



## Twin Falls Transportation Master Plan Agenda

Monday, June 25, 2018, 11:30 AM

203 Main Ave E.  
Twin Falls, ID. 83301

**Members:** Brady Dickinson, Blaine Patterson, Cindy Schmidt, Dane Higdem, James Pennington, John Howard, Kevin Grey, Sarah Harris, Shawn Barigar, Travis Rothweiler

- 1) Confirmation of Quorum/Call Meeting to Order
- 2) Consent Calendar
  - a) 05-21-2018 Meeting Minutes  
Purpose: **ACTION ITEM**
- 3) Items for Discussion
  - a) Intersection Analysis
  - b) Capital Expansion Projects
  - c) Brief Discussion on Status of the Maintenance Component
  - d) Next Steps
  - e) Article
- 4) General Input/Announcements - Public/Staff
- 5) Upcoming Meeting(s) 07/23/2018
- 6) Adjournment

Any person(s) needing special accommodations to participate in the above-noticed meeting could contact Lisa A. Jones (208) 735-7267 at least two working days before the meeting. Si desea esta información en español, llame Leila Sanchez (208) 735-7287.

### **Public Input Procedures**

1. Individuals wishing to provide public input regarding matters relevant to the City of Twin Falls shall
  - wait to be recognized by the Mayor or Chairman
  - approach the microphone/podium
  - state their name and address, and whether they are a resident or property owner in the City of Twin Falls, and proceed with their input.
2. The Mayor or Chairman may limit input to no less than two (2) minutes. Individuals are not permitted to give their time to other speakers.

### **Public Hearing Procedures for Zoning Requests**

1. Prior to opening the first Public Hearing of the session, the Mayor or Chairman shall review the public hearing procedures.
  2. Individuals wishing to testify or speak before the City Council or Planning and Zoning shall wait to be recognized by the Mayor or Chairman, approach the microphone/podium, state their name and address, then proceed with their comments. Following their statements, they shall write their name and address on the record sheet(s) provided by the staff. The staff shall make an audio recording of the Public Hearing.
  3. The Applicant, or the spokesperson for the Applicant, will make a presentation on the application/request (request). No changes to the request may be made by the applicant after the publication of the Notice of Public Hearing. The presentation should include the following:
    - A complete explanation and description of the request.
    - Why the request is being made.
    - Location of the Property.
    - Impacts on the surrounding properties and efforts to mitigate those impacts.
  4. Applicant is limited to 15 minutes, unless a written request for additional time is received, at least 72 hours prior to the hearing, and granted by the Mayor or Chairman.
  5. A City Staff Report shall summarize the application and history of the request.
  6. The City Council or Planning & Zoning Commission may ask questions of staff or the applicant pertaining to the request.
  7. The general public will then be given the opportunity to provide their testimony regarding the request. The Mayor or Chairman may limit public testimony to no less than two (2) minutes per person.
    - Five or more individuals, having received personal public notice of the application under consideration, may select by written petition, a spokesperson. The written petition must be received at least 72 hours prior to the hearing and must be granted by the Mayor or Chairman. The spokesperson shall be limited to 15 minutes.
    - Written comments, including e-mail, shall be either read into the record or displayed to the public on the overhead projector.
    - Following the Public Testimony, the applicant is permitted five (5) minutes to respond to Public Testimony.
  8. Following the Public Testimony and Applicant's response, the hearing shall continue. The City Council or Planning & Zoning Commission, as recognized by the Mayor or Chairman, shall be allowed to question the Applicant, Staff or anyone who has testified. The Mayor or Chairman may again establish time limits.
  9. The Mayor or Chairman shall close the Public Hearing. The City Council or Planning and Zoning Commission shall deliberate on the request. Deliberations and decisions shall be based upon the information and testimony provided during the Public Hearing. Once the Public Hearing is closed, additional testimony from the staff, applicant or public is not allowed. Legal or procedural questions may be directed to the City Attorney.
- \* Any person not conforming to the above rules may be prohibited from speaking. Persons refusing to comply with such prohibitions may be asked to leave the hearing and, thereafter removed from the room by order of the Mayor or Chairman.



## **Twin Falls Transportation Master Plan Meeting Minutes**

Monday, May 21, 2018, 1:30 PM

203 Main Ave E  
Twin Falls, ID. 83301

### **Special Meeting**

**Members Present:** Cindy Schmidt, Dane Higdem, James Pennington, John Howard, Kevin Grey, Sarah Harris, Shawn Barigar, Travis Rothweiler

**Members Absent:** Brady Dickinson, Blaine Patterson

**Staff Present:** Fields, Vitek, Caton, Thompson, Williamson

**Facilitator:** Rob Ramsey

#### **1) Confirmation of Quorum/Call Meeting to Order**

Meeting called to order and confirmation of quorum at 1:33 pm

#### **2) Consent Calendar**

- a) Approval of minutes 04-23-18  
Minutes approved by the committee

#### **3) Items for Discussion**

- a) Roads to be evaluated for the CIP  
Civil Science did a video presentation of future roadway intersections and alternatives.

- b) Blue Lakes LOS option

Discussion Followed

- c) Blue Lakes and Pole Line model alternative

Discussion Followed

- d) Bike Plan Discussion

Jackie presented a map to the committee and had a discussion with the committee about what direction they want to take regarding the bike paths. There was also discussion about bike routes to get out of town.

The committee then had a discussion on what direction to go with the roadways and the bike paths.

#### **4) General Input/Announcements - Public/Staff**

#### **5) Upcoming Meeting(s) 06/25/2018**

#### **6) Adjournment: 3:11pm**

**MEMORANDUM**

*DRAFT*

Date: April 6, 2018  
To: Civil Science  
From: Hales Engineering  
Subject: Twin Falls – Pole Line & Blue Lakes Traffic Study

UT16-944

**PURPOSE**

This analysis is being completed as part of the Twin Falls Transportation Master Plan. The City has identified different intersections in the City that they would like to be analyzed at a more detailed level. Many of the intersections are part of a busy corridor that are all interlinked with each other and were analyzed in the same model. These intersections were located along Pole Line Road and Blue Lakes Boulevard surrounding the Magic Valley Mall. The City also desired to analyze the intersection of North College Road & Blue Lakes Boulevard which was modeled by itself. This memorandum has been compiled in two parts, the intersections around the Magic Valley Mall and the single intersection of North College Road & Blue Lakes Boulevard.

**POLE LINE ROAD & BLUE LAKES BOULEVARD**

The first analysis included the intersections that surrounded the Magic Valley Mall along Pole Line Road and Blue Lakes Boulevard. A total of ten intersections were analyzed in this analysis and include the following:

- Filmore Street / Pole Line Road
- Target/Costco Access / Pole Line Road
- McDonalds Access / Pole Line Road
- Blue Lakes Boulevard / Pole Line Road
- Elm Street / Pole Line Road
- Canyon Springs / Blue Lakes Boulevard
- Perrine Street / Blue Lakes Boulevard
- Bridgeview Boulevard / Blue Lakes Boulevard
- Filmore Street / Bridgeview Boulevard



- Mall Access / Bridgeview Boulevard

Currently, there is significant queueing at the Pole Line Road / Blue Lakes Boulevard intersection during the evening peak hour in the eastbound direction. The eastbound left-turn is a heavy volume movement with dual left-turn lanes. During the average evening peak hour, the queues from the eastbound left-turns can back up to Filmore Street and sometimes further.

## **EXISTING CONDITIONS**

Blue Lakes Boulevard (SH 93): North-south roadway that connects Twin Falls to I-84 to the north. The roadway is also known as SH-93. The roadway has a maximum cross-section of five lanes. The roadway was classified in the previous transportation master plan (TMP) as a state highway.

Pole Line Road: East-west roadway that is located on the north side of Twin Falls. The roadway has a maximum cross-section of six lanes. The roadway was classified in the previous TMP as an arterial.

## **Data Collection**

Civil Science performed weekday morning (7:00 to 9:00 a.m.) and evening (4:00 to 6:00 p.m.) peak period traffic counts at following intersections:

- Filmore Street / Pole Line Road
- Target/Costco Access / Pole Line Road
- McDonalds Access / Pole Line Road
- Blue Lakes Boulevard / Pole Line Road
- Elm Street / Pole Line Road
- Canyon Springs / Blue Lakes Boulevard
- Perrine Street / Blue Lakes Boulevard
- Bridgeview Boulevard / Blue Lakes Boulevard
- Filmore Street / Bridgeview Boulevard
- Mall Access / Bridgeview Boulevard

The counts were performed between Tuesday, January 9, 2018 through Thursday, January 19, 2018. A study was completed at the Bridgeview Boulevard / Blue Lakes Boulevard intersection last year (2017) and found that the traffic volumes were higher during the Friday evening peak hour than the Saturday peak hour. Based on the counts that were completed this year (2018), the volumes during the evening peak hour for Fridays are similar to the traffic volumes on Thursday. Therefore, traffic counts were

completed on weekday (Tuesday – Friday) evenings. Detailed count data are included in Appendix A.

Figure 1 shows the existing evening peak hour volumes of the study area intersections.

### **VISSIM Model Calibration**

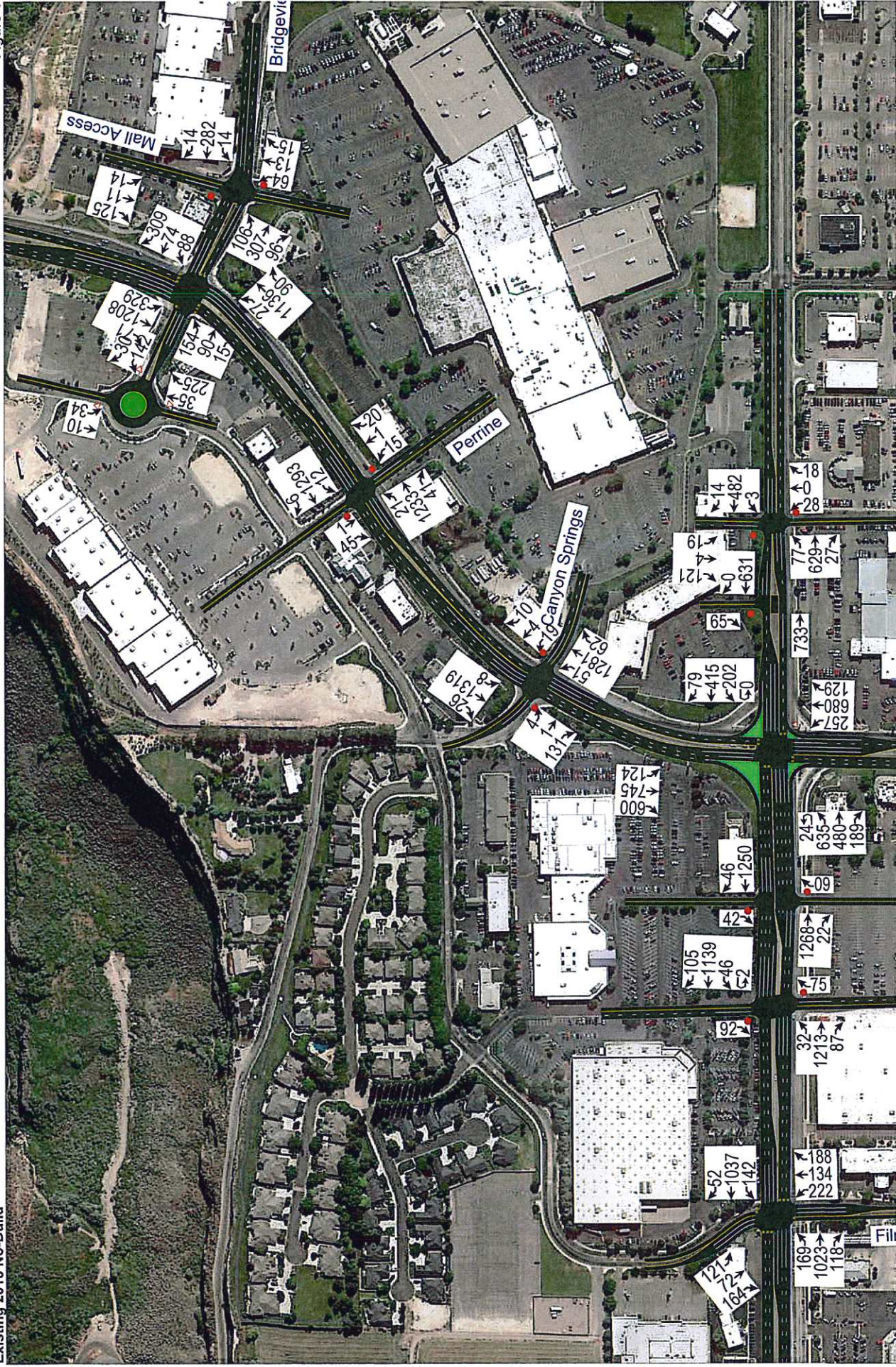
The study intersections were modeled using VISSIM version 9.6. The VISSIM micro-simulation model was calibrated using the following model outputs:

1. Queue lengths
2. Percent served

Queue lengths were observed at study intersections during the peak hours and compared to the average and maximum queue lengths as estimated by the VISSIM model. Each study intersection was observed for several cycle lengths, where possible, during the peak 15-minute period of the peak hour to ensure that the model is reasonably reflecting conditions in the field.

Considering the period each intersection was observed; the modeled queue lengths replicate observed queue lengths. The final calibrated model produces similar queuing as to what is observed in the field.







## **Percent Served**

The percent of traffic serviced was calculated for each intersection. A service rate of 100 percent indicates that all traffic that is able to enter an intersection during the peak hour in the field is also able to enter the modeled intersection during the peak hour. A percent served significantly less than 100 percent indicates that either the model was incorrectly coded, or that a bottle-neck exists in the model that does not actually exist in the study area. Hales Engineering calculated 97 to 104 percent of traffic is served during the evening peak hour at each of the study intersections. Typical model calibration can range between 95 and 105 percent as a general rule of thumb.

## **Level of Service Analysis**

Using VISSIM and following the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition methodology, the existing (2018) evening peak hour level of service (LOS) was computed for the study intersections. The results of this analysis are reported in Table 1 (see Appendix B for the detailed LOS reports). Multiple runs of VISSIM were used to provide a statistical evaluation of the interaction between the intersections.

As shown in Table 1, all intersections are currently operating at acceptable LOS during the evening peak hour.

