SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

DRAFT

Utah Department of Transportation

Draft State Environmental Study
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TABLE OF CONTENTS

Contents

Chapter 1 Project Need and Goal 1-1
1.1 Introduction 1-1
1.2 Study Area 1-1
1.3 Transportation Planning 1-2
1.3.1 Wasatch Front Regional Council 2019–2050 Regional Transportation Plan 1-2
1.3.2 Unified Transportation Plan 1-4
1.3.3 Local Plans 1-4
1.4 Traffic Analysis 1-5
1.4.1 Population and Employment Growth 1-5
1.4.2 Average Daily Volumes and Vehicle Miles Traveled 1-5
1.4.3 Level of Service and Intersection Delay 1-7
1.4.4 Travel Time 1-9
1.5 Need for the Project 1-10
1.6 Project Goal 1-10
Chapter 2 Alternatives 2-1
2.1 Introduction 2-1
2.2 Alternative Development and Screening 2-1
2.2.1 No-Action Alternative 2-1
2.2.2 Build Alternatives 2-1
2.2.3 Traffic Analysis 2-2
2.2.4 Safety Considerations 2-5
2.3 Preferred Alternative 2-6
2.3.1 Roadway Components 2-7
2.3.2 Trail Components 2-7
Chapter 3 Environmental Analysis 3-1
3.1 Introduction 3-1
3.1.1 Issues Considered but not Evaluated in Detail 3-1
3.1.2 Study Area 3-2
3.2 Land Use 3-2
3.2.1 Methodology 3-3
3.2.2 Existing Conditions 3-3
3.2.3 Expected Impacts 3-4
3.2.4 Mitigation 3-5
3.3 Farmland 3-5
3.3.1 Methodology 3-5
3.3.2 Existing Conditions 3-5
3.3.1 Expected Impacts 3-5

TABLE OF CONTENTS

3.3.2 Mitigation 3-6
3.4 Right-of-Way and Relocations 3-7
3.4.1 Methodology 3-7
3.4.2 Existing Conditions 3-7
3.4.3 Expected Impacts 3-7
3.4.4 Mitigation 3-9
3.5 Pedestrians and Bicyclists 3-9
3.5.1 Methodology 3-9
3.5.2 Existing Conditions 3-9
3.5.3 Expected Impacts 3-9
3.5.1 Mitigation 3-10
3.6 Economics 3-11
3.6.1 Methodology 3-11
3.6.2 Existing Conditions 3-11
3.6.3 Expected Impacts 3-11
3.6.4 Mitigation 3-11
3.7 Noise 3-12
3.7.1 Methodology 3-12
3.7.2 Existing Conditions 3-13
3.7.3 Expected Impacts 3-13
3.7.4 Mitigation 3-18
3.8 Visual Resources 3-20
3.8.1 Methodology 3-20
3.8.2 Existing Conditions 3-20
3.8.3 Expected Impacts 3-22
3.8.4 Mitigation 3-22
3.9 Cultural Resources 3-22
3.9.1 Methodology 3-22
3.9.2 Existing Conditions 3-23
3.9.3 Expected Impacts 3-23
3.9.4 Consultation 3-24
3.9.5 Mitigation 3-24
3.10 Wetlands, Other Waters of the US, and Water Resources 3-24
3.10.1 Methodology 3-25
3.10.2 Existing Conditions 3-25
3.10.3 Expected Impacts 3-27
3.10.4 Mitigation 3-28
3.11 Threatened and Endangered Species 3-28
3.11.1 Methodology 3-28
3.11.2 Existing Conditions 3-28

TABLE OF CONTENTS

3.11.3 Expected Impacts 3-29
3.11.4 Mitigation 3-29
3.12 Wildlife 3-29
3.12.1 Methodology 3-29
3.12.2 Existing Conditions 3-29
3.12.3 Expected Impacts 3-31
3.12.4 Wildlife Mitigation 3-31
3.13 Construction Impacts and Mitigation 3-31
3.13.1 Land Use and Farmland 3-31
3.13.2 Right-of-Way 3-32
3.13.3 Utilities 3-32
3.13.4 Traffic 3-32
3.13.5 Pedestrians and Bicyclists 3-32
3.13.6 Air Quality 3-33
3.13.7 Noise 3-33
3.13.8 Visual/Aesthetic Impacts 3-33
3.13.9 Cultural and Paleontological Resources 3-33
3.13.10 Wetlands 3-34
3.13.11 Water Quality 3-34
3.13.12 Wildlife 3-34
3.13.13 Invasive and Noxious Weeds 3-34
3.14 Impacts of the No-Action Alternative 3-35
3.15 Impact Summary 3-35
Chapter 4 Public and Agency Involvement 4-1
4.1 Agency Scoping 4-1
4.2 Public Scoping 4-1
4.2.1 Public Scoping Meeting 4-1
4.2.2 Public Scoping Comment Period 4-1
4.2.3 Additional Scoping Outreach 4-2
4.3 Additional Stakeholder Outreach 4-2
4.3.1 Public Comment Period and Hearing 4-3
Chapter 5 Required Permits and Mitigation 5-1
Chapter 6 References 6-1

TABLE OF CONTENTS

Figures

Figure 1-1: Study Area Map 1-2
Figure 1-2: Regional Transportation Plan Projects in the Study Area 1-4
Figure 1-3: Traffic Volume Percent Changes from Existing Conditions (2018) to Future (2050) Projections 1-6
Figure 1-4: Existing AM Arterial and Intersection Level of Service 1-8
Figure 1-5: Future (2050) AM Arterial and Intersection Level of Service 1-9
Figure 2-1: Build Alternative Alignments 2-2
Figure 2-2: Preferred Alternative 2-6
Figure 2-3: SR-193 Typical Cross-Section Between 3000 West and West Davis Corridor 2-7
Figure 2-4: SR-193 Typical Cross-Section Between West Davis Corridor and 4500 West 2-7
Figure 2-5: Preferred Alternative Detail Plan View (1 of 9) 2-8
Figure 2-6: Preferred Alternative Detail Plan View (2 of 9) 2-8
Figure 2-7: Preferred Alternative Detail Plan View (3 of 9) 2-9
Figure 2-8: Preferred Alternative Detail Plan View (4 of 9) 2-9
Figure 2-9: Preferred Alternative Detail Plan View (5 of 9) 2-10
Figure 2-10: Preferred Alternative Detail Plan View (6 of 9) 2-10
Figure 2-11: Preferred Alternative Detail Plan View (7 of 9) 2-11
Figure 2-12: Preferred Alternative Detail Plan View (8 of 9) 2-11
Figure 2-13: Preferred Alternative Detail Plan View (9 of 9) 2-12
Figure 3-1: Existing Land Use 3-3
Figure 3-2: Local Land Use Planning with West Davis Corridor and the SR-193 Preferred Alternative 3-4
Figure 3-3: Farmland and Designated Agricultural Protection Area 3-6
Figure 3-4: Proposed Right-of-Way and Parcels with Property Acquisition 3-7
Figure 3-5: Location of New Sidewalks and Realignment of the Syracuse Trail 3-10
Figure 3-6: Location of Noise Receptors West of the West Davis Corridor 3-14
Figure 3-7: Location of Noise Receptors East of the West Davis Corridor 3-14
Figure 3-8: A Typical Existing View from the Trails Edge Subdivision (3350 West) Facing Northwest 3-21
Figure 3-9: A typical Existing View of the Study Area for Residents and Drivers Along 4500 West 3-21
Figure 3-10: Potentially Jurisdictional Wetlands and Waters of the U.S. 3-26
Figure 3-11: Water Rights Points of Diversion, Canals, and Open Water 3-27

Tables

Table 1-1: Existing and Future (2050) Daily Volume Comparisons 1-6
Table 1-2: Existing and Future (2050) Vehicle Miles Traveled by Roadway Type 1-7
Table 1-3: Existing and Future (2050) Intersection Delay and Level of Service 1-8
Table 1-4: Existing and Future (2050) Travel Times 1-10
Table 2-1: 2050 Daily Two-Way Traffic Volumes (vehicles/day) 2-3
Table 2-2: 2050 Study Area Vehicle Miles Traveled by Alternative 2-4
Table 2-3: 2050 Average Volume (vehicles/day) by Alternative 2-4
Table 2-4: 2050 Travel Times (minutes) by Alternative 2-5
Table 3-1: Right-of-Way Impacts 3-8
Table 3-2: Noise Abatement Criteria by Land Use Activity Category 3-12
Table 3-3: Modeled Existing and Future Noise Levels 3-15
Table 3-4: State-Listed Species for Davis County and Likelihood of Occurrence in the Study Area 3-30
Table 3-5: Impact Assessment Summary 3-36
Table 5-1: Permits, Clearances, and Mitigation Commitments 5-1

Appendices

APPENDIX A: Traffic Memoranda
APPENDIX B: Noise Study
APPENDIX C: Cultural and Paleontological Clearances
APPENDIX D: Scoping Report

Acronyms and Abbreviations

AGRC	Utah Automated Geographic Reference Center
APA	Agricultural Protection Areas
APE	area of potential effects
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLG	Certified Local Government
CWA	Clean Water Act
dBA	A-weighted decibels
EIS	Environmental Impact Statement
EPA	US Environmental Protection Agency
ESA	Endangered Species Act
GIS	Geographic Information System
HCP	Habitat Conservation Plan
I-15	Interstate 15
IPaC	Information for Planning and Consultation
LOS	Level of Service
LRTP	Long-Range Transportation Plan
NAAQS	National Ambient Air Quality Standards
NAC	noise-abatement criteria
PM	particulate matter
RCRA	Resource Conservation and Recovery Act
ROW	right-of-way
SES	State Environmental Study
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SR	State Route
TIP	Transportation Improvement Programs
UDEQ	Utah Department of Environmental Quality
UDOT	Utah Department of Transportation
UGS	Utah Geological Survey
US	United States
USACE	US Army Corps of Engineers
USBOR	US Bureau of Reclamation
WFRC	Wasatch Front Regional Council
WMA	Waterfowl Management Area
WOTUS	Waters of the United States

Chapter 1 Project Need and Goal

1.1 Introduction

The Utah Department of Transportation (UDOT) has prepared this State Environmental Study (SES) to evaluate a proposed extension of State Route 193 (SR-193) from 3000 West to 4500 West (SR-110) through Syracuse City and West Point City in Davis County, Utah. In this SES, UDOT provides the following:

- An evaluation of existing and future needs for transportation improvements to SR-193,
- An assessment of the potential impacts from each alternative (including a No-Action Alternative), and
- An opportunity for the public to review and comment on this SES document prior to a decision by UDOT.

1.2 Study Area

SR-193 is what is known as a "principal arterial" roadway. It extends from 3000 West in Syracuse on the west to US Highway 89 in Layton on the east. On the east side of Interstate 15 (I-15), SR-193 provides access to the South Gate entrance of Hill Air Force Base and to commercial and residential areas in Layton. On the west side of I-15, SR-193 is the main route to reach Clearfield, and it provides access to the east entrance of the Freeport Center, a large manufacturing, warehousing, and distribution center in Clearfield. SR-193 also provides access to the rapidly developing residential areas in West Point and Syracuse.

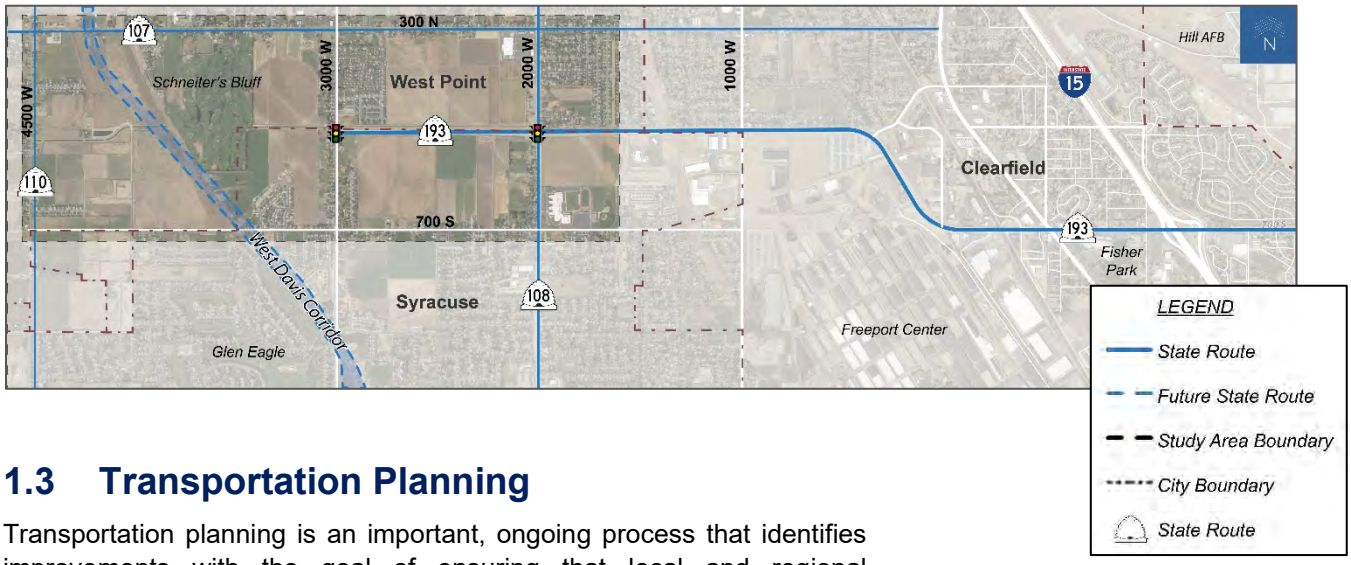
What is a principal arterial roadway?

Each roadway has a functional classification that defines its role in serving local, regional, and interstate travel needs. Principal arterial roadways support relatively high speeds and traffic volumes, connect to other regional routes and destinations, and provide access to adjacent land uses.

The study area encompasses incorporated portions of West Point and Syracuse (see Figure 1-1). This study area for this SES extends from 4500 West (on the west) to 2000 West (on the east), and from 300 North (on the north) to 700 South (on the south). The study area consists of two distinct sections, roughly separated by 3000 West, which is where SR-193 currently terminates.

The largest single land use in the western section of the study area is Schneiter's Bluff Golf Course, which is surrounded by farmland. However, residential developments are rapidly expanding into this portion of the study area from all directions. The future West Davis Corridor and the existing Syracuse Trail will extend north and south to the western portion of the golf course. East of 3000 West, SR-193 is a four-lane arterial roadway (two lanes of travel in each direction) with 8-foot-wide outside shoulders and dedicated right- and left-turn lanes at intersections with 3000 West and 2000 West.

Figure 1-1: Study Area Map



1.3 Transportation Planning

Transportation planning is an important, ongoing process that identifies improvements with the goal of ensuring that local and regional transportation systems are as safe and efficient as possible. The Wasatch Front Regional Council (WFRC), UDOT, and surrounding municipalities are responsible for transportation planning in the study area. The following sections discuss various transportation planning efforts and how they are related to the project outlined in this document, the extension of SR-193 between 3000 West and 4500 West.

1.3.1 Wasatch Front Regional Council 2019–2050 Regional Transportation Plan

According to federal law, WFRC is responsible for developing a regional transportation plan based on a comprehensive analysis of the region's transportation systems. The plan will be designed for use over the next 30 years, and it must be fiscally constrained.

After an analysis that took into consideration all modes of transportation, including highways, public transit, trucking, and pedestrian and bicycle travel, the WFRC *2019–2050 Regional Transportation Plan* was developed, and it includes plans for the extension of SR-193 from 3000 West to 4500 West. This includes an interchange at the West Davis Corridor, which is a component of another transportation improvement project (Phase I east of West Davis Corridor, Phase II west of West Davis Corridor; WFRC Project Number: R-D-5 and R-D-6, respectively).

The following is a list of other projects in or near the study area that would add capacity to the regional roadway network or provide public transit and bicycle facilities (WFRC 2019):

» West Davis Corridor: This will be a new limited-access highway that will pass through the study area in the southeast-northwest directions and will connect the I-15/Legacy Parkway in Farmington to Ogden's 12th Street (SR-39). The West Davis Corridor will initially be constructed with one travel lane in each direction (Phase I; WFRC Project Number: R-D-30), but after

What is the WFRC and what is a Regional Transportation Plan?

WFRC is the metropolitan planning organization for the Wasatch Front urban area and is responsible for developing and maintaining a Regional Transportation Plan for Salt Lake, Davis, and Weber counties. WFRC works with UDOT, Utah Transit Authority, Utah Division of Air Quality, and regional cities and counties to develop the regional transportation plan to include new transportation systems and upgrades to existing transportation infrastructure. Projects are divided into the following phases:

- Phase 1: 2019-2030
- Phase 2: 2031-2040
- Phase 3: 2041-2050

2041, the roadway will be widened to include an additional travel lane in each direction (Phase 3; R-D-29).

- 2000 West: This project will widen the 2000 West roadway from north of the interchange with West Davis Corridor to Antelope Drive (SR-127) (Phase 2; WFRC Project Number: R-D-32).
- 2000 West: This project will widen the 2000 West roadway north of 300 North (SR-107) to Weber County line (Phase 1; WFRC Project Number: R-D-31).
- Antelope Drive: This project will widen the Antelope Drive roadway between West Davis Corridor and 2000 West and (Phase 1; WFRC Project Number: R-D-10).
- SR-193: This project will widen the SR-193 roadway east of 1000 West (Phase 3; WFRC Project Number: R-D-7).
- 500 West: This project will extend the 500 West roadway from 1980 South to C Street in Clearfield (Phase 1; WFRC Project Number: R-D-34).
- 4000 West Bike Lane: This project will add a shared lane along 4000 West from 1200 South to 300 North (Phase 3; WFRC Project Number: A-D-75).
- 3000 West Bike Lane: This project will add a dedicated bike lane to 3000 West from 1700 South to the Weber County Line (Phase 2; WFRC Project Number: A-D-78).
- Antelope Drive Bike Lane: This project will add a dedicated bike lane to Antelope Drive from the Antelope Island payment booth to 2000 West (Phase 1; WFRC Project Number: A-D-18)

Figure 1-2 shows the projects that are currently part of the WFRC *2019–2050 Regional Transportation Plan* and are planned for completion by 2050, which includes the project discussed in this document, the extension of SR-193 between 3000 West and 4500 West.

Figure 1-2: *Regional Transportation Plan Projects in the Study Area*

1.3.2 Unified Transportation Plan

Another transportation plan related to the extension of SR-193 is Utah's *Unified Transportation Plan 2015–2040* (Unified Plan), which was created by UDOT, WFRC, and other metropolitan planning organizations. The Unified Plan is a summary of all the individual agency plans, including the WFRC's regional transportation plan. The Unified Plan contains a comprehensive list of projects anticipated through 2040, and so any project listed in the WFRC *2019–2050 Regional Transportation Plan* is also included in the Unified Plan.

1.3.3 Local Plans

Two local planning documents discuss the extension of SR-193: the Syracuse general plan (*2050 Syracuse*) and the *West Point City General Plan*. Both documents include planned transportation improvements in the study area, including West Davis Corridor and extending SR-193 to West Davis Corridor. *2050 Syracuse* also shows an interchange at West Davis Corridor and SR-193 at approximately 400 South (Syracuse 2019; West Point 2017).

1.4 Traffic Analysis

Traffic analyses are employed to determine how the traveling public would be affected by population and employment growth in a particular area. The traffic analysis that was conducted for the study area considered daily volumes and vehicles miles traveled, level of service, and travel times. Existing and future (2050) conditions were compared to measure predicted roadway performance. In this section, UDOT offers a summary of the results of this analysis. Those wanting additional detail or information may refer to the *SR 193 SES - Existing and 2050 No Action Traffic Analysis* in Appendix A.

1.4.1 Population and Employment Growth

The traffic analysis predicts that the population in the study area will more than double, from 12,650 people in 2018 to 31,370 people in 2050, which represents an average annual increase of 2.6 percent. Employment projections are predicted to increase at a higher rate (5.7 percent average annual rate) from 2,480 jobs in 2018 to 14,750 jobs in 2050.

1.4.2 Average Daily Volumes and Vehicle Miles Traveled

The study area traffic analysis revealed that existing daily traffic volumes (i.e., vehicles per day on a roadway segment) are within the typical limits for each roadway in the study area except 300 North (between 3000 West and 2000 West) and 3000 West (see Table 1-1). However, it is predicted that population growth, combined with SR-193 terminating at 3000 West, will increase daily volumes on the nearby non-arterial roadways. Major collector roadways, including 300 North and 700 South, are predicted to experience significant increases in traffic (100% and 42% increases, respectively). By contrast, SR-193—a principal arterial roadway designed to carry over 20,000 more vehicles on a daily basis than collector roadways—would experience a relatively insignificant increase of 12 percent (see Table 1-1 and Figure 1-3).

What are collector roadways?

Collector roadways (major city streets) provide access to local neighborhoods and businesses, and also funnel traffic to and from higher-capacity arterial roadways and freeways.

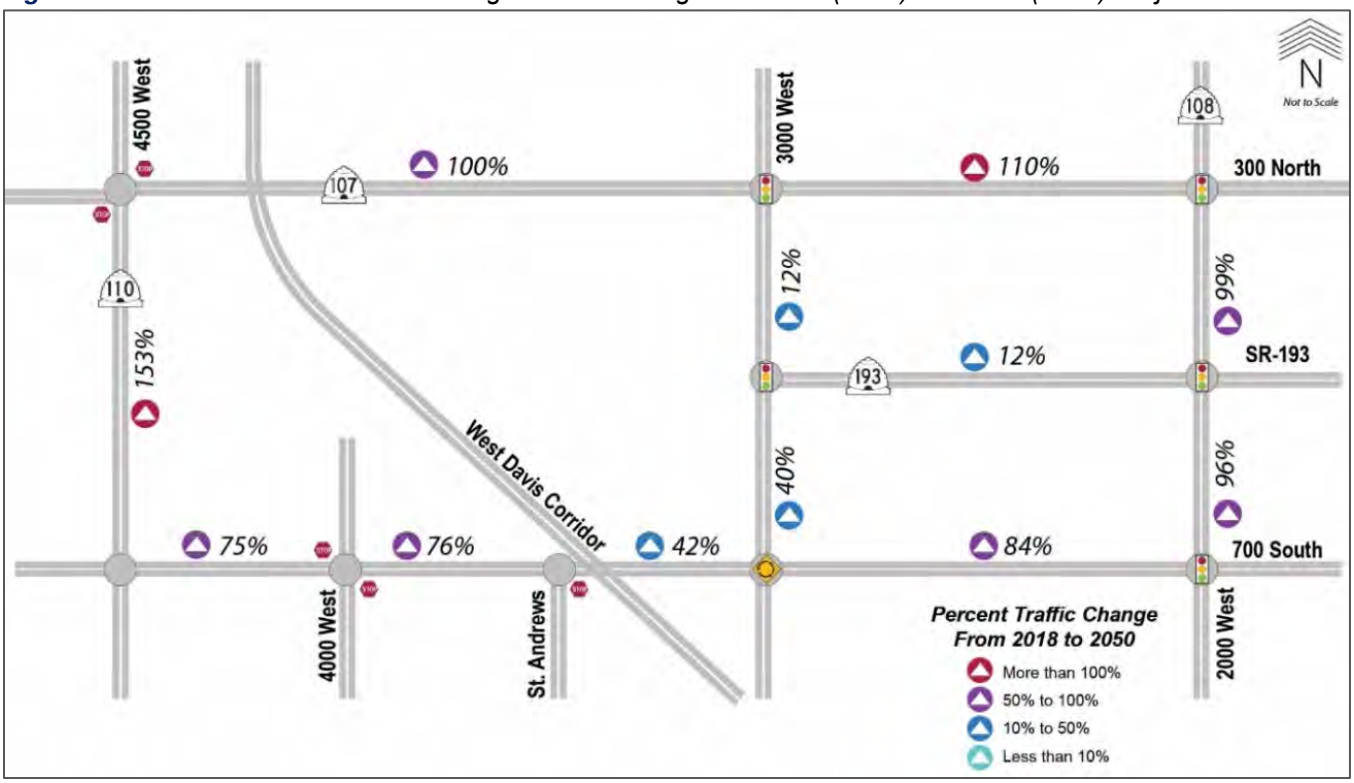
In West Point and Syracuse, 300 North and 700 South, and 3000 West are examples of collector roadways. SR-193 and Antelope Drive are arterial roadways, and I-15 and the future West Davis Corridor are freeways.

Table 1-1: *Existing and Future (2050) Daily Volume Comparisons*

Road	Type	Typical Daily Volume	Segment	Existing Daily Volume	2050 Daily Volume	% Change	Exceeds Typical Volume
300 North	Major Collector	1,100 - 6,300	4500 W to 3000 W	5,100	9,200	100%	Yes
			3000 W to 2000 W	7,600	13,200	110%	Yes
SR-193	Principal Arterial	7,000 - 27,000	3000 W to 2000 W	10,800	12,100	12%	No
700 South	Minor Collector	1,100 - 6,300	4500 W to 4000 W	1,200	2,100	75%	No
			4000 W to West Davis Corridor	2,100	3,700	76%	No
			West Davis Corridor to 3000 W	5,600	8,500	42%	Yes
			3000 W to 2000 W	3,900	7,000	84%	Yes
4500 West	Minor Arterial	3,000 - 14,000	300 N to 700 S	3,800	9,600	153%	No
3000 West	Major Collector	1,100 - 6,300	300 N to SR 193	11,600	13,000	12%	Yes
			SR 193 to 700 S	9,500	13,300	40%	Yes
2000 West	Principal Arterial	7,000 - 27,000	300 N to SR 193	21,100	42,000	99%	Yes
			SR-193 to 700 S	18,100	35,500	96%	Yes

Source: *SR-193 Traffic Memo (Appendix A)*

Figure 1-3: *Traffic Volume Percent Changes from Existing Conditions (2018) to Future (2050) Projections*



Source: *SR-193 Traffic Memo (Appendix A)*

As part of the study area traffic analysis, vehicle miles traveled was calculated to better understand the interaction between arterial and collector roadways within the study area. The addition of the West Davis Corridor by 2050 will provide an alternate direct connection to employment centers south of the study area in Davis and Salt Lake counties. However, the closest interchange would be approximately 1.2 miles south of the study area at Antelope Drive. Without a direct connection to West Davis Corridor, it is predicted that vehicle miles traveled in the study area on collector roadways would increase by 75 percent, from 38,900 miles in 2018 to 68,000 miles in 2050 (see Table 1-2).

What is vehicle miles traveled?

Vehicle miles traveled is a measurement of the amount of travel for all vehicles in a geographic region over a period of time.

Table 1-2: *Existing and Future (2050) Vehicle Miles Traveled by Roadway Type*

Roadway Type	Vehicle Miles Traveled			Length (Miles)	
	2018	2050	% Change	2018	2050
Collector	38,900	68,000	75%	8.0	8.5
Arterial	90,900	162,400	79%	9.0	9.0
Freeway[1]	N/A	41,700	-	N/A	2.2
Total	**129,800**	**272,100**	**110%**	**17.0**	**19.7**

Note: *1. Freeway vehicle miles traveled are attributed to West Davis Corridor*

Source: *SR-193 Traffic Memo (Appendix A)*

1.4.3 Level of Service and Intersection Delay

According to the study area traffic analysis, intersections in the study area currently operate at acceptable Level of Service (LOS) ratings (i.e., LOS D or better) during both peak periods. Although average daily volumes are expected to increase by 2050 (see Section 1.4.2), LOS would remain almost unchanged in 2050. The only exceptions are 700 South and 3000 West, where LOS ratings would deteriorate to LOS E, which is unacceptable (see Table 1-3). Figures 1-4 and 1-5 illustrate the existing and future (2050) LOS ratings during the morning peak hour, which generally represents the worst-case future traffic condition because of the excessive delay at 700 South and 3000 West.

What does Level of Service mean?

Level of service (LOS) is a method of measuring and describing the performance of an intersection or road. The LOS method uses letter grades ranging from A (for free-flowing traffic conditions) to F for failing conditions (extremely congested, stop-and-go traffic).

For signalized intersections, an overall LOS is reported for the entire intersection based on the average delay of all vehicles (A for the least amount of delay, F for the longest delays). For unsignalized intersections, LOS is reported based on the average vehicle delay for the worst approach.

Table 1-3: *Existing and Future (2050) Intersection Delay and Level of Service*

Intersection	AM Peak Hour		PM Peak Hour	
	Existing LOS/Delay (sec/veh)	2050 No Action LOS/Delay (sec/veh)	LOS / Delay (sec/veh)	LOS / Delay (sec/veh)
300 North & 4500 West	A / 10 (WB)	C / 24	B / 12 (WB)	C / 24
300 North & 3000 West	B / 11	B / 18	B / 13	B / 17
SR 193 & 3000 West	A / 9	B / 11	B / 13	B / 15
SR 193 & 2550 West	n/a	C / 27	n/a	C / 30
SR 193 & 2000 West	C / 25	D / 35	C / 24	D / 37
700 South & 4500 West	A / 9 (EB)	A / 8 (EB)	A / 8 (EB)	A / 8 (WB)
700 South & 4000 West	A / 9 (NB)	A / 9 (SB)	A / 8 (NB)	A / 10 (NB)
700 South & St Andrews Drive	A / 8 (NB)	A / 8 (NB)	A / 7 (NB)	A / 8 (NB)
700 South & 3000 West	A / 5	E / 48	A / 5	B / 11

Figure 1-4: *Existing AM Arterial and Intersection Level of Service*

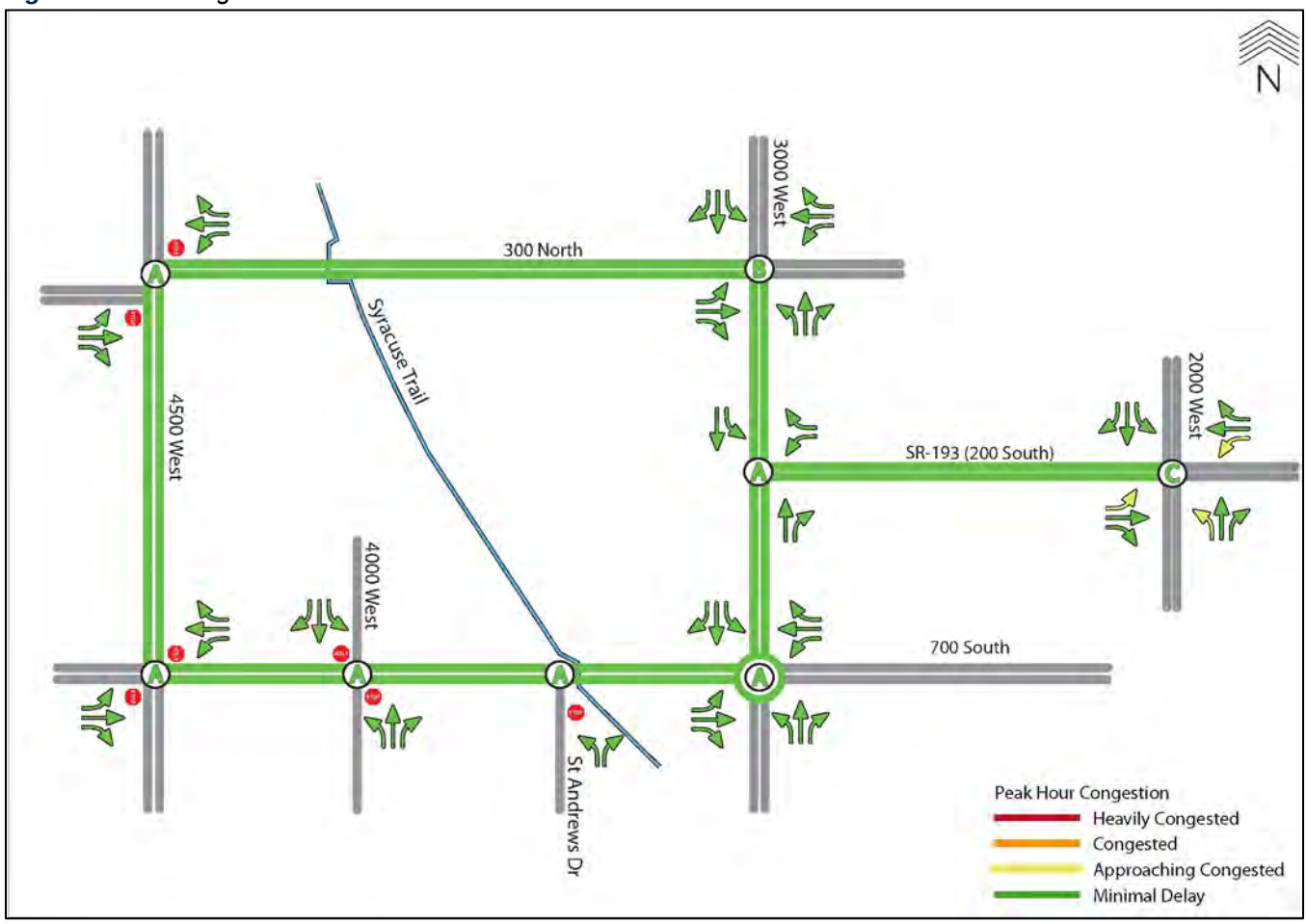
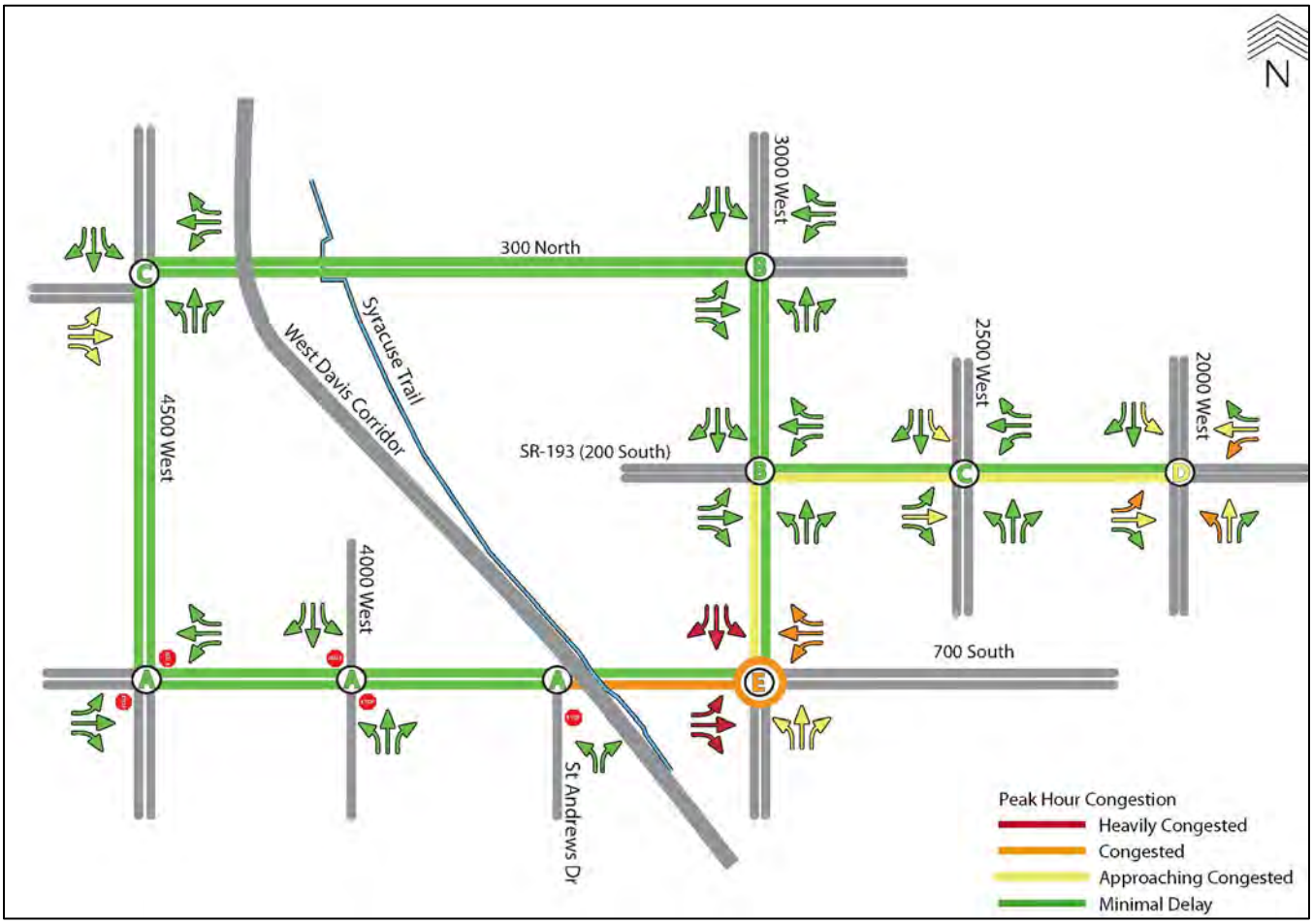


Figure 1-5: *Future (2050) AM Arterial and Intersection Level of Service*



1.4.4 Travel Time

As part of the study area traffic analysis, travel time was calculated for locations east and south of the study area. East-west travel time is affected by SR-193 terminating at 3000 West because this termination constrains the efficient movement of traffic from residential areas in the west to commercial areas in Clearfield (Freeport Center and I-15, for example). Westbound traffic from SR-193 must turn north or south onto 3000 West, then onto 700 South or 300 North to continue traveling west. This is inefficient because 700 South and 300 North have lower speeds and more conflict points (driveways, for example) compared to SR-193. These roadways also have multiple stop signs, limited vehicle capacity, and their connectivity to major destinations such as I-15 is indirect rather than direct. As a result of this indirect travel, it currently takes 12.6 minutes to travel from I-15 to the 4500 West and 200 South intersection (the western-most intersection in the study area). As the study area continues to develop and traffic volumes increase, this travel time is expected to increase to 15.5 minutes by 2050 (see Table 1-4). It should be noted that north-south travel times in 2050 are shorter than existing times because of the addition of West Davis Corridor, which provides a more direct route to Legacy Parkway.

What is travel time?

Travel time is the duration it would take for a vehicle to travel between select locations.

Table 1-4: Existing and Future (2050) Travel Times

Segments	Travel Time (Minutes)		% Change
	Existing	2050	
Legacy Parkway to 3000 West & SR-193	23.1	20.2	-13%
Legacy Parkway to 4500 West & 200 South	26.4	21.5	-19%
I-15 to 4500 West & 200 South	12.6	15.5	23%

Source: *SR-193 Traffic Memo (Appendix A)*

1.5 Need for the Project

Transportation changes are often predicated on a defined need, such unsafe or inefficient traffic conditions. Although the traffic analysis of the study area showed there would be measurable changes in the study area by 2050, these projections alone are not enough for UDOT to justify improvements to the roadway network. A more compelling reason is the current transition of the study area from rural to suburban (see Section 1.4.1). Population growth and the lack of direct connectivity to I-15 is predicted to result in increasing west-east travel times. Similarly, the lack of direct connectivity to the future West Davis Corridor is predicted to increase volumes on collector roadways and out-of-direction travel for residents travelling to employment centers in Davis and Salt Lake counties using West Davis Corridor.

1.6 Project Goal

The goal of the proposed project is to improve local connectivity to existing regional routes, such as I-15, and future regional routes, including the West Davis Corridor.

Chapter 2 Alternatives

2.1 Introduction

Transportation projects are developed by formulating alternatives for accomplishing the goal of the project, comparing the pros and cons of the alternatives, and then selecting one alternative as the "Preferred Alternative." In this chapter, UDOT describes the alternatives considered for this project, along with the rationale behind the selection of the Preferred Alternative.

2.2 Alternative Development and Screening

The process of developing and screening alternatives included evaluating potential solutions that meet the project goal, which is to improve connectivity to existing and future regional routes (see Section 1.6).

UDOT developed four alternatives to address connectivity to existing and future regional transportation routes. These are referred to as "build alternatives" because they include proposed construction and modification to the transportation system. A No-Action Alternative is also included, in which no construction or modifications would take place. The reason for this is to provide the detailed study with a baseline for comparing impacts associated with the build alternatives.

Why is the No-Action Alternative Considered?

The No-Action Alternative is considered for detailed study to provide a baseline for comparing impacts associated with the Build Alternative.

2.2.1 No-Action Alternative

The No-Action Alternative assumes that SR-193 would not be extended from 3000 West to 4500 West, and that the predicted 2050 traffic conditions would occur. Under this alternative, all the other transportation improvements outlined in the *WFRC 2019–2050 Regional Transportation Plan* would be built (see Section 1.3.1 for transportation improvements planned in or near the study area).

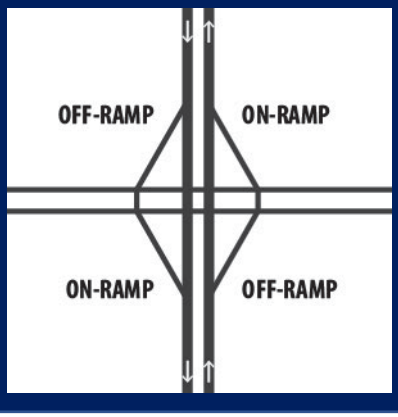
2.2.2 Build Alternatives

UDOT developed four build alternatives, each with a different road alignment, to extend SR-193 from its current western terminus at 3000 West to its proposed new terminus at 4500 West. Each build alternative includes a diamond interchange at the future West Davis Corridor. As shown in Figure 2-1, each alignment intersects the West Davis Corridor at a different location: 700 South, 600 South, 400 South, or 200 South. The name of each build alternative refers to the location of the proposed West Davis Corridor interchange, not necessarily the entire length of the alignment. Accordingly, the five alternatives are referred to by the following names:

- No-Action Alternative
- 700 South Build Alternative
- 600 South Build Alternative

What is a diamond interchange?

A diamond interchange separates a freeway from a surface street to allow unrestricted travel on the freeway. Off-ramps in either direction diverge from the freeway, continue through the intersection of the surface street, and become on-ramps. Traffic at the surface street is controlled by a stop sign or signal, depending the traffic volume.

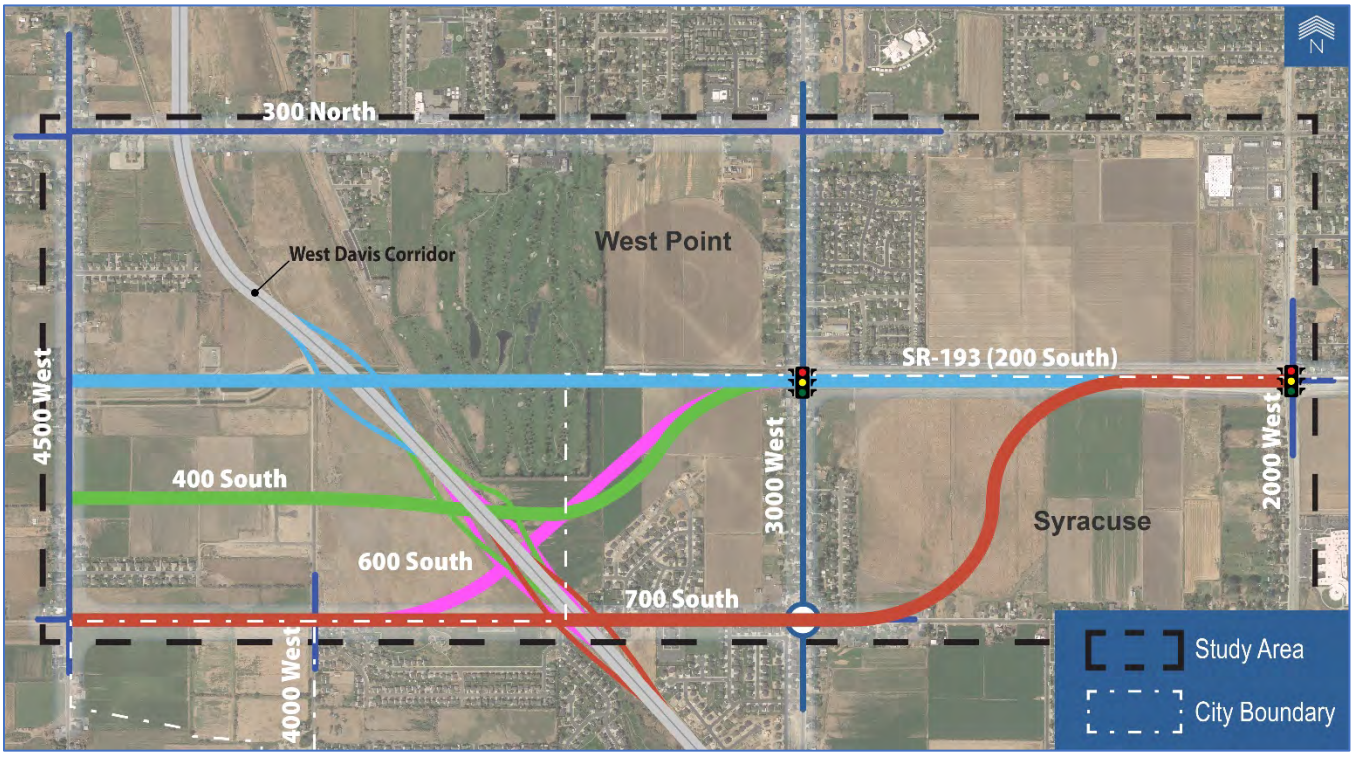


» 400 South Build Alternative

» 200 South Build Alternative

For traffic analysis purposes, UDOT assumed that in each build alternative SR-193 would have two travel lanes in each direction and a diamond interchange at West Davis Corridor.

Figure 2-1: *Build Alternative Alignments*



2.2.3 Traffic Analysis

Using the following measures of effectiveness, a traffic analysis was performed to compare the effectiveness of each build alternative compared to the No-Action Alternative:

» Daily Volumes: This measurement provides an understanding of the traffic flow that would result from each alternative.

» Vehicles Miles Traveled and Average Volumes: These measurements evaluate the interaction between arterial roadways and collector roadways.

» Travel Time: This measurement determines how long it would take for a vehicle to travel from one selected point within the study area to another.

Those wanting more detail may refer to the *SR-193 SES Build Traffic Analysis* in Appendix A.

DAILY VOLUMES

Projected traffic volumes on collector and arterial roadways would vary depending on the location of the proposed SR-193 and West Davis Corridor interchange (see Table 2-1). Under the No-Action Alternative, 700 South and 300 North would continue to carry the majority of west-east traffic between 3000 West and 2000 West, with a combined volume of 20,300 vehicles per day (VPD). Under all build alternatives, traffic volumes would increase on SR-193 between 3000 West and 2000 West, and decrease on 700 South and 300 North.

Also, each of the build alternatives would increase the traffic volume on West Davis Corridor between SR-193 and Antelope Drive compared to the No-Action Alternative (19,200 VPD). Traffic volumes range between 25,900 VPD and 30,200 VPD. The 600 South Build Alternative draws the most traffic onto West Davis Corridor.

Table 2-1: *2050 Daily Two-Way Traffic Volumes (vehicles/day)*

Road	Segment	No-Action	Build Alternative			
			200 South	400 South	600 South	700 South
300 North	4500 W to 3000 W	9,200	4,200	5,900	6,800	7,100
	3000 W to 2000 W	13,200	10,900	11,800	12,400	13,200
SR-193	4500 W to West Davis Corridor	-	10,600	8,400	--	--
	West Davis Corridor to 3000 W	--	11,900	11,700	14,900	--
	3000 W to 2000 W	12,100	14,600	14,100	13,800	12,500
700 South	4500 W to 4000 W	2,100	1,000	900	6,400*	6,200*
	4000 W to West Davis Corridor	3,700	1,700	1,600	11,900*	10,500*
	West Davis Corridor to 3000 W	8,500	6,800	6,300	3,700	12,800*
	3000 W to 2000 W	7,100	6,500	6,500	6,500	8,900*
4500 West	300 N to 700 S	9,600	7,700	8,800	9,600	10,300
3000 West	300 N to SR-193	13,000	9,200	11,600	12,200	10,500
	SR 193 to 700 S	13,300	11,400	9,700	7,200	8,900
2000 West	300 N to SR-193	42,300	42,800	43,000	42,500	42,900
	SR-193 to 700 S	35,500	35,100	35,000	34,300	32,900
West Davis Corridor	SR-193 to Antelope	19,200	25,900	27,700	30,200	28,000
	SR-193 Int. Ramps	--	12,000	12,400	14,600	12,400

**Contains a portion of SR-193*

VEHICLE MILES TRAVELED AND AVERAGE VOLUMES

Vehicle miles traveled would increase slightly under each of the build alternatives, except the 600 South Build Alternative, compared to the No-Action Alternative (see Table 2-2). The predicted increase in vehicle miles traveled is primarily attributed to the increase in vehicles that would use the West Davis Corridor. An interchange at the West Davis Corridor would make it more convenient for drivers in the study area to access the highway. As a result, vehicle miles traveled on arterial and collector roadways would be reduced, while vehicle miles traveled on freeways would increase under the build alternative when compared to the No-Action Alternative. Furthermore, under the build alternatives, average traffic volumes would decrease on collector roadways and increase on arterial roadways, including SR-193, and the West Davis Corridor (see Table 2-3).

Table 2-2: *2050 Study Area Vehicle Miles Traveled by Alternative*

Roadway Type	No-Action	Build Alternative			
		200 South	400 South	600 South	700 South
Collectors	68,000	65,200	66,700	62,600	59,600
Arterials	162,400	158,200	157,000	158,300	165,000
Freeways	41,700	50,800	50,900	50,700	48,100
Total	**272,100**	**274,200**	**274,600**	**271,600**	**272,700**

Table 2-3: *2050 Average Volume (vehicles/day) by Alternative*

Roadway Type	No-Action	Build Alternative			
		200 South	400 South	600 South	700 South
Collectors	8,000	6,200	6,500	6,900	7,000
Arterials	18,100	17,600	17,300	17,300	17,500
Freeways	19,200	23,400	23,500	23,400	22,200
Total	**13,800**	**12,700**	**12,800**	**13,300**	**13,600**

TRAVEL TIME

West-east travel time from 4500 West and 200 South to I-15 would be reduced under all of the build alternatives when compared to the No-Action Alternative (15.5 minutes). The 200 South Build Alternative would have the shortest travel time (12.6 minutes), followed by the 400 South Build Alternative (13.2 minutes), the 600 South Build Alternative (13.7 minutes), and finally the 700 South Build Alternative (14.2 minutes) (see Table 2.4).

Two origin and destination routes were used to determine south-north travel times from Legacy Parkway to points west (4500 West and 200 South) and east (3000 West and SR-193) of West Davis Corridor. Travel times would be reduced under each alternative compared to west and east origin points under the No-Action Alternative (21.5 minutes and 20.2 minutes, respectively). The 200 South Build Alternative would have the greatest reduction west of the West Davis Corridor (18.1 minutes); the

400 South Build Alternative would be the shortest east of West Davis Corridor (18.2 minutes) (see Table 2-4).

Table 2-4: 2050 Travel Times (minutes) by Alternative

Travel Time Segment	No-Action	Build Alternative			
		200 South	400 South	600 South	700 South
Legacy Pkwy to 3000 W & SR-193	20.2	18.4	18.2	18.0	18.7
Legacy Pkwy to 4500 W & 200 S	21.5	18.1	18.8	19.4	19.4
I-15 to 4500 W & 200 S	15.5	12.6	13.2	13.7	14.2

TRAFFIC ANALYIS SUMMARY

Each of the build alternatives would satisfy the project goal of improving local connectivity to existing and future regional routes. The traffic analysis concluded each build alternative would have similar roadway network benefits compared to the No-Action Alternative, as follows:

- Each of the build alternatives would increase projected daily volumes on SR-193 and West Davis Corridor while reducing daily volumes on collector and arterial roadways.
- Each of the build alternatives would increase projected vehicle miles traveled on freeways while reducing vehicle miles traveled on collector and arterial roadways.
- Each of the build alternatives would result in a reduction in travel times to I-15 and Legacy Parkway.

2.2.4 Safety Considerations

UDOT evaluated each build alternative for design elements that could compromise vehicular safety. This evaluation identified the following constraints for the 700 South and 600 South build alternatives:

- **Interchange Spacing**: The distance between the 700 South Build Alternative and the proposed Antelope Drive interchanges along West Davis Corridor would be less than the one-mile minimum distance recommended by the American Association of State Highway and Transportation Officials (AASHTO 2016). Closely spaced interchanges, such as these, negatively affect the traffic operations and safety performance of urban highways because it creates weaving conflicts between vehicles entering and exiting the freeway.
- **Intersection Spacing**: Under the 600 South Build Alternative, the east leg of 700 South would be realigned near Rock Creek Park to intersect with SR-193 at a right-angle. A signal would be required at this intersection because of the predicted traffic volumes on SR-193; however, a signal at this intersection would result in inadequate spacing between the proposed on- and off-ramps, which could affect the operation and safety of the interchange. Without a traffic signal, left-turns from 700 South onto SR-193 would be restricted.

No constraints were identified for the 400 South and 200 South build alternatives.

2.3 Preferred Alternative

In the process of developing transportation project, one alternative is eventually selected as the Preferred Alternative. Because the build alternatives are similar from a traffic-performance perspective, UDOT instead considered engineering and environmental constraints to identify the Preferred Alternative for this project. UDOT selected the 400 South Build Alternative as the Preferred Alternative (see Figure 2-2) because it would:

- avoid Rock Creek Park (a Section 6(f) property), Schneiter's Bluff Golf Course, and existing residences,
- minimize safety issues associated with other build alternatives (i.e., 600 South and 700 South) by providing adequate spacing between the proposed West Davis Corridor interchange at SR-193 and the Antelope Drive interchange, and between the SR-193 interchange and nearby intersections (e.g., 4000 West) that would meet UDOT standards.

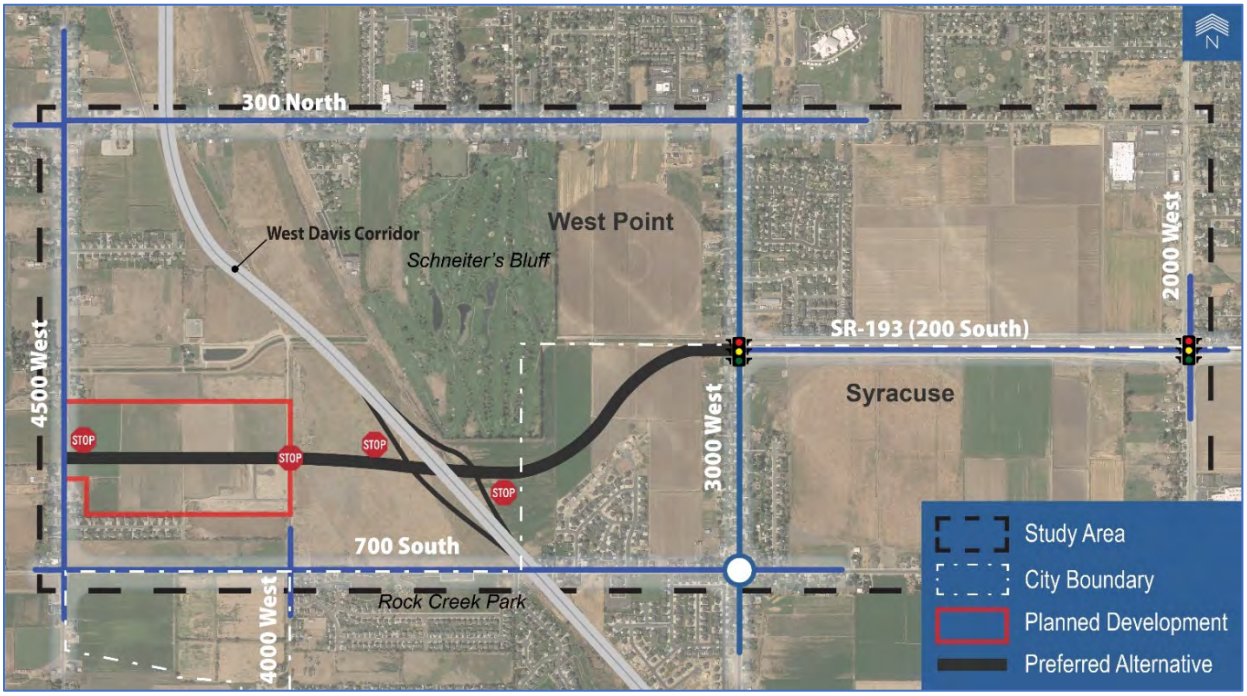
Although a residential development that has already been planned would be bisected by SR-193 in the western portion of the study area, UDOT has been coordinating with the developer to minimize the loss of building lots.

The following sections describe the details of the Preferred Alternative. Figures 2-5 through 2-13 show the Preferred Alternative in a detailed plan view.

What is a Section 6(f) property?

If a park unded through the Land & Water Conservation Fund Act is acquired in whole or in part, Section 6(f) of the act requires the affected property be replaced with other recreation properties of equal fair market value and of reasonable equivalent usefulness and location. Furthermore, alternatives to conversion (i.e., acquisition) of the property must be considered prior the conversion approval (36 Code of Federal Regulations 59.3(b)).

Figure 2-2: *Preferred Alternative*



2.3.1 Roadway Components

Between 3000 West and the West Davis Corridor, UDOT proposes to leave the existing configuration of SR-193 unchanged between 2000 West and 3000 West. The typical cross section for this segment consists of two 12-foot-wide travel-lanes in each direction separated by a 26-foot-wide median swale. The proposed right-of-way line would be 26 feet from both sides of the road. The typical width of this section would be 150 feet-wide (see Figure 2-3).

Between the West Davis Corridor and 4500 West, the proposed typical cross section would have one 12-foot-wide travel lane in each direction separated by a shared 16-foot-wide center turn lane. Ten-foot-wide shoulders would be provided on both sides, lined with curb, gutter, park strip, and sidewalks. The typical width of this section would be 84 feet-wide (see Figure 2-4). At the West Davis Corridor interchange, the cross section would be expanded to include an additional eastbound travel lane and left- and right-turn lanes.

The Preferred Alternative would raise the West Davis Corridor over SR-193. The interchange on- and off-ramps would consist of one 12-foot-wide lane. Intersection stop-control for the off-ramps would be provided by stop signs. The northbound off-ramp would have a free-right lane in the eastbound direction onto SR-193. Street lights would be installed at the interchange.

Why is the West Davis Corridor interchange included in this state environmental study?

The West Davis Corridor Environmental Impact Statement (EIS) did not study an interchange at SR-193. Following the EIS, UDOT determined an interchange is needed along West Davis Corridor at SR-193 and elected to study it independent of the EIS.

Figure 2-3: *SR-193 Typical Cross-Section Between 3000 West and West Davis Corridor*

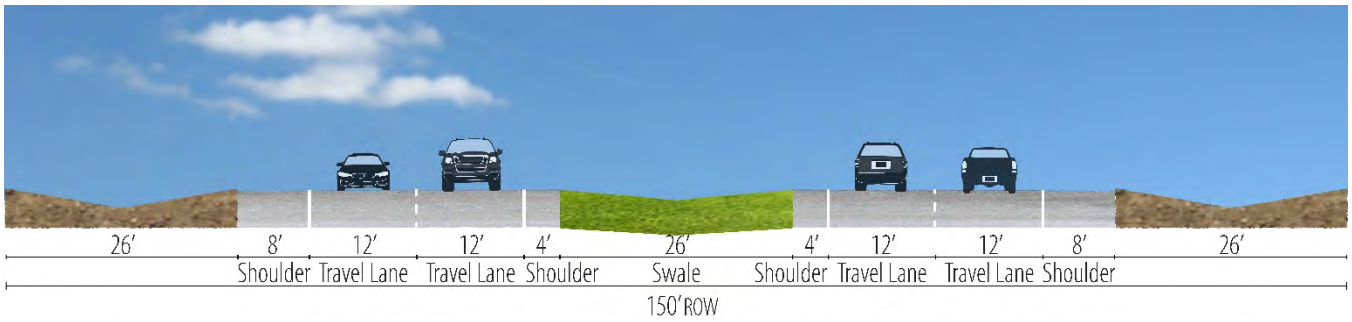
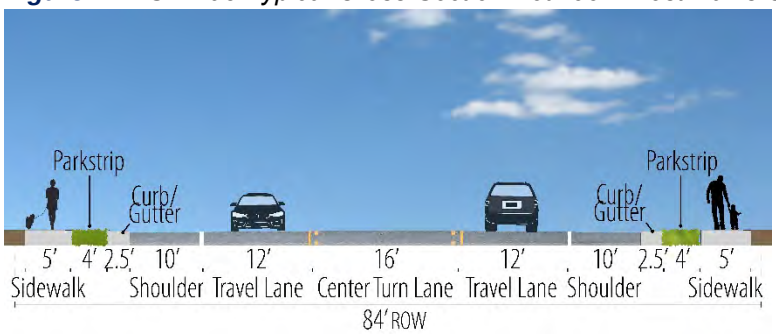


Figure 2-4: *SR-193 Typical Cross-Section Between West Davis Corridor and 4500 West*



2.3.2 Trail Components

The existing Syracuse Trail parallels the east side of the West Davis Corridor (see Section 1.2). The Preferred Alternative would realign the trail to the east of the northbound on- and off-ramps. A bridge for the trail would be constructed over SR-193.

