                                                                 |       |                 | WB    |         |       | NB                                                                                  |       |    | SB    |       |       |
| Approach Movement                               |  |                    |                 |               |     | L                                                                                  | T     | R               | L     | T       | R     | L                                                                                   | T     | R  | L     | T     | R     |
| Assigned Movement                               |  |                    |                 |               |     | 7                                                                                  | 4     | 14              | 3     | 8       | 18    | 5                                                                                   | 2     | 12 | 1     | 6     | 16    |
| Adjusted Flow Rate ( v ), veh/h                 |  |                    |                 |               |     | 184                                                                                | 29    |                 | 7     | 4       | 9     | 47                                                                                  | 559   |    | 20    | 221   | 126   |
| Adjusted Saturation Flow Rate ( s ), veh/h/ln   |  |                    |                 |               |     | 1457                                                                               | 1600  |                 | 1767  | 1856    | 1572  | 1767                                                                                | 1843  |    | 1767  | 1856  | 1296  |
| Queue Service Time ( g s ), s                   |  |                    |                 |               |     | 6.0                                                                                | 1.5   |                 | 0.3   | 0.2     | 0.4   | 2.5                                                                                 | 23.1  |    | 1.0   | 7.3   | 5.8   |
| Cycle Queue Clearance Time ( g c ), s           |  |                    |                 |               |     | 6.0                                                                                | 1.5   |                 | 0.3   | 0.2     | 0.4   | 2.5                                                                                 | 23.1  |    | 1.0   | 7.3   | 5.8   |
| Green Ratio ( g/C )                             |  |                    |                 |               |     | 0.26                                                                               | 0.20  |                 | 0.26  | 0.20    | 0.20  | 0.08                                                                                | 0.47  |    | 0.07  | 0.46  | 0.46  |
| Capacity ( c ), veh/h                           |  |                    |                 |               |     | 365                                                                                | 320   |                 | 404   | 371     | 314   | 141                                                                                 | 866   |    | 124   | 854   | 596   |
| Volume-to-Capacity Ratio ( X )                  |  |                    |                 |               |     | 0.503                                                                              | 0.092 |                 | 0.016 | 0.012   | 0.028 | 0.331                                                                               | 0.645 |    | 0.158 | 0.259 | 0.211 |
| Back of Queue ( Q ), ft/ln ( 95 th percentile)  |  |                    |                 |               |     | 79                                                                                 | 26.5  |                 | 5.3   | 3.9     | 7.7   | 50.5                                                                                | 376.1 |    | 21.1  | 137.9 | 90.2  |
| Back of Queue ( Q ), veh/ln ( 95 th percentile) |  |                    |                 |               |     | 2.6                                                                                | 1.0   |                 | 0.2   | 0.2     | 0.3   | 2.0                                                                                 | 14.7  |    | 0.8   | 5.4   | 3.0   |
| Queue Storage Ratio ( RQ ) ( 95 th percentile)  |  |                    |                 |               |     | 0.00                                                                               | 0.00  |                 | 0.00  | 0.00    | 0.00  | 0.00                                                                                | 0.00  |    | 0.00  | 0.00  | 0.00  |
| Uniform Delay ( d 1 ), s/veh                    |  |                    |                 |               |     | 32.4                                                                               | 32.6  |                 | 27.5  | 32.1    | 32.2  | 43.5                                                                                | 20.2  |    | 43.7  | 16.5  | 16.2  |
| Incremental Delay ( d 2 ), s/veh                |  |                    |                 |               |     | 0.4                                                                                | 0.0   |                 | 0.0   | 0.0     | 0.0   | 0.5                                                                                 | 1.3   |    | 0.2   | 0.1   | 0.1   |
| Initial Queue Delay ( d 3 ), s/veh              |  |                    |                 |               |     | 0.0                                                                                | 0.0   |                 | 0.0   | 0.0     | 0.0   | 0.0                                                                                 | 0.0   |    | 0.0   | 0.0   | 0.0   |
| Control Delay ( d ), s/veh                      |  |                    |                 |               |     | 32.9                                                                               | 32.6  |                 | 27.5  | 32.1    | 32.2  | 44.0                                                                                | 21.5  |    | 43.9  | 16.6  | 16.2  |
| Level of Service ( LOS )                        |  |                    |                 |               |     | C                                                                                  | C     |                 | C     | C       | C     | D                                                                                   | C     |    | D     | B     | B     |
| Approach Delay, s/veh / LOS                     |  |                    |                 |               |     | 32.8                                                                               |       | C               | 30.6  |         | C     | 23.2                                                                                |       | C  | 17.9  |       | B     |
| Intersection Delay, s/veh / LOS                 |  |                    |                 |               |     | 23.4                                                                               |       |                 |       |         |       | C                                                                                   |       |    |       |       |       |
| Multimodal Results                              |  |                    |                 |               |     | EB                                                                                 |       |                 | WB    |         |       | NB                                                                                  |       |    | SB    |       |       |
| Pedestrian LOS Score / LOS                      |  |                    |                 |               |     | 1.94                                                                               |       | B               | 2.16  |         | B     | 2.09                                                                                |       | B  | 1.91  |       | B     |
| Bicycle LOS Score / LOS                         |  |                    |                 |               |     | 0.84                                                                               |       | A               | 0.52  |         | A     | 1.49                                                                                |       | A  | 1.09  |       | A     |

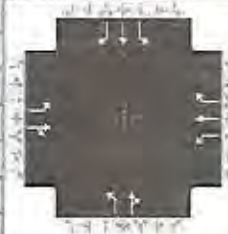
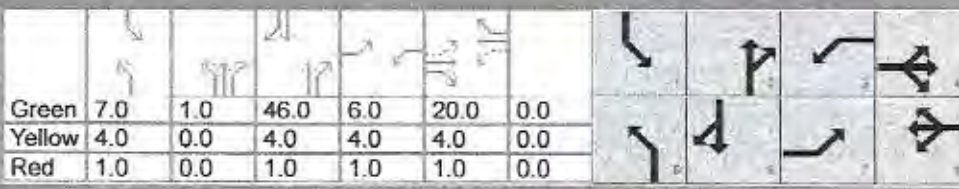


# HCS7 Signalized Intersection Results Summary

| General Information                             |                    |                 |                    | Intersection Information                                                           |       |              |       |  |       |                                                                                     |       |    |       |       |       |
|-------------------------------------------------|--------------------|-----------------|--------------------|------------------------------------------------------------------------------------|-------|--------------|-------|-------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------|-------|----|-------|-------|-------|
| Agency                                          | Solaegui Engineers |                 |                    | Duration, h                                                                        |       | 0.250        |       |                                                                                     |       |                                                                                     |       |    |       |       |       |
| Analyst                                         | MSH                | Analysis Date   | May 20, 2021       | Area Type                                                                          |       | Other        |       |                                                                                     |       |                                                                                     |       |    |       |       |       |
| Jurisdiction                                    | NDOT               | Time Period     | PM Peak Hour       | PHF                                                                                |       | 0.92         |       |                                                                                     |       |                                                                                     |       |    |       |       |       |
| Urban Street                                    |                    | Analysis Year   | Existing + Project | Analysis Period                                                                    |       | 1> 7:00      |       |                                                                                     |       |                                                                                     |       |    |       |       |       |
| Intersection                                    | Main & Logan-Pilot |                 |                    | File Name                                                                          |       | MaLo21pw.xus |       |                                                                                     |       |                                                                                     |       |    |       |       |       |
| Project Description                             |                    |                 |                    |                                                                                    |       |              |       |                                                                                     |       |                                                                                     |       |    |       |       |       |
| Demand Information                              |                    |                 |                    | EB                                                                                 |       |              | WB    |                                                                                     |       | NB                                                                                  |       |    | SB    |       |       |
| Approach Movement                               |                    |                 |                    | L                                                                                  | T     | R            | L     | T                                                                                   | R     | L                                                                                   | T     | R  | L     | T     | R     |
| Demand ( v ), veh/h                             |                    |                 |                    | 179                                                                                | 3     | 77           | 25    | 5                                                                                   | 14    | 57                                                                                  | 404   | 11 | 15    | 573   | 183   |
| Signal Information                              |                    |                 |                    |  |       |              |       |                                                                                     |       |  |       |    |       |       |       |
| Cycle, s                                        | 100.0              | Reference Phase | 2                  |                                                                                    |       |              |       |                                                                                     |       |                                                                                     |       |    |       |       |       |
| Offset, s                                       | 0                  | Reference Point | End                |                                                                                    |       |              |       |                                                                                     |       |                                                                                     |       |    |       |       |       |
| Uncoordinated                                   | Yes                | Simult. Gap E/W | On                 |                                                                                    |       |              |       |                                                                                     |       |                                                                                     |       |    |       |       |       |
| Force Mode                                      | Fixed              | Simult. Gap N/S | On                 |                                                                                    |       |              |       |                                                                                     |       |                                                                                     |       |    |       |       |       |
|                                                 |                    |                 |                    | Green                                                                              | 7.0   | 1.0          | 46.0  | 6.0                                                                                 | 20.0  | 0.0                                                                                 |       |    |       |       |       |
|                                                 |                    |                 |                    | Yellow                                                                             | 4.0   | 0.0          | 4.0   | 4.0                                                                                 | 4.0   | 0.0                                                                                 |       |    |       |       |       |
|                                                 |                    |                 |                    | Red                                                                                | 1.0   | 0.0          | 1.0   | 1.0                                                                                 | 1.0   | 0.0                                                                                 |       |    |       |       |       |
| Timer Results                                   |                    |                 |                    | EBL                                                                                | EBT   | WBL          | WBT   | NBL                                                                                 | NBT   | SBL                                                                                 | SBT   |    |       |       |       |
| Assigned Phase                                  |                    |                 |                    | 7                                                                                  | 4     | 3            | 8     | 5                                                                                   | 2     | 1                                                                                   | 6     |    |       |       |       |
| Case Number                                     |                    |                 |                    | 1.1                                                                                | 4.0   | 1.1          | 3.0   | 2.0                                                                                 | 4.0   | 2.0                                                                                 | 3.0   |    |       |       |       |
| Phase Duration, s                               |                    |                 |                    | 11.0                                                                               | 25.0  | 11.0         | 25.0  | 13.0                                                                                | 52.0  | 12.0                                                                                | 51.0  |    |       |       |       |
| Change Period, ( Y+R c ), s                     |                    |                 |                    | 5.0                                                                                | 5.0   | 5.0          | 5.0   | 5.0                                                                                 | 5.0   | 5.0                                                                                 | 5.0   |    |       |       |       |
| Max Allow Headway ( MAH ), s                    |                    |                 |                    | 3.1                                                                                | 3.3   | 3.1          | 3.3   | 3.1                                                                                 | 3.1   | 3.1                                                                                 | 3.1   |    |       |       |       |
| Queue Clearance Time ( g s ), s                 |                    |                 |                    | 8.0                                                                                | 5.4   | 3.2          | 2.8   | 5.3                                                                                 | 19.1  | 2.9                                                                                 | 29.3  |    |       |       |       |
| Green Extension Time ( g e ), s                 |                    |                 |                    | 0.0                                                                                | 0.1   | 0.0          | 0.1   | 0.0                                                                                 | 2.5   | 0.0                                                                                 | 0.0   |    |       |       |       |
| Phase Call Probability                          |                    |                 |                    | 1.00                                                                               | 1.00  | 1.00         | 1.00  | 1.00                                                                                | 1.00  | 1.00                                                                                | 1.00  |    |       |       |       |
| Max Out Probability                             |                    |                 |                    | 1.00                                                                               | 0.00  | 1.00         | 0.00  | 1.00                                                                                | 0.00  | 0.11                                                                                | 1.00  |    |       |       |       |
| Movement Group Results                          |                    |                 |                    | EB                                                                                 |       |              | WB    |                                                                                     |       | NB                                                                                  |       |    | SB    |       |       |
| Approach Movement                               |                    |                 |                    | L                                                                                  | T     | R            | L     | T                                                                                   | R     | L                                                                                   | T     | R  | L     | T     | R     |
| Assigned Movement                               |                    |                 |                    | 7                                                                                  | 4     | 14           | 3     | 8                                                                                   | 18    | 5                                                                                   | 2     | 12 | 1     | 6     | 16    |
| Adjusted Flow Rate ( v ), veh/h                 |                    |                 |                    | 195                                                                                | 65    |              | 27    | 5                                                                                   | 15    | 62                                                                                  | 451   |    | 16    | 623   | 145   |
| Adjusted Saturation Flow Rate ( s ), veh/h/ln   |                    |                 |                    | 1457                                                                               | 1585  |              | 1767  | 1856                                                                                | 1572  | 1767                                                                                | 1847  |    | 1767  | 1856  | 1296  |
| Queue Service Time ( g s ), s                   |                    |                 |                    | 6.0                                                                                | 3.4   |              | 1.2   | 0.2                                                                                 | 0.8   | 3.3                                                                                 | 17.1  |    | 0.9   | 27.3  | 6.8   |
| Cycle Queue Clearance Time ( g c ), s           |                    |                 |                    | 6.0                                                                                | 3.4   |              | 1.2   | 0.2                                                                                 | 0.8   | 3.3                                                                                 | 17.1  |    | 0.9   | 27.3  | 6.8   |
| Green Ratio ( g/C )                             |                    |                 |                    | 0.26                                                                               | 0.20  |              | 0.26  | 0.20                                                                                | 0.20  | 0.08                                                                                | 0.47  |    | 0.07  | 0.46  | 0.46  |
| Capacity ( c ), veh/h                           |                    |                 |                    | 364                                                                                | 317   |              | 371   | 371                                                                                 | 314   | 141                                                                                 | 868   |    | 124   | 854   | 596   |
| Volume-to-Capacity Ratio ( X )                  |                    |                 |                    | 0.534                                                                              | 0.206 |              | 0.073 | 0.015                                                                               | 0.048 | 0.438                                                                               | 0.520 |    | 0.132 | 0.730 | 0.242 |
| Back of Queue ( Q ), ft/ln ( 95 th percentile)  |                    |                 |                    | 96.3                                                                               | 60.3  |              | 22.3  | 4.8                                                                                 | 13.6  | 67.8                                                                                | 290   |    | 17.5  | 447   | 105   |
| Back of Queue ( Q ), veh/ln ( 95 th percentile) |                    |                 |                    | 3.2                                                                                | 2.4   |              | 0.9   | 0.2                                                                                 | 0.5   | 2.6                                                                                 | 11.3  |    | 0.7   | 17.5  | 3.5   |
| Queue Storage Ratio ( RQ ) ( 95 th percentile)  |                    |                 |                    | 0.00                                                                               | 0.00  |              | 0.00  | 0.00                                                                                | 0.00  | 0.00                                                                                | 0.00  |    | 0.00  | 0.00  | 0.00  |
| Uniform Delay ( d 1 ), s/veh                    |                    |                 |                    | 32.9                                                                               | 33.4  |              | 28.0  | 32.1                                                                                | 32.3  | 43.9                                                                                | 18.6  |    | 43.6  | 21.9  | 16.4  |
| Incremental Delay ( d 2 ), s/veh                |                    |                 |                    | 0.8                                                                                | 0.1   |              | 0.0   | 0.0                                                                                 | 0.0   | 0.8                                                                                 | 0.3   |    | 0.2   | 2.8   | 0.1   |
| Initial Queue Delay ( d 3 ), s/veh              |                    |                 |                    | 0.0                                                                                | 0.0   |              | 0.0   | 0.0                                                                                 | 0.0   | 0.0                                                                                 | 0.0   |    | 0.0   | 0.0   | 0.0   |
| Control Delay ( d ), s/veh                      |                    |                 |                    | 33.7                                                                               | 33.5  |              | 28.0  | 32.1                                                                                | 32.3  | 44.7                                                                                | 18.8  |    | 43.8  | 24.7  | 16.5  |
| Level of Service (LOS)                          |                    |                 |                    | C                                                                                  | C     |              | C     | C                                                                                   | C     | D                                                                                   | B     |    | D     | C     | B     |
| Approach Delay, s/veh / LOS                     |                    |                 |                    | 33.6                                                                               | C     |              | 29.8  | C                                                                                   |       | 22.0                                                                                | C     |    | 23.6  | C     |       |
| Intersection Delay, s/veh / LOS                 |                    |                 |                    | 24.9                                                                               |       |              |       |                                                                                     |       | C                                                                                   |       |    |       |       |       |
| Multimodal Results                              |                    |                 |                    | EB                                                                                 |       |              | WB    |                                                                                     |       | NB                                                                                  |       |    | SB    |       |       |
| Pedestrian LOS Score / LOS                      |                    |                 |                    | 1.94                                                                               | B     |              | 2.20  | B                                                                                   |       | 2.09                                                                                | B     |    | 1.93  | B     |       |
| Bicycle LOS Score / LOS                         |                    |                 |                    | 0.92                                                                               | A     |              | 0.57  | A                                                                                   |       | 1.33                                                                                | A     |    | 1.78  | B     |       |



# HCS7 Signalized Intersection Results Summary

| General Information                              |                    |                 |               |              |  | Intersection Information                                                           |         |     |       |       |       |  |       |    |       |       |       |
|--------------------------------------------------|--------------------|-----------------|---------------|--------------|--|------------------------------------------------------------------------------------|---------|-----|-------|-------|-------|-------------------------------------------------------------------------------------|-------|----|-------|-------|-------|
| Agency                                           | Solaegui Engineers |                 |               |              |  | Duration, h                                                                        | 0.250   |     |       |       |       |                                                                                     |       |    |       |       |       |
| Analyst                                          | MSH                |                 | Analysis Date | May 20, 2021 |  | Area Type                                                                          | Other   |     |       |       |       |                                                                                     |       |    |       |       |       |
| Jurisdiction                                     | NDOT               |                 | Time Period   | AM Peak Hour |  | PHF                                                                                | 0.92    |     |       |       |       |                                                                                     |       |    |       |       |       |
| Urban Street                                     |                    |                 | Analysis Year | 2041 Base    |  | Analysis Period                                                                    | 1> 7:00 |     |       |       |       |                                                                                     |       |    |       |       |       |
| Intersection                                     | Main & Logan-Pilot |                 | File Name     | MaLo41ax.xus |  |                                                                                    |         |     |       |       |       |                                                                                     |       |    |       |       |       |
| Project Description                              |                    |                 |               |              |  |                                                                                    |         |     |       |       |       |                                                                                     |       |    |       |       |       |
| Demand Information                               |                    |                 |               |              |  | EB                                                                                 |         |     | WB    |       |       | NB                                                                                  |       |    | SB    |       |       |
| Approach Movement                                |                    |                 |               |              |  | L                                                                                  | T       | R   | L     | T     | R     | L                                                                                   | T     | R  | L     | T     | R     |
| Demand ( v ), veh/h                              |                    |                 |               |              |  | 222                                                                                | 4       | 37  | 7     | 4     | 10    | 54                                                                                  | 563   | 25 | 24    | 193   | 179   |
| Signal Information                               |                    |                 |               |              |  |  |         |     |       |       |       |  |       |    |       |       |       |
| Cycle, s                                         | 100.0              | Reference Phase | 2             |              |  |                                                                                    |         |     |       |       |       |                                                                                     |       |    |       |       |       |
| Offset, s                                        | 0                  | Reference Point | End           |              |  |                                                                                    |         |     |       |       |       |                                                                                     |       |    |       |       |       |
| Uncoordinated                                    | Yes                | Simult. Gap E/W | On            |              |  |                                                                                    |         |     |       |       |       |                                                                                     |       |    |       |       |       |
| Force Mode                                       | Fixed              | Simult. Gap N/S | On            |              |  |                                                                                    |         |     |       |       |       |                                                                                     |       |    |       |       |       |
|                                                  |                    |                 |               |              |  | Green                                                                              | 7.0     | 1.0 | 46.0  | 6.0   | 20.0  | 0.0                                                                                 |       |    |       |       |       |
|                                                  |                    |                 |               |              |  | Yellow                                                                             | 4.0     | 0.0 | 4.0   | 4.0   | 4.0   | 0.0                                                                                 |       |    |       |       |       |
|                                                  |                    |                 |               |              |  | Red                                                                                | 1.0     | 0.0 | 1.0   | 1.0   | 1.0   | 0.0                                                                                 |       |    |       |       |       |
| Timer Results                                    |                    |                 |               |              |  | EBL                                                                                | EBT     |     | WBL   | WBT   |       | NBL                                                                                 | NBT   |    | SBL   | SBT   |       |
| Assigned Phase                                   |                    |                 |               |              |  | 7                                                                                  | 4       |     | 3     | 8     |       | 5                                                                                   | 2     |    | 1     | 6     |       |
| Case Number                                      |                    |                 |               |              |  | 1.1                                                                                | 4.0     |     | 1.1   | 3.0   |       | 2.0                                                                                 | 4.0   |    | 2.0   | 3.0   |       |
| Phase Duration, s                                |                    |                 |               |              |  | 11.0                                                                               | 25.0    |     | 11.0  | 25.0  |       | 13.0                                                                                | 52.0  |    | 12.0  | 51.0  |       |
| Change Period, ( Y+R <sub>c</sub> ), s           |                    |                 |               |              |  | 5.0                                                                                | 5.0     |     | 5.0   | 5.0   |       | 5.0                                                                                 | 5.0   |    | 5.0   | 5.0   |       |
| Max Allow Headway ( MAH ), s                     |                    |                 |               |              |  | 3.1                                                                                | 3.3     |     | 3.1   | 3.3   |       | 3.1                                                                                 | 3.1   |    | 3.1   | 3.1   |       |
| Queue Clearance Time ( g <sub>s</sub> ), s       |                    |                 |               |              |  | 8.0                                                                                | 3.7     |     | 2.3   | 2.6   |       | 5.2                                                                                 | 30.2  |    | 3.4   | 8.9   |       |
| Green Extension Time ( g <sub>e</sub> ), s       |                    |                 |               |              |  | 0.0                                                                                | 0.1     |     | 0.0   | 0.1   |       | 0.0                                                                                 | 1.9   |    | 0.0   | 1.8   |       |
| Phase Call Probability                           |                    |                 |               |              |  | 1.00                                                                               | 1.00    |     | 1.00  | 1.00  |       | 1.00                                                                                | 1.00  |    | 1.00  | 1.00  |       |
| Max Out Probability                              |                    |                 |               |              |  | 1.00                                                                               | 0.00    |     | 0.24  | 0.00  |       | 1.00                                                                                | 0.01  |    | 0.38  | 0.06  |       |
| Movement Group Results                           |                    |                 |               |              |  | EB                                                                                 |         |     | WB    |       |       | NB                                                                                  |       |    | SB    |       |       |
| Approach Movement                                |                    |                 |               |              |  | L                                                                                  | T       | R   | L     | T     | R     | L                                                                                   | T     | R  | L     | T     | R     |
| Assigned Movement                                |                    |                 |               |              |  | 7                                                                                  | 4       | 14  | 3     | 8     | 18    | 5                                                                                   | 2     | 12 | 1     | 6     | 16    |
| Adjusted Flow Rate ( v ), veh/h                  |                    |                 |               |              |  | 241                                                                                | 34      |     | 8     | 4     | 11    | 59                                                                                  | 639   |    | 26    | 210   | 140   |
| Adjusted Saturation Flow Rate ( s ), veh/h/ln    |                    |                 |               |              |  | 1457                                                                               | 1604    |     | 1767  | 1856  | 1572  | 1767                                                                                | 1841  |    | 1767  | 1856  | 1296  |
| Queue Service Time ( g <sub>s</sub> ), s         |                    |                 |               |              |  | 6.0                                                                                | 1.7     |     | 0.3   | 0.2   | 0.6   | 3.2                                                                                 | 28.2  |    | 1.4   | 6.9   | 6.6   |
| Cycle Queue Clearance Time ( g <sub>c</sub> ), s |                    |                 |               |              |  | 6.0                                                                                | 1.7     |     | 0.3   | 0.2   | 0.6   | 3.2                                                                                 | 28.2  |    | 1.4   | 6.9   | 6.6   |
| Green Ratio ( g/C )                              |                    |                 |               |              |  | 0.26                                                                               | 0.20    |     | 0.26  | 0.20  | 0.20  | 0.08                                                                                | 0.47  |    | 0.07  | 0.46  | 0.46  |
| Capacity ( c ), veh/h                            |                    |                 |               |              |  | 365                                                                                | 321     |     | 400   | 371   | 314   | 141                                                                                 | 865   |    | 124   | 854   | 596   |
| Volume-to-Capacity Ratio ( X )                   |                    |                 |               |              |  | 0.661                                                                              | 0.105   |     | 0.019 | 0.012 | 0.035 | 0.415                                                                               | 0.738 |    | 0.211 | 0.246 | 0.235 |
| Back of Queue ( Q ), ft/ln ( 95 th percentile)   |                    |                 |               |              |  | 178.2                                                                              | 30.5    |     | 6.2   | 3.9   | 9.7   | 64                                                                                  | 455.1 |    | 28.2  | 130.3 | 101.4 |
| Back of Queue ( Q ), veh/ln ( 95 th percentile)  |                    |                 |               |              |  | 5.9                                                                                | 1.2     |     | 0.2   | 0.2   | 0.4   | 2.5                                                                                 | 17.8  |    | 1.1   | 5.1   | 3.4   |
| Queue Storage Ratio ( RQ ) ( 95 th percentile)   |                    |                 |               |              |  | 0.00                                                                               | 0.00    |     | 0.00  | 0.00  | 0.00  | 0.00                                                                                | 0.00  |    | 0.00  | 0.00  | 0.00  |
| Uniform Delay ( d <sub>1</sub> ), s/veh          |                    |                 |               |              |  | 34.7                                                                               | 32.7    |     | 27.6  | 32.1  | 32.2  | 43.8                                                                                | 21.5  |    | 43.9  | 16.4  | 16.3  |
| Incremental Delay ( d <sub>2</sub> ), s/veh      |                    |                 |               |              |  | 3.5                                                                                | 0.1     |     | 0.0   | 0.0   | 0.0   | 0.7                                                                                 | 3.0   |    | 0.3   | 0.1   | 0.1   |
| Initial Queue Delay ( d <sub>3</sub> ), s/veh    |                    |                 |               |              |  | 0.0                                                                                | 0.0     |     | 0.0   | 0.0   | 0.0   | 0.0                                                                                 | 0.0   |    | 0.0   | 0.0   | 0.0   |
| Control Delay ( d ), s/veh                       |                    |                 |               |              |  | 38.2                                                                               | 32.7    |     | 27.6  | 32.1  | 32.2  | 44.5                                                                                | 24.5  |    | 44.2  | 16.5  | 16.4  |
| Level of Service ( LOS )                         |                    |                 |               |              |  | D                                                                                  | C       |     | C     | C     | C     | D                                                                                   | C     |    | D     | B     | B     |
| Approach Delay, s/veh / LOS                      |                    |                 |               |              |  | 37.6                                                                               | D       |     | 30.7  | C     |       | 26.2                                                                                | C     |    | 18.4  | B     |       |
| Intersection Delay, s/veh / LOS                  |                    |                 |               |              |  | 26.4                                                                               |         |     |       |       |       | C                                                                                   |       |    |       |       |       |
| Multimodal Results                               |                    |                 |               |              |  | EB                                                                                 |         |     | WB    |       |       | NB                                                                                  |       |    | SB    |       |       |
| Pedestrian LOS Score / LOS                       |                    |                 |               |              |  | 1.94                                                                               | B       |     | 2.20  | B     |       | 2.09                                                                                | B     |    | 1.92  | B     |       |
| Bicycle LOS Score / LOS                          |                    |                 |               |              |  | 0.94                                                                               | A       |     | 0.53  | A     |       | 1.64                                                                                | B     |    | 1.11  | A     |       |