**Table 1 Existing (2018) Background Evening Peak Hour Level of Service**

| Intersection                                |             | Worst Approach          |                                    |                  | Overall Intersection               |                  |
|---------------------------------------------|-------------|-------------------------|------------------------------------|------------------|------------------------------------|------------------|
| Description                                 | Control     | Approach <sup>1,3</sup> | Aver. Delay (Sec/Veh) <sup>1</sup> | LOS <sup>1</sup> | Aver. Delay (Sec/Veh) <sup>2</sup> | LOS <sup>2</sup> |
| Filmore Street / Pole Line Road             | Signal      | -                       | -                                  | -                | 32.5                               | C                |
| Target/Costco Access / Pole Line Road       | NB/SB Stop  | NB                      | 10.0                               | A                | -                                  | -                |
| McDonalds Access / Pole Line Road           | NB/SB Stop  | SB                      | 10.0                               | A                | -                                  | -                |
| Blue Lakes Boulevard / Pole Line Road       | Signal      | -                       | -                                  | -                | 46.1                               | D                |
| Elm Street / Pole Line Road                 | NB/SB Stop  | SB                      | 9.3                                | A                | -                                  | -                |
| Canyon Spring / Blue Lakes Boulevard        | SE/NW Stop  | SE                      | 15.1                               | C                | -                                  | -                |
| Perrine Street / Blue Lakes Boulevard       | NE/SW Stop  | NW                      | 12.0                               | B                | -                                  | -                |
| Bridgeview Boulevard / Blue Lakes Boulevard | Signal      | -                       | -                                  | -                | 30.9                               | C                |
| Mall Access / Bridgeview Boulevard          | NB/SB Stop  | SB                      | 10.3                               | B                | -                                  | -                |
| Filmore Street / Bridgeview Boulevard       | Round-about | -                       | -                                  | -                | 25.9                               | D                |

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way-stop unsignalized intersections.

2. This represents the overall intersection LOS and delay (seconds / vehicle).

3. SB = Southbound approach, etc.

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## Queueing Analysis

Hales Engineering calculated the max queue lengths for the study intersection. The queue reports can be found in Appendix B. Queueing was observed at some of the study area intersections and the max queues are as follows:

Filmore Street / Pole Line Road  
Eastbound (690 feet)  
Westbound (490 feet)

Bridgeview Blvd / Blue Lakes Blvd  
Northbound (620 feet)  
Southbound (310 feet)  
Eastbound (370 feet)

Blue Lakes Blvd / Pole Line Road

Northbound (650 feet)

Southbound (630 feet)

Eastbound (450 feet)

Westbound (400 feet)

Target/Costco Access / Pole Line Road

Eastbound (430 feet)

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## EXISTING CONDITIONS – ALTERNATIVES

Different alternatives were brainstormed to determine the best solution for the Blue Lakes Blvd / Pole Line Road intersection. The alternatives were evaluated to determine if they would be successful in eliminating or reducing delays and queues in the study area.

### Alternative 1 – CFI with Free Right-turn

The first alternative includes a Continues Flow Intersection (CFI) at the Blue Lakes Blvd / Pole Line Road intersection. This version of a CFI includes a southbound free right-turn; however, at the Target/Costco Access, a traffic light is necessary to allow access into this access from the east or south sides of town. This configuration is believed to maximize the number of movements into the developments, with the least out of direction of travel, to the north of Pole Line Road. The Target/Costco Access will no longer have any eastbound left-turns into the Costco parking lot. See Figure 2 for lane and roadway configurations.

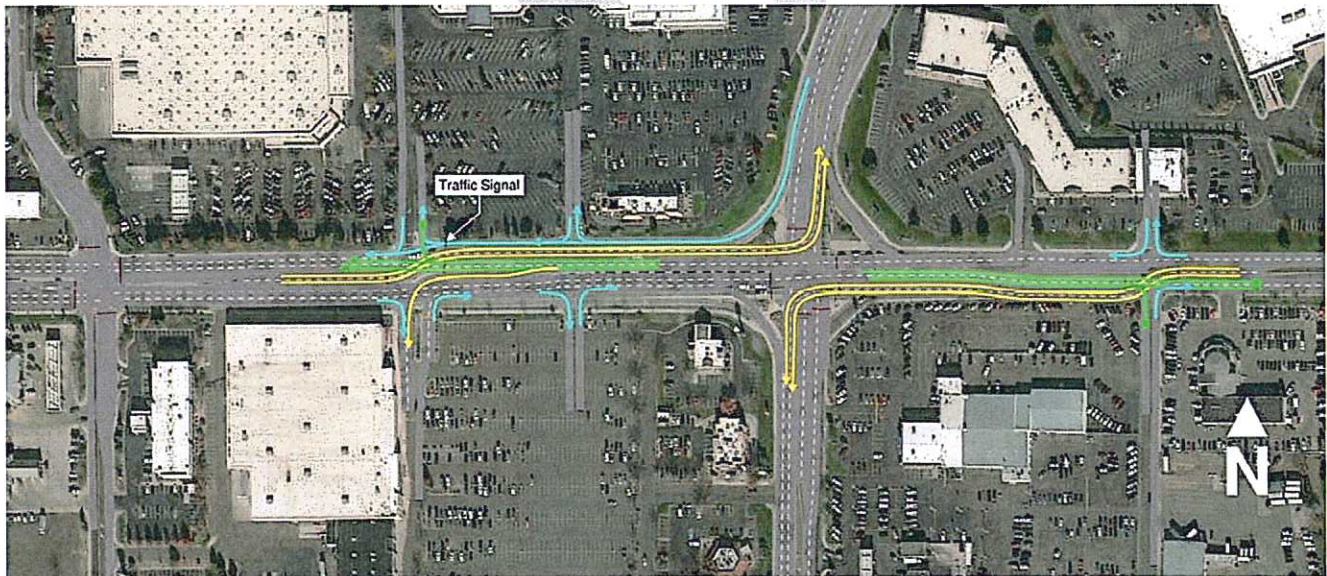


Figure 2: Alternative 1 Roadway Geometry



Using VISSIM and following the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition methodology, the existing conditions evening peak hour level of service (LOS) was computed for the study intersections. The results of this analysis are reported in Table 2 (see Appendix B for the detailed LOS reports). Multiple runs of VISSIM were used to provide a statistical evaluation of the interaction between the intersections. As shown in Table 2, all study intersections are anticipated to perform at acceptable LOS.

**Table 2 Existing (2018) Alternative 1 Evening Peak Hour Level of Service**

| Intersection                                |             | Worst Approach          |                                    |                  | Overall Intersection               |                  |
|---------------------------------------------|-------------|-------------------------|------------------------------------|------------------|------------------------------------|------------------|
| Description                                 | Control     | Approach <sup>1,3</sup> | Aver. Delay (Sec/Veh) <sup>1</sup> | LOS <sup>1</sup> | Aver. Delay (Sec/Veh) <sup>2</sup> | LOS <sup>2</sup> |
| Filmore Street / Pole Line Road             | Signal      | -                       | -                                  | -                | 31.9                               | C                |
| Target/Costco Access / Pole Line Road       | Signal      | -                       | -                                  | -                | 14.3                               | B                |
| McDonalds Access / Pole Line Road           | NB/SB Stop  | SB                      | > 50                               | F                | -                                  | -                |
| Blue Lakes Boulevard / Pole Line Road       | Signal      | -                       | -                                  | -                | 36.6                               | D                |
| Elm Street / Pole Line Road                 | Signal      | -                       | -                                  | -                | 10.0                               | A                |
| Canyon Spring / Blue Lakes Boulevard        | SE/NW Stop  | SE                      | 18.0                               | C                | -                                  | -                |
| Perrine Street / Blue Lakes Boulevard       | NE/SW Stop  | NW                      | 12.5                               | B                | -                                  | -                |
| Bridgeview Boulevard / Blue Lakes Boulevard | Signal      | -                       | -                                  | -                | 35.9                               | D                |
| Mall Access / Bridgeview Boulevard          | NB/SB Stop  | NB                      | 11.4                               | B                | -                                  | -                |
| Filmore Street / Bridgeview Boulevard       | Round-about | -                       | -                                  | -                | 1.7                                | A                |

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way-stop unsignalized intersections.

2. This represents the overall intersection LOS and delay (seconds / vehicle).

3. SB = Southbound approach, etc.

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Hales Engineering calculated the queue lengths for the study intersections. The queue reports can be found in Appendix B. Queueing was observed at some of the study area intersections and the max queues are as follows:



Filmore Street / Pole Line Road

Eastbound (720 feet)

Westbound (330 feet)

Bridgeview Blvd / Blue Lakes Blvd

Northbound (780 feet)

Southbound (600 feet)

Blue Lakes Blvd / Pole Line Road

Northbound (400 feet)

Southbound (660 feet)

Eastbound (440 feet)

Target/Costco Access / Pole Line Road

Eastbound (450 feet)

Westbound (330 feet)

McDonalds Access / Pole Line

Southbound (120 feet)

Westbound (430 feet)

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### **Alternative 2 – CFI with SB Stop Right-turn**

The second alternative includes a Continuous Flow Intersection (CFI) at the Blue Lakes Blvd / Pole Line Road intersection. This version of a CFI includes a southbound to westbound right-turn that stops at the traffic light and can only be served simultaneously with the southbound through movement. This configuration will allow eastbound to northbound left-turns and westbound to northbound right-turns into the Target/Costco Access. The McDonalds Access would need to be closed if this alternative is chosen since the left-turn storage would be located at the access. A total of 88 vehicles will be displaced with the removal of this access (46 enter and 42 exiting). These vehicles would most likely have to reroute to the Costco/Target Access. See Figure 3 for lane and roadway configurations.



**Figure 3: Alternative 2 Roadway Geometry**



Using VISSIM and following the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition methodology, the existing conditions evening peak hour level of service (LOS) was computed for the study intersections. The results of this analysis are reported in Table 3 (see Appendix B for the detailed LOS reports). Multiple runs of VISSIM were used to provide a statistical evaluation of the interaction between the intersections. As shown in Table 3, all study intersections are anticipated to perform at acceptable LOS except the intersection of Canyon Spring / Blue Lakes Blvd.

Hales Engineering calculated the queue lengths for the study intersections. The queue reports can be found in Appendix B. Queueing was observed at some of the study area intersections and the max queues are as follows.

Filmore Street / Pole Line Road

Eastbound (780 feet)

Westbound (370 feet)

Bridgeview Blvd / Blue Lakes Blvd

Northbound (770 feet)

Southbound (630 feet)

Blue Lakes Blvd / Pole Line Road

Northbound (380 feet)

Southbound (760 feet)

Eastbound (420 feet)

Target/Costco Access / Pole Line Road

Eastbound (520 feet)

Canyon Springs / Blue Lakes Blvd

Southwest (510 feet)

Southeast (300 feet)

**Table 3 Existing (2018) Alternative 2 Evening Peak Hour Level of Service**

| Intersection                                |             | Worst Approach          |                                    |                  | Overall Intersection               |                  |
|---------------------------------------------|-------------|-------------------------|------------------------------------|------------------|------------------------------------|------------------|
| Description                                 | Control     | Approach <sup>1,3</sup> | Aver. Delay (Sec/Veh) <sup>1</sup> | LOS <sup>1</sup> | Aver. Delay (Sec/Veh) <sup>2</sup> | LOS <sup>2</sup> |
| Filmore Street / Pole Line Road             | Signal      | -                       | -                                  | -                | 32.2                               | C                |
| Target/Costco Access / Pole Line Road       | Signal      | -                       | -                                  | -                | 10.7                               | B                |
| McDonalds Access / Pole Line Road           | NB Stop     | NB                      | 7.7                                | A                | -                                  | -                |
| Blue Lakes Boulevard / Pole Line Road       | Signal      | -                       | -                                  | -                | 44.8                               | D                |
| Elm Street / Pole Line Road                 | Signal      | -                       | -                                  | -                | 10.0                               | A                |
| Canyon Spring / Blue Lakes Boulevard        | SE/NW Stop  | SE                      | > 50                               | F                | -                                  | -                |
| Perrine Street / Blue Lakes Boulevard       | SE/NW Stop  | SE                      | 25.7                               | D                | -                                  | -                |
| Bridgeview Boulevard / Blue Lakes Boulevard | Signal      | -                       | -                                  | -                | 37.2                               | D                |
| Mall Access / Bridgeview Boulevard          | NB/SB Stop  | NB                      | 11.6                               | B                | -                                  | -                |
| Filmore Street / Bridgeview Boulevard       | Round-about | -                       | -                                  | -                | 1.7                                | A                |

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way-stop unsignalized intersections.

2. This represents the overall intersection LOS and delay (seconds / vehicle).

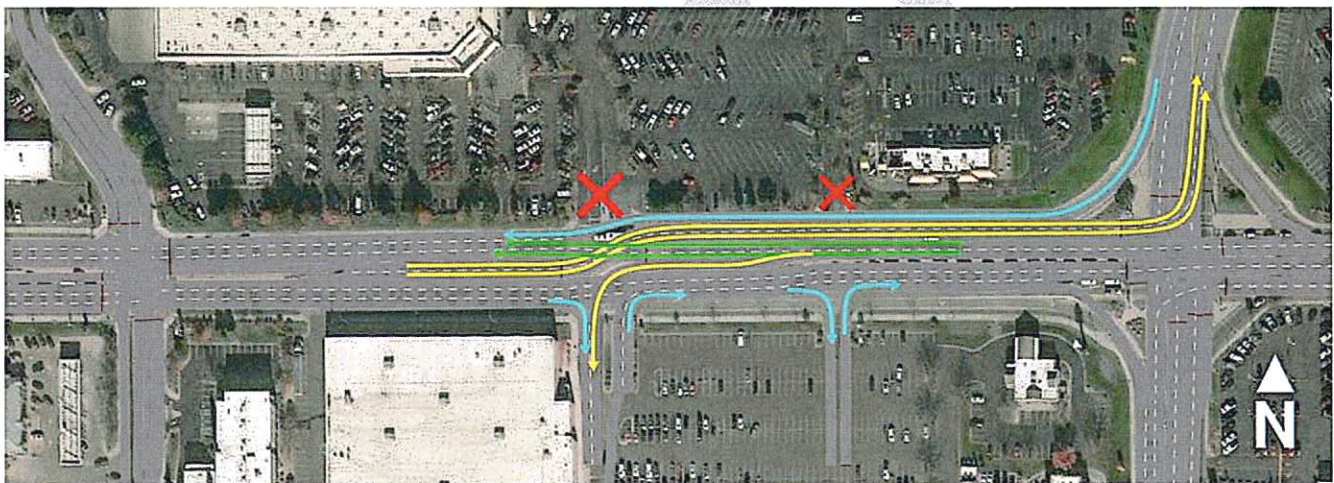
3. SB = Southbound approach, etc.

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### **Alternative 3 – CFI with Free Right & North Accesses Closed**

The third alternative includes a Continuous Flow Intersection (CFI) at the Blue Lakes Blvd / Pole Line Road intersection. This version of a CFI includes a southbound free right-turn. This configuration will close both the Costco and the McDonalds Accesses. A total of 88 vehicles will be displaced with the removal of the McDonalds Access (46 enter and 42 exiting) and a total of 197 vehicles would be displaced with the removal of the Costco Access (105 entering and 92 exiting). These vehicles would most likely have to reroute to Filmore Street to access Costco and McDonalds. See Figure 4 for lane and roadway configurations.