Figure 2-5: *Preferred Alternative Detail Plan View (1 of 9)*

Figure 2-6: *Preferred Alternative Detail Plan View (2 of 9)*

Figure 2-7: *Preferred Alternative Detail Plan View (3 of 9)*

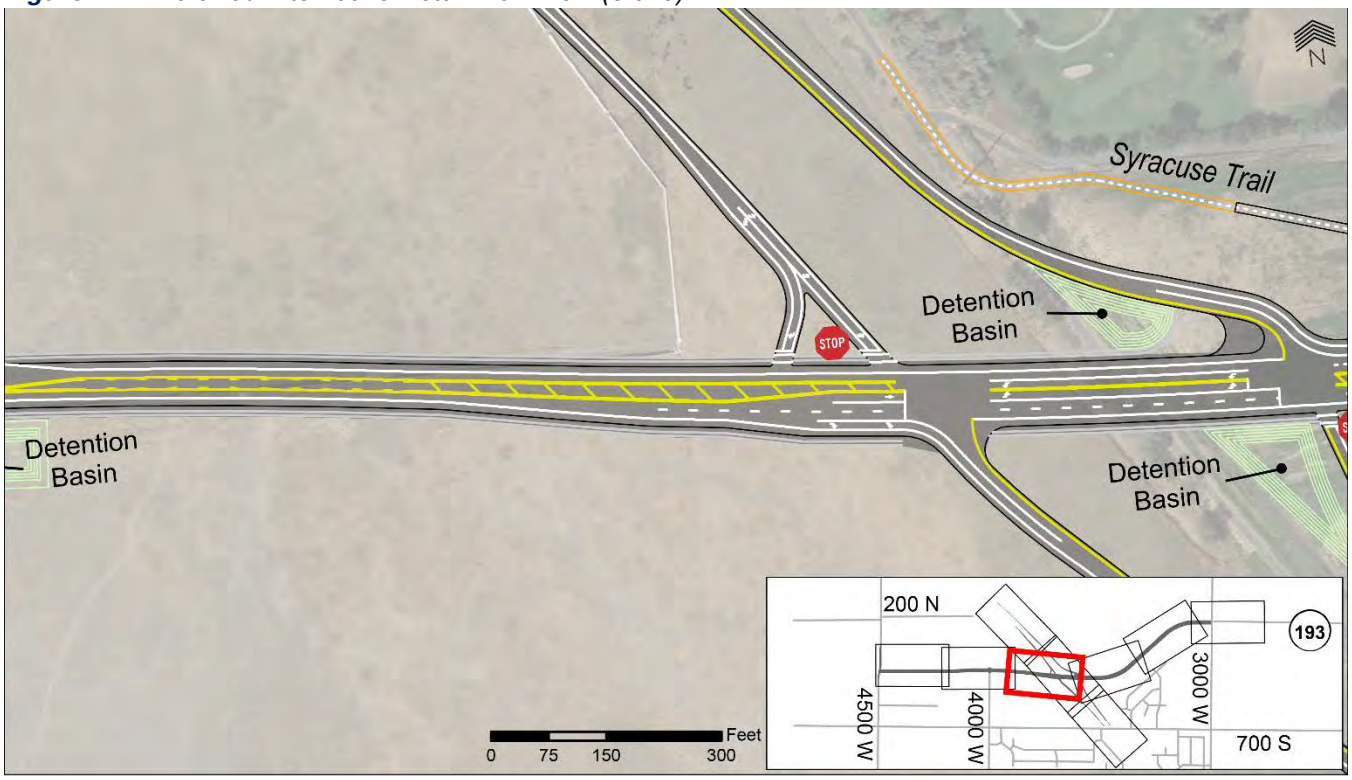


Figure 2-8: *Preferred Alternative Detail Plan View (4 of 9)*

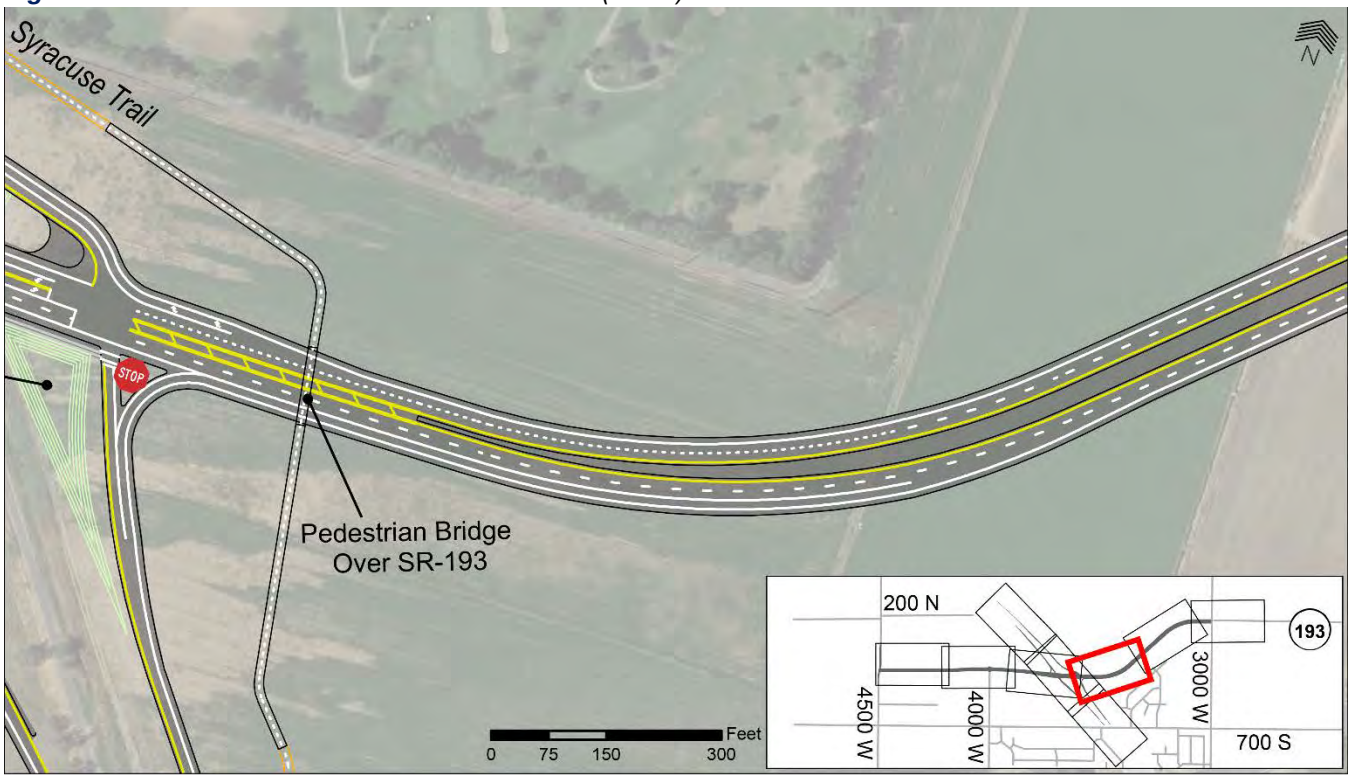


Figure 2-9: *Preferred Alternative Detail Plan View (5 of 9)*

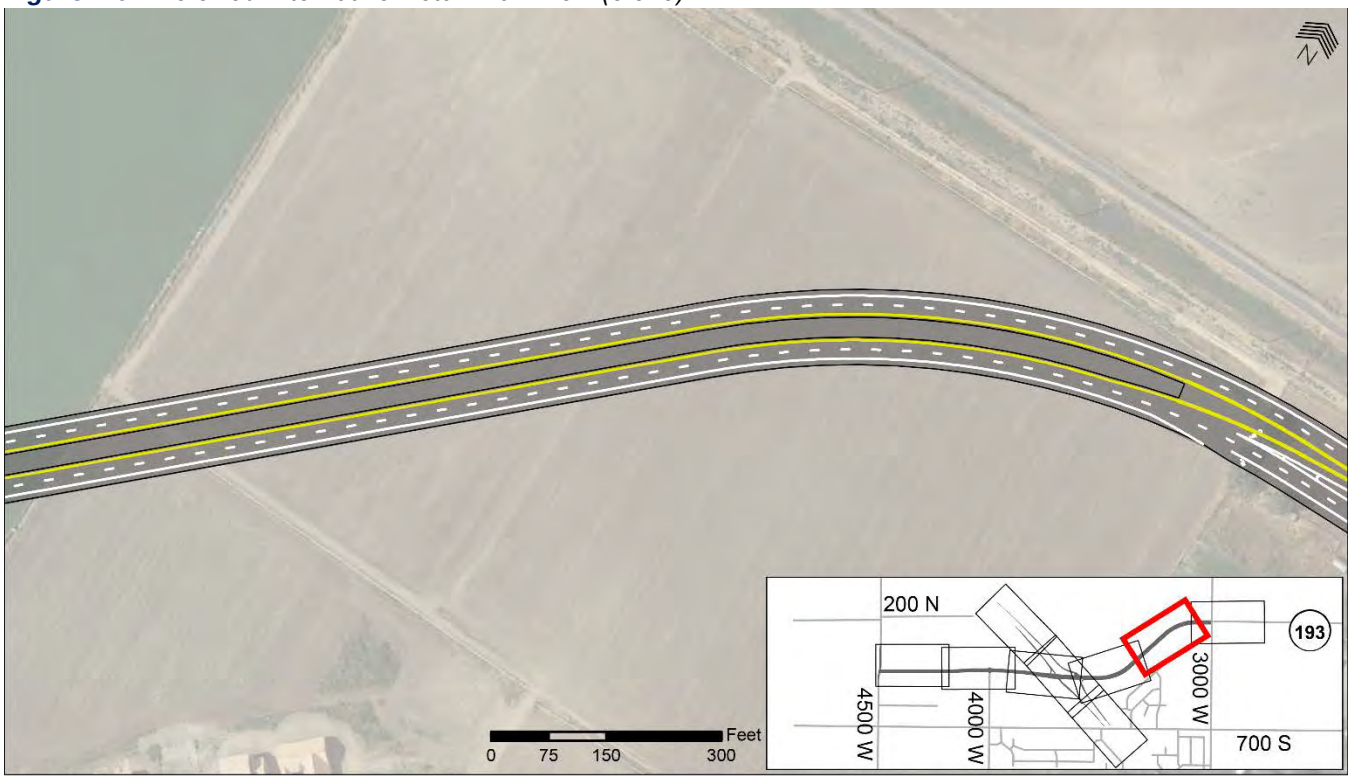


Figure 2-10: *Preferred Alternative Detail Plan View (6 of 9)*

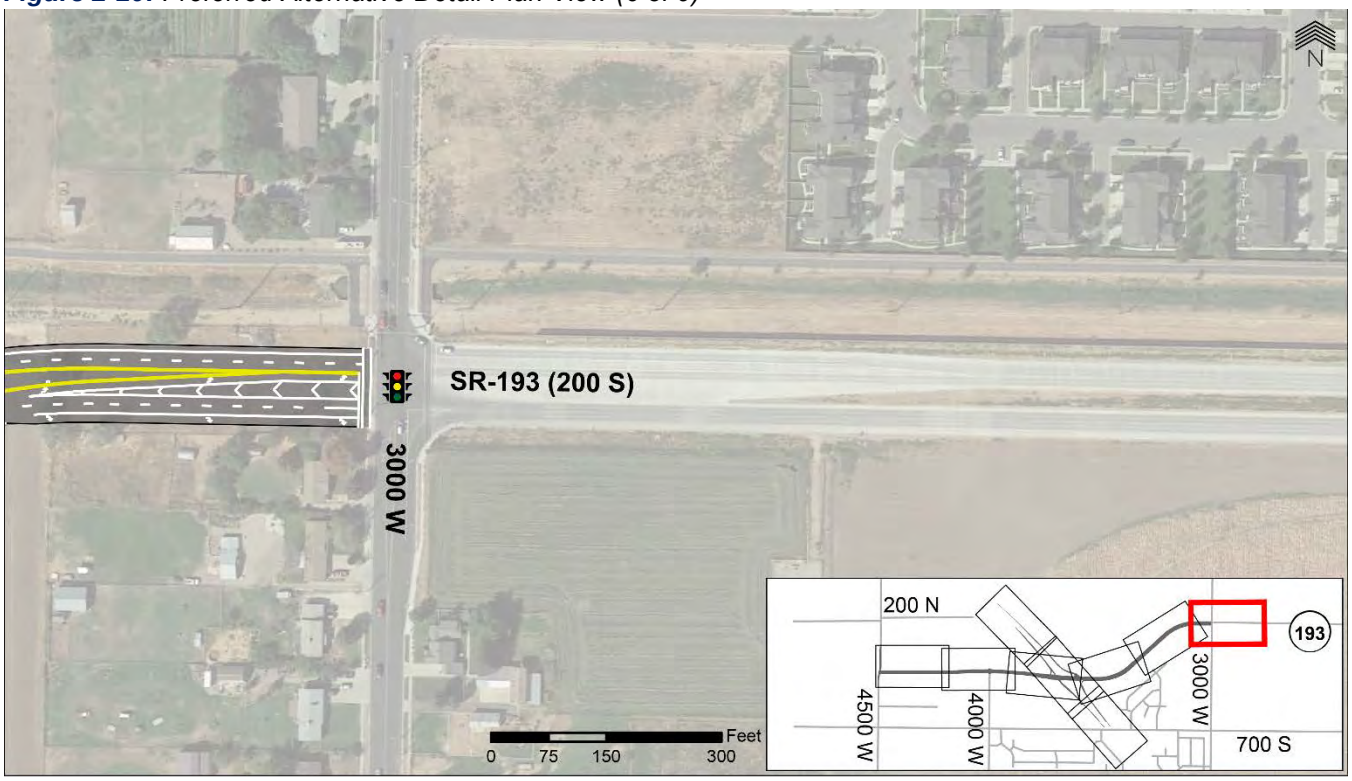


Figure 2-11: *Preferred Alternative Detail Plan View (7 of 9)*

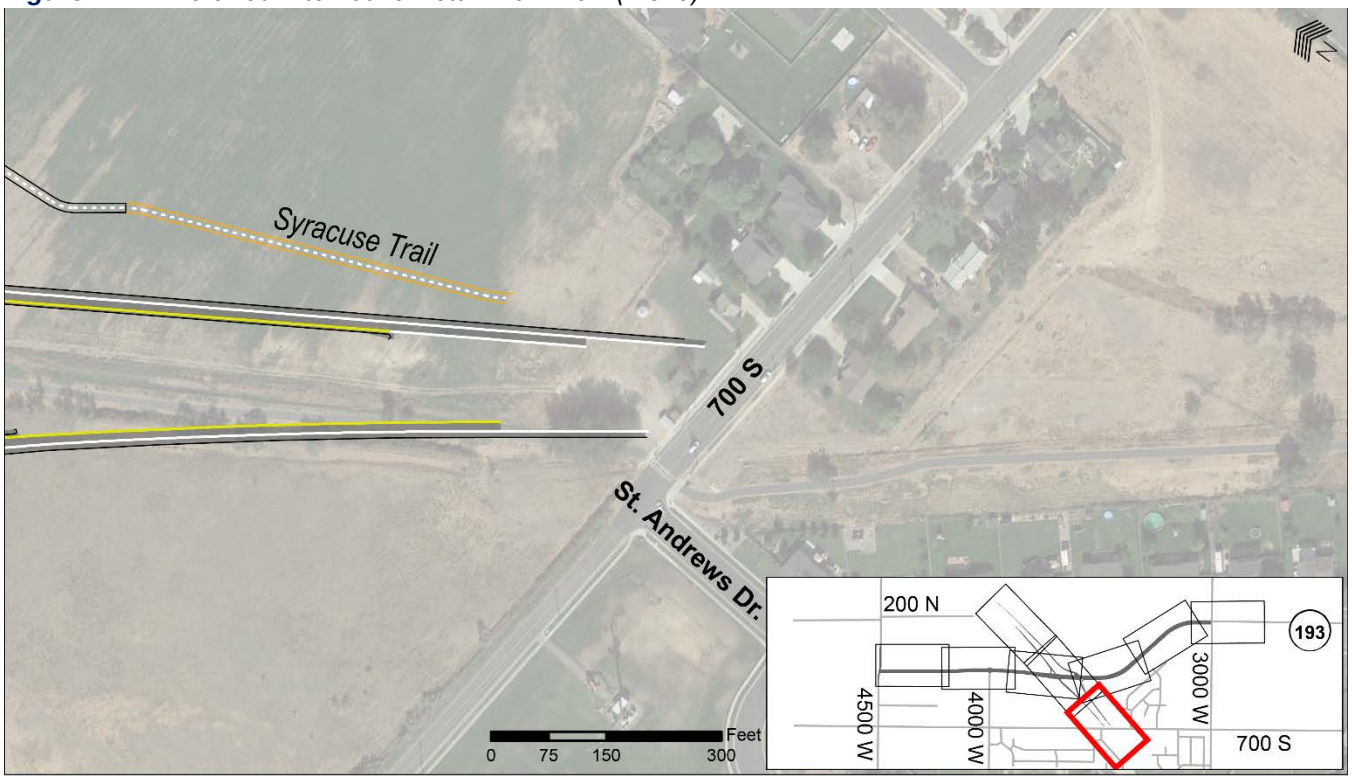


Figure 2-12: *Preferred Alternative Detail Plan View (8 of 9)*

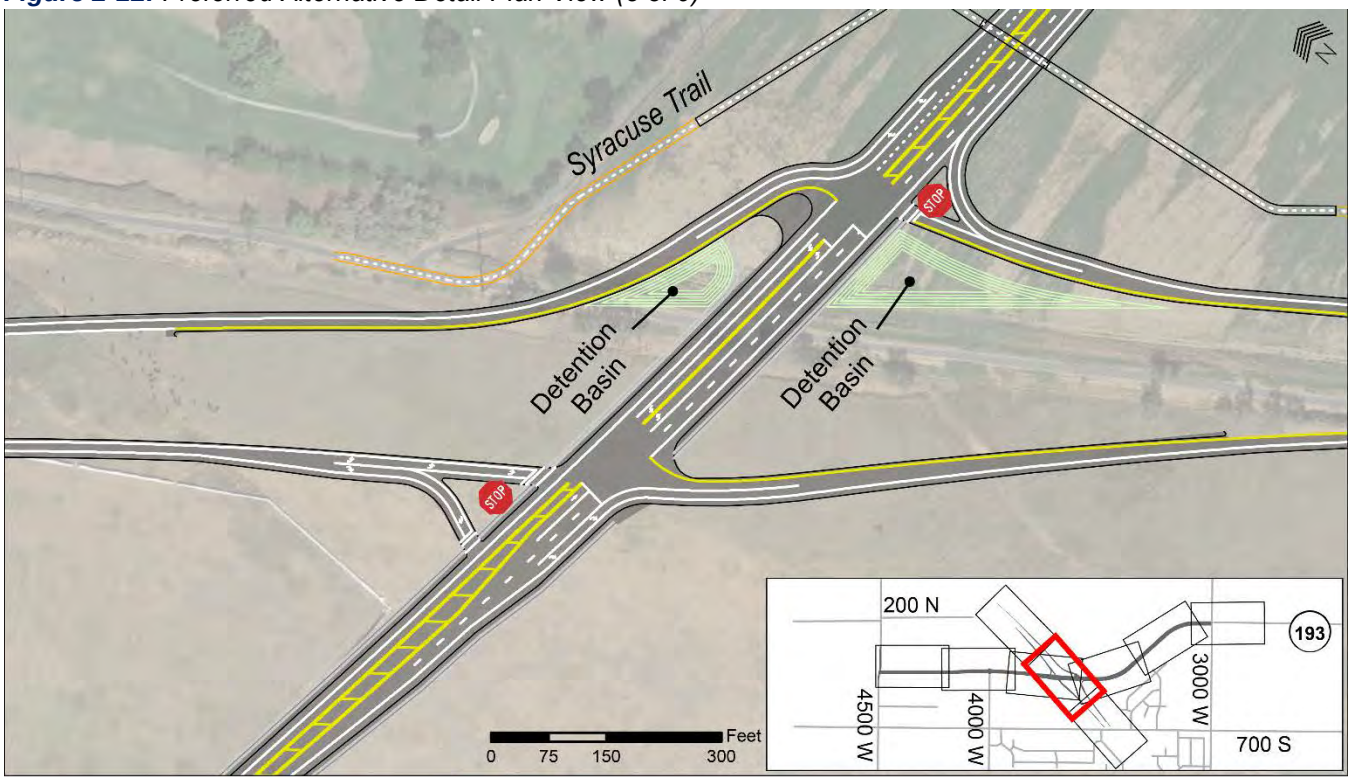
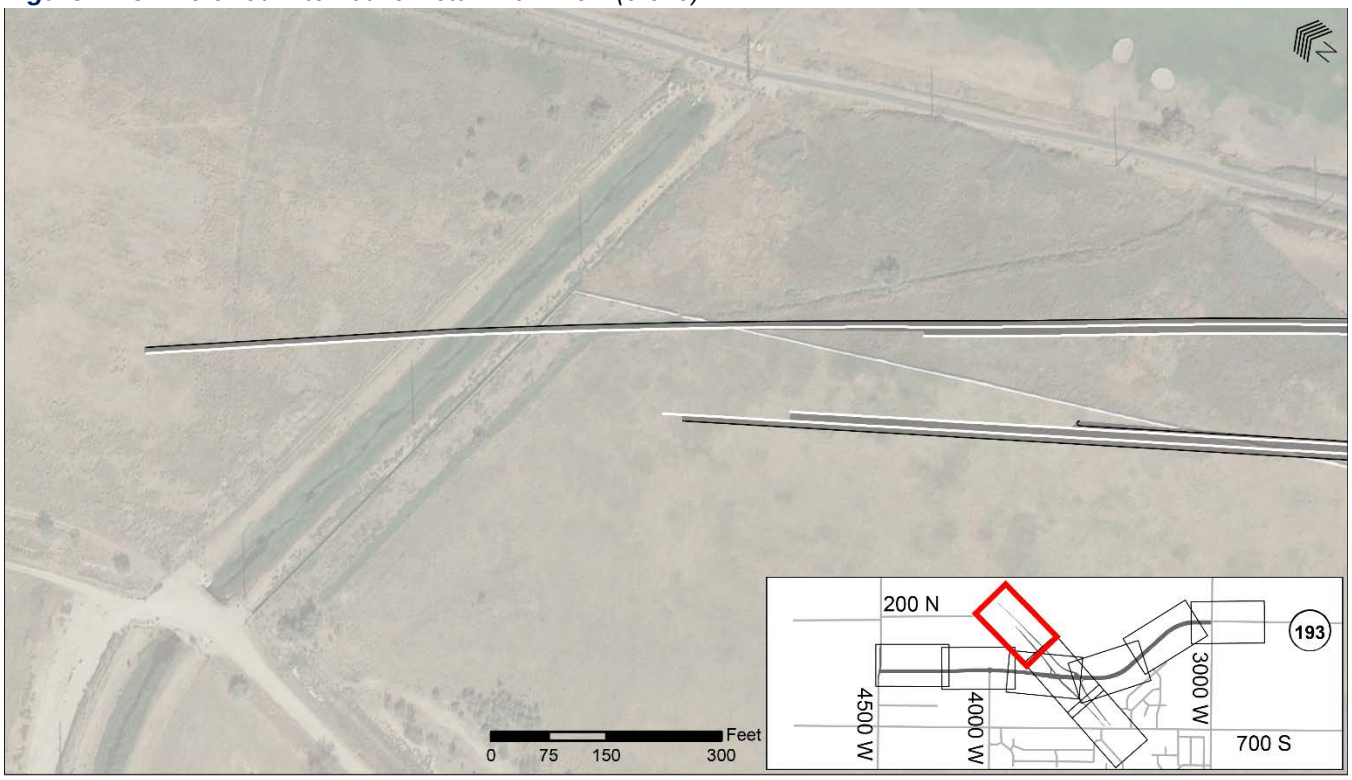


Figure 2-13: *Preferred Alternative Detail Plan View (9 of 9)*



Chapter 3 Environmental Analysis

In this chapter, UDOT describes the existing environmental, community, and economic conditions in the study area, which serve as a baseline for evaluating the impacts of the Preferred Alternative.

3.1 Introduction

The following resources will be discussed in the sections below:

- Land Use
- Farmland
- Right-of-way and Relocations
- Pedestrian and Bicyclists
- Economics
- Noise
- Visual Resources
- Cultural Resources
- Wetlands, Other Waters of the United States, and Water Resources
- Threatened and Endangered Species
- Wildlife
- Construction Impacts

For each resource analyzed, the impact analysis area, regulatory environment, existing conditions, expected impacts, and required mitigation are described. Impacts of the No-Action Alternative are described near the end of the chapter. An impact summary is also presented at the end of the chapter.

3.1.1 Issues Considered but not Evaluated in Detail

Some resource issues are eliminated from detailed evaluation because the resource would not be affected or available data examined early in the process did not identify presence of the resource in the study area. For this project, the following resource issues were not evaluated in detail:

- **Social Impacts**: The Preferred Alternative would not affect social interaction patterns or social cohesion within the study area because there would be no relocations of residences, businesses, or community facilities; the Preferred Alternative would not divide neighborhoods and has been anticipated and included in local community planning.
- **Hazardous Materials and Hazardous Waste**: Searches of available databases (UDEQ 2019, USEPA 2019) have no records of toxic releases, spills, or hazardous facilities on

properties where property would be acquired or where construction would occur.

- **Air Quality**: Because this project would not be federally funded, an air quality conformity determination was not required. Expected short-term air quality impacts from constructing the Preferred Alternative and UDOT's proposed mitigation measures are described in Section 3.13.

- **Paleontological Resources**: UDOT consulted with the Utah Geological Survey (UGS) regarding the potential for encountering paleontological resources (e.g., fossils) in the survey area. The UGS indicated that no such localities have been reported for the survey area and that the geological deposits exposed in the area have low potential for yielding significant fossil localities. A copy of the correspondence from the UGS is included in Appendix C. If unknown resources should be encountered during construction, the contractor would be required to follow UDOT Standard Specifications regarding discovery.

- **Section 6(f) Resources**: During the alternatives development process, the study team identified Rock Creek Park as a Section 6(f) resource (a recreation property that received federal funding under the Land and Water Conservation Fund Act). If acquired in full or in part, a Section 6(f) property must be replaced with other recreation properties of equal fair market value and of reasonable equivalent usefulness and location. Alternatives to conversion (i.e., acquisition) of the property must also be considered prior the conversion approval (36 Code of Federal Regulations 59.3(b)). The preferred alternative would not require property acquisition from Rock Creek Park; therefore, this issue was not further evaluated.

3.1.2 Study Area

The study area for evaluating impacts of the Preferred Alternative focused on the lands bounded by 4500 West (on the west), 2000 West (on the east), 200 South (on the north), and 700 South (on the south).

3.2 Land Use

Land use as a resource issue refers to ways the various properties within the study area are currently used and developed, and how they may be used in the future. The Preferred Alternative is located within the city limits of Syracuse and West Point, and these local governments have general plans showing existing and planned land uses for land development within their respective jurisdictional boundaries. In its environmental process, UDOT typically reviews these plans to help understand how the project could change land-use patterns and the relationship of planned land uses and roadway network needs.

3.2.1 Methodology

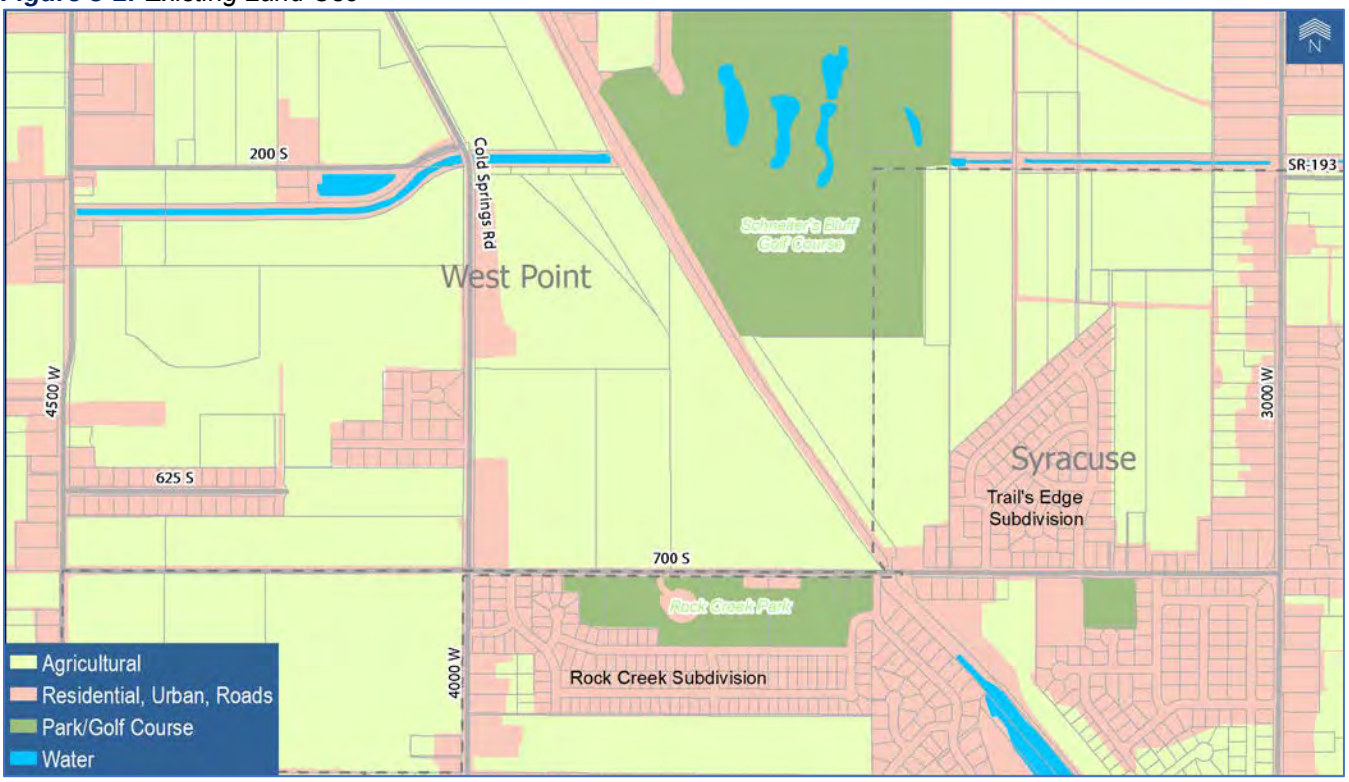
UDOT identified existing land uses in the study area using Google aerial imagery (September 10, 2018) available under license from the Utah Automated Geographic Reference Center (AGRC) and field verification (windshield survey). Additionally, Geographic Information System (GIS) data illustrating existing land uses created by the Utah Division of Water Resources (UDWRE 2017) was used.

The general plans of Syracuse and West Point were reviewed to identify land-use planning area designations. Representatives of the project team met with staff from Syracuse and West Point cities and the Davis School District to coordinate compatibility of the Preferred Alternative with local land use and transportation planning. Coordination with local governments is summarized in Chapter 4 (Section 4.3).

3.2.2 Existing Conditions

Existing land use in the study area (Figure 3-1) is primarily agricultural with residential development concentrated along the existing collector roadways that border the study area: 4500 West, 700 South, and 3000 West. Recreational land uses are represented by Schneiter's Bluff Golf Course and Rock Creek Park. Recently constructed subdivisions include the Trail's Edge subdivision, Rock Creek subdivision, and a development along 625 South at 4500 West. A planned residential development in West Point is the Elite Craft Development, the first phase of which was being constructed at the time this SES document was being prepared.

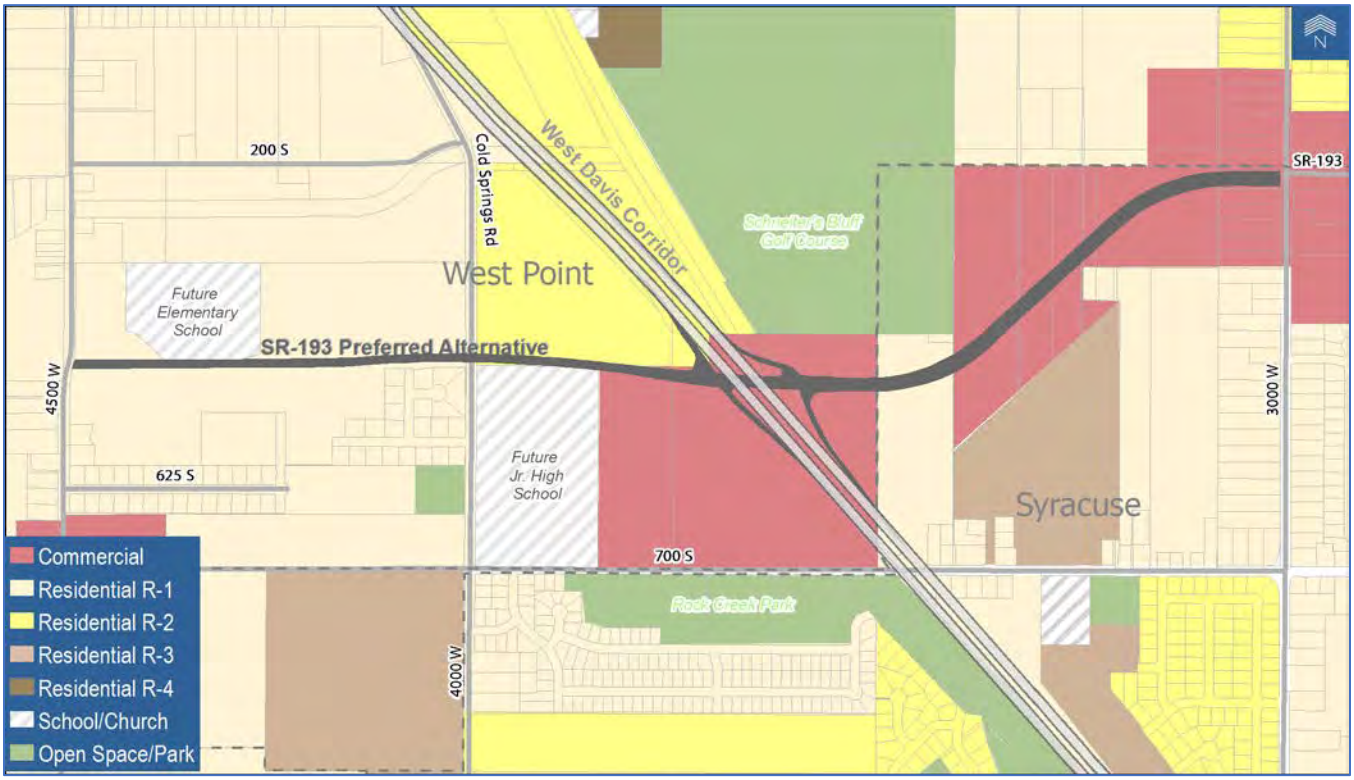
Figure 3-1: *Existing Land Use*



Sources: UDWRE 2017

Growth projections and land-use planning by West Point and Syracuse cities predict and anticipate the continued conversion of agricultural land to low- and medium-density housing with commercial developments at major roadway intersections. Planning maps for West Point and Syracuse, reproduced in Figure 3-2, show future commercial development along the SR-193 corridor between 3000 West and in the vicinity of the proposed interchange with West Davis Corridor. Between this interchange and 4500 West, Davis School District has planned a junior high school and an elementary school at the locations indicated in Figure 3-2. West Point City has planned a community commercial development at the intersection of 4500 West and 700 South intersection. Low- and medium-density residential development is expected to fill in the remaining agricultural lands surrounding the commercial and institutional developments in both cities. West Point City's planning map includes plans for a park west of 4500 West at 200 South and a neighborhood park along Cold Springs Road.

Figure 3-2: *Local Land Use Planning with West Davis Corridor and the SR-193 Preferred Alternative*



Sources*: Syracuse City (2017), West Point City (2017)*

3.2.3 Expected Impacts

The Preferred Alternative is compatible with and would support local land use plans. UDOT has coordinated with the local governments and the Davis School District to make adjustments to the Preferred Alternative alignment and its design features to be compatible with their land-use planning (See Chapter 4, Section 4.3).

The proposed east segment of SR-193 and the West Davis Corridor interchange are compatible with and would support planned commercial development areas shown in Figure 3-2; however, UDOT would manage access to these areas from SR-193 to ensure safety and efficient traffic flow. The SR-193 alignment would not impact the golf course or existing subdivisions. The west segment of the SR-193 alignment, between 4500 West and the interchange, largely avoids the two planned school development sites; however, minor partial acquisitions would be needed at each school property (see right-of-way impacts, Section 3.4).

3.2.4 Mitigation

No mitigation related to land use would be required.

3.3 Farmland

Farmland contributes to the economic output of an area as well as contributing to a sense of rural heritage and open space. It also supports wildlife. The Utah Administrative Code and subsequent state laws have established a system for designating Agricultural Protection Areas (APAs). An APA cannot be condemned for highway purposes unless (1) the landowner requests the removal of the designation or (2) the applicable legislative body (that is, the legislative body of the county, city, or town in which the agriculture protection zone is located) and the APA advisory board approves the condemnation as described in the Utah Administrative Code (Section 17-41-405 (4)(a)).

3.3.1 Methodology

Sources of information consulted to identify farmlands were aerial photography verified by field observation (windshield survey) and GIS data created by the Utah Division of Water Resources (UDWRE 2017). APAs were identified from statewide GIS data.

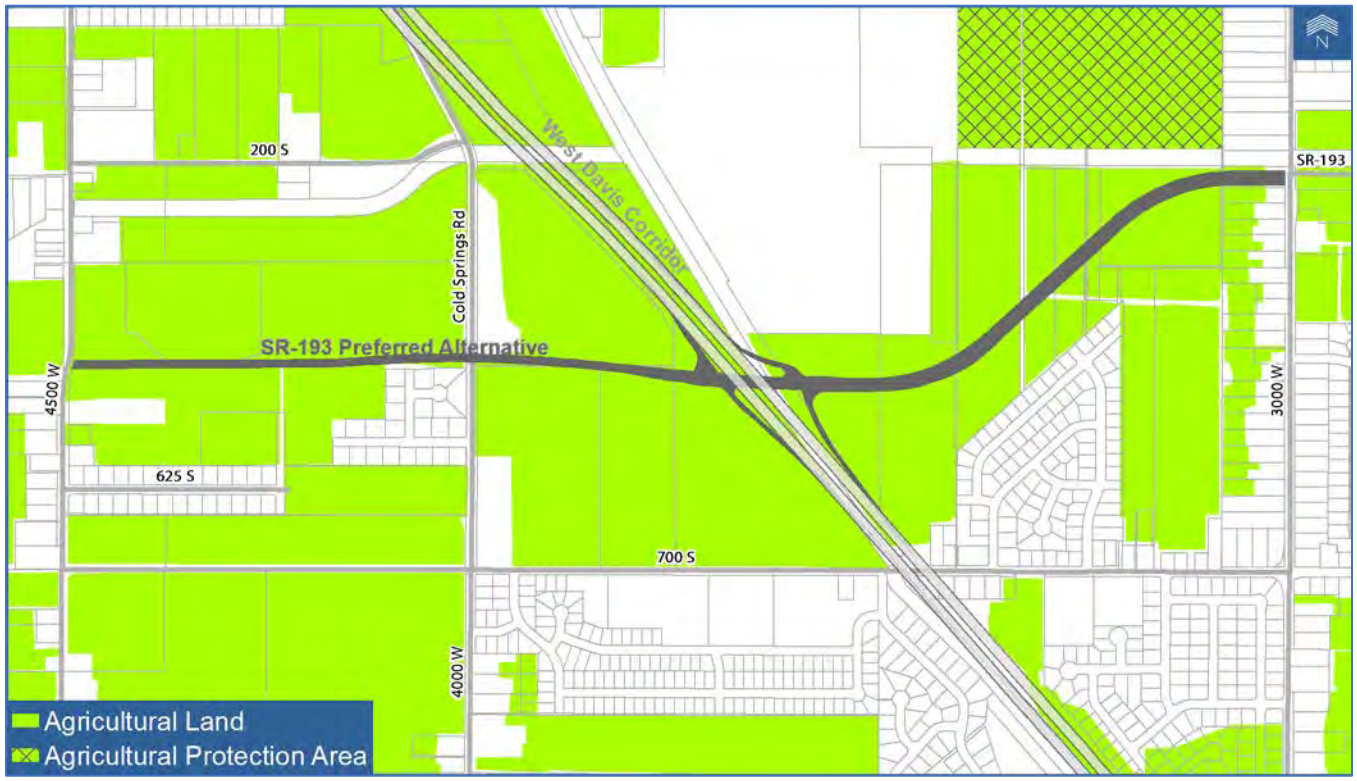
3.3.2 Existing Conditions

As discussed in Section 3.2, existing land use in the vicinity of the Preferred Alternative is primarily agricultural. However, residential development is expanding rapidly in this area and lands where the Preferred Alternative is proposed are within incorporated city limits of West Point and Syracuse. A group of parcels to the east of Schneiter's Bluff Golf Course are within a designated APA (see Figure 3-3).

3.3.1 Expected Impacts

The Preferred Alternative would convert lands currently used for agriculture to a transportation use. As discussed in Section 3.2, lands adjacent to the proposed alignment between 4500 West and Cold Springs Road are already planned for a residential subdivision, with the first phase of the development currently under construction. Additionally, West Point City has identified two parcels as development sites for future schools. Other parcels currently used for agriculture that do not have current development plans would be bisected by the road alignment of the Preferred Alternative. This would affect the agricultural productivity of the parcels and reduce the efficiency of farming the bisected segments,

Figure 3-3: *Farmland and Designated Agricultural Protection Area*



Source: *UDWRE 2017*

requiring the farm operator to move farming equipment to the other side of the roadway. This would also affect how fields are irrigated. These effects would potentially facilitate conversion of the remaining agricultural lands to developed uses. However, as previously discussed, the Preferred Alternative is located entirely within incorporated city limits, and the land-use plans of both cities anticipate future development of these lands irrespective of the Preferred Alternative.

The Preferred Alternative does not cross through designated APAs; therefore, the project would not require approval for condemnation of agricultural lands.

3.3.2 Mitigation

No mitigation-related to farmlands would be required.

3.4 Right-of-Way and Relocations

Highway projects often require property acquisition to accommodate right-of-way (ROW) needed for the roadway facility. Property acquisitions are governed at the state level by the Utah Relocation Assistance Act, Utah Code, Section 57-12. Information for property owners and renters regarding UDOT's process are described in the *Relocation Assistance Brochure* (UDOT 2016).

3.4.1 Methodology

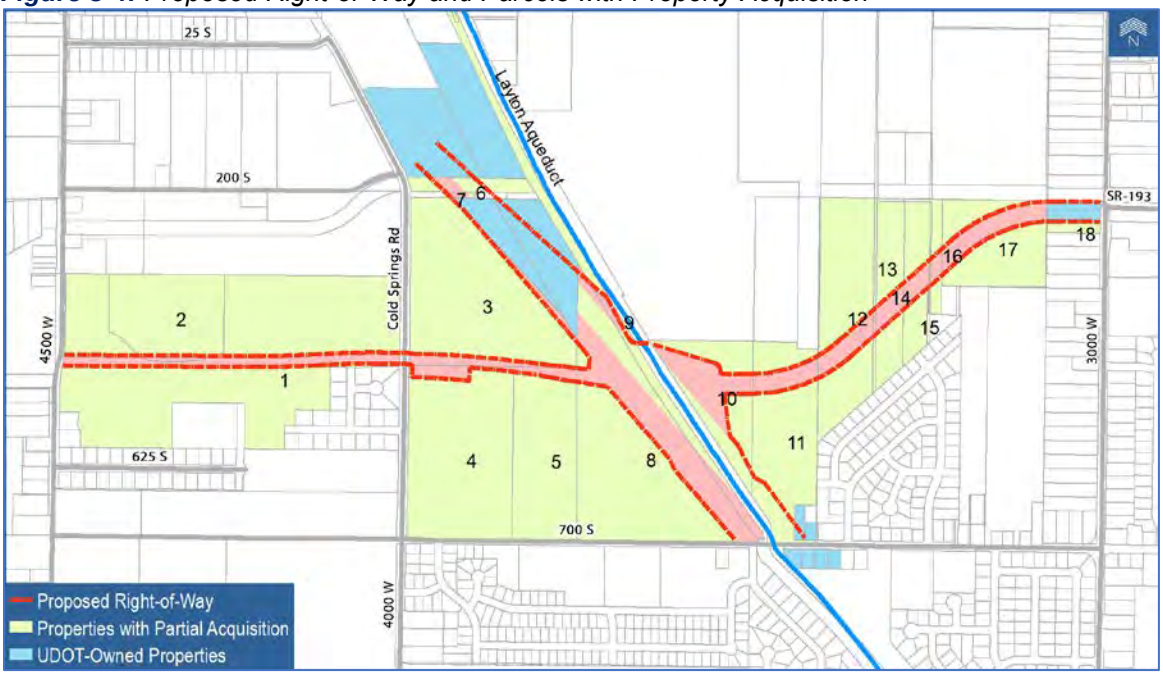
ROW impacts were identified using GIS to overlay Davis County Parcel data with the proposed right-of-way for the Preferred Alternative. The impacts identified are based on preliminary engineering; actual impacts could change and would be determined during final design and during the property-acquisition process. Property impacts are defined as:

- Relocation: a home or business structure is within the ROW of a proposed alternative.
- Potential relocation: a home or business structure is within 15-feet of the proposed ROW.
- Partial acquisition: a home or business structure is more than 15-feet from the proposed ROW.

3.4.2 Existing Conditions

Lands in the study area are privately owned with the exception of a few properties that are owned by public entities, including UDOT. UDOT owns a parcel at the intersection of SR-193 and 3000 West, three parcels west of Schneiter's Bluff Golf Course, and six parcels where West Davis Corridor will cross over 700 South (see Figure 3-4).

Figure 3-4: *Proposed Right-of-Way and Parcels with Property Acquisition*



Note: Numbers in the figure reference the parcels in Table 3-1.

Eight residential relocations from seven properties along 700 South associated with construction of the West Davis Corridor have been accounted for in the West Davis Corridor EIS (FHWA 2017), and are not part of the SR-193 project effects.

The Layton Aqueduct passes through the study area in the north-south direction immediately west of Schneiter's Bluff Golf Course. The Layton Aqueduct was constructed with funding through the US Bureau of Reclamation (USBOR) as a component of the Weber Basin Project. Portions of this waterway are open canal, but the portion that passes through the study area is a buried aqueduct. Segments of the aqueduct to the south of the study area would be realigned as part of the West Davis Corridor Project.

3.4.1 Expected Impacts

The Preferred Alternative would require an estimated 34.5 acres of ROW acquisition, which would affect 18 parcels. Parcels that would be affected are shown in Figure 3-4, and the preliminary ROW acquisition acreages are shown in Table 3-1. Property impacts could vary slightly from these quantities during the final design phase. All of the acquisitions would be partial acquisition; the road alignment of the Preferred Alternative would not require any relocations or potential relocations.

Table 3-1: Right-of-Way Impacts

Reference Number	Acquisition	Parcel ID	Ownership/Land Use	Acquisition Estimate (Acres)
1	Partial	120450058	Private/Planned Subdivision	4.50
2	Partial	120450045	Public/Planned Elementary School	0.44
3	Partial	120390045	Private/Agricultural	2.28
4	Partial	120390043	Public/Planned Jr. High School	1.25
5	Partial	120390042	Private/Agricultural	0.82
6	Partial	120370092	Public/Davis County	0.41
7	Partial	120390028	Public/West Point City	0.17
8	Partial	120390005	Private/Agricultural	9.73
9	Partial	120390041	Public/Layton Aqueduct	1.35
10	Partial	120390010	Private/Agricultural	4.24
11	Partial	120400075	Private/Agricultural	1.78
12	Partial	120400086	Private/Agricultural	1.82
13	Partial	120400085	Private/Agricultural	0.10
14	Partial	120400081	Private/Agricultural	0.96
15	Partial	120400077	Private/Agricultural	0.95
16	Partial	120400067	Private/Agricultural	0.39
17	Partial	120400064	Private/Agricultural	3.11
18	Partial	120400026	Private/Residential	0.15
			Total	**34.45**

The Preferred Alternative road alignment would require moving the Layton Aqueduct alignment farther to the east than what was evaluated for West Davis Corridor. The necessary ROW to route the aqueduct around the interchange has been included in the preliminary interchange design evaluated in this SES and is included in the acreages shown in Table 3-1.

3.4.2 Mitigation

Property acquisitions will be completed according to the provisions of the Utah Relocation Assistance Act, Utah Code, Section 57-12.

3.5 Pedestrians and Bicyclists

Existing and proposed pedestrian and bicycle facilities are typically defined in regional long-range transportation plans. In this case, the plans have been compiled with input from the appropriate cities and counties, and they identify which pedestrian and bicyclist accommodations should be included in the regional system. UDOT promotes active (human-powered) transportation for optimizing mobility and examines opportunities to preserve and enhance active transportation when projects are implemented.

3.5.1 Methodology

Existing pedestrian and bicycle facilities were identified using available statewide GIS data and aerial photography. Planned facilities were identified by reviewing the regional and local transportation plans and through coordination with local governments.

3.5.2 Existing Conditions

Both of the general plans for Syracuse and West Point include goals for maintaining and improving connectivity and safety of pedestrians and bicyclists. The Syracuse Trail presently provides north-south travel by walking or bicycling through these communities. The SR-193 trail presently provides connectivity to the east. The *WFRC 2019-2050 Regional Transportation Plan* also identifies future bike and pedestrian routes along 4000 West (Cold Springs Road), 3000 West, and 700 South for local connectivity (WFRC 2019).

As described in the West Davis Corridor EIS (FHWA 2017), the alignment of the West Davis Corridor has been identified in local planning as a joint-development corridor for both the highway and a separated trail. The Syracuse Trail has already been constructed, but a portion of the trail will need to be realigned when the West Davis Corridor highway is constructed. This realignment will locate the trail on the east side of West Davis Corridor through the SR-193 study area.

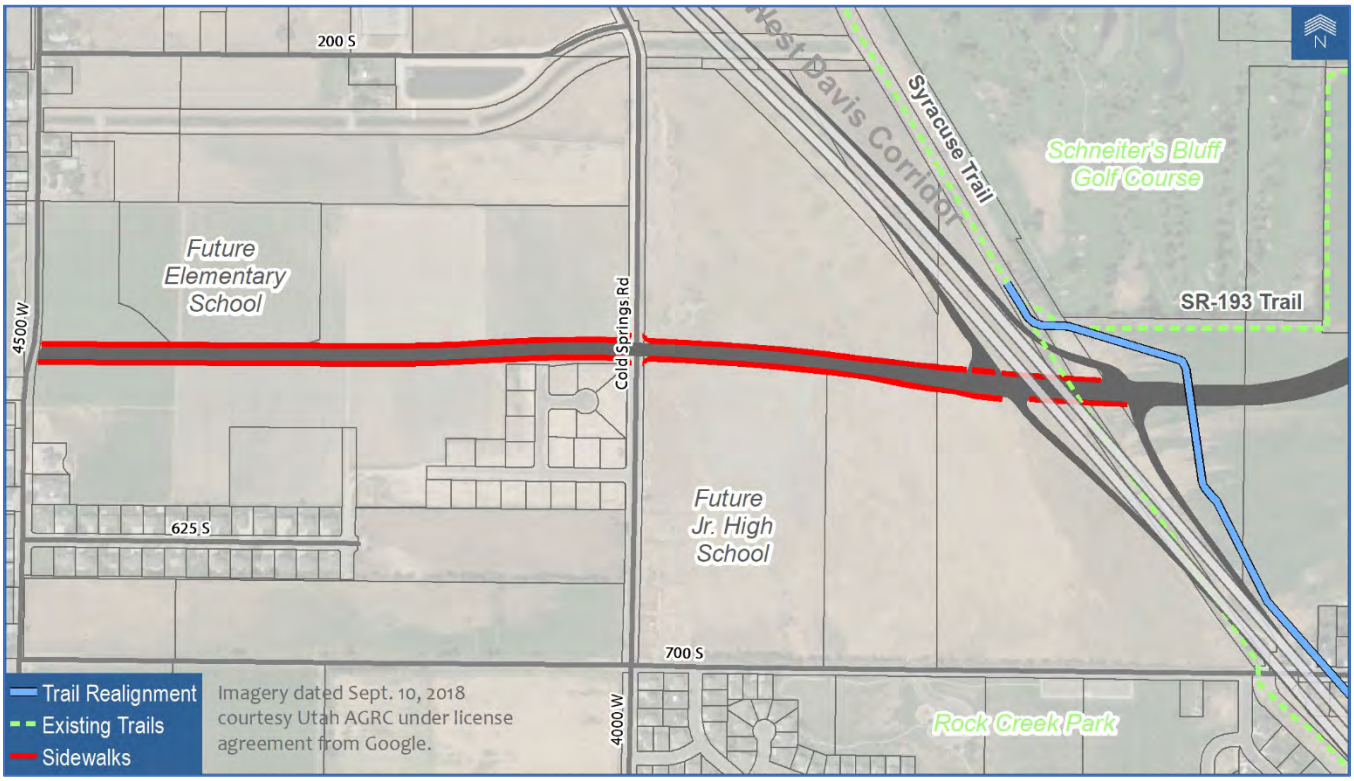
3.5.3 Expected Impacts

The Preferred Alternative would include sidewalks on either side of SR-193 between 4500 West and the interchange at West Davis Corridor (Figure 3-5). Sidewalks would create pedestrian connectivity from 4500 West to the Syracuse Trail and SR-193 Trail. West Point City plans a

multi-use trail connection at 200 South, which would provide bicycle connectivity to the west. The SR-193 Trail and the future 200 South Trail planned by West Point City would not be affected by the Preferred Alternative.

As mentioned for existing conditions, the Syracuse Trail will be realigned along the east side of West Davis Corridor as part of that project. Coordination between the West Davis Corridor and SR-193 project teams occurred during preparation of this SES so that the trail relocation would also be routed around the SR-193 interchange ramps. The trail realignment to accommodate the interchange is illustrated in Figure 3-5.

Figure 3-5: *Location of New Sidewalks and Realignment of the Syracuse Trail*



3.5.1 Mitigation

No mitigation related to pedestrians and bicycles would be required.

3.6 Economics

Transportation projects can have economic impacts because acquiring property, relocating businesses, or changing access is sometimes required.

3.6.1 Methodology

UDOT reviewed local plans and the Davis County website for information regarding existing and planned businesses and local tax revenues for the SR-193 study area.

3.6.2 Existing Conditions

Existing economic activity in the study area is agricultural production from agricultural lands and the Schneiter's Bluff Golf Course. There are no other businesses located in the study area portions of Syracuse or West Point.

Davis County collects property taxes for the cities, the county, school district, and various special-use districts in the county such as water, sewer, fire, library, and mosquito abatement, depending on location (Davis County 2015). The 2018 property tax rate in Syracuse was about 1.2% and for West Point it is 1.3% (Utah State Tax Commission 2018).

In recent years, Syracuse and West Point have been rapidly transitioning from agricultural communities to suburban, bedroom communities with a limited selection of local jobs and commercial or retail destinations.

In its 2050 General Plan, Syracuse City envisions the area south of SR-193 between 1000 West and 3000 West as a potential area for commercial development to diversify the tax base and create local jobs. This might include businesses such as data centers, light industrial manufacturing, or large office complexes (Syracuse City 2019).

West Point's economic goals are to establish a retail base without sacrificing the community's rural character (West Point 2019). West Point has experienced rapid growth of single-family housing and has limited commercial development (the nearest commercial area is at 300 North and 3000 West, approximately 0.5 miles north of the road alignment of the Preferred Alternative).

Both of the cities account for construction of the West Davis Corridor and an interchange at SR-193 in their respective local planning, envisioning a regional commercial shopping center surrounding the interchange.

3.6.3 Expected Impacts

As part of the Preferred Alternative, UDOT would acquire land that is currently in agricultural production, thus impacting agricultural operations, productivity, and revenue. The Preferred Alternative would not require business relocations, acquisition of commercial properties, or changes in access to existing businesses. Property acquired by UDOT would be exempt from property taxes; however, these would be a small proportion of the Study Area lands available for development.

3.6.4 Mitigation

No mitigation related to economic conditions would be required.

3.7 Noise

The State of Utah Administrative Code R930-3 and federal regulations (23 CFR 772) require consideration of noise abatement for certain types of highway projects, known as Type I projects. The UDOT Noise Abatement Policy implements the federal regulation and specifies the procedure for assessing noise impacts and mitigation for noise-sensitive land uses (UDOT 2017). As a new road segment, the SR-193 Preferred Alternative represents a Type I project. A noise study was prepared following the UDOT policy; the complete noise study report is included as Appendix B, with results summarized here.

What is an A-weighted decibel?

An A-weighted decibel is a unit for measuring sound pressure levels (i.e., loudness) that closely represents the range of human hearing.

3.7.1 Methodology

The noise evaluation area included first- and second-row noise-sensitive receptors closest to the Preferred Alternative alignment. Additional receptors were included along 4500 West and 3000 West (the project termini) to help determine the distance of noise increases from the alignment. Table 3-2 presents UDOT's noise-abatement criteria (NAC) for noise-sensitive land-use activity categories. NAC are used to define the sound levels that are considered an impact for each land use activity category. Impacts are based on an A-weighted decibel (dBA) scale averaged over one hour.

Table 3-2: *Noise Abatement Criteria by Land Use Activity Category*

Activity Category	Leq(h)[a]	Land Use Activity Description
A	56 dBA[b] (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	66 dBA (exterior)	Residential.
C	66 dBA (exterior)	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails and trail crossings.
D	51 dBA (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	71 dBA (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands for which no building permit has been issued.

Source: *UDOT 2017*

[a] Hourly equivalent sound level.

[b] Decibels on the A-weighted scale.

In the UDOT Noise Abatement Policy, noise abatement is evaluated for impacted receptors. In the policy, an impacted receptor either:

1. has or is predicted to have noise levels approaching or higher than the noise abatement criteria threshold for the appropriate land use category, or

2. is predicted to receive a substantial noise increase, defined as 10 dBA or more over existing noise levels.

Noise-sensitive land use activity areas in the study area include residential neighborhoods (Category B) and an outdoor activity area, Schneiter's Bluff Golf Course (Category C), The UDOT noise-abatement criterion level for both of these land-use categories is a Leq(h) of 66 dBA.

What is Leq(h)?

Leq(h) is the average sound level over a one-hour period.

UDOT monitored existing noise levels in the noise evaluation area at six study area locations in August 2019 to provide information about existing noise levels and to validate the noise model used for this project. The noise-monitoring locations were selected to represent existing residential developments and recreation areas.

To determine noise impacts of the Preferred Alternative, UDOT estimated the future worst-case traffic noise levels using FHWA's Traffic Noise Model version 2.5. The model included the SR-193 Preferred Alternative as well as the West Davis Corridor. The traffic volumes used in the model were based on Level of Service C volumes at the posted speed limit. Where the noise modeling predicts traffic noise impacts at sensitive receptors, UDOT evaluated the feasibility and reasonableness of abatement according to the Noise Abatement Policy (UDOT 2017).

3.7.2 Existing Conditions

Under existing conditions, none of the field-measured or modeled existing noise levels in the study area exceed the abatement criteria. The highest existing traffic noise in the study area is in the vicinity of the intersection of SR-193 and 3000 West. Modeled existing traffic noise in this vicinity ranged from 53.7 dBA to 57.1 dBA. The vicinity of 4500 West had modeled existing noise in the range of 45.4 dBA to 50.4 dBA. The vicinity of 700 South had modeled existing noise 46.8 dBA to 49.5 dBA. These modeled noise levels were within 3 dBA of field-measured traffic noise for these locations.

Locations that are not near highways, arterial roadways, or collector roadways include residences in the 625 South neighborhood, new and permitted residences in the vicinity of 550 South/Cold Springs Road, residences on the north side of 3350 West, and recreation areas along the Syracuse Trail, SR-193 Trail, and Schneiter's Bluff Golf Course. The field-measured ambient noise for these locations was in the range of 41.9 to 43.3 dBA.

3.7.3 Expected Impacts

Locations of modeled noise receptors are illustrated in Figures 3-6 and 3-7 and results of noise modeling are summarized in Table 3-3.

Figure 3-6: *Location of Noise Receptors West of the West Davis Corridor*

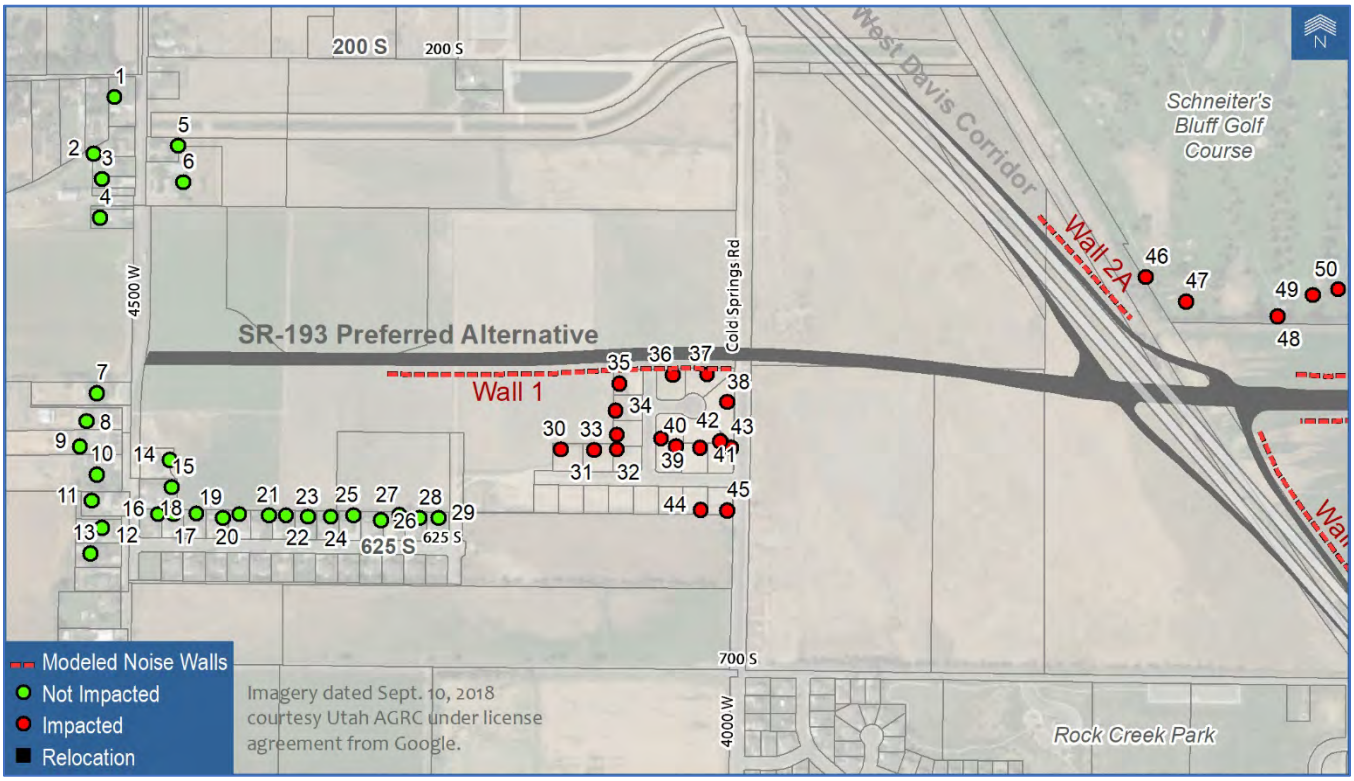


Figure 3-7: *Location of Noise Receptors East of the West Davis Corridor*

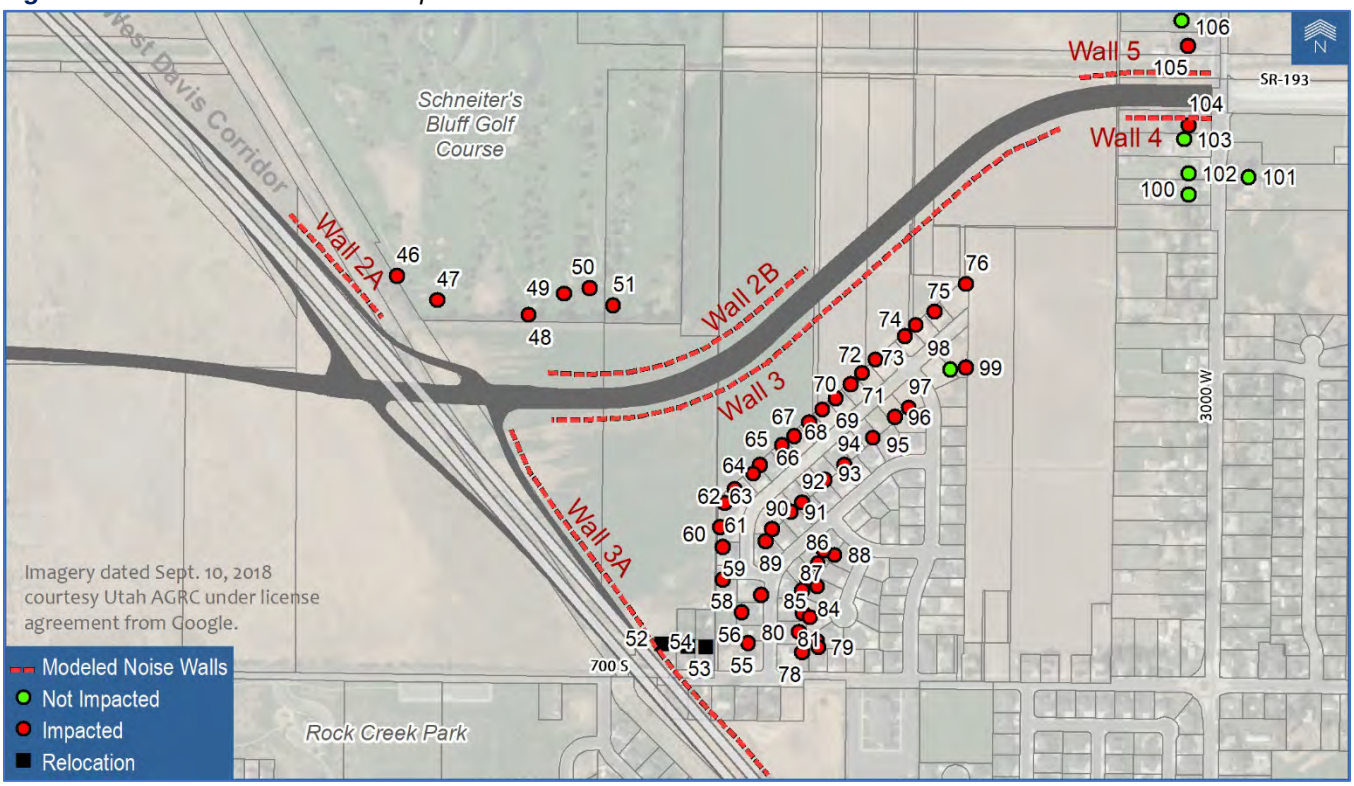


Table 3-3: Modeled Existing and Future Noise Levels

Receptor	Description/ Location	Noise Abatement Criterion	Existing Noise, 2019 [a]	Future Noise, 2050 [a]	Increase	Noise Impact? [b]
1	226 S 4500 West	66	45	47	2	No
2	296 S 4500 West	66	42	48	6	No
3	314 S 4500 West	66	48	49	1	No
4	326 S 4500 West	66	49	50	1	No
5	295 S 4500 West	66	49	50	1	No
6	321 S 4500 West	66	48	50	2	No
7	530 S 4500 West	66	50	53	3	No
8	534 S 4500 West	66	42	51	9	No
9	538 S 4500 West	66	47	50	3	No
10	560 S 4500 West	66	50	51	1	No
11	572 S 4500 West	66	49	50	1	No
12	614 S 4500 West	66	50	51	1	No
13	638 S 4500 West	66	45	47	2	No
14	549 S SR-110	66	44	52	8	No
15	571 S 4500 West	66	42	49	7	No
16	4484 W 625 South	66	50	52	2	No
17	4468 W 625 South	66	45	49	4	No
18	4452 W 625 South	66	42	49	7	No
19	4436 W 625 South	66	42	49	7	No
20	4418 W 625 South	66	42	49	7	No
21	4402 W 625 South	66	42	49	7	No
22	4386 W 625 South	66	42	49	7	No
23	4370 W 625 South	66	42	49	7	No
24	4352 W 625 South	66	42	50	8	No
25	4336 W 625 South	66	42	50	8	No
26	4320 W 625 South	66	42	50	8	No
27	4302 W 625 South	66	42	50	8	No
28	4286 W 625 South	66	42	50	8	No
29	4268 W 625 South	66	42	51	9	No
30	4164 W 550 South	66	42	55	13	Yes
31	4140 W 550 South	66	42	55	13	Yes
32	4116 W 550 South	66	42	55	13	Yes
33	512 S 4100 West	66	42	56	14	Yes
34	478 S 4100 West	66	42	59	17	Yes
35	460 S 4100 West	66	42	63	21	Yes
36	463 S 4100 West	66	42	65	23	Yes
37	4040 W 475 South	66	42	65	23	Yes
38	4018 W 475 South	66	42	60	18	Yes
39	503 S 4100 West	66	42	56	14	Yes
40	529 S 4100 West	66	42	55	13	Yes

Receptor	Description/ Location	Noise Abatement Criterion	Existing Noise, 2019 [a]	Future Noise, 2050 [a]	Increase	Noise Impact? [b]
41	4048 W 550 South	66	42	55	13	Yes
42	4045 W 475 South	66	42	56	14	Yes
43	4020 W 550 South	66	42	56	14	Yes
44	4051 W 550 South	66	42	52	10	Yes
45	4023 W 550 South	66	42	53	11	Yes
46	Golf Course - Hole 13 Tee	66	42	67	25	Yes
47	Golf Course - Hole 12 Green	66	42	66	24	Yes
48	Golf Course - Hole 7 Tee	66	42	64	22	Yes
49	Golf Course - Hole 6 Green	66	42	62	20	Yes
50	Golf Course - Hole 4 Tee	66	42	61	19	Yes
51	Golf Course - Hole 3 Green	66	42	62	20	Yes
52	3454 W 700 South	66	51	Relocation (West Davis Corridor Project)		
53	3378 W 700 South	66	47	Relocation (West Davis Corridor Project)		
54	3370 W 700 South	66	47	Relocation (West Davis Corridor Project)		
55	696 S 3300 West	66	42	58	16	Yes
56	674 S 3300 West	66	42	60	18	Yes
57	662 S 3300 West	66	42	54	12	Yes
58	3353 W 625 South	66	42	57	15	Yes
59	622 S 3350 West	66	42	58	16	Yes
60	618 S 3350 West	66	42	59	17	Yes
61	592 S 3350 West	66	42	58	16	Yes
62	564 S 3350 West	66	42	58	16	Yes
63	542 S 3350 West	66	42	58	16	Yes
64	536 S 3350 West	66	42	58	16	Yes
65	524 S 3350 West	66	42	58	16	Yes
66	506 S 3350 West	66	42	58	16	Yes
67	498 S 3350 West	66	42	58	16	Yes
68	482 S 3350 West	66	42	58	16	Yes
69	464 S 3350 West	66	42	58	16	Yes
70	458 S 3350 West	66	42	58	16	Yes
71	446 S 3350 West	66	42	58	16	Yes
72	436 S 3200 West	66	42	58	16	Yes
73	428 S 3350 West	66	42	58	16	Yes
74	416 S 3350 West	66	42	58	16	Yes
75	404 S 3350 West	66	42	58	16	Yes
76	396 S 3350 West	66	42	58	16	Yes
77	676 S 3275 West	66	42	57	15	Yes
78	693 S 3300 West	66	42	58	16	Yes

Receptor	Description/ Location	Noise Abatement Criterion	Existing Noise, 2019 [a]	Future Noise, 2050 [a]	Increase	Noise Impact? [b]
79	676 S 3275 West	66	42	57	15	Yes
80	681 S 3300 West	66	42	57	15	Yes
81	658 S 3275 West	66	42	56	14	Yes
82	667 S 3300 West	66	42	56	14	Yes
83	651 S 3300 West	66	42	56	14	Yes
84	642 S 3275 West	66	42	56	14	Yes
85	623 S 3300 West	66	42	56	14	Yes
86	611 S 3300 West	66	42	55	13	Yes
87	603 S 3300 West	66	42	54	12	Yes
88	608 S 3275 West	66	42	54	12	Yes
89	624 S 3300 West	66	42	53	11	Yes
90	583 S 3350 West	66	42	54	12	Yes
91	571 S 3350 West	66	42	53	11	Yes
92	539 S 3350 West	66	42	53	11	Yes
93	519 S 3350 West	66	42	53	11	Yes
94	501 S 3350 West	66	42	52	10	Yes
95	479 S 3350 West	66	42	52	10	Yes
96	449 S 3350 West	66	42	54	12	Yes
97	438 S 3200 West	66	42	53	11	Yes
98	431 S 3350 West	66	42	51	9	No
99	413 S 3350 West	66	42	52	10	Yes
100	290 S 3000 West	66	47	56	9	No
101	277 S 3000 West	66	53	59	6	No
102	270 S 3000 West	66	54	59	5	No
103	258 S 3000 West	66	56	64	8	No
104	246 S 3000 West	66	54	67	13	Yes
105	172 S 3000 West	66	54	65	11	Yes
106	136 S 3000 West	66	54	61	7	No
107	112 S 3000 West	66	54	58	4	No

[a] Modeled Leq(h) for worst traffic hour (volume LOS C all roads); decibels on the A-weighted scale (dBA).
[b] All impacted receptors have a substantial increase (10 dBA or greater increase over existing noise level); three receptors (46, 47, and 104) also have modeled future noise levels exceeding the Noise Abatement Criterion.