# HCS7 Signalized Intersection Results Summary

| General Information                             |       |                    |     |               |  | Intersection Information |       |                 |       |         |       |       |       |    |       |       |       |
|-------------------------------------------------|-------|--------------------|-----|---------------|--|--------------------------|-------|-----------------|-------|---------|-------|-------|-------|----|-------|-------|-------|
| Agency                                          |       | Solaegui Engineers |     |               |  | Duration, h              |       | 0.250           |       |         |       |       |       |    |       |       |       |
| Analyst                                         |       | MSH                |     | Analysis Date |  | May 20, 2021             |       | Area Type       |       | Other   |       |       |       |    |       |       |       |
| Jurisdiction                                    |       | NDOT               |     | Time Period   |  | PM Peak Hour             |       | PHF             |       | 0.92    |       |       |       |    |       |       |       |
| Urban Street                                    |       |                    |     | Analysis Year |  | 2041 Base                |       | Analysis Period |       | 1> 7:00 |       |       |       |    |       |       |       |
| Intersection                                    |       | Main & Logan-Pilot |     | File Name     |  | MaLo41px.xus             |       |                 |       |         |       |       |       |    |       |       |       |
| Project Description                             |       |                    |     |               |  |                          |       |                 |       |         |       |       |       |    |       |       |       |
| Demand Information                              |       |                    |     |               |  | EB                       |       |                 | WB    |         |       | NB    |       |    | SB    |       |       |
| Approach Movement                               |       |                    |     |               |  | L                        | T     | R               | L     | T       | R     | L     | T     | R  | L     | T     | R     |
| Demand ( v ), veh/h                             |       |                    |     |               |  | 235                      | 4     | 99              | 32    | 7       | 18    | 74    | 441   | 13 | 20    | 639   | 241   |
| Signal Information                              |       |                    |     |               |  |                          |       |                 |       |         |       |       |       |    |       |       |       |
| Cycle, s                                        | 100.0 | Reference Phase    | 2   |               |  |                          |       |                 |       |         |       |       |       |    |       |       |       |
| Offset, s                                       | 0     | Reference Point    | End |               |  |                          |       |                 |       |         |       |       |       |    |       |       |       |
| Uncoordinated                                   | Yes   | Simult. Gap E/W    | On  |               |  |                          |       |                 |       |         |       |       |       |    |       |       |       |
| Force Mode                                      | Fixed | Simult. Gap N/S    | On  |               |  |                          |       |                 |       |         |       |       |       |    |       |       |       |
|                                                 |       |                    |     |               |  | Green                    | 7.0   | 1.0             | 46.0  | 6.0     | 20.0  | 0.0   |       |    |       |       |       |
|                                                 |       |                    |     |               |  | Yellow                   | 4.0   | 0.0             | 4.0   | 4.0     | 4.0   | 0.0   |       |    |       |       |       |
|                                                 |       |                    |     |               |  | Red                      | 1.0   | 0.0             | 1.0   | 1.0     | 1.0   | 0.0   |       |    |       |       |       |
| Timer Results                                   |       |                    |     |               |  | EBL                      | EBT   | WBL             | WBT   | NBL     | NBT   | SBL   | SBT   |    |       |       |       |
| Assigned Phase                                  |       |                    |     |               |  | 7                        | 4     | 3               | 8     | 5       | 2     | 1     | 6     |    |       |       |       |
| Case Number                                     |       |                    |     |               |  | 1.1                      | 4.0   | 1.1             | 3.0   | 2.0     | 4.0   | 2.0   | 3.0   |    |       |       |       |
| Phase Duration, s                               |       |                    |     |               |  | 11.0                     | 25.0  | 11.0            | 25.0  | 13.0    | 52.0  | 12.0  | 51.0  |    |       |       |       |
| Change Period, ( Y+R c ), s                     |       |                    |     |               |  | 5.0                      | 5.0   | 5.0             | 5.0   | 5.0     | 5.0   | 5.0   | 5.0   |    |       |       |       |
| Max Allow Headway ( MAH ), s                    |       |                    |     |               |  | 3.1                      | 3.3   | 3.1             | 3.3   | 3.1     | 3.1   | 3.1   | 3.1   |    |       |       |       |
| Queue Clearance Time ( g s ), s                 |       |                    |     |               |  | 8.0                      | 6.8   | 3.5             | 3.0   | 6.4     | 21.3  | 3.2   | 34.3  |    |       |       |       |
| Green Extension Time ( g e ), s                 |       |                    |     |               |  | 0.0                      | 0.2   | 0.0             | 0.2   | 0.0     | 3.0   | 0.0   | 0.0   |    |       |       |       |
| Phase Call Probability                          |       |                    |     |               |  | 1.00                     | 1.00  | 1.00            | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  |    |       |       |       |
| Max Out Probability                             |       |                    |     |               |  | 1.00                     | 0.00  | 1.00            | 0.00  | 1.00    | 0.01  | 0.22  | 1.00  |    |       |       |       |
| Movement Group Results                          |       |                    |     |               |  | EB                       |       |                 | WB    |         |       | NB    |       |    | SB    |       |       |
| Approach Movement                               |       |                    |     |               |  | L                        | T     | R               | L     | T       | R     | L     | T     | R  | L     | T     | R     |
| Assigned Movement                               |       |                    |     |               |  | 7                        | 4     | 14              | 3     | 8       | 18    | 5     | 2     | 12 | 1     | 6     | 16    |
| Adjusted Flow Rate ( v ), veh/h                 |       |                    |     |               |  | 255                      | 90    |                 | 35    | 8       | 20    | 80    | 493   |    | 22    | 695   | 208   |
| Adjusted Saturation Flow Rate ( s ), veh/h/ln   |       |                    |     |               |  | 1457                     | 1584  |                 | 1767  | 1856    | 1572  | 1767  | 1846  |    | 1767  | 1856  | 1296  |
| Queue Service Time ( g s ), s                   |       |                    |     |               |  | 6.0                      | 4.8   |                 | 1.5   | 0.3     | 1.0   | 4.4   | 19.3  |    | 1.2   | 32.3  | 10.3  |
| Cycle Queue Clearance Time ( g c ), s           |       |                    |     |               |  | 6.0                      | 4.8   |                 | 1.5   | 0.3     | 1.0   | 4.4   | 19.3  |    | 1.2   | 32.3  | 10.3  |
| Green Ratio ( g/C )                             |       |                    |     |               |  | 0.26                     | 0.20  |                 | 0.26  | 0.20    | 0.20  | 0.08  | 0.47  |    | 0.07  | 0.46  | 0.46  |
| Capacity ( c ), veh/h                           |       |                    |     |               |  | 363                      | 317   |                 | 349   | 371     | 314   | 141   | 868   |    | 124   | 854   | 596   |
| Volume-to-Capacity Ratio ( X )                  |       |                    |     |               |  | 0.704                    | 0.285 |                 | 0.100 | 0.021   | 0.062 | 0.569 | 0.569 |    | 0.176 | 0.814 | 0.348 |
| Back of Queue ( Q ), ft/ln ( 95 th percentile)  |       |                    |     |               |  | 210.1                    | 84.9  |                 | 28.7  | 6.8     | 17.6  | 93.3  | 321.9 |    | 23.4  | 533   | 159.7 |
| Back of Queue ( Q ), veh/ln ( 95 th percentile) |       |                    |     |               |  | 7.0                      | 3.3   |                 | 1.1   | 0.3     | 0.7   | 3.6   | 12.6  |    | 0.9   | 20.8  | 5.3   |
| Queue Storage Ratio ( RQ ) ( 95 th percentile)  |       |                    |     |               |  | 0.00                     | 0.00  |                 | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  |    | 0.00  | 0.00  | 0.00  |
| Uniform Delay ( d 1 ), s/veh                    |       |                    |     |               |  | 35.4                     | 33.9  |                 | 28.2  | 32.1    | 32.4  | 44.3  | 19.2  |    | 43.8  | 23.3  | 17.4  |
| Incremental Delay ( d 2 ), s/veh                |       |                    |     |               |  | 5.2                      | 0.2   |                 | 0.0   | 0.0     | 0.0   | 3.4   | 0.6   |    | 0.2   | 5.7   | 0.1   |
| Initial Queue Delay ( d 3 ), s/veh              |       |                    |     |               |  | 0.0                      | 0.0   |                 | 0.0   | 0.0     | 0.0   | 0.0   | 0.0   |    | 0.0   | 0.0   | 0.0   |
| Control Delay ( d ), s/veh                      |       |                    |     |               |  | 40.5                     | 34.1  |                 | 28.2  | 32.1    | 32.4  | 47.8  | 19.7  |    | 44.0  | 29.0  | 17.5  |
| Level of Service ( LOS )                        |       |                    |     |               |  | D                        | C     |                 | C     | C       | C     | D     | B     |    | D     | C     | B     |
| Approach Delay, s/veh / LOS                     |       |                    |     |               |  | 38.9                     |       | D               | 30.0  |         | C     | 23.7  |       | C  | 26.8  |       | C     |
| Intersection Delay, s/veh / LOS                 |       |                    |     |               |  | 28.1                     |       |                 |       |         |       | C     |       |    |       |       |       |
| Multimodal Results                              |       |                    |     |               |  | EB                       |       |                 | WB    |         |       | NB    |       |    | SB    |       |       |
| Pedestrian LOS Score / LOS                      |       |                    |     |               |  | 1.94                     |       | B               | 2.20  |         | B     | 2.09  |       | B  | 1.93  |       | B     |
| Bicycle LOS Score / LOS                         |       |                    |     |               |  | 1.06                     |       | A               | 0.59  |         | A     | 1.43  |       | A  | 2.01  |       | B     |



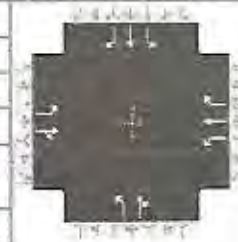
# HCS7 Signalized Intersection Results Summary

## General Information

|                     |                    |
|---------------------|--------------------|
| Agency              | Solaegui Engineers |
| Analyst             | MSH                |
| Jurisdiction        | NDOT               |
| Urban Street        |                    |
| Intersection        | Main & Logan-Pilot |
| Project Description |                    |

## Intersection Information

|                 |                     |
|-----------------|---------------------|
| Duration, h     | 0.250               |
| Area Type       | Other               |
| PHF             | 0.92                |
| Analysis Year   | 2041 Base + Project |
| Analysis Period | 1> 7:00             |
| File Name       | MaLo41aw.xus        |



## Demand Information

|                   | EB  |   |    | WB |   |    | NB |     |    | SB |     |     |
|-------------------|-----|---|----|----|---|----|----|-----|----|----|-----|-----|
| Approach Movement | L   | T | R  | L  | T | R  | L  | T   | R  | L  | T   | R   |
| Demand (v), veh/h | 222 | 4 | 38 | 8  | 4 | 10 | 56 | 629 | 26 | 24 | 249 | 179 |

## Signal Information

|               |       |                 |     |        |     |     |      |     |      |     |  |
|---------------|-------|-----------------|-----|--------|-----|-----|------|-----|------|-----|--|
| Cycle, s      | 100.0 | Reference Phase | 2   |        |     |     |      |     |      |     |  |
| Offset, s     | 0     | Reference Point | End |        |     |     |      |     |      |     |  |
| Uncoordinated | Yes   | Simult. Gap E/W | On  |        |     |     |      |     |      |     |  |
| Force Mode    | Fixed | Simult. Gap N/S | On  |        |     |     |      |     |      |     |  |
|               |       |                 |     | Green  | 7.0 | 1.0 | 46.0 | 6.0 | 20.0 | 0.0 |  |
|               |       |                 |     | Yellow | 4.0 | 0.0 | 4.0  | 4.0 | 4.0  | 0.0 |  |
|               |       |                 |     | Red    | 1.0 | 0.0 | 1.0  | 1.0 | 1.0  | 0.0 |  |

## Timer Results

|                                           | EBL  | EBT  | WBL  | WBT  | NBL  | NBT  | SBL  | SBT  |
|-------------------------------------------|------|------|------|------|------|------|------|------|
| Assigned Phase                            | 7    | 4    | 3    | 8    | 5    | 2    | 1    | 6    |
| Case Number                               | 1.1  | 4.0  | 1.1  | 3.0  | 2.0  | 4.0  | 2.0  | 3.0  |
| Phase Duration, s                         | 11.0 | 25.0 | 11.0 | 25.0 | 13.0 | 52.0 | 12.0 | 51.0 |
| Change Period, (Y+R <sub>c</sub> ), s     | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  | 5.0  |
| Max Allow Headway (MAH), s                | 3.1  | 3.3  | 3.1  | 3.3  | 3.1  | 3.1  | 3.1  | 3.1  |
| Queue Clearance Time (g <sub>s</sub> ), s | 8.0  | 3.8  | 2.4  | 2.6  | 5.3  | 35.4 | 3.4  | 11.2 |
| Green Extension Time (g <sub>e</sub> ), s | 0.0  | 0.1  | 0.0  | 0.1  | 0.0  | 2.1  | 0.0  | 1.9  |
| Phase Call Probability                    | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Max Out Probability                       | 1.00 | 0.00 | 0.27 | 0.00 | 1.00 | 0.08 | 0.38 | 0.18 |

## Movement Group Results

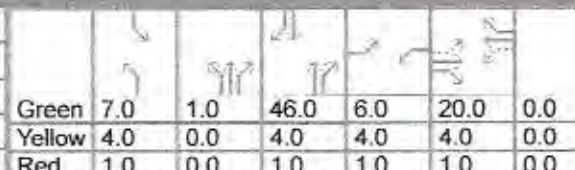
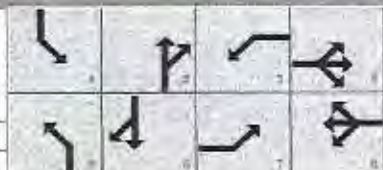
|                                                 | EB    |       |    | WB    |       |       | NB    |       |    | SB    |       |       |
|-------------------------------------------------|-------|-------|----|-------|-------|-------|-------|-------|----|-------|-------|-------|
| Approach Movement                               | L     | T     | R  | L     | T     | R     | L     | T     | R  | L     | T     | R     |
| Assigned Movement                               | 7     | 4     | 14 | 3     | 8     | 18    | 5     | 2     | 12 | 1     | 6     | 16    |
| Adjusted Flow Rate (v), veh/h                   | 241   | 35    |    | 9     | 4     | 11    | 61    | 712   |    | 26    | 271   | 140   |
| Adjusted Saturation Flow Rate (s), veh/h/ln     | 1457  | 1603  |    | 1767  | 1856  | 1572  | 1767  | 1842  |    | 1767  | 1856  | 1296  |
| Queue Service Time (g <sub>s</sub> ), s         | 6.0   | 1.8   |    | 0.4   | 0.2   | 0.6   | 3.3   | 33.4  |    | 1.4   | 9.2   | 6.6   |
| Cycle Queue Clearance Time (g <sub>c</sub> ), s | 6.0   | 1.8   |    | 0.4   | 0.2   | 0.6   | 3.3   | 33.4  |    | 1.4   | 9.2   | 6.6   |
| Green Ratio (g/C)                               | 0.26  | 0.20  |    | 0.26  | 0.20  | 0.20  | 0.08  | 0.47  |    | 0.07  | 0.46  | 0.46  |
| Capacity (c), veh/h                             | 365   | 321   |    | 399   | 371   | 314   | 141   | 866   |    | 124   | 854   | 596   |
| Volume-to-Capacity Ratio (X)                    | 0.661 | 0.108 |    | 0.022 | 0.012 | 0.035 | 0.431 | 0.822 |    | 0.211 | 0.317 | 0.235 |
| Back of Queue (Q), ft/ln (95 th percentile)     | 178.2 | 31.5  |    | 7.1   | 3.9   | 9.7   | 66.5  | 544   |    | 28.2  | 174.8 | 101.4 |
| Back of Queue (Q), veh/ln (95 th percentile)    | 5.9   | 1.2   |    | 0.3   | 0.2   | 0.4   | 2.6   | 21.2  |    | 1.1   | 6.8   | 3.4   |
| Queue Storage Ratio (RQ) (95 th percentile)     | 0.00  | 0.00  |    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |    | 0.00  | 0.00  | 0.00  |
| Uniform Delay (d <sub>1</sub> ), s/veh          | 34.7  | 32.7  |    | 27.6  | 32.1  | 32.2  | 43.8  | 22.9  |    | 43.9  | 17.1  | 16.3  |
| Incremental Delay (d <sub>2</sub> ), s/veh      | 3.5   | 0.1   |    | 0.0   | 0.0   | 0.0   | 0.8   | 6.0   |    | 0.3   | 0.1   | 0.1   |
| Initial Queue Delay (d <sub>3</sub> ), s/veh    | 0.0   | 0.0   |    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |    | 0.0   | 0.0   | 0.0   |
| Control Delay (d), s/veh                        | 38.2  | 32.8  |    | 27.6  | 32.1  | 32.2  | 44.6  | 28.9  |    | 44.2  | 17.1  | 16.4  |
| Level of Service (LOS)                          | D     | C     |    | C     | C     | C     | D     | C     |    | D     | B     | B     |
| Approach Delay, s/veh / LOS                     | 37.5  |       | D  | 30.5  |       | C     | 30.1  |       | C  | 18.5  |       | B     |
| Intersection Delay, s/veh / LOS                 | 28.1  |       |    |       |       |       | C     |       |    |       |       |       |

## Multimodal Results

|                            | EB   |  |   | WB   |  |   | NB   |  |   | SB   |  |   |
|----------------------------|------|--|---|------|--|---|------|--|---|------|--|---|
| Pedestrian LOS Score / LOS | 1.94 |  | B | 2.20 |  | B | 2.09 |  | B | 1.92 |  | B |
| Bicycle LOS Score / LOS    | 0.94 |  | A | 0.53 |  | A | 1.76 |  | B | 1.21 |  | A |



# HCS7 Signalized Intersection Results Summary

| General Information                              |                     |                 |               |                                                                                    |       | Intersection Information |         |       |       |                                                                                     |       |  |       |       |       |
|--------------------------------------------------|---------------------|-----------------|---------------|------------------------------------------------------------------------------------|-------|--------------------------|---------|-------|-------|-------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------|-------|-------|-------|
| Agency                                           | Solaegui Engineers  |                 |               |                                                                                    |       | Duration, h              | 0.250   |       |       |                                                                                     |       |                                                                                     |       |       |       |
| Analyst                                          | MSH                 |                 | Analysis Date | May 20, 2021                                                                       |       | Area Type                | Other   |       |       |                                                                                     |       |                                                                                     |       |       |       |
| Jurisdiction                                     | NDOT                |                 | Time Period   | PM Peak Hour                                                                       |       | PHF                      | 0.92    |       |       |                                                                                     |       |                                                                                     |       |       |       |
| Urban Street                                     |                     |                 | Analysis Year | 2041 Base + Project                                                                |       | Analysis Period          | 1> 7:00 |       |       |                                                                                     |       |                                                                                     |       |       |       |
| Intersection                                     | Mainn & Logan-Pilot |                 | File Name     | MaLo41pw.xus                                                                       |       |                          |         |       |       |                                                                                     |       |                                                                                     |       |       |       |
| Project Description                              |                     |                 |               |                                                                                    |       |                          |         |       |       |                                                                                     |       |                                                                                     |       |       |       |
| Demand Information                               |                     |                 |               | EB                                                                                 |       |                          | WB      |       |       | NB                                                                                  |       |                                                                                     | SB    |       |       |
| Approach Movement                                |                     |                 |               | L                                                                                  | T     | R                        | L       | T     | R     | L                                                                                   | T     | R                                                                                   | L     | T     | R     |
| Demand ( v ), veh/h                              |                     |                 |               | 235                                                                                | 4     | 101                      | 33      | 7     | 18    | 75                                                                                  | 510   | 14                                                                                  | 20    | 725   | 241   |
| Signal Information                               |                     |                 |               |  |       |                          |         |       |       |  |       |                                                                                     |       |       |       |
| Cycle, s                                         | 100.0               | Reference Phase | 2             | Green                                                                              | 7.0   | 1.0                      | 46.0    | 6.0   | 20.0  | 0.0                                                                                 |       |                                                                                     |       |       |       |
| Offset, s                                        | 0                   | Reference Point | End           | Yellow                                                                             | 4.0   | 0.0                      | 4.0     | 4.0   | 4.0   | 0.0                                                                                 |       |                                                                                     |       |       |       |
| Uncoordinated                                    | Yes                 | Simult. Gap E/W | On            | Red                                                                                | 1.0   | 0.0                      | 1.0     | 1.0   | 1.0   | 0.0                                                                                 |       |                                                                                     |       |       |       |
| Force Mode                                       | Fixed               | Simult. Gap N/S | On            |                                                                                    |       |                          |         |       |       |                                                                                     |       |                                                                                     |       |       |       |
| Timer Results                                    |                     |                 |               | EBL                                                                                | EBT   | WBL                      | WBT     | NBL   | NBT   | SBL                                                                                 | SBT   |                                                                                     |       |       |       |
| Assigned Phase                                   |                     |                 |               | 7                                                                                  | 4     | 3                        | 8       | 5     | 2     | 1                                                                                   | 6     |                                                                                     |       |       |       |
| Case Number                                      |                     |                 |               | 1.1                                                                                | 4.0   | 1.1                      | 3.0     | 2.0   | 4.0   | 2.0                                                                                 | 3.0   |                                                                                     |       |       |       |
| Phase Duration, s                                |                     |                 |               | 11.0                                                                               | 25.0  | 11.0                     | 25.0    | 13.0  | 52.0  | 12.0                                                                                | 51.0  |                                                                                     |       |       |       |
| Change Period, ( Y+R <sub>c</sub> ), s           |                     |                 |               | 5.0                                                                                | 5.0   | 5.0                      | 5.0     | 5.0   | 5.0   | 5.0                                                                                 | 5.0   |                                                                                     |       |       |       |
| Max Allow Headway ( MAH ), s                     |                     |                 |               | 3.1                                                                                | 3.3   | 3.1                      | 3.3     | 3.1   | 3.1   | 3.1                                                                                 | 3.1   |                                                                                     |       |       |       |
| Queue Clearance Time ( g <sub>s</sub> ), s       |                     |                 |               | 8.0                                                                                | 7.0   | 3.5                      | 3.0     | 6.4   | 25.6  | 3.2                                                                                 | 41.9  |                                                                                     |       |       |       |
| Green Extension Time ( g <sub>e</sub> ), s       |                     |                 |               | 0.0                                                                                | 0.2   | 0.0                      | 0.2     | 0.0   | 3.5   | 0.0                                                                                 | 0.0   |                                                                                     |       |       |       |
| Phase Call Probability                           |                     |                 |               | 1.00                                                                               | 1.00  | 1.00                     | 1.00    | 1.00  | 1.00  | 1.00                                                                                | 1.00  |                                                                                     |       |       |       |
| Max Out Probability                              |                     |                 |               | 1.00                                                                               | 0.00  | 1.00                     | 0.00    | 1.00  | 0.03  | 0.22                                                                                | 1.00  |                                                                                     |       |       |       |
| Movement Group Results                           |                     |                 |               | EB                                                                                 |       |                          | WB      |       |       | NB                                                                                  |       |                                                                                     | SB    |       |       |
| Approach Movement                                |                     |                 |               | L                                                                                  | T     | R                        | L       | T     | R     | L                                                                                   | T     | R                                                                                   | L     | T     | R     |
| Assigned Movement                                |                     |                 |               | 7                                                                                  | 4     | 14                       | 3       | 8     | 18    | 5                                                                                   | 2     | 12                                                                                  | 1     | 6     | 16    |
| Adjusted Flow Rate ( v ), veh/h                  |                     |                 |               | 255                                                                                | 92    |                          | 36      | 8     | 20    | 82                                                                                  | 570   |                                                                                     | 22    | 788   | 208   |
| Adjusted Saturation Flow Rate ( s ), veh/h/ln    |                     |                 |               | 1457                                                                               | 1584  |                          | 1767    | 1856  | 1572  | 1767                                                                                | 1847  |                                                                                     | 1767  | 1856  | 1296  |
| Queue Service Time ( g <sub>s</sub> ), s         |                     |                 |               | 6.0                                                                                | 5.0   |                          | 1.5     | 0.3   | 1.0   | 4.4                                                                                 | 23.6  |                                                                                     | 1.2   | 39.9  | 10.3  |
| Cycle Queue Clearance Time ( g <sub>c</sub> ), s |                     |                 |               | 6.0                                                                                | 5.0   |                          | 1.5     | 0.3   | 1.0   | 4.4                                                                                 | 23.6  |                                                                                     | 1.2   | 39.9  | 10.3  |
| Green Ratio ( g/C )                              |                     |                 |               | 0.26                                                                               | 0.20  |                          | 0.26    | 0.20  | 0.20  | 0.08                                                                                | 0.47  |                                                                                     | 0.07  | 0.46  | 0.46  |
| Capacity ( c ), veh/h                            |                     |                 |               | 363                                                                                | 317   |                          | 347     | 371   | 314   | 141                                                                                 | 868   |                                                                                     | 124   | 854   | 596   |
| Volume-to-Capacity Ratio ( X )                   |                     |                 |               | 0.704                                                                              | 0.292 |                          | 0.103   | 0.021 | 0.062 | 0.577                                                                               | 0.656 |                                                                                     | 0.176 | 0.923 | 0.348 |
| Back of Queue ( Q ), ft/ln ( 95 th percentile)   |                     |                 |               | 210.1                                                                              | 87.1  |                          | 29.6    | 6.8   | 17.6  | 95.2                                                                                | 385.7 |                                                                                     | 23.4  | 696.7 | 159.7 |
| Back of Queue ( Q ), veh/ln ( 95 th percentile)  |                     |                 |               | 7.0                                                                                | 3.4   |                          | 1.2     | 0.3   | 0.7   | 3.7                                                                                 | 15.1  |                                                                                     | 0.9   | 27.2  | 5.3   |
| Queue Storage Ratio ( RQ ) ( 95 th percentile)   |                     |                 |               | 0.00                                                                               | 0.00  |                          | 0.00    | 0.00  | 0.00  | 0.00                                                                                | 0.00  |                                                                                     | 0.00  | 0.00  | 0.00  |
| Uniform Delay ( d <sub>1</sub> ), s/veh          |                     |                 |               | 35.4                                                                               | 34.0  |                          | 28.2    | 32.1  | 32.4  | 44.4                                                                                | 20.3  |                                                                                     | 43.8  | 25.3  | 17.4  |
| Incremental Delay ( d <sub>2</sub> ), s/veh      |                     |                 |               | 5.2                                                                                | 0.2   |                          | 0.0     | 0.0   | 0.0   | 3.8                                                                                 | 1.4   |                                                                                     | 0.2   | 15.2  | 0.1   |
| Initial Queue Delay ( d <sub>3</sub> ), s/veh    |                     |                 |               | 0.0                                                                                | 0.0   |                          | 0.0     | 0.0   | 0.0   | 0.0                                                                                 | 0.0   |                                                                                     | 0.0   | 0.0   | 0.0   |
| Control Delay ( d ), s/veh                       |                     |                 |               | 40.5                                                                               | 34.2  |                          | 28.2    | 32.1  | 32.4  | 48.1                                                                                | 21.8  |                                                                                     | 44.0  | 40.5  | 17.5  |
| Level of Service ( LOS )                         |                     |                 |               | D                                                                                  | C     |                          | C       | C     | C     | D                                                                                   | C     |                                                                                     | D     | D     | B     |
| Approach Delay, s/veh / LOS                      |                     |                 |               | 38.8                                                                               |       | D                        | 30.0    |       | C     | 25.1                                                                                |       | C                                                                                   | 35.9  |       | D     |
| Intersection Delay, s/veh / LOS                  |                     |                 |               | 32.8                                                                               |       |                          |         |       |       | C                                                                                   |       |                                                                                     |       |       |       |
| Multimodal Results                               |                     |                 |               | EB                                                                                 |       |                          | WB      |       |       | NB                                                                                  |       |                                                                                     | SB    |       |       |
| Pedestrian LOS Score / LOS                       |                     |                 |               | 1.94                                                                               |       | B                        | 2.20    |       | B     | 2.09                                                                                |       | B                                                                                   | 1.93  |       | B     |
| Bicycle LOS Score / LOS                          |                     |                 |               | 1.06                                                                               |       | A                        | 0.59    |       | A     | 1.56                                                                                |       | B                                                                                   | 2.17  |       | B     |