**Figure 4: Alternative 3 Roadway Geometry**

Using VISSIM and following the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition methodology, the existing conditions evening peak hour level of service (LOS) was computed for the study intersections. The results of this analysis are reported in Table 4 (see Appendix B for the detailed LOS reports). Multiple runs of VISSIM were used to provide a statistical evaluation of the interaction between the intersections. As shown in Table 4, all study intersections are anticipated to perform at acceptable LOS.

Hales Engineering calculated the queue lengths for the study intersections. The queue reports can be found in Appendix B. Queueing was observed at some of the study area intersections and the max queues are as follows.

Filmore Street / Pole Line Road

Eastbound (780 feet)  
Westbound (370 feet)

Bridgeview Blvd / Blue Lakes Blvd

Northbound (770 feet)  
Southbound (630 feet)

Blue Lakes Blvd / Pole Line Road

Northbound (380 feet)  
Southbound (760 feet)  
Eastbound (420 feet)

Target/Costco Access / Pole Line Road

Eastbound (520 feet)

Canyon Springs / Blue Lakes Blvd

Southwest (510 feet)  
Southeast (300 feet)



**Table 4 Existing (2018) Alternative 3 Evening Peak Hour Level of Service**

| Intersection                                |             | Worst Approach          |                                    |                  | Overall Intersection               |                  |
|---------------------------------------------|-------------|-------------------------|------------------------------------|------------------|------------------------------------|------------------|
| Description                                 | Control     | Approach <sup>1,3</sup> | Aver. Delay (Sec/Veh) <sup>1</sup> | LOS <sup>1</sup> | Aver. Delay (Sec/Veh) <sup>2</sup> | LOS <sup>2</sup> |
| Filmore Street / Pole Line Road             | Signal      | -                       | -                                  | -                | 30.6                               | C                |
| Target/Costco Access / Pole Line Road       | Signal      | -                       | -                                  | -                | 8.4                                | A                |
| McDonalds Access / Pole Line Road           | NB Stop     | NB                      | 7.8                                | A                | -                                  | -                |
| Blue Lakes Boulevard / Pole Line Road       | Signal      | -                       | -                                  | -                | 35.2                               | D                |
| Elm Street / Pole Line Road                 | Signal      | -                       | -                                  | -                | 9.5                                | A                |
| Canyon Spring / Blue Lakes Boulevard        | SE/NW Stop  | SE                      | 15.1                               | C                | -                                  | -                |
| Perrine Street / Blue Lakes Boulevard       | SE/NW Stop  | NW                      | 12.4                               | B                | -                                  | -                |
| Bridgeview Boulevard / Blue Lakes Boulevard | Signal      | -                       | -                                  | -                | 31.5                               | C                |
| Mall Access / Bridgeview Boulevard          | NB/SB Stop  | NB                      | 12.3                               | B                | -                                  | -                |
| Filmore Street / Bridgeview Boulevard       | Round-about | -                       | -                                  | -                | 1.6                                | A                |

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way-stop unsignalized intersections.

2. This represents the overall intersection LOS and delay (seconds / vehicle).

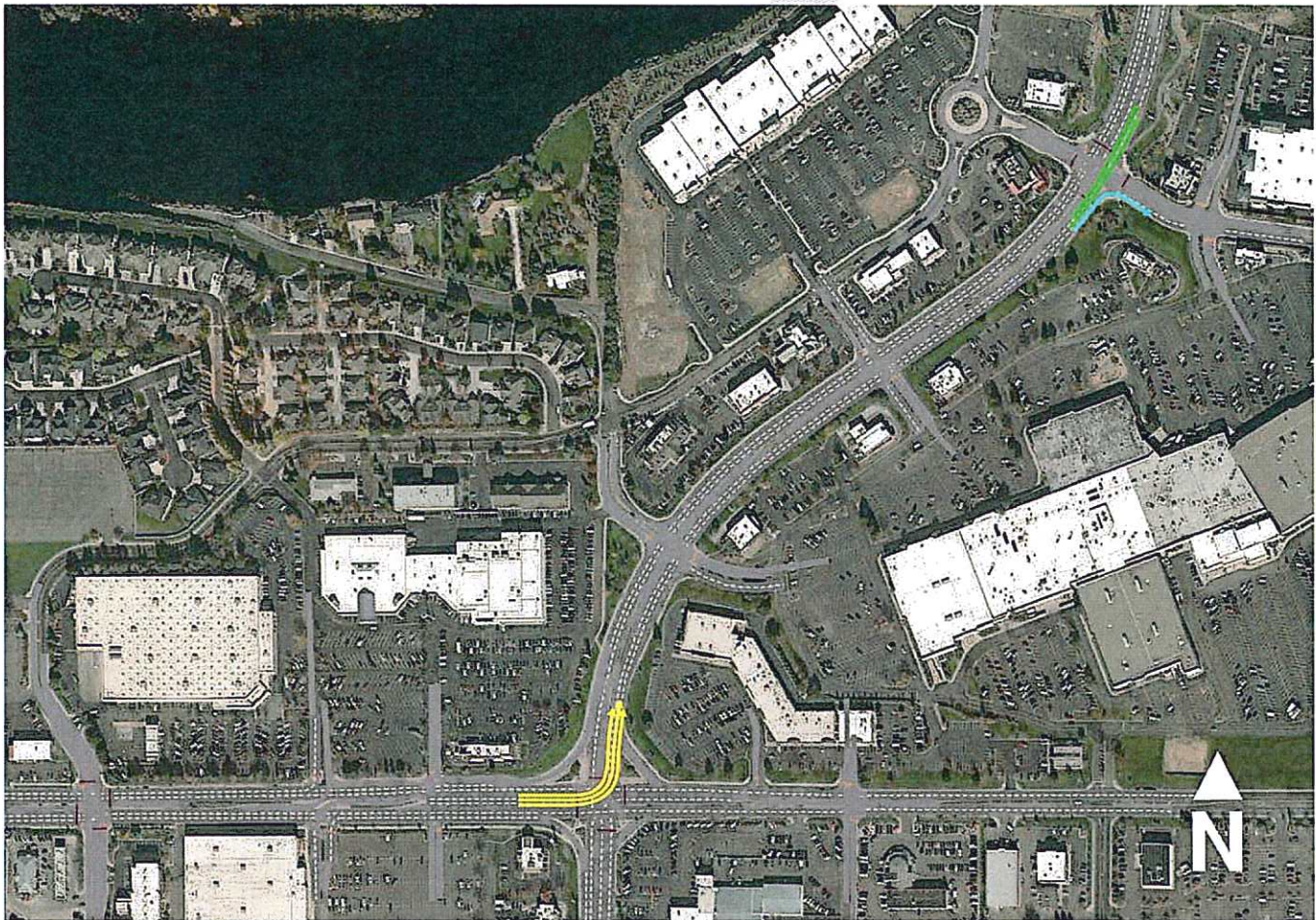
3. SB = Southbound approach, etc.

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#### **Alternative 4 – Triple Eastbound Lefts**

The fourth alternative includes three left-turn lanes in the eastbound direction at the Pole Line Road / Blue Lakes Boulevard intersection. This alternative would allow all existing accesses to remain with possible minor modifications. An additional northbound lane would be necessary in the northbound direction of Blue Lakes Boulevard from Pole Line Road to Bridgeview Boulevard. At Bridgeview Boulevard, the new lane would turn into a right-turn lane into the mall area. See Figure 5 for lane and roadway configurations.



**Figure 5: Alternative 4 Roadway Geometry**



Using VISSIM and following the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition methodology, the existing conditions evening peak hour level of service (LOS) was computed for the study intersections. The results of this analysis are reported in Table 5 (see Appendix B for the detailed LOS reports). Multiple runs of VISSIM were used to provide a statistical evaluation of the interaction between the intersections. As shown in Table 5, all study intersections are anticipated to perform at acceptable LOS.

Hales Engineering calculated the queue lengths for the study intersections. The queue reports can be found in Appendix B. Queueing is anticipated at some of the study area intersections and the max queues are as follows:

Filmore Street / Pole Line Road

Eastbound (600 feet)  
Westbound (350 feet)

Bridgeview Blvd / Blue Lakes Blvd

Northbound (720 feet)  
Southbound (620 feet)

Blue Lakes Blvd / Pole Line Road

Northbound (430 feet)  
Southbound (500 feet)  
Eastbound (320 feet)  
Westbound (340 feet)

**Table 5 Existing (2018) Alternative 4 Evening Peak Hour Level of Service**

| Intersection                                |             | Worst Approach          |                                    |                  | Overall Intersection               |                  |
|---------------------------------------------|-------------|-------------------------|------------------------------------|------------------|------------------------------------|------------------|
| Description                                 | Control     | Approach <sup>1,3</sup> | Aver. Delay (Sec/Veh) <sup>1</sup> | LOS <sup>1</sup> | Aver. Delay (Sec/Veh) <sup>2</sup> | LOS <sup>2</sup> |
| Filmore Street / Pole Line Road             | Signal      | -                       | -                                  | -                | 27.6                               | C                |
| Target/Costco Access / Pole Line Road       | NB/SB Stop  | NB                      | 9.8                                | A                | -                                  | -                |
| McDonalds Access / Pole Line Road           | NB/SB Stop  | SB                      | 9.6                                | A                | -                                  | -                |
| Blue Lakes Boulevard / Pole Line Road       | Signal      | -                       | -                                  | -                | 31.9                               | C                |
| Elm Street / Pole Line Road                 | NB/SB Stop  | NB                      | 10.1                               | B                | -                                  | -                |
| Canyon Spring / Blue Lakes Boulevard        | SE/NW Stop  | SE                      | 13.9                               | B                | -                                  | -                |
| Perrine Street / Blue Lakes Boulevard       | SE/NW Stop  | NW                      | 11.2                               | B                | -                                  | -                |
| Bridgeview Boulevard / Blue Lakes Boulevard | Signal      | -                       | -                                  | -                | 32.3                               | C                |
| Mall Access / Bridgeview Boulevard          | NB/SB Stop  | NB                      | 11.8                               | B                | -                                  | -                |
| Filmore Street / Bridgeview Boulevard       | Round-about | -                       | -                                  | -                | 1.7                                | A                |

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way-stop unsignalized intersections.

2. This represents the overall intersection LOS and delay (seconds / vehicle).

3. SB = Southbound approach, etc.

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## **FUTURE 2040 CONDITIONS**

There are no large or significant changes planned involving land use with-in the study area. It is likely that some of the surrounding area will redevelop at some point in the future. There is also potential for growth east of the study area along Pole Line Road as well as the west end of Pole Line Road closer to the west edge of the city limits. It is anticipated that traffic volumes will grow with in the study area and some intersections will likely need to be upgraded.

To minimize costs and time, it was determined that only the two best performing alternatives would be carried forward to the 2040 conditions. The best two alternatives from the existing conditions are alternative 3 – CFI with the north accesses closed and Alternative 4 – Triple Lefts. These two alternatives will be analyzed using the future 2040 volumes to determine which will perform best in the future.

### **Traffic Volumes**

Hales Engineering obtained future (2040) forecasted volumes from the Twin Falls travel demand model completed in 2018 for the transportation master plan update. Peak period turning movement counts were estimated using NCHRP 255 methodologies which utilize existing peak period turn volumes and future AWDT volumes to project the future turn volumes at the major intersections. The future 2040 evening peak hour volumes can be seen in Figure 6.

### **Alternative 3 – CFI with Free Right-turn & North Accesses Closed**

The third alternative includes a Continues Flow Intersection (CFI) at the Blue Lakes Blvd / Pole Line Road intersection. This version of a CFI includes a southbound free right-turn. This configuration will close both the Costco and the McDonalds Accesses. This alternative was one of the best performing alternatives in the 2018 analysis. This alternative was analyzed for the future 2040 conditions to determine how it will function with the projected traffic volumes with-in the study area.

Using VISSIM and following the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition methodology, the morning and evening peak hour LOS was computed for the study intersection. The results of this analysis are reported in Table 6 (see Appendix B for the detailed LOS reports). Multiple runs of VISSIM were used to provide a statistical evaluation of the interaction between the intersections. As shown in Table 6, all intersections are still anticipated to perform at acceptable LOS during the evening peak hours except Filmore Street / Pole Line Road, Pole Line Road / Blue Lakes Boulevard, Canyon Springs / Blue

Lakes Boulevard, Perrine Street / Blue Lakes Boulevard, and Bridgeview Boulevard / Blue Lakes Boulevard.

**Table 6 Future (2040) Alternative 3 Evening Peak Hour Level of Service**

| Intersection                                |             | Worst Approach          |                                    |                  | Overall Intersection               |                  |
|---------------------------------------------|-------------|-------------------------|------------------------------------|------------------|------------------------------------|------------------|
| Description                                 | Control     | Approach <sup>1,3</sup> | Aver. Delay (Sec/Veh) <sup>1</sup> | LOS <sup>1</sup> | Aver. Delay (Sec/Veh) <sup>2</sup> | LOS <sup>2</sup> |
| Filmore Street / Pole Line Road             | Signal      | -                       | -                                  | -                | 55.4                               | E                |
| Target/Costco Access / Pole Line Road       | Signal      | -                       | -                                  | -                | 20.5                               | C                |
| McDonalds Access / Pole Line Road           | NB/SB Stop  | EB                      | 20.6                               | C                | -                                  | -                |
| Blue Lakes Boulevard / Pole Line Road       | Signal      | -                       | -                                  | -                | 83.7                               | F                |
| Elm Street / Pole Line Road                 | Signal      | -                       | -                                  | -                | 18.8                               | B                |
| Canyon Spring / Blue Lakes Boulevard        | SE/NW Stop  | NW                      | 46.0                               | E                | -                                  | -                |
| Perrine Street / Blue Lakes Boulevard       | SE/NW Stop  | NW                      | 56.9                               | F                | -                                  | -                |
| Bridgeview Boulevard / Blue Lakes Boulevard | Signal      | -                       | -                                  | -                | 70.8                               | E                |
| Mall Access / Bridgeview Boulevard          | NB/SB Stop  | NB                      | 12.4                               | B                | -                                  | -                |
| Filmore Street / Bridgeview Boulevard       | Round-about | -                       | -                                  | -                | 2.9                                | A                |

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way-stop unsignalized intersections.