All modeled receptors would experience noise increases due to increased traffic volumes in the study area. The average noise increase across the study area is approximately 12 dBA. Of 107 receptor locations modeled there were 68 with a substantial noise increase (10 dBA or greater increase over existing noise levels). The highest noise increase would be at Schneiter's Bluff Golf Course (receptors that are closest to the interchange), which have modeled noise increases of 19-25 dBA over the existing ambient condition.

3.7.4 Mitigation

Five noise wall locations were modeled to assess noise abatement for the 68 impacted receptors. The locations of these modeled noise walls are shown in Figures 3-6 and 3-7, and complete modeling results are described in the noise report, which can be found in Appendix B. Noise barriers were evaluated for the UDOT noise abatement criteria described in the policy (UDOT 2017). Noise abatement will be implemented only if UDOT determines that noise-abatement measures are both feasible and reasonable.

Feasibility is determined first by the following criteria:

- **Engineering Considerations**: Engineering considerations such as safety, presence of cross streets, sight distance, access to adjacent properties, wall height, topography, drainage, utilities, maintenance access and maintenance of the abatement measure must be taken into account as part of establishing feasibility. Noise-abatement measures are not intended to serve as privacy fences or safety barriers. Abatement measures installed on structures will not exceed 10 feet in height measured from the top of deck or roadway to the top of the noise wall. Noise walls will not be installed on structures that require retrofitting to accommodate the noise abatement measure. Noise abatement measures will be considered if the project meets the criteria established in this policy if structure replacement is included as part of the project. Abatement measures shall be consistent with general American Association of State Highway and Transportation Officials (AASHTO) design principles.
- **Safety on Urban Non-Access Controlled Roadways**: To avoid a damaged wall from becoming a safety hazard, in the event of a failure, wall height shall be no greater than the distance from the back of curb to the face of proposed wall.
- **Acoustic Feasibility**: Noise abatement must be considered acoustically feasible. This is defined as achieving at least a 5-dBA highway traffic noise reduction for at least 50 percent of front-row receptors.

If a proposed noise barrier is determined to be feasible, it is then assessed using the following criteria:

- **Noise Abatement Design Goal**: Every reasonable effort should be made to obtain substantial noise reductions. UDOT defines the minimum noise reduction (design goal) from proposed abatement measures to be 7 dBA or greater for at least 35 percent of front-row receptors. In accordance with 23 CFR 772, no abatement measure shall be deemed reasonable if the noise abatement design goal cannot be achieved.
- **Cost Effectiveness**: The cost must not exceed $30,000 per benefitted residential receptor (Activity Category B) and $360 per lineal foot for Activity Categories A, C, D, or E.

- **Viewpoints of Property Owners and Residents**: If the previous two criteria can be met, balloting of property owners and residents is conducted to determine if noise abatement is desired.

The following engineering and safety considerations were important for the modeled noise barriers in the study area:

- Wall 1 was modeled for the impacted receptors along the segment of SR-193 west of the interchange; the maximum height of this wall was limited to 9 feet, which is the distance from the face of the wall to the back of the curb.
- Wall 2 Segment A could not be extended eastward around the interchange to meet up with Wall 2 Segment B due to the necessary relocation of the Layton Aqueduct.
- Wall 3A could not be extended eastward toward Wall 3B for the same reason. This created a gap between these respective wall segments. Also, portions of Wall 3A would be located on a structure (a West Davis Corridor Bridge over 700 South); the maximum height of a noise wall on a structure is 10 feet.
- Walls 4 and 5 were modeled up to 12-feet high for the location of these walls along the Preferred Alternative right-of-way near the intersection with 3000 South.

None of the modeled noise walls meet the feasibility and reasonableness design criteria. In general, the largest constraint on the acoustic feasibility of the modeled noise walls was distance from the noise wall to the receptors. Wall 4 came the closest to meeting the criteria, providing acoustic feasibility (5 dBA reduction) and design goal (7 dBA) reductions for the front-row residential receptor. However, it was determined the wall was not cost effective because it would cost $50,600 per benefitted property, which exceeds the $30,000 limit.

Since none of the noise walls would meet the acoustic feasibility and reasonableness criteria, none were recommended for balloting.

3.8 Visual Resources

Transportation projects alter the visual and aesthetic qualities of their surroundings. Local communities often have aesthetic guidelines as part of a general plan to help create a sense of place. UDOT seeks a consistent approach to aesthetics to provide continuity to the state's transportation infrastructure while also allowing projects to exhibit unique features and local compatibility.

3.8.1 Methodology

In general, the visual environment in a given setting is influenced by existing topography, vegetation, and structures and different settings and viewpoints have differing fields of view as well as degrees of visual sensitivity based on viewer expectations. To describe the existing visual environment, UDOT considered visually sensitive resources and locations in the study area. The visual setting was characterized using aerial photography and photographs from site visits to illustrate existing conditions. Impacts were assessed qualitatively, based on the preliminary design of the Preferred Alternative, including typical cross sections and elevation profiles to assess expected changes from existing conditions.

3.8.2 Existing Conditions

As described in Section 3.2, the study area is primarily agricultural at the present time but is currently undergoing rapid residential development. Viewers in the study area include neighborhood residents, trail users, drivers, and golfers at Schneiter's Bluff Golf Course.

At present, residential viewers located along the outer boundaries of subdivisions have open space/agricultural views with dispersed residential subdivisions in the middle-ground and background views of open sky to the west or the Wasatch Range to the east (see Figures 3-8 and 3-9). Schneiter's Bluff Golf Course offers middle ground views bounded by trees and background views of the Wasatch Range.

As the study area continues to develop, middle-ground views will be increasingly dominated by residential structures and new commercial developments. Construction of West Davis Corridor will add a north-south linear feature to the foreground and middle ground views for residents, trail users, and from some viewpoints at the golf course that are not obscured by trees along the golf course boundary. In terms of the nighttime visual environment, the West Davis Corridor EIS (FHWA 2017) indicates that the highway design would include fixtures that shield sideways glare and minimize lighting impacts; areas near interchanges would have increased illumination.

Figure 3-8: *A Typical Existing View from the Trails Edge Subdivision (3350 West) Facing Northwest*

Figure 3-9: *A typical Existing View of the Study Area for Residents and Drivers Along 4500 West*

3.8.3 Expected Impacts

The Preferred Alternative would add an additional east-west linear feature to the foreground and middle-ground viewshed. The interchange at West Davis Corridor would be constructed on fill material, creating a north-south visual barrier from some viewpoints in the study area.

The Preferred Alternative will result in a distinct change in character of the study area viewshed as it is currently experienced by viewers, with the degree of visual impact dependent on distance from the project location and existing foreground features (e.g., other residences, tall trees) that obscure middle-ground and background views.

The addition of the interchange ramps at West Davis Corridor would add additional street lighting in that vicinity.

3.8.4 Mitigation

Visual impacts of the Preferred Alternative can be partially mitigated through aesthetic treatments such as landscaping and use of colors, textures, and styles that are compatible with the local setting and community preferences. UDOT considers aesthetic treatments during the final design phase of projects, in coordination with municipalities. Aesthetic treatments are completed in accordance with UDOT Policy 08C-03, *Project Aesthetics and Landscaping Plan Development and Review* (UDOT 2014a), and UDOT's *Aesthetics Guidelines* (UDOT 2014b).

3.9 Cultural Resources

Cultural resources (historically significant archaeological and architectural resources) offer a view of a community's history and unique assets. The purpose of cultural resource investigations under the National Historic Preservation Act and Utah Code (UCA 9-8-404) is to consider the effects of undertakings on cultural resources that are listed or eligible for listing on the National Register of Historic Places (NRHP) (historic properties). Determinations of the eligibility of historic properties and effects findings are made in consultation with the State Historic Preservation Officer (SHPO). As part of the process, Native American tribes and other potentially interested parties are consulted to help identify resources and to offer the opportunity to consult regarding project effects.

What is an eligible historical property?

An eligible property is one that meets the requirements to be listed on the National Register of Historic Places.

According to the Programmatic Agreement between UDOT and SHPO (renewed January 22, 2018) UDOT will be in compliance with Section 9-8-404 of the Utah Code for state projects by following the process in Section 106 of the National Historic Preservation Act for federal projects found in the Third Amended Programmatic Agreement between FHWA and UDOT.

3.9.1 Methodology

The study area for cultural resources is called the "area of potential effects" (APE), which is the geographic area or areas where an undertaking may result in direct or indirect alterations in the character or

use of historic properties. The APE for the SR-193 project consisted of an area that contained the build alternatives west of 3000 West. UDOT obtained resource investigations to identify potential archaeological and architectural historic resources in the footprint of the Preferred Alternative (Certus 2019a, 2019b). The survey area was a subset of the APE and was based on the Preferred Alternative. Areas that had been previously surveyed for the West Davis Corridor project were reassessed at a reconnaissance level while areas that had not been previously surveyed were intensively surveyed for the current undertaking. The intensive-level survey involved walking transects spaced no more than 50-feet apart, which is consistent with UDOT archaeological inventory guidelines. Also in accordance with UDOT guidelines, and to accommodate a time lag between the compilation of the survey data and any future construction associated with the undertaking, Certus employed a cutoff age of 45-years-old to designate archaeological resources as historical.

A handheld GPS unit capable of sub-meter accuracy and aerial photographs marked with the survey area boundary were used for navigation within the survey area. The GPS unit was also used to document the locations of any newly identified cultural resources.

For the same APE, a selective reconnaissance-level historic structures inventory was completed. Historic structures in the previously surveyed area were revisited to determine whether any changes to the property that might affect National Register eligibility had occurred.

3.9.2 Existing Conditions

Four archaeological sites were identified: the Hooper Canal System (Site 42DV158), an Unnamed Drainage Ditch (Site 42DV172), the Stevenson Ditch System (Site 42DV182), and the Layton Aqueduct (Site 42DV182). Of these, only the Hooper Canal System was determined to be an eligible archaeological resource (see SHPO concurrence Appendix C). However, the portions of the Hooper Canal System within the APE have been piped underground during the modern era using PVC pipe that was laid in the ditch and buried and are not eligible archaeological resources. Therefore, although the overall canal system is historically significant, no physical historically eligible features of the canal system were found within the APE (Certus 2019a).

The APE was also inventoried for potentially eligible historic buildings (Certus 2019b), resulting in the identification of one historically eligible residential structure located at 246 South 3000 West.

3.9.3 Expected Impacts

The Preferred Alternative alignment overlays the Hooper Canal east-west lateral and would relocate it and its modern diversion structure adjacent to the new paved road. The open channel on 4500 West would be piped for approximately 80 feet under the new intersection of 4500 West and SR-193. The currently piped main canal along Cold Springs Road would not be impacted. The Preferred Alternative would affect a relatively small portion of the canal system and would not substantially impact or alter any contributing elements of the site or any of the

character-defining features for which it was determined to be an eligible historic resource. Thus, UDOT made a finding of *No Adverse Effect* for the Hooper Canal System, and the SHPO concurred on September 11, 2019.

For the eligible architectural structure at 246 South 3000 West, the Preferred Alternative would partially acquire approximately 0.15 acres of the 0.93-acre parcel, along the side of the property. The acquisition and associated construction would affect a relatively small portion of this property and would not substantially impact or alter any contributing elements of the property or any of the character-defining features for which it was determined to be an eligible historic property. Therefore, UDOT's finding was *No Adverse Effect*, and the SHPO concurred on September 11, 2019.

3.9.4 Consultation

Consultation was initiated through letters sent to the Confederated Tribes of the Goshute Reservation, Skull Valley Band of Goshutes, Northwestern Band of Shoshone Nation, Shoshone-Bannock Tribes, Eastern Shoshone Tribe of the Wind River Reservation, Uintah and Ouray Ute Tribes, and the Cedar and Shivwits Bands of the Paiute Indians (sent March 4, 2019). Letters were also sent to the Syracuse Certified Local Government (CLG) representative (sent March 6, 2019). No responses or comments were received from the tribes or CLG.

3.9.5 Mitigation

Due to the findings of *No Adverse Effect* for the eligible historic properties in the study area and SHPO concurrence with these findings (see Appendix C), no mitigation would be required.

3.10 Wetlands, Other Waters of the US, and Water Resources

Because of the importance of wetlands for water quality, flood management, and aquatic ecology, impacts on this resource are regulated by federal law. Proposals to fill or dredge jurisdictional wetlands or Waters of the United States are subject to Section 404 permitting requirements of the Clean Water Act. administered by the US Environmental Protection Agency and implemented by the US Army Corps of Engineers (USACE).

What are Waters of the US (WOTUS)?

Waters of the US is a regulatory term that refers to bodies of water that fall under federal jurisdiction for wetland permitting requirements.

Other water resource issues potentially affected by a project include floodplains, streams, water rights, and water quality. Because this resource has many facets, there are also many regulations to ensure the system's proper functioning. These include the Clean Water Act (CWA), the Utah Administrative Codes R317 and R309, and guidance by the Utah Division of Water Quality and the Utah Division of Drinking Water. The EPA has authority for enforcing CWA requirements, which includes ensuring thresholds for pollutants in specific bodies of water are not exceeded. Additionally, the Federal Emergency Management Agency requires the examination of floodplains for development projects. In

addition, UDOT must comply with State of Utah regulations for water wells (Utah Administrative Code [UAC] R655-4), stream alteration (UAC R655-13), and water quality (UAC R317), specifically UAC R317-8 pertaining to the Utah Pollutant Discharge Elimination System.

3.10.1 Methodology

WETLANDS AND OTHER WATERS OF THE UNITED STATES

Study area wetlands were identified using UDOT and USACE guidelines for delineating wetlands. UDOT had previously obtained a preliminary jurisdictional determination from USACE for the West Davis Corridor. Portions of the SR-193 study area that had not been previously delineated were surveyed by a Professional Wetland Scientist in May 2019 to delineate wetlands. Two of the preliminary alignments of SR-193 were delineated. These were the 400 South and 600 South alignments described in Chapter 2 (the 400 South alignment was identified as the Preferred Alternative).

FLOODPLAINS

UDOT identified the local communities and obtained the effective Flood Insurance Rate Maps for the study area from the FEMA Map Service Center (FEMA 2007).

PERENNIAL, INTERMITTENT OR EPHEMERAL STREAMS

Stream GIS data were obtained from AGRC (AGRC 2016). The data includes canals and aqueducts as well as natural streams.

POINTS OF DIVERSION

Points-of-diversion data were obtained from the Utah Division of Water Rights as a GIS shapefile (UDWRI 2019). UDOT performed a qualitative assessment for each point of diversion in the water resources impact analysis area.

3.10.2 Existing Conditions

UDOT previously obtained wetland delineations for portions of the study area during the West Davis Corridor EIS process. A delineation was completed by HDR Engineering in July 2016, portions of which have received a preliminary jurisdictional determination from the USACE. Potential wetland areas beyond the West Davis Corridor delineation but within potential alignments for the SR-193 project were delineated in May 2019 by BIO-WEST, Inc. Wetland areas inclusive of the two delineations are shown in Figure 3-10.

Figure 3-10: *Potentially Jurisdictional Wetlands and Waters of the U.S.*

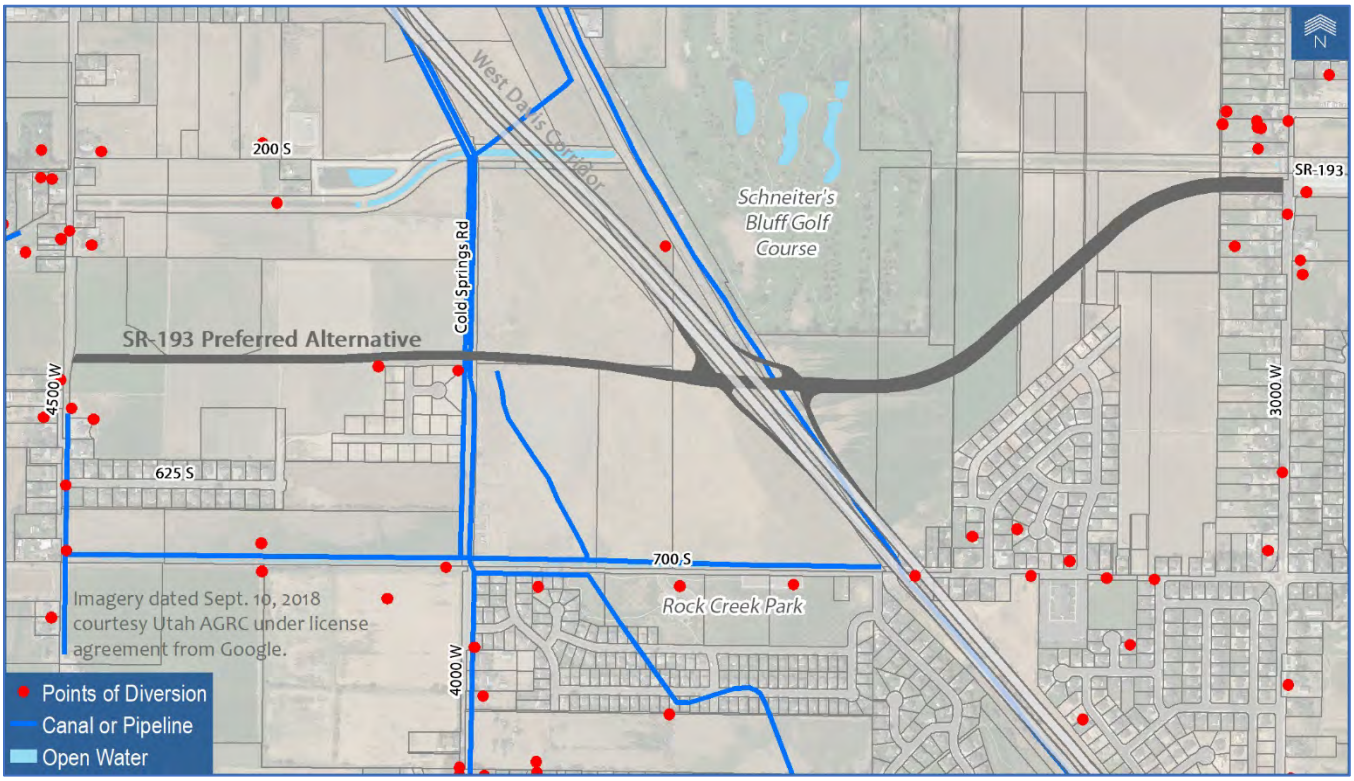
Note: The features shown here are representative of potentially jurisdictional wetlands and Waters of the U.S. that have been identified in delineations conducted for UDOT for the West Davis Corridor and SR-193 study areas but do not represent a jurisdictional determination from the USACE, which would be obtained in the wetland permitting process.

There are no special flood-hazard areas in the study area identified on the Flood Insurance Rate Map (FEMA 2007). There are also no natural perennial or intermittent streams in the study area. The only area of open water intersected in the study area is an open canal crossed by the West Davis Corridor alignment to the west of Schneiter's Bluff Golf Course (Figure 3-11). The Layton Aqueduct crosses through the study area from north to south; realignment of a portion of this pipeline is discussed in the ROW section of this chapter (Section 3.4).

Data from the National Hydrographic Dataset (AGRC 2016) shows two canals/ditches running along the west side of Cold Springs Road. Based on field observations, these are now in an underground pipe or pipes. Also based on field observations, there is a lateral pipe that extends westward from Cold Springs Road which occurs underneath the proposed alignment of SR-193.

Data showing water rights points of diversion (UDWRI 2019) for the study area are shown in Figure 3-11. All of the points shown in the extent of this figure are underground points of diversion (wells).

Figure 3-11: Water Rights Points of Diversion, Canals, and Open Water



Sources: UDWRI (2019), AGRC (2016)

3.10.3 Expected Impacts

Based on the preliminary design footprint, the construction of the Preferred Alternative would require placement of fill or dredging of an estimated 10.6 acres of potentially jurisdictional wetlands. This would be inclusive of the SR-193 footprint, drainage features, and the addition of the interchange at West Davis Corridor; it does not include the direct impact limits of West Davis Corridor, which would be permitted as part of that project.

The Preferred Alternative road alignment would not intersect a FEMA-designated floodplain or affect water right points of diversion. The Preferred Alternative would not create a stream alteration and thus would not require a stream alteration permit.

The Preferred Alternative east of West Davis Corridor would be constructed as a four-lane divided highway. Lanes in each direction would have a vegetated side slope that would allow most stormwater to infiltrate into the ground; some stormwater would flow into detention ponds between the northbound on- and off-ramps and the mainline of West Davis Corridor. The Preferred Alternative west of West Davis Corridor would be constructed with curb and gutter to convey stormwater to a proposed detention pond. A location for the pond has been identified along the south side of the alignment, on a portion of property owned by the Davis School District and planned as the site of a new junior high school. Area for the detention pond has been included in the proposed

ROW for the project (Section 3.4). Stormwater runoff could contain common roadway contaminants including copper, lead, zinc, and salts. The use of existing, modified, or new storm drain systems would minimize negative impacts to water quality by including flow management controls, oil skimmers, grease traps, etc.; storm drain facilities will be analyzed and designed in accordance with UDOT's Stormwater Quality Design Manual during final design.

The Preferred Alternative overlays the east-west lateral pipeline that extends westward from the main pipeline of the Hooper Canal System, buried next to Cold Springs Road. The lateral water pipe and its diversion would be relocated within the ROW. The currently piped main canal along Cold Springs Road would not be impacted. There is also an open channel along the east side of 4500 West (not shown in Figure 3-11). This channel would be piped for approximately 80 feet under the new intersection of 4500 West and SR-193.

3.10.4 Mitigation

UDOT is coordinating with USACE for jurisdictional determinations and wetland permitting and mitigation requirements. No mitigation related to water resources would be required. See Section 3.13 regarding measures for protecting water quality during construction.

3.11 Threatened and Endangered Species

Threatened and endangered species legislation was established to protect plants and animals that are at risk of extinction. Potential effects to these species or their habitat require consideration under the Endangered Species Act (ESA). If there is no federal action (which is the case for the SR-193 project), Section 10 of the ESA applies. Under Section 10, an incidental take permit is required when non-federal activities would result in the "take" of listed species. A Habitat Conservation Plan (HCP) must accompany an application for an incidental take permit.

3.11.1 Methodology

Available databases from the USFWS and the Utah Division of Wildlife Resources (UDWR) were searched for potential species occurrences and habitat in the study area.

3.11.2 Existing Conditions

The USFWS online system, Information for Planning and Consultation (IPaC), was searched for potential occurrences and habitat for listed threatened or endangered species (USFWS 2019). No species occurrences or critical habitat were identified for the study area. Additionally, the Utah Natural Heritage Database was searched for any recorded occurrences of a federally listed species within a 2-mile radius (UDWR 2019a), and no occurrences were identified.

3.11.3 Expected Impacts

There are no known occurrences, critical habitat, or suitable habitat for any federally listed species in the study area, therefore the Preferred Alternative would have *No Effect* on federally listed species.

3.11.4 Mitigation

No mitigation for threatened and endangered species would be required.

3.12 Wildlife

Besides species which receive special considerations under the ESA, the State of Utah identifies sensitive species as candidates for federal listing or for which there is credible scientific evidence to substantiate a threat to continued population viability. Additionally, the federal Bald and Golden Eagle Protection Act could apply if any individual or nest of these two eagle species could be affected by project actions, and the Migratory Bird Treaty Act outlaws all instances that would result in take of a designated migratory bird species.

3.12.1 Methodology

Available databases were searched for known species occurrences in the study area. Habitat characteristics of the study area were assessed based on aerial photography and a site visit on August 1, 2019.

3.12.2 Existing Conditions

Agricultural fields provide habitat for wildlife including upland birds, small mammals, deer, and amphibians. Golf courses also provide habitat for nesting birds and other species. Near the study area, Howard Slough Waterfowl Management Area (WMA) and Great Salt Lake shoreline provide habitat for numerous shorebirds and waterfowl. Table 3-4 describes the likelihood of occurrence for 17 state-listed sensitive species in Davis County. Of these, there are five sensitive bird species with known nearby occurrences or potentially suitable habitat in the study area: bobolink, burrowing owl, grasshopper sparrow, long-billed curlew, and short-eared owl. The project does not take place within a designated Sage Grouse Management Area, nor does it take place within mapped habitat for sage-grouse.

Table 3-4: State-Listed Species for Davis County and Likelihood of Occurrence in the Study Area

Common Name	Scientific Name	Status[a]	Suitable Habitat[b]	Species Occurrence
American White Pelican	*Pelecanus erythrorhynchos*	SPC	Known breeding colony on Great Salt Lake. Primary food is fish. Preferred foraging areas are shallow lakes, marshlands, and rivers. Frequently sighted in nearby waters, but no suitable habitat in the study area.	Unlikely
Bald Eagle	*Haliaeetus leucocephalus*	SPC	Nests in tall trees commonly near open water, water where fish and waterfowl prey are available. Wintering areas commonly associated with open water or nearby prey sources. Generally avoids areas with nearby human activity and development. Sightings along Great Salt Lake shoreline, causeway, and Antelope Island.	Unlikely
Bluehead Sucker	*Catostomus discobolus*	CS	Fast flowing water in high gradient reaches of mountain rivers.	Unlikely
Bobolink	*Dolichonyx oryzivorus*	SPC	Once common in Utah, sightings are rare. Nests and forages in wet meadows and transitional areas. No nearby sightings.	Possible
Bonneville Cutthroat Trout	*Oncorhynchus clarkii utah*	CS	High-elevation mountain streams and lakes to low-elevation grassland streams.	Unlikely
Burrowing Owl	*Athene cunicularia*	SPC	Habitats are open grassland and prairies, but also utilizes other open situations, such as golf courses, cemeteries, and airports. Sightings along Great Salt Lake shoreline, causeway, and Antelope Island.	Possible
Columbia Spotted Frog	*Rana luteiventris*	CS	Isolated springs and seeps.	Unlikely
Ferruginous Hawk	*Buteo regalis*	SPC	Flat and rolling terrain, grasslands, agriculture, shrub lands, and periphery of pinyon-juniper forests. Strong preference for elevated nest sites: cliffs, buttes, creek banks. During winter uses open farmlands, grasslands, and deserts where prey items such as prairie dogs are present.	Unlikely
Grasshopper Sparrow	*Ammodramus savannarum*	SPC	Weedy grasslands. Nests built at the base of grass clumps. Sightings along Great Salt Lake shoreline, causeway, and Antelope Island.	Possible
Kit Fox	*Vulpes macrotis*	SPC	Open prairie, plains, and desert habitats.	Unlikely
Least Chub	*Iotichthys phlegethontis*	CS	Occurs only in scattered springs and streams in western Utah.	Unlikely
Lewis's Woodpecker	*Melanerpes lewis*	SPC	Attracted to burned-over Douglas-fir, mixed conifer, pinyon-juniper, riparian, and oak woodlands. Areas with a good under-story of grasses and shrubs to support insect prey populations are preferred. Winters in wide range of habitats, but oak woodlands are preferred.	Unlikely
Long-billed Curlew	*Numenius americanus*	SPC	At Great Salt Lake, prefers to nest near the edges of barren alkali flats. Commonly seen on Great Salt Lake shorelines and nearby open fields.	Possible

Common Name	Scientific Name	Status[a]	Suitable Habitat[b]	Species Occurrence
Short-eared Owl	*Asio flammeus*	SPC	Usually found in grasslands, shrublands, and other open habitats. Sightings along Great Salt Lake shorelines and wetlands.	Possible
Townsend's Big-eared Bat	*Corynorhinus townsendii*	SPC	Often found near forested areas. Caves, mines, and buildings are used for day roosting and winter hibernation.	Unlikely
Western Pearlshell	*Margaritifera falcata*	SPC	Small streams in northern third of Utah, possibly extirpated.	Unlikely
Western (Boreal) Toad	*Bufo anaxyrus*	SPC	Slow moving streams, wetlands, desert springs, ponds, lakes, meadows, and woodlands.	Unlikely

Source: UDWR 2019b
[a] Species of Concern (SPC), Conservation Agreement Species (CS)
[b] Habitat descriptions from Utah Conservation Data Center (UDWR 2019b), siting information from Utah Natural Heritage Database (UDWR 2019a) and eBird (2019).

3.12.3 Expected Impacts

As land is developed (with or without the Preferred Alternative), the study area will have reduced value for use by wildlife species, including the state-listed sensitive species. In this context, the effects of the Preferred Alternative on long-term wildlife use would be negligible. Adjacent wetland, playa, shoreline, and aquatic habitats associated with the Great Salt Lake and Howard Slough WMA would continue to provide wildlife habitat.

3.12.4 Wildlife Mitigation

Mitigation for wildlife impacts would not be required under the Preferred Alternative; see Construction Impacts (Section 3.13) regarding temporary impacts.

3.13 Construction Impacts and Mitigation

Although previous impact assessments in this chapter have considered the long-term impacts of the Preferred Alternative and reasonably foreseeable development of the study area, construction impacts focus on the temporary, short-term effects to local resources that could degrade the quality of the human or natural environment. The appropriate avoidance and minimization measures identified below will also be included in the Preferred Alternative's environmental commitments.

3.13.1 Land Use and Farmland

IMPACTS

Temporary impacts during construction in agricultural areas could result in the loss of vegetation and compacted soil within the temporary construction easements of the study area. Construction activities could also disrupt the slope and flow patterns of flood-irrigated fields or limit the operation of mechanical irrigation systems, which could diminish crop yields.

MITIGATION

To the extent possible, the contractor would be required to ensure irrigation systems in the study area remain intact and fully functional. Fencing that contains livestock in the study area could be altered during construction. The contractor would be required to maintain fencing and gate operations to protect livestock, as well as construction crews and the traveling public, during construction.

3.13.2 Right-of-Way

IMPACTS

Construction of the Preferred Alternative road alignment would require temporary easements for construction access and staging in the study area.

MITIGATION

Temporary construction easements would be acquired in accordance with state laws and UDOT ROW procedures.

3.13.3 Utilities

IMPACTS

Although utility service would be maintained throughout most construction activities, utility service could be temporarily disrupted in the study area during construction. The affected utilities could include electric, natural gas, water, sewer, telephone, cable, and storm drainage.

MITIGATION

UDOT would complete agreements with utility providers before construction, and the construction contractor would coordinate with the providers to minimize service disruptions in the study area.

3.13.4 Traffic

IMPACTS

Area residents and commuters may experience travel delays during construction.

MITIGATION

A public information program will be developed and implemented during the construction process to inform the public in and near the study area about construction impacts, including identifying work hours and alternate routes. Construction signs will be used in the study area to notify drivers about work activities and changes in traffic patterns.

3.13.5 Pedestrians and Bicyclists

IMPACTS

The Syracuse Trail and SR-193 Trail would be temporarily closed.

MITIGATION

As part of the public information program, UDOT will notify the community of trail closures and alternative routes, if available.

3.13.6 Air Quality

IMPACTS

Construction in the study area could cause temporary degradation of local air quality by generating fugitive dust, particulates, and emissions.

MITIGATION

The construction contractor would be required to obtain an Air Quality Approval Order by submitting a notice of intent to the Utah Division of Air Quality describing the construction activities and emissions that would be associated with operating construction equipment. Following *UDOT Standard Specification 01572* regarding dust control and watering would also be required of the contractor.

3.13.7 Noise

IMPACTS

Construction activity would temporarily increase noise for residents in the study area.

MITIGATION

UDOT's Standard Specifications include provisions to reduce the impacts of construction noise. Methods of reducing construction-noise impacts include establishing hours that construction equipment can be operated in the study area and permissible sound levels at sensitive times.

3.13.8 Visual/Aesthetic Impacts

IMPACTS

Construction would cause temporary visual and aesthetic impacts to study area residents and recreational users of the trails and golf course. These effects would include construction vehicles and equipment, clearing and grading, stockpiling of excavated material, and potential dust, exhaust, and airborne debris.

MITIGATION

Impacts from lights used during nighttime construction in the study area will be reduced by aiming construction lights directly at the work area and/or shielding the lights. Temporary disturbance areas would be restored following construction.

3.13.9 Cultural and Paleontological Resources

IMPACTS

Known cultural and paleontological resources in the study area would not be impacted.

MITIGATION

If unknown resources should be encountered during construction, the contractor would be required to follow provisions of UDOT Standard Specifications regarding discovery.

3.13.10 Wetlands

IMPACTS

Temporary impacts to wetlands would occur in temporary construction easement locations.

MITIGATION

Temporary wetland impact areas will need to be identified as part of the wetland permitting process, including measures to avoid, minimize, and restore disturbances to jurisdictional wetlands.

3.13.11 Water Quality

IMPACTS

Disturbance during construction can increase runoff, erosion, and constituents.

MITIGATION

To reduce water quality effects during construction, UDOT would prepare a Storm Water Pollution Prevention Plan to be included in the construction plans and the contractor would be required to adhere to UDOT Standard Specifications by obtaining a Construction General Permit from the UDEQ.

3.13.12 Wildlife

IMPACTS

Vegetation clearing and construction activity in the would convert existing agricultural lands to developed use for the highway and would temporarily disrupt use of adjacent lands by wildlife. Construction disturbance has the potential to adversely affect migratory birds.

MITIGATION

If work must take place within the nesting period for migratory birds, June 15–July 31, a qualified biologist should assess vegetation areas before removal. If active nests are found, removal should not take place until birds are confirmed to have fledged.

3.13.13 Invasive and Noxious Weeds

IMPACTS

Construction equipment and ground disturbance can facilitate the introduction and spread of invasive and noxious weeds.

MITIGATION

Supplemental Specification 02924S, “Invasive Weed Control” would be included in the contract documents and outlines Best Management Practices that will be incorporated in construction.

3.14 Impacts of the No-Action Alternative

If the Preferred Alternative road alignment were not constructed, no other new project or projects would be identified to improve study area mobility. With the expected growth in West Point and Syracuse, the remaining open land in the study area is expected to convert to urban uses by or before the design year, 2050. UDOT expects that the population growth and associated development would have a similar level of impacts as the Preferred Alternative on resources such as land use, farmland, cultural resources, wetlands, and wildlife.

Under the No-Action Alternative, certain impacts of the Preferred Alternative would not occur:

- **Right-of-way**: The No-Action Alternative would not require the property acquisitions described for the Preferred Alternative (Section 3.4).
- **Pedestrians and bicyclists**: The No-Action Alternative would not provide an opportunity to create new east-west pedestrian connectivity between 4500 West and the multi-use trail facilities east of the interchange (Syracuse Trail and SR-193 Trail).
- **Air quality**: The Preferred Alternative would improve mobility over the No-Action Alternative; greater traffic congestion under the No-Action Alternative would increase vehicle idling and result in worse air quality conditions compared to the Preferred Alternative.
- **Noise**: Traffic congestion under the No-Action Alternative would reduce vehicle travel speeds, which would also lower traffic noise during worst hour travel conditions. The No-Action Alternative would also not create a new east-west arterial roadway that would cause increased traffic noise for study area receptors.
- **Visual Resources**: Under the No-Action Alternative, a new east-west arterial and interchange with West Davis Corridor would not add linear features to the study area viewscape.
- **Construction Impacts**: Short-term impacts of construction described in Section 3.13 would not occur under the No-Action Alternative.

3.15 Impact Summary

Table 3-5 summarizes the impact assessment conclusions presented in this chapter. Mitigation commitments and required permits are summarized in Chapter 5.

Table 3-5: Impact Assessment Summary

Issue	Preferred Alternative	No-Action Alternative
Land Use	• Project has been anticipated in local land use plans and is compatible with future land use planning.	• Would not support local planning, but development would be expected to be similar to a Build Alternative.
Farmlands	• Effects to agricultural production by bisecting properties. • No designated Agricultural Protection Areas impacted.	• No impact.
Right-of-Way	• Partial acquisition from 18 parcels totaling 34.5 acres. No relocations. • Partial acquisition of Layton Aqueduct right-of-way (Federally owned). • Temporary construction easements and staging areas during construction.	• No right-of-way impacts.
Pedestrians and Bicyclists	• Syracuse Trail affected by intersection design; addressed by rerouting segment of the trail. • Sidewalks between 4500 West and West Davis Corridor interchange included.	• No benefit of adding pedestrian facilities.
Economics	• Effects to agricultural production of bisecting properties. • No business relocations, property acquisition, or access changes. • Compatible with commercial development/local land use planning.	• No impact.
Noise	• 68 receptors impacted by substantial increase (10 dBA or greater increase). • Noise walls would not meet the acoustic feasibility and reasonableness criteria, none were recommended for balloting.	• No impact.
Visual Resources	• Visual impact of linear, highway feature and interchange. • Additional street lighting at interchange.	• No impact.
Cultural Resources	• *No Adverse Effect* finding.	• No impact.
Wetlands, Other Waters of the US, Water Resources	• 10.6 acres of permanent wetland impact in project footprint, including interchange ramps. • Temporary wetland impacts to be determined in permitting/final design. • No floodplains impacted. • No water right point of diversion impacts. • Relocation of an irrigation pipeline required. • No stream crossings or alteration. • Increased stormwater and pollutant runoff volumes.	• No impact.
Threatened and Endangered Species	• No Effect.	• No impact.
Wildlife	• Five potentially occurring state-sensitive bird species and potential effects to migratory birds during construction.	• No impact

Chapter 4 Public and Agency Involvement

4.1 Agency Scoping

The project team conducted scoping with agencies that have an interest in the project due to presence of resources under their jurisdiction or because of land owned and/or managed by their agency are within the study area. Letters were mailed on March 8, 2019, soliciting input and inviting agency representatives to attend to a public meeting on March 19, 2019, or to schedule an individual meeting with the project team.

An agency scoping meeting was held prior to the public meeting on March 19, 2019. The goal of this meeting was to inform agencies about the SR-193 SES process, answer their questions, and gather their input before the public meeting began later in the evening. Representatives from the Syracuse Arts Academy, West Point City, and WFRC attended.

4.2 Public Scoping

4.2.1 Public Scoping Meeting

A public scoping meeting was held on March 19, 2019, at Syracuse Arts Academy. The meeting was held in an open house format. Fifty-one people signed-in. Display boards and a scroll plot provided information about both projects for attendees. Members of the SR-193 project team were available to answer questions one-on-one and listen to concerns. A large map of the study areas was also available and attendees left comments on the maps indicating areas where they had concerns. Meeting information shown at the public open house was also available on the SR-193 website, so that residents or interested parties not able to attend could be engaged. A project email was available on the website for members of the public to submit comments electronically, as well as an online comment form, and an interactive comment map.

4.2.2 Public Scoping Comment Period

The public was encouraged to submit written comments on forms provided at the public scoping meeting or mail comments before the end of the 30-day comment period, which began on March 19, 2019 and ended on April 18, 2019. A total of 19 comments were received. Common themes included:

- Feel that the SR-193 Corridor should go through (6 comments) or around the golf course (5 comments).
- Feel that the West Davis Corridor interchange should be located at SR-193 (5 comments)
- Concerned with traffic and congestion increase due to West Davis Corridor traffic (5 comments)
- Concerned about property impacts and land values (7 comments)
- Comments in support of improvements but concerned about routing (1 comment)

- Comments not in support of improvements (2 comments)
- Connect SR-193 at 200 S., not 700 S. (2 comments)
- West Davis Corridor should be built on surface level (2 comments), with frontage road connecting SR-193 (1 comment)
- Would prefer full takes versus partial (2 comments)
- Concerned about bike trail impacts (1 comment)
- Concerned about safety of school children (1 comment)
- Concerned about compensation during ROW (1 comment), and ROW timeline (1 comment)
- Concerned about barriers along neighborhoods and homes near corridor (1 comment)

A scoping report that includes copies of public meeting materials, notices, and comments received is provided in Appendix D.

4.2.3 Additional Scoping Outreach

In addition to the advertisements sent to stakeholders, a legislative update was created, and an article was published about the project in the Standard Examiner on March 18, 2019. A project-specific website was created which included information on the scoping meeting.

4.3 Additional Stakeholder Outreach

Stakeholders included property owners, Davis School District, USBOR, and Syracuse and West Point cities. UDOT engaged six potentially affected property owners through one-on-one meetings. UDOT provided status updates, showed the general layout of the Preferred Alternative, and explained how each property would be affected. Where possible, the Preferred Alternative was modified to address property owner concerns.

Through meetings with the Davis School District, UDOT learned an elementary school and a junior high school are planned near the Preferred Alternative. In general, school district representatives were not concerned with the Preferred Alternative alignment because the main access to the junior high school is planned on 700 South, and the elementary school is not slated for construction in the foreseeable future.

The USBOR operates the Layton Aqueduct, which is a subsurface (i.e., piped) canal that bisects the study area in a northwest-southeast direction. The proposed northbound on- and off-ramps would cross over the canal. To avoid this conflict, UDOT worked with the USBOR to realign the canal east of the ramps.

UDOT provided project status updates to Syracuse and West Point cities during regularly scheduled meetings as part of outreach for the West Davis Corridor project. At the request of West Point City, the Preferred Alternative was modified to replace a 12-foot-wide multiuse trail along the north side of SR-193, between 4500 West and West Davis Corridor, with a standard five-foot-wide sidewalk. This multiuse trail would have

provided developing neighborhoods west of West Davis Corridor with a convenient connection to the Syracuse Trail. Instead, West Point City has plans for a similar multiuse trail north of the Preferred Alternative.

During the environmental process, the project team also learned that the portion of the segment between 4500 West and Cold Springs Road would conflict with a residential development plan in West Point (the Elite Craft development site plan); the Preferred Alternative alignment was located so that it would not directly affect the first phase of the development that was currently underway; however, the alignment would require the developer to redesign subsequent planned phases of the residential development. Coordination with the developer occurred during the SES process so that adjustments to the development could be made.

4.3.1 Public Comment Period and Hearing

This State Environmental Study will be available for public review for 30 days. Comments will be accepted November 18 through December 17, 2019.

A public hearing is scheduled for Tuesday, December 3, 2019: 5:00 p.m. to 7:00 p.m., Syracuse Arts Academy, 2893 West 1700 South, Syracuse, Utah. The hearing will be accessible according to the requirements of the Americans with Disabilities Act (ADA); please contact us at least 72 hours before the meeting so that accommodations can be provided.

Comments must be postmarked or emailed by midnight December 17, 2019 in order to be included in the response to comments. All received during this period will be taken into consideration and responded to in the final document and project decision.

- Hotline: 385-275-2887
- Email: sr193extension@utah.gov
- Mail: SR-193 Team, c/o HW Lochner, 3995 South 700 East, Suite 450, Salt Lake City, UT, 84107.
- Website: https://www.udot.utah.gov/sr193extension/

Chapter 5 Required Permits and Mitigation

Table 5-1 summarizes permitting, clearances and mitigation commitments for the Preferred Alternative.

Table 5-1: *Permits, Clearances, and Mitigation Commitments*

Resource	Permit/Clearance/Commitment	Responsible Party
Pre-Construction Phase		
Right-of-Way	Complete property acquisition following the Utah Relocation Assistance Act, Utah Code Section 57-12	UDOT
Utilities	Complete agreements with utility providers before construction.	UDOT
Visual Resources	All aesthetic treatments will be completed in accordance with UDOT Policy 08C-03, *Project Aesthetics and Landscaping Plan Development and Review*, and UDOT's *Aesthetics Guidelines*. UDOT's policy is to set a budget for aesthetics and landscape enhancements based on the aesthetics guidelines.	UDOT
Wetlands	Obtain Individual Permit under Section 404 of the Clean Water Act. Potential for minimization of the wetland impacts of the respective projects would be addressed during the permitting process. Temporary wetland impacts that would occur during construction will need to be identified as part of the wetland permitting process, including measures to avoid, minimize, and restore disturbances to jurisdictional wetlands.	UDOT
Water Quality	Prepare Stormwater Pollution Prevention Plan for Construction General Permit	UDOT
Water Quality	Obtain Construction General Permit from Utah Division of Water Quality	Contractor
Invasive Species	Include Supplemental Specification 02924S, "Invasive Weed Control" in contract documents, outline Best Management Practices to be followed	UDOT
Construction Phase		
Traffic	A public information program will be developed and implemented during the construction process to inform the public about construction impacts including identifying work hours and alternate routes for vehicles, bicycles, and pedestrians during construction.	UDOT
Traffic	Construction signs will be used to notify drivers about work activities and changes in traffic patterns.	Contractor
Utilities	Coordinate with utility providers to minimize service disruptions.	Contractor
Air Quality	Obtain Air Quality Approval Order from the Utah Division of Air Quality	Contractor
Air Quality	Follow requirements outlined in Standard Specification 01572, "Dust Control and Watering"	Contractor
Noise	UDOT's Standard Specifications include provisions to reduce the impacts of construction noise. Construction activity would temporarily increase noise for residents. Methods of reducing construction noise impacts include establishing hours that construction equipment can be operated and permissible sound levels at sensitive times.	Contractor
Visual Resources/Aesthetics	Impacts from lights used during nighttime construction will be reduced by aiming construction lights directly at the work area and/or shielding the lights. Temporary disturbance areas would be restored following construction.	Contractor

Resource	Permit/Clearance/Commitment	Responsible Party
Cultural Resources	If unknown resources should be encountered during construction, the contractor would be required to follow provisions of UDOT Standard Specifications regarding discovery (Standard Specification 01355 Parts 3.7 and 3.8).	Contractor
Migratory Birds	If work must take place within the nesting period for migratory birds, June 15–July 31, a qualified biologist should assess vegetation areas before removal. If active nests are found, removal should not take place until birds are confirmed to have fledged.	Contractor
Invasive Species	Follow Supplemental Specification 02924S, “Invasive Weed Control”	Contractor

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SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

Appendix A: Traffic Memoranda

MEMORANDUM

To: UDOT Region One & Environmental

From: Avenue Consultants

Date: July 29, 2019

Subject: SR 193 SES - 2018 Existing and 2050 No Action Traffic Analysis

UDOT has initiated a State Environmental Study (SES) for a potential extension of State Route 193 (200 South) from 2000 West (State Route 108) to 4500 West (State Route 110) or the future West Davis Corridor in West Point and Syracuse, Davis County, Utah. This memo describes the traffic evaluation performed for the 2018 existing and future 2050 No Action conditions.

1 TRAFFIC STUDY AREA

For the purposes of the traffic analysis, the study area is the rectangle formed by 300 North on the north, 2000 West on the east, 700 South on the south, and 4500 West on the west. Figure 1 shows the SR 193 SES traffic study area and the study intersections. SR 193 is an east-west road through the middle of the study area that has regional significance extending from its current terminus at 3000 West to US Highway 89. It provides access to I-15 as well as regional trip generators such as the Freeport Center and Hill Air Force Base. In 2018, SR 193 was extended west from its previous terminus at 2000 West to 3000 West. Local and regional plans for the area call for SR 193 to continue being extended west to the future West Davis Corridor and 4500 West.

Figure 1. Traffic Study Area

The general area is transitioning from rural to suburban. As such, the transportation system is also transitioning to what it will ultimately need to be to accommodate future travel demands. Two important characteristics of an effective roadway system are the functional classification of the roads that comprise the system and the connectivity of those roads. Each of these subjects are discussed in the following sections.

1.1 Roadway Functional Classification

The roadway system has a hierarchy to it that is based on roadway attributes such as speed and access. At the top end of the spectrum are freeways, which have high speeds and very limited access. At the other end of the spectrum are local roads, which have low speeds and high access. In between are arterials and collectors, each of which are divided into two sub-classifications: principal and minor arterials and major and minor collectors. The functional classification of a roadway indicates the road's role within the transportation system, which in turn helps determine when increased travel demand or change in the road's use could lead to negative impacts on its intended function in terms of speed, capacity, and relationship to existing and future land use (FHWA, 2013). Table 1 presents some of typical characteristics of the various roadway classes based on *Highway Functional Classification Concepts, Criteria and Procedures* report published in 2013 by the Federal Highway Administration (FHWA).

Table 1. Roadway Characteristics by Functional Classification

Functional Classification	Access	Average Annual Daily Traffic (AADT) Volume	Percentage of Vehicle Miles Traveled (VMT)[1]	Percentage of Roadway Mileage
Freeways/Expressways	Partially/Fully Controlled	13,000 – 129,000	20%-48%	1%-4%
Principal Arterial	Partially/Uncontrolled	7,000 – 27,000	17%-29%	4%-5%
Minor Arterial	Uncontrolled	3,000 - 14,000	15%-22%	7%-12%
Major Collector	Uncontrolled	1,100 - 6,300	7%-13%	7%-13%
Minor Collector	Uncontrolled	1,100 - 6,300	7%-13%	7%-13%
Local	Uncontrolled	80 - 700	6%-24%	67%-76%

[1] Percentage of VMT is defined as the amount of daily traffic driven on each roadway classification compared to the total miles driven in the state.

[2] Percentage of Roadway Miles is defined as the number of miles of each roadway classification compared to the total roadway miles in the state.

The table shows that while freeways and expressways have the fewest number of roadway miles, they carry the highest percentage of traffic, which makes sense because those roads carry high volumes over long distances. It also shows that local streets comprise the majority of the roadway miles, but carry little of the total traffic, which again makes sense because they carry low volumes over short distances.

UDOT publishes a statewide roadway functional classification map on their website (https://www.udot.utah.gov/main/f?p=100:pg:0::::V,T:,1224). Based on data from that map, Table 2 lists the key roads in the traffic study area, their functional classification, and their existing traffic volume.

Table 2. Traffic Study Area Roadway Classifications

Road	Functional Classification	Existing Daily Volume
300 North	Major Collector	5,400
SR 193	Principal Arterial	10,800
700 South	Minor Collector	3,300
4500 West	Minor Arterial	3,800
3000 West	Major Collector	10,500
2000 West	Principal Arterial	19,900

The table shows that the traffic volumes generally follows the roadway functional classification hierarchy with the principal arterials carrying the largest volumes and the minor collector carrying the lowest volume. The volumes also generally fit within the range of typical volumes presented in Table 1. However, 3000 West is a notable exception since it is carrying over 10,000 vehicles per day, which is above the range of the typical collector. This is largely driven by the fact that SR 193 ends at 3000 West, which condition will be further discussed in the next section.

1.2 Roadway Connectivity

Good roadway connectivity is an important component of an effective roadway system. Good connectivity provides drivers with multiple routes to make their trips. Having more options allows for a better distribution of trips throughout the system. However, when viewed from a functional classification system perspective, it is important that the connections occur between compatible roadway types. Per the FHWA functional classification guide mentioned in the previous section, "a roadway of a higher classification should not connect to a single roadway of a lower classification." This is the situation that exists in the traffic study area at the intersection of SR 193 and 3000 West. SR 193 is a principal arterial that connects (and terminates) at a single major collector (3000 West). This condition results in unusually high volumes on 3000 West, given its classification, which then leads to more noise and difficulty pulling in and out of their driveways for those that live on 3000 West.

2 ANALYSIS METHODOLOGY

The analyses performed for this study used the jointly owned and maintained Wasatch Front Regional Council (WFRC)/Mountainland Associated of Governments (MAG) travel demand model and the Vissim traffic operations evaluation software. This section describes how each of these tools was used.

2.1 Travel Demand Modeling

The WFRC/MAG travel demand model (TDM) is a tool used to predict future travel and traffic volumes for the Wasatch Front area. WFRC and MAG are the Metropolitan Planning Organizations for the Wasatch Front and are responsible for coordinating transportation planning in the region. MAG is responsible for Utah County and WFRC for Weber, Davis, and Salt Lake Counties. Version 8.3 draft of the TDM was used for this study. The travel demand model has two primary inputs: land use data and transportation system data. Using the land use and transportation system inputs, the travel model predicts how many trips will be generated in the region, where

those trips are going, the mode by which they will be made, and the transportation facilities that will be used to get there.

2.1.1 Land Use

The land use data for the TDM consists of residential and employment data for the entire region. This data is prepared in geographic blocks called Traffic Analysis Zones (TAZs). The land use inputs are prepared for a base year, which in this case was 2018, and for a future year, which in this case was 2050. In consultation with region's cities, WFRC and MAG prepare future land use projections consisting primarily of household and employment information. These projections are used by the MPOs to develop the Regional Transportation Plan (RTP), which is the plan for the development of the future transportation system.

To prepare the model for use, several TAZs were split in the traffic study area to improve the resolution of the model in the area and to more accurately reflect local travel patterns. Several of these splits were done along the alignment of the future West Davis Corridor. A figure showing the TAZ splits can be found in Appendix A. Where TAZs were split, the resulting households and employment for each split TAZ were taken from the original TAZ and proportioned based on the distribution of existing development and the availability of developable land, as observed through aerial photography. Additionally, several household projections in the study area were adjusted for 2018 conditions to better match the observed households.

The resulting population and employment numbers by TAZ for both 2018 and 2050 are shown in Figure 2 and Figure 3, respectively. Between 2018 and 2050, the population for the SR 193 area is expected to more than double from 12,650 in 2018 to 31,370 in 2050, which represents an average annual increase of 2.6% per year. Employment projections show increases at a much greater rate (5.7% per year on average) from 2,480 in 2018 to 14,750 in 2050. TAZs 460 and 461 include a high proportion of this growth with a combined population of over 8,000 and employment of over 11,000 by 2050.

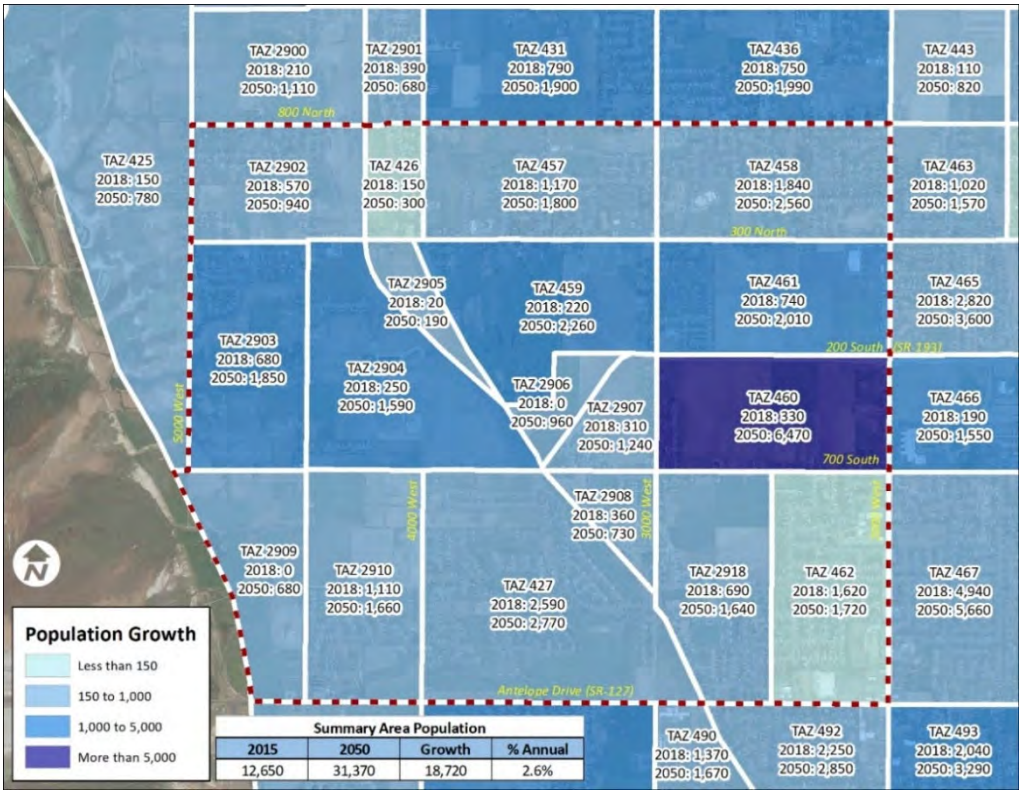


Figure 2. Population Growth by TAZ – 2018 to 2050

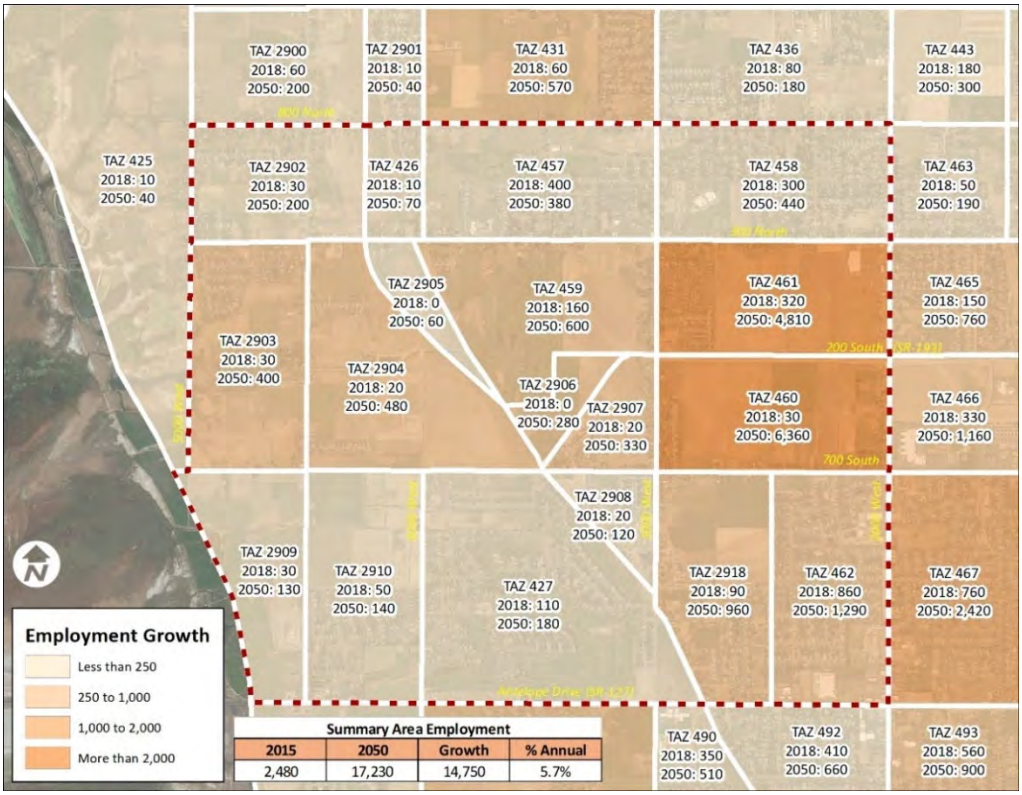


Figure 3. Employment Growth by TAZ – 2018 to 2050

2.1.2 Transportation Network

The second component of the TDM is the transportation network, which consists of the roadway network, including arterials and collectors in the traffic study area. To accommodate the zone splits, several existing collector roads in the study area were added that were not included in the base TDM network. Future roads are also included in the TDM based on the list of projects in the WFRC RTP that are planned to meet future transportation needs over a 20+ year horizon. Figure 4 shows the projects that are currently part of the draft 2050 RTP that would be completed by 2050, which includes the SR 193 extension. Other projects in the vicinity of SR 193 that may affect the corridor include the following:

- West Davis Corridor: a limited access highway that travels northwest/southeast through the study area and ultimately connects SR 39 (Ogden's 12th Street) to I-15/Legacy Parkway in Farmington
- 2000 West widening north of the interchange with West Davis Corridor to Antelope Drive
- Widening of Antelope Drive (SR 127) between 2000 West and West Davis Corridor
- Widening of SR 193 east of 1000 West

Figure 4. SR 193 Area Projects in Draft 2050 WFRC Regional Transportation Plan

After refining the land use and transportation network, the base year TDM was validated for the traffic study area by comparing 2018 TDM volumes to estimated daily traffic volumes. Daily volumes were estimated on roadways throughout the study area using published 2017 UDOT AADT data (2018 data is not yet available) and intersection turning movement count data gathered at intersections for this project. Free flow speeds on some roadways in the study area were adjusted to bring the model volumes closer to the observed volumes.

Once the final model and 2050 RTP are adopted in June 2019, sensitivity tests will be performed to ensure that the conclusions from this analysis are still valid with the new model and RTP.

2.2 Traffic Operations Analysis

The Vissim software was selected for this study because it allows for the evaluation of freeways, closely spaced intersections, and the interaction between the two facilities. Vissim allows for driving behaviors to be modified, can collect travel time data for user-specified segments and can measure queue lengths at key intersections, which collectively are used to calibrate the model to observed conditions.

Existing traffic signal timing data were obtained from the UDOT Traffic Operations Center and used in modeling signalized intersections in Vissim. The intersections within the traffic study area were modeled according to

existing geometry and speeds. The study area was modeled as a network; however, the analysis was completed for each intersection independently.

2.2.1 Traffic Volumes

Two-hour turning movement counts were collected for intersections in the SR 193 area on Tuesday, December 18, 2018 from 7:00-9:00 AM and from 4:00-6:00 PM at the following intersections, shown in Figure 5:

- 300 North & 4500 West
- 300 North & Syracuse Trail
- 300 North & 3000 West
- SR- 193 & 3000 West
- SR- 193 & 2000 West
- 700 South & 4500 West
- 700 South & 4000 West
- 700 South & St Andrews Drive
- 700 South & 3000 West

Figure 5. Traffic Count Locations

The collected turning movement traffic volumes were balanced throughout the traffic study area so that the volume leaving one intersection was the same as the volume arriving at the next to create existing AM and PM peak hour volumes. Estimated 2050 AM and PM peak hour volumes were developed using principles described in the National Highway Cooperative Research Program (NCHRP) Report 255 document. Additionally, traffic count data was collected during December when the volumes are generally lower on average. For this reason, seasonal adjustments were applied to both SR 193 and side street traffic to more accurately replicate peak conditions. The 2050 peak hour intersection volumes were developed from these adjusted volumes and data from the WFRC/MAG travel demand model. The travel model was run for the base year (2018) and for the future year (2050) and the difference between these models was used to estimate the traffic increase, which was applied to the existing traffic volumes. The future volumes were balanced to ensure the correct number of inbound and outbound vehicles on each leg of the intersection. Included in Appendix B has figures presenting the resulting 2018 Existing and 2050 No Action traffic volumes used in this analysis.