# HCS7 Two-Way Stop-Control Report

| General Information      |                    | Site Information           |                 |
|--------------------------|--------------------|----------------------------|-----------------|
| Analyst                  | MSH                | Intersection               | Main/I-80 EB On |
| Agency/Co.               | Solaegui Engineers | Jurisdiction               | NDOT            |
| Date Performed           | 5/19/2021          | East/West Street           | EB On-Ramp      |
| Analysis Year            | 2021               | North/South Street         | Main Street     |
| Time Analyzed            | AM Existing        | Peak Hour Factor           | 0.92            |
| Intersection Orientation | North-South        | Analysis Time Period (hrs) | 0.25            |
| Project Description      |                    |                            |                 |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |   |     |     | Southbound |     |     |   |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|---|-----|-----|------------|-----|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L | T   | R   | U          | L   | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 1U         | 1 | 2   | 3   | 4U         | 4   | 5   | 6 |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0 | 0          | 0 | 1   | 1   | 0          | 1   | 2   | 0 |
| Configuration              |           |    |    |    |           |   |   |   |            |   | T   | R   |            | L   | T   |   |
| Volume (veh/h)             |           |    |    |    |           |   |   |   |            |   | 493 | 112 |            | 142 | 301 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |   |            |   |     |     |            | 25  |     |   |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |
| Percent Grade (%)          |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |   | Yes |     |            |     |     |   |
| Median Type   Storage      | Undivided |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.1  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.60 |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.2  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.45 |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 154  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 884  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.17 |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.6  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.9  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | A    |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3.2  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2021               |
| Time Analyzed            | PM Existing        |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                 |
|----------------------------|-----------------|
| Intersection               | Main/I-80 EB On |
| Jurisdiction               | NDOT            |
| East/West Street           | EB On-Ramp      |
| North/South Street         | Main Street     |
| Peak Hour Factor           | 0.92            |
| Analysis Time Period (hrs) | 0.25            |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |           | Northbound |   |     |     | Southbound |     |     |   |
|----------------------------|-----------|----|----|----|-----------|---|---|-----------|------------|---|-----|-----|------------|-----|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L | T | R         | U          | L | T   | R   | U          | L   | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9         | 1U         | 1 | 2   | 3   | 4U         | 4   | 5   | 6 |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0         | 0          | 0 | 1   | 1   | 0          | 1   | 2   | 0 |
| Configuration              |           |    |    |    |           |   |   |           |            |   | T   | R   |            | L   | T   |   |
| Volume (veh/h)             |           |    |    |    |           |   |   |           |            |   | 317 | 211 |            | 120 | 685 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |           |            |   |     |     |            | 25  |     |   |
| Proportion Time Blocked    |           |    |    |    |           |   |   |           |            |   |     |     |            |     |     |   |
| Percent Grade (%)          |           |    |    |    |           |   |   |           |            |   |     |     |            |     |     |   |
| Right Turn Channelized     |           |    |    |    |           |   |   |           |            |   | Yes |     |            |     |     |   |
| Median Type   Storage      |           |    |    |    |           |   |   | Undivided |            |   |     |     |            |     |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.60 |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.45 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  |  |  |  |  |  | 130  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  |  |  |  |  |  | 1061 |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.12 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.4  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  |  |  |  |  |  | 8.9  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  |  |  |  |  |  | A    |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1.3  |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |

# HCS7 Two-Way Stop-Control Report

| General Information      |                       | Site Information           |                 |
|--------------------------|-----------------------|----------------------------|-----------------|
| Analyst                  | MSH                   | Intersection               | Main/I-80 EB On |
| Agency/Co.               | Solaegui Engineers    | Jurisdiction               | NDOT            |
| Date Performed           | 5/19/2021             | East/West Street           | EB On-Ramp      |
| Analysis Year            | 2021                  | North/South Street         | Main Street     |
| Time Analyzed            | AM Existing + Project | Peak Hour Factor           | 0.92            |
| Intersection Orientation | North-South           | Analysis Time Period (hrs) | 0.25            |
| Project Description      |                       |                            |                 |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |   |     |     | Southbound |     |     |   |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|---|-----|-----|------------|-----|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L | T   | R   | U          | L   | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1 | 2   | 3   | 4          | 5   | 6   |   |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0 | 0          | 0 | 1   | 1   | 0          | 1   | 2   | 0 |
| Configuration              |           |    |    |    |           |   |   |   |            |   | T   | R   |            | L   | T   |   |
| Volume (veh/h)             |           |    |    |    |           |   |   |   |            |   | 545 | 126 |            | 142 | 357 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |   |            |   |     |     |            | 25  |     |   |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |
| Percent Grade (%)          |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |   | Yes |     |            |     |     |   |
| Median Type   Storage      |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.60 |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.45 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  |  |  |  |  |  | 154  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  |  |  |  |  |  | 838  |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.18 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.7  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  |  |  |  |  |  | 10.3 |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  |  |  |  |  |  | B    |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.9  |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | PM Existing + Project |
| Intersection Orientation | North-South           |
| Project Description      |                       |

## Site Information

|                            |                 |
|----------------------------|-----------------|
| Intersection               | Main/I-80 EB On |
| Jurisdiction               | NDOT            |
| East/West Street           | EB On-Ramp      |
| North/South Street         | Main Street     |
| Peak Hour Factor           | 0.92            |
| Analysis Time Period (hrs) | 0.25            |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |   |     |     | Southbound |     |     |   |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|---|-----|-----|------------|-----|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L | T   | R   | U          | L   | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1 | 2   | 3   | 4          | 5   | 6   |   |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0 |            | 0 | 1   | 1   |            | 1   | 2   | 0 |
| Configuration              |           |    |    |    |           |   |   |   |            |   | T   | R   |            | L   | T   |   |
| Volume (veh/h)             |           |    |    |    |           |   |   |   |            |   | 368 | 229 |            | 120 | 771 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |   |            |   |     |     |            | 25  |     |   |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |
| Percent Grade (%)          |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |   | Yes |     |            |     |     |   |
| Median Type   Storage      |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.60 |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.45 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 130  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1007 |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.13 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.4  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.1  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | A    |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1.2  |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | AM Base            |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                 |
|----------------------------|-----------------|
| Intersection               | Main/1-80 EB On |
| Jurisdiction               | NDOT            |
| East/West Street           | EB On-Ramp      |
| North/South Street         | Main Street     |
| Peak Hour Factor           | 0.92            |
| Analysis Time Period (hrs) | 0.25            |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |   |     |     | Southbound |     |     |   |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|---|-----|-----|------------|-----|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L | T   | R   | U          | L   | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1 | 2   | 3   | 4          | 4   | 5   | 6 |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0 | 0          | 0 | 1   | 1   | 0          | 1   | 2   | 0 |
| Configuration              |           |    |    |    |           |   |   |   |            |   | T   | R   |            | L   | T   |   |
| Volume (veh/h)             |           |    |    |    |           |   |   |   |            |   | 648 | 147 |            | 187 | 396 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |   |            |   |     |     |            | 25  |     |   |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |
| Percent Grade (%)          |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |   | Yes |     |            |     |     |   |
| Median Type   Storage      | Undivided |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.60 |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.45 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  |  |  |  |  |  | 203  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  |  |  |  |  |  | 752  |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.27 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  |  |  |  |  |  | 1.1  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  |  |  |  |  |  | 11.6 |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  |  |  |  |  |  | B    |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |

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|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base            |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                 |
|----------------------------|-----------------|
| Intersection               | Main/I-80 EB On |
| Jurisdiction               | NDOT            |
| East/West Street           | EB On-Ramp      |
| North/South Street         | Main Street     |
| Peak Hour Factor           | 0.92            |
| Analysis Time Period (hrs) | 0.25            |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |   |     |     | Southbound |     |     |   |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|---|-----|-----|------------|-----|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L | T   | R   | U          | L   | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1 | 2   | 3   | 4          | 4   | 5   | 6 |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0 | 0          | 0 | 1   | 1   | 0          | 1   | 2   | 0 |
| Configuration              |           |    |    |    |           |   |   |   |            |   | T   | R   |            | L   | T   |   |
| Volume (veh/h)             |           |    |    |    |           |   |   |   |            |   | 417 | 277 |            | 158 | 900 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |   |            |   |     |     |            | 25  |     |   |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |
| Percent Grade (%)          |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |   | Yes |     |            |     |     |   |
| Median Type   Storage      |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.60 |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.45 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 172  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 957  |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.18 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.7  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.6  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | A    |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1.4  |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |



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## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | AM Base + Project  |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                 |
|----------------------------|-----------------|
| Intersection               | Main/I-80 EB On |
| Jurisdiction               | NDOT            |
| East/West Street           | EB On-Ramp      |
| North/South Street         | Main Street     |
| Peak Hour Factor           | 0.92            |
| Analysis Time Period (hrs) | 0.25            |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |   |     |     | Southbound |     |     |   |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|---|-----|-----|------------|-----|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L | T   | R   | U          | L   | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 1U         | 1 | 2   | 3   | 4U         | 4   | 5   | 6 |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0 | 0          | 0 | 1   | 1   | 0          | 1   | 2   | 0 |
| Configuration              |           |    |    |    |           |   |   |   |            |   | T   | R   |            | L   | T   |   |
| Volume (veh/h)             |           |    |    |    |           |   |   |   |            |   | 700 | 161 |            | 187 | 452 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |   |            |   |     |     |            | 25  |     |   |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |
| Percent Grade (%)          |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |   | Yes |     |            |     |     |   |
| Median Type   Storage      |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.60 |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.45 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 203  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 712  |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.29 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1.2  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 12.1 |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | B    |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3.5  |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |



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|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base + Project  |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                 |
|----------------------------|-----------------|
| Intersection               | Main/I-80 EB On |
| Jurisdiction               | NDOT            |
| East/West Street           | EB On-Ramp      |
| North/South Street         | Main Street     |
| Peak Hour Factor           | 0.92            |
| Analysis Time Period (hrs) | 0.25            |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |   |     |     | Southbound |     |     |   |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|---|-----|-----|------------|-----|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L | T   | R   | U          | L   | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 1U         | 1 | 2   | 3   | 4U         | 4   | 5   | 6 |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0 | 0          | 0 | 1   | 1   | 0          | 1   | 2   | 0 |
| Configuration              |           |    |    |    |           |   |   |   |            |   | T   | R   |            | L   | T   |   |
| Volume (veh/h)             |           |    |    |    |           |   |   |   |            |   | 468 | 295 |            | 158 | 986 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |   |            |   |     |     |            | 25  |     |   |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |
| Percent Grade (%)          |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |   | Yes |     |            |     |     |   |
| Median Type   Storage      |           |    |    |    |           |   |   |   |            |   |     |     |            |     |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.1  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.60 |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.2  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  |  |  |  |  |  | 2.45 |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  |  |  |  |  |  | 172  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  |  |  |  |  |  | 908  |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.19 |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.7  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  |  |  |  |  |  | 9.9  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  |  |  |  |  |  | A    |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1.4  |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |  |  |  |  |  |      |  |  |

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|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2021               |
| Time Analyzed            | AM Existing        |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/I-80 EB Off |
| Jurisdiction               | NDOT             |
| East/West Street           | EB Off-Ramp      |
| North/South Street         | Main Street      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 1U         | 1 | 2   | 3 | 4U         | 4 | 5   | 6 |
| Number of Lanes            |           | 1  | 0  | 0  |           | 0 | 0 | 0 | 0          | 0 | 1   | 0 | 0          | 0 | 1   | 0 |
| Configuration              |           | L  |    |    |           |   |   |   |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           | 40 |    |    |           |   |   |   |            |   | 247 |   |            |   | 165 |   |
| Percent Heavy Vehicles (%) |           | 25 |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Percent Grade (%)          | 0         |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Median Type   Storage      | Undivided |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.65 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |      |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |      | 43   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |      | 528  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |      | 0.08 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |      | 0.3  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |      | 12.4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |      | B    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  | 12.4 |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            | B    |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2021               |
| Time Analyzed            | PM Existing        |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/I-80 EB Off |
| Jurisdiction               | NDOT             |
| East/West Street           | EB Off-Ramp      |
| North/South Street         | Main Street      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 1U         | 1 | 2   | 3 | 4U         | 4 | 5   | 6 |
| Number of Lanes            |           | 1  | 0  | 0  |           | 0 | 0 | 0 | 0          | 0 | 1   | 0 | 0          | 0 | 1   | 0 |
| Configuration              |           | L  |    |    |           |   |   |   |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           | 68 |    |    |           |   |   |   |            |   | 159 |   |            |   | 223 |   |
| Percent Heavy Vehicles (%) |           | 25 |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Percent Grade (%)          | 0         |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Median Type   Storage      |           |    |    |    | Undivided |   |   |   |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.65 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |      |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |      | 74   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |      | 552  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |      | 0.13 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |      | 0.5  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |      | 12.5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |      | B    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  | 12.5 |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            | B    |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | AM Existing + Project |
| Intersection Orientation | North-South           |
| Project Description      |                       |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/I-80 EB Off |
| Jurisdiction               | NDOT             |
| East/West Street           | EB Off-Ramp      |
| North/South Street         | Main Street      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |           |    |    | Westbound |   |   |   | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|-----------|----|----|-----------|---|---|---|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L         | T  | R  | U         | L | T | R | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10        | 11 | 12 |           | 7 | 8 | 9 | 10         | 1 | 2   | 3 | 40         | 4 | 5   | 6 |
| Number of Lanes            |           | 1         | 0  | 0  |           | 0 | 0 | 0 | 0          | 0 | 1   | 0 | 0          | 0 | 1   | 0 |
| Configuration              |           | L         |    |    |           |   |   |   |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           | 40        |    |    |           |   |   |   |            |   | 273 |   |            |   | 193 |   |
| Percent Heavy Vehicles (%) |           | 25        |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |           |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Percent Grade (%)          |           | 0         |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |           |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Median Type   Storage      |           | Undivided |    |    |           |   |   |   |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.65 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  | 43   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  | 487  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |  | 0.09 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  | 0.3  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  | 13.1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  | B    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  | 13.1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            |  | B    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

# HCS7 Two-Way Stop-Control Report

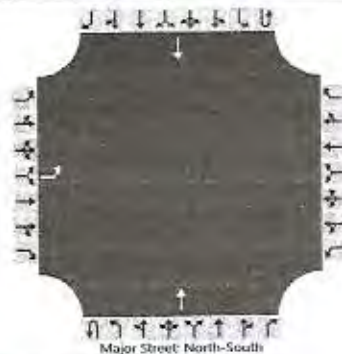
## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | PM Existing + Project |
| Intersection Orientation | North-South           |
| Project Description      |                       |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/I-80 EB Off |
| Jurisdiction               | NDOT             |
| East/West Street           | EB Off-Ramp      |
| North/South Street         | Main Street      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |           |    |    | Westbound |   |   |   | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|-----------|----|----|-----------|---|---|---|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L         | T  | R  | U         | L | T | R | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10        | 11 | 12 |           | 7 | 8 | 9 | 10         | 1 | 2   | 3 | 4          | 5 | 6   |   |
| Number of Lanes            |           | 1         | 0  | 0  |           | 0 | 0 | 0 | 0          | 0 | 1   | 0 | 0          | 0 | 1   | 0 |
| Configuration              |           | L         |    |    |           |   |   |   |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           | 68        |    |    |           |   |   |   |            |   | 184 |   |            |   | 260 |   |
| Percent Heavy Vehicles (%) |           | 25        |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |           |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Percent Grade (%)          |           | 0         |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |           |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Median Type   Storage      |           | Undivided |    |    |           |   |   |   |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.65 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  | 74   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  | 503  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |  | 0.15 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  | 0.5  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  | 13.4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  | B    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  | 13.4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            |  | B    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



# HC57 Two-Way Stop-Control Report

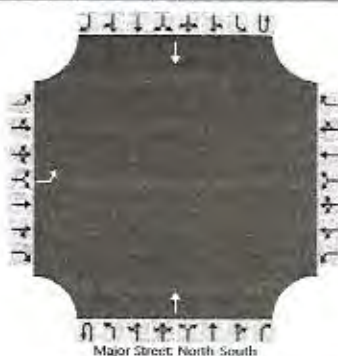
## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | AM Base            |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/I-80 EB Off |
| Jurisdiction               | NDOT             |
| East/West Street           | EB Off-Ramp      |
| North/South Street         | Main Street      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 1U         | 1 | 2   | 3 | 4U         | 4 | 5   | 6 |
| Number of Lanes            |           | 1  | 0  | 0  |           | 0 | 0 | 0 | 0          | 0 | 1   | 0 | 0          | 0 | 1   | 0 |
| Configuration              |           | L  |    |    |           |   |   |   |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           | 53 |    |    |           |   |   |   |            |   | 324 |   |            |   | 217 |   |
| Percent Heavy Vehicles (%) |           | 25 |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Percent Grade (%)          |           | 0  |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Median Type   Storage      |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.65 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  | 58   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  | 435  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |  | 0.13 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  | 0.5  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  | 14.5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  | B    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  | 14.5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            |  | B    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

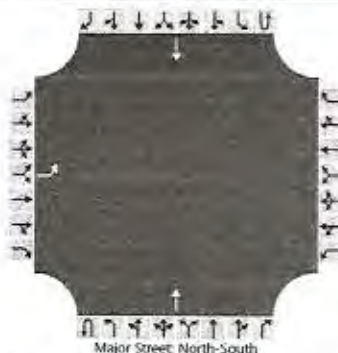
## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base            |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/I-80 EB Off |
| Jurisdiction               | NDOT             |
| East/West Street           | EB Off-Ramp      |
| North/South Street         | Main Street      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1 | 2   | 3 | 4          | 4 | 5   | 6 |
| Number of Lanes            |           | 1  | 0  | 0  |           | 0 | 0 | 0 | 0          | 0 | 1   | 0 | 0          | 0 | 1   | 0 |
| Configuration              |           | L  |    |    |           |   |   |   |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           | 89 |    |    |           |   |   |   |            |   | 209 |   |            |   | 293 |   |
| Percent Heavy Vehicles (%) |           | 25 |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Percent Grade (%)          | 0         |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Median Type   Storage      | Undivided |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.65 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  | 97   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  | 462  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |  | 0.21 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  | 0.8  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  | 14.9 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  | B    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  | 14.9 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            |  | B    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | AM Base + Project  |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/I-80 EB Off |
| Jurisdiction               | NDOT             |
| East/West Street           | EB Off-Ramp      |
| North/South Street         | Main Street      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1 | 2   | 3 | 4          | 5 | 6   |   |
| Number of Lanes            |           | 1  | 0  | 0  |           | 0 | 0 | 0 | 0          | 0 | 1   | 0 | 0          | 0 | 1   | 0 |
| Configuration              |           | L  |    |    |           |   |   |   |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           | 53 |    |    |           |   |   |   |            |   | 350 |   |            |   | 245 |   |
| Percent Heavy Vehicles (%) |           | 25 |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Percent Grade (%)          |           | 0  |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Median Type   Storage      |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.65 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  | 58   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  | 401  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |  | 0.14 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  | 0.5  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  | 15.5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  | C    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  | 15.5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            |  | C    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base + Project  |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/I-80 EB Off |
| Jurisdiction               | NDOT             |
| East/West Street           | EB Off-Ramp      |
| North/South Street         | Main Street      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 1U         | 1 | 2   | 3 | 4U         | 4 | 5   | 6 |
| Number of Lanes            |           | 1  | 0  | 0  |           | 0 | 0 | 0 | 0          | 0 | 1   | 0 | 0          | 0 | 1   | 0 |
| Configuration              |           | L  |    |    |           |   |   |   |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           | 89 |    |    |           |   |   |   |            |   | 234 |   |            |   | 330 |   |
| Percent Heavy Vehicles (%) |           | 25 |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Percent Grade (%)          |           | 0  |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |
| Median Type   Storage      |           |    |    |    |           |   |   |   |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  | 7.1  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  | 6.65 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  | 3.5  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  | 3.73 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  | 97   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  | 421  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |  | 0.23 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  | 0.9  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  | 16.1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  | C    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  | 16.1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            |  | C    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2021               |
| Time Analyzed            | AM Existing        |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                 |
|----------------------------|-----------------|
| Intersection               | Main/I-80 WB On |
| Jurisdiction               | NDOT            |
| East/West Street           | WB On-Ramp      |
| North/South Street         | Main Street     |
| Peak Hour Factor           | 0.92            |
| Analysis Time Period (hrs) | 0.25            |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |           | Northbound |     |     |   | Southbound |   |     |    |
|----------------------------|-----------|----|----|----|-----------|---|---|-----------|------------|-----|-----|---|------------|---|-----|----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R         | U          | L   | T   | R | U          | L | T   | R  |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9         | 1U         | 1   | 2   | 3 | 4U         | 4 | 5   | 6  |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0         | 0          | 1   | 2   | 0 | 0          | 0 | 1   | 1  |
| Configuration              |           |    |    |    |           |   |   |           |            | L   | T   |   |            |   | T   | R  |
| Volume (veh/h)             |           |    |    |    |           |   |   |           |            | 386 | 147 |   |            |   | 165 | 79 |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |           |            | 25  |     |   |            |   |     |    |
| Proportion Time Blocked    |           |    |    |    |           |   |   |           |            |     |     |   |            |   |     |    |
| Percent Grade (%)          |           |    |    |    |           |   |   |           |            |     |     |   |            |   |     |    |
| Right Turn Channelized     |           |    |    |    |           |   |   |           |            |     |     |   |            |   | No  |    |
| Median Type   Storage      |           |    |    |    |           |   |   | Undivided |            |     |     |   |            |   |     |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  |  | 4.60 |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  |  | 2.45 |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  |  | 420  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  |  | 1144 |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  |  | 0.37 |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  |  | 1.7  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  |  | 10.0 |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  |  | A    |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  |  | 7.2  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |

# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2021               |
| Time Analyzed            | PM Existing        |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                 |
|----------------------------|-----------------|
| Intersection               | Main/I-80 WB On |
| Jurisdiction               | NDOT            |
| East/West Street           | WB On-Ramp      |
| North/South Street         | Main Street     |
| Peak Hour Factor           | 0.92            |
| Analysis Time Period (hrs) | 0.25            |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |     |     |   | Southbound |   |     |    |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|-----|-----|---|------------|---|-----|----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L   | T   | R | U          | L | T   | R  |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1   | 2   | 3 | 4          | 5 | 6   |    |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0 | 0          | 1   | 2   | 0 | 0          | 0 | 1   | 1  |
| Configuration              |           |    |    |    |           |   |   |   |            | L   | T   |   |            |   | T   | R  |
| Volume (veh/h)             |           |    |    |    |           |   |   |   |            | 233 | 152 |   |            |   | 223 | 67 |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |   |            | 25  |     |   |            |   |     |    |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |
| Percent Grade (%)          |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |     |     |   |            |   | No  |    |
| Median Type   Storage      |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  |  | 4.60 |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  |  | 2.45 |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  |  | 253  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  |  | 1091 |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  |  | 0.23 |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  |  | 0.9  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  |  | 9.3  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  |  | A    |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  |  | 5.6  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | AM Existing + Project |
| Intersection Orientation | North-South           |
| Project Description      |                       |

## Site Information

|                            |                 |
|----------------------------|-----------------|
| Intersection               | Main/I-80 WB On |
| Jurisdiction               | NDOT            |
| East/West Street           | WB On-Ramp      |
| North/South Street         | Main Street     |
| Peak Hour Factor           | 0.92            |
| Analysis Time Period (hrs) | 0.25            |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |     |     |   | Southbound |   |     |    |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|-----|-----|---|------------|---|-----|----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L   | T   | R | U          | L | T   | R  |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1   | 2   | 3 | 40         | 4 | 5   | 6  |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0 | 0          | 1   | 2   | 0 | 0          | 0 | 1   | 1  |
| Configuration              |           |    |    |    |           |   |   |   |            | L   | T   |   |            |   | T   | R  |
| Volume (veh/h)             |           |    |    |    |           |   |   |   |            | 425 | 160 |   |            |   | 193 | 79 |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |   |            | 25  |     |   |            |   |     |    |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |
| Percent Grade (%)          |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |     |     |   |            |   | No  |    |
| Median Type   Storage      |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  |  | 4.60 |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  |  | 2.45 |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  |  | 462  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  |  | 1112 |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  |  | 0.42 |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  |  | 2.1  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  |  | 10.5 |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  |  | B    |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  |  | 7.6  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | PM Existing + Project |
| Intersection Orientation | North-South           |
| Project Description      |                       |

## Site Information

|                            |                 |
|----------------------------|-----------------|
| Intersection               | Main/I-80 WB On |
| Jurisdiction               | NDOT            |
| East/West Street           | WB On-Ramp      |
| North/South Street         | Main Street     |
| Peak Hour Factor           | 0.92            |
| Analysis Time Period (hrs) | 0.25            |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |     |     |   | Southbound |   |     |    |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|-----|-----|---|------------|---|-----|----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L   | T   | R | U          | L | T   | R  |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1   | 2   | 3 | 4          | 4 | 5   | 6  |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0 | 0          | 1   | 2   | 0 | 0          | 0 | 1   | 1  |
| Configuration              |           |    |    |    |           |   |   |   |            | L   | T   |   |            |   | T   | R  |
| Volume (veh/h)             |           |    |    |    |           |   |   |   |            | 248 | 167 |   |            |   | 260 | 67 |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |   |            | 25  |     |   |            |   |     |    |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |
| Percent Grade (%)          |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |     |     |   |            |   | No  |    |
| Median Type   Storage      |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  |  | 4.60 |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  |  | 2.45 |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  |  | 270  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  |  | 1050 |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  |  | 0.26 |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  |  | 1.0  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  |  | 9.6  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  |  | A    |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  |  | 5.7  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |

# HCS7 Two-Way Stop-Control Report

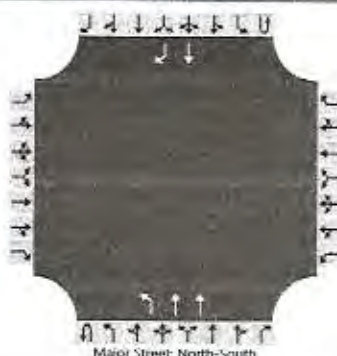
## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | AM Base            |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                 |
|----------------------------|-----------------|
| Intersection               | Main/I-80 WB On |
| Jurisdiction               | NDOT            |
| East/West Street           | WB On-Ramp      |
| North/South Street         | Main Street     |
| Peak Hour Factor           | 0.92            |
| Analysis Time Period (hrs) | 0.25            |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |     |     |   | Southbound |   |     |     |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|-----|-----|---|------------|---|-----|-----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L   | T   | R | U          | L | T   | R   |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1   | 2   | 3 | 4          | 5 | 6   |     |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0 | 0          | 1   | 2   | 0 | 0          | 0 | 1   | 1   |
| Configuration              |           |    |    |    |           |   |   |   |            | L   | T   |   |            |   | T   | R   |
| Volume (veh/h)             |           |    |    |    |           |   |   |   |            | 508 | 193 |   |            |   | 217 | 104 |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |   |            | 25  |     |   |            |   |     |     |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |     |
| Percent Grade (%)          |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |     |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |     |     |   |            |   | No  |     |
| Median Type   Storage      | Undivided |    |    |    |           |   |   |   |            |     |     |   |            |   |     |     |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  |  | 4.60 |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  |  | 2.45 |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |     |      |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|-----|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  |     | 552  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  |     | 1057 |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  |     | 0.52 |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  |     | 3.1  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  |     | 12.1 |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  |     | B    |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  | 8.7 |      |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |     |      |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base            |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                 |
|----------------------------|-----------------|
| Intersection               | Main/I-80 WB On |
| Jurisdiction               | NDOT            |
| East/West Street           | WB On-Ramp      |
| North/South Street         | Main Street     |
| Peak Hour Factor           | 0.92            |
| Analysis Time Period (hrs) | 0.25            |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |     |     |   | Southbound |   |     |    |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|-----|-----|---|------------|---|-----|----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L   | T   | R | U          | L | T   | R  |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1   | 2   | 3 | 4          | 5 | 6   |    |
| Number of Lanes            | 0         | 0  | 0  |    | 0         | 0 | 0 |   | 0          | 1   | 2   | 0 | 0          | 0 | 1   | 1  |
| Configuration              |           |    |    |    |           |   |   |   |            | L   | T   |   |            |   | T   | R  |
| Volume (veh/h)             |           |    |    |    |           |   |   |   |            | 306 | 200 |   |            |   | 293 | 88 |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |   |            | 25  |     |   |            |   |     |    |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |
| Percent Grade (%)          |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |     |     |   |            |   | No  |    |
| Median Type   Storage      | Undivided |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  | 4.60 |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  | 2.45 |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  | 333  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  | 993  |  |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  | 0.33 |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  | 1.5  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  | 10.4 |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  | B    |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  | 6.3  |  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | AM Base + Project  |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                 |
|----------------------------|-----------------|
| Intersection               | Main/I-80 WB On |
| Jurisdiction               | NDOT            |
| East/West Street           | WB On-Ramp      |
| North/South Street         | Main Street     |
| Peak Hour Factor           | 0.92            |
| Analysis Time Period (hrs) | 0.25            |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |           | Northbound |     |     |   | Southbound |   |     |     |
|----------------------------|-----------|----|----|----|-----------|---|---|-----------|------------|-----|-----|---|------------|---|-----|-----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R         | U          | L   | T   | R | U          | L | T   | R   |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9         | 10         | 1   | 2   | 3 | 4          | 5 | 6   |     |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0         | 0          | 1   | 2   | 0 | 0          | 0 | 1   | 1   |
| Configuration              |           |    |    |    |           |   |   |           |            | L   | T   |   |            |   | T   | R   |
| Volume (veh/h)             |           |    |    |    |           |   |   |           |            | 547 | 206 |   |            |   | 245 | 104 |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |           |            | 25  |     |   |            |   |     |     |
| Proportion Time Blocked    |           |    |    |    |           |   |   |           |            |     |     |   |            |   |     |     |
| Percent Grade (%)          |           |    |    |    |           |   |   |           |            |     |     |   |            |   |     |     |
| Right Turn Channelized     |           |    |    |    |           |   |   |           |            |     |     |   |            |   | No  |     |
| Median Type   Storage      |           |    |    |    |           |   |   | Undivided |            |     |     |   |            |   |     |     |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  | 4.60 |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  | 2.45 |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  | 595  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  | 1027 |  |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  | 0.58 |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  | 3.9  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  | 13.2 |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  | B    |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  | 9.6  |  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |

# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base + Project  |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                 |
|----------------------------|-----------------|
| Intersection               | Main/I-80 WB On |
| Jurisdiction               | NDOT            |
| East/West Street           | WB On-Ramp      |
| North/South Street         | Main Street     |
| Peak Hour Factor           | 0.92            |
| Analysis Time Period (hrs) | 0.25            |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |   |   |   | Northbound |     |     |   | Southbound |   |     |    |
|----------------------------|-----------|----|----|----|-----------|---|---|---|------------|-----|-----|---|------------|---|-----|----|
| Movement                   | U         | L  | T  | R  | U         | L | T | R | U          | L   | T   | R | U          | L | T   | R  |
| Priority                   |           | 10 | 11 | 12 |           | 7 | 8 | 9 | 10         | 1   | 2   | 3 | 4          | 5 | 6   |    |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0 | 0 | 0 | 0          | 1   | 2   | 0 | 0          | 0 | 1   | 1  |
| Configuration              |           |    |    |    |           |   |   |   |            | L   | T   |   |            |   | T   | R  |
| Volume (veh/h)             |           |    |    |    |           |   |   |   |            | 342 | 215 |   |            |   | 330 | 88 |
| Percent Heavy Vehicles (%) |           |    |    |    |           |   |   |   |            | 25  |     |   |            |   |     |    |
| Proportion Time Blocked    |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |
| Percent Grade (%)          |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |
| Right Turn Channelized     |           |    |    |    |           |   |   |   |            |     |     |   |            |   | No  |    |
| Median Type   Storage      |           |    |    |    |           |   |   |   |            |     |     |   |            |   |     |    |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  |  |  |  |  | 4.1  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  |  |  |  |  | 4.60 |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  |  |  |  |  | 2.2  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  |  |  |  |  | 2.45 |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  |  |  |  |  | 372  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  |  |  |  |  | 956  |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  |  |  |  |  | 0.39 |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  |  |  |  |  | 1.9  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  |  |  |  |  | 11.1 |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  |  |  |  |  | B    |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  |  |  |  |  | 6.8  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |                            |                  |
|--------------------------|--------------------|----------------------------|------------------|
| Analyst                  | MSH                | Intersection               | Main/I-80 WB Off |
| Agency/Co.               | Solaegui Engineers | Jurisdiction               | NDOT             |
| Date Performed           | 5/19/2021          | East/West Street           | WB Off-Ramp      |
| Analysis Year            | 2021               | North/South Street         | Main Street      |
| Time Analyzed            | AM Existing        | Peak Hour Factor           | 0.92             |
| Intersection Orientation | North-South        | Analysis Time Period (hrs) | 0.25             |
| Project Description      |                    |                            |                  |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |           |    |     | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|----|----|----|-----------|-----------|----|-----|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L         | T  | R   | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7         | 8  | 9   | 1U         | 1 | 2   | 3 | 4U         | 4 | 5   | 6 |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0         | 1  | 0   | 0          | 0 | 2   | 0 | 0          | 0 | 2   | 0 |
| Configuration              |           |    |    |    |           |           | LR |     |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           |    |    |    |           | 81        |    | 119 |            |   | 147 |   |            |   | 163 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           | 25        |    | 25  |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |    |    |    |           |           |    |     |            |   |     |   |            |   |     |   |
| Percent Grade (%)          |           |    |    |    |           | 0         |    |     |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |    |    |    |           |           |    |     |            |   |     |   |            |   |     |   |
| Median Type   Storage      |           |    |    |    |           | Undivided |    |     |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|------|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 7.5  |  | 6.9  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 7.30 |  | 7.40 |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 3.75 |  | 3.55 |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  | 217  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  | 1504 |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  | 0.14 |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  | 0.5  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  | 7.8  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  | A    |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  | 7.8  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  | A    |  |  |  |  |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2021               |
| Time Analyzed            | PM Existing        |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/I-80 WB Off |
| Jurisdiction               | NDOT             |
| East/West Street           | WB Off-Ramp      |
| North/South Street         | Main Street      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |    |    |     | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|----|----|----|-----------|----|----|-----|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L  | T  | R   | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7  | 8  | 9   | 10         | 1 | 2   | 3 | 4          | 5 | 6   |   |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0  | 1  | 0   | 0          | 0 | 2   | 0 | 0          | 0 | 2   | 0 |
| Configuration              |           |    |    |    |           |    | LR |     |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           |    |    |    |           | 71 |    | 128 |            |   | 152 |   |            |   | 219 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           | 25 |    | 25  |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |    |    |    |           |    |    |     |            |   |     |   |            |   |     |   |
| Percent Grade (%)          |           |    |    |    | 0         |    |    |     |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |    |    |    |           |    |    |     |            |   |     |   |            |   |     |   |
| Median Type   Storage      |           |    |    |    | Undivided |    |    |     |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |      |  |      |  |  |  |  |  |  |  |  |  |
|------------------------------|--|--|--|--|------|--|------|--|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  | 7.5  |  | 6.9  |  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  | 7.30 |  | 7.40 |  |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  | 3.75 |  | 3.55 |  |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  | 216  |  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  | 1385 |  |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  | 0.16 |  |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  | 0.6  |  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  | 8.1  |  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  | A    |  |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  | 8.1  |  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  | A    |  |  |  |  |  |  |  |  |  |  |  |

# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |
|--------------------------|-----------------------|
| Analyst                  | MSH                   |
| Agency/Co.               | Solaegui Engineers    |
| Date Performed           | 5/19/2021             |
| Analysis Year            | 2021                  |
| Time Analyzed            | AM Existing + Project |
| Intersection Orientation | North-South           |
| Project Description      |                       |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/I-80 WB Off |
| Jurisdiction               | NDOT             |
| East/West Street           | WB Off-Ramp      |
| North/South Street         | Main Street      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |           |    |     | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|----|----|----|-----------|-----------|----|-----|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L         | T  | R   | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7         | 8  | 9   | 1U         | 1 | 2   | 3 | 4U         | 4 | 5   | 6 |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0         | 1  | 0   | 0          | 0 | 2   | 0 | 0          | 0 | 2   | 0 |
| Configuration              |           |    |    |    |           |           | LR |     |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           |    |    |    |           | 97        |    | 119 |            |   | 160 |   |            |   | 175 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           | 25        |    | 25  |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |    |    |    |           |           |    |     |            |   |     |   |            |   |     |   |
| Percent Grade (%)          |           |    |    |    |           | 0         |    |     |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |    |    |    |           |           |    |     |            |   |     |   |            |   |     |   |
| Median Type   Storage      |           |    |    |    |           | Undivided |    |     |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|------|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 7.5  |  | 6.9  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 7.30 |  | 7.40 |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 3.75 |  | 3.55 |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  | 235  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  | 1421 |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  | 0.17 |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  | 0.6  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  | 8.0  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  | A    |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  | 8.0  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  | A    |  |  |  |  |  |  |  |  |  |  |

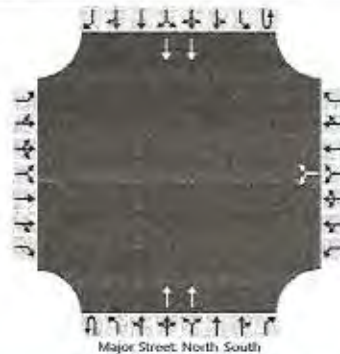


# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                       |                            |                  |
|--------------------------|-----------------------|----------------------------|------------------|
| Analyst                  | MSH                   | Intersection               | Main/I-80 WB Off |
| Agency/Co.               | Solaegui Engineers    | Jurisdiction               | NDOT             |
| Date Performed           | 5/19/2021             | East/West Street           | WB Off-Ramp      |
| Analysis Year            | 2021                  | North/South Street         | Main Street      |
| Time Analyzed            | PM Existing + Project | Peak Hour Factor           | 0.92             |
| Intersection Orientation | North-South           | Analysis Time Period (hrs) | 0.25             |
| Project Description      |                       |                            |                  |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |    |           |     | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|----|----|----|-----------|----|-----------|-----|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L  | T         | R   | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7  | 8         | 9   | 1U         | 1 | 2   | 3 | 4U         | 4 | 5   | 6 |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0  | 1         | 0   | 0          | 0 | 2   | 0 | 0          | 0 | 2   | 0 |
| Configuration              |           |    |    |    |           |    | LR        |     |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           |    |    |    |           | 91 |           | 128 |            |   | 167 |   |            |   | 236 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           | 25 |           | 25  |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |    |    |    |           |    |           |     |            |   |     |   |            |   |     |   |
| Percent Grade (%)          |           |    |    |    |           |    | 0         |     |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |    |    |    |           |    |           |     |            |   |     |   |            |   |     |   |
| Median Type   Storage      |           |    |    |    |           |    | Undivided |     |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|------|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 7.5  |  | 6.9  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 7.30 |  | 7.40 |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 3.75 |  | 3.55 |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  | 238  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  | 1442 |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  | 0.17 |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  | 0.6  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  | 8.0  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  | A    |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  | 8.0  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  | A    |  |  |  |  |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | AM Base            |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/I-80 WB Off |
| Jurisdiction               | NDOT             |
| East/West Street           | WB Off-Ramp      |
| North/South Street         | Main Street      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |     |           |     | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|----|----|----|-----------|-----|-----------|-----|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L   | T         | R   | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7   | 8         | 9   | 10         | 1 | 2   | 3 | 40         | 4 | 5   | 6 |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0   | 1         | 0   | 0          | 0 | 2   | 0 | 0          | 0 | 2   | 0 |
| Configuration              |           |    |    |    |           |     | LR        |     |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           |    |    |    |           | 107 |           | 156 |            |   | 193 |   |            |   | 214 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           | 25  |           | 25  |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |    |    |    |           |     |           |     |            |   |     |   |            |   |     |   |
| Percent Grade (%)          |           |    |    |    |           |     | 0         |     |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |    |    |    |           |     |           |     |            |   |     |   |            |   |     |   |
| Median Type   Storage      |           |    |    |    |           |     | Undivided |     |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|------|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 7.5  |  | 6.9  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 7.30 |  | 7.40 |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 3.75 |  | 3.55 |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  | 286  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  | 1437 |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  | 0.20 |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  | 0.7  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  | 8.1  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  | A    |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  | 8.1  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  | A    |  |  |  |  |  |  |  |  |  |  |

# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base            |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/I-80 WB Off |
| Jurisdiction               | NDOT             |
| East/West Street           | WB Off-Ramp      |
| North/South Street         | Main Street      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |           |    |     | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|----|----|----|-----------|-----------|----|-----|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L         | T  | R   | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7         | 8  | 9   | 1U         | 1 | 2   | 3 | 4U         | 4 | 5   | 6 |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0         | 1  | 0   | 0          | 0 | 2   | 0 | 0          | 0 | 2   | 0 |
| Configuration              |           |    |    |    |           |           | LR |     |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           |    |    |    |           | 93        |    | 168 |            |   | 200 |   |            |   | 288 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           | 25        |    | 25  |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |    |    |    |           |           |    |     |            |   |     |   |            |   |     |   |
| Percent Grade (%)          |           |    |    |    |           | 0         |    |     |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |    |    |    |           |           |    |     |            |   |     |   |            |   |     |   |
| Median Type   Storage      |           |    |    |    |           | Undivided |    |     |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|------|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 7.5  |  | 6.9  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 7.30 |  | 7.40 |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 3.75 |  | 3.55 |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |  | 284  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |  | 1019 |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |  | 0.28 |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |  | 1.1  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |  | 9.9  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |  | A    |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  |  | 9.9  |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  |  | A    |  |  |  |  |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |                            |                  |
|--------------------------|--------------------|----------------------------|------------------|
| Analyst                  | MSH                | Intersection               | Main/I-80 WB Off |
| Agency/Co.               | Solaegui Engineers | Jurisdiction               | NDOT             |
| Date Performed           | 5/19/2021          | East/West Street           | WB Off-Ramp      |
| Analysis Year            | 2041               | North/South Street         | Main Street      |
| Time Analyzed            | AM Base + Project  | Peak Hour Factor           | 0.92             |
| Intersection Orientation | North-South        | Analysis Time Period (hrs) | 0.25             |
| Project Description      |                    |                            |                  |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |     |    |     | Northbound |   |     |   | Southbound |   |   |     |
|----------------------------|-----------|----|----|----|-----------|-----|----|-----|------------|---|-----|---|------------|---|---|-----|
| Movement                   | U         | L  | T  | R  | U         | L   | T  | R   | U          | L | T   | R | U          | L | T | R   |
| Priority                   |           | 10 | 11 | 12 |           | 7   | 8  | 9   | 1U         | 1 | 2   | 3 | 4U         | 4 | 5 | 6   |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0   | 1  | 0   | 0          | 0 | 2   | 0 | 0          | 0 | 2 | 0   |
| Configuration              |           |    |    |    |           |     | LR |     |            |   | T   |   |            |   | T |     |
| Volume (veh/h)             |           |    |    |    |           | 123 |    | 156 |            |   | 206 |   |            |   |   | 226 |
| Percent Heavy Vehicles (%) |           |    |    |    |           | 25  |    | 25  |            |   |     |   |            |   |   |     |
| Proportion Time Blocked    |           |    |    |    |           |     |    |     |            |   |     |   |            |   |   |     |
| Percent Grade (%)          |           |    |    |    | 0         |     |    |     |            |   |     |   |            |   |   |     |
| Right Turn Channelized     |           |    |    |    |           |     |    |     |            |   |     |   |            |   |   |     |
| Median Type   Storage      |           |    |    |    | Undivided |     |    |     |            |   |     |   |            |   |   |     |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|------|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 7.5  |  | 6.9  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 7.30 |  | 7.40 |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 3.75 |  | 3.55 |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |     |      |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|-----|------|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |     | 303  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |     | 1284 |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |     | 0.24 |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |     | 0.9  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |     | 8.7  |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |     | A    |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  | 8.7 |      |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  | A   |      |  |  |  |  |  |  |  |  |  |  |



# HCS7 Two-Way Stop-Control Report

## General Information

|                          |                    |
|--------------------------|--------------------|
| Analyst                  | MSH                |
| Agency/Co.               | Solaegui Engineers |
| Date Performed           | 5/19/2021          |
| Analysis Year            | 2041               |
| Time Analyzed            | PM Base + Project  |
| Intersection Orientation | North-South        |
| Project Description      |                    |

## Site Information

|                            |                  |
|----------------------------|------------------|
| Intersection               | Main/I-80 WB Off |
| Jurisdiction               | NDOT             |
| East/West Street           | WB Off-Ramp      |
| North/South Street         | Main Street      |
| Peak Hour Factor           | 0.92             |
| Analysis Time Period (hrs) | 0.25             |

## Lanes



## Vehicle Volumes and Adjustments

| Approach                   | Eastbound |    |    |    | Westbound |     |    |     | Northbound |   |     |   | Southbound |   |     |   |
|----------------------------|-----------|----|----|----|-----------|-----|----|-----|------------|---|-----|---|------------|---|-----|---|
| Movement                   | U         | L  | T  | R  | U         | L   | T  | R   | U          | L | T   | R | U          | L | T   | R |
| Priority                   |           | 10 | 11 | 12 |           | 7   | 8  | 9   | 10         | 1 | 2   | 3 | 40         | 4 | 5   | 6 |
| Number of Lanes            |           | 0  | 0  | 0  |           | 0   | 1  | 0   | 0          | 0 | 2   | 0 | 0          | 0 | 2   | 0 |
| Configuration              |           |    |    |    |           |     | LR |     |            |   | T   |   |            |   | T   |   |
| Volume (veh/h)             |           |    |    |    |           | 113 |    | 168 |            |   | 215 |   |            |   | 305 |   |
| Percent Heavy Vehicles (%) |           |    |    |    |           | 25  |    | 25  |            |   |     |   |            |   |     |   |
| Proportion Time Blocked    |           |    |    |    |           |     |    |     |            |   |     |   |            |   |     |   |
| Percent Grade (%)          |           |    |    |    | 0         |     |    |     |            |   |     |   |            |   |     |   |
| Right Turn Channelized     |           |    |    |    |           |     |    |     |            |   |     |   |            |   |     |   |
| Median Type   Storage      |           |    |    |    | Undivided |     |    |     |            |   |     |   |            |   |     |   |

## Critical and Follow-up Headways

|                              |  |  |  |  |  |      |  |      |  |  |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|------|--|------|--|--|--|--|--|--|--|--|
| Base Critical Headway (sec)  |  |  |  |  |  | 7.5  |  | 6.9  |  |  |  |  |  |  |  |  |
| Critical Headway (sec)       |  |  |  |  |  | 7.30 |  | 7.40 |  |  |  |  |  |  |  |  |
| Base Follow-Up Headway (sec) |  |  |  |  |  | 3.5  |  | 3.3  |  |  |  |  |  |  |  |  |
| Follow-Up Headway (sec)      |  |  |  |  |  | 3.75 |  | 3.55 |  |  |  |  |  |  |  |  |

## Delay, Queue Length, and Level of Service

|                                         |  |  |  |  |      |      |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|--|--|--|--|------|------|--|--|--|--|--|--|--|--|--|--|
| Flow Rate, v (veh/h)                    |  |  |  |  |      | 305  |  |  |  |  |  |  |  |  |  |  |
| Capacity, c (veh/h)                     |  |  |  |  |      | 987  |  |  |  |  |  |  |  |  |  |  |
| v/c Ratio                               |  |  |  |  |      | 0.31 |  |  |  |  |  |  |  |  |  |  |
| 95% Queue Length, Q <sub>95</sub> (veh) |  |  |  |  |      | 1.3  |  |  |  |  |  |  |  |  |  |  |
| Control Delay (s/veh)                   |  |  |  |  |      | 10.3 |  |  |  |  |  |  |  |  |  |  |
| Level of Service (LOS)                  |  |  |  |  |      | B    |  |  |  |  |  |  |  |  |  |  |
| Approach Delay (s/veh)                  |  |  |  |  | 10.3 |      |  |  |  |  |  |  |  |  |  |  |
| Approach LOS                            |  |  |  |  | B    |      |  |  |  |  |  |  |  |  |  |  |

# Conditions of Approval for TSM22001

## Tentative Subdivision Map

**1. APPROVAL:**

THE PROJECT IS APPROVED AS SUBMITTED AND CONDITIONED. ANY SUBSTANTIVE CHANGE SHALL REQUIRE REVIEW AND APPROVAL BY THE PLANNING COMMISSION AND CITY COUNCIL AS AN AMENDMENT TO THIS TENTATIVE MAP.

**2. PROJECT DESCRIPTION:**

THE PROJECT APPROVAL IS LIMITED TO A MIXED USE RESIDENTIAL/COMMERCIAL DEVELOPMENT WITH A MAXIMUM OF 9 LOTS ON 28.42 ± ACRES.

**3. EXPIRATION DATE:**

THE TENTATIVE MAP SHALL EXPIRE WITHIN FOUR (4) YEARS OF THE DATE OF THE CITY COUNCIL APPROVAL, UNLESS THE FINAL MAP HAS BEEN RECORDED IN ACCORDANCE WITH NEVADA REVISED STATUTES (N.R.S.) 278.360.

**4. PROJECT CONTACT:**

THE DEVELOPER SHALL DESIGNATE TO THE CITY A PROJECT CONTACT PERSON RESPONSIBLE/AUTHORIZED TO CORRECT PROBLEMS REGARDING THE PROJECT ON A 24-HOUR/7-DAYS A WEEK BASIS. THE DEVELOPER SHALL DESIGNATE THE PROJECT CONTACT PERSON TO THE CITY PRIOR TO ISSUANCE OF A BUILDING PERMIT FOR THE PROJECT.

**5. WATER RIGHTS:**

THE DEVELOPER SHALL COMPLY WITH ALL CITY OF FERNLEY MUNICIPAL CODES REGARDING THE DEDICATION OF WATER RIGHTS AND ALL ASSOCIATED FEES FOR THE CONNECTION TO THE CITY'S MUNICIPAL WATER SYSTEM IN THE AMOUNT THAT IS REQUIRED PRIOR TO THE RECORDATION OF A FINAL MAP.

**6. SANITARY SEWER REPORT:**

THE DEVELOPER SHALL PROVIDE A SEWER REPORT DEMONSTRATING THE DEVELOPMENT CAN BE SERVED BY THE CITY'S SANITARY SEWER SYSTEM. THE DEVELOPER SHALL BE RESPONSIBLE FOR ANY IMPROVEMENTS DEEMED NECESSARY TO SERVE THE PROJECT TO THE APPROVAL OF THE CITY ENGINEER. THE DEVELOPER SHALL COMPLY WITH ALL CITY OF FERNLEY MUNICIPAL CODES REGARDING THE SANITARY SEWER SYSTEM, INCLUDING ASSOCIATED FEES, FOR THE CONNECTION TO THE CITY'S SANITARY SEWER SYSTEM IN THE AMOUNT THAT IS REQUIRED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT FOR THE PUBLIC IMPROVEMENTS FOR THE PROJECT.

**7. WATER AND SEWER MAINS AND SERVICES:**

THE DEVELOPER SHALL COMPLY WITH ALL STANDARDS, CODES, AND REQUIREMENTS REGARDING CONNECTION TO THE CITY'S SANITARY SEWER AND POTABLE WATER SYSTEMS, INCLUDING BUT NOT LIMITED TO, ASSOCIATED FEES, EASEMENTS, DESIGN STANDARDS, SYSTEM LOOPING, DEVELOPMENT CODE REQUIREMENTS, AND STATE REQUIREMENTS. RECORDATION OF A FINAL MAP FOR ANY PHASE OF THE PROJECT, THE DEVELOPER SHALL PROVIDE THE CITY WITH A UTILITY PLAN FOR WATER AND SANITARY SEWER THAT IS IN CONFORMANCE WITH THE CITY OF FERNLEY'S MUNICIPAL CODE AND PUBLIC WORKS DESIGN MANUAL TO THE APPROVAL OF THE CITY ENGINEER, PUBLIC WORKS DIRECTOR, AND ADMINISTRATOR. EACH PHASE MUST ALSO BE REVIEWED AND APPROVED BY THE NEVADA DEPARTMENT OF ENVIRONMENTAL PROTECTION PRIOR TO CONSTRUCTION.

# Conditions of Approval for TSM22001

## Tentative Subdivision Map

### **8. UTILITY EASEMENTS:**

THE DEVELOPER SHALL PROVIDE EASEMENTS TO THE CITY OF FERNLEY FOR THE MAINTENANCE OF THE PUBLIC INFRASTRUCTURE BEING INSTALLED ON PRIVATE PROPERTY. THE EASEMENTS SHALL INCLUDE THE CITY OF FERNLEY'S STANDARD EASEMENT LANGUAGE AND SHALL BE RECORDED ALONG WITH THE FINAL MAP.

### **9. DESIGN STANDARDS:**

THE DEVELOPER SHALL COMPLY WITH THE DESIGN STANDARDS AND DEVELOPMENT REGULATIONS AS SET FORTH IN THE CITY OF FERNLEY'S DEVELOPMENT CODE AND PUBLIC WORKS DESIGN MANUAL UNLESS IN CONFLICT WITH THE LOCAL, STATE, OR FEDERAL REGULATIONS, IN WHICH CASE THE MORE STRINGENT REGULATION WILL TAKE PRECEDENCE.

### **10. ENGINEERING DIVISION:**

THE DEVELOPER SHALL COMPLY WITH ALL ENGINEERING REQUIREMENTS WITHIN THE FERNLEY MUNICIPAL CODE TITLE 32, INCLUDING BUT NOT LIMITED TO, COMPLIANCE WITH SITE DEVELOPMENT STANDARDS, FLOODPLAIN MANAGEMENT, ROADWAYS, UNDERGROUNDING OF UTILITIES, AND WATER AND WASTEWATER FACILITIES TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR PRIOR TO THE RECORDATION OF ANY FINAL MAP FOR THE PROJECT.

### **11. LANDSCAPING/IRRIGATION:**

THE DEVELOPER SHALL SUBMIT A LANDSCAPING AND IRRIGATION PLAN FOR THE PROJECT IN CONFORMANCE WITH TITLE 32 OF THE FERNLEY MUNICIPAL CODE FOR REVIEW AND APPROVAL BY THE ADMINISTRATOR PRIOR TO APPROVAL AND RECORDATION OF A FINAL MAP FOR EACH PHASE. THE LANDSCAPING AND IRRIGATION SHALL BE INSTALLED PER THE APPROVED PLANS TO THE APPROVAL OF THE ADMINISTRATOR.

### **12. STREETS:**

THE DEVELOPER SHALL CONSTRUCT ANY ROADWAY IMPROVEMENTS NECESSARY TO SERVE THE PROJECT TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR, PRIOR TO APPROVAL AND RECORDATION OF A FINAL MAP.

### **13. DRAINAGE AND GRADING:**

THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF THE FERNLEY MUNICIPAL CODE CHAPTER 32 (DRAINAGE AND GRADING) AND CHAPTER 10 OF THE CITY OF FERNLEY'S PUBLIC WORKS DESIGN MANUAL TO THE APPROVAL OF ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR. THE DEVELOPER SHALL PROVIDE A DRAINAGE REPORT FOR THE PROJECT IN CONFORMANCE WITH THE CITY'S DEVELOPMENT CODE, MUNICIPAL CODE, AND THE PUBLIC WORKS DESIGN MANUAL FOR REVIEW AND APPROVAL BY THE CITY ENGINEER. EACH SUCCESSIVE PHASE OF THE PROJECT SHALL SUBMIT AN UPDATED DRAINAGE REPORT FOR REVIEW AND APPROVAL BY THE CITY ENGINEER SHOWING THE CUMULATIVE EFFECT OF THE DEVELOPED PORTION OF THE PROJECT ALONG WITH THE PROPOSED PHASE'S EFFECT ON THE TOTAL DISCHARGE INTO THE DRAINAGE SYSTEM. THE DRAINAGE BASIN SHALL BE DEDICATED TO THE CITY OF FERNLEY UPON COMPLETION OF THE PROJECT IN ORDER FOR THE CITY TO MAINTAIN THE STORM DRAIN SYSTEM FOR THE SUBDIVISION.