2. This represents the overall intersection LOS and delay (seconds / vehicle).

3. SB = Southbound approach, etc.

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Hales Engineering calculated the queue lengths for the study intersections. The queue reports can be found in Appendix B. Queueing is anticipated at some of the study area intersections and the max queues are as follows:

Filmore Street / Pole Line Road  
Northbound (670 feet)  
Southbound (590 feet)  
Eastbound (1,050 feet)  
Westbound (520 feet)

Canyon Springs / Blue Lakes Blvd  
Southwest Bound (490 feet)  
Northeast Bound (760 feet)



Bridgeview Blvd / Blue Lake Blvd  
Northeast Bound (860 feet)  
Southwest Bound (940 feet)

Target/Costco / Pole Line Road  
Eastbound (640 feet)

Blue Lakes Blvd / Pole Line Road  
Northbound (1,190 feet)  
Southbound (780 feet)  
Eastbound (470 feet)  
Westbound (600 feet)

Elm Street / Pole Line Road  
Westbound (520 feet)

Perrine Street / Blue Lakes Blvd  
Northeast Bound (800 feet)

No other significant queueing is anticipated during the evening peak hour.

### **Additional Measures**

Multiple intersections within the study area are anticipated to perform at a poor LOS. The following are recommended:

#### Pole Line Road / Blue Lakes Boulevard

- Southbound - Protected/Permissive Left-turn Phasing

#### Bridgeview Blvd / Blue Lakes Boulevard

- East- and Westbound - Protected/Permissive Left-turn Phasing

#### Corridor

- Coordinate all signals in the study area.
- Use a cycle length of at least 150 seconds at all signals in the study area during the peak hours.

As shown in Table 7, with the proposed mitigation measures, all intersections are anticipated to improve to acceptable LOS during the evening peak hour.

Hales Engineering calculated the average queue lengths for the study intersections. The queue reports can be found in Appendix B. Queueing is anticipated at some of the study area intersections and the max queues are as follows:

Filmore Street / Pole Line Road  
Northbound (760 feet)  
Eastbound (990 feet)  
Westbound (430 feet)

Canyon Springs / Blue Lakes Blvd  
Northeast Bound (390 feet)

Elm Street / Pole Line Road

Bridgeview Blvd / Blue Lake Blvd  
Northeast Bound (850 feet)  
Southwest Bound (530 feet)

Westbound (420 feet)

Blue Lakes Blvd / Pole Line Road

Northbound (1,030 feet)

Southbound (670 feet)

Eastbound (450 feet)

Westbound (460 feet)

Perrine Street / Blue Lakes Blvd

Northeast Bound (670 feet)

Target/Costco / Pole Line Road

Eastbound (590 feet)

No other significant queueing is anticipated during the evening peak hour.

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**Table 7 Future (2040) Alternative 3 Evening Peak Hour Level of Service - Mitigated**

| Intersection                                |             | Worst Approach          |                                    |                  | Overall Intersection               |                  |
|---------------------------------------------|-------------|-------------------------|------------------------------------|------------------|------------------------------------|------------------|
| Description                                 | Control     | Approach <sup>1,3</sup> | Aver. Delay (Sec/Veh) <sup>1</sup> | LOS <sup>1</sup> | Aver. Delay (Sec/Veh) <sup>2</sup> | LOS <sup>2</sup> |
| Filmore Street / Pole Line Road             | Signal      | -                       | -                                  | -                | 44.9                               | D                |
| Target/Costco Access / Pole Line Road       | Signal      | -                       | -                                  | -                | 9.7                                | A                |
| McDonalds Access / Pole Line Road           | NB/SB Stop  | NB                      | 8.4                                | A                | -                                  | -                |
| Blue Lakes Boulevard / Pole Line Road       | Signal      | -                       | -                                  | -                | 39.0                               | D                |
| Elm Street / Pole Line Road                 | Signal      | -                       | -                                  | -                | 13.3                               | B                |
| Canyon Spring / Blue Lakes Boulevard        | SE/NW Stop  | NW                      | 24.9                               | C                | -                                  | -                |
| Perrine Street / Blue Lakes Boulevard       | SE/NW Stop  | NW                      | 28.1                               | D                | -                                  | -                |
| Bridgeview Boulevard / Blue Lakes Boulevard | Signal      | -                       | -                                  | -                | 38.1                               | D                |
| Mall Access / Bridgeview Boulevard          | NB/SB Stop  | NB                      | 14.3                               | B                | -                                  | -                |
| Filmore Street / Bridgeview Boulevard       | Round-about | -                       | -                                  | -                | 2.5                                | A                |

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way-stop unsignalized intersections.

2. This represents the overall intersection LOS and delay (seconds / vehicle).

3. SB = Southbound approach, etc.

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#### **Alternative 4 – Triple Eastbound Left-turn Lanes**

The triple eastbound left-turn lanes alternative was one of the best performing alternatives in the 2018 analysis. This alternative was analyzed for the future 2040 conditions to determine how it will function with the projected traffic volumes with-in the study area.

Using VISSIM and following the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition methodology, the morning and evening peak hour LOS was computed for the study intersection. The results of this analysis are reported in Table 8 (see Appendix B for the detailed LOS reports). Multiple runs of VISSIM were used to provide a statistical evaluation of the interaction between the intersections. As shown in Table 8, all intersections are still anticipated to perform at acceptable LOS during both the evening peak hours except Pole Line Road / Blue Lakes Boulevard, Canyon Springs / Blue Lakes Boulevard, Filmore Street / Bridgeview Boulevard.

Hales Engineering calculated the queue lengths for the study intersections. The queue reports can be found in Appendix B. Queueing is anticipated at some of the study area intersections and the max queues are as follows:

Filmore Street / Pole Line Road  
Eastbound (1,050 feet)  
Westbound (620 feet)

Canyon Springs / Blue Lakes Blvd  
Southwest Bound (600 feet)

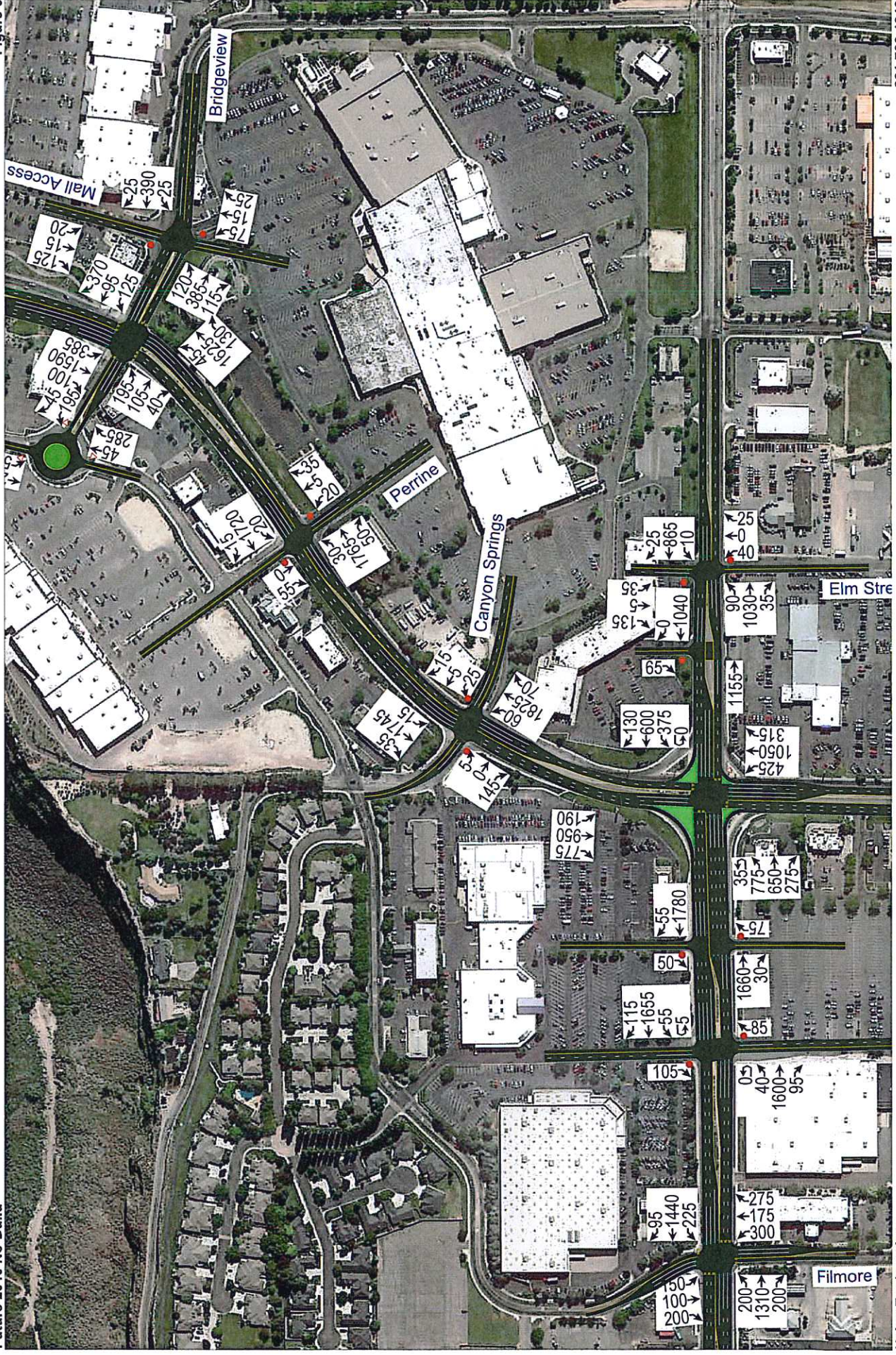
Bridgeview Blvd / Blue Lake Blvd  
Southeast Bound (1,050 feet)  
Northeast Bound (720 feet)  
Southwest Bound (510 feet)

Filmore Street / Bridgeview Blvd  
Northeast Bound (1,050 feet)

Blue Lakes Blvd / Pole Line Road  
Northbound (1,190 feet)  
Southbound (800 feet)  
Eastbound (440 feet)  
Westbound (680 feet)

No other significant queueing is anticipated during the morning peak hour.







**Table 8 Future (2040) Alternative 4 Evening Peak Hour Level of Service**

| Intersection                                |             | Worst Approach          |                                    |                  | Overall Intersection               |                  |
|---------------------------------------------|-------------|-------------------------|------------------------------------|------------------|------------------------------------|------------------|
| Description                                 | Control     | Approach <sup>1,3</sup> | Aver. Delay (Sec/Veh) <sup>1</sup> | LOS <sup>1</sup> | Aver. Delay (Sec/Veh) <sup>2</sup> | LOS <sup>2</sup> |
| Filmore Street / Pole Line Road             | Signal      | -                       | -                                  | -                | 48.7                               | D                |
| Target/Costco Access / Pole Line Road       | NB/SB Stop  | NB                      | 14.0                               | B                | -                                  | -                |
| McDonalds Access / Pole Line Road           | NB/SB Stop  | SB                      | 11.5                               | B                | -                                  | -                |
| Blue Lakes Boulevard / Pole Line Road       | Signal      | -                       | -                                  | -                | 83.7                               | F                |
| Elm Street / Pole Line Road                 | NB/SB Stop  | NB                      | 17.5                               | C                | -                                  | -                |
| Canyon Spring / Blue Lakes Boulevard        | SE/NW Stop  | NW                      | 46.3                               | E                | -                                  | -                |
| Perrine Street / Blue Lakes Boulevard       | SE/NW Stop  | SE                      | 14.3                               | B                | -                                  | -                |
| Bridgeview Boulevard / Blue Lakes Boulevard | Signal      | -                       | -                                  | -                | 36.5                               | D                |
| Mall Access / Bridgeview Boulevard          | NB/SB Stop  | NB                      | 13.3                               | B                | -                                  | -                |
| Filmore Street / Bridgeview Boulevard       | Round-about | -                       | -                                  | -                | 56.1                               | F                |

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way-stop unsignalized intersections.

2. This represents the overall intersection LOS and delay (seconds / vehicle).

3. SB = Southbound approach, etc.

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### Additional Measures

The intersection of Pole Line Road / Blue Lakes Boulevard is anticipated to perform poorly using the same roadway configuration used in the 2018 scenario. There is heavy queueing anticipated in the north-, south-, and westbound directions. Additional capacity is needed for these approaches to function adequately. The following are recommended.

#### Pole Line Road / Blue Lakes Boulevard

- Additional Northbound through lane

#### Bridgeview Blvd / Blue Lakes Boulevard

- East- and Westbound - Protected/Permissive Left-turn Phasing



Corridor

- Coordinate all signals in the study area.
- Use a cycle length of at least 150 seconds at all signals in the study area during the peak hours.

As shown in Table 9, most intersections are anticipated to improve with the proposed mitigation measures, however the Filmore Street / Pole Line Road, Blue Lakes Boulevard / Pole Line Road, Canyon Springs / Blue Lakes Boulevard and Perrine Street / Blue Lakes Boulevard intersections are still anticipated to operate at unacceptable LOS.

Hales Engineering calculated the average queue lengths for the study intersection. The queue reports can be found in Appendix B. Queueing is anticipated at some of the study area intersections and the max queues are as follows:

Filmore Street / Pole Line Road

Northbound (560 feet)  
Eastbound (1,040 feet)  
Westbound (640 feet)

Canyon Springs / Blue Lakes Blvd

Southwest Bound (800 feet)

Bridgeview Blvd / Blue Lake Blvd

Northwest Bound (350 feet)  
Northeast Bound (760 feet)  
Southwest Bound (630 feet)

Filmore Street / Bridgeview Blvd

Northeast Bound (1,050 feet)

Perrine Street / Blue Lakes Blvd

Southwest Bound (660 feet)

Blue Lakes Blvd / Pole Line Road

Northbound (840 feet)  
Southbound (800 feet)  
Eastbound (470 feet)  
Westbound (520 feet)

Target/Costco / Pole Line Road

Eastbound (650 feet)

No other significant queueing is anticipated during the evening peak hour.

**Table 9 Future (2040) Alternative 4 Evening Peak Hour Level of Service - Mitigated**

| Intersection                                |             | Worst Approach          |                                    |                  | Overall Intersection               |                  |
|---------------------------------------------|-------------|-------------------------|------------------------------------|------------------|------------------------------------|------------------|
| Description                                 | Control     | Approach <sup>1,3</sup> | Aver. Delay (Sec/Veh) <sup>1</sup> | LOS <sup>1</sup> | Aver. Delay (Sec/Veh) <sup>2</sup> | LOS <sup>2</sup> |
| Filmore Street / Pole Line Road             | Signal      | -                       | -                                  | -                | 57.8                               | E                |
| Target/Costco Access / Pole Line Road       | NB/SB Stop  | NB                      | 17.6                               | C                | -                                  | -                |
| McDonalds Access / Pole Line Road           | NB/SB Stop  | SB                      | 11.4                               | B                | -                                  | -                |
| Blue Lakes Boulevard / Pole Line Road       | Signal      | -                       | -                                  | -                | 64.8                               | E                |
| Elm Street / Pole Line Road                 | NB/SB Stop  | NB                      | 14.2                               | B                | -                                  | -                |
| Canyon Spring / Blue Lakes Boulevard        | SE/NW Stop  | SE                      | > 50                               | F                | -                                  | -                |
| Perrine Street / Blue Lakes Boulevard       | SE/NW Stop  | SE                      | > 50                               | F                | -                                  | -                |
| Bridgeview Boulevard / Blue Lakes Boulevard | Signal      | -                       | -                                  | -                | 37.3                               | D                |
| Mall Access / Bridgeview Boulevard          | NB/SB Stop  | NB                      | 15.7                               | C                | -                                  | -                |
| Filmore Street / Bridgeview Boulevard       | Round-about | -                       | -                                  | -                | 2.8                                | A                |

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way-stop unsignalized intersections.