2.2.2 Measures of Effectiveness

For each Vissim analysis (e.g. Existing Conditions, 2050 No Action), the model was run 10 times to produce statistically significant results and the results were averaged. Three key measures of effectiveness were extracted from the Vissim models to analyze intersection performance along the corridor. The first was intersection and turning movement delay, which was used to determine level of service (LOS), as described in the *Highway Capacity Manual*. LOS describes the operating performance of an intersection or roadway. LOS is measured quantitatively and is reported on a scale from A to F, with A representing the best performance and F the worst. For signalized intersections, an overall LOS is reported for the entire intersection based on the average delay of all vehicles. For unsignalized intersections, LOS is reported based on the average vehicle delay for the worst approach. Table 3 provides a brief explanation for each LOS and the associated average delay per vehicle for signalized and unsignalized intersections.

Table 3. Intersection Level of Service Criteria

Level of Service	Traffic Conditions	Average Delay (seconds/vehicle)	Average Delay (seconds/vehicle)
		Signalized Intersection	Unsignalized Intersection
A	Free Flow Operations / Insignificant Delay	0 ≤ 10	0 ≤ 10.0
B	Smooth Operations / Short Delays	> 10 and ≤ 20	>10.0 and ≤ 15.0
C	Stable Operations / Acceptable Delays	> 20 and ≤ 35	>15.0 and ≤ 25.0
D	Approaching Unstable Operations / Tolerable Delays	> 35 and ≤ 55	>25.0 and ≤ 35.0
E	Unstable Operations / Significant Delays Begin	> 55 and ≤ 80	>35.0 and ≤ 50.0
F	Very Poor Operations / Excessive Delays Occur	> 80	> 50.0

Source: Highway Capacity Manual 2016, *Transportation Research Board National Research Council, Washington D.C*

The second key measure of effectiveness is the 95th percentile queue length for each movement at the study intersections. The length of the 95th percentile queue is identified as the queue distance that will only be exceeded five percent of the time during the analysis period. The queue length helps to identify key issues such as queuing between intersections and queues that exceed their available storage and block the adjacent through lanes.

The third key measure of effectiveness is arterial level of service, which is based on travel speed. Specifically, arterial LOS is determined by comparing the actual or modeled travel speed to the base free-flow speed, which in this case was assumed to be the speed limit. Table 4 shows the various speed thresholds for LOS by base free-flow speed.

For the analyses, travel time data collection segments were placed throughout the Vissim model along key roadways, which measure the travel time and speed for those segments. The speeds were then used to determine the arterial LOS.

Table 4. Arterial Level of Service Criteria

LOS	Travel Speed Threshold by Base Free-Flow Speed (mph)						
	55	50	45	40	35	30	25
A	> 44	> 40	> 36	> 32	> 28	> 24	> 20
B	> 37	> 34	> 30	> 27	> 23	> 20	> 17
C	> 28	> 25	> 23	> 20	> 18	> 15	> 13
D	> 22	> 20	> 18	> 16	> 14	> 12	> 10
E	> 17	> 15	> 14	> 12	> 11	> 9	> 8
F	≤ 17	≤ 15	≤ 14	≤ 12	≤ 11	≤ 9	≤ 8

Source: Highway Capacity Manual 2016*, Transportation Research Board National Research Council, Washington D.C*

2.2.3 Model Calibration

Vissim model calibration focused on matching modeled queues, travel times, and vehicle behavior to those same characteristics observed during field visits to the study area.

3 EXISTING AND 2050 NO ACTION ANALYSIS RESULTS

The analysis results presented in this section include intersection delay, LOS, travel times, and 95th percentile queue lengths.

3.1 Existing Conditions

The evaluation of key intersections and associated queue lengths within the traffic study area are presented in the following sections.

3.1.1 Intersection Delay and LOS Analysis

The delay and LOS calculated for the key intersections are presented in Table 5 for the AM and PM peak hours. For stop-controlled intersections, the approach having the worst delay is presented in the parenthesis. For the roundabout, the total intersection delay is reported, but the LOS is reported based on the unsignalized criteria. In 2018, during the AM and PM peak hour all intersections within the study area perform at LOS C or better. Figures showing LOS by movement can be found in Appendix C, while detailed results are in Appendix D.

Table 5. 2018 Existing Intersection Delay and Level of Service Results

Intersection	Traffic Control Type	AM LOS / Delay (sec/veh)	PM LOS / Delay (sec/veh)
300 North & 4500 West	Two-way stop	A / 10 (WB)	B / 12 (WB)
300 North & 3000 West	Signalized	B / 11	B / 13
SR 193 & 3000 West	Signalized	A / 9	B / 13
SR 193 & 2000 West	Signalized	C / 25	C / 24
700 South & 4500 West	Two-way stop	A / 9 (EB)	A / 8 (EB)
700 South & 4000 West	Two-way stop	A / 9 (NB)	A / 8 (NB)
700 South & St Andrews Drive	One-way stop	A / 8 (NB)	A / 7 (NB)
700 South & 3000 West	Roundabout	A / 5	A / 5

3.1.2 95th Percentile Queue Analysis

Estimated 2018 existing 95th percentile queue lengths are presented in Table 6. Due to relatively low intersection volumes, there no significant queuing in the study area during the AM or PM peak hours. In queues, on average, there will be a vehicle approximately every 25 feet. The maximum queue shown in the table is 225 feet for the northbound approach on 2000 West at SR-193, suggesting a queue of about nine vehicles per lane.

Table 6. 2018 Existing 95th Percentile Queue Results

95th Percentile Queue Approach	AM	PM
EB Approach of 300 N & 4500 W	50 ft	25 ft
WB Approach of 300 N & 4500 W	125 ft	150 ft
EB Approach of 300 North & 3000 West	150 ft	125 ft
WB Approach of 300 North & 3000 West	100 ft	200 ft
EB Approach of SR- 193 & 2000 West	200 ft	125 ft
WB Approach of SR- 193 & 2000 West	125 ft	200 ft
NB Approach of SR- 193 & 2000 West	175 ft	225 ft
SB Approach of SR- 193 & 2000 West	200 ft	175 ft
EB Approach of 700 South & 4500 West	25 ft	25 ft
WB Approach of 700 South & 4500 West	100 ft	75 ft
SB Approach of 700 South & St Andrews Drive	100 ft	50 ft
EB Approach of 700 South & 3000 West	175 ft	75 ft
WB Approach of 700 South & 3000 West	75 ft	50 ft
NB Approach of 700 South & 3000 West	175 ft	75 ft
SB Approach of 700 South & 3000 West	100 ft	125 ft

3.1.3 Arterial Analysis

The travel speeds and arterial LOS for key segments are labeled and compared in Table 7. Overall the corridors operate at LOS C or better for both AM and PM peak hour. A figure showing arterial LOS is included in Appendix C and Appendix D contains detailed travel time and speed results.

Table 7. Existing Arterial Level of Service Results

Roadway Segment			Base Free Flow Speed (mph)	AM LOS/Speed (mph)	PM LOS/Speed (mph)
Eastbound	300 N	**4500 W to 3000W**	**40**	**B / 32**	**B / 32**
	SR 193	**3000 W to 2000 W**	**50**	**C / 33**	**C / 33**
		3000 W to 2550 W	*50*	-	-
		2550 W to 2000 W	*50*	-	-
	700 S	**4500 W to 3000W**	**35**	**A / 32**	**A / 32**
		4500 W to 4000 W	*35*	*A / 34*	*A / 34*
		4000 W to St Andrews Dr	*35*	*A / 34*	*A / 34*
		St Andrews Dr to 3000 W	*35*	*B / 28*	*A / 30*
Westbound	300 N	**3000 W to 4500W**	**40**	**A / 35**	**A / 34**
	SR 193	**2000 W to 3000 W**	**50**	**A / 41**	**B / 39**
		2000 W to 2550 W	*50*	-	-
		2550 W to 3000 W	*50*	-	-
	700 S	**3000 W to 4500 W**	**35**	**A / 34**	**A / 32**
		4000 W to 4500 W	*35*	*A / 33*	*A / 29*
		St Andrews Dr to 4000 W	*35*	*A / 34*	*A / 34*
		3000 W to St Andrews Dr	*35*	*A / 33*	*A / 33*
Northbound	4500 W	**700 S to 300 N**	**40**	**A / 38**	**A / 38**
	3000 W	**700 S to 300 N**	**35**	**B / 28**	**B / 28**
		SR 193 to 300 N	*35*	*A / 30*	*A / 29*
		700 S to SR 193	*35*	*B / 27*	*B / 27*
Southbound	4500 W	**300 N to 700 S**	**40**	**A / 38**	**A / 38**
	3000 W	**300 N to 700 S**	**35**	**A / 29**	**A / 30**
		300 N to SR 193	*35*	*A / 30*	*A / 31*
		SR 193 to 700 S	*35*	*B / 28*	*B / 28*

3.2 2050 No Action Conditions

For the 2050 No Action analysis, the following assumptions were made in the TDM and/or Vissim models:

- West Davis Corridor would pass through the study area, but there would be no access in the study area
- A new signalized intersection was added on SR 193 at 2550 West (between 3000 West and 2000 West)
- A west leg was added at the intersection of SR 193 and 3000 West as a street providing local access but no throughput
- The intersection of 300 North and 4500 West was signalized because of excessive queuing without a signal – it would also likely warrant a traffic signal by 2050

The resulting analysis of the 2050 No Action conditions is presented in the following sections.

3.2.1 Traffic Volume

As expected by 2050, daily traffic volumes increase along the key roadways in the traffic study area. As shown in Figure 6, the daily volume on several corridors grows by about 100% or more including 300 North, 4500 West, and 2000 West. Table 8 shows similar information, but includes the relationship to the typical volume for the various roadway functional classifications. The daily roadway volumes shown in Table 2 in section 1.2 Roadway Functional Classification were developed by averaging the existing volumes from Figure 6 / Table 8.

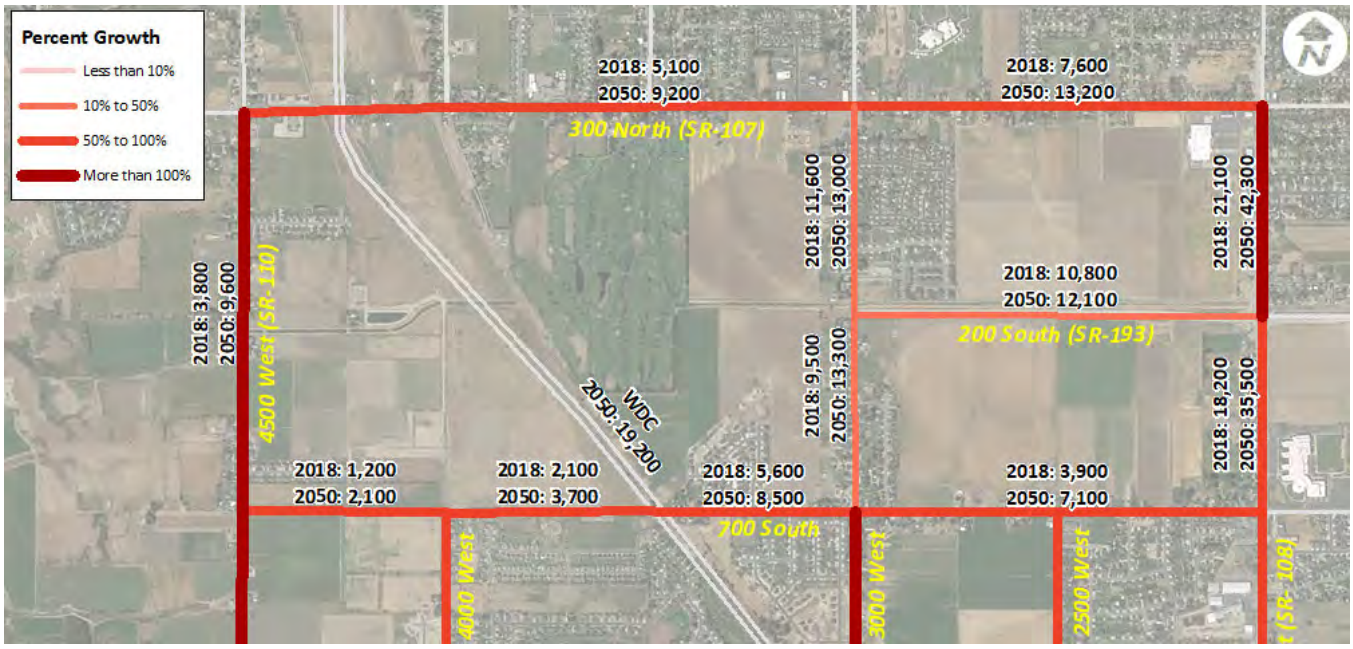


Figure 6. Daily Volume Growth (2018 to 2050)

Table 8. Daily Volume Comparisons

Road	Functional Classification	Typical Daily Volume	Segment	Existing Daily Volume	2050 Daily Volume	% Change	Exceeds Typical?
300 North	Major Collector	1,100 - 6,300	4500 W to 3000 W	5,100	9,200	100%	Yes
			3000 W to 2000 W	7,600	13,200	110%	Yes
SR 193	Principal Arterial	7,000 - 27,000	3000 W to 2000 W	10,800	12,100	12%	No
700 South	Minor Collector	1,100 - 6,300	4500 W to 4000 W	1,200	2,100	75%	No
			4000 W to WDC	2,100	3,700	76%	No
			WDC to 3000 W	5,600	8,500	42%	Yes
			3000 W to 2000 W	3,900	7,000	84%	Yes
4500 West	Minor Arterial	3,000 - 14,000	300 N to 700 S	3,800	9,600	153%	No
3000 West	Major Collector	1,100 - 6,300	300 N to SR 193	11,600	13,000	12%	Yes
			SR 193 to 700 S	9,500	13,300	40%	Yes
2000 West	Principal Arterial	7,000 - 27,000	300 N to SR 193	21,100	42,000	99%	Yes
			SR 193 to 700 S	18,100	35,500	96%	Yes

On 300 North, which is a major collector, with its large increase in traffic, the volumes would exceed those of a typical collector. The volume growth on 700 South is relatively modest as most of the east-west volume increase occurs on 300 North; however, the 700 South segments between WDC and 2000 West would still have volumes that exceed those of the typical minor collector. Similarly, while volume growth on 3000 West is quite modest, largely due to the presence of the West Davis Corridor, it does still show volumes that exceed those of a typical collector. In total, six of the eight collector road segments in the study area have volumes that exceed the typical collector threshold. This is largely due to the lack of an east-west arterial road through the study area.

To better understand the interaction between the arterial and collector roads in the study area, an analysis was performed to see how the average arterial and collector road volume would change by 2050. The average volume for each type of facility was calculated by dividing the daily vehicle miles travelled (VMT) on each type of road by the number of centerline miles of each roadway type. By 2050, total VMT in the study is expected to more than double. Average volume on collectors will increase from 4,900 to 8,000 vehicles per day, an increase of 63%. Arterial volumes increase from 10,100 to 18,100 vehicles per day, an increase of 79%. When including volumes on the new West Davis Corridor freeway, overall average volumes increase 82% in the study area. Table 9 details the VMT, length, and average volumes by each type of roadway.

Table 9. 2018 Existing and 2050 No Action VMT

Roadway Type	VMT		Length (miles)		Average Volume (vehicles/day)		
	2018 Existing	2050 No Action	2018 Existing	2050 No Action	2018 Existing	2050 No Action	% Change
Collectors	38,900	68,000	8.0	8.5	4,900	8,000	63%
Arterials	90,900	162,400	9.0	9.0	10,100	18,100	79%
Freeways	n/a	41,700	n/a	2.2	n/a	19,200	n/a
Total	**129,800**	**272,100**	**17.0**	**19.7**	**7,600**	**13,800**	**82%**

Table 10 shows a comparison of both Existing and 2050 No Action intersection volumes, the detailed turning movement volumes of which can be seen in Appendix B and Appendix C. These show that all intersections increase in volume by 2050.

Table 10. 2018 Existing and 2050 No Action Peak Hour Total Intersection Volumes

Intersection	AM Peak Hour			PM Peak Hour		
	Existing 2018	2050 No Action	% Growth	Existing 2018	2050 No Action	% Growth
300 North & 4500 West	516	1,000	94%	611	1,220	100%
300 North & 3000 West	1,241	1,890	52%	1,303	1,900	46%
SR 193 & 3000 West	1,206	1,700	41%	1,237	1,730	40%
SR 193 & 2550 West	-	2,830	n/a	-	3,280	n/a
SR 193 & 2000 West	2,672	4,870	82%	2,830	5,330	88%
700 South & 4500 West	276	695	152%	355	824	132%
700 South & 4000 West	215	471	119%	189	480	154%
700 South & St Andrews Drive	405	561	39%	341	570	67%
700 South & 3000 West	1,164	1,850	59%	927	1,730	87%

3.2.2 Intersection Delay and LOS Analysis

As presented in Table 11, during the AM peak hour, the roundabout at 700 S and 3000 W is expected to operate at LOS E with both the southbound and eastbound approaches at LOS F at 54 and 90 seconds of delay per vehicle, respectively. In the PM peak period, all the study intersections are expected to operate at LOS D or better. Appendix D contains additional details on the intersection analysis results.

Table 11. 2018 Existing and 2050 No Action Intersection Delay and Level of Service Results

Intersection	AM Peak Hour		PM Peak Hour	
	Existing LOS/Delay (sec/veh)	2050 No Action LOS/Delay (sec/veh)	LOS / Delay (sec/veh)	LOS / Delay (sec/veh)
300 North & 4500 West	A / 10 (WB)	C / 24	B / 12 (WB)	C / 24
300 North & 3000 West	B / 11	B / 18	B / 13	B / 17
SR 193 & 3000 West	A / 9	B / 11	B / 13	B / 15
SR 193 & 2550 West	n/a	C / 27	n/a	C / 30
SR 193 & 2000 West	C / 25	D / 35	C / 24	D / 37
700 South & 4500 West	A / 9 (EB)	A / 8 (EB)	A / 8 (EB)	A / 8 (WB)
700 South & 4000 West	A / 9 (NB)	A / 9 (SB)	A / 8 (NB)	A / 10 (NB)
700 South & St Andrews Drive	A / 8 (NB)	A / 8 (NB)	A / 7 (NB)	A / 8 (NB)
700 South & 3000 West	A / 5	E / 48	A / 5	B / 11

3.2.3 95th Percentile Queue Analysis

The 95th percentile queue lengths presented in Table 12Table 12 are for the approaches with the longest queue lengths from the 2050 No Action analysis. The biggest difference is in the southbound direction on the roundabout at 700 South and 3000 West where the 2050 queue lengths increase by over 1,400 feet for the AM peak period. As anticipated, traffic operations are expected to deteriorate with the increased traffic demand. At an average of 25 feet per vehicle, a 1,400 foot queue would have approximately 56 vehicles in it. Other queues of 700 feet would have about 28 vehicles. These are substantial increases over the nine vehicles in the existing conditions.

Table 12. 2018 Existing and 2050 No Action 95th Percentile Queue Results

95th Percentile Queue Approach	2018 AM Existing	2050 AM No Action	2018 PM Existing	2050 PM No Action
EB Approach of 300 N & 4500 W	50 ft	200 ft	25 ft	175 ft
WB Approach of 300 N & 4500 W	125 ft	275 ft	150 ft	400 ft
EB Approach of 300 N & 3000 W	150 ft	175 ft	125 ft	250 ft
WB Approach of 300 N & 3000 W	100 ft	675 ft	200 ft	450 ft
EB Approach of SR- 193 & 2000 W	200 ft	375 ft	125 ft	350 ft
WB Approach of SR- 193 & 2000 W	125 ft	350 ft	200 ft	450 ft
NB Approach of SR- 193 & 2000 W	175 ft	425 ft	225 ft	450 ft
SB Approach of SR- 193 & 2000 W	200 ft	475 ft	175 ft	600 ft
EB Approach of 700 S & 4500 W	25 ft	50 ft	25 ft	50 ft
WB Approach of 700 S & 4500 W	100 ft	100 ft	50 ft	100 ft
NB Approach of 700 S & 4000 W	75 ft	50 ft	75 ft	50 ft
SB Approach of 700 S & 4000 W	50 ft	75 ft	50 ft	50 ft
SB Approach of 700 S & St Andrews Drive	100 ft	75 ft	50 ft	75 ft
EB Approach of 700 S & 3000 W	175 ft	750 ft	75 ft	175 ft
WB Approach of 700 S & 3000 W	75 ft	650 ft	50 ft	250 ft
NB Approach of 700 S & 3000 W	175 ft	700 ft	75 ft	175 ft
SB Approach of 700 S & 3000 W	100 ft	1,425 ft	125 ft	450 ft

3.2.4 Arterial Analysis

Travel speeds presented in Table 13 show a comparison of the 2018 and 2050 travel speeds, with the biggest increase being during the AM peak period. On 700 South the eastbound travel speed from St. Andrews Drive to 3000 West decreases by 16 mph to 12 mph which is only 34% of the base free-flow speed. This decrease is due to a 225% volume increase at the eastbound approach of the roundabout, which is more demand than it can handle. Additional detail on the travel time results can be found in Appendix D.

Table 13. Existing and 2050 No Action Arterial LOS Results

Roadway Segment			Base Free Flow Speed (mph)	2018 AM Existing	2050 AM No Action	2018 PM Existing	2050 PM No Action
				LOS/Speed (mph)	LOS/Speed (mph)	LOS/Speed (mph)	LOS/Speed (mph)
Eastbound	300 N	**4500 W to 3000W**	**40**	**B / 32**	**A / 34**	**B / 32**	**A / 34**
	SR 193	**3000 W to 2000 W**	**50**	**C / 33**	**D / 24**	**C / 33**	**D / 24**
		3000 W to 2550 W	*50*	-	*D / 25*	-	*D / 23*
		2550 W to 2000 W	*50*	-	*D / 24*	-	*C / 25*
	700 S	**4500 W to 3000W**	**35**	**A / 32**	**C / 21**	**A / 32**	**A / 31**
		4500 W to 4000 W	*35*	*A / 34*	*A / 34*	*A / 34*	*A / 33*
		4000 W to St Andrews Dr	*35*	*A / 34*	*A / 34*	*A / 34*	*A / 34*
		St Andrews Dr to 3000 W	*35*	*B / 28*	*E / 12*	*A / 30*	*B / 28*
Westbound	300 N	**3000 W to 4500W**	**40**	**A / 35**	**A / 34**	**A / 34**	**B / 34**
	SR 193	**2000 W to 3000 W**	**50**	**A / 41**	**B / 35**	**B / 39**	**C / 33**
		2000 W to 2550 W	*50*	-	*B / 37*	-	*C / 33*
		2550 W to 3000 W	*50*	-	*C / 34*	-	*C / 34*
	700 S	**3000 W to 4500W**	**35**	**A / 34**	**A / 34**	**A / 32**	**A / 31**
		4000 W to 4500 W	*35*	*A / 33*	*A / 33*	*A / 29*	*B / 28*
		St Andrews Dr to 4000 W	*35*	*A / 34*	*A / 33*	*A / 34*	*A / 33*
		3000 W to St Andrews Dr	*35*	*A / 33*	*A / 34*	*A / 33*	*A / 33*
Northbound	4500 W	**700 S to 300 N**	**40**	**A / 38**	**B / 32**	**A / 38**	**A / 33**
	3000 W	**700 S to 300 N**	**35**	**B / 28**	**B / 26**	**B / 28**	**B / 25**
		SR 193 to 300 N	*35*	*A / 30*	*B / 27*	*A / 29*	*B / 26*
		700 S to SR 193	*35*	*B / 27*	*B / 25*	*B / 27*	*B / 24*
Southbound	4500 W	**300 N to 700 S**	**40**	**A / 38**	**B / 32**	**A / 38**	**A / 33**
	3000 W	**300 N to 700 S**	**35**	**A / 29**	**C / 20**	**A / 30**	**B / 26**
		300 N to SR 193	*35*	*A / 30*	*B / 27*	*A / 31*	*B / 28*
		SR 193 to 700 S	*35*	*B / 28*	*D / 16*	*B / 28*	*B / 24*

The resulting arterial LOS for each segment is found on figures in Appendix E. Most segments are anticipated to have an arterial LOS C or better. The exception is eastbound SR 193 by 2050 between 3000 West and the new intersection at 2550 West with an anticipated arterial LOS E or worse in both AM and PM peak periods.

3.2.5 Travel Time Analysis

Travel time information was used to understand how long it would take for a vehicle to travel between select locations. The travel times were extracted from the TDM for the PM peak period. Three movements were identified for the analysis:

- from Legacy Parkway to the intersection of 3000 West and SR 193,
- from Legacy Parkway to the intersection of 4500 West and 200 South, and
- from I 15 to the intersection of 4500 West and 200 South.

The travel time results presented in Table 14 show a comparison of the 2018 and 2050 No Action travel times for the PM peak period.

Table 14. 2018 Existing and 2050 No Action Travel Times

Segments	Travel Time (minutes)		% Change
	2018 Existing	2050 No Action	
Legacy Parkway to 3000 West & SR 193	23.1	20.2	-13%
Legacy Parkway to 4500 West & 200 South	26.4	21.5	-19%
I 15 to 4500 West & 200 South	12.6	15.5	23%

By 2050 north-south connectivity will have improved due to the opening of West Davis Corridor in the study area. This explains the decrease in travel time in north-south travel times using Legacy Parkway towards the study area at SR 193. The east-west connectivity in 2050 remains the same as base year (2018) while the volume increases significantly. Therefore, there is expected to be an increase in east-west travel time through the study area.

4 CONCLUSION

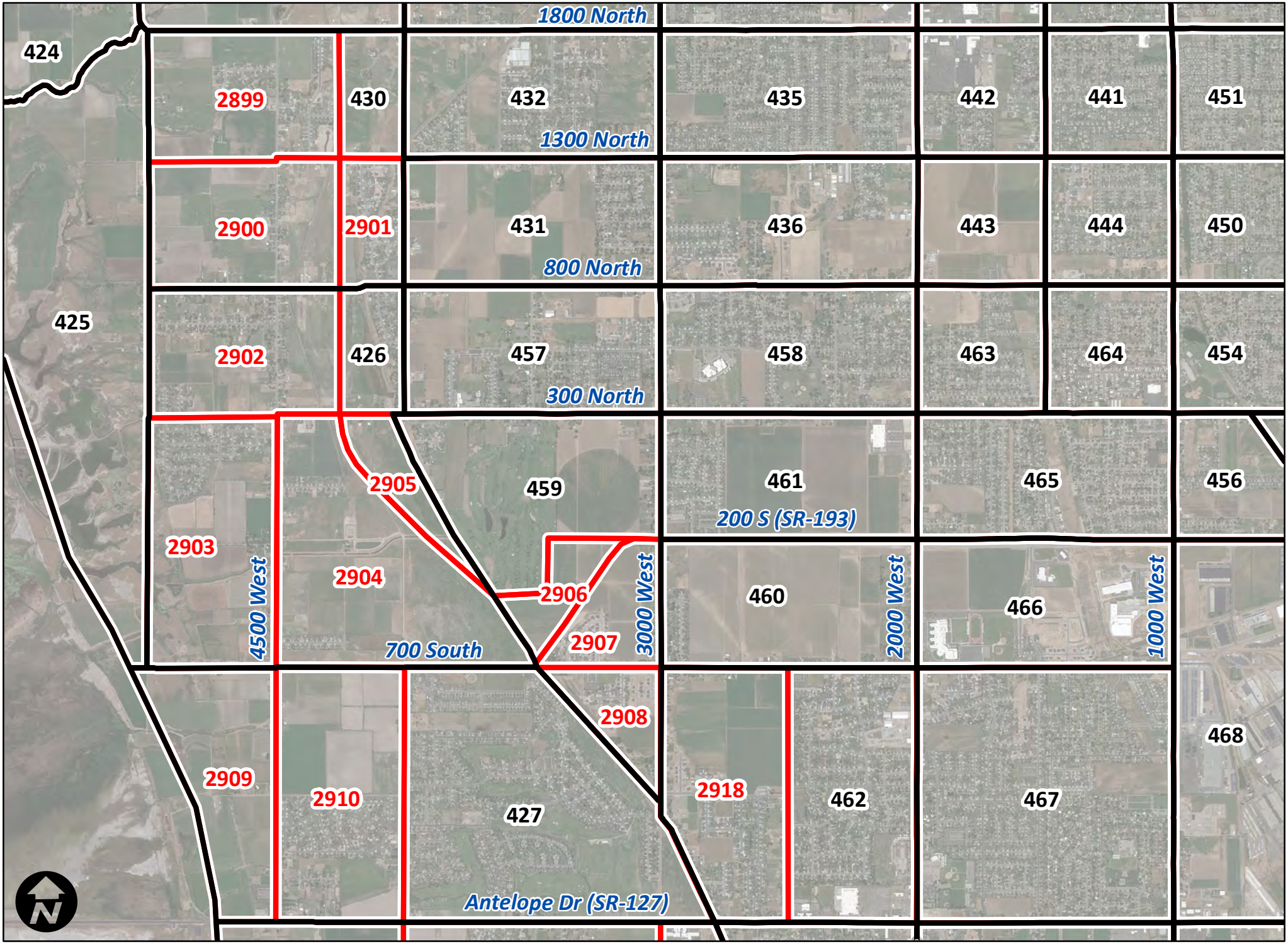
The traffic operations analysis shows that there is not much congestion under existing conditions in the traffic study area. For the 2050 No Action alternative, traffic delays are still fairly low with the notable exception of the 700 South and 3000 West intersection where the roundabout is expected to fail in the 2050 AM peak hour.

Although the analysis does not show significant congestion or increased delay, the traffic study area is transitioning from rural to suburban in nature. While there is generally good roadway connectivity throughout the area, there is currently a situation where a principal arterial (SR 193) terminates at a major collector (3000 West), which is not only inconsistent with good planning and network connectivity practices, but redirects higher than typical traffic volumes onto the surrounding roadways. Under existing conditions, this causes volumes on 3000 West to be higher than is typical for a collector road. This situation is exacerbated in the 2050 No Action alternative when 300 North and 700 South would also have volumes that exceed typical levels, which is largely due to the lack of an east-west arterial through the study area. This all leads to inefficient, ineffective, and out-of-direction travel for motorists and higher traffic volumes for residents on roads not intended for major corridor movement.

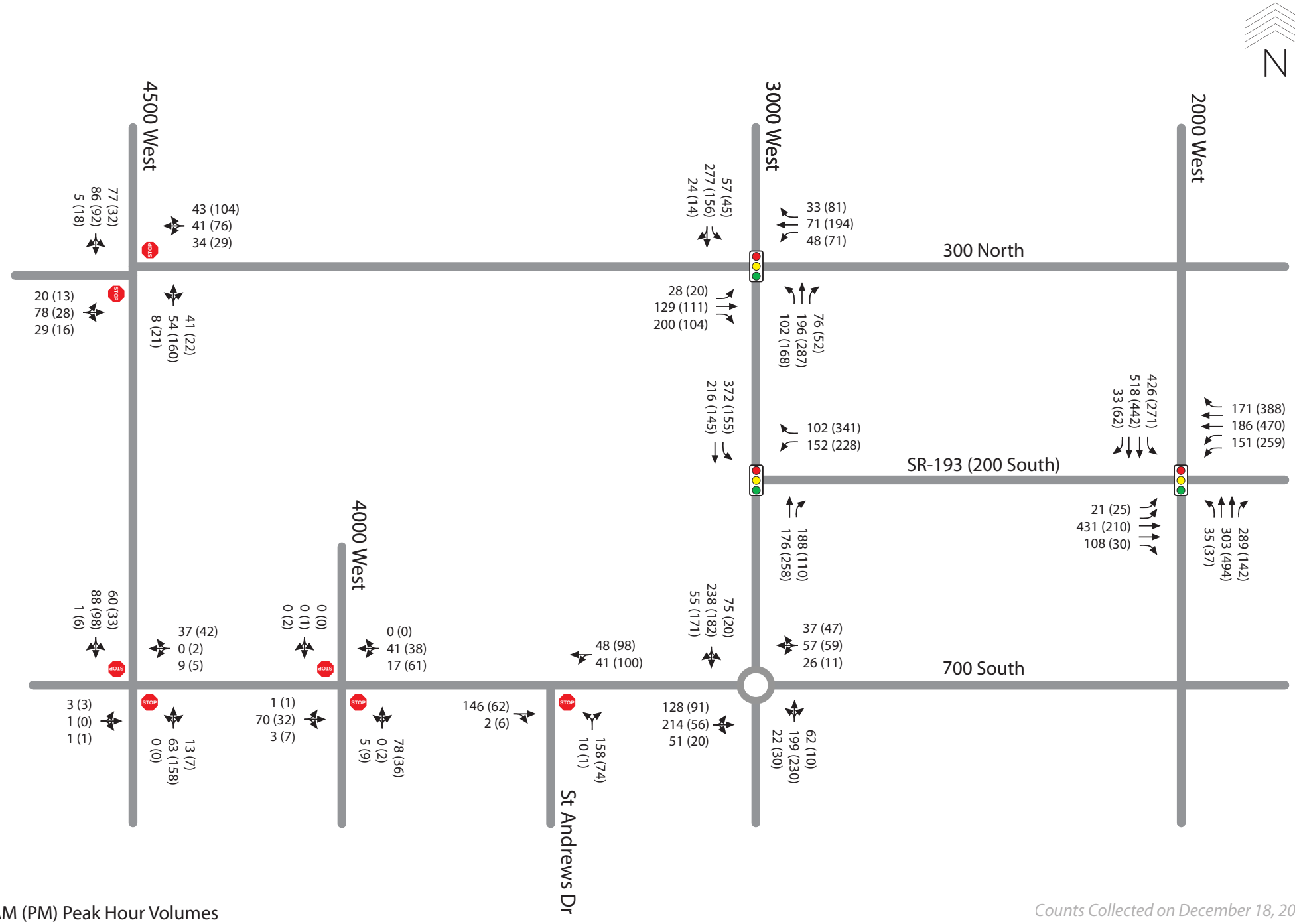
Overall, the largest issues in the future are expected to be the lack of principal arterial street connectivity. A disconnected SR 193 will continue to shift regional traffic onto collectors not designed for this level and type of traffic. Furthermore, having the West Davis Corridor pass through the study area, but not be able to have access to it means that residents will not receive the full traffic benefit that a connected transportation network with West Davis Corridor can provide.

APPENDIX A – TAZ SPLIT FIGURE

SR-193 TAZ Splits



APPENDIX B – TRAFFIC VOLUME FIGURES

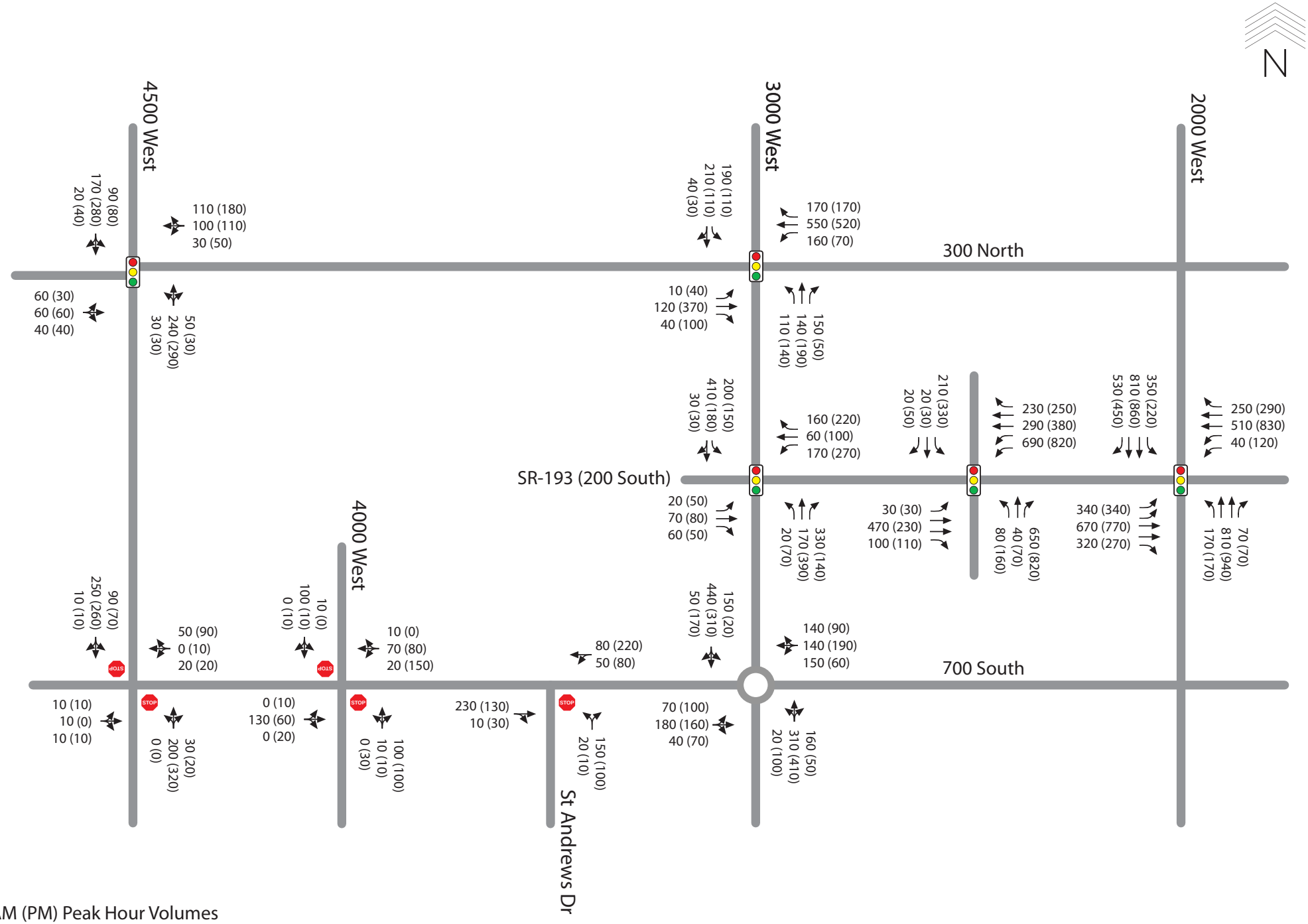


AM (PM) Peak Hour Volumes

Counts Collected on December 18, 2018

Existing Peak Hour Volumes

SR-193 State Environmental Study

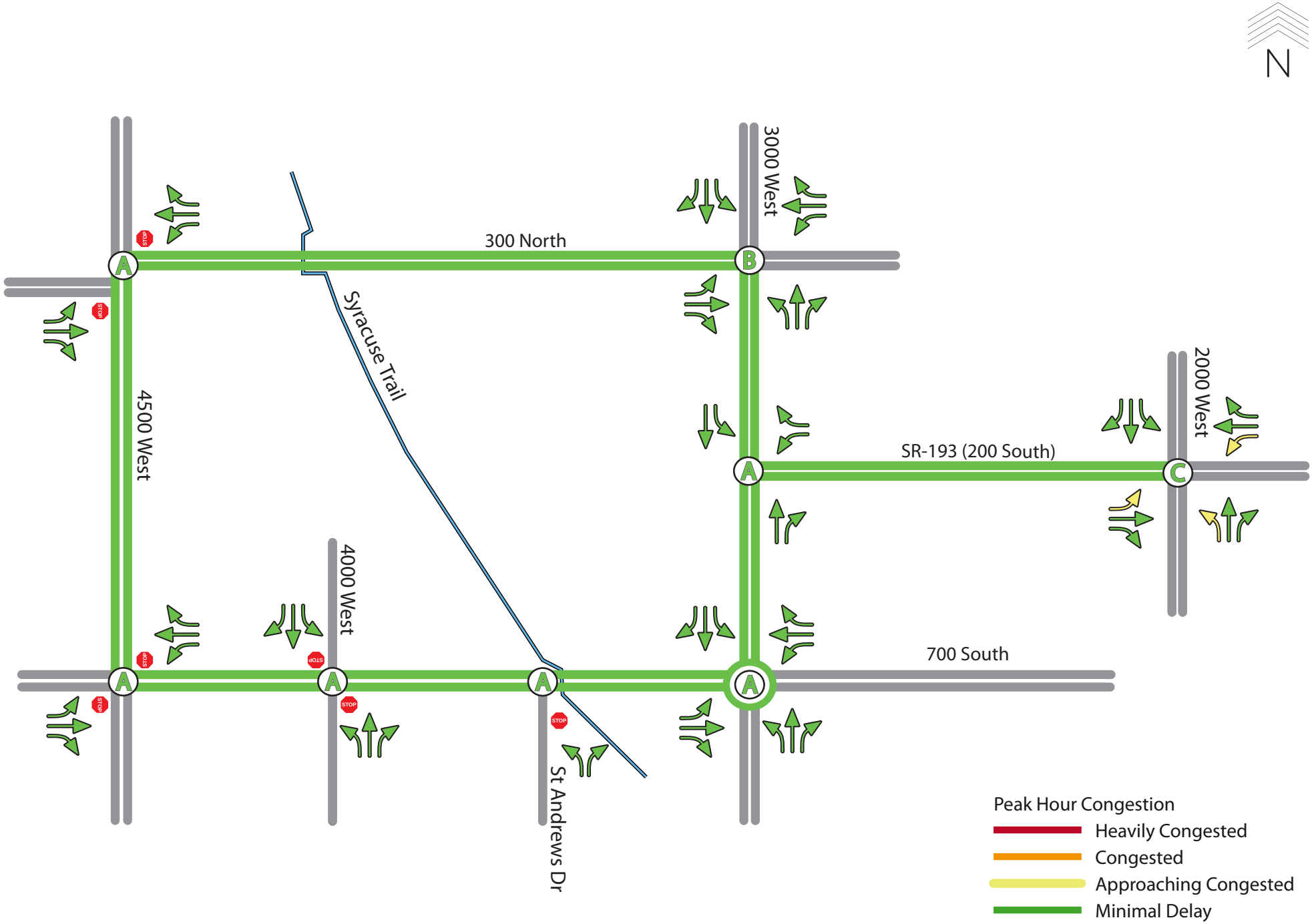


AM (PM) Peak Hour Volumes

2050 No Action Peak Hour Volumes

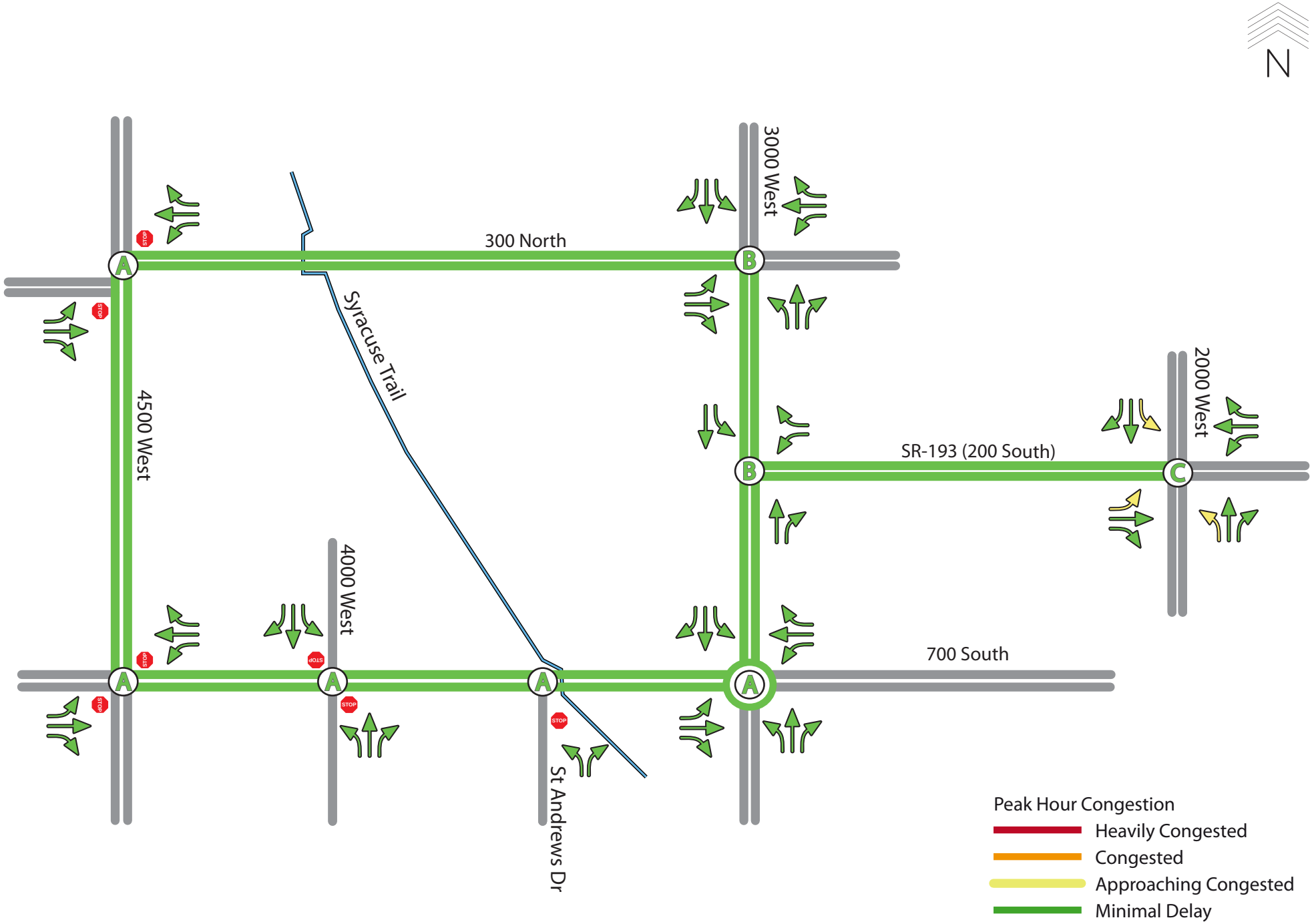
SR-193 State Environmental Study

APPENDIX C – LEVEL OF SERVICE FIGURES



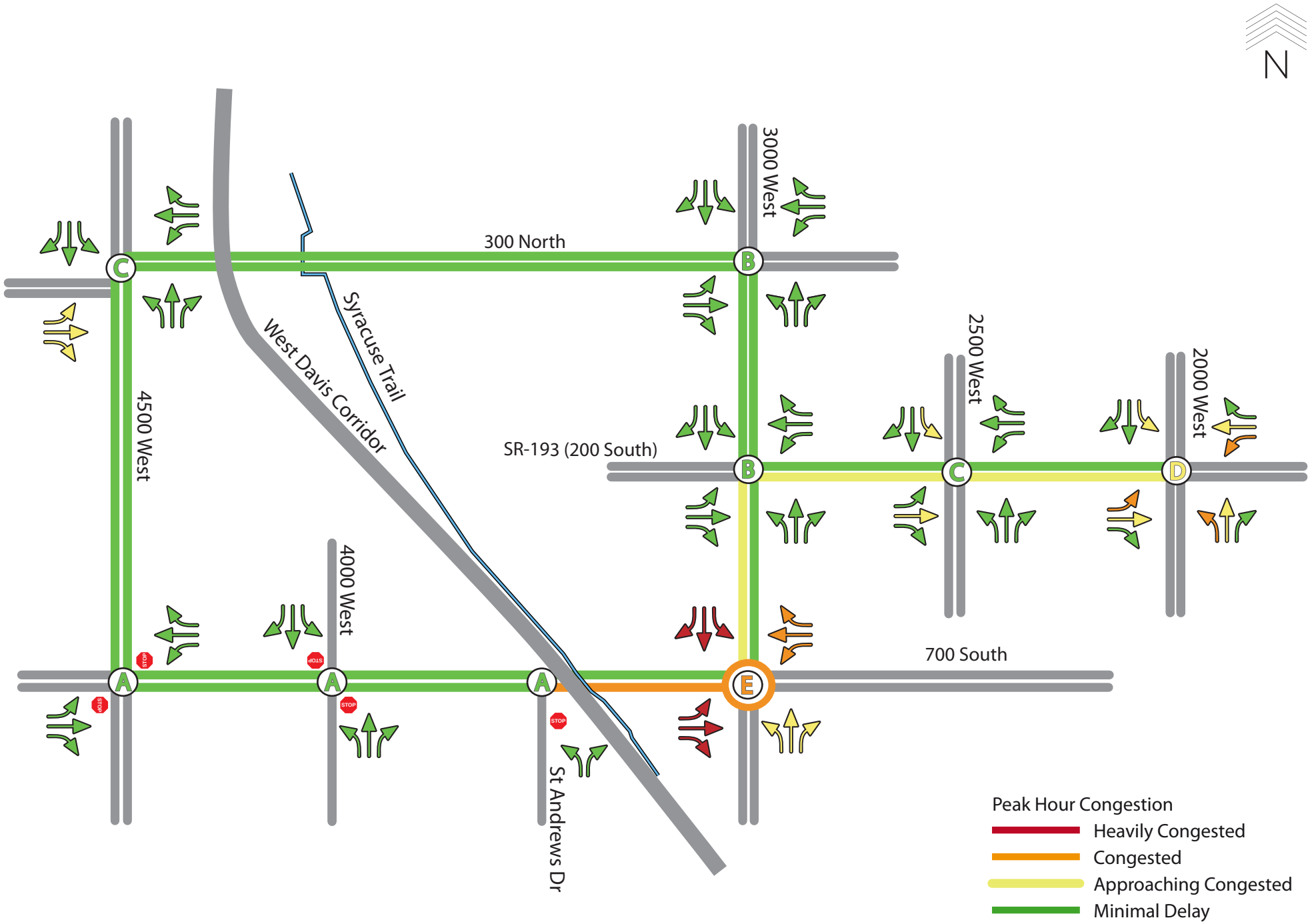
Existing AM Peak Hour Intersection and Arterial LOS

SR-193 State Environmental Study



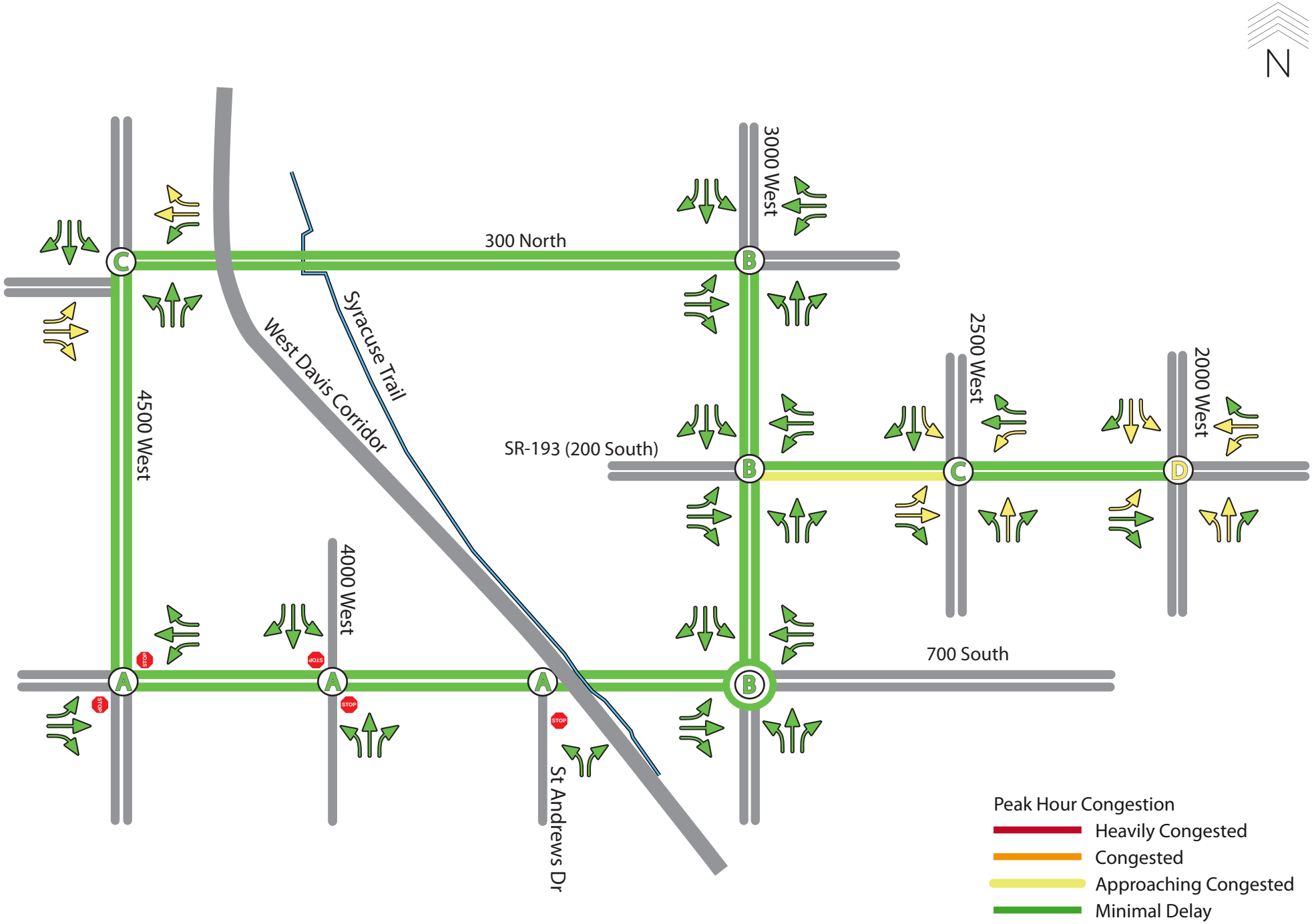
Existing PM Peak Hour Intersection and Arterial LOS

SR-193 State Environmental Study



2050 No Action AM Peak Hour Intersection and Arterial LOS

SR-193 State Environmental Study



2050 No Action PM Peak Hour Intersection and Arterial LOS

SR-193 State Environmental Study

APPENDIX D – DETAILED VISSIM RESULTS

Existing AM

LOS Category: Unsignalized

1: West-4500 W & 300 N						Delay / LOS	
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	8	9	113%	0	50	1	A
NB	**8**	**9**	**113%**			**1**	**A**
SBR	5	4	80%	0	0	1	A
SB	**5**	**4**	**80%**			**1**	**A**
EBL	20	19	95%	0	50	9	A
EBT	78	75	96%	0	50	8	A
EBR	29	29	100%	0	50	9	A
EB	**127**	**123**	**97%**			**9**	**A**
WBT	41	40	98%	0	125	3	A
WB	**41**	**40**	**98%**			**3**	**A**
Total	**181**	**176**	**97%**			**7**	**A**

Node Letter: A VISSIM ID: 1

LOS Category: Unsignalized

2: East-4500 W & 300 N						Delay / LOS	
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBR	41	39	95%	0	0	1	A
NB	**41**	**39**	**95%**			**1**	**A**
SBL	77	74	96%	0	100	1	A
SB	**77**	**74**	**96%**			**1**	**A**
EBT	78	75	96%	0	150	3	A
EB	**78**	**75**	**96%**			**3**	**A**
WBL	34	35	103%	0	100	10	B
WBT	41	40	98%	0	100	10	B
WBR	43	42	98%	0	100	10	A
WB	**118**	**117**	**99%**			**10**	**A**
Total	**314**	**305**	**97%**			**5**	**A**

Node Letter: A VISSIM ID: 2

Existing PM

LOS Category: Unsignalized

1: West-4500 W & 300 N						Delay / LOS	
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	21	20	95%	0	75	1	A
NB	**21**	**20**	**95%**			**1**	**A**
SBR	18	17	94%	0	0	1	A
SB	**18**	**17**	**94%**			**1**	**A**
EBL	13	14	108%	0	25	8	A
EBT	28	25	89%	0	25	8	A
EBR	16	16	100%	0	25	8	A
EB	**57**	**55**	**96%**			**8**	**A**
WBT	76	79	104%	0	150	3	A
WB	**76**	**79**	**104%**			**3**	**A**
Total	**172**	**171**	**99%**			**4**	**A**

Node Letter: A VISSIM ID: 1

LOS Category: Unsignalized

2: East-4500 W & 300 N						Delay / LOS	
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBR	22	19	86%	0	0	1	A
NB	**22**	**19**	**86%**			**1**	**A**
SBL	32	30	94%	0	75	1	A
SB	**32**	**30**	**94%**			**1**	**A**
EBT	28	25	89%	0	100	3	A
EB	**28**	**25**	**89%**			**3**	**A**
WBL	29	27	93%	0	125	13	B
WBT	76	78	103%	0	125	12	B
WBR	104	102	98%	0	125	12	B
WB	**209**	**207**	**99%**			**12**	**B**
Total	**291**	**281**	**97%**			**10**	**A**

Node Letter: A VISSIM ID: 2

2050 No Action AM

LOS Category: Signalized

1: 4500 W & 300 N						Delay / LOS	
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	30	30	100%	25	325	18	B
NBT	240	236	98%	25	325	19	B
NBR	50	51	102%	25	325	18	B
NB	**320**	**317**	**99%**			**18**	**B**
SBL	90	88	98%	25	250	15	B
SBT	170	171	101%	25	250	15	B
SBR	20	20	100%	0	100	4	A
SB	**280**	**279**	**100%**			**14**	**B**
EBL	60	61	102%	25	200	39	D
EBT	60	60	100%	25	200	38	D
EBR	40	39	98%	25	200	36	D
EB	**160**	**160**	**100%**			**38**	**D**
WBL	30	28	93%	50	275	32	C
WBT	100	105	105%	50	275	34	C
WBR	110	115	105%	50	275	32	C
WB	**240**	**248**	**103%**			**33**	**C**
Total	**1,000**	**1,004**	**100%**			**24**	**C**

Node Letter: A VISSIM ID: 1

2050 No Action PM

LOS Category: Signalized

1: 4500 W & 300 N						Delay / LOS	
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	30	28	93%	25	250	15	B
NBT	290	287	99%	25	250	16	B
NBR	30	28	93%	25	250	15	B
NB	**350**	**343**	**98%**			**16**	**B**
SBL	80	80	100%	25	325	20	B
SBT	280	278	99%	25	325	18	B
SBR	40	41	103%	0	0	6	A
SB	**400**	**399**	**100%**			**17**	**B**
EBL	30	31	103%	25	175	41	D
EBT	60	58	97%	25	175	39	D
EBR	40	40	100%	25	175	38	D
EB	**130**	**129**	**99%**			**39**	**D**
WBL	50	49	98%	75	400	34	C
WBT	110	113	103%	75	400	38	D
WBR	180	184	102%	75	400	36	D
WB	**340**	**346**	**102%**			**36**	**D**
Total	**1,220**	**1,217**	**100%**			**24**	**C**

Node Letter: A VISSIM ID: 1

Existing AM

LOS Category: Signalized

3: 3000 W & 300 N — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg 900-4500	Queue (ft) 95th 900-4500	Analysis Period 900-4500	
NBL	102	97	95%	0	100	7	A
NBT	196	197	101%	0	125	5	A
NBR	76	73	96%	0	50	3	A
NB	**374**	**367**	**98%**			**5**	**A**
SBL	57	56	98%	0	50	6	A
SBT	277	278	100%	0	125	5	A
SBR	24	24	100%	0	125	3	A
SB	**358**	**358**	**100%**			**5**	**A**
EBL	28	30	107%	0	75	28	C
EBT	129	121	94%	25	150	29	C
EBR	200	198	99%	0	100	8	A
EB	**357**	**349**	**98%**			**17**	**B**
WBL	48	47	98%	0	75	32	C
WBT	71	72	101%	0	100	28	C
WBR	33	32	97%	0	25	5	A
WB	**152**	**151**	**99%**			**24**	**C**
Total	**1,241**	**1,225**	**99%**			**11**	**B**

Node Letter: C VISSIM ID: 3

LOS Category: Signalized

4: SR 193 & 3000 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg 900-4500	Queue (ft) 95th 900-4500	Analysis Period 900-4500	
NBT	176	172	98%	0	175	14	B
NBR	188	186	99%	0	0	1	A
NB	**364**	**358**	**98%**			**7**	**A**
SBL	372	366	98%	0	150	8	A
SBT	216	217	100%	0	100	5	A
SB	**588**	**583**	**99%**			**7**	**A**
WBL	152	151	99%	25	175	21	C
WBR	102	102	100%	0	100	7	A
WB	**254**	**253**	**100%**			**15**	**B**
Total	**1,206**	**1,194**	**99%**			**9**	**A**

Node Letter: D VISSIM ID: 6

Existing PM

LOS Category: Signalized

3: 3000 W & 300 N — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg 900-4500	Queue (ft) 95th 900-4500	Analysis Period 900-4500	
NBL	168	164	98%	0	100	8	A
NBT	287	287	100%	0	150	6	A
NBR	52	51	98%	0	50	3	A
NB	**507**	**502**	**99%**			**6**	**A**
SBL	45	45	100%	0	50	7	A
SBT	156	156	100%	0	100	6	A
SBR	14	13	93%	0	100	4	A
SB	**215**	**214**	**100%**			**6**	**A**
EBL	20	21	105%	0	75	23	C
EBT	111	102	92%	25	125	27	C
EBR	104	104	100%	0	75	6	A
EB	**235**	**227**	**97%**			**17**	**B**
WBL	71	69	97%	0	100	31	C
WBT	194	194	100%	25	200	28	C
WBR	81	79	98%	0	50	5	A
WB	**346**	**342**	**99%**			**23**	**C**
Total	**1,303**	**1,285**	**99%**			**13**	**B**

Node Letter: C VISSIM ID: 3

LOS Category: Signalized

4: SR 193 & 3000 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg 900-4500	Queue (ft) 95th 900-4500	Analysis Period 900-4500	
NBT	258	254	98%	25	175	14	B
NBR	110	108	98%	0	0	1	A
NB	**368**	**362**	**98%**			**10**	**B**
SBL	155	152	98%	0	100	7	A
SBT	145	143	99%	0	100	5	A
SB	**300**	**295**	**98%**			**6**	**A**
WBL	228	226	99%	25	225	21	C
WBR	341	333	98%	25	350	18	B
WB	**569**	**559**	**98%**			**19**	**B**
Total	**1,237**	**1,216**	**98%**			**13**	**B**

Node Letter: D VISSIM ID: 6

2050 No Action AM

LOS Category: Signalized

3: 3000 W & 300 N — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg 900-4500	Queue (ft) 95th 900-4500	Analysis Period 900-4500	
NBL	110	110	100%	0	125	15	B
NBT	140	148	106%	0	125	12	B
NBR	150	150	100%	0	100	5	A
NB	**400**	**408**	**102%**			**10**	**B**
SBL	190	189	99%	25	200	16	B
SBT	210	210	100%	25	200	13	B
SBR	40	40	100%	25	225	9	A
SB	**440**	**439**	**100%**			**14**	**B**
EBL	10	10	100%	0	50	20	B
EBT	120	118	98%	0	175	20	B
EBR	40	39	98%	0	50	4	A
EB	**170**	**167**	**98%**			**16**	**B**
WBL	160	158	99%	25	150	27	C
WBT	550	547	99%	75	675	26	C
WBR	170	169	99%	0	75	10	A
WB	**880**	**874**	**99%**			**23**	**C**
Total	**1,890**	**1,888**	**100%**			**18**	**B**

Node Letter: C VISSIM ID: 3

LOS Category: Signalized

4: SR 193 & 3000 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg 900-4500	Queue (ft) 95th 900-4500	Analysis Period 900-4500	
NBL	20	20	100%	0	50	17	B
NBT	170	176	104%	25	150	18	B
NBR	330	327	99%	0	0	2	A
NB	**520**	**523**	**101%**			**8**	**A**
SBL	200	200	100%	0	150	12	B
SBT	410	408	100%	25	225	11	B
SBR	30	30	100%	25	225	9	A
SB	**640**	**638**	**100%**			**11**	**B**
EBL	20	19	95%	0	100	16	B
EBT	70	70	100%	0	0	15	B
EBR	60	59	98%	0	150	7	A
EB	**150**	**148**	**99%**			**12**	**B**
WBL	170	171	101%	25	175	21	C
WBT	60	60	100%	0	125	17	B
WBR	160	161	101%	0	150	8	A
WB	**390**	**392**	**101%**			**15**	**B**
Total	**1,700**	**1,701**	**100%**			**11**	**B**

Node Letter: D VISSIM ID: 6

2050 No Action PM

LOS Category: Signalized

3: 3000 W & 300 N — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg 900-4500	Queue (ft) 95th 900-4500	Analysis Period 900-4500	
NBL	140	137	98%	0	150	15	B
NBT	190	194	102%	0	175	13	B
NBR	50	51	102%	0	50	4	A
NB	**380**	**382**	**101%**			**13**	**B**
SBL	110	107	97%	0	125	16	B
SBT	110	110	100%	0	150	12	B
SBR	30	30	100%	0	150	7	A
SB	**250**	**247**	**99%**			**13**	**B**
EBL	40	43	108%	0	75	24	C
EBT	370	362	98%	25	250	20	C
EBR	100	101	101%	0	75	6	A
EB	**510**	**506**	**99%**			**18**	**B**
WBL	70	66	94%	0	75	26	C
WBT	520	521	100%	50	450	22	C
WBR	170	171	101%	0	75	7	A
WB	**760**	**758**	**100%**			**19**	**B**
Total	**1,900**	**1,893**	**100%**			**17**	**B**