# Conditions of Approval for TSM22001

## Tentative Subdivision Map

### **14. GRADING PERMIT:**

THE DEVELOPER SHALL SUBMIT A GRADING PLAN FOR ANY PHASE OF THE PROJECT TO THE APPROVAL OF THE CITY ENGINEER. PRIOR TO THE ISSUANCE OF A GRADING PERMIT FOR THE DEVELOPMENT, THE DEVELOPER SHALL POST A SURETY BOND FOR REGRADING AND RECLAMATION OF THE SITE. THE DEVELOPER SHALL PROVIDE A STAMPED ENGINEER'S ESTIMATE FOR REGRADING AND RECLAMATION OF THE SITE. THE DEVELOPER SHALL COMPLY WITH ALL GRADING REQUIREMENTS SET FORTH IN THE CITY OF FERNLEY'S DEVELOPMENT CODE AS WELL AS ALL STATE AND FEDERAL REGULATIONS. THE DEVELOPER OR THEIR DESIGNEE SHALL BE RESPONSIBLE FOR OBTAINING AND MAINTAINING A STORM WATER POLLUTION PREVENTION PERMIT WITH THE STATE OF NEVADA AS WELL AS A SURFACE AREA DISTURBANCE.

### **15. GEOTECHNICAL REPORT:**

THE DEVELOPER SHALL PROVIDE A FINAL GEOTECHNICAL REPORT FOR THE PROJECT IN CONFORMANCE WITH THE DEVELOPMENT CODE FOR REVIEW AND APPROVAL BY THE ADMINISTRATOR, CITY ENGINEER, PUBLIC WORKS DIRECTOR PRIOR TO THE RECORDATION OF A FINAL MAP FOR ANY PORTION OF THE PROJECT.

### **16. IMPROVEMENT PLANS:**

WITH THE SUBMITTAL OF ANY FINAL MAP APPLICATION, THE DEVELOPER SHALL SUBMIT THE ASSOCIATED IMPROVEMENT PLANS FOR REVIEW AND APPROVAL. THE IMPROVEMENT PLANS SHALL BE APPROVED PRIOR TO THE APPROVAL AND RECORDATION OF THE FINAL MAP. THE UTILITIES AND INFRASTRUCTURE FOR EACH PHASE MUST OPERATE INDEPENDENTLY OF FUTURE PHASES YET TO BE CONSTRUCTED. PRIOR TO THE APPROVAL AND RECORDATION OF A FINAL MAP FOR THE PROJECT, THE DEVELOPER SHALL CONSTRUCT ALL REQUIRED PUBLIC IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO, PUBLIC UTILITY AND ROADWAY INFRASTRUCTURE ASSOCIATED WITH THE PROJECT OR PROVIDE A SURETY BOND IN ACCORDANCE WITH THE PROVISIONS SET FORTH IN FERNLEY MUNICIPAL CODE CHAPTER 32.13, IMPROVEMENTS AND AGREEMENTS, AND MEET THE REQUIREMENTS OF CHAPTER 32.03, LAND DIVISION APPLICATIONS OF THE FERNLEY MUNICIPAL CODE.

### **17. NORTH LYON FIRE PROTECTION DISTRICT:**

THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF THE NORTH LYON COUNTY FIRE PROTECTION DISTRICT, INCLUDING BUT NOT LIMITED TO PROVIDING SECONDARY EMERGENCY ACCESS TO THE APPROVAL OF THE ADMINISTRATOR AND FIRE CHIEF PRIOR TO THE ISSUANCE OF ANY FINAL MAP FOR THE PROJECT.

### **18. RESIDENTIAL CONSTRUCTION TAX:**

THE DEVELOPER IS SUBJECT TO THE PROVISIONS OF FERNLEY MUNICIPAL CODE RELATED TO RESIDENTIAL CONSTRUCTION TAX. THE RESIDENTIAL CONSTRUCTION TAX FEE SHALL BE PAID PRIOR TO THE ISSUANCE OF A BUILDING PERMIT FOR EACH RESIDENTIAL UNIT.

### **19. ADDRESSING AND STREET NAMES:**

THE DEVELOPER SHALL SUBMIT A REQUEST FOR ADDRESSING AND STREET NAME RESERVATION TO THE CITY OF FERNLEY FOR REVIEW AND APPROVAL. ALL ADDRESSING OF LOTS SHALL BE COMPLETED BY THE CITY. STREET NAMES SHALL BE APPROVED BY THE CITY PRIOR TO THE SUBMITTAL OF A FINAL MAP FOR THE PROJECT.

# Conditions of Approval for TSM22001

## Tentative Subdivision Map

### **20. TRUCKEE CARSON IRRIGATION DISTRICT (TCID)/BUREAU OF RECLAMATION:**

THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF THE TRUCKEE CARSON IRRIGATION DISTRICT AND/OR THE BUREAU OF RECLAMATION RELATED TO ANY FACILITY OR EASEMENT WITHIN THE PROJECT BOUNDARY TO THE APPROVAL OF THE ADMINISTRATOR PRIOR TO THE APPROVAL AND RECORDATION OF A FINAL MAP.

### **21. NEVADA DEPARTMENT OF ENVIRONMENTAL PROTECTION:**

THE DEVELOPER SHALL COMPLY WITH ALL REQUIREMENTS OF THE NEVADA DEPARTMENT OF ENVIRONMENTAL PROTECTION – BUREAU OF SAFE DRINKING WATER AND BUREAU OF WATER POLLUTION CONTROL FOR THE WATER AND SEWER INFRASTRUCTURE DESIGN AND CONSTRUCTION TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR.

### **22. WASTE MANAGEMENT:**

THE DEVELOPER SHALL PROVIDE A WILL SERVE FROM WASTE MANAGEMENT TO THE APPROVAL OF THE ADMINISTRATOR PRIOR TO THE APPROVAL AND RECORDATION OF A FINAL MAP.

### **23. TRUCKEE LANE AND MAIN STREET INTERSECTION:**

THE DEVELOPER SHALL SUBMIT A PROPOSED REDEVELOPMENT PLAN FOR THE TRUCKEE LANE EXTENSION/MAIN STREET INTERSECTION, TO THE APPROVAL OF THE CITY ENGINEER, ADMINISTRATOR, PUBLIC WORKS DIRECTOR, AND THE NEVADA DEPARTMENT OF TRANSPORTATION.

### **24. NEVADA DEPARTMENT OF TRANSPORTATION (NDOT):**

THE DEVELOPER SHALL OBTAIN APPROVAL FROM THE NEVADA DEPARTMENT OF TRANSPORTATION PRIOR TO THE RECORDATION OF ANY FINAL MAP FOR THIS PROJECT. SHOULD NDOT NOT APPROVE OF THE ACCESS PLANS FROM MAIN STREET (SR-427), THE DEVELOPER SHALL PROVIDE THE APPROPRIATE EASEMENTS AND IMPROVEMENT PLANS AS MAY BE REQUIRED BY NDOT. AN ENCROACHMENT PERMIT SHALL ALSO BE OBTAINED FOR ANY WORK OR IMPROVEMENTS BEING MADE TO S.R. 427 (MAIN STREET).

### **25. FINAL MAP PHASING:**

IF APPLICABLE, EACH MAP PHASE SUBMITTED MUST BE DESIGNED TO MEET THE PUBLIC FACILITIES AND IMPROVEMENT STANDARDS AND BE ABLE TO OPERATE INDEPENDENTLY AND AS PART OF THE OVERALL DESIGN. CHANGES TO THE PHASING PLAN WILL REQUIRE REVIEW AND APPROVAL BY THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR PRIOR TO BEING IMPLEMENTED.

### **26. COVENANTS, CONDITIONS, AND RESTRICTIONS (CC&R'S):**

THE APPLICANT SHALL PROVIDE COVENANTS, CONDITIONS, AND RESTRICTIONS (CC&R'S) WITH THE FIRST FINAL MAP AND SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE ADMINISTRATOR AND CITY ATTORNEY. CC&R'S SHALL BE RECORDED CONCURRENTLY WITH THE FINAL SUBDIVISION MAP. THE APPLICANT SHALL INCLUDE IN THE CC&R'S PROVISIONS OUTLINING MAINTENANCE RESPONSIBILITIES OF COMMON AREAS, SHARED ROADWAYS, LANDSCAPE MEDIANS, OR OTHER COMMON ELEMENTS TO THE APPROVAL OF THE ADMINISTRATOR, CITY ENGINEER, AND PUBLIC WORKS DIRECTOR.

# Conditions of Approval for TSM22001

## Tentative Subdivision Map

### **27. FLOODPLAIN MANAGEMENT AND FEDERAL EMERGENCY MANAGEMENT AGENCY:**

THE DEVELOPER SHALL COMPLY WITH CHAPTER 32.09.060 OF THE CITY OF FERNLEY DEVELOPMENT CODE TITLED: FLOODPLAIN MANAGEMENT AS WELL AS ALL FEDERAL EMERGENCY MANAGEMENT AGENCY, FEMA, NATIONAL FLOOD INSURANCE PROGRAM REQUIREMENTS FOR ALL FLOODPLAIN MODIFICATIONS. THE REQUIRED APPROVALS FROM THE CITY OF FERNLEY AND FEMA SHALL BE OBTAINED PRIOR TO WORK BEGINNING WITHIN THE MAPPPED FLOODPLAIN AREA. ALL REQUIRED IMPROVEMENTS SHALL BE CONSTRUCTED AND APPROVED PRIOR TO THE RECORDATION OF A FINAL MAP.

### **28. SR-427/MAIN STREET IMPROVEMENTS**

IN ACCORDANCE WITH SECTION 32.09.140 OF THE CITY OF FERNLEY DEVELOPMENT CODE AND THE CITY OF FERNLEY'S 2014 MAIN STREET REVITALIZATION STUDY, THE EXISTING SR-427 SHALL BE IMPROVED TO THE RECOMMENDED LONG-TERM ALTERNATIVE IDENTIFIED IN THE STUDY. THIS ALTERNATIVE INCLUDES TWO 12-FOOT TRAVELS LANES, A 14-FOOT CENTER TURN LANE, CURB GUTTER AND SEPERATED SIDEWALK, A BIKE LANE AND LANDSCAPING AND LIGHTING IMPROVEMENTS. THE IMPROVEMENTS SHALL BE CONSTRUCTED ALONG THE LENGTH OF THE DEVELOPMENT BOUNDARY OF THE PROJECT ON THE SIDE OF THE ROAD ADJACENT TO THE PROJECT PARCEL/S.

### **29. MAIN STREET/SR-427 AND US 95A INTERSECTION PROPORTIONATE SHARE:**

THE DEVELOPER SHALL PAY A PROPORTIONAL SHARE OF FUTURE IMPROVEMENTS TO THE MAIN STREET/SR-427 AND US 95A INTERSECTION. THE DEVELOPER SHALL PROVIDE THE CITY WITH A PAYMENT PLAN FOR THE PROPORTIONAL SHARE OF FUTURE IMPROVEMENTS TO THE APPROVAL OF THE CITY ENGINEER, PUBLIC WORKS DIRECTOR, NEVADA DEPARTMENT OF TRANSPORTATION, AND ADMINISTRATOR PRIOR TO THE RECORDATION OF A FINAL MAP.

### **30. MAIN STREET AND MILLER LANE INTERSECTION PROPORTIONATE SHARE:**

THE DEVELOPER SHALL PAY A PROPORTIONAL SHARE OF FUTURE IMPROVEMENTS TO THE MAIN STREET/SR-427 AND MILLER LANE INTERSECTION. THE DEVELOPER SHALL PROVIDE THE CITY WITH A PAYMENT PLAN FOR THE PROPORTIONAL SHARE OF FUTURE IMPROVEMENTS TO THE APPROVAL OF THE CITY ENGINEER, PUBLIC WORKS DIRECTOR, NEVADA DEPARTMENT OF TRANSPORTATION, AND ADMINISTRATOR PRIOR TO THE RECORDATION OF A FINAL MAP.





# CITY OF FERNLEY

## City Council AGENDA REPORT

Meeting Date: April 6, 2022

**REPORT TO:** Mayor and City Council

**REPORT FROM:** Tim Thompson, Planning Director

| FINANCIAL IMPACT: |     | CURRENTLY BUDGETED: |     | FUND/ACCOUNT: |
|-------------------|-----|---------------------|-----|---------------|
| Yes:              | No: | Yes:                | No: | N/A           |

**ACTION REQUESTED:** Ordinance

**AGENDA ITEM: (For Possible Action):**

**(For possible action) First Reading, Introduction of Bill #306 – ZMA22001**

Consideration and possible action to introduce Bill #306 as a general Ordinance for a Zoning Map Amendment, associated with ZMA22001, to change the zoning on a single parcel of vacant land from C2 (General Commercial) to I (Industrial) on a site approximately ±27.83 acres in size located at 1000 Pilot Road, Fernley, NV (APN: 021-061-32).

**AGENDA ITEM BRIEF:**

The proposed item accounts for a change in both the land use and the zoning classification of a single parcel of vacant land, generally located north of the Union Pacific railroad, south of Interstate-80, and west of the Speedco Truck Repair facility. The purpose of these zoning and land use amendments is to ensure that a ±481,320 sq. ft. Industrial Building can be developed on the parcel.

**RECOMMENDED MOTION:**

Read Bill by title and schedule 2<sup>nd</sup> Reading and public hearing on Bill #306 for the regularly scheduled City Council meeting on April 20<sup>th</sup>, 2022.

**"I move to introduce Bill #306 and set the public hearing for the April 20<sup>th</sup>, 2022 City Council Meeting"**

**BUSINESS IMPACT (per NRS Chapter 237):**

A Business Impact Statement is not required because this is not a rule (term excludes vehicles by which legislative powers are exercised under NRS Chapters 271, 278, 278A, or 278B).

See attached report for background, analysis, alternatives.

**ALTERNATIVES:**

**BACKGROUND:**

See Attached Staff Report for Background/Analysis/Findings

**RELEVANT LAWS, STATUTES, AND REGULATIONS:**

**FINANCIAL IMPLICATIONS:**

**ATTACHMENTS:**

1. ZMA21001 - CC Report - Introduction
2. Attachment 1 - Vicinity Map
3. Attachment 2 - Ex\_Pro\_LandUse Exhibit
4. Attachment 3 - Resolution 22-009
5. Attachment 4 - Ex\_Pro\_Zoning Exhibit
6. Attachment 5 - Bill 306 – Ordinance for Zoning Map Amendment

City Council Meeting April 6, 2022  
Zoning Map Amendment (ZMA22002)

**PROJECT SUMMARY**

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|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CASE NUMBER(S):</b>      | <ul style="list-style-type: none"><li>• MPA 22001 &amp; ZMA 22001</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>REQUESTED ACTION(S):</b> | <ul style="list-style-type: none"><li>• Master Plan Amendment &amp; Zoning Map Amendment</li></ul>                                                                                                                                                                                                                                                                                                                                                                               |
| <b>PROJECT DESCRIPTION:</b> | <ul style="list-style-type: none"><li>• A Master Plan Amendment request on a vacant parcel of land to convert the Land Use classification from Commercial to Industrial, and a Zoning Map Amendment request on the same parcel to change the zoning from C2 (General Commercial) to I (Industrial). The project site is generally located south of Interstate-80 East, north of the Union Pacific Railroad, and west of the terminus of Pilot Road. (APN: 021-061-32).</li></ul> |
| <b>PROPERTY OWNER:</b>      | <ul style="list-style-type: none"><li>• Jeffrey M. Herman – 1000 Pilot Road LLC</li></ul>                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>APPLICANT:</b>           | <ul style="list-style-type: none"><li>• Tom Theobald – Mohr Capital</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>LOCATION:</b>            | <ul style="list-style-type: none"><li>• 1000 Pilot Road</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>SITE SIZE:</b>           | <ul style="list-style-type: none"><li>• ±27.83 acres</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>EXISTING ZONING:</b>     | <ul style="list-style-type: none"><li>• C2 – General Commercial</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>PROPOSED ZONING</b>      | <ul style="list-style-type: none"><li>• I – Industrial</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>EXISTING LAND USE:</b>   | <ul style="list-style-type: none"><li>• Commercial</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>PROPOSED LAND USE:</b>   | <ul style="list-style-type: none"><li>• Industrial</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>WARD INFORMATION:</b>    | <ul style="list-style-type: none"><li>• Ward 1 – Councilman Lacy</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                       |

**\*A PUBLIC HEARING IS REQUIRED**

**POLICY REFERENCE**

|                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Nevada Statutes:</i>                  | <i>NRS 278A</i>                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <i>Fernley Municipal Code:</i>           | <i>Title 32</i>                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <i>Policies &amp; Procedure Manual:</i>  | <i>N/A</i>                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <i>Community Assessment:</i>             | <i>N/A</i>                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <i>City of Fernley Development Code:</i> | <i>Section 32.03.040 – Comprehensive Master Plan/Zoning Map Amendments</i><br><i>Section 32.06.110 – Industrial (I) Zoning Districts</i><br><i>Section 32.09.035 – Dedication of Water Rights</i><br><i>Section 32.09.140 – Streets (Roadways)</i><br><i>Section 32.09.150 – Utilities</i><br><i>Section 32.12.010 – Adequate Public Facilities Required</i><br><i>Section 32.13.030 – Improvements, Security, &amp; Inspections</i> |



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**BACKGROUND**

The project site has been under the ownership of 1000 Pilot Road LLC since December 2014, and has undergone various map adjustments throughout the years, most recently a Parcel Map in 2015. Additionally, the project site has recorded a Deed for Water Rights to be dedicated to the City of Fernley as of May, 2016. The project site has remained vacant throughout history, and as such, does not possess any public facilities such as water or sewer infrastructure at this time.

The project area is currently zoned C2 (General Commercial) and is approximately 27.83 acres in size. The project site consists of a single parcel of land, located at 1000 Pilot Road (APN: 021-061-32). The project area's surrounding land uses generally consist of Commercial and Industrial development, as well as vacant land. The properties directly east contain Commercial development and the properties directly north of the project site are slated for Industrial development. The project area is located within the City of Fernley's "Project Redevelopment Area #1", as stated within the City's Zoning map.

**ANALYSIS**

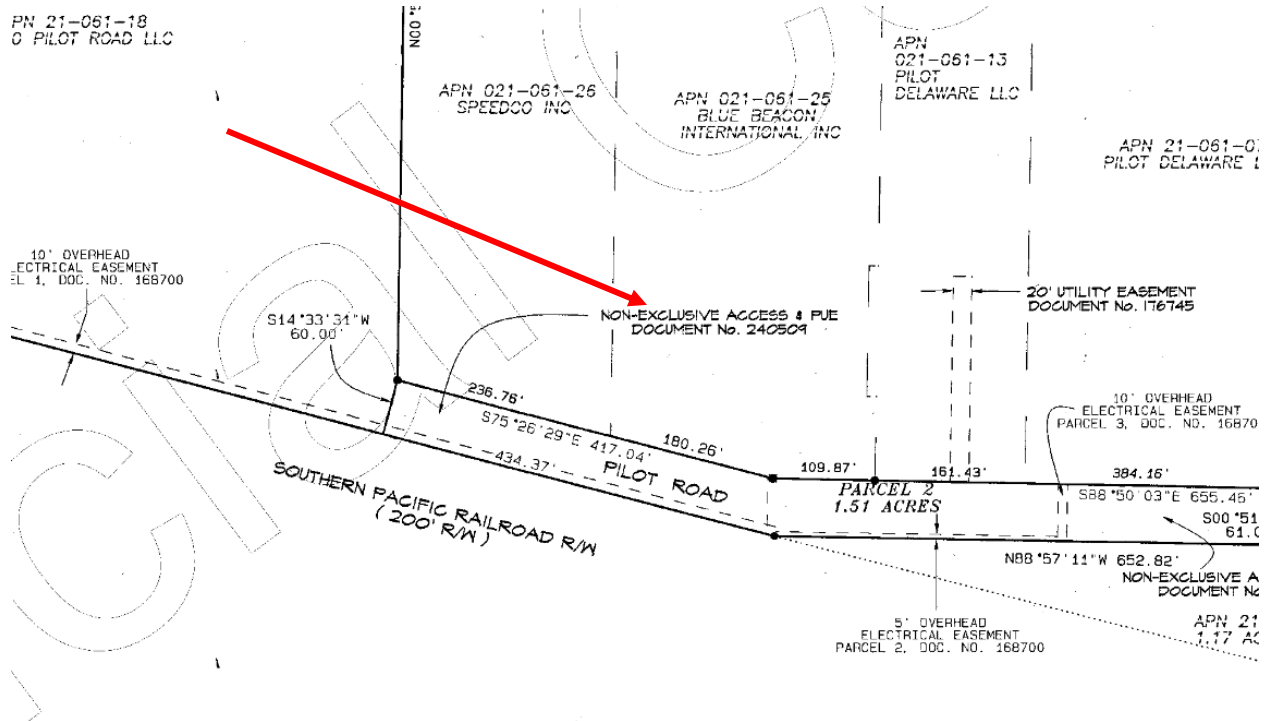
The applicant is seeking the approval of a Master Plan and Zoning Map Amendment on a parcel of land located at 1000 Pilot Road, to convert the existing land use classification from Commercial to Industrial and change the zoning of the parcel from C2 (General Commercial) to I (Industrial). The applicant aims to implement these changes in order to develop an Industrial building on the property, expected to be approximately 481,320 square feet in size. Should the Master Plan and Zoning Map amendment be approved, any development on the site would require the approval of an Administrative Review or Conditional Use Permit, depending on the Use.

The City of Fernley's Comprehensive Master Plan was most recently updated in 2018. The project area currently has a Land Use classification of Commercial, and an underlying zoning of C2 (General Commercial). The Commercial Land use classification highlights primary uses such as restaurants, lodging, office space, business centers, and general recreation facilities. The current Commercial land use does not permit for Warehousing, Distribution, Storage, Manufacturing/Production along with multiple other industrial uses. To permit the project site for Industrial development, the applicant is first required to submit a request for a Comprehensive Master Plan Amendment to change the Land Use classification from Commercial to Industrial. Once the Master Plan Amendment has been submitted, the applicant must then submit a request for a Zoning Map Amendment, in order to change the zoning from C2 (General Commercial) to I (Industrial).

The Industrial Land Use classification does indeed allow for larger scale uses such as Warehousing, Distribution, Manufacturing, Processing, and so on. The standards for Industrial development highlight the importance of being located near major arterial roads and highways, as well as proximity to rail lines. This standard is met by the project site's location directly south of Interstate 80, directly east of S.R. 427 (Main Street), as well as its proximity to the Union Pacific Rail Line, directly south of the project site. Municipal services such as sewer and water connections are another required development standard of the Industrial Zoning/Land Use, and these do exist in the nearby surrounding area – as a result of the already existing Commercial and Industrial development surrounding the project site.

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The proposed development will utilize a non-exclusive access easement from the adjacent parcel directly to the east for primary ingress/egress. This easement exists as its own distinct parcel, and currently provides access to three separate parcels further east of the project site, including the Truck Wash and the SpeedCo Truck Services Facility. This can be seen marked on the recorded parcel map below:



Considering that this easement (Pilot Road) will serve as the project's primary access, it is required to be improved to the standards outlined within the City of Fernley Development Code, to the approval of the City Administrator, Engineer, and Public Works Director. Additionally, the potential increase in traffic may trigger the need for improvements at the intersection of Pilot Road and Main Street, such as traffic signaling or signage.

The proposed change to the Industrial Land Use and the Industrial Zoning, along with the subsequent Industrial Project will have some impact on the existing facilities in the surrounding area. Transportation facilities, especially those along Main Street (S.R. 427) and Pilot Road are expected to require improvements over the 10-year horizon. The applicant does believe that the proposed Master Plan and Zoning Map Amendment will not alter the timing for these improvements to be made, and any immediate development will not require any traffic improvements. Other Public Facilities that may be affected include city utilities such as sewer and water, and public service agencies the Lyon County Sheriff's Office and the North Lyon County Fire Protection district. Due to the nature of the use however, the applicant believes that any impacts to these services will be minimal.

Utilities such as sewer and water will be connected to, and any development will tie in to existing sewer/water mains located within the surrounding area. Although this is expected to have some impact on the overall capacity for water and sewer, the applicant does believe that the specific nature of the industrial use (For the time being, proposed Warehousing/Distribution + Cross Docking facility) indicates

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that the utility consumption is much lower than a heavier industrial use, such as fabrication and manufacturing.

Given the surrounding uses to the project area, the applicant believes that the proposed Industrial zoning will fit in well with the existing development. The project site is surrounded by three (3) developed parcels of land to the east, up to the Main Street/Pilot Road Intersection. These three parcels contain a Truck Wash, the Pilot Travel Center, and the Speedco Truck Repair shop. Given that all three of these properties contain trucks and trailers, it does appear as though the proposed zone change and subsequent development will fit in with the existing development, and potentially increase the service revenues of those surrounding businesses. Furthermore, any residential land south of the project site is significantly buffered by the Union Pacific Railroad, whereas any abutting parcels further north are shielded by the Interstate-80 Right of Way. The parcels directly west of the project site do share a common boundary (021-061-012 and 021-051-14) and are both currently vacant, with land use designations of OSP (Open Space & Parks) and C (Commercial).

The proposed Master Plan and Zoning Map Amendment does accomplish some of the Goals and Action Strategies outlined within the City of Fernley Comprehensive Master Plan, including but not limited to Land Use, Transportation, and Public Services & Facilities. These will be explored in the Findings section of the Staff Report. The applicant does believe that the construction and development of the Industrial Building will lead to a greater influx of higher paying jobs to the community, as Industrial Warehousing and Distribution jobs do tend to pay more than retail or service commercial jobs. This then provides additional opportunity for economic development within the City of Fernley. Conversely, this does take away from some of the Master Plan's goals and strategies as well. These amendments can also reduce the availability of commercial space along the Main Street/I-80 Corridor, as these larger scale Industrial buildings generally do not offer any recreational or entertainment value to the City.

**Should the Planning Commission determine the project, as submitted, is consistent with the existing surrounding land uses, will not have a significant adverse impact on the existing surrounding uses, promotes the public health, safety, and general welfare, and can make the applicable Findings, the Planning Commission can approve the item with the attached conditions of approval.**

**If the Planning Commission cannot make some or all the applicable Findings and determines the project is not consistent with the existing surrounding uses, will have a significant adverse impact on the existing uses, and/or does not promote the public health, safety and general welfare, the Planning Commission can deny the application. The motion to deny should be based on information received in written materials and at the public hearings on this matter and the Planning Commission's inability to make any Finding(s) should be explicitly described**

## **FINDINGS**

### Master Plan Amendment

#### **MP1: Implementation of the goals and policies outlined within the Master Plan Amendment:**

Land Use Goals and Policies included within the City's 2018 Comprehensive Master Plan that are relevant to this project include the following:



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Land Use:

- LU.1.1 Encourage and plan for new development in areas where adequate public services and facilities can be provided efficiently.**
- LU.1.1.1 Require new development to provide its proportionate share of improvements to avoid a degradation of services for existing residents. This requirement will be applied regardless of project size in order to avoid incremental erosion of services and facilities.
  - LU.1.1.2 Encourage development of vacant or underutilized lands within the community core where adequate infrastructure and facilities currently exists.
  - LU.1.1.3 Require new development to provide certified, stamped studies demonstrating the impact proposed development will have on existing infrastructure and to provide improvements and/or funding in lieu of improvements in proportion to the impacts of the proposed projects on the city's roadway, sewer and water systems.
- LU.1.3 Provide a balanced distribution of employment and population.**
- LU.1.3.1 Encourage land uses and development, which maintains a balance of population, housing, and employment.
- LU.1.4 Ensure existing and future land uses are compatible.**
- LU.1.4.2 Projects shall be evaluated with the intent to promote land use compatibility; community design measures can increase compatibility among adjoining land uses.
- LU.1.5 Promote infill development.**
- LU.1.5.3 Development on the perimeter of Fernley is appropriate only where orderly extension of existing public services and facilities can occur.
  - LU.1.5.4 Adopt development regulations that recognize the relationship between land use timing and the provision of services and facilities.
- LU.1.6 Create a growth pattern that assures flexible, feasible and efficient projects.**
- LU.1.6.1 Support for developmental approval of projects that provide an appropriate balance of population.
  - LU.1.6.2 The land use designations include minimum service standards that shall apply to proposed developments and land use changes.