2. This represents the overall intersection LOS and delay (seconds / vehicle).

3. SB = Southbound approach, etc.

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Additional measures that could be included would be an additional through lane in the southbound direction at the Blue Lakes Boulevard / Pole Line Road. This will add capacity to the southbound leg of the intersection and reduce queueing that would block both Canyon Springs and Perrine Street.

An additional northbound through lane at the Bridgeview Boulevard / Blue Lakes Boulevard would add needed capacity to the northbound leg of the intersection. This extra lane would be required to merge back into the existing two lanes before the bridge.



## FINDINGS

The findings of the study are as follows:

- Currently all intersections perform at acceptable LOS during the evening peak hours.
  - Long queues exist in the eastbound left-turn lane at Blue Lakes Boulevard / Pole Line Road.
  - Queueing was also observed at the Filmore Street / Bridgeview Boulevard Roundabout in the northbound direction.
- Four alternatives were evaluated. Three included variations of a Continuous Flow Intersection (CFI) and the other alternative included three left-turn lanes in the eastbound direction at Blue Lakes Boulevard / Pole Line Road. The results can be seen below in ES-1.
  - Poorly performing intersections are highlighted in red.

| Table ES-1<br>Existing 2018 Evening Peak Hour<br>Twin Falls - TMP Intersection Analysis                                                                                                                                              |                                                       |                                                            |                                                                                  |                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------|
| Intersection                                                                                                                                                                                                                         | Existing 2018<br>Alternative 1 - CFI w/<br>Free Right | Existing 2018<br>Alternative 2 - CFI SB<br>Stop Right-turn | Existing 2018<br>Alternative 3 - CFI w/<br>Free Right & North<br>Accesses Closed | Existing 2018<br>Alternative 4 - Triple<br>Lefts |
| Description                                                                                                                                                                                                                          | LOS (Sec/Veh <sup>1</sup> )                           | LOS (Sec/Veh <sup>1</sup> )                                | LOS (Sec/Veh <sup>1</sup> )                                                      | LOS (Sec/Veh <sup>1</sup> )                      |
| Filmore Street / Pole Line Road                                                                                                                                                                                                      | C (31.9)                                              | C (32.2)                                                   | C (30.6)                                                                         | C (27.6)                                         |
| Target/Costco Access / Pole Line Road                                                                                                                                                                                                | B (14.3)                                              | B (10.7)                                                   | A (8.4)                                                                          | A (9.8) / NB                                     |
| McDonalds Access / Pole Line Road                                                                                                                                                                                                    | F (>50) / SB                                          | A (7.7) / NB                                               | A (7.4) / NB                                                                     | A (9.6) / SB                                     |
| Blue Lakes Boulevard / Pole Line Road                                                                                                                                                                                                | D (36.6)                                              | D (44.8)                                                   | D (35.2)                                                                         | C (31.9)                                         |
| Elm Street / Pole Line Road                                                                                                                                                                                                          | A (10.0)                                              | A (10.0)                                                   | A (9.5)                                                                          | B (10.1) / NB                                    |
| Canyon Spring / Blue Lakes Boulevard                                                                                                                                                                                                 | C (18.0) / SE                                         | F (>50) / SE                                               | C (15.1) / SE                                                                    | B (13.9) / SE                                    |
| Perrine Street / Blue Lakes Boulevard                                                                                                                                                                                                | B (12.5) / NW                                         | D (25.7) / SE                                              | B (12.4) / NW                                                                    | B (11.2) / NE                                    |
| Bridgeview Boulevard / Blue Lakes Boulevard                                                                                                                                                                                          | D (35.9)                                              | D (37.2)                                                   | C (31.5)                                                                         | C (32.3)                                         |
| Mall Access / Bridgeview Boulevard                                                                                                                                                                                                   | B (11.4) / NB                                         | B (11.6) / NB                                              | B (12.3) / NB                                                                    | B (11.8) / NB                                    |
| Filmore Street / Bridgeview Boulevard                                                                                                                                                                                                | A (1.7)                                               | A (1.7)                                                    | A (1.6)                                                                          | A (1.7)                                          |
| 1. Intersection LOS and delay (seconds/vehicle) values represent the overall intersection average for roundabout, signalized, all-way stop controlled intersections and the worst approach for all other unsignalized intersections. |                                                       |                                                            |                                                                                  |                                                  |
| Mar-18                                                                                                                                                                                                                               |                                                       |                                                            |                                                                                  |                                                  |



- As shown in the table above, Alternatives 1 and 2 have a poorly performing intersection. It was determined that the best two alternatives would be carried forward to the 2040 analyses.
- The best two alternatives were determined to be Alternative 3 and 4.
- Traffic volumes in the study area are anticipated to increase between 2018 and 2040.
- The results from the 2040 analyses can be seen below in ES-2.

3 LEFT

| Future 2040 Evening Peak Hour<br>Twin Falls - TMP Intersection Analysis                                                                                                                                                              |                                |                                            |                                |                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------------------|--------------------------------|--------------------------------------------|
| Intersection                                                                                                                                                                                                                         | Existing 2018<br>Alternative 3 | Existing 2018<br>Alternative 3 - Mitigated | Existing 2018<br>Alternative 4 | Existing 2018<br>Alternative 4 - Mitigated |
| Description                                                                                                                                                                                                                          | LOS (Sec/Veh <sup>1</sup> )    | LOS (Sec/Veh <sup>1</sup> )                | LOS (Sec/Veh <sup>1</sup> )    | LOS (Sec/Veh <sup>1</sup> )                |
| Filmore Street / Pole Line Road                                                                                                                                                                                                      | E (55.4)                       | D (44.9)                                   | D (48.7)                       | E (57.8)                                   |
| Target/Costco Access / Pole Line Road                                                                                                                                                                                                | C (20.5)                       | A (9.7)                                    | B (14.0) / NB                  | C (17.6) / NB                              |
| McDonalds Access / Pole Line Road                                                                                                                                                                                                    | C (20.6) / EB                  | A (8.4) / NB                               | B (11.5) / SB                  | B (11.4) / SB                              |
| Blue Lakes Boulevard / Pole Line Road                                                                                                                                                                                                | F (>80)                        | D (39.0)                                   | F (>80)                        | E (64.8)                                   |
| Elm Street / Pole Line Road                                                                                                                                                                                                          | B (18.8)                       | B (13.3)                                   | C (18.5) / NB                  | B (14.2) / NB                              |
| Canyon Spring / Blue Lakes Boulevard                                                                                                                                                                                                 | E (46.0) / NW                  | C (24.9) / NW                              | E (46.3) / NW                  | F (>50) / SE                               |
| Perrine Street / Blue Lakes Boulevard                                                                                                                                                                                                | F (>50) / NW                   | C (28.1) / NW                              | B (14.3) / SE                  | F (>50) / SE                               |
| Bridgeview Boulevard / Blue Lakes Boulevard                                                                                                                                                                                          | E (70.8)                       | D (38.1)                                   | D (36.5)                       | D (37.3)                                   |
| Mall Access / Bridgeview Boulevard                                                                                                                                                                                                   | B (12.4) / NB                  | B (14.3)                                   | B (13.3) / NB                  | C (15.7) / NB                              |
| Filmore Street / Bridgeview Boulevard                                                                                                                                                                                                | A (2.9)                        | A (2.5)                                    | F (>50)                        | A (2.8)                                    |
| 1. Intersection LOS and delay (seconds/vehicle) values represent the overall intersection average for roundabout, signalized, all-way stop controlled intersections and the worst approach for all other unsignalized intersections. |                                |                                            |                                |                                            |
| Mar-18                                                                                                                                                                                                                               |                                |                                            |                                |                                            |

- As shown in the table, both Alternatives 3 and 4 are anticipated to have poorly performing intersections in the year 2040.
- With some additional roadway improvements or signalization improvements, improvement is anticipated for both alternatives in the 2040 analysis.
- Alternative 3 appears to perform better than Alternative 4 in terms of LOS.
  - Alternative 3 is anticipated to have no poorly performing intersections.
  - Alternative 4 is anticipated to have four poorly performing intersections.



## **NORTH COLLEGE ROAD & BLUE LAKES BLVD**

The second analysis evaluated a single intersection along Blue Lakes Boulevard, North College Road. This intersection has left-turn pockets at all approaches with shared through right-turn lanes on all approaches. Blue Lakes Boulevard is a five-lane cross section with no right-turn pockets.

Currently, there is queueing at the North College Road / Blue Lakes Boulevard intersection during the evening peak hour in the eastbound direction. The eastbound through and right-turn volumes are high enough to cause queueing issues in the eastbound direction. During the average evening peak hour, the queues from the eastbound through/right-turn lane can back up to 400 feet or further.

### **EXISTING CONDITIONS**

Blue Lakes Boulevard (SH 93): North-south roadway that connects Twin Falls to I-84 to the north. The roadway is also known as SH-93. The roadway has a maximum cross-section of five lanes. The roadway was classified in the previous transportation master plan (TMP) as a state highway.

North College Road: East-west roadway that is located on the north side of the college in Twin Falls. The roadway has a maximum cross-section of three lanes. The roadway was classified in the previous TMP as a collector.

### **Data Collection**

Civil Science performed weekday morning (7:00 to 9:00 a.m.) and evening (4:00 to 6:00 p.m.) peak period traffic counts at following intersections:

- North College Road / Blue Lakes Boulevard

The counts were performed between Tuesday, January 16, 2018. The morning peak hour was between 7:45 to 8:45 a.m. and the evening peak hour was between 4:30 and 5:30 p.m. The evening peak hour was calculated to be 30 percent higher than the morning peak hour. Detailed count data are included in Appendix A.

Figure 7 shows the existing evening peak hour volumes of the study area intersections.



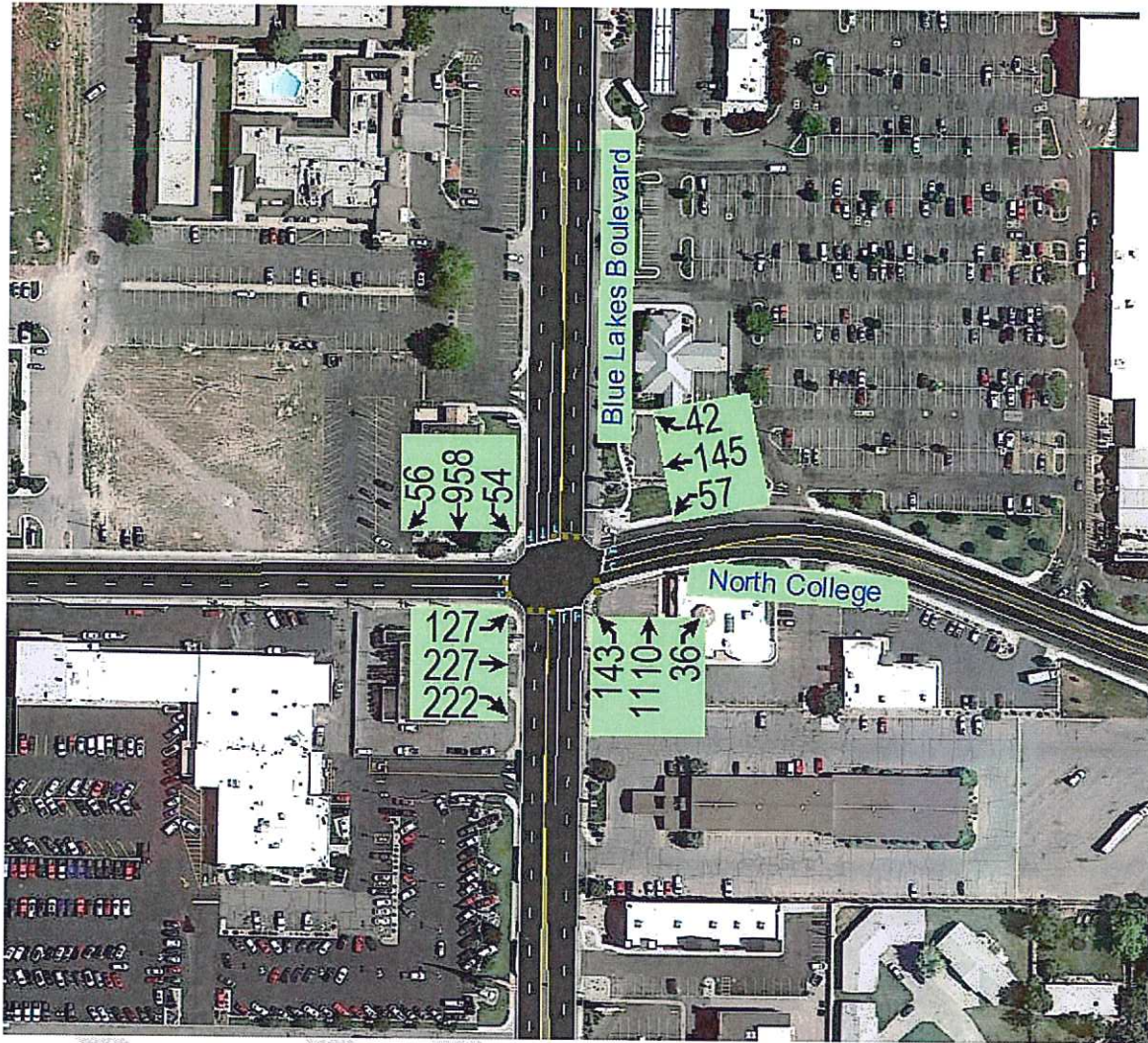


Figure 7: Existing Traffic Volumes and Roadway Geometry

### Synchro Model Calibration

The study intersections were modeled using Synchro/SimTraffic. The Synchro/SimTraffic micro-simulation model was calibrated using the following model outputs:

1. Queue lengths
2. Percent served

Queue lengths were observed at study intersections during the peak hours and compared to the average and maximum queue lengths as estimated by the Synchro model. Each study intersection was observed for several cycle lengths, where possible, during the peak



15-minute period of the peak hour to ensure that the model is reasonably reflecting conditions in the field.