Node Letter: C VISSIM ID: 3

LOS Category: Signalized

4: SR 193 & 3000 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg 900-4500	Queue (ft) 95th 900-4500	Analysis Period 900-4500	
NBL	70	65	93%	0	75	17	B
NBT	390	398	102%	50	325	22	C
NBR	140	140	100%	0	0	2	A
NB	**600**	**603**	**101%**			**17**	**B**
SBL	150	151	101%	0	125	13	B
SBT	180	178	99%	0	150	10	B
SBR	30	28	93%	0	150	6	A
SB	**360**	**357**	**99%**			**11**	**B**
EBL	50	49	98%	0	75	16	B
EBT	80	79	99%	0	0	15	B
EBR	50	50	100%	25	150	8	A
EB	**180**	**178**	**99%**			**13**	**B**
WBL	270	270	100%	25	250	22	C
WBT	100	96	96%	0	125	17	B
WBR	220	212	96%	0	150	9	A
WB	**590**	**578**	**98%**			**17**	**B**
Total	**1,730**	**1,716**	**99%**			**15**	**B**

Node Letter: D VISSIM ID: 6

Existing AM

LOS Category: Signalized

6: SR- 193 & 2000 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 95th 900-4500		Analysis Period 900-4500	
NBL	35	32	91%	0	50	42	D
NBT	303	302	100%	25	175	32	C
NBR	289	293	101%	25	200	11	B
NB	**627**	**627**	**100%**			**23**	**C**
SBL	426	424	100%	50	225	34	C
SBT	518	517	100%	25	200	19	B
SBR	33	34	103%	0	25	1	A
SB	**977**	**975**	**100%**			**25**	**C**
EBL	21	22	105%	0	50	40	D
EBT	431	423	98%	50	200	34	C
EBR	108	104	96%	0	75	6	A
EB	**560**	**549**	**98%**			**29**	**C**
WBL	151	149	99%	25	150	36	D
WBT	186	188	101%	25	125	22	C
WBR	171	171	100%	0	125	6	A
WB	**508**	**508**	**100%**			**21**	**C**
Total	**2,672**	**2,659**	**100%**			**25**	**C**

Node Letter: E VISSIM ID: 17

Existing PM

LOS Category: Signalized

6: SR- 193 & 2000 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 95th 900-4500		Analysis Period 900-4500	
NBL	37	35	95%	0	75	39	D
NBT	494	493	100%	50	225	30	C
NBR	142	145	102%	0	100	6	A
NB	**673**	**673**	**100%**			**26**	**C**
SBL	271	270	100%	25	150	35	D
SBT	442	438	99%	25	175	20	B
SBR	62	63	102%	0	25	2	A
SB	**775**	**771**	**99%**			**24**	**C**
EBL	25	24	96%	0	50	39	D
EBT	210	205	98%	25	125	33	C
EBR	30	29	97%	0	50	5	A
EB	**265**	**258**	**97%**			**31**	**C**
WBL	259	267	103%	25	150	34	C
WBT	470	462	98%	25	200	23	C
WBR	388	392	101%	25	225	12	B
WB	**1,117**	**1,121**	**100%**			**22**	**C**
Total	**2,830**	**2,823**	**100%**			**24**	**C**

Node Letter: E VISSIM ID: 17

2050 No Action AM

LOS Category: Signalized

5: SR-193 & 2550 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 95th 900-4500		Analysis Period 900-4500	
NBL	80	76	95%	0	100	28	C
NBT	40	39	98%	50	250	31	C
NBR	650	656	101%	50	250	20	C
NB	**770**	**771**	**100%**			**22**	**C**
SBL	210	208	99%	25	150	42	D
SBT	20	21	105%	0	50	23	C
SBR	20	18	90%	0	25	3	A
SB	**250**	**247**	**99%**			**38**	**D**
EBL	30	30	100%	0	100	30	C
EBT	470	465	99%	50	275	35	D
EBR	100	102	102%	75	300	25	C
EB	**600**	**597**	**100%**			**33**	**C**
WBL	690	684	99%	75	350	34	C
WBT	290	296	102%	25	250	13	B
WBR	230	224	97%	25	275	10	A
WB	**1,210**	**1,204**	**100%**			**24**	**C**
Total	**2,830**	**2,819**	**100%**			**27**	**C**

Node Letter: Z VISSIM ID: 20

LOS Category: Signalized

6: SR- 193 & 2000 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 95th 900-4500		Analysis Period 900-4500	
NBL	170	173	102%	25	125	55	E
NBT	810	807	100%	100	475	39	D
NBR	70	70	100%	0	75	6	A
NB	**1,050**	**1,050**	**100%**			**40**	**D**
SBL	350	345	99%	50	225	50	D
SBT	810	817	101%	75	425	33	C
SBR	530	525	99%	25	475	16	B
SB	**1,690**	**1,687**	**100%**			**31**	**C**
EBL	340	335	99%	50	250	58	E
EBT	670	678	101%	75	375	35	D
EBR	320	312	98%	25	275	16	B
EB	**1,330**	**1,325**	**100%**			**36**	**D**
WBL	40	40	100%	0	100	56	E
WBT	510	512	100%	75	350	46	D
WBR	250	249	100%	25	250	11	B
WB	**800**	**801**	**100%**			**36**	**D**
Total	**4,870**	**4,863**	**100%**			**35**	**D**

Node Letter: E VISSIM ID: 17

2050 No Action PM

LOS Category: Signalized

5: SR-193 & 2550 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 95th 900-4500		Analysis Period 900-4500	
NBL	160	154	96%	25	175	27	C
NBT	70	66	94%	75	350	41	D
NBR	820	831	101%	75	350	26	C
NB	**1,050**	**1,051**	**100%**			**27**	**C**
SBL	330	327	99%	50	200	50	D
SBT	30	31	103%	0	75	25	C
SBR	50	49	98%	0	50	4	A
SB	**410**	**407**	**99%**			**43**	**D**
EBL	30	31	103%	0	75	40	D
EBT	230	229	100%	50	200	42	D
EBR	110	107	97%	50	225	24	C
EB	**370**	**367**	**99%**			**36**	**D**
WBL	820	828	101%	75	375	35	D
WBT	380	376	99%	25	250	19	B
WBR	250	244	98%	25	275	15	B
WB	**1,450**	**1,448**	**100%**			**28**	**C**
Total	**3,280**	**3,273**	**100%**			**30**	**C**

Node Letter: Z VISSIM ID: 20

LOS Category: Signalized

6: SR- 193 & 2000 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 95th 900-4500		Analysis Period 900-4500	
NBL	170	169	99%	25	125	51	D
NBT	940	936	100%	125	600	44	D
NBR	70	70	100%	0	50	7	A
NB	**1,180**	**1,175**	**100%**			**43**	**D**
SBL	220	219	100%	50	175	51	D
SBT	860	855	99%	100	450	38	D
SBR	450	445	99%	25	350	15	B
SB	**1,530**	**1,519**	**99%**			**33**	**C**
EBL	340	344	101%	50	225	51	D
EBT	770	778	101%	75	350	33	C
EBR	270	275	102%	25	225	13	B
EB	**1,380**	**1,397**	**101%**			**34**	**C**
WBL	120	120	100%	25	100	50	D
WBT	830	838	101%	125	450	46	D
WBR	290	285	98%	25	250	13	B
WB	**1,240**	**1,243**	**100%**			**39**	**D**
Total	**5,330**	**5,334**	**100%**			**37**	**D**

Node Letter: E VISSIM ID: 17

Existing AM

LOS Category: Unsignalized

7: East- 700 S & 4500 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg	Queue (ft) 95th	Analysis Period 900-4500	LOS
NBR	13	14	108%	0	0	0	A
NB	**13**	**14**	**108%**			**0**	**A**
SBL	60	61	102%	0	75	1	A
SB	**60**	**61**	**102%**			**1**	**A**
EBT	1	1	100%	0	75	2	A
EB	**1**	**1**	**100%**			**2**	**A**
WBL	9	10	111%	0	100	8	A
WBR	37	33	89%	0	75	6	A
WB	**46**	**43**	**93%**			**6**	**A**
Total	**120**	**119**	**99%**			**3**	**A**

Node Letter: F VISSIM ID: 13

LOS Category: Unsignalized

8: West- 700 S & 4500 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg	Queue (ft) 95th	Analysis Period 900-4500	LOS
SBR	1	2	200%	0	50	2	A
SB	**1**	**2**	**200%**			**1**	**A**
EBL	3	2	67%	0	25	8	A
EBT	1	1	100%	0	25	8	A
EBR	1	1	100%	0	25	6	A
EB	**5**	**4**	**80%**			**9**	**A**
Total	**6**	**6**	**100%**			**6**	**A**

Node Letter: F VISSIM ID: 14

LOS Category: Unsignalized

9: North- 700 S & 4000 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg	Queue (ft) 95th	Analysis Period 900-4500	LOS
EBL	1	2	200%	0	0	1	A
EB	**1**	**2**	**200%**			**1**	**A**
Total	**1**	**2**	**200%**			**1**	**A**

Node Letter: G VISSIM ID: 11

Existing PM

LOS Category: Unsignalized

7: East- 700 S & 4500 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg	Queue (ft) 95th	Analysis Period 900-4500	LOS
NBR	7	7	100%	0	0	0	A
NB	**7**	**7**	**100%**			**0**	**A**
SBL	33	34	103%	0	75	2	A
SB	**33**	**34**	**103%**			**2**	**A**
WBL	5	5	100%	0	75	7	A
WBT	2	2	100%	0	50	8	A
WBR	42	39	93%	0	50	6	A
WB	**49**	**46**	**94%**			**6**	**A**
Total	**89**	**87**	**98%**			**4**	**A**

Node Letter: F VISSIM ID: 13

LOS Category: Unsignalized

8: West- 700 S & 4500 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg	Queue (ft) 95th	Analysis Period 900-4500	LOS
SBR	6	6	100%	0	25	1	A
SB	**6**	**6**	**100%**			**1**	**A**
EBL	3	3	100%	0	25	9	A
EBR	1	1	100%	0	25	6	A
EB	**4**	**4**	**100%**			**8**	**A**
WBT	2	2	100%	0	75	2	A
WB	**2**	**2**	**100%**			**3**	**A**
Total	**12**	**12**	**100%**			**4**	**A**

Node Letter: F VISSIM ID: 14

LOS Category: Unsignalized

9: North- 700 S & 4000 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg	Queue (ft) 95th	Analysis Period 900-4500	LOS
NBT	2	3	150%	0	75	1	A
NB	**2**	**3**	**150%**			**1**	**A**
EBL	1	1	100%	0	0	1	A
EB	**1**	**1**	**100%**			**2**	**A**
Total	**3**	**4**	**133%**			**1**	**A**

Node Letter: G VISSIM ID: 11

2050 No Action AM

LOS Category: Unsignalized

7: East- 700 S & 4500 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg	Queue (ft) 95th	Analysis Period 900-4500	LOS
NBR	30	27	90%	0	0	0	A
NB	**30**	**27**	**90%**			**0**	**A**
SBL	90	86	96%	0	150	11	B
SB	**90**	**86**	**96%**			**11**	**B**
EBT	10	9	90%	0	75	2	A
EB	**10**	**9**	**90%**			**2**	**A**
WBL	20	17	85%	0	100	9	A
WBR	50	49	98%	0	75	7	A
WB	**70**	**66**	**94%**			**7**	**A**
Total	**200**	**188**	**94%**			**8**	**A**

Node Letter: F VISSIM ID: 13

LOS Category: Unsignalized

8: West- 700 S & 4500 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg	Queue (ft) 95th	Analysis Period 900-4500	LOS
SBR	10	11	110%	0	150	10	A
SB	**10**	**11**	**110%**			**10**	**A**
EBL	10	10	100%	0	50	10	A
EBT	10	9	90%	0	50	8	A
EBR	10	10	100%	0	50	7	A
EB	**30**	**29**	**97%**			**8**	**A**
Total	**40**	**40**	**100%**			**9**	**A**

Node Letter: F VISSIM ID: 14

LOS Category: Unsignalized

9: North- 700 S & 4000 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg	Queue (ft) 95th	Analysis Period 900-4500	LOS
NBT	10	10	100%	0	125	2	A
NB	**10**	**10**	**100%**			**2**	**A**
SBL	10	11	110%	0	75	9	A
SBT	100	96	96%	0	75	9	A
SB	**110**	**107**	**97%**			**9**	**A**
WBR	10	10	100%	0	25	1	A
WB	**10**	**10**	**100%**			**1**	**A**
Total	**130**	**127**	**98%**			**8**	**A**

Node Letter: G VISSIM ID: 11

2050 No Action PM

LOS Category: Unsignalized

7: East- 700 S & 4500 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg	Queue (ft) 95th	Analysis Period 900-4500	LOS
NBR	20	20	100%	0	0	0	A
NB	**20**	**20**	**100%**			**0**	**A**
SBL	70	66	94%	0	150	4	A
SB	**70**	**66**	**94%**			**4**	**A**
WBL	20	22	110%	0	100	9	A
WBT	10	9	90%	0	75	9	A
WBR	90	86	96%	0	75	7	A
WB	**120**	**117**	**98%**			**8**	**A**
Total	**210**	**203**	**97%**			**6**	**A**

Node Letter: F VISSIM ID: 13

LOS Category: Unsignalized

8: West- 700 S & 4500 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg	Queue (ft) 95th	Analysis Period 900-4500	LOS
SBR	10	11	110%	0	125	2	A
SB	**10**	**11**	**110%**			**2**	**A**
EBL	10	10	100%	0	50	10	A
EBR	10	10	100%	0	25	7	A
EB	**20**	**20**	**100%**			**8**	**A**
WBT	10	9	90%	0	75	3	A
WB	**10**	**9**	**90%**			**3**	**A**
Total	**40**	**40**	**100%**			**5**	**A**

Node Letter: F VISSIM ID: 14

LOS Category: Unsignalized

9: North- 700 S & 4000 W — Delay / LOS

Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg	Queue (ft) 95th	Analysis Period 900-4500	LOS
NBT	10	11	110%	0	75	2	A
NB	**10**	**11**	**110%**			**2**	**A**
SBT	10	9	90%	0	25	8	A
SBR	10	10	100%	0	50	7	A
SB	**20**	**19**	**95%**			**8**	**A**
EBL	10	11	110%	0	50	2	A
EB	**10**	**11**	**110%**			**2**	**A**
Total	**40**	**41**	**103%**			**5**	**A**

Node Letter: G VISSIM ID: 11

Existing AM

LOS Category: Unsignalized

10: South- 700 S & 4000 W							Delay / LOS
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	5	4	80%	0	50	9	A
NBR	78	78	100%	0	50	9	A
NB	**83**	**82**	**99%**			**9**	**A**
EBR	3	4	133%	0	0	1	A
EB	**3**	**4**	**133%**			**1**	**A**
Total	**86**	**86**	**100%**			**8**	**A**

Node Letter: G VISSIM ID: 12

LOS Category: Unsignalized

11: 700 S & St Andrews Dr							Delay / LOS
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	10	10	100%	0	100	9	A
NBR	158	156	99%	0	100	8	A
NB	**168**	**166**	**99%**			**8**	**A**
EBR	2	3	150%	0	0	1	A
EB	**2**	**3**	**150%**			**1**	**A**
WBL	41	41	100%	0	100	1	A
WB	**41**	**41**	**100%**			**1**	**A**
Total	**211**	**210**	**100%**			**7**	**A**

Node Letter: H VISSIM ID: 10

Existing PM

LOS Category: Unsignalized

10: South- 700 S & 4000 W							Delay / LOS
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	9	10	111%	0	50	9	A
NBT	2	3	150%	0	50	8	A
NBR	36	33	92%	0	50	8	A
NB	**47**	**46**	**98%**			**8**	**A**
EBR	7	8	114%	0	0	1	A
EB	**7**	**8**	**114%**			**1**	**A**
Total	**54**	**54**	**100%**			**7**	**A**

Node Letter: G VISSIM ID: 12

LOS Category: Unsignalized

11: 700 S & St Andrews Dr							Delay / LOS
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	1	1	100%	0	50	7	A
NBR	74	73	99%	0	50	7	A
NB	**75**	**74**	**99%**			**7**	**A**
EBR	6	6	100%	0	0	1	A
EB	**6**	**6**	**100%**			**1**	**A**
WBL	100	100	100%	0	125	1	A
WB	**100**	**100**	**100%**			**1**	**A**
Total	**181**	**180**	**99%**			**4**	**A**

Node Letter: H VISSIM ID: 10

2050 No Action AM

LOS Category: Unsignalized

10: South- 700 S & 4000 W							Delay / LOS
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBT	10	10	100%	0	75	9	A
NBR	100	98	98%	0	75	9	A
NB	**110**	**108**	**98%**			**9**	**A**
SBT	100	96	96%	0	75	1	A
SB	**100**	**96**	**96%**			**2**	**A**
Total	**210**	**204**	**97%**			**6**	**A**

Node Letter: G VISSIM ID: 12

LOS Category: Unsignalized

11: 700 S & St Andrews Dr							Delay / LOS
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	20	17	85%	0	100	8	A
NBR	150	152	101%	0	100	8	A
NB	**170**	**169**	**99%**			**8**	**A**
EBR	10	10	100%	0	0	1	A
EB	**10**	**10**	**100%**			**1**	**A**
WBL	50	47	94%	0	125	2	A
WB	**50**	**47**	**94%**			**2**	**A**
Total	**230**	**226**	**98%**			**7**	**A**

Node Letter: H VISSIM ID: 10

2050 No Action PM

LOS Category: Unsignalized

10: South- 700 S & 4000 W							Delay / LOS
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	30	29	97%	0	50	10	A
NBT	10	11	110%	0	50	10	A
NBR	100	98	98%	0	50	9	A
NB	**140**	**138**	**99%**			**10**	**A**
SBT	10	9	90%	0	75	2	A
SB	**10**	**9**	**90%**			**2**	**A**
EBR	20	19	95%	0	0	1	A
EB	**20**	**19**	**95%**			**1**	**A**
Total	**170**	**166**	**98%**			**8**	**A**

Node Letter: G VISSIM ID: 12

LOS Category: Unsignalized

11: 700 S & St Andrews Dr							Delay / LOS
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	10	10	100%	0	75	8	A
NBR	100	101	101%	0	75	8	A
NB	**110**	**111**	**101%**			**8**	**A**
EBR	30	30	100%	0	0	1	A
EB	**30**	**30**	**100%**			**1**	**A**
WBL	80	78	98%	0	125	2	A
WB	**80**	**78**	**98%**			**2**	**A**
Total	**220**	**219**	**100%**			**5**	**A**

Node Letter: H VISSIM ID: 10

Existing AM

LOS Category: Unsignalized

12: 700 S & 3000 W						Delay / LOS	
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	22	22	100%	0	175	6	A
NBT	199	198	99%	0	175	5	A
NBR	62	62	100%	0	175	5	A
NB	**283**	**282**	**100%**			**5**	**A**
SBL	75	72	96%	0	100	5	A
SBT	238	240	101%	0	100	5	A
SBR	55	55	100%	0	100	5	A
SB	**368**	**367**	**100%**			**5**	**A**
EBL	128	127	99%	0	175	7	A
EBT	214	207	97%	0	175	7	A
EBR	51	54	106%	0	175	6	A
EB	**393**	**388**	**99%**			**7**	**A**
WBL	26	26	100%	0	75	5	A
WBT	57	60	105%	0	75	4	A
WBR	37	33	89%	0	75	4	A
WB	**120**	**119**	**99%**			**4**	**A**
Total	**1,164**	**1,156**	**99%**			**5**	**A**

Node Letter: I VISSIM ID: 7

Existing PM

LOS Category: Unsignalized

12: 700 S & 3000 W						Delay / LOS	
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	30	30	100%	0	75	2	A
NBT	230	230	100%	0	75	2	A
NBR	10	8	80%	0	75	2	A
NB	**270**	**268**	**99%**			**2**	**A**
SBL	20	20	100%	0	125	5	A
SBT	182	180	99%	0	125	5	A
SBR	171	171	100%	0	125	5	A
SB	**373**	**371**	**99%**			**5**	**A**
EBL	91	86	95%	0	75	3	A
EBT	56	56	100%	0	75	3	A
EBR	20	19	95%	0	75	3	A
EB	**167**	**161**	**96%**			**3**	**A**
WBL	11	11	100%	0	50	3	A
WBT	59	60	102%	0	50	3	A
WBR	47	46	98%	0	50	2	A
WB	**117**	**117**	**100%**			**3**	**A**
Total	**927**	**917**	**99%**			**4**	**A**

Node Letter: I VISSIM ID: 7

2050 No Action AM

LOS Category: Unsignalized

12: 700 S & 3000 W						Delay / LOS	
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	20	19	95%	75	700	28	D
NBT	310	310	100%	75	700	26	D
NBR	160	160	100%	75	700	25	D
NB	**490**	**489**	**100%**			**26**	**D**
SBL	150	153	102%	250	1,425	55	F
SBT	440	435	99%	250	1,425	53	F
SBR	50	49	98%	250	1,425	52	F
SB	**640**	**637**	**100%**			**54**	**F**
EBL	70	69	99%	200	750	92	F
EBT	180	177	98%	200	750	90	F
EBR	40	37	93%	200	750	91	F
EB	**290**	**283**	**98%**			**90**	**F**
WBL	150	145	97%	100	650	38	E
WBT	140	140	100%	100	650	36	E
WBR	140	145	104%	100	650	37	E
WB	**430**	**430**	**100%**			**37**	**E**
Total	**1,850**	**1,839**	**99%**			**48**	**E**

Node Letter: I VISSIM ID: 7

2050 No Action PM

LOS Category: Unsignalized

12: 700 S & 3000 W						Delay / LOS	
Mvmt	Demand	Volume Served	% Served	Queue (ft) Avg / 900-4500	95th 900-4500	Analysis Period 900-4500	
NBL	100	100	100%	0	175	7	A
NBT	410	410	100%	0	175	6	A
NBR	50	48	96%	0	175	6	A
NB	**560**	**558**	**100%**			**6**	**A**
SBL	20	18	90%	25	450	17	C
SBT	310	305	98%	25	450	17	C
SBR	170	176	104%	25	450	17	C
SB	**500**	**499**	**100%**			**17**	**C**
EBL	100	99	99%	0	175	8	A
EBT	160	159	99%	0	175	7	A
EBR	70	66	94%	0	175	7	A
EB	**330**	**324**	**98%**			**7**	**A**
WBL	60	58	97%	25	250	13	B
WBT	190	185	97%	25	250	13	B
WBR	90	93	103%	25	250	12	B
WB	**340**	**336**	**99%**			**12**	**B**
Total	**1,730**	**1,717**	**99%**			**11**	**B**

Node Letter: I VISSIM ID: 7

VISSIM Travel Time Comparison

SR 193

Existing AM

300 N EB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
EB-4500Wto 3000W	1.5	67	169	32	40	80%	B

300 N WB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
WB-4500Wto3000W	1.5	40	156	35	40	87%	A
Total	1.5	--	156	35	40	87%	A

SR 193 EB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
EB-3000Wto2000W	1.0	423	109	33	50	66%	C
Total	1.0	--	109	33	50	66%	C

SR 193 WB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
WB-3000Wto2000W	1.0	151	86	41	50	82%	B
Total	1.0	--	86	41	50	82%	B

700 S EB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
EB-4500Wto4000W	0.5	69	54	34	35	96%	A
EB-4000WtoSyracuseTr	0.5	144	54	34	35	96%	A
EB-SyracuseTrailto3000	0.5	160	66	28	35	80%	B
Total	1.5	--	173	32	35	90%	A

700 S WB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
WB-4000WtoSyracuseT	0.5	39	53	34	35	98%	A
WB-SyracuseTrailto300	0.5	47	52	33	35	95%	A
Total	1.0	--	105	34	35	97%	A

4500 W NB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
NB-700Sto300N	1.0	48	93	38	40	96%	A
Total	1.0	--	93	38	40	96%	A

4500 W SB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
SB-700Sto300N	1.0	72	93	38	40	96%	A

4/4/2019 11:44 AM

Existing PM

300 N EB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
EB-4500Wto 3000W	1.5	32	169	32	40	80%	B

300 N WB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
WB-4500Wto3000W	1.5	79	159	34	40	85%	A
Total	1.5	--	159	34	40	85%	A

SR 193 EB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
EB-3000Wto2000W	1.0	205	108	33	50	67%	C
Total	1.0	--	108	33	50	67%	C

SR 193 WB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
WB-3000Wto2000W	1.0	227	89	39	50	79%	B
Total	1.0	--	89	39	50	79%	B

700 S EB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
EB-4500Wto4000W	0.5	32	53	34	35	97%	A
EB-4000WtoSyracuseTr	0.5	60	53	34	35	98%	A
EB-SyracuseTrailto3000	0.5	45	62	30	35	85%	A
Total	1.5	--	169	32	35	93%	A

700 S WB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
WB-4000Wto4500W	0.5	2	62	29	35	83%	A
WB-4000WtoSyracuseT	0.5	36	54	34	35	97%	A
WB-SyracuseTrailto300	0.5	100	53	33	35	94%	A
Total	1.5	--	168	32	35	91%	A

4500 W NB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
NB-700Sto300N	1.0	156	93	38	40	96%	A
Total	1.0	--	93	38	40	96%	A

4500 W SB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS

2050 No Action AM

300 N EB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
EB-4500Wto 3000W	1.5	118	160	34	40	85%	A

300 N WB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
WB-4500Wto3000W	1.5	105	183	30	40	74%	B
Total	1.5	--	183	30	40	74%	B

SR 193 EB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
EB-3000Wto2550W	0.5	465	73	25	50	49%	D
EB-2550Wto2000W	0.5	678	74	24	50	49%	D
Total	1.0	--	147	24	50	49%	D

SR 193 WB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
WB-3000Wto2550W	0.5	56	53	34	50	68%	C
Total	0.5	--	53	34	50	68%	C

700 S EB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
EB-4500Wto4000W	0.5	121	54	34	35	96%	A
EB-4000WtoSyracuseTr	0.5	220	54	34	35	96%	A
EB-SyracuseTrailto3000	0.5	177	151	12	35	35%	E
Total	1.5	--	260	21	35	60%	C

700 S WB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
WB-4000WtoSyracuseT	0.5	66	53	34	35	97%	A
WB-SyracuseTrailto300	0.5	82	52	33	35	94%	A
Total	1.0	--	106	34	35	96%	A

4500 W NB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
NB-700Sto300N	1.0	190	112	32	40	80%	B
Total	1.0	--	112	32	40	80%	B

4500 W SB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS

2050 No Action PM

300 N EB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
EB-4500Wto 3000W	1.5	119	160	34	40	84%	B

300 N WB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
WB-4500Wto3000W	1.5	113	186	29	40	73%	B
Total	1.5	--	186	29	40	73%	B

SR 193 EB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
EB-3000Wto2550W	0.5	229	80	23	50	45%	D
EB-2550Wto2000W	0.5	779	72	25	50	50%	C
Total	1.0	--	152	24	50	47%	D

SR 193 WB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
WB-3000Wto2550W	0.5	88	53	34	50	68%	C
Total	0.5	--	53	34	50	68%	C

700 S EB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
EB-4500Wto4000W	0.5	57	54	33	35	95%	A
EB-4000WtoSyracuseTr	0.5	124	54	34	35	96%	A
EB-SyracuseTrailto3000	0.5	112	65	28	35	80%	B
Total	1.5	--	174	31	35	90%	A

700 S WB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
WB-4000Wto4500W	0.5	9	64	28	35	80%	B
WB-4000WtoSyracuseT	0.5	76	55	33	35	95%	A
WB-SyracuseTrailto300	0.5	220	53	33	35	93%	A
Total	1.5	--	172	31	35	89%	A

4500 W NB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
NB-700Sto300N	1.0	287	109	33	40	82%	B
Total	1.0	--	109	33	40	82%	B

4500 W SB	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS

VISSIM Travel Time Comparison

SR 193

Total	1.0	--	93	38	40	96%	A

3000 W NB

	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
NB-700StoSR193	0.5	172	65	27	35	77%	B
NB-SR193to300N	0.5	147	61	30	35	85%	A
Total	1.0	--	126	28	35	81%	B

3000 W SB

	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
SB-700StoSR193	0.5	240	63	28	35	81%	B
SB-SR193to300N	0.5	193	61	30	35	87%	A
Total	1.0	--	124	29	35	84%	B

SB-700Sto300N	1.0	85	91	39	40	98%	A
Total	1.0	--	91	39	40	98%	A

3000 W NB

	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
NB-700StoSR193	0.5	254	65	27	35	76%	B
NB-SR193to300N	0.5	287	62	29	35	84%	A
Total	1.0	--	127	28	35	80%	B

3000 W SB

	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
SB-700StoSR193	0.5	180	63	28	35	81%	B
SB-SR193to300N	0.5	143	60	31	35	88%	A
Total	1.0	--	123	30	35	84%	B

SB-700Sto300N	1.0	142	108	33	40	82%	B
Total	1.0	--	108	33	40	82%	B

3000 W NB

	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
NB-700StoSR193	0.5	176	70	25	35	71%	B
NB-SR193to300N	0.5	131	67	27	35	78%	B
Total	1.0	--	137	26	35	74%	B

3000 W SB

	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
SB-700StoSR193	0.5	435	113	16	35	45%	D
SB-SR193to300N	0.5	260	68	27	35	77%	B
Total	1.0	--	182	20	35	57%	C

SB-700Sto300N	1.0	232	95	37	40	93%	A
Total	1.0	--	95	37	40	93%	A

3000 W NB

	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
NB-700StoSR193	0.5	398	73	24	35	68%	B
NB-SR193to300N	0.5	194	71	26	35	74%	B
Total	1.0	--	144	25	35	71%	B

3000 W SB

	Dist (mi)	# Veh	Travel Time (sec)	Travel Speed (mph)	Base FFS (mph)	% Base FFS	LOS
SB-700StoSR193	0.5	305	75	24	35	68%	B
SB-SR193to300N	0.5	138	65	28	35	81%	B
Total	1.0	--	140	26	35	74%	B

MEMORANDUM

To: UDOT Region One & Environmental

From: Avenue Consultants

Date: October 28, 2019

Subject: SR 193 SES – 2050 Build Traffic Analysis

UDOT has initiated a State Environmental Study (SES) for a potential extension of State Route 193 (200 South) from 2000 West (State Route 108) to 4500 West (State Route 110) or the future West Davis Corridor in West Point and Syracuse, Davis County, Utah. This memo describes the study area traffic evaluation performed for the future 2050 Build conditions and is companion to the SR 193 SES - 2018 Existing and 2050 No Action Traffic Analysis dated June 29, 2019. Figure 1 shows the study area.

Figure 1: Traffic Study Area

1 BUILD ALTERNATIVES

SR 193 is currently an east-west principal arterial with two lanes in each direction between 2000 West and 3000 West. This study contemplates the extension of SR 193 farther to the west to 4500 West with an interchange at the future West Davis Corridor. The following five build alternatives (see Figure 2) with their alignment and interchange location on West Davis Corridor were considered for this analysis: 200 South, 400 South, 600 South, and 700 South.

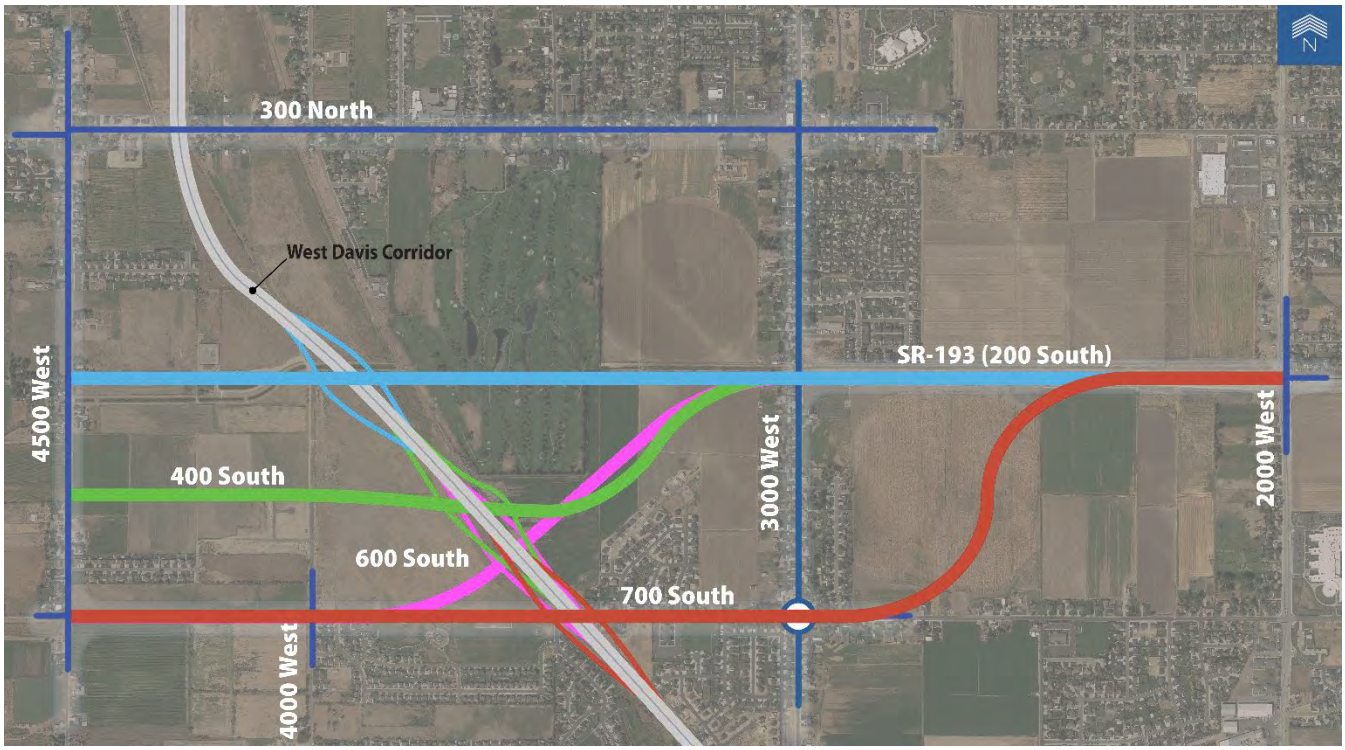


Figure 2: SR-193 Build Alternatives

2 MEASURES OF EFFECTIVENESS

Three key measures of effectiveness were used to compare the transportation network performance under each alternative: daily segment-level volumes, study area VMT and average volumes by facility type, and travel times.

DAILY VOLUMES

To understand for the changes in traffic flow for each alternative, daily volumes were estimated for the collector and arterial roads in the study area. Estimates were based on the output of the WFRC/MAG Travel Demand Model (TDM), which were then adjusted to account for differences between the existing conditions TDM and observed existing traffic volumes.

VMT AND AVERAGE VOLUMES

To better understand the interaction between the arterial and collector roads in the study area, an analysis was performed to see how the VMT and average arterial and collector road volume would change by alternative. These were calculated using the roadways within the study area from 300 North to 700 South and 4500 West to 2000 West. The average volume for each type of facility was calculated by dividing the daily VMT on each type of road by the number of centerline miles of each roadway type.

TRAVEL TIMES

Travel time information was used to understand how long it would take for a vehicle to travel between select locations. The travel times were extracted from the TDM for the PM peak period. Three movements were identified for the analysis:

- from Legacy Parkway to the intersection of 3000 West and SR 193,
- from Legacy Parkway to the intersection of 4500 West and 200 South, and
- from I 15 to the intersection of 4500 West and 200 South.

3 2050 BUILD ANALYSIS RESULTS

The analysis results presented in this section include daily volumes, VMT and average volumes, and travel times. The 2050 No Action analysis was used as a baseline against which to compare the build alternatives.

3.1 Daily Volumes

The daily volumes by roadway segment for each build alternative are shown in Table 1. The volumes are highly dependent on the location of SR 193 and its interchange with WDC. For instance, 700 South between 4000 West and WDC fluctuates between 1,600 vehicles per day under the 400 South alternative to 11,900 vehicles per day under the 600 South alternative, in which SR-193 is routed on to 700 South for this portion of roadway. Volumes are reduced the most on the parallel 300 North and 700 South corridors in the two scenarios (200 South and 400 South) where SR 193 creates a new east-west corridor between 3000 West and 4500 West rather than being aligned along an existing roadway,

Table 1. 2050 Daily Two-Way Traffic Volumes (vehicles/day)

Road	Segment	No Action	Build Alternative (SR 193 Alignment/Interchange Location)			
			200 South	400 South	600 South	700 South
300 North	4500 W to 3000 W	9,200	4,200	5,900	6,800	7,100
	3000 W to 2000 W	13,200	10,900	11,800	12,400	13,200
SR 193	4500 W to WDC	--	10,600	8,400	--	--
	WDC to 3000 W	--	11,900	11,700	14,900	--
	3000 W to 2000 W	12,100	14,600	14,100	13,800	12,500
700 South	4500 W to 4000 W	2,100	1,000	900	6,400*	6,200*
	4000 W to WDC	3,700	1,700	1,600	11,900*	10,500*
	WDC to 3000 W	8,500	6,800	6,300	3,700	12,800*
	3000 W to 2000 W	7,100	6,500	6,500	6,500	8,900*
4500 West	300 N to 700 S	9,600	7,700	8,800	9,600	10,300
3000 West	300 N to SR 193	13,000	9,200	11,600	12,200	10,500
	SR 193 to 700 S	13,300	11,400	9,700	7,200	8,900
2000 West	300 N to SR 193	42,300	42,800	43,000	42,500	42,900
	SR 193 to 700 S	35,500	35,100	35,000	34,300	32,900
WDC	SR 193 to Antelope	19,200	25,900	27,700	30,200	28,000
	SR-193 Int. Ramps	--	12,000	12,400	14,600	12,400

**Contains a portion of SR 193*

When looking at SR 193 itself, the 600 South alternative puts the most traffic onto SR-193 between WDC and 3000 West with 14,900 vehicles per day (vpd). The 200 and 400 South alternatives are further behind with 11,900 vpd and 11,700 vpd, respectively. As for getting volume onto WDC, the 600 South alternative draws the most traffic with 30,200 vpd between SR-193 and Antelope Drive and 14,600 vpd using the SR-193 interchange ramps.

3.2 VMT and Average Volumes

VMT and average volumes for each alternative were calculated and are shown in Table 2 and Table 4, respectively. Additionally, the length by roadway type is listed for each alternative (see Table 3) since there was

some reclassification of roadways depending on which alternative was being analyzed. For example, in the alternatives when the alignment of SR 193 utilizes 600 South and 700 South, this portion of roadway was reclassified as an arterial.

While the overall total VMT only increases slightly between the No Action alternative and the build alternatives, the changes by roadway type are more substantial. The 700 South alternative does the best in reducing average collector VMT by 8,400 down to 59,600 and increases arterial VMT the most by 2,600 to 165,000. The 400 South alternative has the highest overall VMT.

Table 2. 2050 Study Area VMT by Alternative

Roadway Type	No Action	Build Alternative (SR-193 Alignment/Interchange Location)			
		200 South	400 South	600 South	700 South
Collectors	68,000	65,200	66,700	62,600	59,600
Arterials	162,400	158,200	157,000	158,300	165,000
Freeways	41,700	50,800	50,900	50,700	48,100
Total	**272,100**	**274,200**	**274,600**	**271,600**	**272,700**

The total length of roadways increases across all alternatives due to the SR-193 extension. The SR-193 extension in the 200 South and 400 South alternatives adds an all new roadway resulting in the most roadway miles. Where the extension utilizes existing 700 South, the roadway type is reclassified as an arterial and the resulting length adjustments can be seen in the shift from collector to arterial.

Table 3. 2050 Roadway Length (miles) by Alternative

Roadway Type	No Action	Build Alternative (SR-193 Alignment/Interchange Location)			
		200 South	400 South	600 South	700 South
Collectors	8.5	10.5	10.3	9.1	8.5
Arterials	9.0	9.0	9.1	9.2	9.4
Freeways	2.2	2.2	2.2	2.2	2.2
Total	**19.7**	**21.6**	**21.5**	**20.5**	**20.1**

While the 600 South alternative had the lowest VMT, when calculating average volumes by roadway functional type, the 200 South alternative had the lowest average volume on collectors with 6,200 vpd. The 700 South alternative had the highest average volume on collectors at 7,000 vpd, which is still 1,000 vpd less than the No Action alternative. Because of the WDC interchange, all the alternatives move traffic to the highest roadway class (freeway) and away from the lowest class (collectors) with a smaller reduction in arterial traffic.

Table 4. 2050 Average Volume (vehicles/day) by Alternative

Roadway Type	No Action	Build Alternative (SR-193 Alignment/Interchange Location)			
		200 South	400 South	600 South	700 South
Collectors	8,000	6,200	6,500	6,900	7,000
Arterials	18,100	17,600	17,300	17,300	17,500
Freeways	19,200	23,400	23,500	23,400	22,200
Total	**13,800**	**12,700**	**12,800**	**13,300**	**13,600**

3.3 Travel Times

The travel time results presented in Table 5 show a comparison of the 2050 travel times for the PM peak period. The worst or highest travel time performer for a given segment is shown in **red** and the best or lowest in **blue**. For the segment from Legacy Parkway to 3000 West & SR 193 (east of WDC), the 400 South alternative had the lowest travel time and the 700 South alternative had the highest travel times. For the segment from Legacy Parkway to 4500 West & 200 South (west of WDC), the lowest travel time was the 200 South alternative, while the 600 South and 700 South alternatives had the highest travel times. For the segment going from east to west through the study area, I-15 to 4500 West & 200 South, the 200 South alternative performed the best and 700 South the worst.

Table 5. 2050 Travel Times (minutes) by Alternative

Travel Time Segment	No Action	Build Alternative (SR-193 Alignment/Interchange Location)			
		200 South	400 South	600 South	700 South
Legacy Pkwy to 3000 W & SR 193	20.2	18.4	**18.2**	18.0	**18.7**
Legacy Pkwy to 4500 W & 200 S	21.5	**18.1**	18.8	**19.4**	**19.4**
I-15 to 4500 W & 200 S	15.5	**12.6**	13.2	13.7	**14.2**

The travel times for these segments are highly dependent on the desired origin and destination, and a different pair of origins and destinations would likely yield different results. For instance, the third segment in the table is west-to-east travel along 200 South, so naturally the 200 South alternative performs best, since it is a straight shot. However, if there was a different segment added from I-15 to 4500 W & 700 South, the 600 South or 700 South alternatives would likely perform better than the other alternatives, since in these alternative SR 193 is aligned on southwestern diagonal through the study area. The most important fact is that all the alternatives show lower travel times than the No Action alternative.

4 CONCLUSION

Extending SR 193 to the west creates additional connectivity to West Davis Corridor thus providing greater regional access to the surrounding area. The 2050 No Action alternative shows an increase in traffic throughout the area with arterials and collectors experiencing high rate of traffic growth. Five build alternatives were analyzed to see their impact on roadway segment volumes, VMT and average volumes, and travel times. The analysis shows that all alternatives do well in adding traffic to the West Davis Corridor and SR 193 and, depending on the alternative, generally reduce traffic on other corridors throughout the study area. When considering 2050 VMT, the 600 South alternative decreases VMT the most across the study area; however, the 200 South alternative does the best in reducing average volumes on collector streets in the study area. The 200 South alternative also does the best at reducing travel times into or across the area in the 2050 PM peak with the caveat that the travel times are highly dependent on the location of the origin/destination in relation to proposed improvements.

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

Appendix B: Noise Study

SR-193 ENVIRONMENTAL STUDY
4500 W. to 3000 W.

Traffic Noise

UDOT Project S-R199(245), PIN 16518

November 2019

Prepared for:

Utah Department of Transportation
501 Constitution Blvd.
Taylorsville, Utah 84129

Prepared by:

BIO-WEST, Inc. and Avenue Consultants

Table of Contents

Introduction 1
Fundamentals of Noise Measurement 2
Noise Abatement Criteria 4
Study Methods and Procedures 5
Existing and Future Noise Levels 7
Abatement Considered 11
Wall 1 11
Wall 2 12
Wall 3 14
Wall 4 14
Wall 5 16
Construction Noise 17
Local Planning and Future Noise Levels 17
Conclusions 18
References 18

List of Tables

Table 1. Sound Level Change and Relative Loudness (UDOT 2017). 3
Table 2. Noise Abatement Criteria (UDOT 2017). 4
Table 3. Comparison of measured and modeled traffic noise. 7
Table 4. Modeled Existing and Future Noise Levels. 8
Table 5. Wall 1 Analysis. 12
Table 6. Wall 2 Analysis. 13
Table 7. Wall 3 Analysis. 15
Table 8. Wall 4 Analysis. 16
Table 9. Wall 5 Analysis. 17

List of Figures

Figure 1. Build Alternative 1
Figure 2. Typical Cross Section Between 3000 West and West Davis Corridor 1
Figure 3. Typical Cross Section Between West Davis Corridor and 4500 West 2
Figure 4. Typical A-weighted sound levels (Caltrans 2013) 3
Figure 5. Noise Measurement Sites 6

Attachments

Attachment A – Noise Impact Map Series
Attachment B – Measurement Data Sheets, Photos, and Sound Meter Data Logs
Attachment C – Traffic Volumes Used for Noise Modeling
Attachment D – Traffic Noise Model Sound Level Results Tables and Figures

Introduction

This study provides an evaluation of traffic-generated noise and potential noise abatement for the proposed extension of State Route 193 (SR-193) in Davis County, Utah. The SR-193 Build Alternative, illustrated in Figure 1, would involve continuing SR-193 from 3000 West to 4500 West. The Build Alternative includes a diamond interchange with the future West Davis Corridor. Between 3000 West and the West Davis Corridor, UDOT proposes to continue the configuration of SR-193 that currently exists between 2000 West and 3000 West, which consists of two travel-lanes in each direction separated by a median swale; the typical width of this section would be 150 feet-wide (Figure 2). Between West Davis Corridor and 4500 West, the typical cross section would be 84-feet wide, consisting of one travel lane in each direction separated by a continuous two-way left-turn lane median (Figure 3).

Figure 1. Build Alternative

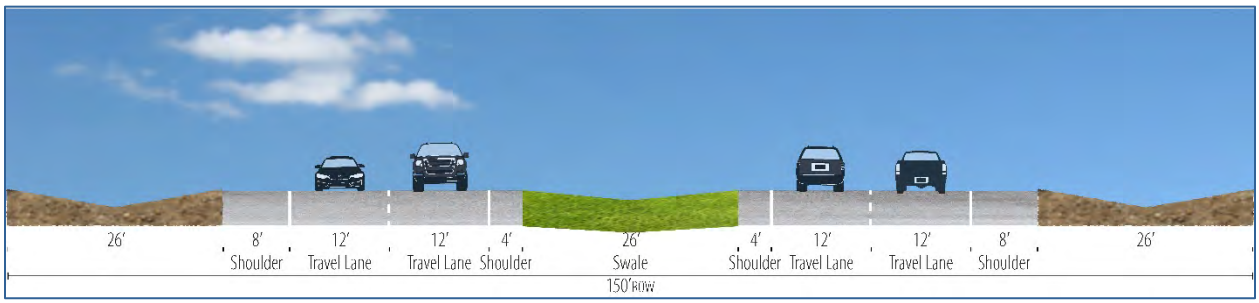


Figure 2. Typical Cross Section Between 3000 West and West Davis Corridor

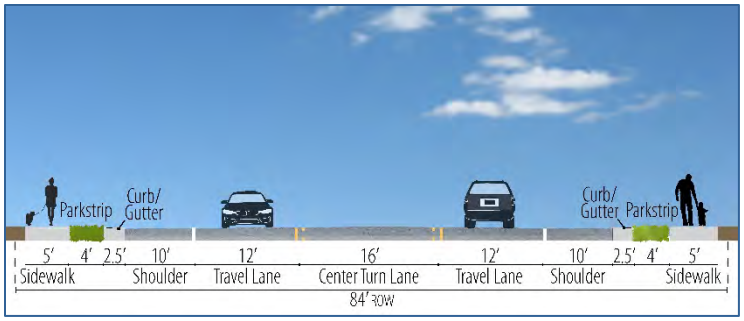


Figure 3. Typical Cross Section Between West Davis Corridor and 4500 West

State funds would be applied to construct the project and UDOT is preparing a State Environmental Study to evaluate impacts. The extension of SR-193 would be a Type I project under the UDOT Noise Abatement Policy (UDOT 2017), which is a project requiring preparation of a noise study.

Fundamentals of Noise Measurement

This section provides some basic information regarding the fundamentals of traffic noise measurement for readers who are less familiar with traffic noise modeling methods and regulatory procedures. Additional helpful information for understanding fundamentals of traffic noise can be found on the Federal Highway Administration's website (FHWA 2018).

Sound is created when an object moves, such as the rustling of leaves when the wind blows. Noise is defined as unwanted sound, and sound coming from traffic is generally understood to be a form of unwanted sound because at certain levels traffic noise can interfere with our ability to hear desirable sounds, such as a conversation between friends taking place in a park, golf course, or backyard.

In terms of measuring sound, the unit used in sound measurement is called the decibel (dB), and decibels are measured on a logarithmic scale. On this logarithmic scale, a doubling of acoustic energy corresponds to an increase of 3 dB, regardless of the level of the original sound. So if one vehicle produces 70 dB when it passes an observer, two identical vehicles that produce 70 dB passing the observer simultaneously would together produce 70 dB + 3 dB = 73dB, not simple arithmetic doubling (i.e. 70+70=140). This happens because acoustic energy from a source that is closer to us (or a source with more energy) will mask much of the acoustic energy from a source farther away (or a source with less energy).

To understand how we experience sound, it is also important to know that different decibel weighting scales are used for measuring various kinds of noise environments. The most commonly used scale is known as the A-weighted scale, abbreviated as dBA. The A-weighted scale has been demonstrated to closely represent the response of the human ear to sound. Table 1 illustrates sound level changes on the A-weighted decibel scale compared to relative loudness as perceived by most people. Experiments show that most people begin to detect a sound level increase at 3 dB, while changes in noise of 1 to 2 dB are generally not perceptible. A 5 dB increase is a readily perceptible change by most people, and a 10 dB increase is generally perceived as a doubling of loudness.

Table 1. Sound Level Change and Relative Loudness (UDOT 2017).

Sound Level Change	Relative Loudness
1 dBA [a]	No perceptible change
3 dBA	Barely perceptible change
5 dBA	Readily perceptible change
10 dBA	Perceived as twice as loud

[a] Decibels on the A-weighted scale.

With the A-weighted scale in mind, Figure 4 illustrates typical sound levels for some common outdoor and indoor noise environments. Evident from the comparisons in Figure 4, sound levels dissipate quickly with distance (a gas lawnmower at 3 feet compared to 100 feet) and also vary greatly over periods of time (daytime and nighttime, for example).

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 mph		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower at 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban daytime	50	Dishwasher in next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio (background)
	10	
	0	

Figure 4. Typical A-weighted sound levels (Caltrans 2013).

In terms of noise dissipation with distance, sound intensity decreases in proportion with the square of the distance from the source; generally, this means that sound levels from a point source will decrease by 6 dBA for each doubling of distance.

In terms of the variability of sound over time, the measurement that is most commonly used to express dBA levels for traffic noise is the hourly equivalent sound level, or Leq(h). The Leq(h) describes a noise-sensitive receiver's average exposure to all noise-producing events over a 1-hour period. UDOT's noise abatement criteria are based on Leq(h) noise levels for the worst traffic noise generating hour during a typical work day.

To summarize key points, sound level for typical human exposures to noise is measured in A-weighted decibels (dBA) and in traffic noise measurement, exposure of a noise-sensitive receiver to traffic noise over time is typically measured as the Leq(h), or the average exposure during the worst hour of traffic noise during a typical work day.

Noise Abatement Criteria

Utah's noise abatement criteria are specified in UDOT's Noise Abatement Policy (UDOT 2017) and are summarized in Table 2. Noise abatement criteria are specific to various exterior and interior environments (land use activity categories) that may be impacted by traffic noise.

Table 2. Noise Abatement Criteria (UDOT 2017).

Activity Category	Leq(h) [a]	Land Use Activity Description
A	56 dBA [b] (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	66 dBA (exterior)	Residential
C	66 dBA (exterior)	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails and trail crossings.
D	51 dBA (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	71 dBA (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands for which no building permit has been issued.

[a] Hourly equivalent sound level.
[b] Decibels on the A-weighted scale.

In Utah's Traffic Noise Abatement Policy (UDOT 2017), a receptor is a discrete or representative location of a noise sensitive area(s). A receptor is considered impacted by traffic noise under one of two possible conditions:

1) The future worst-case noise level for the receptor is equal to or greater than the UDOT Noise Abatement Criteria for the appropriate land use activity category, or;

2) the receptor is predicted to receive a substantial noise increase, defined as an increase of 10 dBA or more over *existing noise levels*. This impact criterion takes effect regardless of existing noise levels.

If either of these conditions are met for a given receptor, then UDOT considers implementing noise abatement measures for that receptor.

Worst-case hourly traffic noise levels occur when vehicle volume, operating speed, and the number of heavy trucks combine to produce the highest possible free-flowing capacity for a given road. Under the UDOT Noise Abatement Policy, roadway capacity Level of Service C is used in noise modeling to represent this worst-case traffic noise condition unless there is a project-specific reason to use a different roadway capacity that has been prior-approved by the UDOT Environmental Services Director.

Study Methods and Procedures

To assess existing and future worst-case traffic noise for receptors in the study area, noise modeling was completed using the traffic noise prediction computer model (FHWA Traffic Noise Model [TNM] Version 2.5). The model accounts for factors that influence traffic noise propagation and dissipation. These factors include roadway geometry, vehicle volumes, types, and speeds, ground absorption, buildings and other noise barriers, and receptor location/distance from other objects. The noise model is verified using field collected noise measurements and traffic counts. The verified model is used to determine existing and future worst-case traffic noise. Noise abatement measures can also be modeled.

A site visit was conducted on August 1, 2019 to identify and map land use categories and relevant noise model objects and to obtain existing noise measurements for representative locations. The map series in Attachment A illustrates locations of noise-sensitive receptors that were modeled in the noise study. Existing noise sensitive land uses include residential neighborhoods that border existing major roads (3000 West, 700 South, and 4500 West) and Schneiter's Bluff Golf Course. Portions of two trails cross through the study area, the Syracuse Trail (Emigration Trail) and the SR-193 trail. These trails were considered transportation facilities and were not considered noise-sensitive land uses.

Traffic noise measurements were collected at six locations using a Quest Technologies 2900 sound level meter; locations are illustrated in Figure 5. Three sites were representative locations with existing traffic noise:

- Site 1 – 4500 West
- Site 3 – 700 South
- Site 6 – 3000 West

Noise measurements taken at these sites to assess the existing noise level near existing roads and to verify the traffic noise model.

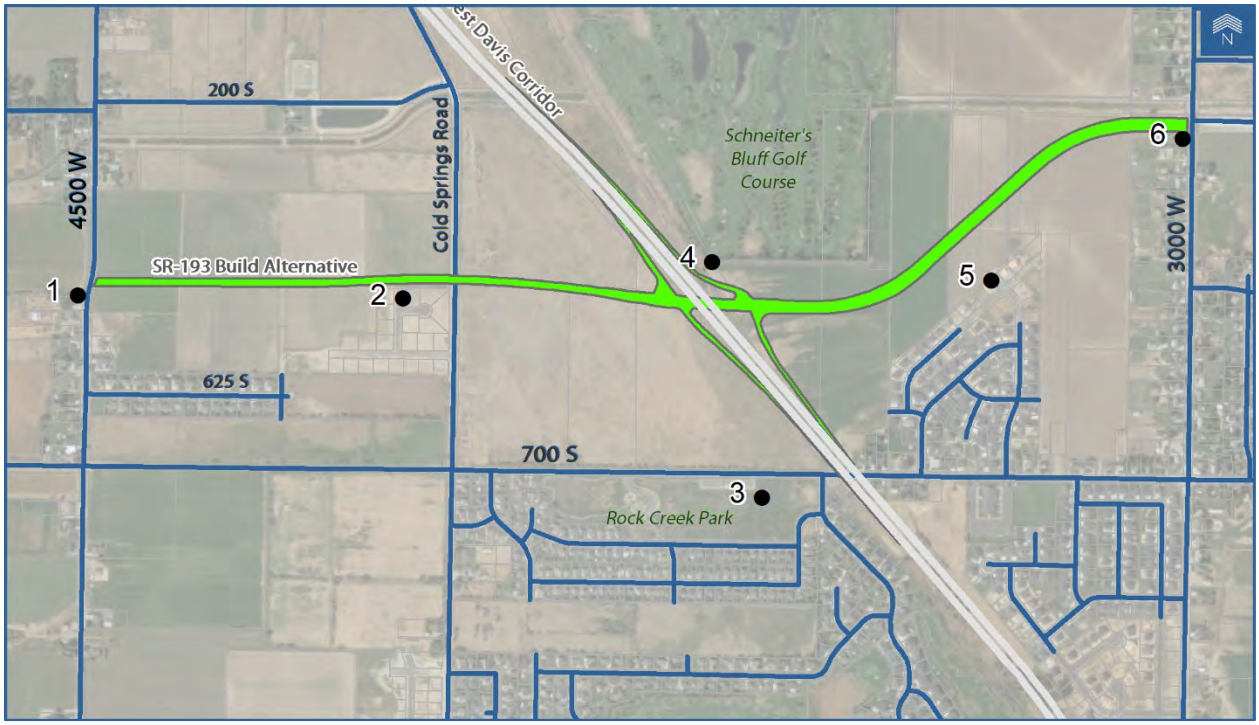


Figure 5. Noise Measurement Sites

Measurements at three other sites (Sites 2, 4, and 5) were taken at locations where there are no existing roads and little or no existing traffic noise; measurements at these sites were taken to establish the ambient noise level.

Each noise measurement was taken for 20 minutes. For Sites 1, 3, and 6 where existing roads are present, traffic was classified and counted for the measurement duration at each site. Vehicles were classified as automobiles, medium-duty trucks, heavy-duty trucks, and motorcycles. An automobile was defined as a vehicle with two axles and four tires designed primarily to carry passengers. Small vans and light trucks were included in this category. Medium-duty trucks included all cargo vehicles with two axles and six tires. Heavy-duty trucks included all vehicles with three or more axles. Operating speeds were also noted. Measurements were taken on August 1, 2019. Air temperature during measurements ranged from 84 to 89 degrees Fahrenheit with wind speed from 4 to 15 miles per hour. Noise measurement data sheets, site photos, and sound meter log reports are included as attachments to this report (Attachment B).

For the noise model, representations of study area noise model objects (buildings, terrain lines, roadways, noise-sensitive receptors) were created using aerial photography and CAD drawing objects (.dxf file) and then imported into TNM model runs for the project. Measured Leq(h) and traffic counts for existing roads were entered into TNM to verify that the model accurately predicted traffic noise based on the modeled objects and vehicle types, volumes, and speeds. Table 3 compares the measured and modeled noise levels for the noise model validation run. The measurement sites near existing roads (Sites 1, 3, and 6) returned modeled noise levels within 3.0 dBA of the field-measured noise level, indicating that the model provided accurate noise prediction for the study area.

Table 3. Comparison of measured and modeled traffic noise.

Measurement Site	Address	Field-measured Leq(h) [a,b]	TNM-modeled Leq(h) [a,b]	Difference
1	530 S 4500 W, West Point Residence	56.0	53.9	– 2.1
3	Rock Creek Park, 3850 W 700 S	43.1	41.7	– 1.4
6	246 S 3000 W, Syracuse Residence	59.3	60.2	0.9

[a] Hourly equivalent sound level.

[b] Measurement unit is decibels on the A-weighted scale (dBA).

Measurements at sites 2, 4, and 5 had field measured Leq(h) ambient noise between 41.9 to 43.3 dBA, which was a reasonably expected ambient noise level for a quiet, urban environment (see Figure 4) at locations that are remote from existing roads. FHWA guidance indicates that ambient noise measurements taken in the study area should be used to determine existing noise levels for projects on new alignment (FHWA 2011). Therefore, it was decided that the low end of the field measured range at these sites (41.9 dBA) would be used as the existing noise level for study area receptors that are not located along existing roads.

Existing and Future Noise Levels

Traffic volumes for modeling existing traffic noise were obtained from the project traffic study (Avenue Consultants 2019). Traffic volumes were based on peak hour 2018 volumes traveling at posted speed limits. Medium and heavy truck traffic proportions were based on UDOT Annual Average Daily Traffic information (UDOT 2019). Design year 2050 traffic volumes were based on Level of Service C volumes traveling at design speeds. Attachment C includes copies of the existing traffic volumes and design year Level of Service C volumes used.

Results of noise modeling for receptor locations are reported in Table 4. The locations of receptors are shown in the attached map series (Attachment A). Of 107 receptor locations modeled there were 68 with a substantial noise increase (10 dBA or greater increase over existing noise levels). The highest noise increase would be at Schneiter's Bluff Golf Course receptors that are closest to the interchange, Receptors 46 and 47), which have modeled noise increases of 24-25 dBA over the existing ambient condition. The average noise increase across the study area is approximately 12 dBA. Copies of noise model run output from TNM is included in Attachment D.

Table 4. Modeled Existing and Future Noise Levels.

Receptor [a]	Description / Location	Noise Abatement Criterion	Existing Noise Level [b]	Future Noise Level [b]	Increase	Noise Impact? [c]
1	226 S 4500 West	66	45.4	47.2	1.8	No
2	296 S 4500 West	66	41.9	48.3	6.4	No
3	314 S 4500 West	66	48.1	49.4	1.3	No
4	326 S 4500 West	66	48.6	50.3	1.7	No
5	295 S 4500 West	66	48.5	50.3	1.8	No
6	321 S 4500 West	66	47.6	50.2	2.6	No
7	530 S 4500 West	66	50.1	53.4	3.3	No
8	534 S 4500 West	66	41.9	51.3	9.4	No
9	538 S 4500 West	66	47.2	49.7	2.5	No
10	560 S 4500 West	66	50.1	51	0.9	No
11	572 S 4500 West	66	48.6	49.5	0.9	No
12	614 S 4500 West	66	50.4	51	0.6	No
13	638 S 4500 West	66	45	46.8	1.8	No
14	549 S SR-110	66	44	51.6	7.6	No
15	571 S 4500 West	66	41.7	49.4	7.7	No
16	4484 W 625 South	66	50.1	51.5	1.4	No
17	4468 W 625 South	66	44.9	49.1	4.2	No
18	4452 W 625 South	66	41.9	48.6	6.7	No
19	4436 W 625 South	66	41.9	48.5	6.6	No
20	4418 W 625 South	66	41.9	48.6	6.7	No
21	4402 W 625 South	66	41.9	48.8	6.9	No
22	4386 W 625 South	66	41.9	48.9	7	No
23	4370 W 625 South	66	41.9	49.1	7.2	No
24	4352 W 625 South	66	41.9	49.5	7.6	No
25	4336 W 625 South	66	41.9	49.8	7.9	No
26	4320 W 625 South	66	41.9	49.9	8	No
27	4302 W 625 South	66	41.9	49.9	8	No
28	4286 W 625 South	66	41.9	50.4	8.5	No
29	4268 W 625 South	66	41.9	50.6	8.7	No
30	4164 W 550 South	66	41.9	54.6	12.7	Yes
31	4140 W 550 South	66	41.9	55	13.1	Yes
32	4116 W 550 South	66	41.9	54.6	12.7	Yes
33	512 S 4100 West	66	41.9	55.7	13.8	Yes
34	478 S 4100 West	66	41.9	58.8	16.9	Yes
35	460 S 4100 West	66	41.9	63.2	21.3	Yes
36	463 S 4100 West	66	41.9	65.1	23.2	Yes
37	4040 W 475 South	66	41.9	65.4	23.5	Yes
38	4018 W 475 South	66	41.9	60.4	18.5	Yes
39	503 S 4100 West	66	41.9	55.5	13.6	Yes

Receptor [a]	Description / Location	Noise Abatement Criterion	Existing Noise Level [b]	Future Noise Level [b]	Increase	Noise Impact? [c]
40	529 S 4100 West	66	41.9	54.9	13	Yes
41	4048 W 550 South	66	41.9	55.1	13.2	Yes
42	4045 W 475 South	66	41.9	55.8	13.9	Yes
43	4020 W 550 South	66	41.9	55.9	14	Yes
44	4051 W 550 South	66	41.9	52.4	10.5	Yes
45	4023 W 550 South	66	41.9	52.7	10.8	Yes
46	Golf Course - Hole 13 Tee	66	41.9	67.2	25.3	Yes
47	Golf Course - Hole 12 Green	66	41.9	66.3	24.4	Yes
48	Golf Course - Hole 7 Tee	66	41.9	63.9	22	Yes
49	Golf Course - Hole 6 Green	66	41.9	61.8	19.9	Yes
50	Golf Course - Hole 4 Tee	66	41.9	61.2	19.3	Yes
51	Golf Course - Hole 3 Green	66	41.9	61.5	19.6	Yes
52	3454 W 700 South	66	50.6	Relocation (West Davis Corridor Project)		
53	3378 W 700 South	66	47.0	Relocation (West Davis Corridor Project)		
54	3370 W 700 South	66	46.8	Relocation (West Davis Corridor Project)		
55	696 S 3300 West	66	41.9	58.4	16.5	Yes
56	674 S 3300 West	66	41.9	59.8	17.9	Yes
57	662 S 3300 West	66	41.9	53.8	11.9	Yes
58	3353 W 625 South	66	41.9	57.1	15.2	Yes
59	622 S 3350 West	66	41.9	58.1	16.2	Yes
60	618 S 3350 West	66	41.9	59.3	17.4	Yes
61	592 S 3350 West	66	41.9	58.4	16.5	Yes
62	564 S 3350 West	66	41.9	58.3	16.4	Yes
63	542 S 3350 West	66	41.9	57.5	15.6	Yes
64	536 S 3350 West	66	41.9	57.9	16	Yes
65	524 S 3350 West	66	41.9	57.9	16	Yes
66	506 S 3350 West	66	41.9	57.7	15.8	Yes
67	498 S 3350 West	66	41.9	57.8	15.9	Yes
68	482 S 3350 West	66	41.9	58	16.1	Yes
69	464 S 3350 West	66	41.9	57.9	16	Yes
70	458 S 3350 West	66	41.9	57.9	16	Yes
71	446 S 3350 West	66	41.9	57.9	16	Yes
72	436 S 3200 West	66	41.9	58	16.1	Yes
73	428 S 3350 West	66	41.9	57.9	16	Yes
74	416 S 3350 West	66	41.9	57.9	16	Yes
75	404 S 3350 West	66	41.9	57.6	15.7	Yes

Receptor [a]	Description / Location	Noise Abatement Criterion	Existing Noise Level [b]	Future Noise Level [b]	Increase	Noise Impact? [c]
76	396 S 3350 West	66	41.9	57.7	15.8	Yes
77	676 S 3275 West	66	41.9	57.1	15.2	Yes
78	693 S 3300 West	66	41.9	57.7	15.8	Yes
79	676 S 3275 West	66	41.9	57.2	15.3	Yes
80	681 S 3300 West	66	41.9	56.6	14.7	Yes
81	658 S 3275 West	66	41.9	56.1	14.2	Yes
82	667 S 3300 West	66	41.9	55.9	14	Yes
83	651 S 3300 West	66	41.9	55.8	13.9	Yes
84	642 S 3275 West	66	41.9	55.6	13.7	Yes
85	623 S 3300 West	66	41.9	55.8	13.9	Yes
86	611 S 3300 West	66	41.9	54.9	13	Yes
87	603 S 3300 West	66	41.9	54.2	12.3	Yes
88	608 S 3275 West	66	41.9	53.9	12	Yes
89	624 S 3300 West	66	41.9	53.4	11.5	Yes
90	583 S 3350 West	66	41.9	54.4	12.5	Yes
91	571 S 3350 West	66	41.9	52.9	11	Yes
92	539 S 3350 West	66	41.9	53.3	11.4	Yes
93	519 S 3350 West	66	41.9	52.9	11	Yes
94	501 S 3350 West	66	41.9	52.3	10.4	Yes
95	479 S 3350 West	66	41.9	52.4	10.5	Yes
96	449 S 3350 West	66	41.9	53.5	11.6	Yes
97	438 S 3200 West	66	41.9	53.1	11.2	Yes
98	431 S 3350 West	66	41.9	51.2	9.3	No
99	413 S 3350 West	66	41.9	52.1	10.2	Yes
100	290 S 3000 West	66	46.6	55.5	8.9	No
101	277 S 3000 West	66	53.3	59.1	5.8	No
102	270 S 3000 West	66	53.7	58.5	4.8	No
103	258 S 3000 West	66	55.5	63.9	8.4	No
104	246 S 3000 West	66	53.8	67.2	13.4	Yes
105	172 S 3000 West	66	54	64.8	10.8	Yes
106	136 S 3000 West	66	53.9	60.8	6.9	No
107	112 S 3000 West	66	53.9	57.5	3.6	No

[a] Locations of receptors are illustrated in the Attachment A map series.