Transportation:

- T.1.1 Require that roadway facilities be maintained and constructed as needed to ensure high quality and safe travel on major streets and at major intersections.**
- T.1.1.1 The minimum Level of Service on all city-maintained roadways shall be LOS D. The city will work with representatives from NDOT to ensure timely improvements are planned when NDOT roadways are forecast to fall below LOS D.
  - T.1.1.4 Develop regulations regarding setbacks, signage and right-of-way dedication, and other considerations which preserve and increase roadway capacity and safety.
  - T.1.1.5 Ensure development of the roadways planned in the Streets and Highways Plan section of the Comprehensive Master Plan occurs in a timely manner and with the financial assistance from the development community.
  - T.1.1.6 Require all new development to be consistent with the access right-of-way dedication and improvement standards as specified in the Public Works Design

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- Manual and pursuant to the functional classification as defined in this chapter.
- T.1.1.8 Monitor road conditions and prioritize maintenance schedules based on traffic demand and the availability of alternative routes.
- T.1.3 Implement street design and access standards to provide for safe and efficient movement of goods and people.**
- T.1.3.4 Require proposed new development that intends to connect with an NDOT roadway to incorporate the NDOT Access Management System and Standards into the project design. These standards regulate access onto the roadway network in order to protect health, safety and welfare of the public, maintain the rights-of-way, and to preserve the functional classification level of the roadway network while meeting the needs of the motoring public. The access management standards address the location, spacing and frequency of access points on the roadway network.

Public Services & Facilities:

**PSF.1.1 To provide and maintain a reliable and adequate water supply and delivery system.**

- PSF.1.1.2 Plan water supply for Fernley based upon meeting the average water demand in normal to dry years with additional water conservation measures or other actions in periods of severe drought.
- PSF.1.1.3 Final maps and building permits will be approved only when adequate water rights have been dedicated to the City of Fernley and applicable service and connections fees have been paid.
- PSF.1.1.5 Areas with the potential to pollute the water supply, if developed on septic systems, shall be connected to the municipal wastewater system. Proposals for new development using septic systems shall be reviewed by the Nevada Department of Environmental Protection (NDEP) for compliance with their regulations for quantity of septic systems within the specific hydrographic basin. The maximum allowable number of septic systems currently allowed by the NDEP is 180 within a one-mile radius.
- PSF.1.2 To the maximum extent possible, the costs of improvement, extension and construction of public facilities should be borne by those whose land development and redevelopment actions made such improvement, extension and construction necessary. A procedure is to be established that defines the responsibility for improvements of individual projects.**
- PSF.1.4 Reduce water demand through xeriscape project landscaping, reclamation and reuse of treated wastewater for golf courses, medians, parkways and other appropriate application uses.**
- PSF.1.4.1 The Department of Community Development will include provisions for reclamation of water resources and appropriate uses for wastewater application in the Fernley Development Code.
- PSF.1.5 Design water treatment and delivery systems to be compatible with the area in which they are located.**
- PSF.2.1 Insure an efficient, adequate and self-supporting wastewater collection treatment and disposal system that will meet the needs of the public and comply with federal, state and local clean water requirements.**
- PSF.2.1.1 All new development within the City limits with lot sizes equal to or



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Smaller than 1.0 acre shall be required to connect to the municipal sewer system. New development with residential densities lower than one dwelling unit per acre shall be allowed to utilize individual septic systems with acceptable sub-surface disposal, if sewer is not available.

- PSF.2.1.2 Final maps and building permits will be approved only when adequate sewer capacity is secured and applicable service and connections fees have been paid.
- PSF.2.1.3 Sewer costs directly attributable to new development shall be paid for by the new development. The cost of providing service shall include the cost of extending service lines or other necessary facilities to the individual project site.
- PSF.2.1.4 The City will maintain and improve the existing sanitary sewer system through preventive maintenance and on-going appraisal.
- PSF.2.1.6 The City can require improvement of the existing sewer system in those areas adversely affected by overloaded sewer systems caused by new development.
- PSF.2.1.5 The City shall establish sewer use fees as required to support operations.
- PSF.3.3 Ensure appropriate levels of public services and facilities are continually provided.**
  - PSF.3.3.1 Coordinate the provision of public services with growth and development in Fernley.
  - PSF.3.3.2 Consider the financial impacts in all growth management decisions.
- PSF.3.11 Require large-scale developments to be within adequate fire service areas.**
  - PSF.3.11.2 All development in the City (except for residential densities less than one residence per acre) shall be within a 4-7-minute response time of an existing or planned fire station.
  - PSF.3.11.3 New Development shall identify and fund facilities and infrastructure necessary to provide adequate fire protection.
  - PSF.3.11.5 Require water distribution systems to meet the Lyon County Fire District standards for all future development.

The Comprehensive Master Plan fosters the City's Mission, promoting future prosperity and the balanced growth of the community, promoting economic development, and improving the quality of life enjoyed by the community's residents. To support future industrial and manufacturing development, that could potentially begin to offer higher-pay and higher-skill employment opportunities within the community, the City of Fernley will have to consider a variety of land use, community development, and economic development strategies designed to diversify its current housing stock and economic profile with additional professional and commercial office space and additional retail space. The incorporation of non-single-family detached residential owner-occupied housing options, with additional multi-family and renter-occupied housing options sited in appropriate areas within the community, will be critical in securing future private investment in the development of new smaller and mid-sized manufacturing space. The diversification of the community's existing housing stock, coupled with improvements in the types of employment opportunities and retail and recreational opportunities offered, will be necessary to support the community's continued prosperity and smart growth.

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**MP2: Compatibility with surrounding land uses.**

The following table shows land use and zoning designations for the parcels directly surrounding the project parcel:

| Direction | Current Use                                     | Current Zoning                                                                             | Master Plan Land Use Designation |
|-----------|-------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------|
| North:    | Interstate 80, Proposed Industrial Building     | I (Industrial)                                                                             | Industrial                       |
| South:    | Union Pacific Railroad, Rural Residential land, | RR1 (Residential Rural, 1-acre minimum lot size)                                           | Residential Rural                |
| East:     | SpeedCo Truck Repair, Blue Beacon Truck Wash    | C2 (General Commercial), and TC (Tourist Commercial)                                       | Commercial                       |
| West:     | Vacant Land                                     | GR20 (General Rural, 20 acre min. lot size), RR1 (Residential Rural, 1-acre min. lot size) | Open Space & Parks, Commercial   |

The surrounding parcels contain a small variety of zoning and land use categories, with generally very low densities. There are currently only 4 parcels directly adjacent to the project site, as parcels to the North and South are buffered from the project area by the Interstate-80 Highway, and the Union Pacific Railroad respectively. The two parcels directly east of the project site include the SpeedCo Truck repair shop (021-061-26), and a parcel that serves as a roadway easement (021-061-33) for the Truck Repair Shop, the Truck Wash, and the Travel Center. The SpeedCo Truck Repair shop will most likely benefit from the additional truck traffic that this project is proposed to bring to this area, and the access parcel will also serve as the primary ingress/egress point and will be improved in accordance with the City of Fernley Engineering, Public Works, and Development Standards. The two parcels directly west of the project site are currently vacant and are master planned for Open Space & Parks (021-061-12) and Commercial (021-051-14) land. Industrially zoned land is permitted adjacent to commercial land and or residential, subject to certain conditions and requirements related to screening. The development code requires a minimum 20-foot buffer to be placed along any property line abutting a residential zoning district, in addition to the use of landscaping to provide screening between those areas. Any smoke, noise, excessive light, dust, will also be directed away from those non-industrial zoning districts to the extent possible. Provided the conditions outlined within the City of Fernley Development code can be satisfied, this Finding can be made for the Master Plan Amendment.

**MP3: Public notice was given, and a public hearing has been scheduled per the requirements of the Development Code and Nevada Revised Statutes.**

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Public notice was given and a public hearing was scheduled. The Planning Commission and City Council meetings function as the public hearings for this matter as required in the City's Municipal Code and Nevada Revised Statutes.

Zoning Map Amendment:

**Z1: The application, as submitted, is consistent with the City of Fernley Comprehensive Master Plan.**

Relationship to the Master Plan

1. Industrial (I)

The proposed development is located within an area designated as Industrial in the city's Comprehensive Master Plan. The description of the Industrial land use states the equivalent zoning district is I (Industrial). Per the Comprehensive Master Plan document, Industrial land use focuses on Industrial uses, such as manufacturing/warehousing, maintenance and repair shops, distribution, mining, storage, and construction. Other uses such as supporting railroad uses and limited support services for the convenience of employees, such as restaurants, small scale retail, and professional and medical offices may also be permitted. Planned Development (PD) zoning may be applied to the area designated Industrial for entitlement and construction.

The Comprehensive Master Plan goes on to state that Industrial areas are intended to create an environment where industrial activities may occur with a minimum amount of impact on the natural environment and surrounding land uses. Industrial land uses are not appropriate adjacent to residential development. Areas of steep slopes, floodplains and/or potential wetlands should generally be avoided. Industrial land uses are typically located near major transportation corridors but isolated from residential land uses and are generally located south of I-80 and north of US 50A. Municipal Services are required.

2. The Land Use Plan Goals and Action Strategies in the 2018 Comprehensive Master Plan that are relevant to this proposal include:

Land Use:

**LU.1.1 Encourage and plan for new development in areas where adequate public services and facilities can be provided efficiently.**

LU.1.1.1 Require new development to provide its proportionate share of improvements to avoid a degradation of services for existing residents. This requirement will be applied regardless of project size in order to avoid incremental erosion of services and facilities.

LU.1.1.2 Encourage development of vacant or underutilized lands within the community core where adequate infrastructure and facilities currently exists.

LU.1.1.3 Require new development to provide certified, stamped studies demonstrating the impact proposed development will have on existing infrastructure and to provide improvements and/or funding in lieu of improvements in proportion to the impacts of the proposed projects on the city's roadway, sewer and water systems.

**LU.1.5 Promote infill development.**

LU.1.5.3 Development on the perimeter of Fernley is appropriate only where orderly extension of existing public services and facilities can occur.



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LU.1.5.4 Adopt development regulations that recognize the relationship between land use timing and the provision of services and facilities.

**LU.1.6 Create a growth pattern that assures flexible, feasible and efficient projects.**

LU.1.6.1 Support for developmental approval of projects that provide an appropriate balance of population.

LU.1.6.2 The land use designations include minimum service standards that shall apply to proposed developments and land use changes.

Transportation:

**T.1.1 Require that roadway facilities be maintained and constructed as needed to ensure high quality and safe travel on major streets and at major intersections.**

T.1.1.1 The minimum Level of Service on all city-maintained roadways shall be LOS D. The city will work with representatives from NDOT to ensure timely improvements are planned when NDOT roadways are forecast to fall below LOS D.

T.1.1.6 Require all new development to be consistent with the access right-of-way dedication and improvement standards as specified in the Public Works Design Manual and pursuant to the functional classification as defined in this chapter.

T.1.1.8 Monitor road conditions and prioritize maintenance schedules based on traffic demand and the availability of alternative routes.

Public Services & Facilities:

**PSF.1.2 To the maximum extent possible, the costs of improvement, extension and construction of public facilities should be borne by those whose land development and redevelopment actions made such improvement, extension and construction necessary. A procedure is to be established that defines the responsibility for improvements of individual projects.**

**PSF.1.4 Reduce water demand through xeriscape project landscaping, reclamation and reuse of treated wastewater for golf courses, medians, parkways and other appropriate application uses.**

PSF.1.4.1 The Department of Community Development will include provisions for reclamation of water resources and appropriate uses for wastewater application in the Fernley Development Code.

**PSF.1.5 Design water treatment and delivery systems to be compatible with the area in which they are located.**

**PSF.3.3 Ensure appropriate levels of public services and facilities are continually provided.**

PSF.3.3.1 Coordinate the provision of public services with growth and development in Fernley.

PSF.3.3.2 Consider the financial impacts in all growth management decisions.

**PSF.3.11 Require large-scale developments to be within adequate fire service areas.**

PSF.3.11.2 All development in the City (except for residential densities less than one residence per acre) shall be within a 4-7-minute response time of an existing or planned fire station.

PSF.3.11.3 New Development shall identify and fund facilities and infrastructure necessary to provide adequate fire protection.

PSF.3.11.5 Require water distribution systems to meet the Lyon County Fire District standards for all future development.

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**Z2: Consistent with the surrounding Land uses:**

The following chart shows land use and zoning designations for the parcels directly surrounding the project parcels (021-061-32):

| Direction | Current Use                                     | Current Zoning                                                                             | Master Plan Land Use Designation |
|-----------|-------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------|
| North:    | Interstate 80, Proposed Industrial Building     | I (Industrial)                                                                             | Industrial                       |
| South:    | Union Pacific Railroad, Rural Residential land, | RR1 (Residential Rural, 1-acre minimum lot size)                                           | Residential Rural                |
| East:     | SpeedCo Truck Repair, Blue Beacon Truck Wash    | C2 (General Commercial), and TC (Tourist Commercial)                                       | Commercial                       |
| West:     | Vacant Land                                     | GR20 (General Rural, 20 acre min. lot size), RR1 (Residential Rural, 1-acre min. lot size) | Open Space & Parks, Commercial   |

The surrounding parcels contain a small variety of zoning and land use categories, with generally very low densities. There are currently only 4 parcels directly adjacent to the project site, as parcels to the North and South are buffered from the project area by the Interstate-80 Highway, and the Union Pacific Railroad respectively. The two parcels directly east of the project site include the SpeedCo Truck repair shop (021-061-26), and a parcel that serves as a roadway easement (021-061-33) for the Truck Repair Shop, the Truck Wash, and the Travel Center. The SpeedCo Truck Repair shop will most likely benefit from the additional truck traffic that this project is proposed to bring to this area, and the access parcel will also serve as the primary ingress/egress point and will be improved in accordance with the City of Fernley Engineering, Public Works, and Development Standards. The two parcels directly west of the project site are currently vacant and are master planned for Open Space & Parks (021-061-12) and Commercial (021-051-14) land. Industrially zoned land is permitted adjacent to commercial land and or residential, subject to certain conditions and requirements related to screening. The development code requires a minimum 20-foot buffer to be placed along any property line abutting a residential zoning district, in addition to the use of landscaping to provide screening between those areas. Any smoke, noise, excessive light, dust, will also be directed away from those non-industrial zoning districts to the extent possible. Provided the conditions outlined within the City of Fernley Development code can be satisfied, this Finding can be made for the Zoning Map Amendment.

**Z3: Public notice was given, and a public hearing has been scheduled per the requirements of the Development Code and Nevada Revised Statutes.**

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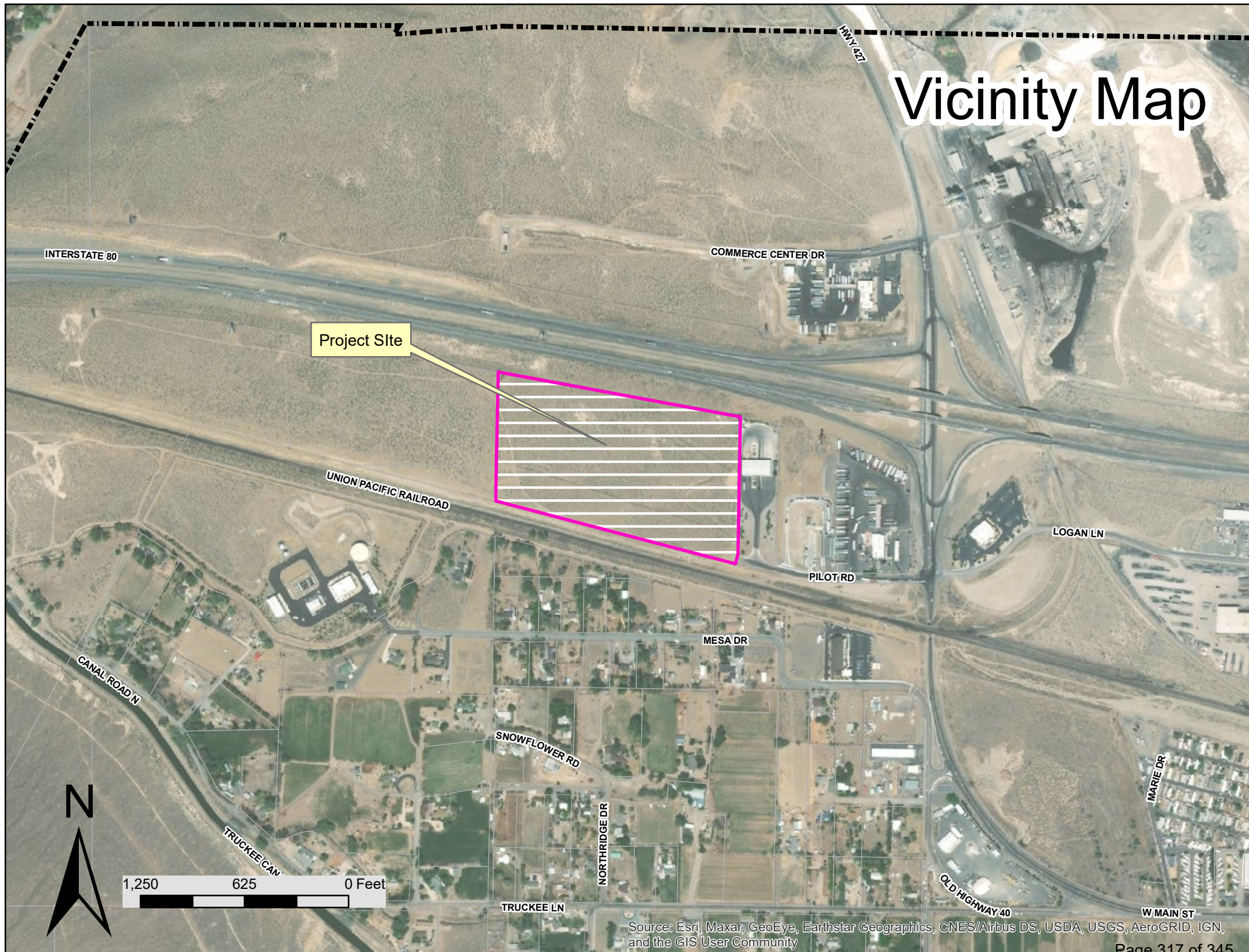
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**ATTACHMENTS**

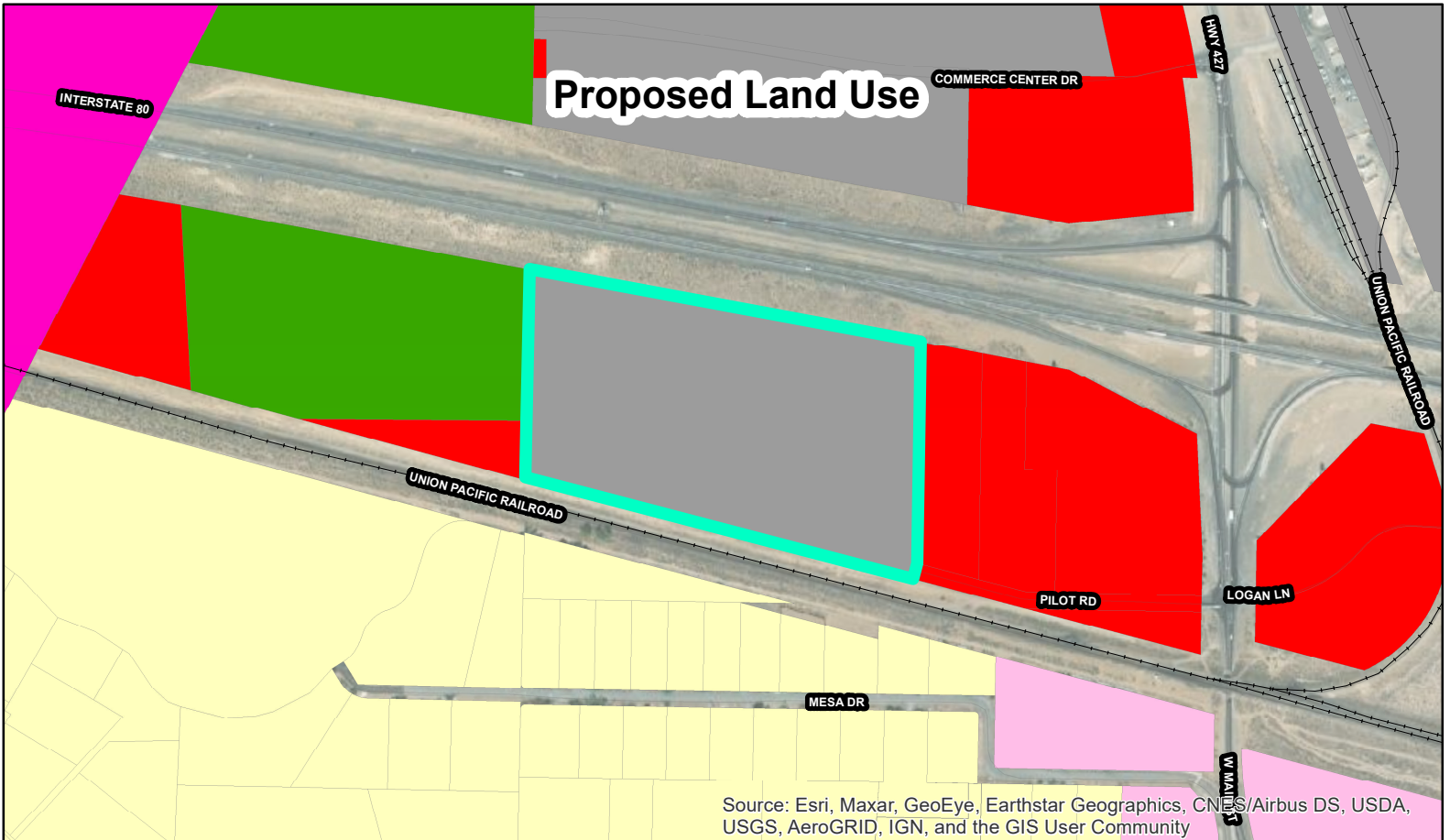
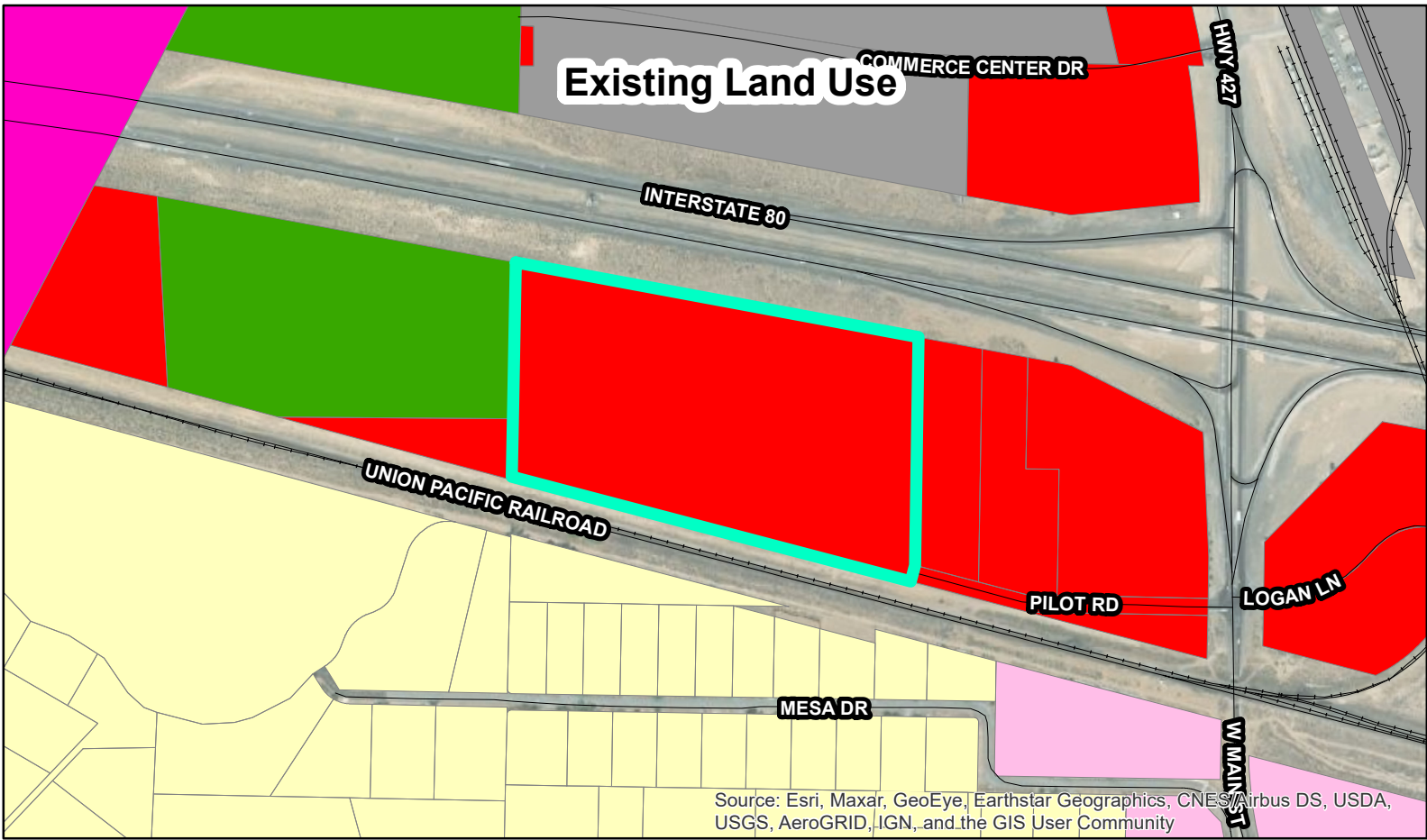
- 1.) Vicinity Map
- 2.) Existing & Proposed Land Use Map Exhibit
- 3.) Signed Resolution 22-009
- 4.) Existing & Proposed Zoning Map Exhibit
- 5.) Bill #306



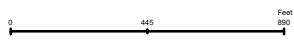
# Vicinity Map







NOTE: The scale and configuration of all information shown hereon are approximate only and are NOT intended as a guide for design or survey work. Reproduction is NOT permitted without prior written permission from the City of Fernley



### Legend

- |                                                                                                                                                                                |                                                                                                                                                                               |                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #90EE90; border: 1px solid black; margin-right: 5px;"></span> General Rural (GR)              | <span style="display: inline-block; width: 15px; height: 15px; background-color: #8B4513; border: 1px solid black; margin-right: 5px;"></span> Multi Family Residential (MFR) | <span style="display: inline-block; width: 15px; height: 15px; background-color: #00BFFF; border: 1px solid black; margin-right: 5px;"></span> Mixed Employment (ME)      |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFFE0; border: 1px solid black; margin-right: 5px;"></span> Rural Residential (RR)          | <span style="display: inline-block; width: 15px; height: 15px; background-color: #FF0000; border: 1px solid black; margin-right: 5px;"></span> Commercial (C)                 | <span style="display: inline-block; width: 15px; height: 15px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Public Facility (PF)       |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #FFD700; border: 1px solid black; margin-right: 5px;"></span> Single-Family Residential (SFR) | <span style="display: inline-block; width: 15px; height: 15px; background-color: #FFB6C1; border: 1px solid black; margin-right: 5px;"></span> Suburban Mixed Use (SMU)       | <span style="display: inline-block; width: 15px; height: 15px; background-color: #3CB371; border: 1px solid black; margin-right: 5px;"></span> Open Space and Parks (OSP) |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #FF8C00; border: 1px solid black; margin-right: 5px;"></span> Mixed Residential (MR)          | <span style="display: inline-block; width: 15px; height: 15px; background-color: #A9A9A9; border: 1px solid black; margin-right: 5px;"></span> Industrial (I)                 | <span style="display: inline-block; width: 15px; height: 15px; background-color: #FF00FF; border: 1px solid black; margin-right: 5px;"></span> Tribal                     |

**CITY OF FERNLEY**  
**RESOLUTION # 22-009**

**A RESOLUTION OF THE CITY OF FERNLEY FOR A COMPREHENSIVE MASTER PLAN AMENDMENT, ASSOCIATED WITH CASE NUMBER MPA22001, TO CHANGE THE LAND USE CLASSIFICATION FROM COMMERCIAL TO INDUSTRIAL ON A SITE CONSISTING OF ONE PARCEL OF LAND TOTALING ±27.83 ACRES IN SIZE GENERALLY LOCATED SOUTH OF INTERSTATE-80 AND WEST OF THE CURRENT TERMINUS OF PILOT ROAD, AT 1000 PILOT ROAD, FERNLEY, NV. (APN: 021-061-32).**

**WHEREAS**, the 2018 Fernley Comprehensive Plan was adopted by Resolution of the Planning Commission on August 8, 2018, and by the City Council on August 15, 2018; and

**WHEREAS** Nevada Revised Statutes chapter 278.210 specifies that master plans or any amendments must be adopted by resolution of the Planning Commission; and

**WHEREAS** the Planning Commission held a public hearing on March 23rd, 2022;

**NOW, THEREFORE, BE IT RESOLVED**, that based on the discussion and findings provided in the staff report and/or testimony presented at the March 23rd, 2022 public hearing, that the change in the Land Use Classification from Commercial to Industrial on a site consisting of one parcel of land totaling ±27.83 acres in size generally located south of Interstate-80 and west of the current terminus of Pilot Road, at 1000 Pilot Road, Fernley, NV. (APN's: 021-061-32) be adopted as part of the City of Fernley's Comprehensive Plan; and

**BE IT FURTHER RESOLVED** that the Fernley Planning Commission approves and recommends that the City Council adopt this Master Plan Amendment as part of the Fernley Comprehensive Plan.