Considering the period each intersection was observed; the modeled queue lengths replicate observed queue lengths. The final calibrated model produces similar queuing as to what is observed in the field.

### Level of Service Analysis

Using Synchro/SimTraffic and following the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition methodology, the existing (2018) evening peak hour level of service (LOS) was computed for the study intersections. The results of this analysis are reported in Table 10 (see Appendix B for the detailed LOS reports). Multiple runs of Synchro/SimTraffic were used to provide a statistical evaluation of the interaction between the intersections.

As shown in Table 10, all intersections are currently operating at acceptable LOS during the evening peak hour.

**Table 10 Existing (2018) Background Evening Peak Hour Level of Service**

| Intersection                              |         | Worst Approach          |                                    |                  | Overall Intersection               |                  |
|-------------------------------------------|---------|-------------------------|------------------------------------|------------------|------------------------------------|------------------|
| Description                               | Control | Approach <sup>1,3</sup> | Aver. Delay (Sec/Veh) <sup>1</sup> | LOS <sup>1</sup> | Aver. Delay (Sec/Veh) <sup>2</sup> | LOS <sup>2</sup> |
| North College Road / Blue Lakes Boulevard | Signal  | -                       | -                                  | -                | 18.7                               | B                |

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way-stop unsignalized intersections.

2. This represents the overall intersection LOS and delay (seconds / vehicle).

3. SB = Southbound approach, etc.

March 2018

### Queueing Analysis

Hales Engineering calculated the 95<sup>th</sup> percentile queue lengths for the study intersection. The queue reports can be found in Appendix B. Queueing was observed at the following intersections:

North College Road / Blue Lakes Blvd  
Eastbound (400 feet)

## EXISTING CONDITIONS – ALTERNATIVES

A single alternative was completed to mitigate the queueing issue at the North College Road / Blue Lakes Boulevard intersection. The alternative was evaluated to determine if it would be successful in eliminating or reducing delays and queues at the intersection.

### Alternative 1 – Eastbound Right-turn Pocket

This alternative includes an eastbound right-turn pocket at the North College Road / Blue Lakes Boulevard intersection. No other changes have been made to the intersection. See Figure 8 for more details.

Using Synchro/SimTraffic and following the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition methodology, the existing (2018) evening peak hour level of service (LOS) was computed for the study intersections. The results of this analysis are reported in Table 11 (see Appendix B for the detailed LOS reports). Multiple runs of Synchro/SimTraffic were used to provide a statistical evaluation of the interaction between the intersections. As shown in Table 11, the intersection is anticipated to perform at an acceptable LOS.

**Table 11 Existing (2018) Alternative 1 Evening Peak Hour Level of Service**

| Intersection                              |         | Worst Approach          |                                    |                  | Overall Intersection               |                  |
|-------------------------------------------|---------|-------------------------|------------------------------------|------------------|------------------------------------|------------------|
| Description                               | Control | Approach <sup>1,3</sup> | Aver. Delay (Sec/Veh) <sup>1</sup> | LOS <sup>1</sup> | Aver. Delay (Sec/Veh) <sup>2</sup> | LOS <sup>2</sup> |
| North College Road / Blue Lakes Boulevard | Signal  | -                       | -                                  | -                | 14.3                               | B                |

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way-stop unsignalized intersections.

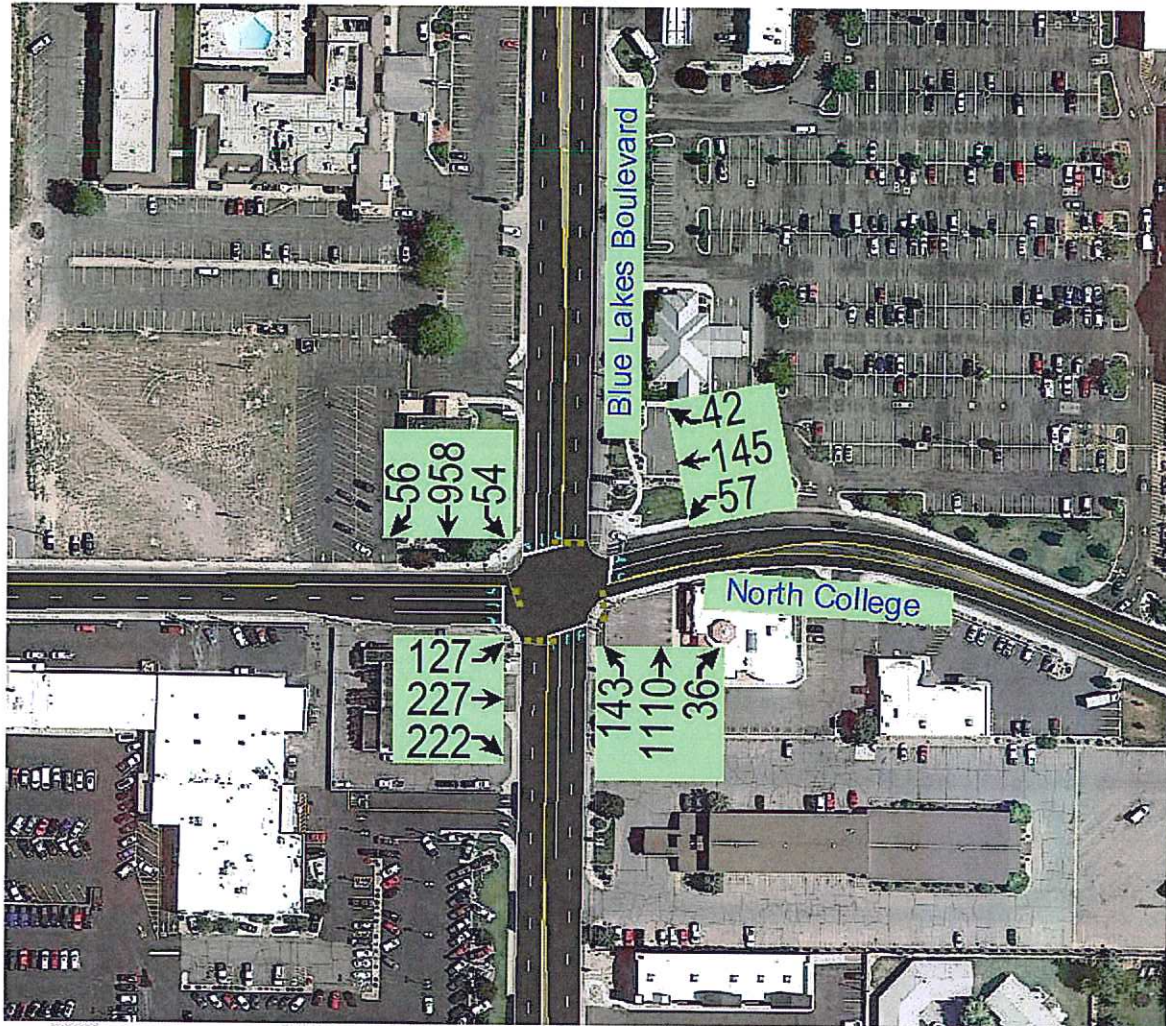
2. This represents the overall intersection LOS and delay (seconds / vehicle).

3. SB = Southbound approach, etc.

March 2018

Hales Engineering calculated the 95<sup>th</sup> percentile queue lengths for the study intersection. The queue reports can be found in Appendix B. No significant queueing is anticipated at the study intersection. The eastbound queue for the through and right-turn lanes is anticipated to be approximately 175 feet. This is an improvement of over 200 feet in length.





**Figure 8: Alternative 1 Traffic Volumes and Roadway Geometry**



## **FUTURE 2040 CONDITIONS**

There are no significant changes in land use planned with-in the study area. It is likely that some of the surrounding area will redevelop at some point in the future. There is also potential for redevelopment growth east and west of the North College Road / Blue Lakes Boulevard intersection. It is anticipated that traffic volumes will grow with in the study area.

### **Traffic Volumes**

Hales Engineering obtained future (2040) forecasted volumes from the Twin Falls travel demand model completed in 2018. Peak period turning movement counts were estimated using NCHRP 255 methodologies which utilize existing peak period turn volumes and future AWDT volumes to project the future turn volumes at the major intersections. The future 2040 evening peak hour volumes can be seen in Figure 9.

### **Alternative 1 – Eastbound Right-turn Pocket**

Using Synchro/SimTraffic and following the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition methodology, the existing (2018) evening peak hour level of service (LOS) was computed for the study intersections. The results of this analysis are reported in Table 12 (see Appendix B for the detailed LOS reports). Multiple runs of Synchro/SimTraffic were used to provide a statistical evaluation of the interaction between the intersections. As shown in Table 12, the intersection is anticipated to perform at an acceptable LOS.

Hales Engineering calculated the 95<sup>th</sup> percentile queue lengths for the study intersection. The queue reports can be found in Appendix B. Queueing at the North College Road / Blue Lakes Boulevard intersection in the north-, south-, and eastbound directions is anticipated to be approximately 320, 370, and 360 feet, respectively. The increase in traffic at this intersection will inevitably increase the queue lengths on all approaches. It is recommended that the eastbound right-turn pocket be at least 225 feet in length to accommodate the future 2040 traffic demands.



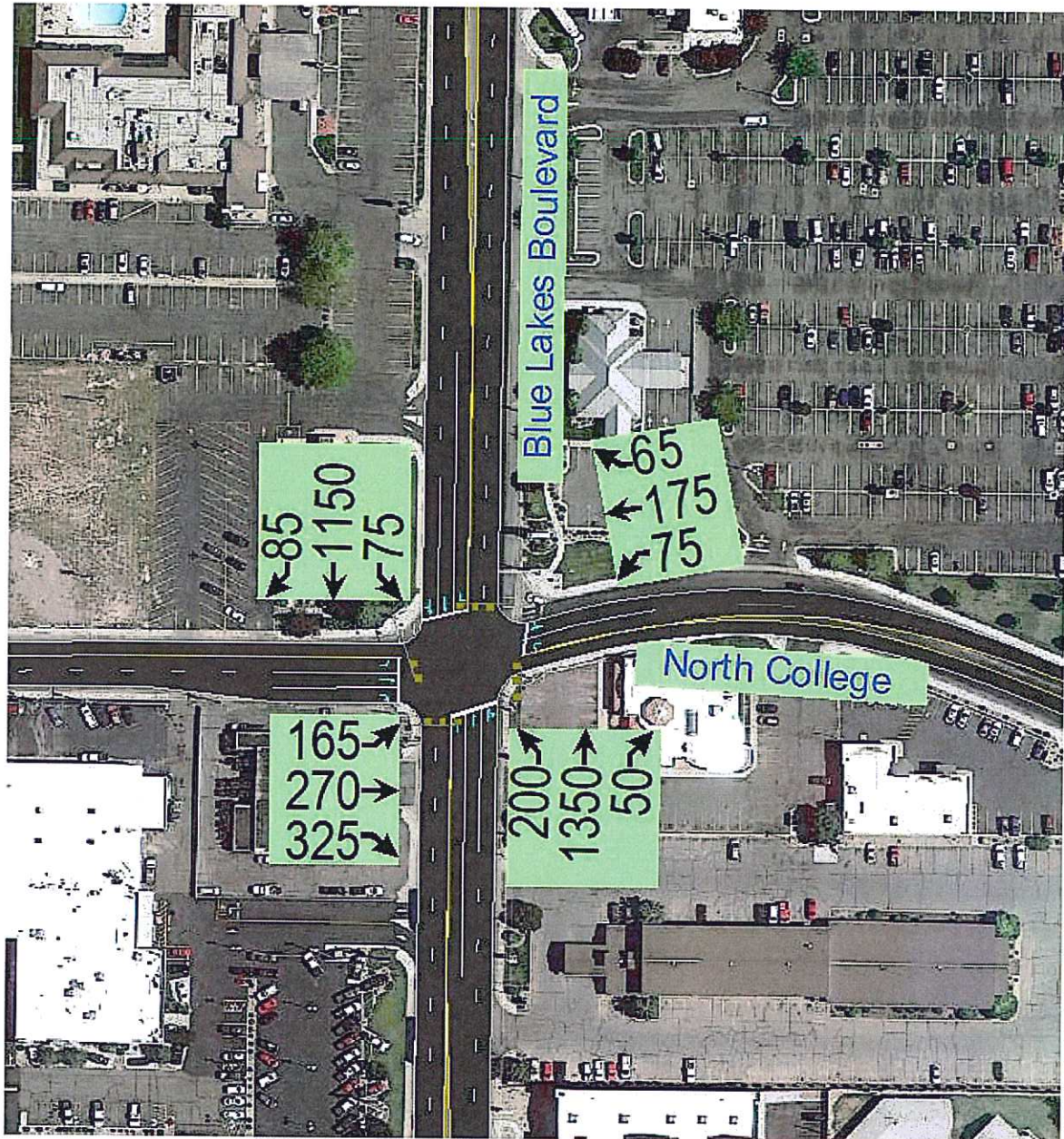


Figure 9: Future 2040 Traffic Volumes and Roadway Geometry



**Table 12 Future (2040) Alternative 1 Evening Peak Hour Level of Service**

| Intersection                              |         | Worst Approach          |                                    |                  | Overall Intersection               |                  |
|-------------------------------------------|---------|-------------------------|------------------------------------|------------------|------------------------------------|------------------|
| Description                               | Control | Approach <sup>1,3</sup> | Aver. Delay (Sec/Veh) <sup>1</sup> | LOS <sup>1</sup> | Aver. Delay (Sec/Veh) <sup>2</sup> | LOS <sup>2</sup> |
| North College Road / Blue Lakes Boulevard | Signal  | -                       | -                                  | -                | 24.5                               | C                |

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way-stop unsignalized intersections.