[b] Modeled Leq(h) for worst traffic hour (volume LOS C all roads); decibels on the A-weighted scale (dBA).

[c] All impacts are associated with a substantial increase (10 dBA or greater increase over existing noise level); three receptors (46, 47, and 104) also have modeled future noise levels exceeding the Noise Abatement Criterion.

Abatement Considered

Potential methods of abating traffic noise impacts include traffic management (speed reduction or restriction of heavy truck traffic), noise insulation (building interiors), and noise barriers (berms or noise walls). Speed reductions and restriction of truck traffic would not be practicable or consistent with the intended transportation functions of the study area roadways. No sensitive interior land uses are present in the study area, so noise insulation is also not a practicable mitigation measure for this project. Therefore, preliminary noise barrier (noise wall) modeling was performed for the study area impacted receptors.

As a general design rule for a traffic noise wall, it should be continuous along the roadway adjacent to the impacted site or sites. Openings for pedestrian or vehicular access greatly reduce the ability of a wall to reduce noise levels. For safety purposes, a wall that is located along an urban non-access-controlled roadway should not be taller than the distance from the back of curb to the face of the proposed wall. Five noise walls were evaluated for the SR-193 project, these are illustrated in the Attachment A map series.

Feasibility and reasonableness design criteria for evaluating noise walls are described in the UDOT Noise Abatement Policy (UDOT 2017), Attachment E. In general, if noise modeling determines that a noise wall would be feasible from an engineering and safety standpoint and the wall would meet acoustic feasibility and acoustic design goals, then the wall is recommended for balloting during the project final design phase to determine if noise abatement is desired by property owners and residents.

Wall 1

The conceptual design for Wall 1 extended westward from Cold Springs Road for a length of approximately 1,500 feet along the south side of the SR-193 alignment; the location of the wall is illustrated in Map 1 of Attachment A. The wall would potentially provide abatement to 16 existing and permitted residential properties located west of Cold Springs Road and south of the SR-193 alignment. Following the UDOT Noise Abatement Policy, the maximum safe height for this wall would be 9-feet because this segment of SR-193 would not be access controlled and this would be the distance from the back of the curb to the face of the wall.

Three wall heights (7, 8, and 9 feet) were modeled with noise reduction results summarized in Table 5. Wall heights of 8 or 9 feet would meet the acoustic feasibility criterion of providing at least a 5 dBA reduction for 50 percent of front row receptors. However, none of the wall heights would meet the reasonableness design goal of providing a 7 dBA or greater reduction for at least 35 percent of front-row receptors. Therefore, Wall 1 was not recommended for balloting.

Table 5. Wall 1 Analysis.

Receptor	Receptors [a]	Noise Reduction [b] with Barrier Height in Feet		
		7	8	9
30	4164 W 550 South (Front Row)	– 2.4	– 2.5	– 2.6
31	4140 W 550 South (Front Row)	– 2.7	– 2.8	– 2.9
35	460 S 4100 West (Front Row)	– 4.7	– 5.0	– 5.7
36	463 S 4100 West (Front Row)	– 4.9	– 5.4	– 6.3
37	4040 W 475 South (Front Row)	– 4.7	– 5.4	– 6.2
32	4116 W 550 South	– 2.1	– 2.2	– 2.3
33	512 S 4100 West	– 2.3	– 2.5	– 2.6
34	478 S 4100 West	– 3.6	– 3.8	– 4.0
38	4018 W 475 South	– 1.4	– 1.5	– 1.5
39	503 S 4100 West	– 1.0	– 1.2	– 1.3
40	529 S 4100 West	– 0.9	– 0.9	– 1.0
41	4048 W 550 South	– 0.9	– 1.0	– 1.0
42	4045 W 475 South	– 0.8	– 0.8	– 0.9
43	4020 W 550 South	– 0.5	– 0.6	– 0.6
44	4051 W 550 South	– 0.5	– 0.5	– 0.6
45	4023 W 550 South	– 0.4	– 0.4	– 0.4
Potentially benefitted receptors, number [e]		16	16	16
Potentially benefitted front row receptors, number		5	5	5
Front row receptors with 5 dBA or greater reduction, %		0.0	60.0	60.0
Front row receptors with 7 dBA or greater reduction, %		0.0	0.0	0.0
Meets acoustic feasibility goal? [c]		No	Yes	Yes
Meets reasonableness design goal? [d]		No	No	No

[a] Locations of receptors are indicated in the Attachment A map series.
[b] Modeled noise reduction in decibels on the A-weighted scale (dBA).
[c] A 5 dBA reduction for at least 50 percent of front-row receptors (acoustic feasibility)
[d] A 7 dBA or greater reduction for at least 35 percent of front-row receptors (reasonableness design goal).
[e] A benefitted receptor is any receptor that receives a noise reduction of at least 5 dBA.

Wall 2

Two segments of Wall 2 were modeled to determine if 6 impacted receptor locations at Schneiter's Bluff Golf Course could be mitigated. Locations of the wall segments are illustrated in Map 2 of Attachment A. The wall segments are separated because as part of constructing the interchange with West Davis Corridor, a segment of the Layton Aqueduct would be rerouted between the interchange and the golf course. The aqueduct is located on a right-of-way managed by the U.S. Bureau of Reclamation (Reclamation). UDOT has coordinated with Reclamation for both the West Davis Corridor and SR-193 projects. Reclamation indicated that they would not permit a noise wall to be constructed over the aqueduct or within the right-of-way for the aqueduct because access must be unimpeded for maintenance.

Results of noise wall modeling for Wall 2 (including Segments A and B) are summarized in Table 6. Wall heights of 16, 18, and 20 feet were modeled. None of the modeled wall heights met the acoustic feasibility or reasonableness design goals. Therefore, Wall 2 was not recommended for balloting.

Table 6. Wall 2 Analysis.

Receptor	Receptors [a]	Noise Reduction [b] with Barrier Height in Feet		
		16	18	20
46	Golf Course - Hole 13 Tee	– 2.3	– 2.6	– 2.7
47	Golf Course - Hole 12 Green	– 0.6	– 0.7	– 0.7
48	Golf Course - Hole 7 Tee	– 0.5	– 0.6	– 0.6
49	Golf Course - Hole 6 Green	– 1.0	– 1.1	– 1.2
50	Golf Course - Hole 4 Tee	– 1.3	– 1.5	– 1.6
51	Golf Course - Hole 3 Green	– 2.1	– 2.4	– 2.5
Potentially benefitted receptors, number [e]		6	6	6
Potentially benefitted front row receptors, number		6	6	6
Front row receptors with 5 dBA or greater reduction, %		0.0	0.0	0.0
Front row receptors with 7 dBA or greater reduction, %		0.0	0.0	0.0
Meets acoustic feasibility goal? [c]		No	No	No
Meets reasonableness design goal? [d]		No	No	No

[a] Locations of receptors are indicated in the Attachment A map series.
[b] Modeled noise reduction in decibels on the A-weighted scale (dBA).
[c] A 5 dBA reduction for at least 50 percent of front-row receptors (acoustic feasibility)
[d] A 7 dBA or greater reduction for at least 35 percent of front-row receptors (reasonableness design goal).
[e] A benefitted receptor is any receptor that receives a noise reduction of at least 5 dBA.

Wall 3

For the same reason as stated for Wall 2, Wall 3 was modeled in two segments, separated by the Layton Aqueduct right-of-way. Locations of the Wall 3 segments are illustrated on Map 3 in Attachment A. The Wall 3 segments would potentially benefit impacted residential receptors located along 3350 West and along 700 South. Wall heights of 16, 18, and 20 feet were modeled. Portions of Wall 3 would be located on a bridge structure over 700 South. The maximum allowable height of a noise wall on structure (UDOT Noise Abatement Policy) is 10-feet. The portion of Wall 3 (Segment A) over the structure was limited to 10-feet high in the noise model.

Results of noise modeling for the wall segments are summarized in Table 7. Modeled noise walls would meet the acoustic feasibility goal but not the reasonableness design goal. Therefore, Wall 3 was not recommended for balloting.

Wall 4

The conceptual design of Wall 4 was developed for an impacted residential receptor located along 3000 West to the south of the SR-193 alignment. The location is illustrated on Map 3 (Attachment A). The wall length is approximately 273 feet. Wall heights of 8, 10, and 12-feet were modeled; all of these met the acoustic feasibility goal, providing a 5 dBA or greater reduction for 100 percent of the front-row receptors (Receptor 104), with results reported in Table 8 (in this case, there is only one front-row receptor).

In the modeling, it was determined that a combination of a 10-foot wall for approximately 170 feet and then reducing to an 8-foot wall for an additional 100 feet would be sufficient for meeting the 7 dBA reduction or greater for the front-row receptor, with modeling results for this combination (average wall height 9 feet reported in the middle column of Table 8). Because this wall would meet the reasonableness design goal, the cost estimate was calculated (also calculated for the 12-foot wall). However, the wall would not meet the cost-effectiveness criterion in the UDOT Noise Abatement Policy because only one receptor would receive a 5 dBA or greater noise reduction from the wall. Therefore, the cost of the wall would exceed the cost effectiveness criterion of $30,000 or less per benefited receptor. In conclusion, Wall 4 would be acoustically feasible and acoustically reasonable, but not cost reasonable, and was therefore not recommended for balloting.

Table 7. Wall 3 Analysis.

Receptor	Receptors [a]	Noise Reduction [b] with Barrier Height in Feet		
		16	18	20
55	696 S 3300 West (front row)	– 2.2	– 2.3	– 2.4
56	674 S 3300 West (front row)	– 2.4	– 2.6	– 2.8
57	662 S 3300 West (front row)	– 2.6	– 2.8	– 2.9
58	3353 W 625 South (front row)	– 4.6	– 4.9	– 5.2
59	622 S 3350 West (front row)	– 3.9	– 4.1	– 4.3
60	618 S 3350 West (front row)	– 3.2	– 3.4	– 3.6
61	592 S 3350 West (front row)	– 4.1	– 4.4	– 4.6
62	564 S 3350 West (front row)	– 4.6	– 4.9	– 5.2
63	542 S 3350 West (front row)	– 4.4	– 4.7	– 5.1
64	536 S 3350 West (front row)	– 4.6	– 5.0	– 5.3
65	524 S 3350 West (front row)	– 4.8	– 5.3	– 5.7
66	506 S 3350 West (front row)	– 5.0	– 5.5	– 5.9
67	498 S 3350 West (front row)	– 5.0	– 5.5	– 6.0
68	482 S 3350 West (front row)	– 5.3	– 5.8	– 6.2
69	464 S 3350 West (front row)	– 5.4	– 6.0	– 6.4
70	458 S 3350 West (front row)	– 5.4	– 6.0	– 6.5
71	446 S 3350 West (front row)	– 5.4	– 6.0	– 6.4
72	436 S 3200 West (front row)	– 5.4	– 6.0	– 6.4
73	428 S 3350 West (front row)	– 5.5	– 6.1	– 6.5
74	416 S 3350 West (front row)	– 5.5	– 6.0	– 6.5
75	404 S 3350 West (front row)	– 5.5	– 5.9	– 6.4
76	396 S 3350 West (front row)	– 5.2	– 5.6	– 6.0
Potentially benefitted front row receptors, number [e]		22	22	22
Front row receptors with 5 dBA or greater reduction, %		50.0	59.0	68.0
Front row receptors with 7 dBA or greater reduction, %		0.0	0.0	0.0
Meets acoustic feasibility goal? [c]		Yes	Yes	Yes
Meets reasonableness design goal? [d]		No	No	No

[a] Locations of receptors are indicated in the Attachment A map series.
[b] Modeled noise reduction in decibels on the A-weighted scale (dBA).
[c] A 5 dBA reduction for at least 50 percent of front-row receptors (acoustic feasibility)
[d] A 7 dBA or greater reduction for at least 35 percent of front-row receptors (reasonableness design goal).
[e] A benefitted receptor is any receptor that receives a noise reduction of at least 5 dBA.

Table 8. Wall 4 Analysis.

Receptor	Receptors [a]	Noise Reduction [b] with Average Barrier Height in Feet		
		8	9	12
104	246 S 3000 West (front row)	6.1	7.4	8.3
103	258 S 3000 West	2.6	3.1	3.7
102	270 S 3000 West	0.5	0.7	1.0
100	290 S 3000 West	0.5	0.8	1.3
Potentially benefitted receptors, number [e]		4	4	4
Potentially benefitted front row receptors, number		1	1	1
Front row receptors with 5 dBA or greater reduction, %		100.0	100.0	100.0
Front row receptors with 7 dBA or greater reduction, %		0.0	100.0	100.0
Meets acoustic feasibility goal? [c]		Yes	Yes	Yes
Meets reasonableness design goal? [d]		No	Yes	Yes
Wall length, feet		--	273	273
Wall surface area, square feet		--	2,530	3,279
Total cost, $20 per square foot		--	$50,600	$65,580
Cost per benefitted receptor [e]		--	$50,600	$65,580
Cost effective?		--	No	No

[a] Locations of receptors are indicated in the Attachment A map series.
[b] Modeled noise reduction in decibels on the A-weighted scale (dBA).
[c] A 5 dBA reduction for at least 50 percent of front-row receptors (acoustic feasibility)
[d] A 7 dBA or greater reduction for at least 35 percent of front-row receptors (reasonableness design goal).
[e] A benefitted receptor is any receptor that receives a noise reduction of at least 5 dBA.

Wall 5

Wall 5 was modeled for impacted receptors located north of the SR-193 alignment near 3000 West. This included one front-row residence and two other residences along 300 West. The location of Wall 7 is shown on Map 3 in Attachment A. The wall is approximately 1,620 feet in length. Wall heights of 8, 10, and 12 feet were modeled with results summarized in Table 9. None of these walls would meet the acoustic feasibility goal; therefore, this wall was determined to be not feasible and was not recommended for balloting.

Table 9. Wall 5 Analysis.

Receptor	Receptors [a]	Noise Reduction [b] with Barrier Height in Feet		
		8	10	12
105	172 S 3000 West (front row)	1.7	2.1	2.7
106	136 S 3000 West	0.6	0.9	1.2
107	112 S 3000 West	0.2	0.3	0.4
Potentially benefitted receptors, number [e]		3	3	3
Potentially benefitted front row receptors, number		1	1	1
Front row receptors with 5 dBA or greater reduction, %		0.0	0.0	0.0
Front row receptors with 7 dBA or greater reduction, %		0.0	0.0	0.0
Meets acoustic feasibility goal? [c]		Yes	Yes	Yes
Meets reasonableness design goal? [d]		No	No	No

[a] Locations of receptors are indicated in the Attachment A map series.
[b] Modeled noise reduction in decibels on the A-weighted scale (dBA).
[c] A 5 dBA reduction for at least 50 percent of front-row receptors (acoustic feasibility)
[d] A 7 dBA or greater reduction for at least 35 percent of front-row receptors (reasonableness design goal).
[e] A benefitted receptor is any receptor that receives a noise reduction of at least 5 dBA.

Construction Noise

Land uses that are sensitive to traffic noise are also sensitive to construction noise. Methods of controlling construction noise include establishing the hours that construction equipment can be operated and permissible sound levels at those times. In order to consistently address construction traffic noise for noise-sensitive land uses, UDOT has developed Supplemental Specifications that include requirements related to construction noise and nighttime construction work (Supplemental Specification 00555, UDOT 2017 Standards and Specifications). The contractor selected for the project would be required to conform to this specification.

Local Planning and Future Noise Levels

Federal noise abatement regulations require providing information for local officials regarding potential avoidance of future traffic noise impacts for currently undeveloped lands (23 CFR 772.17). The current project is located in a rapidly developing portion of Davis County.

Based on noise contours generated in the noise modeling that includes the West Davis Corridor interchange and SR-193, the 66.0 dBA NAC level (land use activity categories B and C) would be exceeded within approximately 50 to 100 feet from the edge of pavement east of West Davis Corridor. With the lower traffic volume and speed to the west of West Davis Corridor, the range is closer to the edge of pavement, with the 66.0 dBA NAC level exceeded within 25 to 75 feet.

This information is intended to provide a general guide for future planning but does not account for variable influences of terrain, ground cover type, and intervening structures at various locations that can partially dissipate traffic noise at specific locations.

Conclusions

Noise-sensitive receptors in the SR-193 study area include residences and portions of Schneiter's Bluff Golf Course. The new segment of SR-193 would pass through currently undeveloped lands where the ambient noise level is a Leq(h) of approximately 41.9 dBA. Construction of SR-193 and the interchange with the future West Davis Corridor and accompanying design year traffic volumes would increase ambient noise by as much as 25 dBA for the closest receptors to the edge of pavement. The average increase would be about 12 dBA.

Five noise walls were modeled; however, none met the feasibility and reasonableness criteria and none were recommended for balloting. Short-term construction noise impacts would be minimized by requiring the construction contractor to follow UDOT Standard Specifications for noise control.

References

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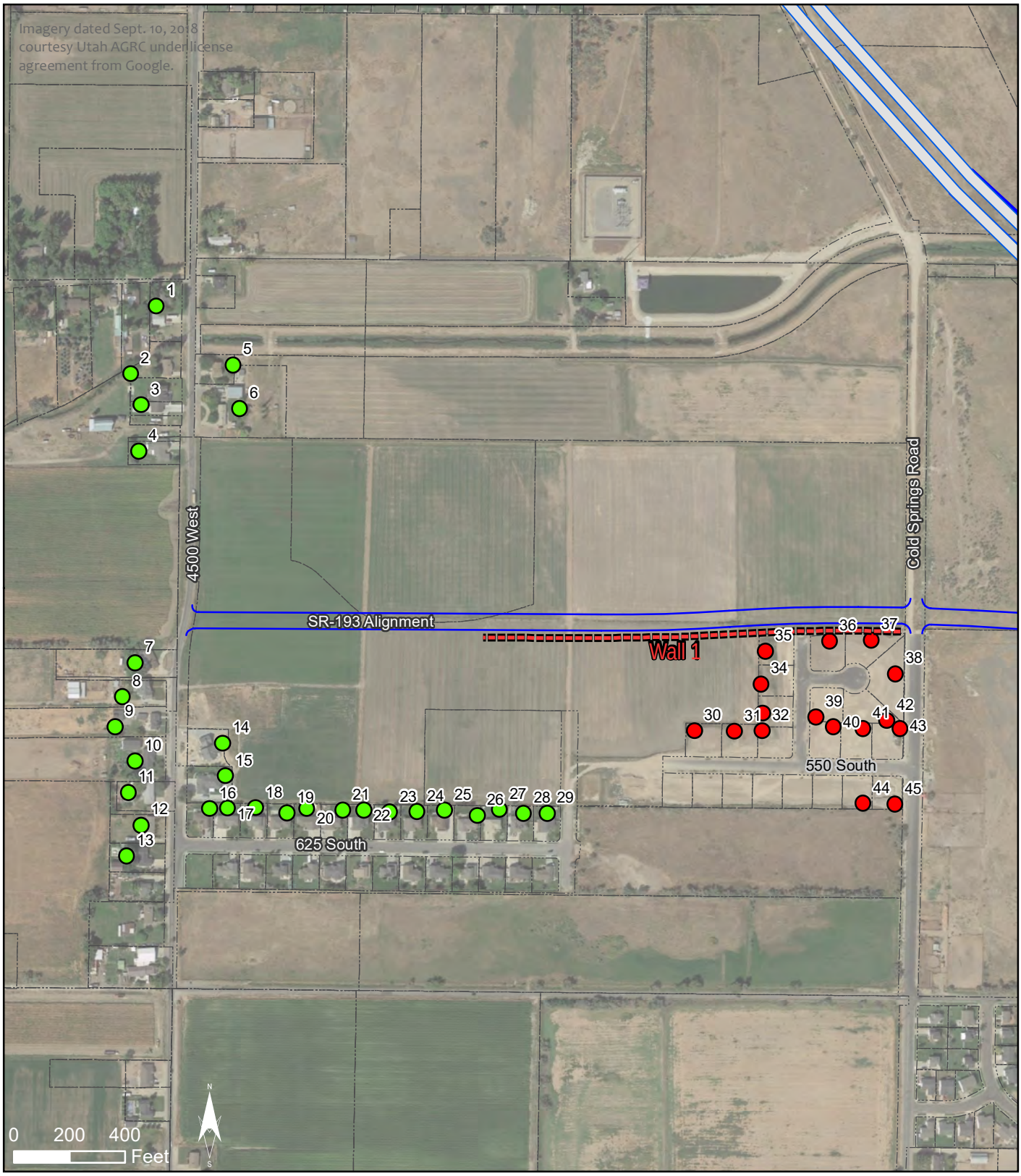
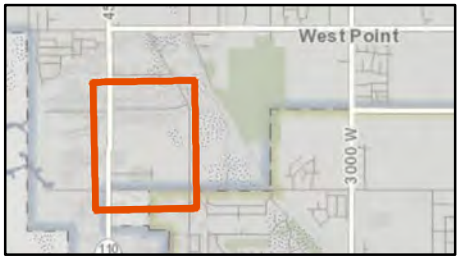
Attachment A

Map Series





Design Features

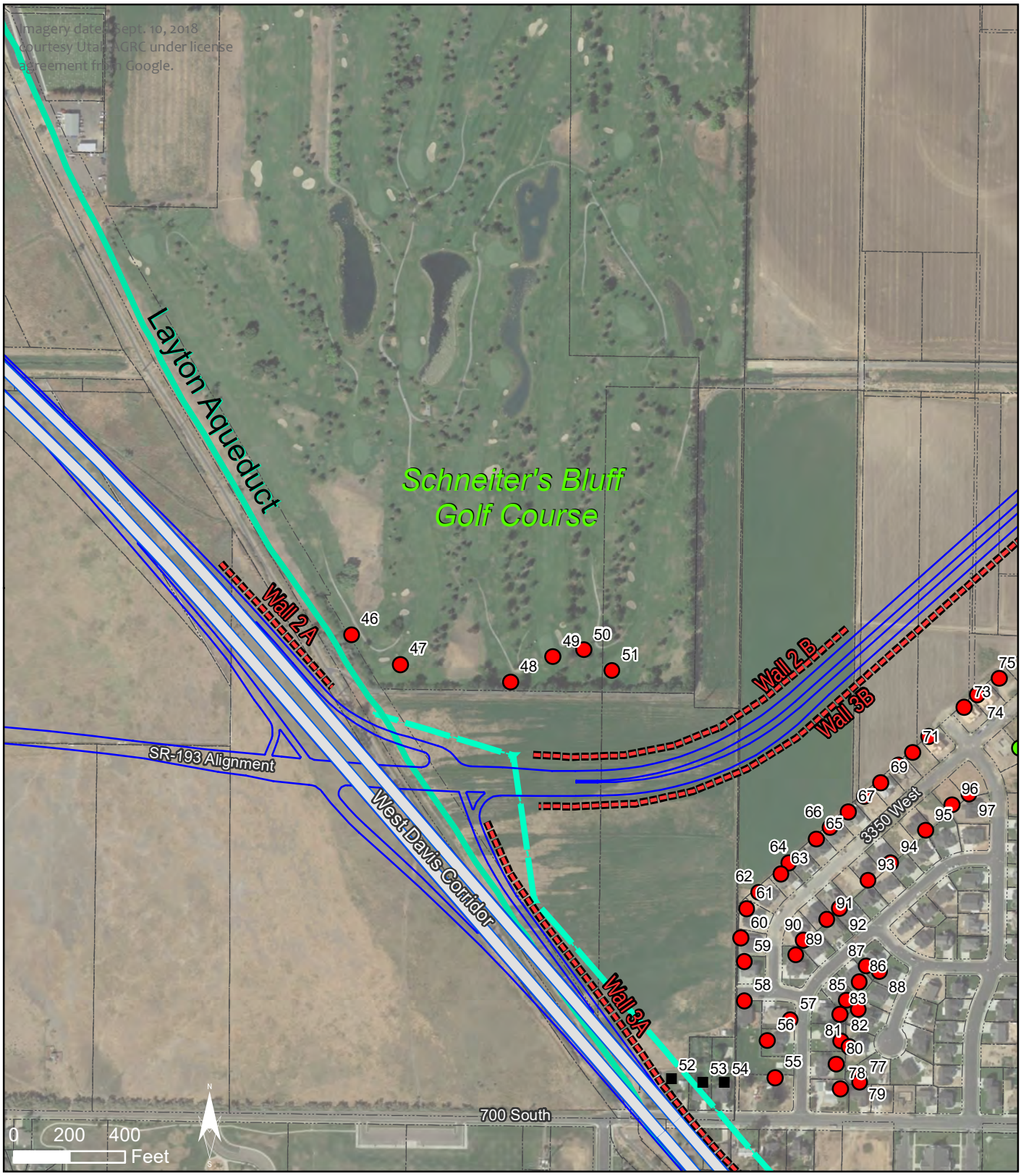
- Edge of Pavement
- Aqueduct Realignment

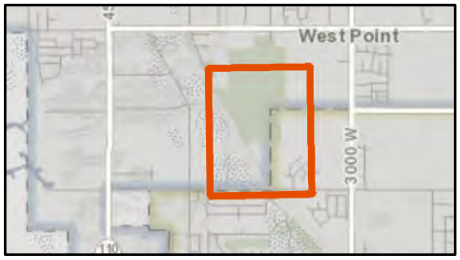
Noise Study

- Not Impacted
- Impacted
- Relocation
- Modeled Noise Walls

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

Project S-0199(245) PIN 16518
Noise Impacts
Map Date 10/24/2019
Map 1 of 3





Design Features

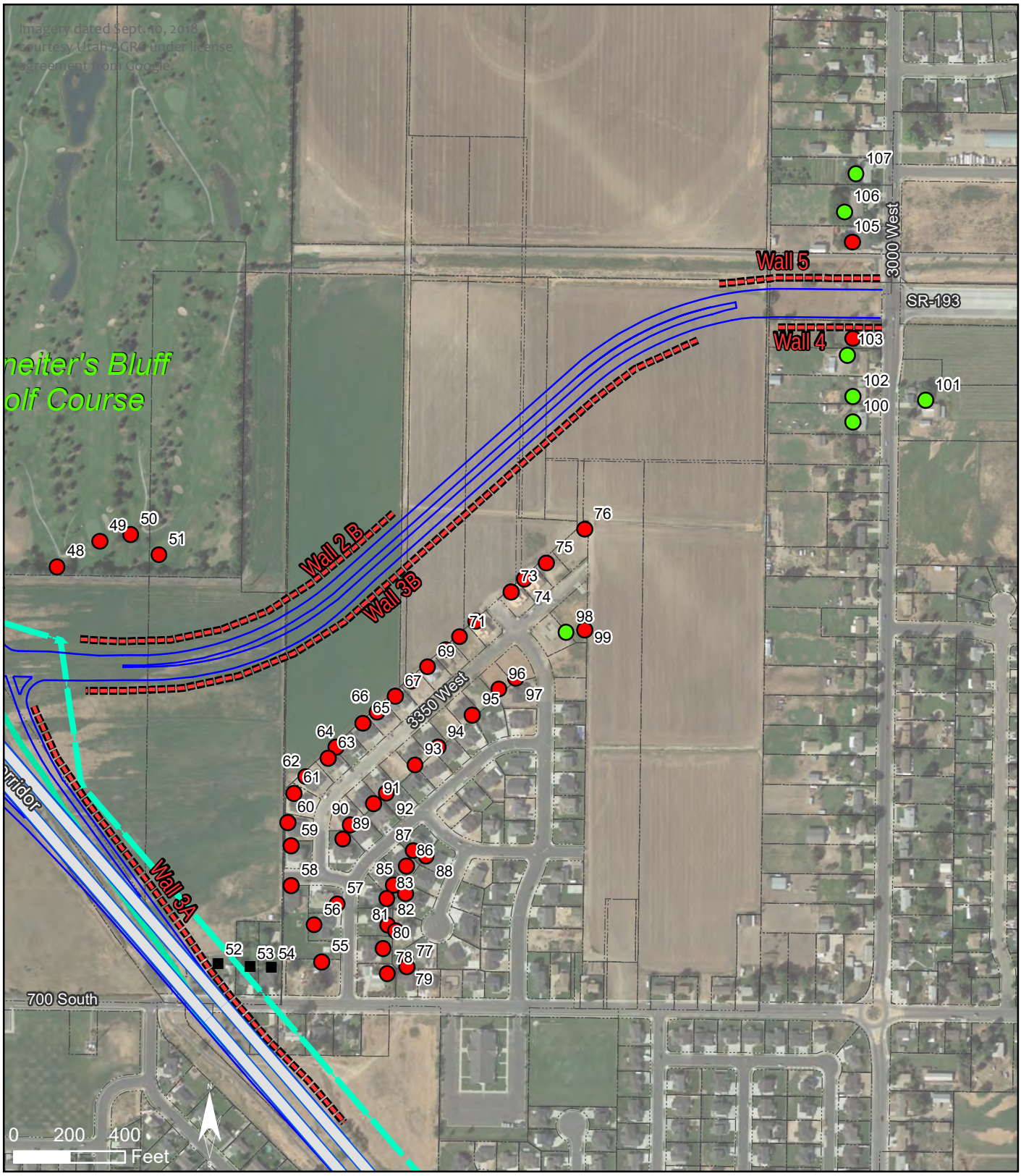
- Edge of Pavement
- Aqueduct Realignment

Noise Study

- Not Impacted
- Impacted
- Relocation
- Modeled Noise Walls

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

Project S-0199(245) PIN 16518
Noise Impacts
Map Date 10/24/2019
Map 2 of 3



Design Features

- Edge of Pavement
- Aqueduct Realignment

Noise Study

- Not Impacted
- Impacted
- Relocation
- Modeled Noise Walls

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

Project S-0199(245) PIN 16518
Noise Impacts
Map Date 10/24/2019
Map 3 of 3

Attachment B

Noise Measurement Data Sheets,

Site Photos, and Sound Meter Data Logs

TRAFFIC NOISE MEASUREMENT DATA SHEET

BIO-WEST
www.bio-west.com
435.752.4202

Project: SR 193 Date: 8-1-2019
Technician: S. Keenan Site Number: 1
Site Description: 530 S. 4500 W.

Equipment Check (First and Last Measurement)

Meter: Quest 2900 #1 Calibrator:
Battery Check: Calibration: First measurement: ____dB
Response Setting: ☒ Set to Slow (typically) Last measurement: ____dB
Frequency Weighting: ☒ Set to A-weighted Sound Range Setting: Low: 40 dBA; High: 100 dBA

Weather

Temp: 88° Humidity: 28 Pressure: 29.85
Wind (MPH/Dir): 4 / NW Clouds: Clear

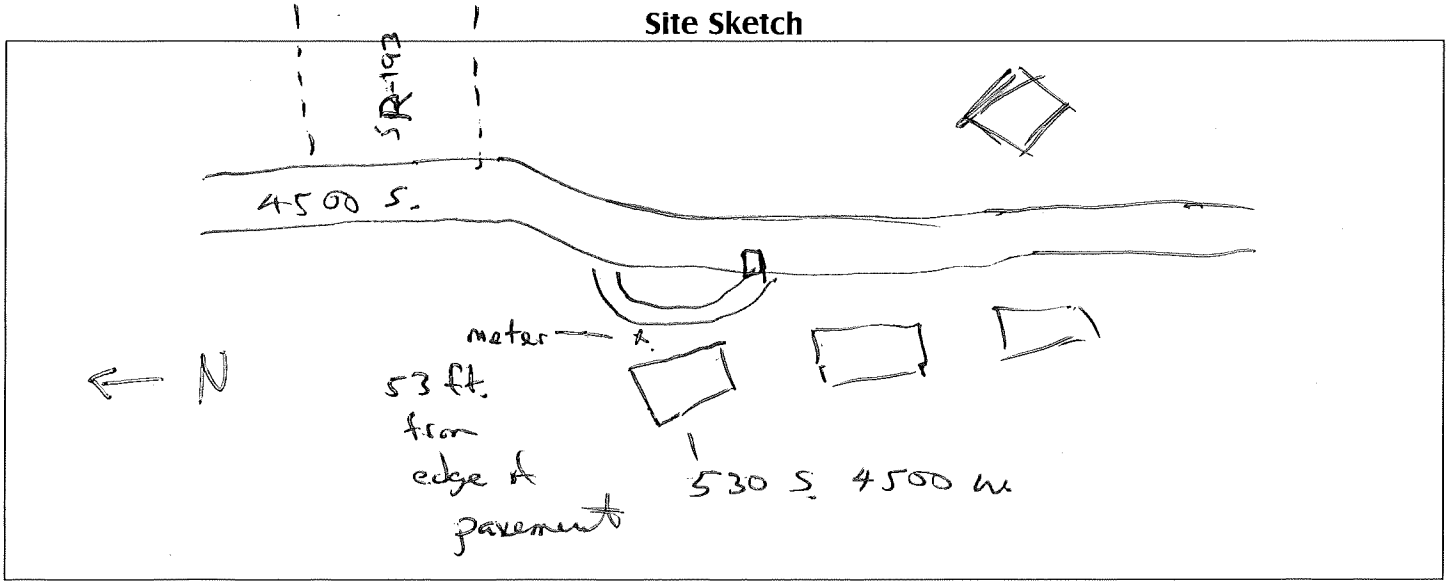
Noise Measurement Results

Start Time: 4:16 PM End Time: 4:36 P Duration: 20 min
Meter Event Number: 6 LEQ(h): 56.0 dBA LMin 34.4 dBA LMax: 73.0 dBA
Major Sources: Traffic
Background Noise: None
Unusual Events: None
Other Notes:

Traffic

Road	4500 S.					
Direction of Travel	N	S				
Traffic Speed	45	45				
Autos	48	32				
Medium Trucks	2	0				
Heavy Trucks	0	0				
Motorcycles	0	0				

Site Sketch



Site 1. Looking West

Site 1. Looking East

STUDY 6
Notes _____

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Measuring Parameters:
Range 40-100dB Weighting A Time Constant SLOW
Threshold OFF Exchange Rate 3dB Peak Weighting A

Session Started Session Stopped Run Time
01-AUG-19 @ 16:16:38 01-AUG-19 @ 16:36:39 0:20:00
Peak Level 86.1dB 01-AUG-19 @ 16:20:16
Max Level 73.0dB 01-AUG-19 @ 16:20:16
Min Level 34.4dB 01-AUG-19 @ 16:34:02
Overload 0.00%

LEQ 56.0dB SEL(3) 86.8dB TWA 42.3dB TAKM5 59.4dB
LDN 56.0dB CNEL 56.0dB Pa2Sec 0.1
L5 62.8dB L10 60.3dB L50 46.7dB L90 38.1dB

LOGGING (30 SEC)	LEQ	LMAX	LPK	L10	L90
Study 6					
16:17:08	55.8dB	66.0dB	83.9dB	61.5dB	37.9dB
16:17:38	52.8dB	62.2dB	78.3dB	58.6dB	41.3dB
16:18:08	51.8dB	60.5dB	75.3dB	56.2dB	38.5dB
16:18:38	38.0dB	39.8dB	69.0dB	38.9dB	37.6dB
16:19:08	53.3dB	61.0dB	75.5dB	58.4dB	38.6dB
16:19:38	58.0dB	63.2dB	79.0dB	62.1dB	45.7dB
16:20:08	58.9dB	66.2dB	80.5dB	63.9dB	46.9dB
16:20:38	64.2dB	73.0dB	86.1dB	70.6dB	41.3dB
16:21:08	39.8dB	43.6dB	62.8dB	43.1dB	37.2dB
16:21:38	49.6dB	58.9dB	72.0dB	55.5dB	37.2dB
16:22:08	50.4dB	59.4dB	74.2dB	56.1dB	38.5dB
16:22:38	46.1dB	54.7dB	65.2dB	51.2dB	37.6dB
16:23:08	60.4dB	67.0dB	81.6dB	65.8dB	50.3dB
16:23:38	58.3dB	63.0dB	76.7dB	61.5dB	45.1dB
16:24:08	53.9dB	59.7dB	74.8dB	57.9dB	43.6dB
16:24:38	51.5dB	59.5dB	72.5dB	56.2dB	41.9dB
16:25:08	59.3dB	67.7dB	82.8dB	63.8dB	46.3dB
16:25:38	58.1dB	64.2dB	80.1dB	63.1dB	46.5dB
16:26:08	40.5dB	45.8dB	62.8dB	44.0dB	38.7dB
16:26:38	43.3dB	51.2dB	65.3dB	44.7dB	40.4dB
16:27:08	58.7dB	66.1dB	84.8dB	64.2dB	47.6dB
16:27:38	44.7dB	51.9dB	64.1dB	48.8dB	38.5dB
16:28:08	58.1dB	63.0dB	77.8dB	61.5dB	41.7dB
16:28:38	54.8dB	63.9dB	82.2dB	59.5dB	43.4dB

16:29:08	54.4dB	60.6dB	82.5dB	59.6dB	41.5dB
16:29:38	57.4dB	66.6dB	80.5dB	63.2dB	43.6dB
16:30:08	50.5dB	59.9dB	77.9dB	56.4dB	39.5dB
16:30:38	53.8dB	61.7dB	75.7dB	60.1dB	40.1dB
16:31:08	60.7dB	68.7dB	84.7dB	65.6dB	44.3dB
16:31:38	54.0dB	64.3dB	77.9dB	60.1dB	38.5dB
16:32:08	59.5dB	69.3dB	84.0dB	64.8dB	42.5dB
16:32:38	41.6dB	44.8dB	62.2dB	43.7dB	39.4dB
16:33:08	55.2dB	62.8dB	76.2dB	59.9dB	38.7dB
16:33:38	60.2dB	64.8dB	81.8dB	63.2dB	49.1dB
16:34:08	49.5dB	61.8dB	69.8dB	53.4dB	35.1dB
16:34:38	53.2dB	60.1dB	75.7dB	58.7dB	37.0dB
16:35:08	40.0dB	45.3dB	68.2dB	42.1dB	37.9dB
16:35:38	52.0dB	58.0dB	74.0dB	56.8dB	40.3dB
16:36:08	48.0dB	57.7dB	71.0dB	53.9dB	36.4dB
16:36:38	49.9dB	59.2dB	80.7dB	56.0dB	36.7dB

TRAFFIC NOISE MEASUREMENT DATA SHEET

BIO-WEST
www.bio-west.com
435.752.4202

Project: SR-193 Date: 8-1-2019
Technician: S. Keenan Site Number: 2
Site Description: 463 S. 4100 W.

Equipment Check (First and Last Measurement)

Meter: Quest 2900 #1 Calibrator:
Battery Check: Calibration: First measurement: ____dB
Response Setting: ☒Set to Slow (typically) Last measurement: ____dB
Frequency Weighting: ☒Set to A-weighted Sound Range Setting: Low: 30 dBA; High: 90 dBA

Weather

Temp: 88° Humidity: Pressure:
Wind (MPH/Dir): Clouds:

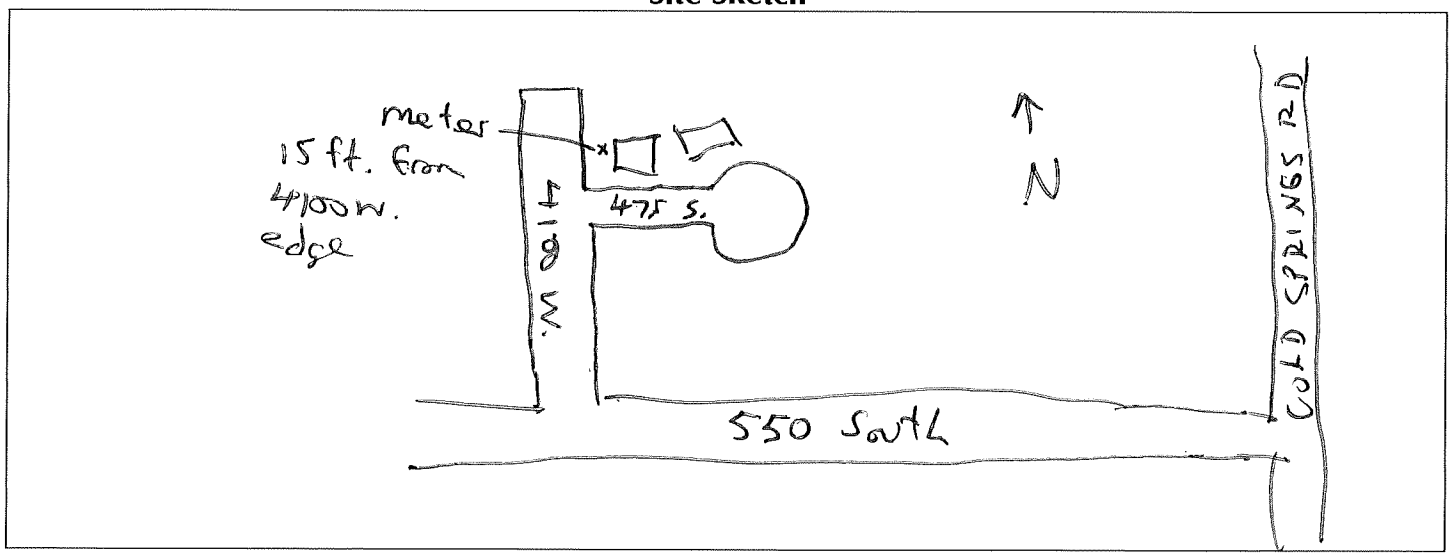
Noise Measurement Results

Start Time: 3:32 PM End Time: 3:52 PM Duration: 20 min
Meter Event Number: 5 LEQ(h): 41.9 dBA LMin 31.8 dBA LMax: 59.0 dBA
Major Sources: A quiet spot today
Background Noise: None
Unusual Events: None
Other Notes:

Traffic

Road	4100 W		475 South			
Direction of Travel	N	S	E	W		
Traffic Speed	25	25	25	25		
Autos	1	1	0	0		
Medium Trucks						
Heavy Trucks						
Motorcycles						

Site Sketch



Site 2. Looking East

Site 2. Looking South

STUDY 5
Notes _____

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Measuring Parameters:
Range 30- 90dB Weighting A Time Constant SLOW
Threshold OFF Exchange Rate 3dB Peak Weighting A

Session Started Session Stopped Run Time
01-AUG-19 @ 15:32:40 01-AUG-19 @ 15:52:40 0:20:00
Peak Level 73.2dB 01-AUG-19 @ 15:33:35
Max Level 59.0dB 01-AUG-19 @ 15:39:28
Min Level 31.8dB 01-AUG-19 @ 15:46:06
Overload 0.00%

LEQ 41.9dB SEL(3) 72.7dB TWA 28.1dB TAKM5 43.6dB
LDN 41.9dB CNEL 41.9dB Pa2Sec 0.0
L5 47.4dB L10 42.0dB L50 36.1dB L90 33.3dB

LOGGING (30 SEC)	LEQ	LMAX	LPK	L10	L90	
Study 5						
15:33:10	38.8dB	44.1dB	70.2dB	41.4dB	35.9dB	
15:33:40	38.1dB	45.7dB	73.2dB	40.3dB	35.3dB	OL
15:34:10	37.5dB	43.5dB	69.8dB	39.0dB	35.4dB	
15:34:40	36.5dB	41.2dB	66.3dB	38.7dB	34.7dB	
15:35:10	37.0dB	39.5dB	63.4dB	38.4dB	35.3dB	
15:35:40	37.9dB	40.4dB	62.7dB	39.1dB	36.9dB	
15:36:10	41.8dB	46.6dB	63.4dB	43.6dB	38.8dB	
15:36:40	37.2dB	41.2dB	57.4dB	38.9dB	35.1dB	
15:37:10	35.6dB	36.8dB	54.6dB	36.3dB	34.5dB	
15:37:40	36.2dB	37.5dB	62.1dB	37.2dB	34.9dB	
15:38:10	37.8dB	39.9dB	65.2dB	38.9dB	36.3dB	
15:38:40	41.3dB	47.7dB	60.4dB	45.1dB	37.2dB	
15:39:10	51.0dB	57.1dB	71.4dB	54.0dB	46.1dB	
15:39:40	54.3dB	59.0dB	72.4dB	58.0dB	48.5dB	
15:40:10	45.0dB	51.1dB	64.5dB	49.3dB	40.0dB	
15:40:40	41.8dB	45.1dB	63.7dB	43.1dB	40.5dB	
15:41:10	39.6dB	42.6dB	57.9dB	41.9dB	37.5dB	
15:41:40	34.3dB	37.4dB	52.4dB	35.9dB	33.3dB	
15:42:10	33.5dB	36.0dB	54.4dB	34.1dB	32.9dB	
15:42:40	33.9dB	36.5dB	53.4dB	35.4dB	32.6dB	
15:43:10	35.9dB	44.4dB	65.6dB	38.8dB	33.0dB	
15:43:40	35.2dB	37.4dB	53.8dB	36.7dB	33.5dB	
15:44:10	37.7dB	41.1dB	58.2dB	38.9dB	36.3dB	
15:44:40	36.3dB	38.2dB	64.2dB	37.7dB	35.1dB	

15:45:10	36.4dB	42.8dB	71.0dB	37.9dB	34.6dB
15:45:40	35.1dB	39.0dB	67.8dB	36.3dB	34.1dB
15:46:10	33.1dB	34.1dB	51.6dB	33.8dB	32.2dB
15:46:40	34.4dB	36.3dB	54.3dB	35.3dB	32.9dB
15:47:10	34.7dB	36.8dB	54.4dB	35.8dB	33.8dB
15:47:40	35.4dB	37.7dB	56.6dB	36.6dB	34.0dB
15:48:10	35.9dB	39.6dB	68.7dB	38.0dB	34.1dB
15:48:40	37.6dB	42.8dB	72.3dB	39.1dB	35.8dB
15:49:10	34.5dB	38.5dB	56.0dB	36.7dB	33.3dB
15:49:40	33.7dB	35.9dB	53.9dB	35.1dB	32.5dB
15:50:10	34.4dB	37.5dB	56.9dB	36.0dB	32.9dB
15:50:40	33.2dB	34.1dB	55.2dB	33.7dB	32.7dB
15:51:10	38.3dB	44.9dB	60.4dB	42.1dB	34.5dB
15:51:40	39.4dB	45.3dB	62.2dB	42.1dB	36.2dB
15:52:10	36.4dB	39.5dB	56.0dB	38.4dB	33.8dB
15:52:40	36.5dB	42.5dB	59.7dB	37.1dB	34.8dB

TRAFFIC NOISE MEASUREMENT DATA SHEET

BIO-WEST
www.bio-west.com
435.752.4202

Project: SR-193
Date: 8-1-2019
Technician: S. Keenan
Site Number: 3
Site Description: Rock Creek Park

Equipment Check (First and Last Measurement)

Meter: Quest 2900 #1
Calibrator:
Battery Check:
Calibration: First measurement: _____dB
Last measurement: _____dB
Response Setting: ☒ Set to Slow (typically)
Frequency Weighting: ☒ Set to A-weighted Sound
Range Setting: Low: 30 dBA; High: 90 dBA

Weather

Temp: 89°
Humidity:
Pressure:
Wind (MPH/Dir): 15 / SW
Clouds:

Noise Measurement Results

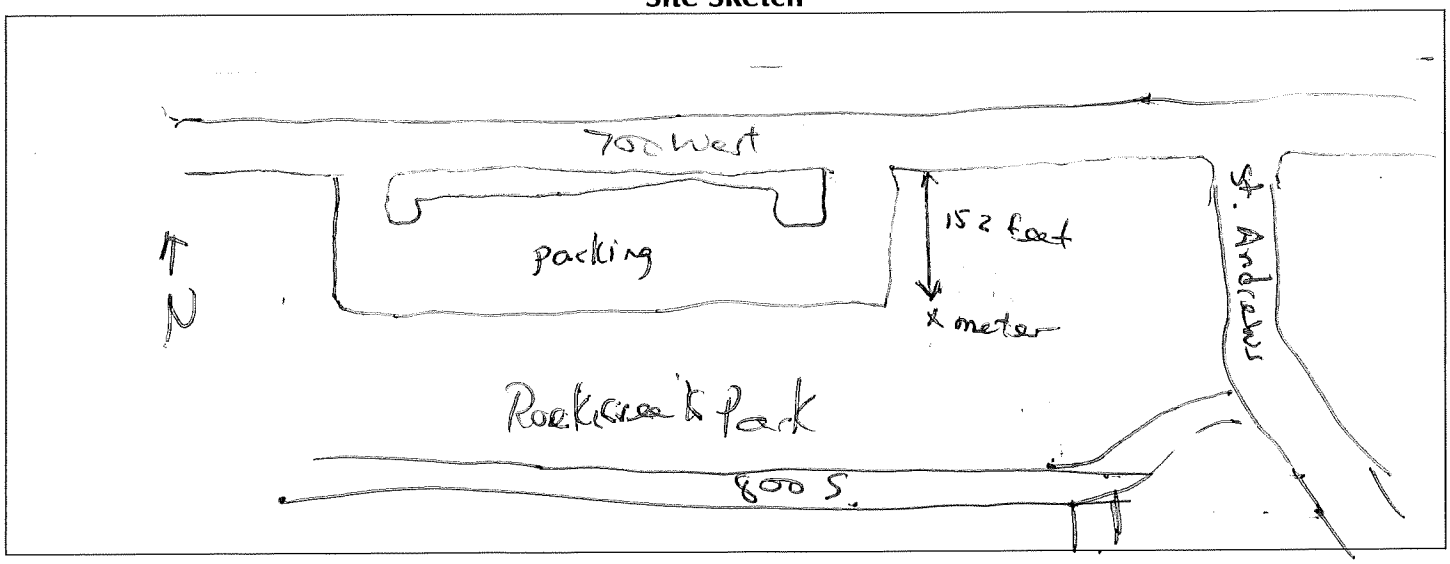
Start Time: 3:04 PM
End Time: 3:24 PM
Duration: 20 min
Meter Event Number: 4
LEQ(h): 43.1 dBA
LMin 33.7 dBA
LMax: 60.6 dBA

Major Sources:
Background Noise:
Unusual Events:
Other Notes:

Traffic

Road	700 S.		St. Andrews		800 S.	
Direction of Travel	E	W	N	S	E	W
Traffic Speed	35	35	25	25	25	25
Autos	16	17	13	27	3	6
Medium Trucks	2	4	1	2	0	0
Heavy Trucks	0	0	0	0	0	0
Motorcycles	2	0	0	1	0	1

Site Sketch



Site 3. Looking Southeast

Site 3. Looking North

STUDY 4
Notes _____

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Measuring Parameters:
Range 30- 90dB Weighting A Time Constant SLOW
Threshold OFF Exchange Rate 3dB Peak Weighting A

Session Started Session Stopped Run Time
01-AUG-19 @ 15:01:49 01-AUG-19 @ 15:21:49 0:20:00
Peak Level 82.2dB 01-AUG-19 @ 15:16:39
Max Level 60.6dB 01-AUG-19 @ 15:16:38
Min Level 33.7dB 01-AUG-19 @ 15:03:22
Overload 0.01%

LEQ 43.1dB SEL(3) 73.9dB TWA 29.3dB TAKM5 45.9dB
LDN 43.1dB CNEL 43.1dB Pa2Sec 0.0
L5 48.5dB L10 46.2dB L50 40.3dB L90 36.1dB

LOGGING (30 SEC)	LEQ	LMAX	LPK	L10	L90	
Study 4						
15:02:19	36.5dB	41.4dB	66.8dB	38.3dB	34.9dB	
15:02:49	36.2dB	37.3dB	58.4dB	36.9dB	35.6dB	
15:03:19	34.9dB	36.2dB	56.5dB	35.6dB	34.5dB	
15:03:49	35.5dB	42.1dB	57.0dB	36.6dB	34.2dB	
15:04:19	41.4dB	48.0dB	71.5dB	45.9dB	36.3dB	
15:04:49	39.0dB	46.0dB	57.5dB	41.9dB	36.1dB	
15:05:19	37.4dB	41.4dB	67.7dB	39.5dB	35.9dB	
15:05:49	45.1dB	48.4dB	65.8dB	47.6dB	41.3dB	
15:06:19	38.5dB	41.7dB	72.7dB	40.1dB	36.9dB	
15:06:49	37.0dB	41.6dB	60.1dB	38.8dB	35.5dB	
15:07:19	42.7dB	47.7dB	61.7dB	46.3dB	37.5dB	
15:07:49	40.8dB	44.6dB	61.0dB	43.2dB	36.8dB	
15:08:19	41.0dB	44.6dB	60.7dB	42.9dB	37.4dB	OL
15:08:49	48.8dB	56.0dB	71.6dB	52.8dB	41.7dB	
15:09:19	39.2dB	42.1dB	58.0dB	41.4dB	37.1dB	
15:09:49	46.5dB	52.2dB	67.8dB	49.7dB	40.7dB	
15:10:19	45.5dB	54.9dB	70.1dB	51.0dB	37.0dB	
15:10:49	39.4dB	43.0dB	61.6dB	42.3dB	36.1dB	
15:11:19	40.9dB	43.1dB	58.2dB	42.4dB	38.8dB	
15:11:49	40.2dB	41.9dB	60.6dB	41.3dB	38.8dB	
15:12:19	39.2dB	42.9dB	61.7dB	40.6dB	37.7dB	
15:12:49	44.1dB	47.9dB	63.6dB	46.2dB	40.7dB	
15:13:19	48.0dB	52.3dB	67.4dB	50.2dB	43.7dB	
15:13:49	41.5dB	45.9dB	58.5dB	43.9dB	39.1dB	

15:14:19	41.0dB	44.6dB	58.0dB	43.3dB	38.8dB	
15:14:49	38.6dB	42.0dB	60.9dB	40.5dB	36.8dB	
15:15:19	42.4dB	46.2dB	62.2dB	44.5dB	39.7dB	
15:15:49	43.4dB	49.9dB	63.1dB	47.4dB	38.6dB	
15:16:19	37.8dB	40.8dB	56.8dB	39.9dB	35.5dB	
15:16:49	48.9dB	60.6dB	82.2dB	51.4dB	42.1dB	OL
15:17:19	39.1dB	44.1dB	66.9dB	40.9dB	37.3dB	
15:17:49	46.9dB	52.2dB	67.8dB	50.1dB	42.0dB	
15:18:19	43.0dB	46.1dB	62.0dB	44.7dB	41.6dB	
15:18:49	47.9dB	51.1dB	71.0dB	50.1dB	44.0dB	
15:19:19	44.0dB	48.1dB	61.2dB	47.4dB	40.9dB	
15:19:49	40.3dB	44.0dB	68.8dB	42.6dB	37.7dB	
15:20:19	42.4dB	44.9dB	60.6dB	44.0dB	40.7dB	
15:20:49	43.7dB	47.8dB	65.2dB	45.9dB	41.7dB	
15:21:19	40.1dB	46.4dB	59.3dB	42.9dB	35.7dB	
15:21:49	39.1dB	43.7dB	59.8dB	41.9dB	36.9dB	

TRAFFIC NOISE MEASUREMENT DATA SHEET

BIO-WEST
www.bio-west.com
435.752.4202

Project: SR-193 Date: 8-1-2019
Technician: S. Keenan Site Number: 4
Site Description: SR-193 / Syracuse Trail Connection

Equipment Check (First and Last Measurement)

Meter: Quest 2900 #1 Calibrator:
Battery Check: Calibration: First measurement: ____ dB
Response Setting: ☒ Set to Slow (typically) Last measurement: +0.3 dB
Frequency Weighting: ☒ Set to A-weighted Sound Range Setting: Low: 20 dBA; High: 80 dBA

Weather

Temp: 84° Humidity: 34% Pressure: 29.88
Wind (MPH/Dir): 4/NNW Clouds: clear

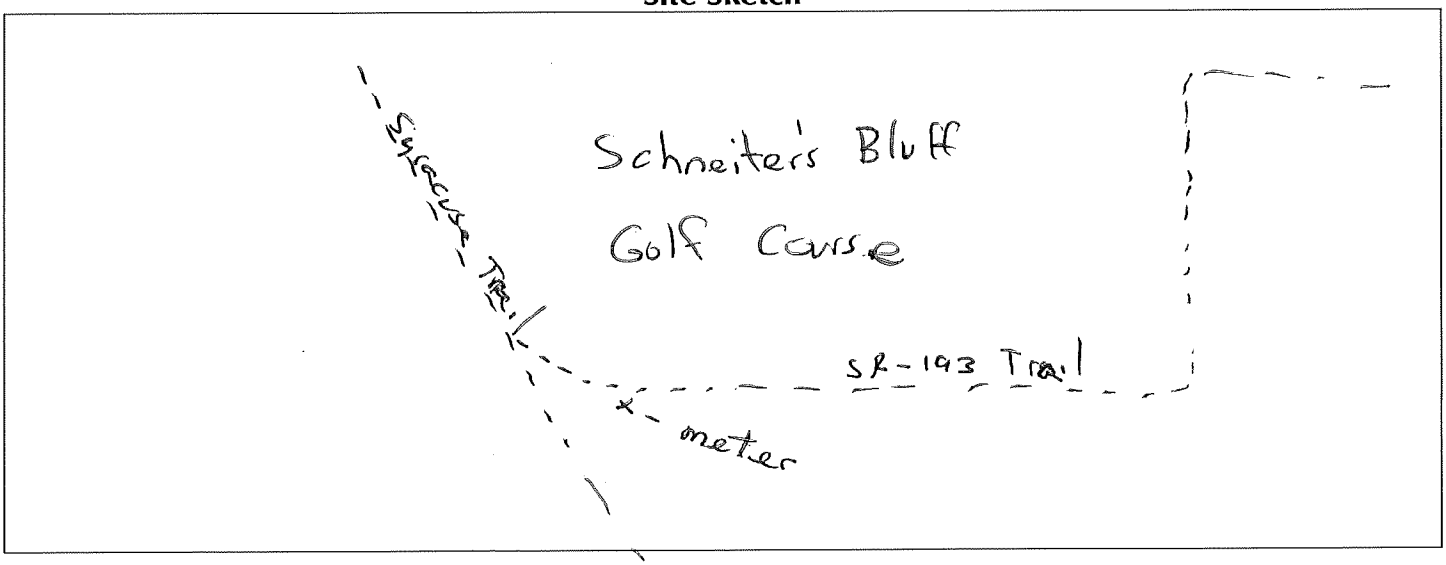
Noise Measurement Results

Start Time: 8:25 pm End Time: 8:45 pm Duration: 20 min
Meter Event Number: 12 LEQ(h): 43.3 dBA LMin 33.3 dBA LMax: 64.2 dBA
Major Sources: Ambient - occasional trail users passing by.
Background Noise: None
Unusual Events:
Other Notes:

Traffic

Road	None					
Direction of Travel						
Traffic Speed						
Autos						
Medium Trucks						
Heavy Trucks						
Motorcycles						

Site Sketch



Site 4. Looking West

Site 4. Looking East

STUDY 12
Notes _____

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Measuring Parameters:
Range 20- 80dB Weighting A Time Constant SLOW
Threshold OFF Exchange Rate 3dB Peak Weighting A

Session Started Session Stopped Run Time
01-AUG-19 @ 20:25:55 01-AUG-19 @ 20:45:56 0:20:00
Peak Level 87.6dB 01-AUG-19 @ 20:41:22
Max Level 64.2dB 01-AUG-19 @ 20:35:05
Min Level 33.3dB 01-AUG-19 @ 20:28:42
Overload 0.02%

LEQ 43.3dB SEL(3) 74.1dB TWA 29.5dB TAKM5 47.5dB
LDN 43.3dB CNEL 48.3dB Pa2Sec 0.0
L5 45.7dB L10 42.6dB L50 36.3dB L90 34.3dB

LOGGING (30 SEC)	LEQ	LMAX	LPK	L10	L90	
Study 12						
20:26:25	36.7dB	42.5dB	70.3dB	38.0dB	35.2dB	
20:26:55	37.6dB	42.2dB	78.1dB	39.8dB	35.3dB	
20:27:25	42.4dB	49.8dB	83.3dB	45.8dB	34.5dB	OL
20:27:55	34.3dB	35.1dB	53.9dB	34.6dB	33.9dB	
20:28:25	37.5dB	45.2dB	76.5dB	40.3dB	34.1dB	
20:28:55	34.4dB	37.7dB	64.0dB	35.5dB	33.6dB	
20:29:25	34.8dB	37.2dB	57.0dB	35.4dB	34.3dB	
20:29:55	34.6dB	35.6dB	49.3dB	34.9dB	34.1dB	
20:30:25	34.1dB	35.0dB	51.0dB	34.4dB	33.8dB	
20:30:55	34.5dB	35.1dB	50.0dB	34.7dB	34.2dB	
20:31:25	35.4dB	37.6dB	51.6dB	36.4dB	34.6dB	
20:31:55	36.4dB	38.4dB	64.3dB	37.9dB	35.5dB	
20:32:25	36.2dB	37.9dB	54.9dB	37.3dB	35.4dB	
20:32:55	34.9dB	36.8dB	56.6dB	35.8dB	34.2dB	
20:33:25	36.1dB	43.1dB	60.2dB	37.8dB	34.1dB	
20:33:55	37.1dB	43.9dB	76.8dB	39.0dB	34.1dB	
20:34:25	39.2dB	49.3dB	71.1dB	42.6dB	33.7dB	
20:34:55	40.6dB	49.0dB	74.9dB	45.6dB	34.7dB	
20:35:25	55.9dB	64.2dB	81.0dB	61.5dB	41.3dB	
20:35:55	36.8dB	41.0dB	62.9dB	38.0dB	35.1dB	
20:36:25	42.1dB	51.1dB	72.1dB	46.5dB	37.0dB	
20:36:55	37.7dB	44.0dB	74.2dB	41.0dB	33.9dB	
20:37:25	35.0dB	37.3dB	57.6dB	35.9dB	34.3dB	
20:37:55	36.7dB	39.3dB	55.7dB	37.8dB	35.5dB	

20:38:25	36.9dB	38.8dB	54.6dB	38.0dB	35.5dB	
20:38:55	37.0dB	39.2dB	65.8dB	38.5dB	35.5dB	
20:39:25	40.8dB	50.0dB	80.9dB	44.7dB	37.2dB	
20:39:55	43.0dB	48.1dB	71.8dB	45.6dB	40.1dB	
20:40:25	38.7dB	43.8dB	64.2dB	41.6dB	36.2dB	
20:40:55	38.9dB	41.4dB	58.8dB	39.9dB	38.1dB	
20:41:25	51.8dB	62.4dB	87.6dB	56.0dB	42.0dB	OL
20:41:55	48.7dB	56.0dB	83.3dB	55.0dB	38.8dB	
20:42:25	40.2dB	45.8dB	68.7dB	42.4dB	37.6dB	
20:42:55	40.7dB	43.2dB	65.2dB	42.0dB	38.8dB	
20:43:25	37.7dB	41.2dB	66.7dB	39.5dB	36.2dB	OL
20:43:55	37.1dB	42.7dB	74.5dB	40.6dB	34.7dB	
20:44:25	35.4dB	37.3dB	53.7dB	35.9dB	34.9dB	
20:44:55	39.3dB	46.7dB	66.8dB	42.6dB	36.0dB	
20:45:25	37.7dB	45.8dB	65.2dB	41.0dB	34.7dB	
20:45:55	34.5dB	36.0dB	57.4dB	35.1dB	33.9dB	

TRAFFIC NOISE MEASUREMENT DATA SHEET

BIO-WEST
www.bio-west.com
435.752.4202

Project: SR-193 Date: 8-1-2019
Technician: S. Keenan Site Number: 5
Site Description: 436 N 3200 W

Equipment Check (First and Last Measurement)

Meter: Quest 2900 #1 Calibrator:
Battery Check: Calibration: First measurement: ____dB
Response Setting: ☒Set to Slow (typically) Last measurement: ____dB
Frequency Weighting: ☒Set to A-weighted Sound Range Setting: Low: 30 dBA; High: 90 dBA

Weather

Temp: 84° Humidity: Pressure:
Wind (MPH/Dir): 15 SW Clouds:

Noise Measurement Results

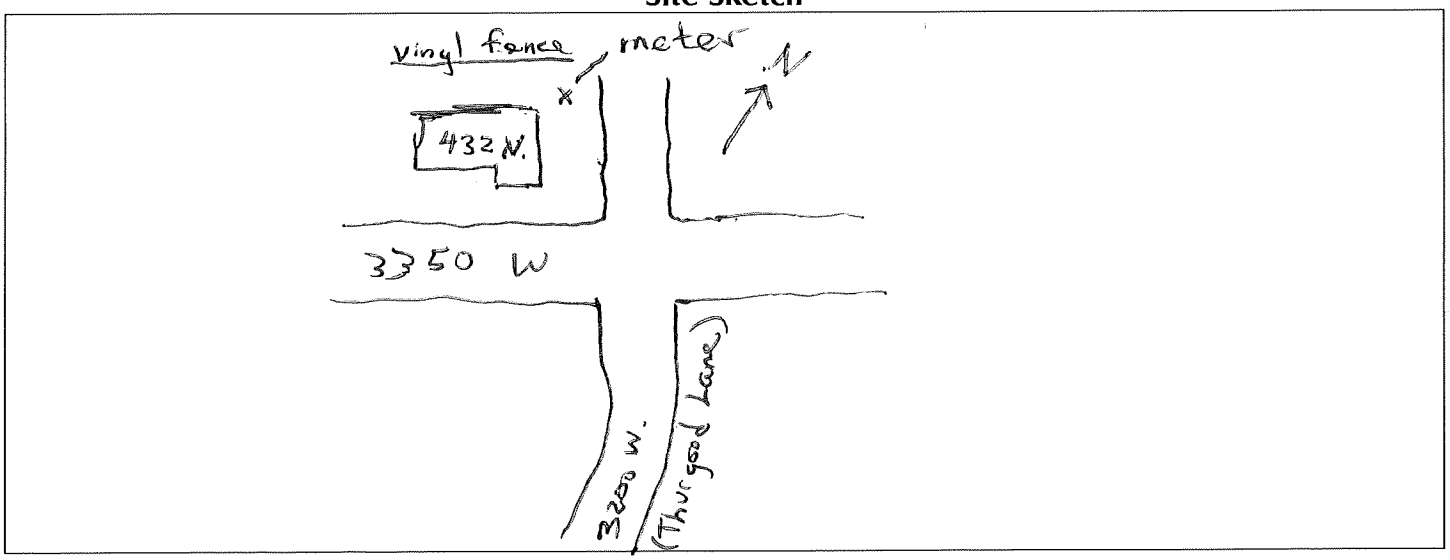
Start Time: 3:01 PM End Time: 3:21 PM Duration: 20 min
Meter Event Number: 3 LEQ(h): 41.9 dBA LMin 32.8 dBA LMax: 54.9 dBA

Major Sources:
Background Noise:
Unusual Events:
Other Notes:

Traffic

Road	3350 W.		3200 W (Thurgood)			
Direction of Travel	E	W	N	S		
Traffic Speed	25	25	25	25		
Autos	3	None	1	2		
Medium Trucks	0		0	0		
Heavy Trucks	0		0	0		
Motorcycles	0		0	0		

Site Sketch



Site 5. Looking West

Site 5. Looking East

STUDY 3
Notes _____

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Measuring Parameters:
Range 30- 90dB Weighting A Time Constant SLOW
Threshold OFF Exchange Rate 3dB Peak Weighting A

Session Started Session Stopped Run Time
01-AUG-19 @ 14:31:11 01-AUG-19 @ 14:51:11 0:20:00
Peak Level 79.8dB 01-AUG-19 @ 14:39:46
Max Level 54.9dB 01-AUG-19 @ 14:41:50
Min Level 32.8dB 01-AUG-19 @ 14:41:18
Overload 0.00%

LEQ 41.9dB SEL(3) 72.7dB TWA 28.1dB TAKM5 44.5dB
LDN 41.9dB CNEL 41.9dB Pa2Sec 0.0
L5 46.7dB L10 43.6dB L50 38.8dB L90 37.0dB

LOGGING (30 SEC)	LEQ	LMAX	LPK	L10	L90	
Study 3						
14:31:41	39.9dB	48.8dB	72.1dB	41.1dB	37.7dB	
14:32:11	39.9dB	42.1dB	63.7dB	41.1dB	37.5dB	
14:32:41	40.2dB	43.8dB	64.4dB	41.1dB	39.2dB	
14:33:11	39.8dB	41.1dB	64.0dB	40.4dB	39.2dB	
14:33:41	40.5dB	46.2dB	66.5dB	41.7dB	39.3dB	
14:34:11	42.1dB	48.1dB	71.3dB	43.4dB	40.2dB	
14:34:41	40.5dB	42.1dB	70.5dB	41.6dB	39.5dB	
14:35:11	43.2dB	51.2dB	74.7dB	45.1dB	40.6dB	
14:35:41	40.1dB	42.1dB	59.8dB	40.8dB	39.5dB	
14:36:11	39.6dB	43.9dB	64.2dB	40.9dB	38.3dB	
14:36:41	38.3dB	39.5dB	63.0dB	39.1dB	37.8dB	
14:37:11	38.1dB	39.7dB	63.1dB	38.8dB	37.7dB	
14:37:41	37.7dB	39.6dB	66.1dB	38.3dB	37.3dB	
14:38:11	38.0dB	41.5dB	61.1dB	40.2dB	37.1dB	
14:38:41	43.3dB	46.1dB	71.0dB	44.8dB	41.1dB	
14:39:11	46.1dB	54.8dB	67.6dB	50.7dB	38.0dB	
14:39:41	37.4dB	39.9dB	65.5dB	38.1dB	36.6dB	OL
14:40:11	45.8dB	53.2dB	79.8dB	52.6dB	36.9dB	
14:40:41	47.2dB	54.8dB	69.0dB	52.9dB	39.8dB	
14:41:11	43.5dB	52.9dB	66.7dB	49.4dB	33.6dB	
14:41:41	38.4dB	46.4dB	61.5dB	42.4dB	33.4dB	
14:42:11	50.0dB	54.9dB	73.7dB	53.6dB	39.8dB	
14:42:41	45.7dB	53.3dB	75.6dB	48.7dB	40.2dB	
14:43:11	41.5dB	48.7dB	75.0dB	45.3dB	38.3dB	

14:43:41	38.0dB	42.1dB	63.2dB	38.8dB	36.9dB
14:44:11	37.4dB	39.8dB	62.6dB	38.3dB	36.4dB
14:44:41	42.4dB	49.7dB	78.7dB	46.6dB	37.7dB
14:45:11	37.4dB	39.1dB	58.2dB	38.4dB	36.5dB
14:45:41	39.3dB	44.9dB	71.4dB	41.1dB	37.0dB
14:46:11	39.9dB	44.1dB	70.3dB	42.0dB	37.9dB
14:46:41	38.9dB	42.3dB	59.4dB	39.9dB	37.9dB
14:47:11	45.0dB	51.5dB	70.7dB	48.6dB	39.1dB
14:47:41	37.9dB	43.4dB	57.7dB	38.6dB	37.1dB
14:48:11	37.8dB	39.9dB	65.3dB	38.6dB	36.9dB
14:48:41	37.4dB	38.7dB	57.1dB	38.1dB	36.8dB
14:49:11	38.3dB	40.4dB	57.4dB	39.9dB	37.3dB
14:49:41	37.6dB	39.6dB	60.1dB	38.4dB	36.5dB
14:50:11	38.0dB	40.0dB	59.7dB	39.3dB	37.1dB
14:50:41	37.6dB	42.0dB	61.2dB	38.6dB	36.5dB
14:51:11	39.3dB	48.1dB	71.6dB	40.5dB	37.1dB

TRAFFIC NOISE MEASUREMENT DATA SHEET

BIO-WEST
www.bio-west.com
435.752.4202

Project: SR-193
Date: 8-1-2019
Technician: S. Keenan
Site Number: 6
Site Description: 246 S. 3000 W.