**RESOLUTION PASSED, APPROVED, AND ADOPTED this 23<sup>rd</sup> day of March 2022, by the following vote of the Fernley Planning Commission:**

AYES: 6 NAYS: 0 ABSTENTIONS: 0 ABSENT: 1

By: [Signature]  
Barry Williams, Sr., Chairman

Date: 3/23/2022

Attest By: [Signature]

Date: 3/23/2022

Brenda Gosser, Deputy City Clerk

**RESOLUTION CERTIFIED this 20<sup>th</sup> day of April, 2022, by the following vote of the Fernley City Council:**

AYES: \_\_\_\_\_ NAYS: \_\_\_\_\_ ABSTENTIONS: \_\_\_\_\_ ABSENT: \_\_\_\_\_

FERNLEY CITY COUNCIL

By: \_\_\_\_\_

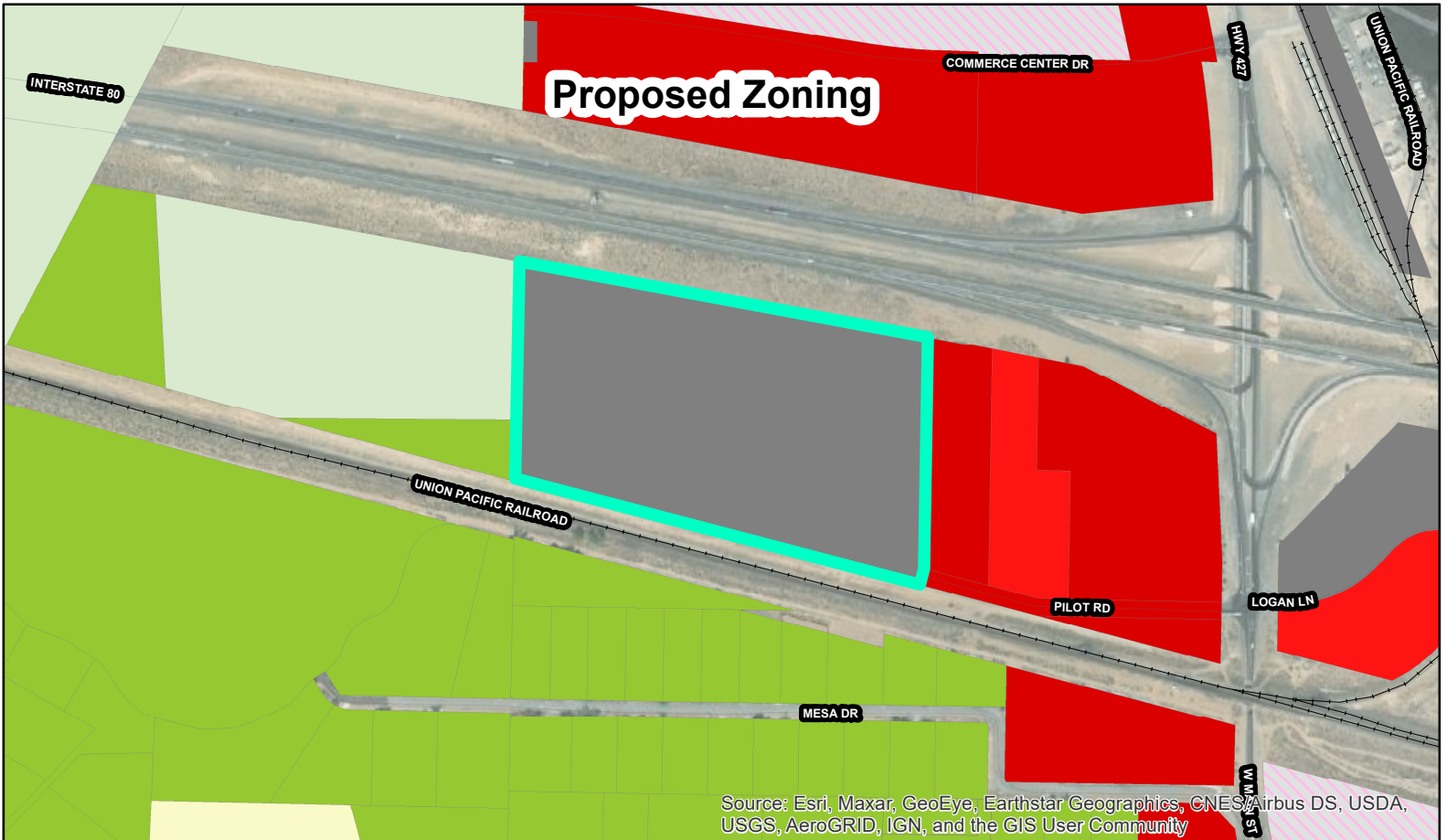
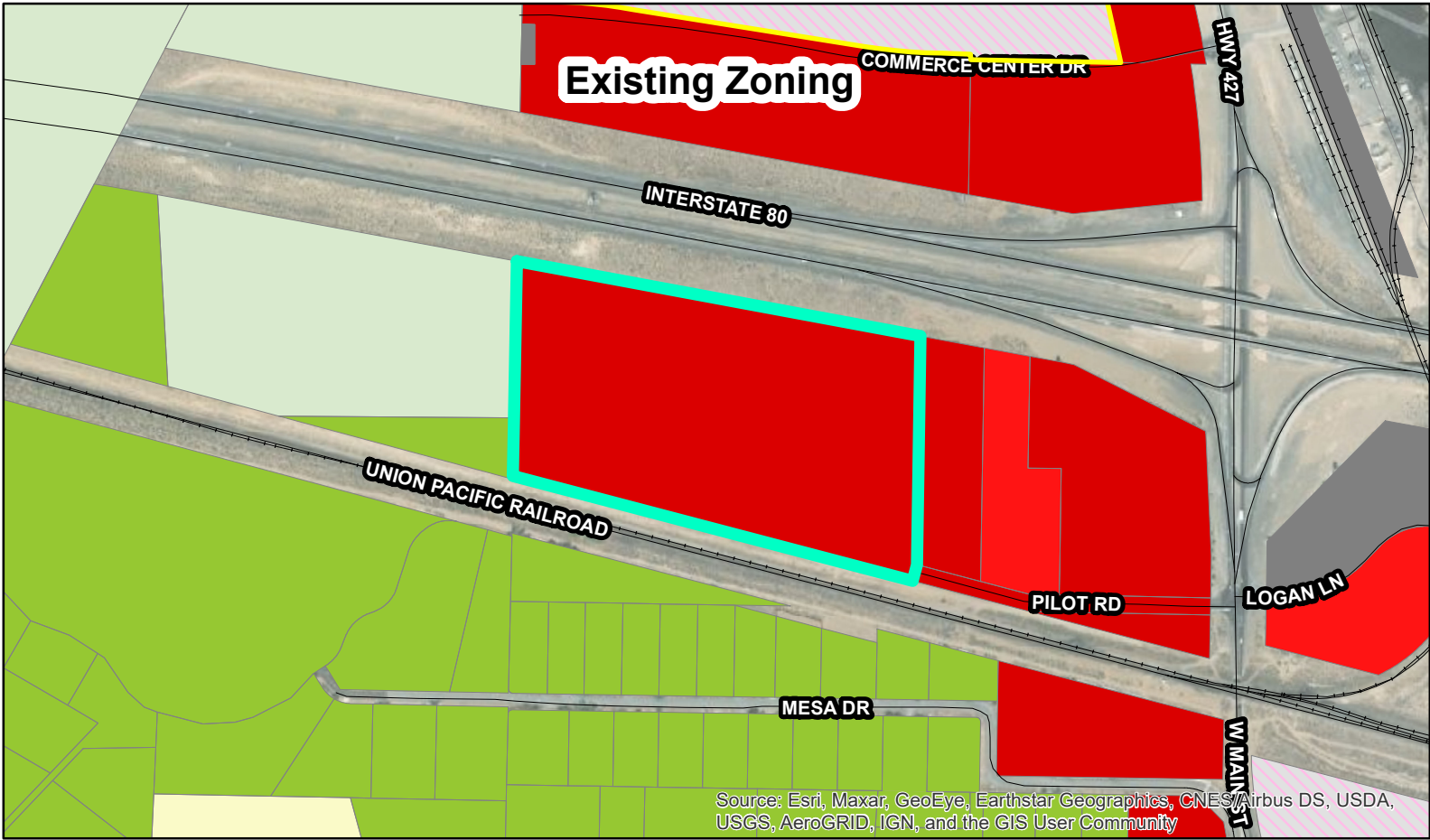
Date: \_\_\_\_\_

Roy Edgington, Mayor

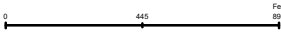
Attest By: \_\_\_\_\_

Date: \_\_\_\_\_

Kim Swanson, City Clerk



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Pilot\_Rd\_ZMA

Corporate Boundary

GR20

RR5

RR1

RR½

SF20

SF12

SF9

SF6

MDR14

MF21

MF30

MU

C1

C2

TC

EC

I

PD

PF

OSP

When recorded, mail to:  
City Clerk  
City of Fernley  
595 Silver Lace Boulevard  
Fernley, NV 89408

**BILL # 306**  
**CITY OF FERNLEY**  
**ORDINANCE # 2022-003**

**A GENERAL ORDINANCE FOR A ZONING MAP AMENDMENT, ASSOCIATED WITH ZMA22001, TO CHANGE THE ZONING FROM C2 (GENERAL COMMERCIAL) TO I (INDUSTRIAL) ON A SITE APPROXIMATELY ±27.83 ACRES IN SIZE LOCATED AT 1000 PILOT ROAD, FERNLEY, NV, ASSESSOR'S PARCEL NUMBERS 021-061-32, AND PROVIDING OTHER MATTERS PROPERLY RELATING THERETO.**

THE CITY COUNCIL OF THE CITY OF FERNLEY, hereinafter "the Council", DO HEREBY ORDAIN:

**Section 1:** The zoning of property described in Exhibit "A" and shown in Exhibit "A-1", which is attached hereto and incorporated herein by reference, situated in the City of Fernley, County Of Lyon, State Of Nevada, Is Hereby Changed from C2 (General Commercial) to I (Industrial) on a site approximately ±27.83 acres in size located at 1000 Pilot Road, Fernley, NV (APN: 021-061-32).

**SECTION 2:** The zoning map of the City of Fernley is hereby amended in accordance with the zoning map amendment herein.

**SECTION 3:** All ordinances or parts of ordinances in conflict herewith are hereby repealed.

**SECTION 4:** The City Clerk is instructed and authorized to publish the title to this ordinance as provided by law and to record the plan certified herein as provided by law.

**SECTION 5:** This ordinance shall become effective upon passage, approval, and publication.

**SECTION 6:** The provisions of this ordinance shall be liberally construed to effectively carry out its purposes in the interest of the public health, safety, welfare and convenience.



**SECTION 7:** If any subsection, phrase, sentence or portion of this section is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision, and such holding shall not affect the validity of the remaining portions.

**SECTION 8:** The City Council finds that this ordinance is not likely to impose a direct and significant economic burden upon a business or directly restrict the formation, operation or expansion of a business, or is otherwise exempt from Nevada Revised Statutes Chapter 237.

BILL # 306 BEING HEREBY PROPOSED on the 6<sup>th</sup> day of April 2022.

BILL # 306 BEING HEREBY PASSED, APPROVED and ADOPTED this 20<sup>th</sup> day of April 2022, by the following vote of the Council:

Ayes: \_\_\_\_\_ Nays: \_\_\_\_\_ Abstentions: \_\_\_\_\_ Absent: \_\_\_\_\_

FERNLEY CITY COUNCIL

By: \_\_\_\_\_  
Roy Edgington, Mayor

Date: \_\_\_\_\_

Attest By: \_\_\_\_\_  
Kim Swanson, City Clerk

Date: \_\_\_\_\_

**LEGAL DESCRIPTION**  
**(APN: 021-061-32)**

**EXHIBIT "A"**

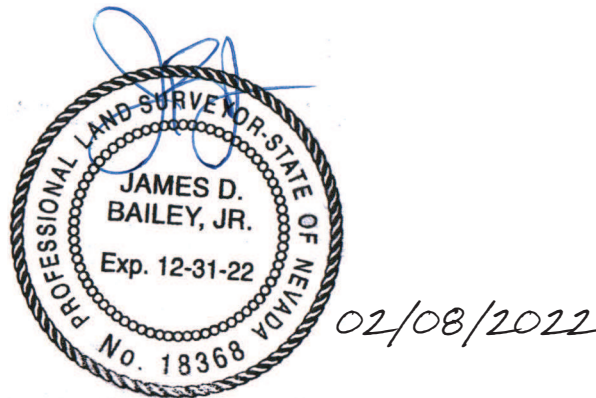
All that certain real property situate in the County of Lyon, State of Nevada, lying within a portion of the East Half of Section 10, Township 20 North, Range 24 East, M.D.M., being Parcel 1 of Parcel Map for 1000 Pilot Road, LLC, filed in the Office of the County recorder of Lyon County, Nevada, on November 13, 2015 as Instrument No. 543634 of Official Records, more particularly described as follows:

**Beginning** at the Southwesterly corner of said Parcel 1, thence North 01°07'16" East, 212.02 feet;  
Thence, N 01°09'29" E, 563.84 feet;  
Thence, S 79°34'30" E, 1476.57 feet;  
Thence, S 00°50'10" W, 824.68 feet;  
Thence, S 14°33'31" W, 60.00 feet;  
Thence, N 75°26'29" W, 1488.42 feet, to the **Point of Beginning**.

Total Area Containing: 27.83 acres, more or less.

See Exhibit A-1, attached hereto and made a part hereof.

James D. Bailey, Jr.  
P.L.S. 18368



PREPARED BY THE FIRM OF  
**MERIDIAN SURVEYING & MAPPING, INC.**  
8725 TECHNOLOGY WAY, STE. C2  
RENO, NV. 89521

U.S. INTERSTATE 80  
(DEED TO STATE OF NEVADA DOC. NO. 87576)

**PARCEL 1**  
**PM 543634**  
APN: 021-061-32  
27.83± ACRES

SPEEDCO, INC  
APN: 021-061-26

BLUE BEACON  
INTERNATIONAL, INC  
APN: 021-061-35

SOUTHERN PACIFIC RIGHT-OF-WAY  
(200' WIDE RIGHT-OF-WAY)

PILOT ROAD

JAMES AND MYRL  
JOHNSON,  
APN: 021-051-14

U.S.A.  
APN: 021-061-12



0 150 300 600  
SCALE: 1" = 300'

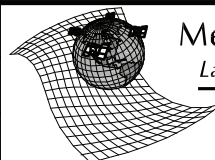
**EXHIBIT A-1**

PARCEL 1  
PARCEL MAP NO. 543634  
APN: 021-061-32

DRAWN BY: TDM

CHECKED BY: JDB

DATE: FEB 2022



**Meridian Surveying & Mapping, Inc.**  
Land, Construction and Boundary Surveys

8725 Technology Way, Reno, NV 89521  
(775) 690-4194





# CITY OF FERNLEY

## City Council AGENDA REPORT

**Meeting Date: April 6, 2022**

**REPORT TO:** Mayor and City Council

**REPORT FROM:** Tim Thompson, Planning Director

**FINANCIAL IMPACT:**

Yes: No:

**CURRENTLY BUDGETED:**

Yes: No:

**FUND/ACCOUNT:**

N/A

**ACTION REQUESTED:** Ordinance

**AGENDA ITEM: (For Possible Action):**

**(For possible action) First Reading, Introduction, of Bill #308 - ZMA22003**

Consideration and possible action to introduce Bill #308 as an ordinance for a Zoning Map Amendment to change the zoning of a single parcel of land from SF6 (Single Family, 6,000 sq. ft. minimum lot size) to MF21 (Multi-Family, 10-21 dwelling units per acre). The project site is approximately ±3.94 acres in size and is located at 1170 Newlands Drive (APN: 020-320-01).

**AGENDA ITEM BRIEF:**

The City of Fernley is requesting to change the zoning on a single parcel of land from SF6 (Single Family, 6,000 sq. ft. minimum lot size) to MU (Mixed Use). The parcel is the former site of the Lyon County Senior Center, which has since been relocated to 105 Lois Lane (APN: 021-103-57).

**RECOMMENDED MOTION:**

Read the bill and schedule 2<sup>nd</sup> Reading and public hearing on Bill #308 for the regularly scheduled meeting on April 20<sup>th</sup>, 2022.

"I move to introduce Bill #308 and set the public hearing for the April 20<sup>th</sup>, 2022 City Council Meeting."

**BUSINESS IMPACT (per NRS Chapter 237):**

A Business Impact Statement is not required because this is not a rule (term excludes vehicles by which legislative powers are exercised under NRS Chapters 271, 278, 278A, or 278B).

**See attached report for background, analysis, alternatives.**

**ALTERNATIVES:**

**BACKGROUND:**

See Attached Staff Report for Background/Analysis/Findings

**RELEVANT LAWS, STATUTES, AND REGULATIONS:**

**FINANCIAL IMPLICATIONS:**

**ATTACHMENTS:**

1. ZMA22003 - CC Staff Report - Introduction
2. Attachment 1 - Vicinity Map
3. Attachment 2 - Existing + Proposed Zoning Exhibit
4. Attachment 3 - Bill# 308 – Ordinance for Zoning Map Amendment

City Council Meeting April 6, 2022  
Zoning Map Amendment (ZMA22003)

**PROJECT SUMMARY**

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|                             |                                                                                                                                                                                                                                                                          |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CASE NUMBER(S):</b>      | <ul style="list-style-type: none"><li>• ZMA 22003</li></ul>                                                                                                                                                                                                              |
| <b>REQUESTED ACTION(S):</b> | <ul style="list-style-type: none"><li>• Zoning Map Amendment</li></ul>                                                                                                                                                                                                   |
| <b>PROJECT DESCRIPTION:</b> | <ul style="list-style-type: none"><li>• A Zoning Map Amendment request from the City of Fernley to change the zoning of a single parcel of land from SF6 (Single Family, 6,000 sq. ft. minimum lot size) to MF21 (Multifamily, 10-21 dwelling units per acre).</li></ul> |
| <b>PROPERTY OWNER:</b>      | <ul style="list-style-type: none"><li>• City of Fernley</li></ul>                                                                                                                                                                                                        |
| <b>APPLICANT:</b>           | <ul style="list-style-type: none"><li>• City of Fernley</li></ul>                                                                                                                                                                                                        |
| <b>LOCATION:</b>            | <ul style="list-style-type: none"><li>• 1170 Newlands Drive</li></ul>                                                                                                                                                                                                    |
| <b>SITE SIZE:</b>           | <ul style="list-style-type: none"><li>• ±3.94 acres</li></ul>                                                                                                                                                                                                            |
| <b>EXISTING ZONING:</b>     | <ul style="list-style-type: none"><li>• SF6 (Single Family, 6,000 sq. ft. minimum lot size)</li></ul>                                                                                                                                                                    |
| <b>PROPOSED ZONING</b>      | <ul style="list-style-type: none"><li>• MF21 (Multifamily, 10-21 dwelling units per acre)</li></ul>                                                                                                                                                                      |
| <b>EXISTING LAND USE:</b>   | <ul style="list-style-type: none"><li>• MFR (Multifamily Residential)</li></ul>                                                                                                                                                                                          |
| <b>WARD INFORMATION:</b>    | <ul style="list-style-type: none"><li>• Ward 1 - Councilman Lacy</li></ul>                                                                                                                                                                                               |

**\*A PUBLIC HEARING IS REQUIRED**

**POLICY REFERENCE**

*Nevada Statutes:* NRS 278A

*Fernley Municipal Code:* Title 32

*Policies & Procedure Manual:* N/A

*Community Assessment:* N/A

*City of Fernley Development Code:* Section 32.03.040 – Comprehensive Master Plan/Zoning  
Map Amendments

*Section 32.06.080 – Residential (Multifamily) Zoning Districts*

*Section 32.09.035 – Dedication of Water Rights*

*Section 32.09.140 – Streets (Roadways)*

*Section 32.09.150 – Utilities*

*Section 32.12.010 – Adequate Public Facilities Required*

*Section 32.13.030 – Improvements, Security, & Inspections*



## **BACKGROUND**

The project parcel is the former site of the Lyon County Senior Center and has been under the ownership of the City of Fernley since the 16<sup>th</sup> of September, 2021. The parcel had been acquired by the City from Lyon County, who had owned the parcel since 1981. Lyon County Resolution 21-25 ([Document # 644692](#)) had passed in September 2021, proclaiming that the City of Fernley exchange the parcel on which the new Senior Center exists (APN: 021-103-57 – 105 Lois Lane) for the project parcel (APN: 020-321-01 – 1170 Newlands Drive). As a result of the recorded resolution, the Newlands Parcel is currently owned by the City of Fernley, while the Lois Lane Senior Center Parcel is now under the ownership of Lyon County.

At the Fernley City Council Meeting on the 2<sup>nd</sup> of February, 2022, The City Council approved a motion to instruct City Staff to begin the process of filing a Zoning Map Amendment to change the zoning on the Newlands Parcel from SF6 (Single Family, 6,000 sq. ft minimum lot size) to MF21 (Multifamily, 10-21 dwelling units per acre). The application materials and submissions will be furnished by City Staff, and the Zoning Map Amendment will pass through the City's Planning Commission and City Council for Final Approval - akin to a normal Zoning Map Amendment approval process.

## **ANALYSIS**

The MF21 (Multifamily, 10-21 residential dwelling units per acre) zoning district is intended to act as an area for medium-density residential housing types, ranging from single family detached homes, to condominiums or townhomes as well. Amenities such as parks, trails, fitness centers, swimming pools, are highly encouraged in order to offset the impacts of increased residential density. Commercial uses are not permitted as stated within the City's Development Code, although specific assembly or recreational uses may be permissible, pending the approval of a Conditional Use Permit. The MF21 zoning district does not have a minimum lot size requirement, although the minimum site area for development is 6,000 square feet.

## **FINDINGS**

### **Zoning Map Amendment:**

**Z1: The application, as submitted, is consistent with the City of Fernley's Comprehensive Master Plan.**

Relationship to the Master Plan

#### **1. Multi-Family Residential (MFR)**

The proposed development is located within an area designated as Multifamily Residential within the city's Comprehensive Master Plan. The description of the Multifamily Residential Land Use states that the equivalent zoning districts are MF21 (Multifamily, 10-21 dwelling units per acre) and MF30 (Multifamily, 21-30 dwelling units per acre). Per the Comprehensive Master Plan document, Multifamily residential land uses focus on medium to high density residential development such as apartment buildings, attached single family houses, townhomes, condominiums, and duplexes/triplexes/fourplexes. Accessory uses such as Home Occupations or Live/Work dwellings may also be permitted, subject to certain conditions and standards outlined within the City's Development code.

The Comprehensive Master Plan goes on to state that Multi-Family Residential is intended to provide residential opportunities primarily in the urban core areas and are typically located near transportation

corridors, parks, and school sites. Residential uses shall be buffered from adjacent roadways and should integrate convenient pedestrian access when located adjacent to commercial uses. Community amenities should be provided within each development. Direct access from arterials may be allowed with special review and municipal services are required.

2. The Land Use Plan Goals and Action Strategies in the 2018 Comprehensive Master Plan that are relevant to this proposal include:

Population, Housing & Employment

**HP.1.1 Enhance Fernley's vitality as a community by providing a variety of housing types, density and costs that accommodate the needs, desires and financial abilities of the current and future households.**

- HP.1.1.4 Encourage the efficient use of land and existing infrastructure by focusing on achieving good design in new housing or redeveloped housing on either vacant land, infill parcels and/or under-developed parcels.

Land Use

**LU.1.1 Encourage and plan for new development in areas where adequate public services and facilities can be provided efficiently.**

- LU.1.1.1 Require new development to provide its proportionate share of improvements to avoid a degradation of services for existing residents. This requirement will be applied regardless of project size in order to avoid incremental erosion of services and facilities.
- LU.1.1.2 Encourage development of vacant or underutilized lands within the community core where adequate infrastructure and facilities currently exists.
- LU.1.1.3 Require new development to provide certified, stamped studies demonstrating the impact proposed development will have on existing infrastructure and to provide improvements and/or funding in lieu of improvements in proportion to the impacts of the proposed projects on the city's roadway, sewer and water systems.

**LU.1.4 Ensure existing and future land uses are compatible.**

- LU.1.4.2 Projects shall be evaluated with the intent to promote land use compatibility; community design measures can increase compatibility among adjoining land uses.
- LU.1.4.5 Require development plans to address conditions unique to the developing area and minimize impacts to adjacent properties.
- LU.1.4.6 Review all projects in relation to their geographic location, impacts to adjacent communities, fiscal impact and mitigation measures to protect natural and cultural resources. Apply specific conditions of approval tailored for each development proposal.

**LU.1.5 Promote Infill Development**

- LU.1.5.1 Encourage the intensification of land use in the existing community core.

**LU.1.5 It is the intent of the City of Fernley to provide timely, orderly, and efficient arrangement of adequate public facilities and infrastructure that support existing and planned land use patterns and densities.**

LU.1.12.1 Subdivision or intensification of land without adequate public facilities available to serve the new development as it occurs shall not be allowed.

Other Goals and Action strategies which may be relevant to this project are, HP.1.2, HP1.2.1, HP1.2.2, HP.1.3, HP.1.3.1, HP.1.3.2, HP.1.4, HP.1.4.1, C.1.2, C.1.2.1, C.1.3, C.1.3.8, LU.1.2, LU.1.2.1, T.1.1, T.1.1.1, T.1.1.5, T.1.1.6, T.1.2, T.1.2.2, T.1.3, T.1.3.2, T.1.3.5, PSF.1.1, PSF1.1.3, PSF.1.1.4, PSF.1.2, PSF.2.1, PSF.2.1.1, PSF.2.1.2, PSF.2.1.3, PSF.2.1.6, PSF.3.3, PSF.3.3.1, and PSF.3.3.2.