2. This represents the overall intersection LOS and delay (seconds / vehicle).

3. SB = Southbound approach, etc.

March 2018

## FINDINGS

The findings of the study are as follows:

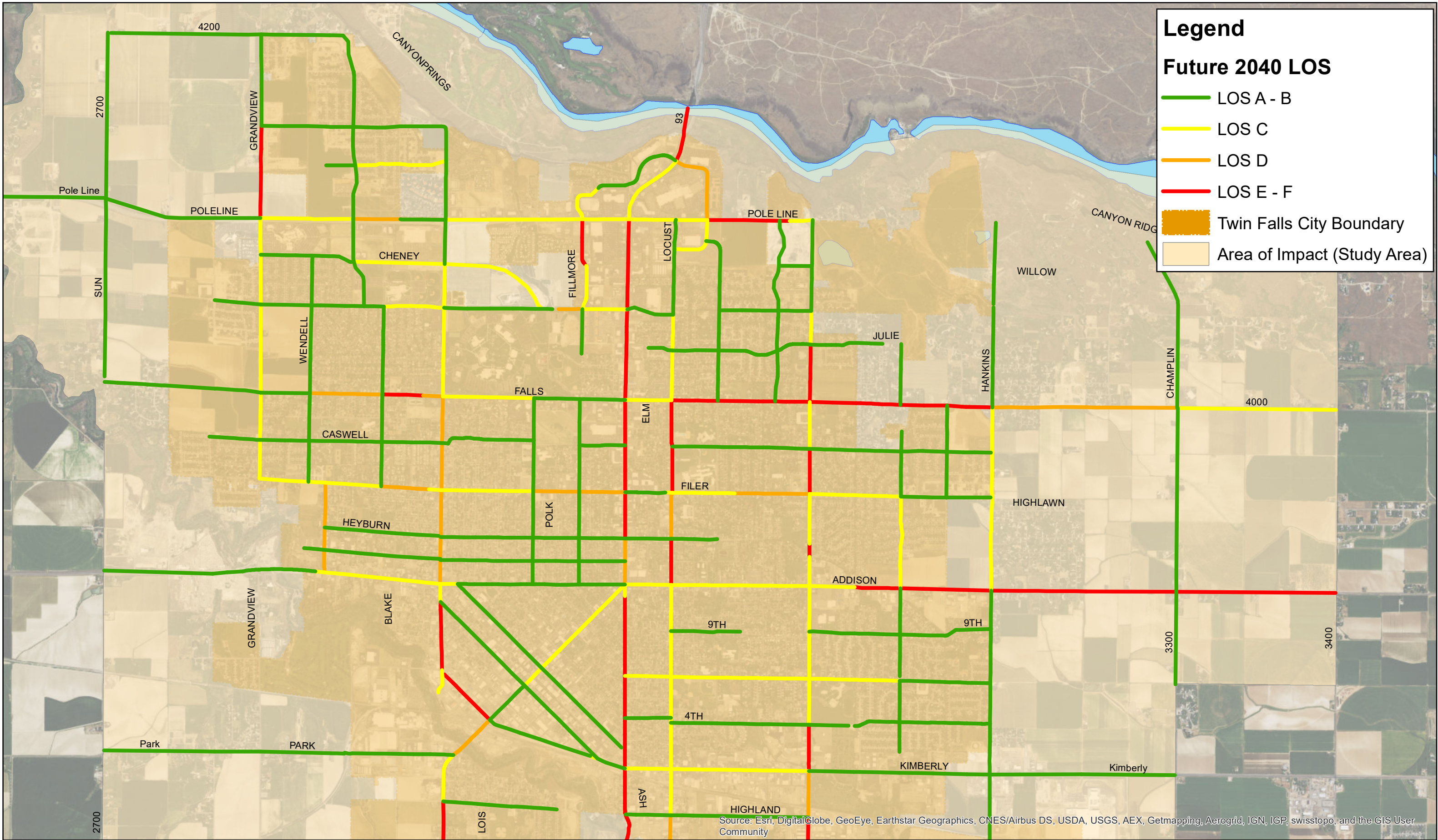
- Currently the North College Road / Blue Lakes Boulevard intersection performs at acceptable LOS during the evening peak hours.
  - Long queues exist in the eastbound through/right-turn lane, approximately 400 feet in length.
- A single alternative was completed for this intersection.
  - Adding an eastbound right-turn pocket is recommended for this intersection.
    - With the addition of the eastbound right-turn pocket, queues decreased by over 200 feet.
- A future 2040 analysis was completed to determine if a right-turn pocket is still sufficient for this intersection.
  - The study intersection is anticipated to perform at acceptable LOS.
  - Queueing is anticipated in the north-, south-, and eastbound directions of approximately 320, 370, and 360 feet, respectively.



| Capital Improvement Projects - Idaho Twin Falls TMP |                 |                    |                                                                                                                  |
|-----------------------------------------------------|-----------------|--------------------|------------------------------------------------------------------------------------------------------------------|
| Roadway                                             | From            | To                 | Improvement                                                                                                      |
| Blue Lakes Blvd                                     | Addison Ave     | Park Ave           | Widen to 3-lane cross-section                                                                                    |
| Blue Lakes Blvd                                     | Park Ave        | Orchard Dr         | Re-stripe to 3-lane cross-section                                                                                |
| Falls Ave                                           | Locust St       | Eastland Dr        | Widen to 3-lane cross-section                                                                                    |
| Falls Ave                                           | Eastland Dr     | Hankins Rd         | Widen to 5-lane cross-section                                                                                    |
| Addison Ave                                         | Eastland Dr     | 3400 E             | Widen to 5-lane cross-section                                                                                    |
| Bridgeview Blvd                                     | Blue Lakes      | Pole Line Rd       | Re-stripe to 3-lane cross-section                                                                                |
| Fillmore St                                         | Pole Line Rd    | North College Road | Widen to 3-lane cross-section                                                                                    |
| Eastland Dr                                         | Julie Ln        | Falls Ave          | Widen to 5-lane cross-section                                                                                    |
| Eastland Dr                                         | Stadium Blvd    | Addison Ave        | Widen to 5-lane cross-section                                                                                    |
| Eastland Dr                                         | 4th Ave         | Kimberly Rd        | Widen to 5-lane cross-section                                                                                    |
| Filer Ave                                           | Grandview Dr    | Martin St          | Widen to 3-lane cross-section                                                                                    |
| Fillmore St                                         | Falls Ave       | North College Road | Connect Fillmore between North College Rd and Falls Ave - 3 lane                                                 |
| Fillmore St                                         | Falls Ave       | Addison Ave        | Re-stripe to 3-lane cross-section                                                                                |
| Grandview Dr                                        | Canyon Rim Rd   | Pole Line Rd       | Wide to 3-lane cross-section; add 3-lane approaches to NB / SB sides of Grandview Dr / Pole Line Rd intersection |
| Locust St                                           | Pole Line Rd    | Highland Ave       | Re-stripe to 3-lane cross-section                                                                                |
| Martin St                                           | Filer Ave       | Addison Ave        | Widen to 3-lane cross-section                                                                                    |
| Pole Line Rd                                        | Bridgeview Blvd | Eastland Dr        | Widen to 5-lane cross-section                                                                                    |
| Washington St S                                     | Highland Ave    | Orchard Dr         | Widen to 5-lane cross-section                                                                                    |
| Washington St S                                     | Orchard Dr      | Airport            | 3600H Re-stripe to 3-lane cross-section                                                                          |
| Blue Lakes Blvd                                     | Bridge          | Pole Line Rd       | Widen to 7-lane cross-section                                                                                    |
| Washington St                                       | Addison Ave     | Shoshone St        | Re-stripe to 3-lane cross-section                                                                                |
| Hales Engineering, June 2018                        |                 |                    |                                                                                                                  |

6th  
 Cheney Fillmore - Madrone  
 3 lanes



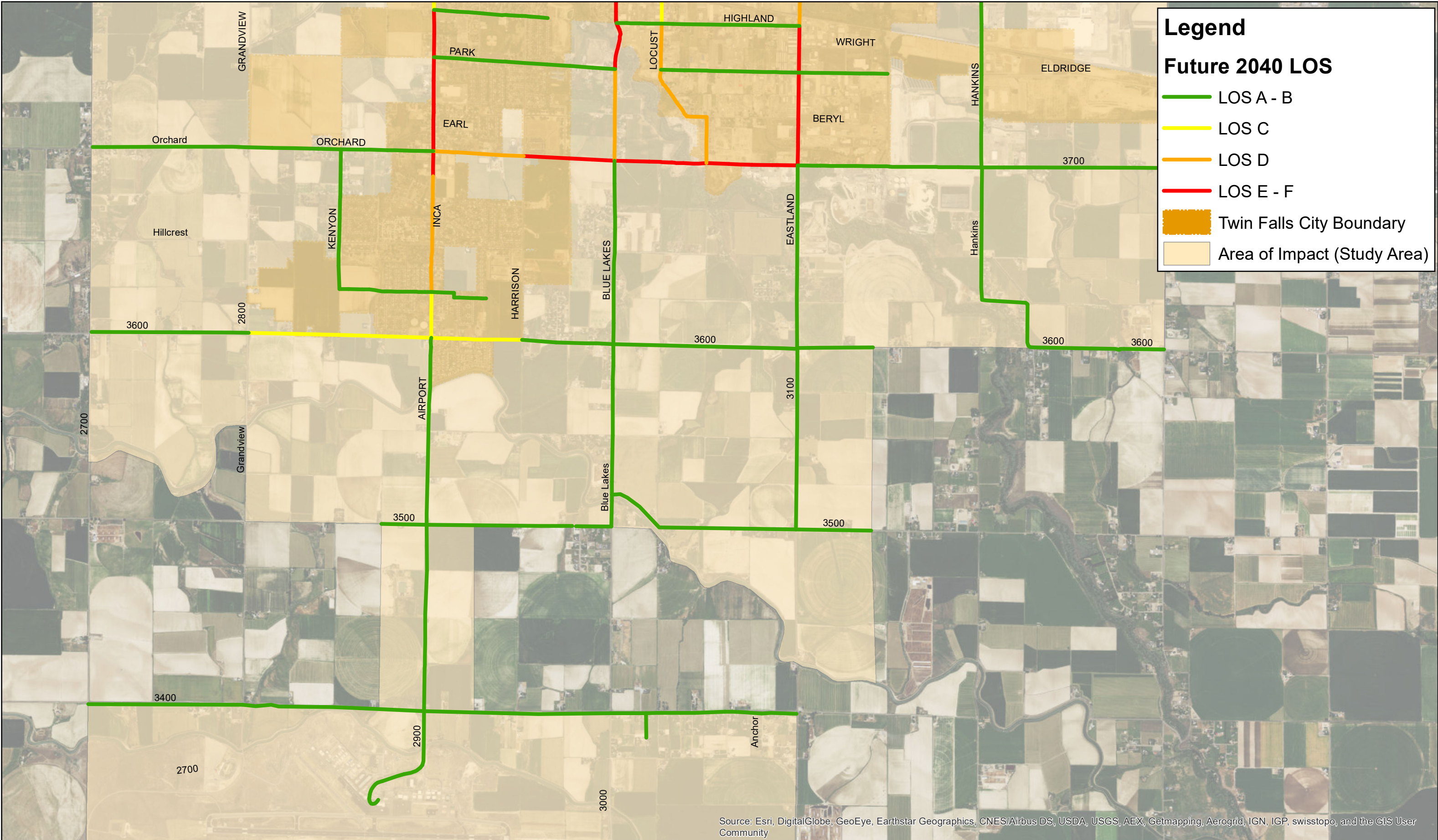


**Legend**

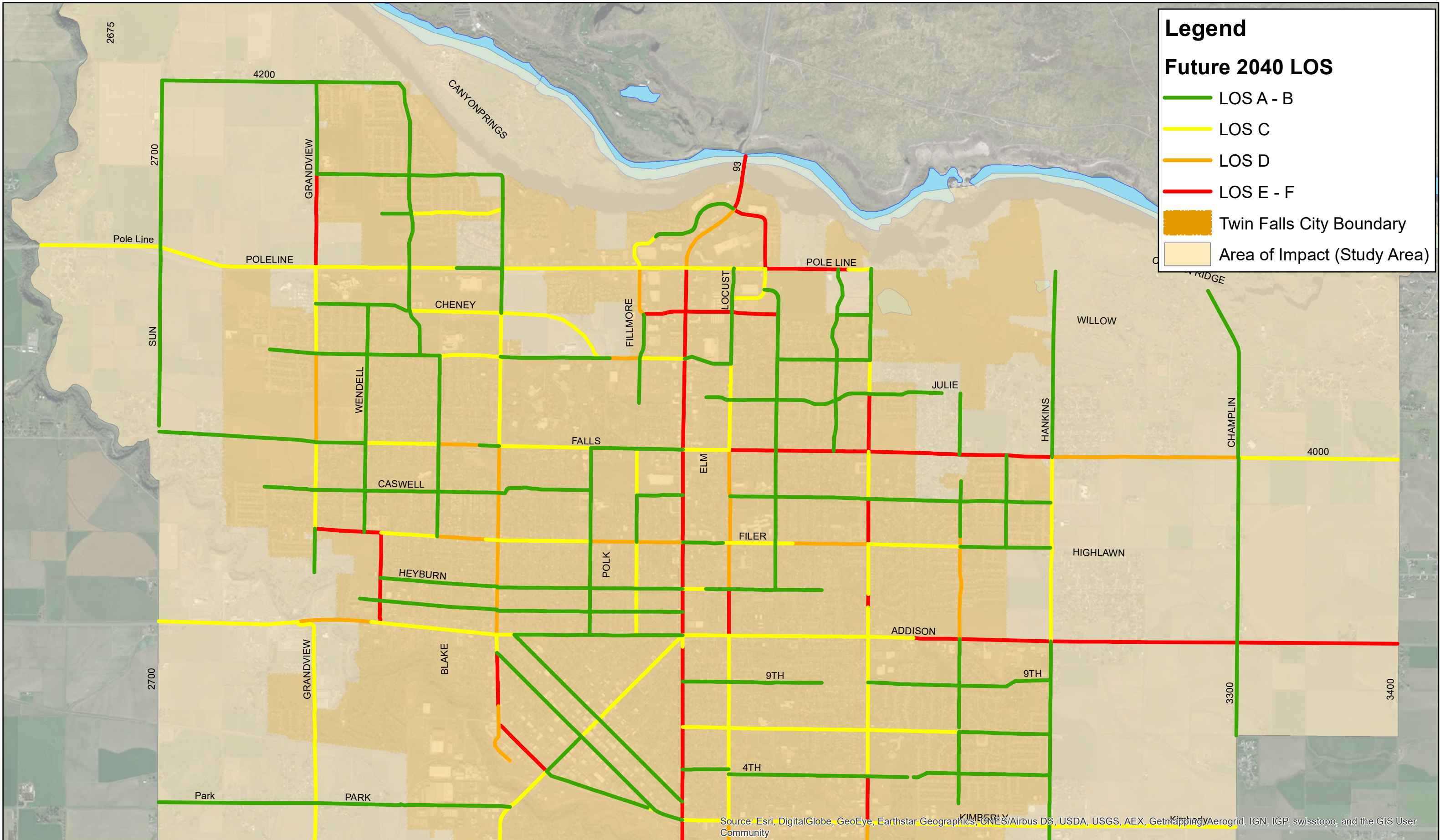
**Future 2040 LOS**

- LOS A - B
- LOS C
- LOS D
- LOS E - F
- Twin Falls City Boundary
- Area of Impact (Study Area)