Equipment Check (First and Last Measurement)

Meter: Rest 2900 #1
Calibrator:
Battery Check: ✓
Calibration: First measurement: +0.2 dB
Response Setting: ☐Set to Slow (typically) Fast
Last measurement: _____ dB
Frequency Weighting: ☒Set to A-weighted Sound
Range Setting: Low: _____ dBA; High: _____ dBA

Weather

Temp: 84°
Humidity: 33%
Pressure: 29.83
Wind (MPH/Dir): 7/SW
Clouds: Clear

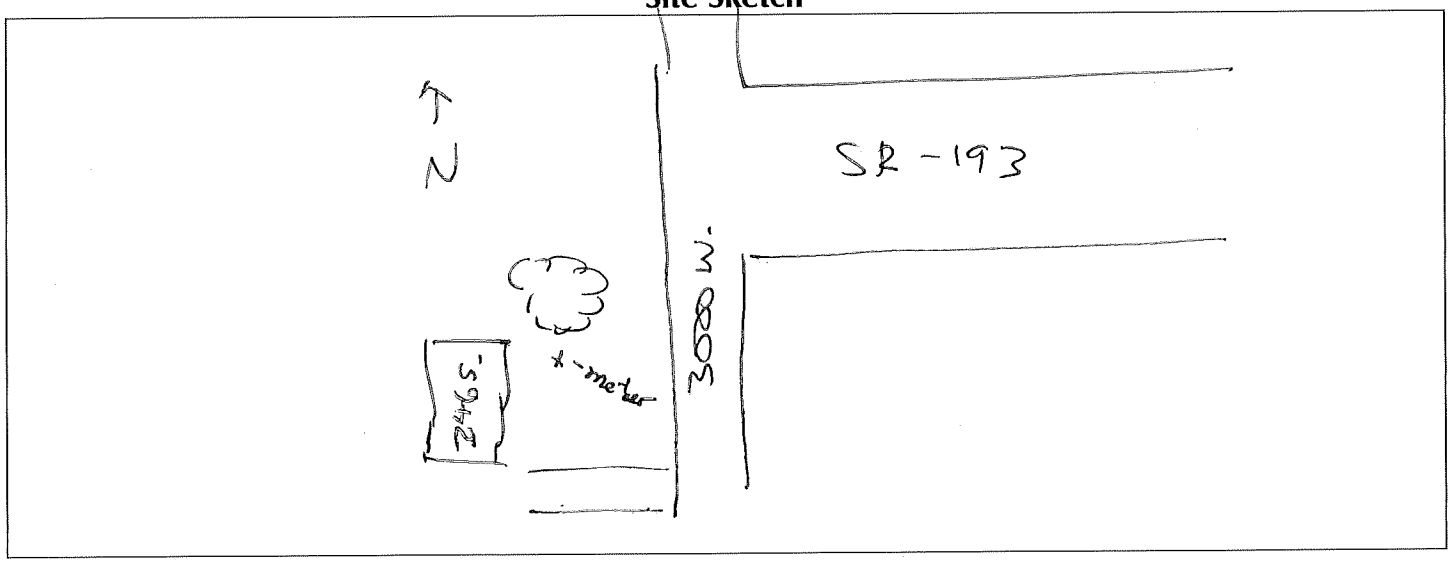
Noise Measurement Results

Start Time: 1:40 PM
End Time: 2:00 PM
Duration: 20 min
Meter Event Number: 1
LEQ(h): 59.3 dBA
LMin 41.1 dBA
LMax: 80.7 dBA
Major Sources: Traffic
Background Noise: —
Unusual Events: —
Other Notes:

Traffic

Road	3000 W.		SR-193			
Direction of Travel	N	S	E	W		
Traffic Speed	35	35	50	50		
Autos	64	75	54	73		
Medium Trucks	2	5	3	2		
Heavy Trucks	1	3	2	2		
Motorcycles	1	1	0	0		

Site Sketch



Site 6. Looking West

Site 6. Looking East

STUDY 1
Notes _____

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_____

Measuring Parameters:
Range 40-100dB Weighting A Time Constant FAST
Threshold OFF Exchange Rate 3dB Peak Weighting A

Session Started Session Stopped Run Time
01-AUG-19 @ 13:31:08 01-AUG-19 @ 13:51:09 0:20:00
Peak Level 91.9dB 01-AUG-19 @ 13:39:25
Max Level 80.7dB 01-AUG-19 @ 13:39:25
Min Level 41.1dB 01-AUG-19 @ 13:47:42
Overload 0.00%

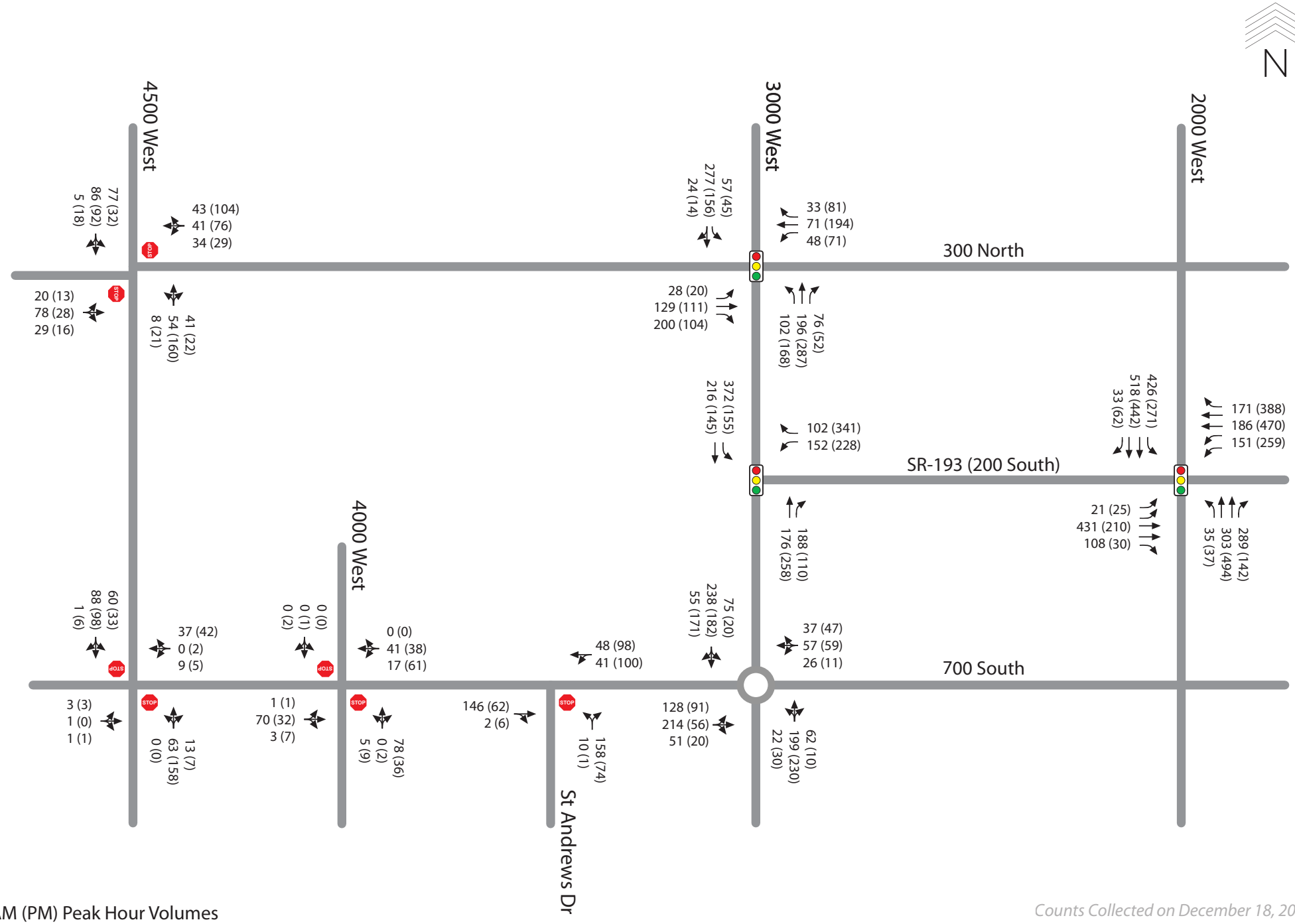
LEQ 59.3dB SEL(3) 90.1dB TWA 45.5dB TAKM5 63.2dB
LDN 59.3dB CNEL 59.3dB Pa2Sec 0.4
L5 64.6dB L10 62.0dB L50 53.5dB L90 46.5dB

LOGGING (30 SEC)	LEQ	LMAX	LPK	L10	L90
Study 1					
13:31:38	58.2dB	65.9dB	80.2dB	62.4dB	48.6dB
13:32:08	57.6dB	66.0dB	77.0dB	63.0dB	47.2dB
13:32:38	52.3dB	61.8dB	74.1dB	56.5dB	44.5dB
13:33:08	51.4dB	55.4dB	68.8dB	53.6dB	49.3dB
13:33:38	58.8dB	70.6dB	79.7dB	61.5dB	48.9dB
13:34:08	49.8dB	55.4dB	72.5dB	53.2dB	43.8dB
13:34:38	53.5dB	62.9dB	74.5dB	58.3dB	43.3dB
13:35:08	54.8dB	64.0dB	74.5dB	57.9dB	48.6dB
13:35:38	62.4dB	73.1dB	83.7dB	66.5dB	52.7dB
13:36:08	56.0dB	62.9dB	76.8dB	59.9dB	45.9dB
13:36:38	52.0dB	59.9dB	75.4dB	55.3dB	46.3dB
13:37:08	53.2dB	60.8dB	74.0dB	58.6dB	47.2dB
13:37:38	56.8dB	64.2dB	75.9dB	61.7dB	47.3dB
13:38:08	57.3dB	65.0dB	76.9dB	60.5dB	52.9dB
13:38:38	56.9dB	63.5dB	75.3dB	60.8dB	50.8dB
13:39:08	58.4dB	65.4dB	77.4dB	60.4dB	54.5dB
13:39:38	70.2dB	80.7dB	91.9dB	73.9dB	54.6dB
13:40:08	53.0dB	57.8dB	70.6dB	55.1dB	49.1dB
13:40:38	54.9dB	61.4dB	73.2dB	59.3dB	49.2dB
13:41:08	52.0dB	57.8dB	71.0dB	56.2dB	46.5dB
13:41:38	60.2dB	70.0dB	81.6dB	63.9dB	48.7dB
13:42:08	58.5dB	66.9dB	79.6dB	62.8dB	49.7dB
13:42:38	62.7dB	70.8dB	83.2dB	68.2dB	53.2dB
13:43:08	59.3dB	64.6dB	77.2dB	62.6dB	55.2dB

13:43:38	61.6dB	67.1dB	78.2dB	65.0dB	52.4dB
13:44:08	56.8dB	62.1dB	73.8dB	60.6dB	48.1dB
13:44:38	55.7dB	62.6dB	75.5dB	60.3dB	43.7dB
13:45:08	55.1dB	61.7dB	76.6dB	59.6dB	49.1dB
13:45:38	56.4dB	62.3dB	74.4dB	58.7dB	51.2dB
13:46:08	63.0dB	70.4dB	82.5dB	67.9dB	52.9dB
13:46:38	54.5dB	65.8dB	77.9dB	59.6dB	45.9dB
13:47:08	58.6dB	68.1dB	80.6dB	64.6dB	49.6dB
13:47:38	51.2dB	61.8dB	77.9dB	55.6dB	43.5dB
13:48:08	57.3dB	68.9dB	80.6dB	62.7dB	42.4dB
13:48:38	54.1dB	63.1dB	76.3dB	59.0dB	46.0dB
13:49:08	62.4dB	68.6dB	81.7dB	67.3dB	49.7dB
13:49:38	60.8dB	67.6dB	80.9dB	65.8dB	45.7dB
13:50:08	55.8dB	64.1dB	76.2dB	61.6dB	45.3dB
13:50:38	55.3dB	63.1dB	78.1dB	60.0dB	46.9dB
13:51:08	52.0dB	61.4dB	73.3dB	57.7dB	43.7dB

Attachment C

Traffic Volumes



AM (PM) Peak Hour Volumes

Counts Collected on December 18, 2018

Existing Peak Hour Volumes

SR-193 State Environmental Study

LOS C Traffic Volumes

Information on LOS C Traffic Conditions was obtained from WDC Project Memos and Correspondance

LOS C Traffic Conditions

Facility	LOS C Volume (vphpl)	Speed Limit (mph)	
WDC Mainline	1600	65	Posted
WDC Interchange Ramps	1600	45	Assumed Value
Arterials	700	45	Posted

Traffic Fleet Mix (vphpl):

Type	%	WDC Mainline	WDC On & Off Ramps	Arterials
Cars	92	1472	1472	644
M Trucks	5	80	80	35
H Trucks	3	48	48	21
Buses	0			
MC	0			
	Total	1600	1600	700

From: Jerry Chaney [mailto:jchaney@utah.gov]

Sent: Tuesday, April 24, 2012 2:41 PM

To: Overcast, Curt

Cc: Kilpatrick, Kevin; Brandon Weston; Randy Jefferies
Subject: Re: WDC Link Volumes

Curt:

Thanks for the spreadsheet. Interesting info.

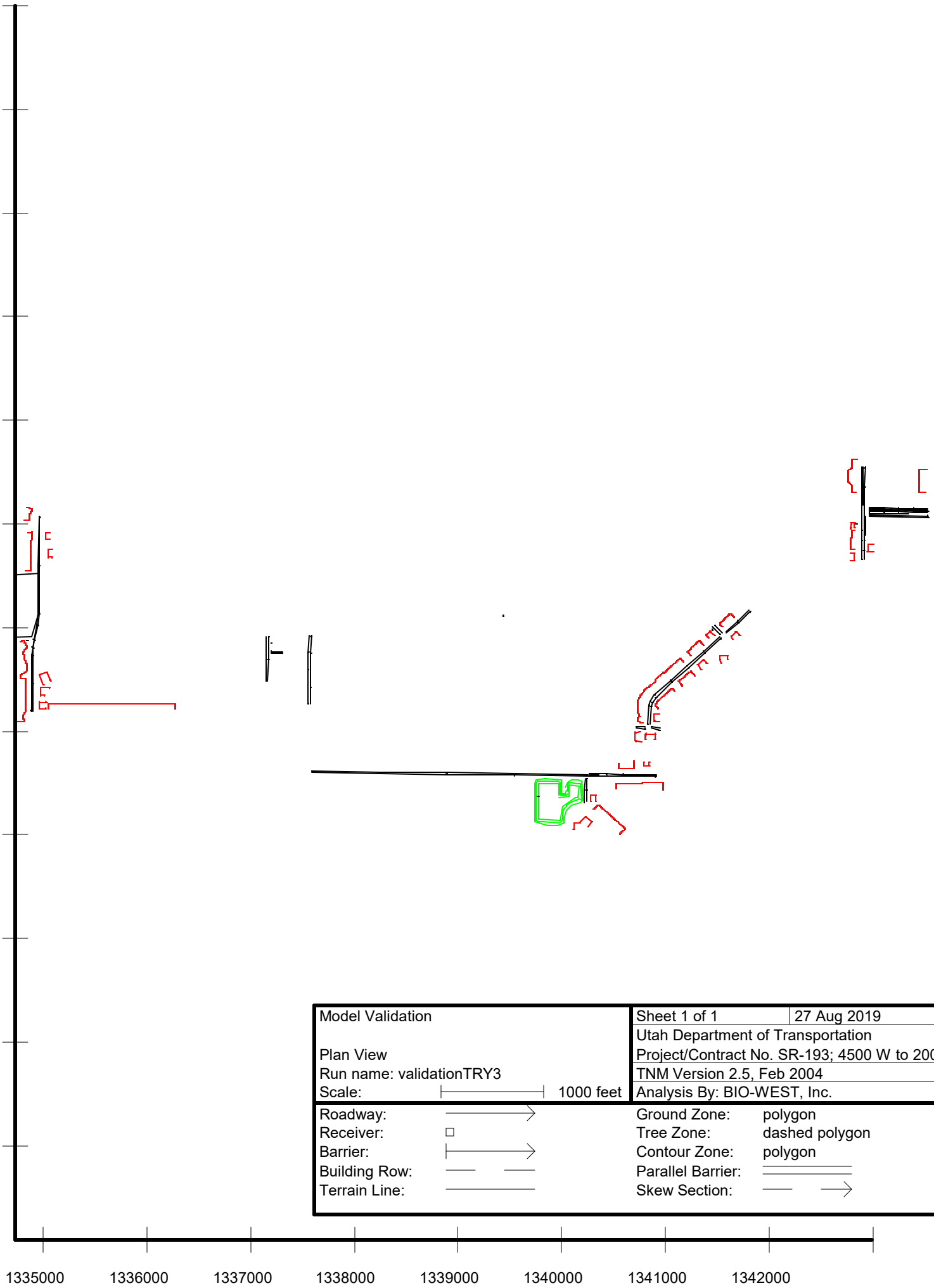
The Noise Policy states that we need to use worst case (LOS C) volumes for the analysis, we don't want to deviate from this standard.

For the WDC noise analysis we need to use LOS C traffic volumes consistent with the Highway Capacity Manual.
According to my documentation LOS C conditions are as follows:
Highway segments: 1600 vphpl at the posted speed limit
Arterial segments: 700 vphpl at the posted speed limit
Thanks,
Jerry

Attachment D

Traffic Noise Model

Sound Level Results Tables



Model Validation	Sheet 1 of 1 — 27 Aug 2019
	Utah Department of Transportation
Plan View	Project/Contract No. SR-193; 4500 W to 2000 W,
Run name: validationTRY3	TNM Version 2.5, Feb 2004
Scale: 1000 feet	Analysis By: BIO-WEST, Inc.

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

Utah Department of Transportation
BIO-WEST, Inc.

27 August 2019
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SR-193; 4500 W to 2000 W, PIN 16518
RUN: Model Validation
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 88 deg F, 28% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Site 3	31	1	43.1	41.7	66	-1.4	10	----	41.7	0.0	8	-8.0
Site 5	88	1	43.1	39.8	66	-3.3	10	----	39.8	0.0	8	-8.0
Site 1	89	1	56.0	53.9	66	-2.1	10	----	53.9	0.0	8	-8.0
Site 2	90	1	41.9	34.6	66	-7.3	10	----	34.6	0.0	8	-8.0
Site 4	91	1	43.3	26.9	66	-16.4	10	----	26.9	0.0	8	-8.0
Site 6	122	1	59.3	60.2	66	0.9	10	----	60.2	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	6	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Utah Department of Transportation
BIO-WEST, Inc.

19 September 2019
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SR-193; 4500 W to 2000 W, PIN 16518
RUN: Existing Conditions
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 86 deg F, 28% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Site 3	31	1	43.1	45.8	66	2.7	10	----	45.8	0.0	7	-7.0
Site 5	88	1	43.1	40.8	66	-2.3	10	----	40.8	0.0	7	-7.0
Site 1	89	1	56.0	59.6	66	3.6	10	----	59.6	0.0	7	-7.0
Site 2	90	1	41.9	37.3	66	-4.6	10	----	37.3	0.0	7	-7.0
Site 4	91	1	43.3	32.3	66	-11.0	10	----	32.3	0.0	7	-7.0
Site 6	122	1	59.3	66.3	66	7.0	10	Snd Lvl	66.3	0.0	7	-7.0
549 S SR-110	123	1	0.0	44.0	66	44.0	10	----	44.0	0.0	7	-7.0
530 S 4500 WEST	124	1	0.0	50.1	66	50.1	10	----	50.1	0.0	7	-7.0
538 S 4500 WEST	125	1	0.0	47.2	66	47.2	10	----	47.2	0.0	7	-7.0
560 South 4500 West	126	1	0.0	50.1	66	50.1	10	----	50.1	0.0	7	-7.0
572 S 4500 WEST	127	1	0.0	48.6	66	48.6	10	----	48.6	0.0	7	-7.0
571 South 4500 West	128	1	0.0	41.7	66	41.7	10	----	41.7	0.0	7	-7.0
614 S 4500 WEST	129	1	0.0	50.4	66	50.4	10	----	50.4	0.0	7	-7.0
638 S 4500 WEST	130	1	0.0	45.0	66	45.0	10	----	45.0	0.0	7	-7.0
326 S 4500 WEST	131	1	0.0	48.6	66	48.6	10	----	48.6	0.0	7	-7.0
314 S 4500 WEST	132	1	0.0	48.1	66	48.1	10	----	48.1	0.0	7	-7.0
295 S 4500 WEST	133	1	0.0	48.5	66	48.5	10	----	48.5	0.0	7	-7.0
226 South 4500 West	134	1	0.0	45.4	66	45.4	10	----	45.4	0.0	7	-7.0
463 S 4100 WEST	135	1	0.0	32.7	66	32.7	10	----	32.7	0.0	7	-7.0
4452 W 625 SOUTH	136	1	0.0	41.4	66	41.4	10	----	41.4	0.0	7	-7.0
321 S 4500 WEST	137	1	0.0	47.6	66	47.6	10	----	47.6	0.0	7	-7.0
4468 W 625 SOUTH	138	1	0.0	44.9	66	44.9	10	----	44.9	0.0	7	-7.0
4484 W 625 SOUTH	139	1	0.0	50.1	66	50.1	10	----	50.1	0.0	7	-7.0
4436 W 625 SOUTH	140	1	0.0	39.9	66	39.9	10	----	39.9	0.0	7	-7.0

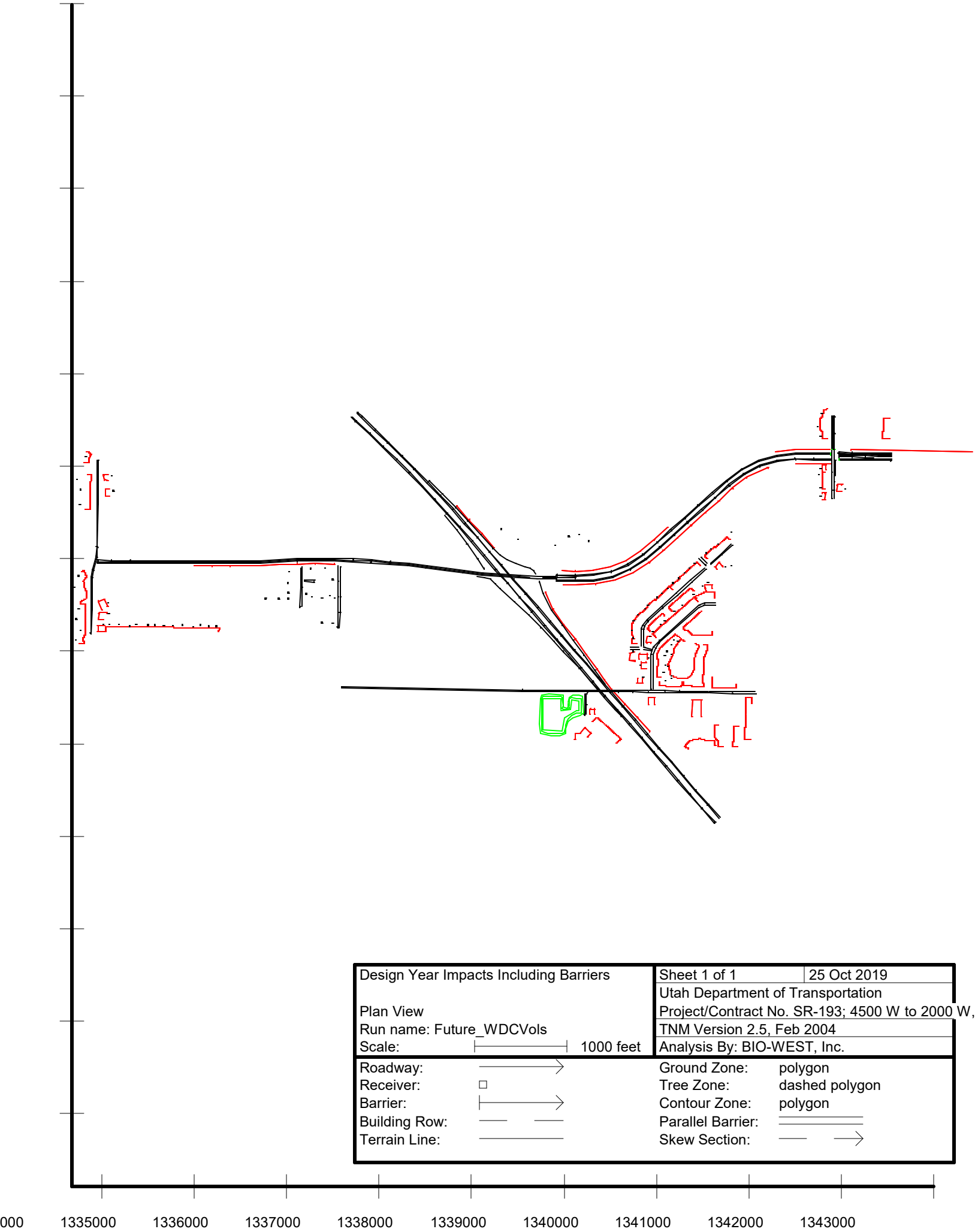
4418 W 625 SOUTH	141	1	0.0	38.6	66	38.6	10	----	38.6	0.0	7	-7.0
4402 W 625 SOUTH	142	1	0.0	37.2	66	37.2	10	----	37.2	0.0	7	-7.0
4386 W 625 SOUTH	143	1	0.0	36.5	66	36.5	10	----	36.5	0.0	7	-7.0
4370 W 625 SOUTH	144	1	0.0	35.7	66	35.7	10	----	35.7	0.0	7	-7.0
4352 W 625 SOUTH	145	1	0.0	34.9	66	34.9	10	----	34.9	0.0	7	-7.0
4336 W 625 SOUTH	146	1	0.0	34.4	66	34.4	10	----	34.4	0.0	7	-7.0
4320 W 625 SOUTH	147	1	0.0	33.4	66	33.4	10	----	33.4	0.0	7	-7.0
4302 W 625 SOUTH	148	1	0.0	33.1	66	33.1	10	----	33.1	0.0	7	-7.0
4286 W 625 SOUTH	149	1	0.0	32.5	66	32.5	10	----	32.5	0.0	7	-7.0
4268 W 625 SOUTH	150	1	0.0	32.5	66	32.5	10	----	32.5	0.0	7	-7.0
4040 W 475 SOUTH	151	1	0.0	32.5	66	32.5	10	----	32.5	0.0	7	-7.0
741 S ST ANDREWS	152	1	0.0	46.5	66	46.5	10	----	46.5	0.0	7	-7.0
3449 West 700 South	153	1	0.0	48.8	66	48.8	10	----	48.8	0.0	7	-7.0
3427 West 700 South	154	1	0.0	49.2	66	49.2	10	----	49.2	0.0	7	-7.0
3405 West 700 South	155	1	0.0	49.3	66	49.3	10	----	49.3	0.0	7	-7.0
3383 West 700 South	156	1	0.0	49.3	66	49.3	10	----	49.3	0.0	7	-7.0
3361 West 700 South	157	1	0.0	49.5	66	49.5	10	----	49.5	0.0	7	-7.0
3378 West 700 South	158	7	0.0	47.0	66	47.0	10	----	47.0	0.0	7	-7.0
3370 West 700 South	159	1	0.0	46.8	66	46.8	10	----	46.8	0.0	7	-7.0
765 S ST ANDREWS	160	1	0.0	42.8	66	42.8	10	----	42.8	0.0	7	-7.0
777 S ST ANDREWS	161	1	0.0	40.9	66	40.9	10	----	40.9	0.0	7	-7.0
791 S ST ANDREWS	162	1	0.0	39.9	66	39.9	10	----	39.9	0.0	7	-7.0
803 S ST ANDREWS	163	1	0.0	39.0	66	39.0	10	----	39.0	0.0	7	-7.0
766 S ST ANDREWS	164	1	0.0	33.5	66	33.5	10	----	33.5	0.0	7	-7.0
795 S 3525 WEST	167	1	0.0	30.1	66	30.1	10	----	30.1	0.0	7	-7.0
696 S 3300 WEST	168	1	0.0	49.2	66	49.2	10	----	49.2	0.0	7	-7.0
3353 W 625 SOUTH	169	1	0.0	35.3	66	35.3	10	----	35.3	0.0	7	-7.0
662 S 3300 WEST	170	1	0.0	46.4	66	46.4	10	----	46.4	0.0	7	-7.0
622 S 3350 WEST	171	1	0.0	35.3	66	35.3	10	----	35.3	0.0	7	-7.0
624 S 3300 WEST	172	1	0.0	34.9	66	34.9	10	----	34.9	0.0	7	-7.0
618 S 3350 WEST	173	1	0.0	35.3	66	35.3	10	----	35.3	0.0	7	-7.0
592 S 3350 WEST	174	1	0.0	34.4	66	34.4	10	----	34.4	0.0	7	-7.0
564 S 3350 WEST	175	1	0.0	33.8	66	33.8	10	----	33.8	0.0	7	-7.0
542 S 3350 WEST	176	1	0.0	34.0	66	34.0	10	----	34.0	0.0	7	-7.0
536 S 3350 WEST	177	1	0.0	34.4	66	34.4	10	----	34.4	0.0	7	-7.0
524 S 3350 WEST	178	1	0.0	34.5	66	34.5	10	----	34.5	0.0	7	-7.0
506 S 3350 WEST	179	1	0.0	34.0	66	34.0	10	----	34.0	0.0	7	-7.0
498 S 3350 WEST	180	1	0.0	33.9	66	33.9	10	----	33.9	0.0	7	-7.0
583 S 3350 WEST	181	1	0.0	37.9	66	37.9	10	----	37.9	0.0	7	-7.0
571 S 3350 WEST	182	1	0.0	37.7	66	37.7	10	----	37.7	0.0	7	-7.0
539 S 3350 WEST	183	1	0.0	37.7	66	37.7	10	----	37.7	0.0	7	-7.0

519 S 3350 WEST	184	1	0.0	37.2	66	37.2	10	----	37.2	0.0	7	-7.0
501 S 3350 WEST	185	1	0.0	37.6	66	37.6	10	----	37.6	0.0	7	-7.0
479 S 3350 WEST	186	1	0.0	36.6	66	36.6	10	----	36.6	0.0	7	-7.0
479 S 3350 WEST	187	1	0.0	32.4	66	32.4	10	----	32.4	0.0	7	-7.0
458 S 3350 WEST	188	1	0.0	33.8	66	33.8	10	----	33.8	0.0	7	-7.0
436 S 3200 WEST	189	1	0.0	35.5	66	35.5	10	----	35.5	0.0	7	-7.0
428 S 3350 WEST	190	1	0.0	36.5	66	36.5	10	----	36.5	0.0	7	-7.0
416 S 3350 WEST	191	1	0.0	36.8	66	36.8	10	----	36.8	0.0	7	-7.0
482 S 3200 WEST	192	1	0.0	34.1	66	34.1	10	----	34.1	0.0	7	-7.0
431 S 3350 WEST	193	1	0.0	37.9	66	37.9	10	----	37.9	0.0	7	-7.0
290 S 3000 WEST	194	1	0.0	46.6	66	46.6	10	----	46.6	0.0	7	-7.0
277 S 3000 WEST	195	1	0.0	55.3	66	55.3	10	----	55.3	0.0	7	-7.0
270 S 3000 WEST	196	1	0.0	53.7	66	53.7	10	----	53.7	0.0	7	-7.0
258 S 3000 WEST	197	1	0.0	55.5	66	55.5	10	----	55.5	0.0	7	-7.0
246 S 3000 WEST	198	1	0.0	53.8	66	53.8	10	----	53.8	0.0	7	-7.0
172 S 3000 WEST	199	1	0.0	60.1	66	60.1	10	----	60.1	0.0	7	-7.0
136 S 3000 WEST	200	1	0.0	57.9	66	57.9	10	----	57.9	0.0	7	-7.0
112 S 3000 WEST	201	1	0.0	57.1	66	57.1	10	----	57.1	0.0	7	-7.0
172 S 2875 WEST	202	1	0.0	49.5	66	49.5	10	----	49.5	0.0	7	-7.0
168 S 2875 WEST	203	1	0.0	49.5	66	49.5	10	----	49.5	0.0	7	-7.0
164 S 2875 WEST	204	1	0.0	49.5	66	49.5	10	----	49.5	0.0	7	-7.0
160 S 2875 WEST	205	1	0.0	49.5	66	49.5	10	----	49.5	0.0	7	-7.0
148 S 2875 WEST	206	1	0.0	49.3	66	49.3	10	----	49.3	0.0	7	-7.0
144 S 2875 WEST	207	1	0.0	49.2	66	49.2	10	----	49.2	0.0	7	-7.0
140 S 2875 WEST	208	1	0.0	49.1	66	49.1	10	----	49.1	0.0	7	-7.0
136 S 2875 WEST	209	1	0.0	49.0	66	49.0	10	----	49.0	0.0	7	-7.0
300 N 3500 W	210	1	0.0	32.2	66	32.2	10	----	32.2	0.0	7	-7.0
300 N 3500 W	211	1	0.0	32.8	66	32.8	10	----	32.8	0.0	7	-7.0
300 N 3500 W	212	1	0.0	33.0	66	33.0	10	----	33.0	0.0	7	-7.0
300 N 3500 W	213	1	0.0	33.4	66	33.4	10	----	33.4	0.0	7	-7.0
300 N 3500 W	214	1	0.0	32.0	66	32.0	10	----	32.0	0.0	7	-7.0
4018 W 475 SOUTH	215	1	0.0	35.8	66	35.8	10	----	35.8	0.0	7	-7.0
4045 W 475 SOUTH	216	1	0.0	34.3	66	34.3	10	----	34.3	0.0	7	-7.0
503 S 4100 WEST	217	1	0.0	35.3	66	35.3	10	----	35.3	0.0	7	-7.0
460 S 4100 WEST	218	1	0.0	32.3	66	32.3	10	----	32.3	0.0	7	-7.0
478 S 4100 WEST	219	1	0.0	32.4	66	32.4	10	----	32.4	0.0	7	-7.0
512 S 4100 WEST	220	1	0.0	32.5	66	32.5	10	----	32.5	0.0	7	-7.0
4020 W 550 SOUTH	221	1	0.0	37.9	66	37.9	10	----	37.9	0.0	7	-7.0
4048 W 550 SOUTH	222	1	0.0	33.2	66	33.2	10	----	33.2	0.0	7	-7.0
529 S 4100 WEST	223	1	0.0	33.2	66	33.2	10	----	33.2	0.0	7	-7.0
4023 W 550 SOUTH	224	1	0.0	36.4	66	36.4	10	----	36.4	0.0	7	-7.0

4116 W 550 SOUTH	225	1	0.0	32.4	66	32.4	10	----	32.4	0.0	7	-7.0
4140 W 550 SOUTH	226	1	0.0	32.1	66	32.1	10	----	32.1	0.0	7	-7.0
4164 W 550 SOUTH	227	1	0.0	31.9	66	31.9	10	----	31.9	0.0	7	-7.0
4051 W 550 SOUTH	228	1	0.0	33.4	66	33.4	10	----	33.4	0.0	7	-7.0
3850 W 700 S	229	1	0.0	45.0	66	45.0	10	----	45.0	0.0	7	-7.0
534 South 4500 West	230	1	0.0	48.2	66	48.2	10	----	48.2	0.0	7	-7.0
446 S 3350 WEST	231	1	0.0	35.1	66	35.1	10	----	35.1	0.0	7	-7.0
449 S 3350 WEST	232	1	0.0	36.9	66	36.9	10	----	36.9	0.0	7	-7.0
438 S 3200 WEST	233	1	0.0	35.2	66	35.2	10	----	35.2	0.0	7	-7.0
413 S 3350 WEST	234	1	0.0	38.1	66	38.1	10	----	38.1	0.0	7	-7.0
404 S 3350 WEST	235	1	0.0	38.6	66	38.6	10	----	38.6	0.0	7	-7.0
396 S 3350 WEST	237	1	0.0	39.3	66	39.3	10	----	39.3	0.0	7	-7.0
296 S 4500 WEST	238	1	0.0	46.6	66	46.6	10	----	46.6	0.0	7	-7.0
674 S 3300 WEST	240	1	0.0	44.4	66	44.4	10	----	44.4	0.0	7	-7.0
651 S 3300 WEST	241	1	0.0	41.0	66	41.0	10	----	41.0	0.0	7	-7.0
623 S 3300 WEST	242	1	0.0	40.5	66	40.5	10	----	40.5	0.0	7	-7.0
611 S 3300 WEST	243	1	0.0	39.7	66	39.7	10	----	39.7	0.0	7	-7.0
642 S 3275 WEST	244	1	0.0	40.0	66	40.0	10	----	40.0	0.0	7	-7.0
667 S 3300 WEST	245	1	0.0	43.0	66	43.0	10	----	43.0	0.0	7	-7.0
658 S 3275 WEST	246	1	0.0	43.4	66	43.4	10	----	43.4	0.0	7	-7.0
681 S 3300 WEST	247	1	0.0	47.0	66	47.0	10	----	47.0	0.0	7	-7.0
676 S 3275 WEST	248	1	0.0	48.5	66	48.5	10	----	48.5	0.0	7	-7.0
676 S 3275 WEST	249	1	0.0	49.6	66	49.6	10	----	49.6	0.0	7	-7.0
693 S 3300 WEST	250	1	0.0	50.8	66	50.8	10	----	50.8	0.0	7	-7.0
673 S 3275 WEST	251	1	0.0	48.4	66	48.4	10	----	48.4	0.0	7	-7.0
3264 W 700 SOUTH	252	1	0.0	50.0	66	50.0	10	----	50.0	0.0	7	-7.0
696 S 3250 WEST	253	1	0.0	56.3	66	56.3	10	----	56.3	0.0	7	-7.0
678 S 3250 WEST	254	1	0.0	47.6	66	47.6	10	----	47.6	0.0	7	-7.0
662 S 3250 WEST	255	1	0.0	45.0	66	45.0	10	----	45.0	0.0	7	-7.0
657 S 3275 WEST	256	1	0.0	43.1	66	43.1	10	----	43.1	0.0	7	-7.0
644 S 3250 WEST	257	1	0.0	42.3	66	42.3	10	----	42.3	0.0	7	-7.0
629 S 3275 WEST	258	1	0.0	38.9	66	38.9	10	----	38.9	0.0	7	-7.0
628 S 3250 WEST	259	1	0.0	40.0	66	40.0	10	----	40.0	0.0	7	-7.0
612 S THURGOOD	260	1	0.0	38.9	66	38.9	10	----	38.9	0.0	7	-7.0
3267 W 700 SOUTH	261	1	0.0	60.3	66	60.3	10	----	60.3	0.0	7	-7.0
3214 W 700 SOUTH	262	1	0.0	52.4	66	52.4	10	----	52.4	0.0	7	-7.0
3196 W 700 SOUTH	263	1	0.0	50.2	66	50.2	10	----	50.2	0.0	7	-7.0
716 S 3175 WEST	264	1	0.0	55.7	66	55.7	10	----	55.7	0.0	7	-7.0
732 S 3175 WEST	265	1	0.0	49.9	66	49.9	10	----	49.9	0.0	7	-7.0
748 S 3175 WEST	266	1	0.0	46.2	66	46.2	10	----	46.2	0.0	7	-7.0
764 S 3175 WEST	267	1	0.0	42.5	66	42.5	10	----	42.5	0.0	7	-7.0

765 S 3225 WEST	268	1	0.0	41.0	66	41.0	10	----	41.0	0.0	7	-7.0
766 S 3225 WEST	269	1	0.0	41.0	66	41.0	10	----	41.0	0.0	7	-7.0
782 S 3175 WEST	270	1	0.0	39.9	66	39.9	10	----	39.9	0.0	7	-7.0
783 S 3225 WEST	271	1	0.0	38.8	66	38.8	10	----	38.8	0.0	7	-7.0
797 S 3225 WEST	272	1	0.0	37.6	66	37.6	10	----	37.6	0.0	7	-7.0
3302 W 800 SOUTH	273	1	0.0	39.5	66	39.5	10	----	39.5	0.0	7	-7.0
3284 W 800 SOUTH	274	1	0.0	40.6	66	40.6	10	----	40.6	0.0	7	-7.0
3267 W 700 SOUTH	275	1	0.0	41.9	66	41.9	10	----	41.9	0.0	7	-7.0
3262 W 800 SOUTH	276	1	0.0	40.1	66	40.1	10	----	40.1	0.0	7	-7.0
3246 W 800 SOUTH	277	1	0.0	39.2	66	39.2	10	----	39.2	0.0	7	-7.0
784 S 3225 WEST	278	1	0.0	39.2	66	39.2	10	----	39.2	0.0	7	-7.0
798 S 3225 WEST	279	1	0.0	37.3	66	37.3	10	----	37.3	0.0	7	-7.0
603 S 3300 WEST	280	1	0.0	40.1	66	40.1	10	----	40.1	0.0	7	-7.0
608 S 3275 WEST	283	1	0.0	38.4	66	38.4	10	----	38.4	0.0	7	-7.0
3260 W 600 SOUTH	284	1	0.0	37.8	66	37.8	10	----	37.8	0.0	7	-7.0
765 S ST ANDREWS	285	1	0.0	43.9	66	43.9	10	----	43.9	0.0	7	-7.0
SR 193 Trail 1	286	1	0.0	34.5	66	34.5	10	----	34.5	0.0	8	-8.0
SR 193 Trail 3	288	1	0.0	34.5	66	34.5	10	----	34.5	0.0	8	-8.0
SR 193 Trail 5	290	1	0.0	34.5	66	34.5	10	----	34.5	0.0	8	-8.0
SR 193 Trail 7	292	1	0.0	34.1	66	34.1	10	----	34.1	0.0	8	-8.0
SR 193 Trail 9	294	1	0.0	34.0	66	34.0	10	----	34.0	0.0	8	-8.0
SR 193 Trail 10	295	1	0.0	34.1	66	34.1	10	----	34.1	0.0	8	-8.0
SR 193 Trail 11	296	1	0.0	34.1	66	34.1	10	----	34.1	0.0	8	-8.0
SR 193 Trail 12	297	1	0.0	34.0	66	34.0	10	----	34.0	0.0	8	-8.0
SR 193 Trail 14	299	1	0.0	33.6	66	33.6	10	----	33.6	0.0	8	-8.0
SR 193 Trail 16	301	1	0.0	33.3	66	33.3	10	----	33.3	0.0	8	-8.0
SR 193 Trail 18	303	1	0.0	32.9	66	32.9	10	----	32.9	0.0	8	-8.0
SR 193 Trail 20	305	1	0.0	32.7	66	32.7	10	----	32.7	0.0	8	-8.0
SR 193 Trail 22	307	1	0.0	32.4	66	32.4	10	----	32.4	0.0	8	-8.0
SR 193 Trail 24	309	1	0.0	32.1	66	32.1	10	----	32.1	0.0	8	-8.0
Syracuse Trail 5	315	1	0.0	32.2	66	32.2	10	----	32.2	0.0	8	-8.0
Syracuse Trail 7	317	1	0.0	31.8	66	31.8	10	----	31.8	0.0	8	-8.0
Syracuse Trail 9	319	1	0.0	31.5	66	31.5	10	----	31.5	0.0	8	-8.0
Syracuse Trail 11	321	1	0.0	31.3	66	31.3	10	----	31.3	0.0	8	-8.0
Syracuse Trail 13	323	1	0.0	31.0	66	31.0	10	----	31.0	0.0	8	-8.0
Syracuse Trail 15	325	1	0.0	30.7	66	30.7	10	----	30.7	0.0	8	-8.0
Syracuse Trail 17	327	1	0.0	30.4	66	30.4	10	----	30.4	0.0	8	-8.0
Syracuse Trail 19	329	1	0.0	30.2	66	30.2	10	----	30.2	0.0	8	-8.0
Syracuse Trail 21	331	1	0.0	30.0	66	30.0	10	----	30.0	0.0	8	-8.0
3454 W 700 SOUTH	332	1	0.0	50.6	66	50.6	10	----	50.6	0.0	8	-8.0
SR 193 Trail 25	333	1	0.0	54.4	66	54.4	10	----	54.4	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	188	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0



Design Year Impacts Including Barriers	Sheet 1 of 1	25 Oct 2019
	Utah Department of Transportation	
Plan View	Project/Contract No. SR-193; 4500 W to 2000 W,	
Run name: Future_WDCVols	TNM Version 2.5, Feb 2004	
Scale: 1000 feet	Analysis By: BIO-WEST, Inc.	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

Utah Department of Transportation
BIO-WEST, Inc.

24 October 2019
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SR-193; 4500 W to 2000 W, PIN 16518
RUN: Design Year Impacts Including Barriers
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 86 deg F, 28% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

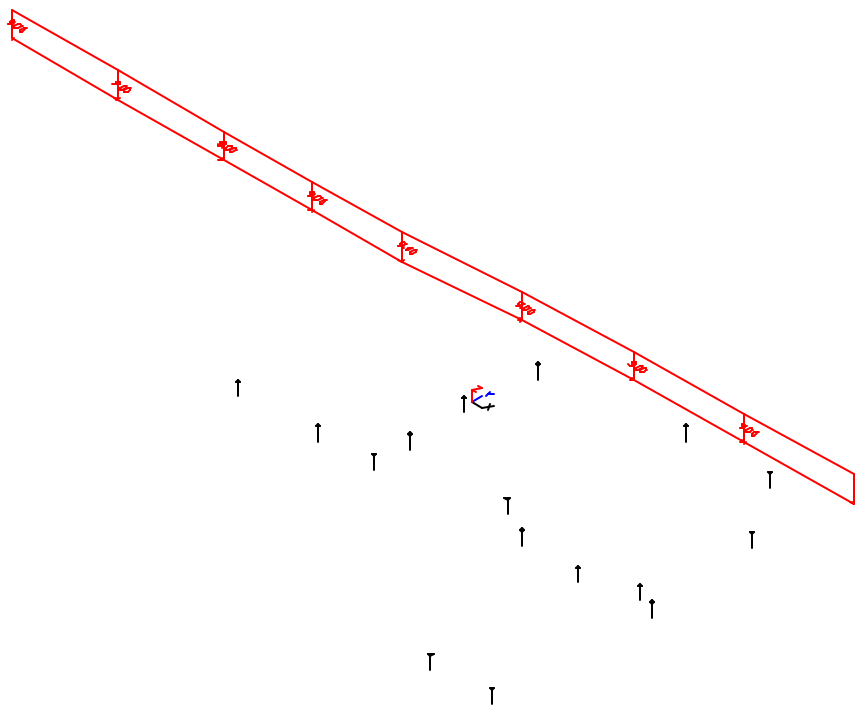
Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
549 S SR-110	123	1	44.0	51.6	66	7.6	10	----	51.4	0.2	7	-6.8
530 S 4500 WEST	124	1	50.1	53.4	66	3.3	10	----	53.4	0.0	7	-7.0
538 S 4500 WEST	125	1	47.2	49.7	66	2.5	10	----	49.7	0.0	7	-7.0
560 South 4500 West	126	1	50.1	51.0	66	0.9	10	----	51.0	0.0	7	-7.0
572 S 4500 WEST	127	1	48.6	49.5	66	0.9	10	----	49.4	0.1	7	-6.9
571 South 4500 West	128	1	41.7	49.4	66	7.7	10	----	49.2	0.2	7	-6.8
614 S 4500 WEST	129	1	50.4	51.0	66	0.6	10	----	51.0	0.0	7	-7.0
638 S 4500 WEST	130	1	45.0	46.8	66	1.8	10	----	46.7	0.1	7	-6.9
326 S 4500 WEST	131	1	48.6	50.3	66	1.7	10	----	50.3	0.0	7	-7.0
314 S 4500 WEST	132	1	48.1	49.4	66	1.3	10	----	49.4	0.0	7	-7.0
295 S 4500 WEST	133	1	48.5	50.3	66	1.8	10	----	50.3	0.0	7	-7.0
226 South 4500 West	134	1	45.4	47.2	66	1.8	10	----	47.2	0.0	7	-7.0
463 S 4100 WEST	135	1	41.9	65.1	66	23.2	10	Sub'l Inc	59.7	5.4	7	-1.6
4452 W 625 SOUTH	136	1	41.9	48.6	66	6.7	10	----	48.4	0.2	7	-6.8
321 S 4500 WEST	137	1	47.6	50.2	66	2.6	10	----	50.2	0.0	7	-7.0
4468 W 625 SOUTH	138	1	44.9	49.1	66	4.2	10	----	49.0	0.1	7	-6.9
4484 W 625 SOUTH	139	1	50.1	51.5	66	1.4	10	----	51.4	0.1	7	-6.9
4436 W 625 SOUTH	140	1	41.9	48.5	66	6.6	10	----	48.2	0.3	7	-6.7
4418 W 625 SOUTH	141	1	41.9	48.6	66	6.7	10	----	48.4	0.2	7	-6.8
4402 W 625 SOUTH	142	1	41.9	48.8	66	6.9	10	----	48.4	0.4	7	-6.6
4386 W 625 SOUTH	143	1	41.9	48.9	66	7.0	10	----	48.5	0.4	7	-6.6
4370 W 625 SOUTH	144	1	41.9	49.1	66	7.2	10	----	48.5	0.6	7	-6.4
4352 W 625 SOUTH	145	1	41.9	49.5	66	7.6	10	----	48.6	0.9	7	-6.1
4336 W 625 SOUTH	146	1	41.9	49.8	66	7.9	10	----	48.7	1.1	7	-5.9

4320 W 625 SOUTH	147	1	41.9	49.9	66	8.0	10	----	48.6	1.3	7	-5.7
4302 W 625 SOUTH	148	1	41.9	49.9	66	8.0	10	----	48.9	1.0	7	-6.0
4286 W 625 SOUTH	149	1	41.9	50.4	66	8.5	10	----	48.8	1.6	7	-5.4
4268 W 625 SOUTH	150	1	41.9	50.6	66	8.7	10	----	49.0	1.6	7	-5.4
4040 W 475 SOUTH	151	1	41.9	65.4	66	23.5	10	Sub'l Inc	60.0	5.4	7	-1.6
696 S 3300 WEST	168	1	41.9	58.4	66	16.5	10	Sub'l Inc	56.1	2.3	7	-4.7
3353 W 625 SOUTH	169	1	41.9	57.1	66	15.2	10	Sub'l Inc	52.0	5.1	7	-1.9
662 S 3300 WEST	170	1	41.9	53.8	66	11.9	10	Sub'l Inc	51.0	2.8	7	-4.2
622 S 3350 WEST	171	1	41.9	58.1	66	16.2	10	Sub'l Inc	53.8	4.3	7	-2.7
624 S 3300 WEST	172	1	41.9	53.4	66	11.5	10	Sub'l Inc	50.1	3.3	7	-3.7
618 S 3350 WEST	173	1	41.9	59.3	66	17.4	10	Sub'l Inc	55.8	3.5	7	-3.5
592 S 3350 WEST	174	1	41.9	58.4	66	16.5	10	Sub'l Inc	53.9	4.5	7	-2.5
564 S 3350 WEST	175	1	41.9	58.3	66	16.4	10	Sub'l Inc	53.2	5.1	7	-1.9
542 S 3350 WEST	176	1	41.9	57.5	66	15.6	10	Sub'l Inc	52.5	5.0	7	-2.0
536 S 3350 WEST	177	1	41.9	57.9	66	16.0	10	Sub'l Inc	52.6	5.3	7	-1.7
524 S 3350 WEST	178	1	41.9	57.9	66	16.0	10	Sub'l Inc	52.3	5.6	7	-1.4
506 S 3350 WEST	179	1	41.9	57.7	66	15.8	10	Sub'l Inc	51.9	5.8	7	-1.2
498 S 3350 WEST	180	1	41.9	57.8	66	15.9	10	Sub'l Inc	51.9	5.9	7	-1.1
583 S 3350 WEST	181	1	41.9	54.4	66	12.5	10	Sub'l Inc	50.0	4.4	7	-2.6
571 S 3350 WEST	182	1	41.9	52.9	66	11.0	10	Sub'l Inc	48.9	4.0	7	-3.0
539 S 3350 WEST	183	1	41.9	53.3	66	11.4	10	Sub'l Inc	48.9	4.4	7	-2.6
519 S 3350 WEST	184	1	41.9	52.9	66	11.0	10	Sub'l Inc	48.5	4.4	7	-2.6
501 S 3350 WEST	185	1	41.9	52.3	66	10.4	10	Sub'l Inc	48.3	4.0	7	-3.0
479 S 3350 WEST	186	1	41.9	52.4	66	10.5	10	Sub'l Inc	47.7	4.7	7	-2.3
464 S 3350 WEST	187	1	41.9	57.9	66	16.0	10	Sub'l Inc	51.6	6.3	7	-0.7
458 S 3350 WEST	188	1	41.9	57.9	66	16.0	10	Sub'l Inc	51.6	6.3	7	-0.7
436 S 3200 WEST	189	1	41.9	58.0	66	16.1	10	Sub'l Inc	52.0	6.0	7	-1.0
428 S 3350 WEST	190	1	41.9	57.9	66	16.0	10	Sub'l Inc	51.7	6.2	7	-0.8
416 S 3350 WEST	191	1	41.9	57.9	66	16.0	10	Sub'l Inc	51.7	6.2	7	-0.8
431 S 3350 WEST	193	1	41.9	51.2	66	9.3	10	----	47.6	3.6	7	-3.4
290 S 3000 WEST	194	1	46.6	55.5	66	8.9	10	----	53.1	2.4	7	-4.6
277 S 3000 WEST	195	1	53.3	59.1	66	5.8	10	----	59.0	0.1	7	-6.9
270 S 3000 WEST	196	1	53.7	58.5	66	4.8	10	----	57.0	1.5	7	-5.5
258 S 3000 WEST	197	1	55.5	63.9	66	8.4	10	----	59.8	4.1	7	-2.9
246 S 3000 WEST	198	1	53.8	67.2	66	13.4	10	Both	58.8	8.4	7	1.4
172 S 3000 WEST	199	1	54.0	64.8	66	10.8	10	Sub'l Inc	62.6	2.2	7	-4.8
136 S 3000 WEST	200	1	53.9	60.8	66	6.9	10	----	59.8	1.0	7	-6.0
112 S 3000 WEST	201	1	60.1	57.5	66	-2.6	10	----	57.2	0.3	7	-6.7
Golf Course - Hole 12 Green	210	1	41.9	66.3	66	24.4	10	Both	65.6	0.7	7	-6.3
Golf Course - Hole 7 Tee	211	1	41.9	63.9	66	22.0	10	Sub'l Inc	62.6	1.3	7	-5.7
Golf Course - Hole 6 Green	212	1	41.9	61.8	66	19.9	10	Sub'l Inc	59.7	2.1	7	-4.9

Golf Course - Hole 3 Green	213	1	41.9	61.5	66	19.6	10	Sub'l Inc	57.8	3.7	7	-3.3
Golf Course - Hole 13 Tee	214	1	41.9	67.2	66	25.3	10	Both	64.6	2.6	7	-4.4
4018 W 475 SOUTH	215	1	41.9	60.4	66	18.5	10	Sub'l Inc	58.9	1.5	7	-5.5
4045 W 475 SOUTH	216	1	41.9	55.8	66	13.9	10	Sub'l Inc	55.0	0.8	7	-6.2
503 S 4100 WEST	217	1	41.9	55.5	66	13.6	10	Sub'l Inc	54.3	1.2	7	-5.8
460 S 4100 WEST	218	1	41.9	63.2	66	21.3	10	Sub'l Inc	58.2	5.0	7	-2.0
478 S 4100 WEST	219	1	41.9	58.8	66	16.9	10	Sub'l Inc	55.0	3.8	7	-3.2
512 S 4100 WEST	220	1	41.9	55.7	66	13.8	10	Sub'l Inc	53.2	2.5	7	-4.5
4020 W 550 SOUTH	221	1	41.9	55.9	66	14.0	10	Sub'l Inc	55.3	0.6	7	-6.4
4048 W 550 SOUTH	222	1	41.9	55.1	66	13.2	10	Sub'l Inc	54.1	1.0	7	-6.0
529 S 4100 WEST	223	1	41.9	54.9	66	13.0	10	Sub'l Inc	53.9	1.0	7	-6.0
4023 W 550 SOUTH	224	1	41.9	52.7	66	10.8	10	Sub'l Inc	52.3	0.4	7	-6.6
4116 W 550 SOUTH	225	1	41.9	54.6	66	12.7	10	Sub'l Inc	52.4	2.2	7	-4.8
4140 W 550 SOUTH	226	1	41.9	55.0	66	13.1	10	Sub'l Inc	52.1	2.9	7	-4.1
4164 W 550 SOUTH	227	1	41.9	54.6	66	12.7	10	Sub'l Inc	52.1	2.5	7	-4.5
4051 W 550 SOUTH	228	1	41.9	52.4	66	10.5	10	Sub'l Inc	51.8	0.6	7	-6.4
534 South 4500 West	230	1	41.9	51.3	66	9.4	10	----	51.3	0.0	7	-7.0
446 S 3350 WEST	231	1	41.9	57.9	66	16.0	10	Sub'l Inc	51.6	6.3	7	-0.7
449 S 3350 WEST	232	1	41.9	53.5	66	11.6	10	Sub'l Inc	50.9	2.6	7	-4.4
438 S 3200 WEST	233	1	41.9	53.1	66	11.2	10	Sub'l Inc	48.5	4.6	7	-2.4
413 S 3350 WEST	234	1	41.9	52.1	66	10.2	10	Sub'l Inc	48.1	4.0	7	-3.0
404 S 3350 WEST	235	1	41.9	57.6	66	15.7	10	Sub'l Inc	51.4	6.2	7	-0.8
396 S 3350 WEST	237	1	41.9	57.7	66	15.8	10	Sub'l Inc	51.8	5.9	7	-1.1
296 S 4500 WEST	238	1	41.9	48.3	66	6.4	10	----	48.3	0.0	7	-7.0
674 S 3300 WEST	240	1	41.9	59.8	66	17.9	10	Sub'l Inc	57.2	2.6	7	-4.4
651 S 3300 WEST	241	1	41.9	55.8	66	13.9	10	Sub'l Inc	52.2	3.6	7	-3.4
623 S 3300 WEST	242	1	41.9	55.8	66	13.9	10	Sub'l Inc	51.8	4.0	7	-3.0
611 S 3300 WEST	243	1	41.9	54.9	66	13.0	10	Sub'l Inc	50.5	4.4	7	-2.6
642 S 3275 WEST	244	1	41.9	55.6	66	13.7	10	Sub'l Inc	51.1	4.5	7	-2.5
667 S 3300 WEST	245	1	41.9	55.9	66	14.0	10	Sub'l Inc	53.0	2.9	7	-4.1
658 S 3275 WEST	246	1	41.9	56.1	66	14.2	10	Sub'l Inc	53.3	2.8	7	-4.2
681 S 3300 WEST	247	1	41.9	56.6	66	14.7	10	Sub'l Inc	53.8	2.8	7	-4.2
676 S 3275 WEST	248	1	41.9	57.2	66	15.3	10	Sub'l Inc	54.9	2.3	7	-4.7
676 S 3275 WEST	249	1	41.9	57.1	66	15.2	10	Sub'l Inc	55.2	1.9	7	-5.1
693 S 3300 WEST	250	1	41.9	57.7	66	15.8	10	Sub'l Inc	55.5	2.2	7	-4.8
603 S 3300 WEST	280	1	41.9	54.2	66	12.3	10	Sub'l Inc	49.8	4.4	7	-2.6
608 S 3275 WEST	283	1	41.9	53.9	66	12.0	10	Sub'l Inc	49.3	4.6	7	-2.4
482 S 3350 WEST	341	1	41.9	58.0	66	16.1	10	Sub'l Inc	51.9	6.1	7	-0.9
Golf Course - Hole 4 Tee	345	1	41.9	61.2	66	19.3	10	Sub'l Inc	58.3	2.9	7	-4.1
Dwelling Units		**# DUs**	**Noise Reduction**									
			Min	**Avg**	**Max**							

RESULTS: SOUND LEVELS **SR-193; 4500 W to 2000 W, PIN 16518**

			dB	dB	dB
All Selected		104	0.0	2.7	8.4
All Impacted		68	0.4	3.7	8.4
All that meet NR Goal		1	8.4	8.4	8.4



Design Year Impacts Including Barriers	Sheet 1 of 1	25 Oct 2019
	Utah Department of Transportation	
Barrier View-Wall 1	Project/Contract No. SR-193; 4500 W to 2000 W,	
Run name: Future_WDCVols	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: BIO-WEST, Inc.	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

Utah Department of Transportation 25 October 2019
BIO-WEST, Inc. TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: SR-193; 4500 W to 2000 W, PIN 16518
RUN: Design Year Impacts Including Barriers
BARRIER DESIGN: Wall 1

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First	Average	Second		Area	On	Important	Volume	
				Point		Point			Struc?	Reflections?		
				ft	ft	ft	ft	sq ft			cu yd	$
Wall 1	W	point103	103	9.00	9.00	9.00	191	1722				0
		point104	104	9.00	9.00	9.00	191	1721				0
		point105	105	9.00	9.00	9.00	162	1454				0
		point106	106	9.00	9.00	9.00	162	1454				0
		point107	107	9.00	9.00	9.00	203	1827				0
		point108	108	9.00	9.00	9.00	196	1763				0
		point109	109	9.00	9.00	9.00	197	1775				0
		point110	110	9.00	9.00	9.00	201	1811				0

Utah Department of Transportation
BIO-WEST, Inc.