The proposed zoning will bring the property into conformance with the adopted Comprehensive Master Plan Land Use Designation.

**Z2: Consistent with the surrounding Land Uses:**

The following chart shows land use and zoning designations for the parcels directly surrounding the project parcel:

| SURROUNDING LAND USES & ZONING |                                                      |      |
|--------------------------------|------------------------------------------------------|------|
| North:                         | Interstate 80 right-of-way                           |      |
| East:                          | Multiple Family Residential 30 du/ac                 | MF30 |
| South:                         | Single Family Residential<br>(6,000 sq. ft. minimum) | SF6  |
| West:                          | Single Family Residential<br>(6,000 sq. ft. minimum) | SF6  |

There is existing multi-family residential development located directly to the east of the project site. Those parcels are zoned MF30, which allows for a maximum of 30 dwelling units per acre. The proposed MF21 zoning district will help to provide a buffer between the single family residential located to the west and the multi-family residential located to the east. In addition, the development code includes adjacency standards to help minimize potential impacts a development project may have on the single-family residences

**Z3: Public notice was given, and a public hearing has been scheduled per the requirements of the Development Code and Nevada Revised Statutes.**

Public notice was given, and a public hearing was scheduled. The Planning Commission and City Council meetings function as the public hearing for this matter as required in the City's Municipal Code and Nevada Revised Statutes.



City Council Meeting April 6, 2022  
Zoning Map Amendment (ZMA22003)

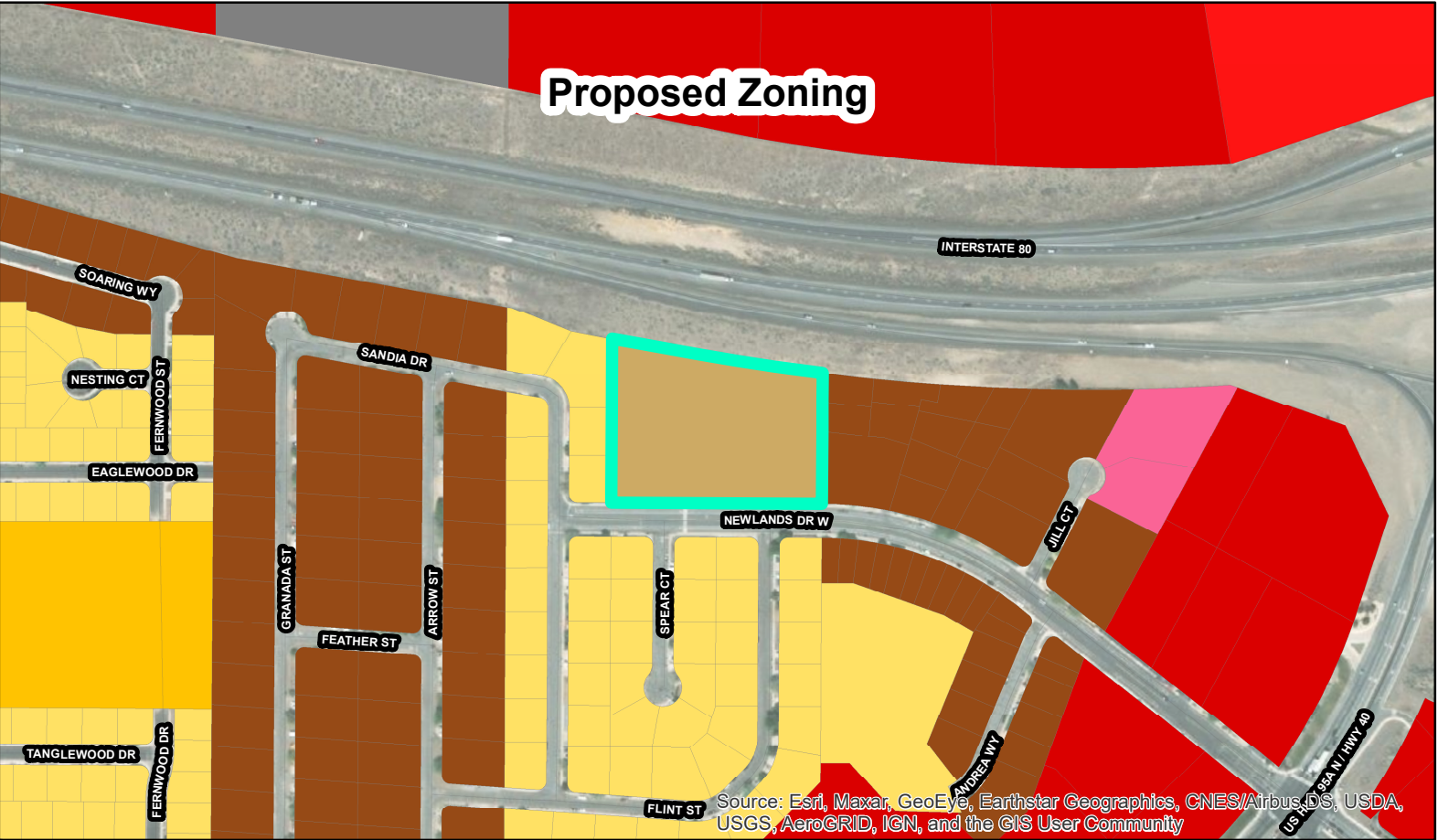
**ATTACHMENTS**

1. Vicinity Map
2. Existing & Proposed Zoning Exhibit
3. Bill # 308

# Vicinity Map







**NOTE:** The scale and configuration of all information shown hereon are approximate only and are NOT intended as a guide for design or survey work. Reproduction is NOT permitted without prior written permission from the City of Fernley

### Legend

|                                                                                                                                  |                                                                                                                                  |                                                                                                                                 |                                                                                                                                  |                                                                                                                                   |                                                                                                                                  |                                                                                                                                |                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <span style="border: 2px solid red; padding: 2px;">Newlands_Property</span>                                                      | Corporate Boundary                                                                                                               | <span style="background-color: #90EE90; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> RR1 | <span style="background-color: #FFFF00; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> SF12 | <span style="background-color: #FFD700; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> MDR14 | <span style="background-color: #FFB6C1; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> MU   | <span style="background-color: #FF0000; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> TC | <span style="background-color: #800080; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> PD  |
| <span style="background-color: #90EE90; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> GR20 | <span style="background-color: #FFFF00; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> RR½  | <span style="background-color: #FFD700; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> SF9 | <span style="background-color: #FFB6C1; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> C1   | <span style="background-color: #FF0000; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> EC    | <span style="background-color: #800080; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> PF   | <span style="background-color: #FF0000; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> C2 | <span style="background-color: #800080; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> OSP |
| <span style="background-color: #FFFF00; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> RR5  | <span style="background-color: #FFD700; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> SF20 | <span style="background-color: #FFB6C1; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> SF6 | <span style="background-color: #FF0000; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> MF21 | <span style="background-color: #800080; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> I     | <span style="background-color: #800080; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> MF30 |                                                                                                                                |                                                                                                                                 |

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When recorded, mail to:  
City Clerk  
City of Fernley  
595 Silver Lace Boulevard  
Fernley, NV 89408

**BILL # 308**  
**CITY OF FERNLEY**  
**ORDINANCE # 2022-005**

**A GENERAL ORDINANCE FOR A ZONING MAP AMENDMENT, ASSOCIATED WITH ZMA22003, TO CHANGE THE ZONING FROM SF6 (SINGLE FAMILY, 6,000 SQ. FT. MINIMUM LOT SIZE) TO MF21 (MULTIFAMILY RESIDENTIAL, 10-21 DWELLING UNITS PER ACRE) ON A SITE APPROXIMATELY ±3.94 ACRES IN SIZE LOCATED AT 1170 NEWLANDS DRIVE, FERNLEY, NV, ASSESSOR'S PARCEL NUMBERS 021-321-01, AND PROVIDING OTHER MATTERS PROPERLY RELATING THERETO.**

THE CITY COUNCIL OF THE CITY OF FERNLEY, hereinafter "the Council", DO HEREBY ORDAIN:

**Section 1:** The zoning of property described in Exhibit "A" and shown in Exhibit "B", which is attached hereto and incorporated herein by reference, situated in the City of Fernley, County Of Lyon, State Of Nevada, Is Hereby Changed from SF6 (Single Family, 6,000 sq. ft. minimum lot size) to MF21 (Multifamily Residential, 10-21 dwelling units per acre) on a site approximately ±3.94 acres in size located at 1170 Newlands Drive, Fernley, NV (APN: 021-071-02, and 021-071-03).

**SECTION 2:** The zoning map of the City of Fernley is hereby amended in accordance with the zoning map amendment herein.

**SECTION 3:** All ordinances or parts of ordinances in conflict herewith are hereby repealed.

**SECTION 4:** The City Clerk is instructed and authorized to publish the title to this ordinance as provided by law and to record the plan certified herein as provided by law.

**SECTION 5:** This ordinance shall become effective upon passage, approval, and publication.

**SECTION 6:** The provisions of this ordinance shall be liberally construed to effectively carry out its purposes in the interest of the public health, safety, welfare and convenience.

**SECTION 7:** If any subsection, phrase, sentence or portion of this section is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision, and such holding shall not affect the validity of the remaining portions.

**SECTION 8:** The City Council finds that this ordinance is not likely to impose a direct and significant economic burden upon a business or directly restrict the formation, operation or expansion of a business, or is otherwise exempt from Nevada Revised Statutes Chapter 237.

BILL # 308 BEING HEREBY PROPOSED on the 6<sup>th</sup> day of April 2022.

BILL # 308 BEING HEREBY PASSED, APPROVED and ADOPTED this 20<sup>th</sup> day of April 2022, by the following vote of the Council:

Ayes: \_\_\_\_\_ Nays: \_\_\_\_\_ Abstentions: \_\_\_\_\_ Absent: \_\_\_\_\_

FERNLEY CITY COUNCIL

By: \_\_\_\_\_  
Roy Edgington, Mayor

Date: \_\_\_\_\_

Attest By: \_\_\_\_\_  
Kim Swanson, City Clerk

Date: \_\_\_\_\_

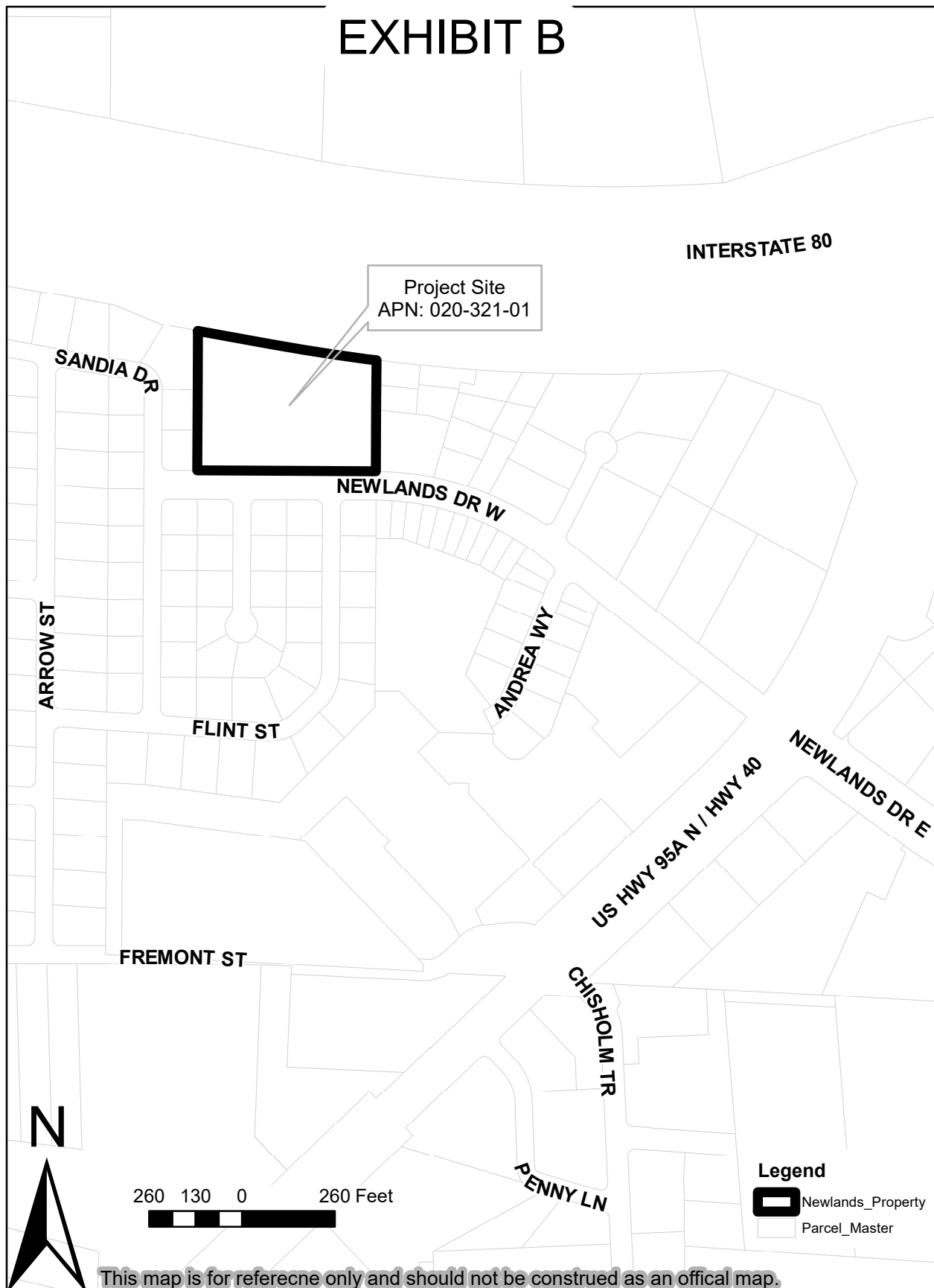
Exhibit A  
**LEGAL DESCRIPTION OF PROPERTY**  
APN: 020-321-01

All that certain real property situate in the SW 1/4 of the SW 1/4 , of Section 7, Township 20 North, Range 25 E., M.D.B.&M., Lyon County, Nevada, described as follows:

Lot 5, in BLOCK B, as shown on the Official Map of SANDIA SUBDIVISION NO. 2, recorded in the Official Records of Lyon County, Nevada, on September 11, 1980, as Document No. 55898 and on Certificate of Amendment recorded on 11/30/1981 as Document No. 64915.



# EXHIBIT B





# CITY OF FERNLEY

## City Council AGENDA REPORT

**Meeting Date: April 6, 2022**

**REPORT TO:** Mayor and City Council

**REPORT FROM:** Daphne Hooper, City Manager

**FINANCIAL IMPACT:**

Yes: No: X

**CURRENTLY BUDGETED:**

Yes: No: X

**FUND/ACCOUNT:**

N/A

**ACTION REQUESTED:** Motion

**AGENDA ITEM: (For Possible Action):**

(For possible action) Update and discussion regarding Main Street Park and partnership with Rotary.

**AGENDA ITEM BRIEF:**

TBD

**RECOMMENDED MOTION:**

"I move to approve the concept for the Main Street Park and partnership with the Rotary."

**BUSINESS IMPACT (per NRS Chapter 237):**

N/A

See attached report for background, analysis, alternatives.

**ALTERNATIVES:**

The Council may request additional information.

**BACKGROUND:**

In 2012, the Black Rock Arts Foundation (BRAAF) and Burning Man collaborated to launch a new joint initiative,

Big Art for Small Towns, partnering with the City of Fernley. The partners were awarded a grant from the National Endowment for the Arts in the amount of \$75,000. The Our Town grant was a matching grant, and the partner organizations raised money to match the N.E.A. funds. This two-phase project spanned a period of two years. In the first phase, BRAF and the City conducted a Request for Proposals and selected two projects for temporary installation in the new city-owned park. The two works of art were installed in the late spring of 2014; the Bottle Cap Gazebo by Max Poynton and Andrew Grinbert; and Rockspinner 6 by Zachary Coffin. During the second phase of the project, the City and BRAF selected a lead artist, local artist Pan Pantojo, who collaborated with Fernley residents to create an original public artwork that reflects Fernley's character, heritage, and culture, the Desert Tortoise. Following the original installation in 2014, the Rockspinner has since been removed (as it was intended for temporary installation). Other than routine maintenance, the park has not seen significant improvements since 2014.

In September 2017, the City Council adopted the Parks Master Plan, which specifically identified the following recommendations and improvements for Main Street Park:

- Maintain art collection and secure new pieces
- Incorporate the park into a future downtown loop trail, including connectivity to the future Depot Community Campus
- Provide shade structure and seating
- Provide entry signage.

Over the last several years, the Rotary Club of Fernley established priorities to include the Main Street park's upkeep and revitalization through local leaders. The Rotary Club created a Main Street Park subcommittee and began meeting in 2020, with representation from the Rotary Club, the City of Fernley, and the Fernley Community Foundation.

The Rotary Club received a grant for a landscape architect to proceed with conceptual design/improvements to Main Street Park, including the recommendations/improvements listed above. Formalizing the adoption of Main Street Park by the Rotary Club of Fernley directly aligns with the goal of "Progress through Partnership," outlined in the city's strategic plan.

In May 2021, the City Council directed staff to work with the Rotary regarding a potential lease for the Park. Since that time, staff met with the Rotary, and together, they determined the best approach would be for the Rotary to "adopt" the park, rather than leasing. The Rotary would like to purchase pieces and provide funding for the installation identified in the conceptual plan. Parks staff have been included in the discussion to ensure alignment with the Parks Master Plan and to ensure long-term maintenance is feasible with the suggestions.

#### **RELEVANT LAWS, STATUTES, AND REGULATIONS:**

N/A

#### **FINANCIAL IMPLICATIONS:**

This approval is for the partnership and the concept of moving forward with improvements to Main Street Park. Funding will be discussed with the Rotary to determine the next steps. Any installations will be presented to the council for final approval.

#### **ATTACHMENTS:**

None





# CITY OF FERNLEY

## City Council AGENDA REPORT

**Meeting Date: April 6, 2022**

**REPORT TO:** Mayor and City Council

**REPORT FROM:** Patrick Marsh, Deputy City Manager

**FINANCIAL IMPACT:**

Yes: No:

**CURRENTLY BUDGETED:**

Yes: X No:

**FUND/ACCOUNT:**

N/A

**ACTION REQUESTED:**

**AGENDA ITEM: (For Possible Action):**

(For possible action) Discussion on Development Review Operations Assessment Implementation Action Plan Update

**AGENDA ITEM BRIEF:**

Update on progress to date - Action Plan Implementation.

**RECOMMENDED MOTION:**

N/A

**BUSINESS IMPACT (per NRS Chapter 237):**

N/A

See attached report for background, analysis, alternatives.

**ALTERNATIVES:**

N/A

**BACKGROUND:**

On December 16, 2020, City Council directed staff to move forward with a citywide efficiency study. The development review process was selected for the first area of review. On February 3, 2021, City Council directed

staff to move forward with the efficiency review of the development review process and approved a proposal from Management Partners. On March 3, 2201, City Council approved a contract with Management Partners. The development team includes Building, Planning, Engineering, Public Works, and the Fire Marshal. On September 15, 2021, City Council accepted the Development Review Operations Assessment and directed staff to carry out the Implementation Action Plan completed by Management Partners. Staff met and reviewed the Implementation Action Plan, which includes 33 action items. The Action Plan has been arranged according to established priority. Currently, dates and responsibilities have been established for those items indicated as Priority 1. To fully move forward with implementation and completion of all items in the Action Plan, it is critical to ensure all staff is trained appropriately to clearly understand the development review process. Additionally, to ensure staff has the capacity to utilize the SmartGov technology, training will be scheduled. The focus of the priority 1 items includes training, providing information to staff and customers, setting expectations, and providing the appropriate tools and resources needed. Staff is committed to working toward this process and will continue to meet to ensure success while balancing the existing workloads. Staff will continue to meet to establish timelines for items indicated as Priority 2 and Priority 3 and will provide periodic updates to Council.

**RELEVANT LAWS, STATUTES, AND REGULATIONS:**

N/A

**FINANCIAL IMPLICATIONS:**

Funding and resources may be requested in the future as needed.

**ATTACHMENTS:**

1. Copy of Implementation Action Plan April 2022

| No. | Recommendation                                                                                                                                                        | Implementation Steps                                                                                                                                                                                                                                                                                                                                                                   | Priority   | Person Responsible  | Status                                                                                                                                                                                                                                            |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Hold development services staff accountable for improving customer service (including employee responsiveness, helpfulness, and interpersonal treatment of customers) | <ul style="list-style-type: none"> <li>•Research and create customer service guidelines and share with staff</li> <li>•Provide customer service training to staff</li> <li>•Incorporate customer service evaluations into yearly staff performance reviews</li> </ul>                                                                                                                  | Priority 1 | Deputy City Manager | <ul style="list-style-type: none"> <li>•Met with direct reports to set expectations - <b>completed</b></li> <li>•Customer Service training - ongoing</li> </ul>                                                                                   |
| 2   | Conduct regular training for staff about the various components of the development review process to promote higher level of customer service                         | <ul style="list-style-type: none"> <li>•Develop training materials to inform staff about the various componenets of the development review process</li> <li>•Create a schedule for regular, training for staff to promote a higher level of customer service</li> <li>•Survey staff after training sessions to assess their understanding of the development review process</li> </ul> | Priority 1 | DeputyCity Manager  | Completed Training in December, January and February.<br><ul style="list-style-type: none"> <li>•Monthly training started in Dec. 2021</li> </ul>                                                                                                 |
| 4   | Provide detailed process information on the City's website in a manner that is consolidated, readily accessible, understandable, and current                          | <ul style="list-style-type: none"> <li>•Determine the process information that would be most helpful to customers</li> <li>•Develop forms, guidelines, and checklists for the identified processes</li> <li>•Post the materials to the city's website and inform applicants of its availability</li> </ul>                                                                             | Priority 1 | Deputy City Manager | In process with website update                                                                                                                                                                                                                    |
| 7   | Develop an interdepartmental working group charged with oversight of development review and permitting business systems and reporting                                 | <ul style="list-style-type: none"> <li>•Identify appropriate staff to form an interdepartmental working group charged with oversight of development review</li> <li>•Charge the group with advising the city manager about needed upgrades, the procurement of new software and hardware, and reports that can be used to track performance</li> </ul>                                 | Priority 1 | Deputy City Manager | <ul style="list-style-type: none"> <li>•Identify group members - Completed Nov. 2021 Development Coordinator, New position will be lead staff</li> <li>•Established schedule for team meetings. - Nov. 2021</li> </ul>                            |
| 9   | Create an administrator/permit coordinator position to manage the use of the SmartGov system, and act as liaison for training and an ombudsman for permitting         | <ul style="list-style-type: none"> <li>•Prepare a job description and classification for the position, in consultation with Human Resources</li> <li>•Obtain City Council authorization</li> <li>•Advertise the position</li> <li>•Review and interview top applicants</li> <li>•Offer position and finalize paperwork</li> <li>•Organize training for onboarding employee</li> </ul>  | Priority 1 | Deputy City Manager | HR - Created Job Description - Reviewed by Development Team and Approved by Council in March 2022<br>* Posted Position in March 2022 with Deadline of April 1, 2022                                                                               |
| 10  | Fund annual training of staff on the land management business system and workflow management practices                                                                | <ul style="list-style-type: none"> <li>•Identify funding in the budget for annual staff training on the land management business system</li> <li>•Ensure the identified fudning is included in the budget annually</li> </ul>                                                                                                                                                          | Priority 1 | Deputy City Manager | <ul style="list-style-type: none"> <li>•Funding included in FY22 bugdet - <b>completed</b></li> <li>•Completed several SmartGov Training sessions</li> <li>•Schedule training for new Development Specialist upon hire. April/May 2022</li> </ul> |
| 15  | Ensure all plan review staff enter comments directly into SmartGov                                                                                                    | <ul style="list-style-type: none"> <li>•Inform plan review staff that all comments must be entered into SmartGov</li> <li>•Periodically review SmartGov to ensrue that plan review comments are entered</li> <li>•Identify and work with staff that are not routinely adding comments to SmartGov</li> </ul>                                                                           | Priority 1 | Deputy City Manager | <ul style="list-style-type: none"> <li>•Staff has been directed to enter comments into SmartGov - complete</li> <li>•Continue to refine process - ongoing</li> <li>Building staff is entering comments</li> </ul>                                 |



|    |                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                     |                                                                                                                                                                    |
|----|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16 | Delegate applications for review within 24 hours of receipt by the department                                 | <ul style="list-style-type: none"> <li>•Create a policy that all plans should be assigned to a reviewer upon receipt of a completed application</li> <li>•Inform staff of the policy</li> <li>•Periodically review SmartGov to ensure that plan review comments are entered</li> </ul>                                                                                                                                                                           | Priority 1 | Planning Director   | Completed and in process - Ongoing                                                                                                                                 |
| 19 | Train/corss-train staff on internal development review processes                                              | <ul style="list-style-type: none"> <li>•Identify dedicated time for training</li> <li>•Train all development review staff on the Planning, Engineering and Building process steps for general knowledge</li> </ul>                                                                                                                                                                                                                                               | Priority 1 | Deputy City Manager | <ul style="list-style-type: none"> <li>• Completed through development team.</li> </ul>                                                                            |
| 21 | Educate customers about the development review processes using existing and new handouts and the city website | <ul style="list-style-type: none"> <li>•Determine if the development review handouts have the appropriate information to assist customers</li> <li>•Ensure the creation of handouts is coordianted among the entire development review team</li> <li>•Create a handout with Code and other inforamtion for applicants to access the portal</li> <li>•Ensure process documents and requirements are available and easy to access on the city's website</li> </ul> | Priority 1 | Deputy City Manager | <ul style="list-style-type: none"> <li>•Ongoing</li> <li>•Began meeting with customers about system improvement &amp; process improvements in Feb. 2022</li> </ul> |
| 25 | Hire or promote a SmartGov administrator/permit coordinator                                                   | <ul style="list-style-type: none"> <li>•Prepare a job description and classification for the position, in consultation with Human Resources</li> <li>•Obtain City Council authorization</li> <li>•Advertise the position</li> <li>•Review and interview top applicants</li> <li>•Offer position and finalize paperwork</li> <li>•Organize training</li> </ul>                                                                                                    | Priority 1 | City Manager        | In process.                                                                                                                                                        |
| 26 | Re-Implement SmartGov and provide robust SmartGov training                                                    | <ul style="list-style-type: none"> <li>•Hire SmartGov to re-implement the technology system</li> <li>•Hire SmartGov to provide on-site training for all development staff</li> <li>•Develop training for different user groups</li> <li>•Use SmartGov Administrator/Permit Coordinator to continue training</li> <li>•Determine the number of authorized users for SmartGov and add users as needed</li> </ul>                                                   | Priority 1 | City Manager        | Some training is complete. Ongoing                                                                                                                                 |
| 31 | Develop a process to ensure permits are closed out                                                            | <ul style="list-style-type: none"> <li>•Prepare a list of all conditions of approval needed for planning</li> <li>•Implement a Planning Certificate of Completion</li> <li>•Formalize the role of Planning and Enginnering in the completion of projects</li> <li>•Include planning reviews to the list of final inspections</li> <li>•Communicate which approvals are needed to the customer before a Certificate of Occupancy can be issued</li> </ul>         | Priority 1 | Building Official   | In process, will coordinate with building official, development specialist and deputy city manager                                                                 |
| 33 | Obtain commitment from leadership to ensure all applicants and employees are treated equitable                | <ul style="list-style-type: none"> <li>•Ensure leaders confer with staff prior to responding to applicants regarding timelines and approvals</li> <li>•Ensure development review staff communicate any potential conflicts with applicants to leaders</li> </ul>                                                                                                                                                                                                 | Priority 1 | Deputy City Manager | <ul style="list-style-type: none"> <li>•Commitment from staff - completed</li> <li>•Commitment from Council - Oct. 21</li> </ul>                                   |
|    |                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |                     |                                                                                                                                                                    |
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