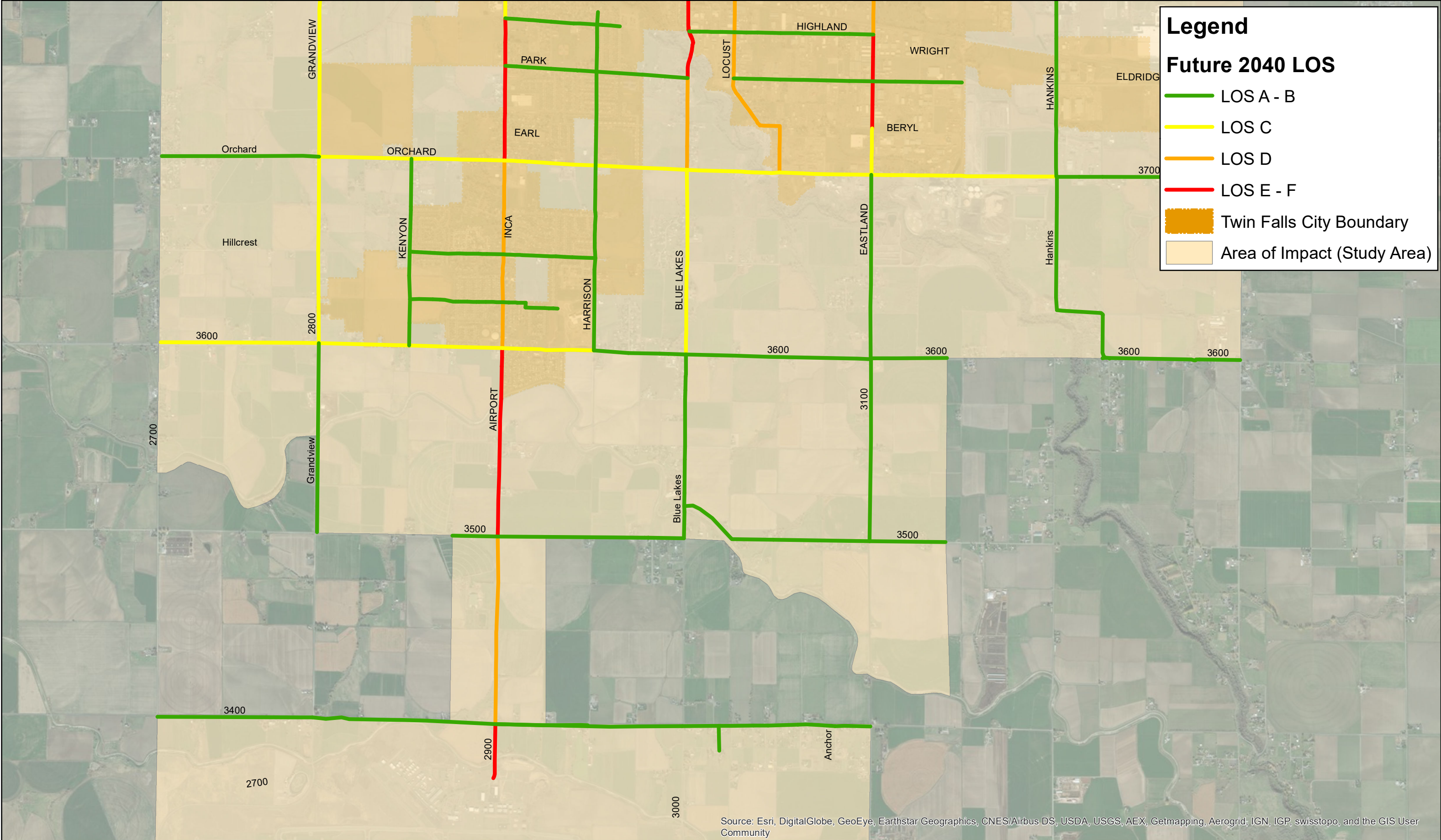




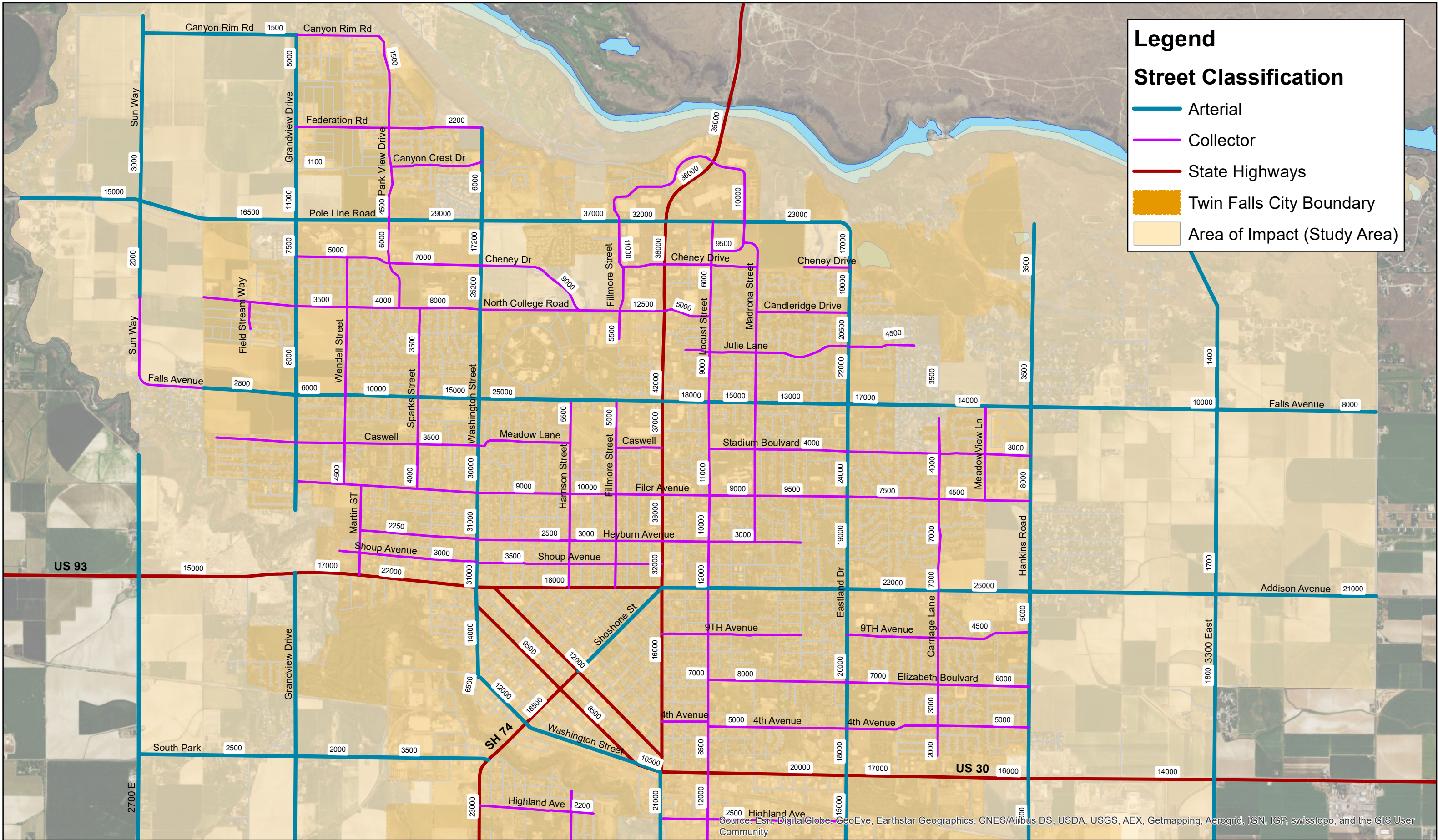




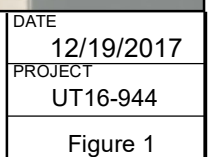














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# PUBLIC SQUARE (/publicsquare)

A CNU Journal



TRANSPORTATION (/PUBLICSQUARE/CATEGORY/TRANSPORTATION)

## Congestion can be good, study reports

Despite long-held beliefs of transportation officials, traffic congestion does not slow down economies, productivity, or job growth; and it may spur positive adaptation.

ROBERT STEUTEVILLE (/node/538) JUN. 6, 2018



(<http://www.facebook.com/sharer/sharer.php?u=https%3A//www.cnu.org/node/6970&title=Congestion%20can%20be%20good%2C%20study%20reports>)



(<http://twitter.com/intent/tweet?status=Congestion%20can%20be%20good%2C%20study%20reports%2Bhttps%3A//www.cnu.org/node/6970>)



(<http://www.linkedin.com/shareArticle?mini=1&url=https%3A//www.cnu.org/node/6970&title=Congestion%20can%20be%20good%2C%20study%20reports&source=ht>



(mailto:?subject=Check%20out%20Congestion%20can%20be%20good%2C%20study%20reports&body=https%3A//www.cnu.org/publicsquare/can-be-good-study-reports)

Yogi Berra, Hall of Fame baseball player and manager and renowned wordsmith, famously said, "Nobody goes there anymore, it's too crowded."



Transportation planners and elected officials have spent trillions of dollars under the assumption that Yogi was right—or to put it in more sophisticated terms, that traffic congestion inhibits economic growth and jobs, costing money and driving away business and activity. They needn't have worried so much—A groundbreaking study by researchers at the University of Colorado at Denver and Florida Atlantic University concludes that traffic congestion does not slow down economies, productivity, or job growth.

"Our findings suggest that a region's economy is not significantly impacted by traffic congestion. In fact, the results even suggest a positive association between traffic congestion and economic productivity as well as jobs," say authors Wes Marshall and Eric Dumbaugh.

"Without traffic congestion, there would be less incentive for infill development, living in an location-efficient place, walking, biking, and transit use, ridesharing, innovations in urban freight, etcetera," Marshall explained by email. "And if your city doesn't have any traffic congestion, there is something really wrong."

Based on 30 years of data from 89 US regions and controlling for reverse causality, this study sought to understand whether traffic congestion in US metropolitan areas should be considered a foe that needs to be jettisoned for the sake of the economy or merely an inconvenience with minimal economic impact, the authors note.



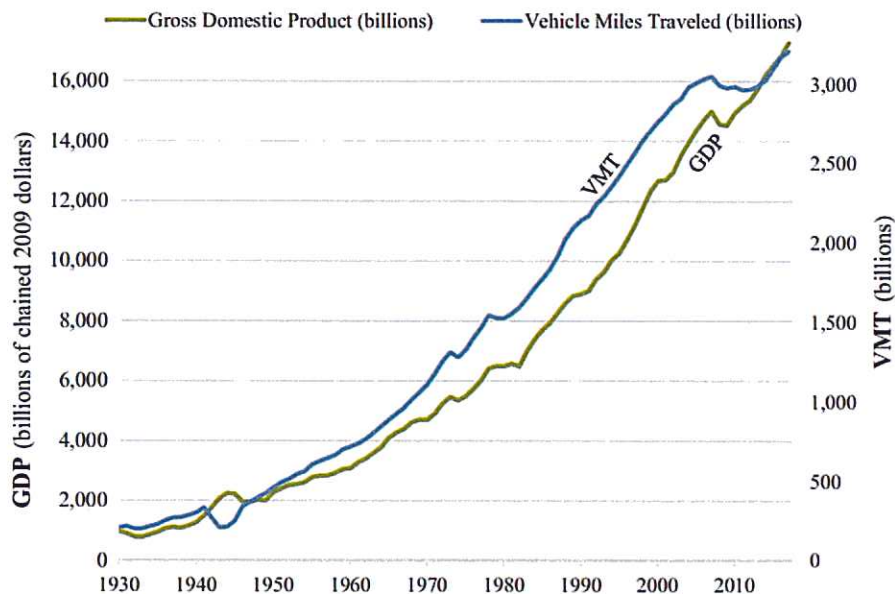
**Cities afraid of death by congestion.** The first paragraph reads: "A plan to widen part of Interstate 10 in metropolitan Phoenix from 14 lanes to 24 lanes is the USA's latest giant superhighway proposal designed to ease the kind of gridlock that some planners say could stunt economic growth."

*Conventional wisdom regarding traffic congestion suggests that higher levels of peak hour delay would be associated with decreases in GDP and jobs as well as higher wages to compensate workers for the increased costs of travel. We did not find this to be the case. For our regions, peak hour delay had a statistically significant and positive effect on both per capita GDP and jobs. This suggests that our current concerns about traffic congestion negatively impacting the economy may not be particularly well founded.*



*In terms of per capita income, the results were statistically insignificant. Thus, regions with more congestion were more economically productive with more jobs, and this took place without traffic congestion manifesting itself with higher labor costs.*

Conventional thinking sprang from the long-time correlation of rising vehicle miles traveled and rising gross domestic product (GDP). But correlation does not equal causation, and that correlation did not hold from the late 1990s to about 2013.



The relationship between vehicle miles traveled and gross domestic product since the 1930s. Source Marshall and Dumbaugh.

The mindset, though, is evident from a 2013 quote from the Federal Highway Administration.

“Congestion in 498 metropolitan areas caused urban Americans to travel 5.5 billion hours more and to purchase an extra 2.9 billion gallons of fuel for a congestion cost of \$121 billion.”

On the contrary, traffic congestion may entice positive adaptations. “For instance, traffic congestion could potentially lead to positive economic externalities such as infill development (via improved location efficiency), more efficient travel patterns, and/or agglomeration benefits. People may also adapt to high levels of traffic congestion by switching to other travel modes (Wheaton 2004, Chatman and Noland 2014).

“Case in point: of the ten most congested cities in the recent Urban Mobility Report, seven of those cities rank in the top ten for lowest driving mode share. Eight of the top ten congested cities rank in the top ten for highest transit mode share, and four rank in the top ten for highest active transportation mode shares.

“It would make sense for individuals and businesses to respond to traffic congestion by changing modes or locations, but there might also be higher-level shifts toward a greater concentration of industries—such as professional service and tech industries—that would be less impacted by traffic congestion than industries such as manufacturing.”

Marshall acknowledges that not all congestion is created equal, and further research is needed to explore the impacts of particular kinds of congestion. Former CNU president and CEO John Norquist proposed in a 2011 *CityLab* article (<https://www.citylab.com/transportation/2011/12/case-congestion/717/>) (then called *The Atlantic Cities*) that there is “good congestion” and “bad congestion,” just like there is “good



cholesterol” and “bad cholesterol.” The good congestion could be described as a place, like a city center with lots of destinations or a historic town with nice architecture, that is so popular and appealing that it is crowded. If you are stuck in traffic on a freeway, on the other hand, that’s bad congestion. The data used in this study could not distinguish qualitative congestion types, but new datasets might be able to do that, Marshall says.

The study is called *Revisiting the relationship between traffic congestion and the economy: a longitudinal examination of U.S. metropolitan areas*. (<https://link.springer.com/article/10.1007/s11116-018-9884-5>)

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(/publicsquare/author/robert-steuteville)