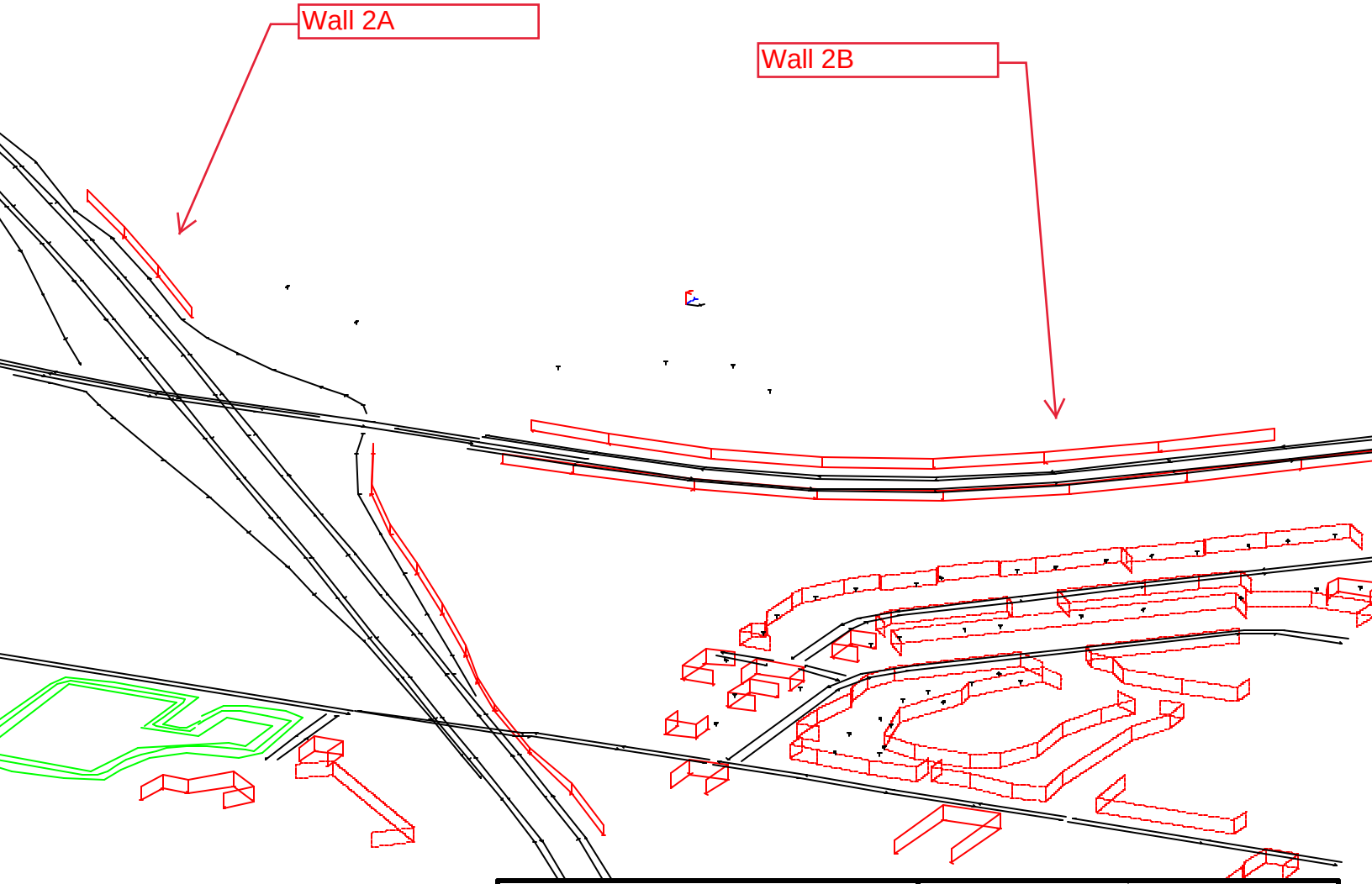
24 October 2019
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SR-193; 4500 W to 2000 W, PIN 16518
RUN: Design Year Impacts Including Barriers
BARRIER DESIGN: unsaved
ATMOSPHERICS: 86 deg F, 28% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
4164 W 550 SOUTH	227	1	41.9	54.6	66	12.7	10	Sub'l Inc	52.0	2.6	7	-4.4
4140 W 550 SOUTH	226	1	41.9	55.0	66	13.1	10	Sub'l Inc	52.1	2.9	7	-4.1
4116 W 550 SOUTH	225	1	41.9	54.6	66	12.7	10	Sub'l Inc	52.3	2.3	7	-4.7
512 S 4100 WEST	220	1	41.9	55.7	66	13.8	10	Sub'l Inc	53.1	2.6	7	-4.4
478 S 4100 WEST	219	1	41.9	58.8	66	16.9	10	Sub'l Inc	54.8	4.0	7	-3.0
460 S 4100 WEST	218	1	41.9	63.2	66	21.3	10	Sub'l Inc	57.5	5.7	7	-1.3
463 S 4100 WEST	135	1	41.9	65.1	66	23.2	10	Sub'l Inc	58.8	6.3	7	-0.7
4040 W 475 SOUTH	151	1	41.9	65.4	66	23.5	10	Sub'l Inc	59.2	6.2	7	-0.8
4018 W 475 SOUTH	215	1	41.9	60.4	66	18.5	10	Sub'l Inc	58.9	1.5	7	-5.5
4045 W 475 SOUTH	216	1	41.9	55.8	66	13.9	10	Sub'l Inc	54.9	0.9	7	-6.1
503 S 4100 WEST	217	1	41.9	55.5	66	13.6	10	Sub'l Inc	54.2	1.3	7	-5.7
4020 W 550 SOUTH	221	1	41.9	55.9	66	14.0	10	Sub'l Inc	55.3	0.6	7	-6.4
4048 W 550 SOUTH	222	1	41.9	55.1	66	13.2	10	Sub'l Inc	54.1	1.0	7	-6.0
529 S 4100 WEST	223	1	41.9	54.9	66	13.0	10	Sub'l Inc	53.9	1.0	7	-6.0
4023 W 550 SOUTH	224	1	41.9	52.7	66	10.8	10	Sub'l Inc	52.3	0.4	7	-6.6
4051 W 550 SOUTH	228	1	41.9	52.4	66	10.5	10	Sub'l Inc	51.8	0.6	7	-6.4

Dwelling Units	# DUs	Noise Reduction Min dB	Avg dB	Max dB
All Selected	16	0.4	2.5	6.3
All Impacted	16	0.4	2.5	6.3
All that meet NR Goal	0	0.0	0.0	0.0



Design Year Impacts Including Barriers	Sheet 1 of 1 | 24 Oct 2019
	Utah Department of Transportation
Perspective View	Project/Contract No. SR-193; 4500 W to 2000 W,
Run name: Future_WDCVols	TNM Version 2.5, Feb 2004
Scale: <DNA - due to perspective>	Analysis By: BIO-WEST, Inc.

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

Utah Department of Transportation 24 October 2019
BIO-WEST, Inc. TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: SR-193; 4500 W to 2000 W, PIN 16518
RUN: Design Year Impacts Including Barriers
BARRIER DESIGN: unsaved

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First	Average	Second		Area	On	Important	Volume	
				Point		Point			Struc?	Reflections?		
				ft	ft	ft	ft	sq ft			cu yd	$
Wall 2A	W	point241	241	22.00	22.00	22.00	200	4407				0
		point242	242	22.00	22.00	22.00	198	4357				0
		point243	243	22.00	22.00	22.00	201	4416				0
Wall 2B	W	point164	164	22.00	22.00	22.00	198	4361				0
		point165	165	22.00	22.00	22.00	196	4317				0
		point166	166	22.00	22.00	22.00	186	4102				0
		point167	167	22.00	22.00	22.00	183	4026				0
		point168	168	22.00	22.00	22.00	188	4138				0
		point169	169	22.00	22.00	22.00	185	4072				0
		point170	170	22.00	22.00	22.00	143	3145				0

Utah Department of Transportation
BIO-WEST, Inc.

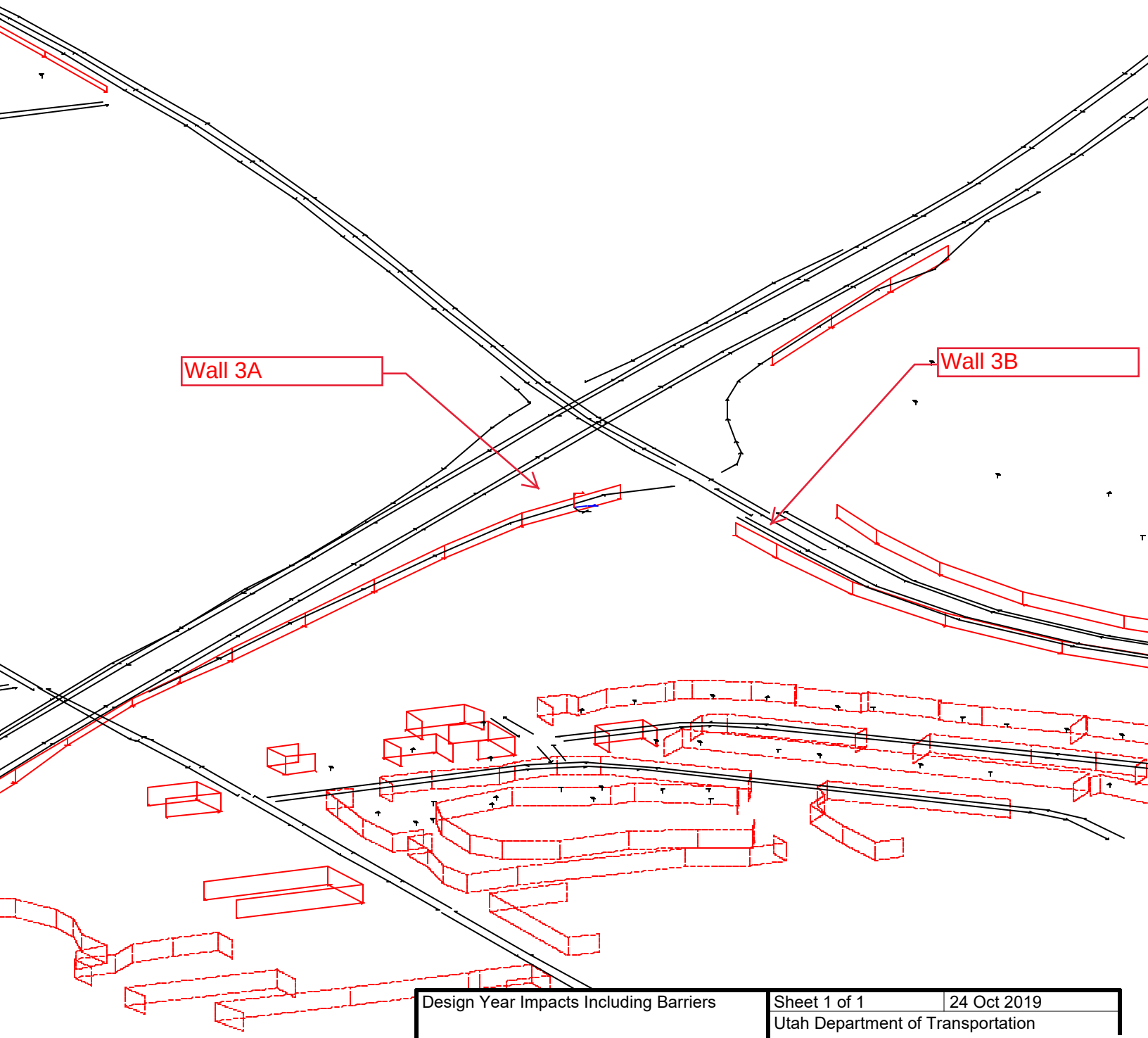
24 October 2019
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SR-193; 4500 W to 2000 W, PIN 16518
RUN: Design Year Impacts Including Barriers
BARRIER DESIGN: unsaved
ATMOSPHERICS: 86 deg F, 28% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Golf Course - Hole 3 Green	213	1	41.9	61.5	66	19.6	10	Sub'l Inc	58.9	2.6	7	-4.4
Golf Course - Hole 4 Tee	345	1	41.9	61.2	66	19.3	10	Sub'l Inc	59.5	1.7	7	-5.3
Golf Course - Hole 6 Green	212	1	41.9	61.8	66	19.9	10	Sub'l Inc	60.6	1.2	7	-5.8
Golf Course - Hole 7 Tee	211	1	41.9	63.9	66	22.0	10	Sub'l Inc	63.3	0.6	7	-6.4
Golf Course - Hole 12 Green	210	1	41.9	66.3	66	24.4	10	Both	65.5	0.8	7	-6.2
Golf Course - Hole 13 Tee	214	1	41.9	67.2	66	25.3	10	Both	64.4	2.8	7	-4.2

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	6	0.6	1.6	2.8
All Impacted	6	0.6	1.6	2.8
All that meet NR Goal	0	0.0	0.0	0.0



Design Year Impacts Including Barriers	Sheet 1 of 1 | 24 Oct 2019
	Utah Department of Transportation
Perspective View	Project/Contract No. SR-193; 4500 W to 2000 W,
Run name: Future_WDCVols	TNM Version 2.5, Feb 2004
Scale: <DNA - due to perspective>	Analysis By: BIO-WEST, Inc.

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

Utah Department of Transportation 24 October 2019
BIO-WEST, Inc. TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: SR-193; 4500 W to 2000 W, PIN 16518
RUN: Design Year Impacts Including Barriers
BARRIER DESIGN: unsaved

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First	Average	Second		Area	On	Important	Volume	
				Point		Point			Struc?	Reflections?		
				ft	ft	ft	ft	sq ft			cu yd	$
Wall 3A	W	point226	226	18.00	18.00	18.00	199	3589				0
		point227	227	18.00	14.00	10.00	202	2834				0
		point228	228	10.00	10.00	10.00	210	2102	Y			0
		point229	229	10.00	10.00	10.00	135	1347	Y			0
		point230	230	10.00	14.00	18.00	132	1848				0
		point231	231	18.00	18.00	18.00	200	3609				0
		point232	232	18.00	18.00	18.00	200	3591				0
		point233	233	18.00	18.00	18.00	200	3605				0
		point234	234	18.00	18.00	18.00	200	3607				0
		point235	235	18.00	18.00	18.00	202	3630				0
Wall 3B	W	point133	133	18.00	18.00	18.00	129	2329				0
		point134	134	18.00	18.00	18.00	217	3903				0
		point135	135	18.00	18.00	18.00	207	3720				0
		point136	136	18.00	18.00	18.00	210	3777				0
		point137	137	18.00	18.00	18.00	210	3780				0
		point138	138	18.00	18.00	18.00	203	3656				0
		point139	139	18.00	18.00	18.00	197	3548				0
		point140	140	18.00	18.00	18.00	204	3668				0
		point141	141	18.00	18.00	18.00	201	3610				0
		point142	142	18.00	18.00	18.00	197	3548				0
		point143	143	18.00	18.00	18.00	200	3597				0
		point144	144	18.00	18.00	18.00	193	3469				0
		point145	145	18.00	18.00	18.00	247	4447				0

Utah Department of Transportation
BIO-WEST, Inc.

24 October 2019
TNM 2.5
Calculated with TNM 2.5

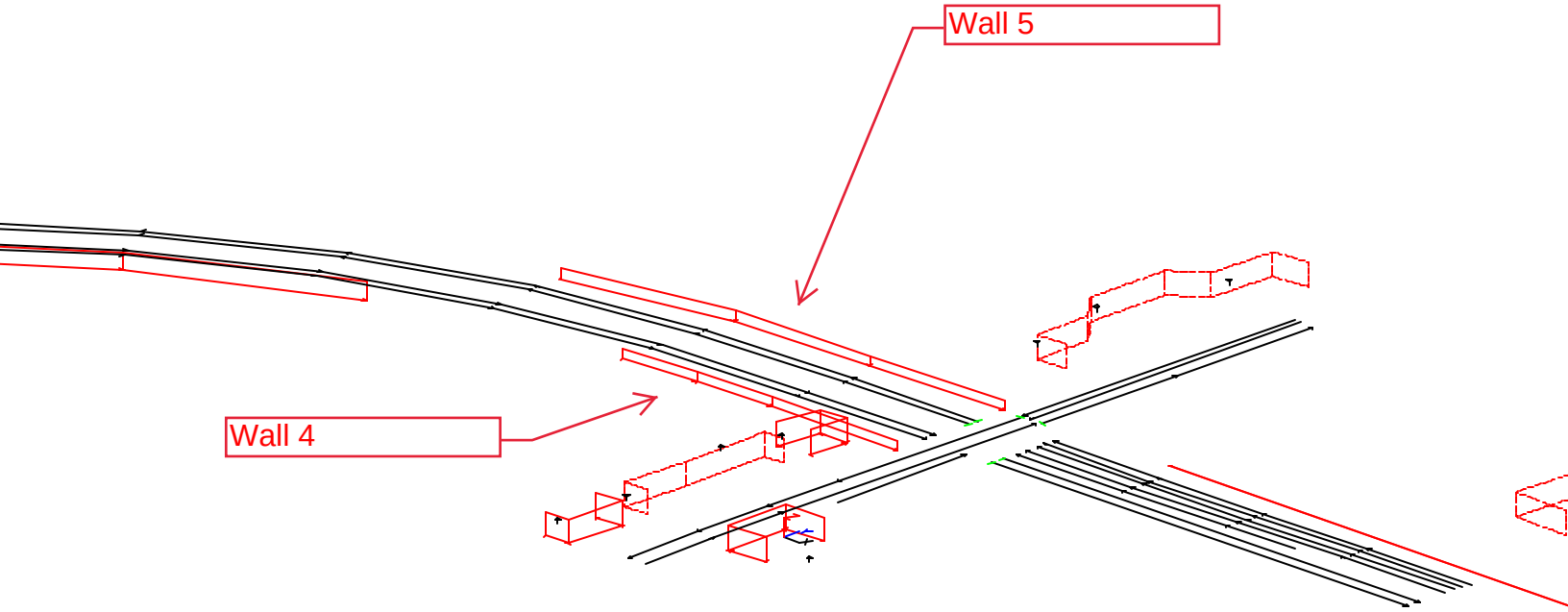
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SR-193; 4500 W to 2000 W, PIN 16518
RUN: Design Year Impacts Including Barriers
BARRIER DESIGN: Wall 3
ATMOSPHERICS: 86 deg F, 28% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
662 S 3300 WEST	170	1	41.9	53.8	66	11.9	10	Sub'l Inc	50.8	3.0	7	-4.0
413 S 3350 WEST	234	1	41.9	52.1	66	10.2	10	Sub'l Inc	47.6	4.5	7	-2.5
431 S 3350 WEST	193	1	41.9	51.2	66	9.3	10	----	47.2	4.0	7	-3.0
438 S 3200 WEST	233	1	41.9	53.1	66	11.2	10	Sub'l Inc	47.9	5.2	7	-1.8
449 S 3350 WEST	232	1	41.9	53.5	66	11.6	10	Sub'l Inc	50.8	2.7	7	-4.3
479 S 3350 WEST	186	1	41.9	52.4	66	10.5	10	Sub'l Inc	47.4	5.0	7	-2.0
501 S 3350 WEST	185	1	41.9	52.3	66	10.4	10	Sub'l Inc	48.0	4.3	7	-2.7
519 S 3350 WEST	184	1	41.9	52.9	66	11.0	10	Sub'l Inc	48.1	4.8	7	-2.2
539 S 3350 WEST	183	1	41.9	53.3	66	11.4	10	Sub'l Inc	48.4	4.9	7	-2.1
571 S 3350 WEST	182	1	41.9	52.9	66	11.0	10	Sub'l Inc	48.6	4.3	7	-2.7
583 S 3350 WEST	181	1	41.9	54.4	66	12.5	10	Sub'l Inc	49.5	4.9	7	-2.1
624 S 3300 WEST	172	1	41.9	53.4	66	11.5	10	Sub'l Inc	49.6	3.8	7	-3.2
608 S 3275 WEST	283	1	41.9	53.9	66	12.0	10	Sub'l Inc	48.9	5.0	7	-2.0
603 S 3300 WEST	280	1	41.9	54.2	66	12.3	10	Sub'l Inc	49.3	4.9	7	-2.1
611 S 3300 WEST	243	1	41.9	54.9	66	13.0	10	Sub'l Inc	50.0	4.9	7	-2.1
623 S 3300 WEST	242	1	41.9	55.8	66	13.9	10	Sub'l Inc	51.4	4.4	7	-2.6
642 S 3275 WEST	244	1	41.9	55.6	66	13.7	10	Sub'l Inc	50.4	5.2	7	-1.8
651 S 3300 WEST	241	1	41.9	55.8	66	13.9	10	Sub'l Inc	52.0	3.8	7	-3.2
667 S 3300 WEST	245	1	41.9	55.9	66	14.0	10	Sub'l Inc	52.8	3.1	7	-3.9
658 S 3275 WEST	246	1	41.9	56.1	66	14.2	10	Sub'l Inc	53.0	3.1	7	-3.9
681 S 3300 WEST	247	1	41.9	56.6	66	14.7	10	Sub'l Inc	53.6	3.0	7	-4.0
676 S 3275 WEST	248	1	41.9	57.2	66	15.3	10	Sub'l Inc	54.7	2.5	7	-4.5
676 S 3275 WEST	249	1	41.9	57.1	66	15.2	10	Sub'l Inc	55.0	2.1	7	-4.9
693 S 3300 WEST	250	1	41.9	57.7	66	15.8	10	Sub'l Inc	55.3	2.4	7	-4.6

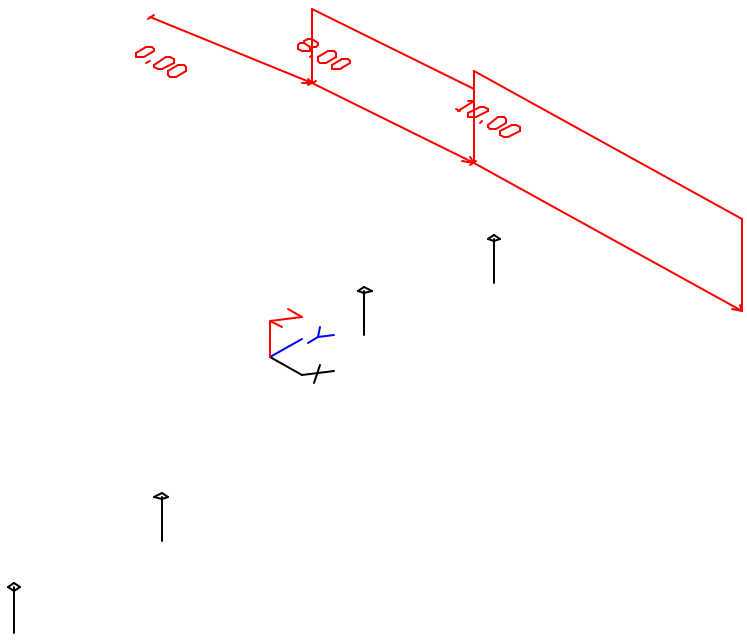
396 S 3350 WEST	237	1	41.9	57.7	66	15.8	10	Sub'l Inc	51.4	6.3	7	-0.7
404 S 3350 WEST	235	1	41.9	57.6	66	15.7	10	Sub'l Inc	50.8	6.8	7	-0.2
416 S 3350 WEST	191	1	41.9	57.9	66	16.0	10	Sub'l Inc	51.0	6.9	7	-0.1
428 S 3350 WEST	190	1	41.9	57.9	66	16.0	10	Sub'l Inc	51.0	6.9	7	-0.1
436 S 3200 WEST	189	1	41.9	58.0	66	16.1	10	Sub'l Inc	51.1	6.9	7	-0.1
446 S 3350 WEST	231	1	41.9	57.9	66	16.0	10	Sub'l Inc	51.0	6.9	7	-0.1
458 S 3350 WEST	188	1	41.9	57.9	66	16.0	10	Sub'l Inc	51.0	6.9	7	-0.1
464 S 3350 WEST	187	1	41.9	57.9	66	16.0	10	Sub'l Inc	51.0	6.9	7	-0.1
482 S 3350 WEST	341	1	41.9	58.0	66	16.1	10	Sub'l Inc	51.4	6.6	7	-0.4
498 S 3350 WEST	180	1	41.9	57.8	66	15.9	10	Sub'l Inc	51.4	6.4	7	-0.6
506 S 3350 WEST	179	1	41.9	57.7	66	15.8	10	Sub'l Inc	51.4	6.3	7	-0.7
524 S 3350 WEST	178	1	41.9	57.9	66	16.0	10	Sub'l Inc	51.9	6.0	7	-1.0
536 S 3350 WEST	177	1	41.9	57.9	66	16.0	10	Sub'l Inc	52.3	5.6	7	-1.4
542 S 3350 WEST	176	1	41.9	57.5	66	15.6	10	Sub'l Inc	52.1	5.4	7	-1.6
564 S 3350 WEST	175	1	41.9	58.3	66	16.4	10	Sub'l Inc	52.8	5.5	7	-1.5
592 S 3350 WEST	174	1	41.9	58.4	66	16.5	10	Sub'l Inc	53.6	4.8	7	-2.2
618 S 3350 WEST	173	1	41.9	59.3	66	17.4	10	Sub'l Inc	55.6	3.7	7	-3.3
622 S 3350 WEST	171	1	41.9	58.1	66	16.2	10	Sub'l Inc	53.6	4.5	7	-2.5
3353 W 625 SOUTH	169	1	41.9	57.1	66	15.2	10	Sub'l Inc	51.6	5.5	7	-1.5
674 S 3300 WEST	240	1	41.9	59.8	66	17.9	10	Sub'l Inc	56.9	2.9	7	-4.1
696 S 3300 WEST	168	1	41.9	58.4	66	16.5	10	Sub'l Inc	55.9	2.5	7	-4.5

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	45	2.1	4.8	6.9
All Impacted	44	2.1	4.8	6.9
All that meet NR Goal	0	0.0	0.0	0.0



Design Year Impacts Including Barriers	Sheet 1 of 1	24 Oct 2019
	Utah Department of Transportation	
Perspective View	Project/Contract No. SR-193; 4500 W to 2000 W,	
Run name: Future_WDCVols	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: BIO-WEST, Inc.	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	



Design Year Impacts Including Barriers	Sheet 1 of 1	25 Oct 2019
	Utah Department of Transportation	
Barrier View-Wall4	Project/Contract No. SR-193; 4500 W to 2000 W,	
Run name: Future_WDCVols	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: BIO-WEST, Inc.	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

Utah Department of Transportation 24 October 2019
BIO-WEST, Inc. TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: SR-193; 4500 W to 2000 W, PIN 16518
RUN: Design Year Impacts Including Barriers
BARRIER DESIGN: unsaved

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First	Average	Second		Area	On	Important	Volume	
				Point		Point			Struc?	Reflections?		
				ft	ft	ft	ft	sq ft			cu yd	$
Wall 4	W	point193	193	0.00	8.00	0.00	0	0				0
		point194	194	8.00	8.00	8.00	101	810				0
		point195	195	10.00	10.00	10.00	172	1720				0

Utah Department of Transportation
BIO-WEST, Inc.

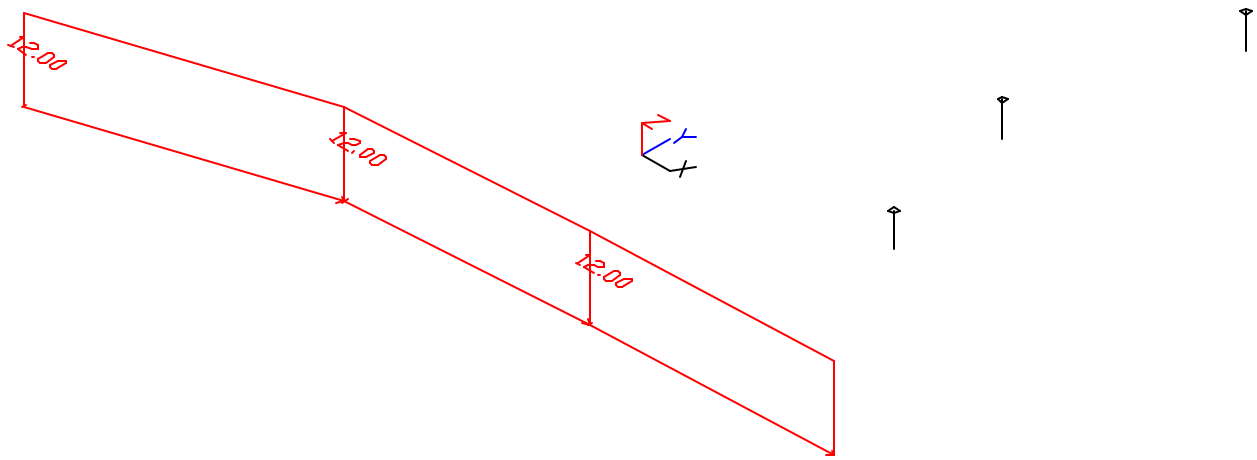
24 October 2019
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SR-193; 4500 W to 2000 W, PIN 16518
RUN: Design Year Impacts Including Barriers
BARRIER DESIGN: unsaved
ATMOSPHERICS: 86 deg F, 28% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
290 S 3000 WEST	194	1	46.6	55.5	66	8.9	10	----	54.7	0.8	7	-6.2
270 S 3000 WEST	196	1	53.7	58.5	66	4.8	10	----	57.8	0.7	7	-6.3
258 S 3000 WEST	197	1	55.5	63.9	66	8.4	10	----	60.8	3.1	7	-3.9
246 S 3000 WEST	198	1	53.8	67.2	66	13.4	10	Both	59.8	7.4	7	0.4

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	4	0.7	3.0	7.4
All Impacted	1	7.4	7.4	7.4
All that meet NR Goal	1	7.4	7.4	7.4



Design Year Impacts Including Barriers	Sheet 1 of 1	25 Oct 2019
	Utah Department of Transportation	
Barrier View-Wall 5	Project/Contract No. SR-193; 4500 W to 2000 W,	
Run name: Future_WDCVols	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: BIO-WEST, Inc.	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

Utah Department of Transportation 24 October 2019
BIO-WEST, Inc. TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: SR-193; 4500 W to 2000 W, PIN 16518
RUN: Design Year Impacts Including Barriers
BARRIER DESIGN: unsaved

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First	Average	Second		Area	On	Important	Volume	
				Point		Point			Struc?	Reflections?		
				ft	ft	ft	ft	sq ft			cu yd	$
Wall 5	W	point237	237	12.00	12.00	12.00	215	2578				0
		point238	238	12.00	12.00	12.00	182	2184				0
		point239	239	12.00	12.00	12.00	182	2184				0

Utah Department of Transportation
BIO-WEST, Inc.

24 October 2019
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SR-193; 4500 W to 2000 W, PIN 16518
RUN: Design Year Impacts Including Barriers
BARRIER DESIGN: unsaved
ATMOSPHERICS: 86 deg F, 28% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
112 S 3000 WEST	201	1	60.1	57.5	66	-2.6	10	----	57.1	0.4	7	-6.6
136 S 3000 WEST	200	1	53.9	60.8	66	6.9	10	----	59.6	1.2	7	-5.8
172 S 3000 WEST	199	1	54.0	64.8	66	10.8	10	Sub'l Inc	62.1	2.7	7	-4.3

Dwelling Units	# DUs	Noise Reduction Min dB	Avg dB	Max dB
All Selected	3	0.4	1.4	2.7
All Impacted	1	2.7	2.7	2.7
All that meet NR Goal	0	0.0	0.0	0.0

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

Appendix C:
Cultural and Paleontological Clearances

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

September 9, 2019

Mr. Cory Jensen
Senior Historic Preservation Specialist
Utah Division of State History
300 Rio Grande
Salt Lake City, UT 84101-1182

RE: UDOT Project No. S-R199(245)2; SR-193, 700 South to 3000 West, Davis County, Utah (PIN 16518).
Determination of Eligibility and Finding of No Adverse Effect.

Dear Mr. Jensen:

The Utah Department of Transportation (UDOT) is preparing to undertake the subject state-aid project. In accordance with the *Programmatic Agreement between the UDOT and the Utah State Historic Preservation Officer Regarding Implementation of U.C.A. 9-8-404 for State Funded Transportation Projects in Utah* (renewed January 22, 2018), the UDOT has taken into account the effects of this undertaking on historic properties and is affording the Utah State Historic Preservation Officer (SHPO) an opportunity to comment on the undertaking.

PROJECT DESCRIPTION

UDOT is proposing to extend SR-193 from its current western terminus at 3000 West to 4500 West (SR-110) and construct a diamond interchange at the future West Davis Corridor. Between 3000 West and the West Davis Corridor, UDOT proposes to continue the configuration of SR-193 that currently exists between 2000 West and 3000 West, which consists of two travel-lanes in each direction separated by a median swale; the typical width of this section would be 150 feet-wide. Between West Davis Corridor and 4500 West, the proposed typical cross section would have one travel lane in each direction separated by a continuous two-way left-turn lane. Shoulders would be provided on both sides, lined with gutter, curb, park strip, and sidewalk; the typical width of this section would be 84 feet-wide.

The APE for cultural resources included the proposed footprint of all active alternatives as well as all adjoining parcels. However, after initial alternative selection, a smaller survey area was established based on the preferred alternative. The APE has been surveyed for archaeology by Certus Environmental Solutions, under State Antiquities Project Number U19HY0003, and the results are reported in *An Archaeological Resource Assessment for the SR-193 Extension; 4500 West to 3000 West, Davis County, Utah* (see enclosed report). An intensive level pedestrian survey was conducted using 15 meter transects to identify archaeological resources. A selective reconnaissance level survey was also conducted to record architectural properties, and the results are reported in *A Selective Reconnaissance-Level Historic Structures Inventory for the SR-193 Extension; 4500 West to 3000 West, Davis County, Utah* (see enclosed report).

The survey has resulted in the identification of 4 archaeological sites and 4 architectural properties. Of these, 1 archaeological site and 1 architectural property are eligible to the National Register of Historic Places (NRHP). No known traditional cultural properties or paleontological resources are located in the APE. The Determinations of

Eligibility and Findings of Effects are provided in Table 1 for archaeological resources and in Table 2 for architectural properties.

ARCHAEOLOGICAL RESOURCES

Table 1. Determinations of Eligibility and Findings of Effect for Archaeological Resources

Site	Name or Description	NRHP Eligibility	Finding of Effect
42DV158	Hooper Canal System	Eligible (Criterion A)	No Adverse Effect
42DV172	Unnamed Drainage Ditch	Not Eligible	No Historic Properties Affected
42DV178	Stevenson Ditch System	Not Eligible	No Historic Properties Affected
42DV182	Layton Canal	Not Eligible	No Historic Properties Affected

Description of Effect to Site 42DV158: The proposed project will move the piped East-West lateral and it's modern diversion to accommodate the new road alignment. Aerial imagery indicates that this lateral was piped in 2010 along the same alignment as a previous open channel. The western 640 feet of this lateral has been added in modern times and the lateral appears to only supply the adjacent fields; it does not connect with the rest of the system on 4500 West. The open channel on 4500 West will be piped for approximately 80 feet under the new intersection of 4500 West and SR-193. The currently piped main canal along Cold Springs Road will not be impacted. The project will affect a relatively small portion of the canal system and will not substantially impact or alter any contributing elements of the site or any of the character-defining features for which it was determined eligible for the NRHP. Thus, the proposed project will result in a finding of No Adverse Effect for this property.

ARCHITECTURAL PROPERTIES

Table 2. Determinations of Eligibility and Findings of Effect for Architectural Properties

Address	Date	Style	NRHP Eligibility/ SHPO Rating	Finding of Effect
222 S. 3000 West, West Point	1965	Outbuildings	Not Eligible/NC	No Historic Properties Affected
246 S. 3000 West, West Point	1967	Ranch/ Rambler	Eligible/EC	No Adverse Effect
3444 W. 700 South, West Point	1910	Cross-wing	Not Eligible/NC	No Historic Properties Affected
3454 W. 700 South, West Point	1936	Other: Minimal Traditional	Not Eligible/NC	No Historic Properties Affected

Description of Effect to 246S. 3000 West: This proposed project requires right of way acquisitions of approximately 0.15 acres (of 0.93 acre parcel) along the side of the property. The acquisitions and associated construction affect a relatively small portion of this property and will not substantially impact or alter any contributing elements of the property or any of the character-defining features for which it was determined eligible for the NRHP.

CONSULTATION EFFORTS

Native American consultation was initiated through letters sent to the Confederated Tribes of the Goshute Reservation, Skull Valley Band of Goshutes, Northwestern Band of Shoshone Nation, Shoshone-Bannock Tribes, Eastern Shoshone Tribe of the Wind River Reservation, Uintah and Ouray Ute Tribes, and the Cedar and Shivwits

Bands of the Paiute Indians (sent March 4, 2019). Letters were also sent to the Syracuse Certified Local Government representative (sent March 6, 2019). No responses or comments were received from the tribes or CLG. The public will be notified of the impacts to cultural resources during a project open house.

SUMMARY

To summarize, the project will result in a finding of **No Adverse Effect** for 1 archaeological site and 1architectural property, and a finding of **No Historic Properties Affected** for all remaining architectural properties and archaeological sites. Therefore, the Finding of Effect for the proposed UDOT Project No. S-R199(245)2; SR-193, 700 South to 3000 West, Davis County, Utah, is **No Adverse Effect**.

Please review this document and, providing you agree with the findings contained herein, provide written concurrence. Should you have any questions or need additional information, please feel free to contact Liz Robinson at 801-910-2035 or lizrobinson@utah.gov; or Elizabeth Giraud at 801-965-4917 or egiraud@utah.gov.

Sincerely,

Liz Robinson

Liz Robinson, M.A., RPA
Cultural Resources Program Manager
UDOT Environmental Services

Elizabeth Giraud

Elizabeth Giraud, AICP
Architectural Historian
UDOT Environmental Services

Enclosures

cc: Dan Young, Project Manager
Elisa Albury, Environmental Manager

Imagery dated June 18, 2015, courtesy Utah AGRC under license agreement from Google.

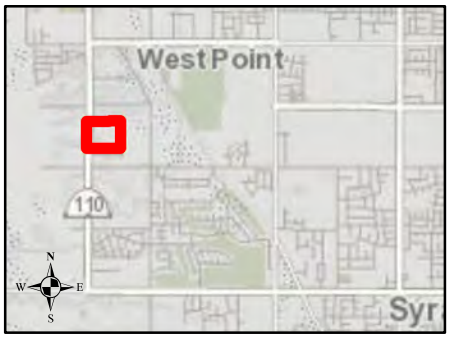
4500 West

Open Lateral Ditch

Piped Lateral Ditch

N

0 100 200 Feet



Right-of-Way Line

Edge of Pavement

Parcel Boundaries

42DV158

Eligible Structure

Partial Acquisition

SR-193

ENVIRONMENTAL STUDY

4500 W. to 3000 W.

Project S-0199(245) PIN 16518

Determination of Eligibility and Finding of Effect

Map Date 8/29/2019

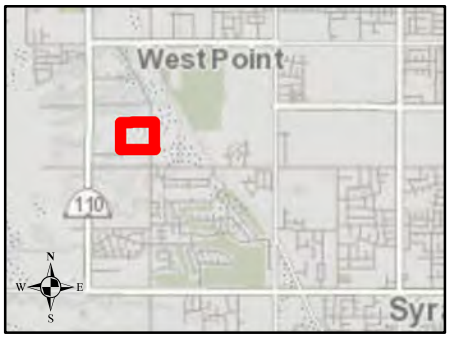
Imagery dated June 18, 2015, courtesy Utah AGRC under license agreement from Google.

Piped Lateral Ditch

Piped Main Canal

N

0 100 200 Feet



Right-of-Way Line

Edge of Pavement

Parcel Boundaries

42DV158

Eligible Structure

Partial Acquisition

SR-193

ENVIRONMENTAL STUDY

4500 W. to 3000 W.

Project S-0199(245) PIN 16518

Determination of Eligibility and Finding of Effect

Map Date 8/29/2019

Imagery dated June 18, 2015, courtesy Utah AGRC under license agreement from Google.

0.15 acres

246 S 3000 W

R/W

R/W

R/W

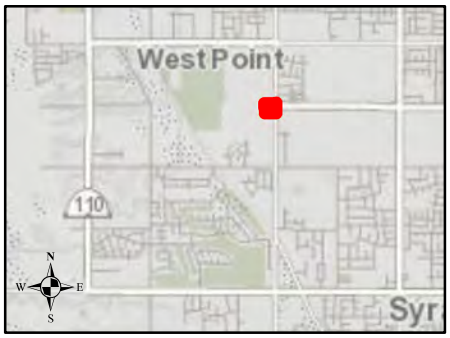
20 feet

3000 West

SR-193

N

0 100 200 Feet



Right-of-Way Line

Edge of Pavement

Parcel Boundaries

42DV158

Eligible Structure

Partial Acquisition

SR-193

ENVIRONMENTAL STUDY

4500 W. to 3000 W.

Project S-0199(245) PIN 16518

Determination of Eligibility and Finding of Effect

Map Date 8/29/2019

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Jill Remington Love
Executive Director
Department of
Heritage & Arts

Utah Division of
State History

Don Hartley
Director
State Historic Preservation Officer

September 11, 2019

Liz Robinson
Cultural Resources Program Manager
Utah Dept of Transportation (UDOT)
4501 Constitution Blvd
Salt Lake City, UT 84119

RE: PIN 16518_SR-193, 700 South to 3000 West, Davis County_S-R199(245)2

For future correspondence, please reference Case No. 19-1973

Dear Ms Robinson,

The Utah State Historic Preservation Office received your submission and request for our comment on the above-referenced project on September 10, 2019. Based on the information provided to our office, we concur with your determination of eligibility and finding of No Adverse Effect for the proposed undertaking.

This information is provided to assist with Section 106 responsibilities as per §36CFR800. If you have questions, please contact me at (801) 245-7242 or by email at coryjensen@utah.gov.

Sincerely,

Cory Jensen
National Register & Survey Coordinator

GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
Executive Director
Utah Geological Survey
R. William Keach II
State Geologist/Division Director

July 11, 2019

Sheri Murray Ellis
CERTUS Environmental Solutions, LLC
655 7th Avenue
Salt Lake City UT 84103

RE: Paleontological File Search and Recommendations for UDOT Project S-R199(245); PIN 16518: SR-193 Extension; 700 South to 2000 West, Davis County, Utah
U.C.A. 79-3-508 (Paleontological) Compliance; Request for Confirmation of Literature Search according to the UDOT/UGS Memorandum of Understanding.

Dear Sheri:

I have conducted a paleontological file search for the SR-193 Extension Project in response to your letter of July 11, 2019. This project qualifies for treatment under the UDOT/UGS executed Memorandum of Understanding.

There are no paleontological localities recorded in our files within this project area. Quaternary and Recent alluvial and lacustrine deposits that are exposed along this project right-of-way have a low potential for yielding significant fossil localities (PFYC 2). Unless fossils are discovered as a result of construction activities, this project should have no impact on paleontological resources.

If you have any questions, please call me at (801) 537-3311.

Sincerely,

Martha Hayden

Martha Hayden
Paleontological Assistant

1594 West North Temple, Suite 3110, PO Box 146100, Salt Lake City, UT 84114-6100
telephone (801) 537-3300 • facsimile (801) 537-3400 • TTY (801) 538-7458 • *geology.utah.gov*

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

Appendix D: Scoping Report

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

SCOPING REPORT

SR-193 State Environmental Study

Project No. S-R199(245)

PIN 16518

May 2019

Prepared for: Utah Department of Transportation

Prepared by: H.W. Lochner | 3995 South 700 East, Suite 450 | Salt Lake City, UT 84107

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Table of Contents

1.0 Project Overview *4*

2.0 Scoping Phase *4*

Agency and Tribal Scoping *4*

Public Scoping Advertisement *4*

Public Scoping Meeting *5*

3.0 Comment Summary *5*

Appendix A: Agency and Tribal Scoping Letters and Comments *7*

Appendix B: Public Scoping Meeting Advertisement *61*

Appendix C: Public Scoping Meeting Materials *69*

Appendix D: Public Scoping Comments *102*

1.0 Project Overview

The Utah Department of Transportation (UDOT) is preparing a State Environmental Study (SES) to evaluate a potential extension of SR-193 in Syracuse and West Point, Utah. SR-193 currently terminates at 3000 west. Through this study, UDOT will evaluate alternatives for extending the road to the west, providing connectivity to the future West Davis Corridor and potentially connecting to 4500 West. In preparing the SES, UDOT will evaluate the environmental and social impacts of the proposed extension.

UDOT conducted an agency and public scoping phase for the SR-193 SES. This report documents the work that took place during the scoping phase, a summary of the public scoping meeting, and comments received.

2.0 Scoping Phase

The formal scoping phase began on March 19, 2019, with a public scoping meeting followed by a 30-day public comment period continuing through April 18, 2019. The purpose of this phase was to share information about the SR-193 SES process, and listen to and learn from the agencies and public regarding issues, concerns, goals, and solutions.

Agency and Tribal Scoping

The project team conducted scoping with agencies that could have an interest in the project due to presence of resources or land under their jurisdiction within the study area. Scoping was also conducted with tribes that could have an interest in the project due to cultural affiliation. Letters were mailed on March 8, 2019, soliciting input and inviting agency representatives to attend to the public meeting on March 19, 2019 or to schedule an individual meeting with the project team.

An Agency scoping meeting was held on March 19, 2019 prior to the public meeting. The goal of this meeting was to inform agencies about the SR-193 SES process, answer their questions, and gather their input before the public meeting began later in the evening. Representatives from the Syracuse Arts Academy, West Point City, and the Wasatch Front Regional Council attended. **See Appendix A for a copy of the letters and the agency sign in sheet.**

Scoping Advertisement

The project team advertised the public scoping meeting and comment period to the community through the following methods:

- Postcard invitations as well as an email notification were sent to residents adjacent to the corridor on March 8, 2019
- UDOT Region One posted meeting invitation reminders on its official Twitter account on March 17, March 18, 2019, and March 19, 2019
- A press release was sent on March 8, 2019
- A project specific website was created (utah.udot.gov/sr193extension), which included information on the scoping meeting

See Appendix B for copies of these meeting advertisements.

Public Scoping Meeting

A public scoping meeting was held on March 19, 2019, at Syracuse Arts Academy, which is located on the Antelope Drive corridor. The meeting was held in an open house format and 57 people signed-in at the meeting. This meeting was held in conjunction with the Antelope Drive (SR-127) scoping meeting. Display boards and a scroll plot provided information about both projects. The project team and West Davis Corridor (WDC) representatives were available to answer questions one-on-one and listen to concerns. Attendees were encouraged to submit comments on forms provided at the meeting or mail their comments before the end of the comment period. A large map of the study area was available and attendees provided comments on the maps indicating areas where they had concerns.

Meeting information shown at the public open house was also available on the website, allowing individuals unable to attend the meeting to be engaged. An online comment form and the project email were available on the website for members of the public to submit comments electronically.

See Appendix C for sign-in sheets, meeting display boards, Frequently Asked Questions handout, scroll plot, blank comment forms, and content from the website.

3.0 Comment Summary

A 30-day official public scoping comment period began on March 19, 2019, and ended on April 18, 2019. Comments were gathered through the following methods:

- Comment form available at the open house
- Email to sr193extension@utah.gov
- Online comment form and web map on project site: udot.utah.gov/sr193extension
- Mailed to SR-193 SES Project Team, c/o Lochner, 3995 South 700 East, # 450, SLC, UT 84107

A total of 19 comment forms for SR-193 were completed by attendees at the public scoping meeting, along with 3 individuals commenting on the scroll plot. In addition, 3 individuals commented via email, and 1 individual commented utilizing the online comment form. No comments were submitted via the online comment map.

The following is a summary of common themes (and number of comments associated with each theme) from comments collected during the scoping phase:

- Feel that the SR-193 Corridor should go through (6) or around (5) the golf course.
- Feel that the WDC interchange should be located at SR-193 (5)
- Concerned with traffic and congestion increase due to future WDC traffic (5)
- Concerned about property impacts and land values (7)
- Comments in support of improvements but concerned about routing (1)
- Comments not in support of improvements (2)
- Connect SR-193 at 200 S., not 700 S. (2)
- Misc. Comments
    - WDC should be built on surface level (2), with frontage road connecting SR-193 to Antelope Dr. (1)
    - Would prefer full takes versus partial (2)
    - Concerned about bike trail impacts (1)

- Concerned about safety of school children (1)
- Concerned about compensation during ROW (1), and ROW timeline (1)
- Concerned about barriers along neighborhoods and homes near corridor, would like to see noise barriers put up (1)

At the end of the public comment period, the project team sent an email to members of the public who provided contact information or comments during the scoping period. The purpose of the email was to provide a summary and general response to comments received. **Comments and the email sent following the comment period are available in Appendix D.**

Appendix A

Agency and Tribal Scoping Letters and Comments

SR-193

ENVIRONMENTAL STUDY

4500 W. to 3000 W.

Study Area
UDOT Project S-R199(245)
PIN 16518

0 0.25 0.5 1 Miles

0 0.25 0.5 1 Kilometers

N

Map Date: 2/27/2019

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 1, 2019

Mr.Jason Gipson, Chief Utah Regulatory Branch
U.S. Army Corps of Engineers, Bountiful Field Office
533 West 2600 South, Suite 150
Bountiful, UT 84010-7744

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Gipson:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping
UDOT is interested in understanding issues and concerns about the project location from the expertise of your agency. You are invited to attend an agency scoping meeting, to be held on Tuesday, March 19, 2019 from 3:30 - 4:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075.

A public open house will also be held on Tuesday, March 19, 2019 from 5:30 - 7:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075. The public is invited to comment regarding potential issues to be evaluated in the Study. Agency representatives are welcome to attend the open house.

The official thirty (30) day scoping comment period will run from March 19, 2019 through April 18, 2019.

If you have any questions or would like to discuss in more detail the project or your agency's respective roles and responsibilities during the preparation of this SES and you are unable to attend the agency scoping meeting, please contact me at:

Elisa Albury
Environmental Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
ealbury@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Elisa Sims Albury
Environmental Program Manager
Environmental Services Division

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 1, 2019

Mr.Andrew Gruber, Executive Director
Wasatch Front Regional Council
295 North Jimmy Doolittle Road
Salt Lake City, UT 84116

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Gruber:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping
UDOT is interested in understanding issues and concerns about the project location from the expertise of your agency. You are invited to attend an agency scoping meeting, to be held on Tuesday, March 19, 2019 from 3:30 - 4:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075.

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The official thirty (30) day scoping comment period will run from March 19, 2019 through April 18, 2019.

If you have any questions or would like to discuss in more detail the project or your agency's respective roles and responsibilities during the preparation of this SES and you are unable to attend the agency scoping meeting, please contact me at:

Elisa Albury
Environmental Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
ealbury@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Elisa Sims Albury
Environmental Program Manager
Environmental Services Division

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 1, 2019

Mr.Kyle Laws, City Manager
West Point City
3200 West 300 North
West Point, UT 84015

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Laws:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping
UDOT is interested in understanding issues and concerns about the project location from the expertise of your agency. You are invited to attend an agency scoping meeting, to be held on Tuesday, March 19, 2019 from 3:30 - 4:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075.

A public open house will also be held on Tuesday, March 19, 2019 from 5:30 - 7:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075. The public is invited to comment regarding potential issues to be evaluated in the Study. Agency representatives are welcome to attend the open house.

The official thirty (30) day scoping comment period will run from March 19, 2019 through April 18, 2019.

If you have any questions or would like to discuss in more detail the project or your agency's respective roles and responsibilities during the preparation of this SES and you are unable to attend the agency scoping meeting, please contact me at:

Elisa Albury
Environmental Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
ealbury@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Elisa Sims Albury
Environmental Program Manager
Environmental Services Division

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 1, 2019

Mr.Brett Schneiter,
Schneiter's Bluff Golf Course
300 North 3500 West
West Point, UT 84015

Subject: State Route 127 (Antelope Drive) State Environmental Study, Davis County, Utah
UDOT Project No. S-0127(7)2, PIN 16717
Initiation of Environmental Scoping

Dear Mr. Schneiter:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential improvements to S.R. 127 (Antelope Drive) in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

The future West Davis Corridor will intersect S.R. 127 between Bluff Road and 3000 West, near the Syracuse Arts Academy. In the SES, UDOT will be evaluating capacity, connectivity, and safety needs for the segments of S.R. 127 near the new interchange with the West Davis Corridor. Updated traffic data is being collected to help define these needs. Additionally, the preliminary design of the West Davis Corridor/S.R. 127 interchange may also be reevaluated as part of the State Environmental Study. Based on previous studies, cultural resources—primarily historic structures—are the main environmental concern along the project corridor. A public hearing on the draft SES is expected in fall 2019.

Scoping

UDOT is interested in understanding issues and concerns about the project location from the expertise of your agency. You are invited to attend an agency scoping meeting, to be held on Tuesday, March 19, 2019 from 3:30 - 4:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075.

A public open house will also be held on Tuesday, March 19, 2019 from 5:30 - 7:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075. The public is invited to comment regarding potential issues to be evaluated in the Study. Agency representatives are welcome to attend the open house.

The official thirty (30) day scoping comment period will run from March 19, 2019 through April 18, 2019.

If you have any questions or would like to discuss in more detail the project or your agency's respective roles and responsibilities during the preparation of this SES and you are unable to attend the agency scoping meeting, please contact me at:

Elisa Albury
Environmental Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
ealbury@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Elisa Sims Albury
Environmental Program Manager
Environmental Services Division

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 1, 2019

Mr.Brett Schneiter,
Schneiter's Bluff Golf Course
300 North 3500 West
West Point, UT 84015

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Schneiter:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping
UDOT is interested in understanding issues and concerns about the project location from the expertise of your agency. You are invited to attend an agency scoping meeting, to be held on Tuesday, March 19, 2019 from 3:30 - 4:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075.

A public open house will also be held on Tuesday, March 19, 2019 from 5:30 - 7:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075. The public is invited to comment regarding potential issues to be evaluated in the Study. Agency representatives are welcome to attend the open house.

The official thirty (30) day scoping comment period will run from March 19, 2019 through April 18, 2019.

If you have any questions or would like to discuss in more detail the project or your agency's respective roles and responsibilities during the preparation of this SES and you are unable to attend the agency scoping meeting, please contact me at:

Elisa Albury
Environmental Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
ealbury@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Elisa Sims Albury
Environmental Program Manager
Environmental Services Division

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 1, 2019

Ms.Sindy Smith, RDCC Coordinator
Resource Development Coordinating Committee
Public Lands Policy Coordinating Office
5110 State Office Building
P.O. Box 141107
Salt Lake City, UT 84114-1107

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Ms. Smith:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping

UDOT is interested in understanding issues and concerns about the project location from the expertise of your agency. You are invited to attend an agency scoping meeting, to be held on Tuesday, March 19, 2019 from 3:30 - 4:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075.

A public open house will also be held on Tuesday, March 19, 2019 from 5:30 - 7:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075. The public is invited to comment regarding potential issues to be evaluated in the Study. Agency representatives are welcome to attend the open house.

The official thirty (30) day scoping comment period will run from March 19, 2019 through April 18, 2019.

If you have any questions or would like to discuss in more detail the project or your agency's respective roles and responsibilities during the preparation of this SES and you are unable to attend the agency scoping meeting, please contact me at:

Elisa Albury
Environmental Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
ealbury@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Elisa Sims Albury
Environmental Program Manager
Environmental Services Division

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 1, 2019

Mr.Grey Turner, Sr. Program Manager
Utah Transit Authority
P.O. Box 30810
Salt Lake City, UT 84130

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Turner:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping
UDOT is interested in understanding issues and concerns about the project location from the expertise of your agency. You are invited to attend an agency scoping meeting, to be held on Tuesday, March 19, 2019 from 3:30 - 4:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075.

A public open house will also be held on Tuesday, March 19, 2019 from 5:30 - 7:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075. The public is invited to comment regarding potential issues to be evaluated in the Study. Agency representatives are welcome to attend the open house.

The official thirty (30) day scoping comment period will run from March 19, 2019 through April 18, 2019.

If you have any questions or would like to discuss in more detail the project or your agency's respective roles and responsibilities during the preparation of this SES and you are unable to attend the agency scoping meeting, please contact me at:

Elisa Albury
Environmental Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
ealbury@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Elisa Sims Albury
Environmental Program Manager
Environmental Services Division

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 1, 2019

Mr.Brad Westwood, State Historic Preservation Officer
State Historic Preservation Office
300 S. Rio Grande Street (450 West)
Salt Lake City, UT 84101

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Westwood:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

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Scoping
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Elisa Albury
Environmental Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
ealbury@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Elisa Sims Albury
Environmental Program Manager
Environmental Services Division

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 1, 2019

Mr.Brody Bovero, City Manager
Syracuse City
1979 West 1900 South
Syracuse, UT 84075

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Laws:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping
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Elisa Albury
Environmental Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
ealbury@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Elisa Sims Albury
Environmental Program Manager
Environmental Services Division

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Mr. Rupert Steele, Chairman
Confederated Tribes of the Goshute Reservation
P.O. BOX 6104/195 Tribal Center Rd.
Ibapah, UT 84034

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Rupert:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping

UDOT is interested in understanding issues and concerns about the project location from the expertise of your agency. You are invited to attend an agency scoping meeting, to be held on Tuesday, March 19, 2019 from 3:30 - 4:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075.

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If you have any questions or would like to discuss in more detail the project or your agency's respective roles and responsibilities during the preparation of this SES and you are unable to attend the agency scoping meeting, please contact me at:

Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Ms. Mary Pete-Freeman, Tribal Transportation Planning
Confederated Tribes of the Goshute Reservation
P.O. BOX 6104/195 Tribal Center Rd.
Ibapah, UT 84034

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Ms. Pete-Freeman:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping

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Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Ms. Candace Bear, Chairwoman
Skull Valley Band of Goshute Indians
407 Skull Valley Rd.
Skull Valley, UT 84029

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Ms. Bear:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping

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Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Mr. Darren Parry, Chairman
Northwestern Band of Shoshone Nation
707 North Main Street
Brigham City, UT 84302

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Parry:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping

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Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Ms. Patty Timbimboo-Madsen, Cultural and Natural Resource Manager
Northwestern Band of Shoshone Nation
707 North Main Street
Brigham City, UT 84302

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Ms. Timbimboo-Madsen:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

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Study Background

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Scoping

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Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Mr. Blaine Edmo, Chairman
Shoshone-Bannock Tribes of the Fort Hall Reservation
P.O. Box 306 Pima Drive
Fort Hall, ID 83203

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Edmo:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

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Study Background

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Scoping

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Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Ms. Carolyn Smith, Cultural Resources/Heritage Tribal Office (HeTO)
Shoshone-Bannock Tribes of the Fort Hall Reservation
P.O. Box 306 Pima Drive
Fort Hall, ID 83203

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Ms. Smith:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

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Study Background

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Scoping

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Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Mr. Darwin St. Clair, Jr., Chairman
Eastern Shoshone Tribe of the Wind River Reservation
P.O. Box 538/15 North Fork Rd
Fort Washakie, WY 82514

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. St. Clair, Jr.:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

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Study Background

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Scoping

UDOT is interested in understanding issues and concerns about the project location from the expertise of your agency. You are invited to attend an agency scoping meeting, to be held on Tuesday, March 19, 2019 from 3:30 - 4:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075.

A public open house will also be held on Tuesday, March 19, 2019 from 5:30 - 7:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075. The public is invited to comment regarding potential issues to be evaluated in the Study. Agency representatives are welcome to attend the open house.

The official thirty (30) day scoping comment period will run from March 19, 2019 through April 18, 2019.

If you have any questions or would like to discuss in more detail the project or your agency's respective roles and responsibilities during the preparation of this SES and you are unable to attend the agency scoping meeting, please contact me at:

Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Ms. Glenda Trosper, Director, Cultural Center
Eastern Shoshone Tribe of the Wind River Reservation
P.O. Box 538/15 North Fork Rd
Fort Washakie, WY 82514

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Ms. Trosper:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping

UDOT is interested in understanding issues and concerns about the project location from the expertise of your agency. You are invited to attend an agency scoping meeting, to be held on Tuesday, March 19, 2019 from 3:30 - 4:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075.

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Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Mr. Joshua Mann, Tribal Historic Presevation Officer
Eastern Shoshone Tribe of the Wind River Reservation
P.O. Box 538/15 North Fork Rd
Fort Washakie, WY 82514

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Mann:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping

UDOT is interested in understanding issues and concerns about the project location from the expertise of your agency. You are invited to attend an agency scoping meeting, to be held on Tuesday, March 19, 2019 from 3:30 - 4:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075.

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If you have any questions or would like to discuss in more detail the project or your agency's respective roles and responsibilities during the preparation of this SES and you are unable to attend the agency scoping meeting, please contact me at:

Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Mr. Luke Dunkin, Chairperson
Ute Indian Tribe of the Uintah & Ouray Reservation
P.O. Box 190
Fort Duchesne, UT 84026

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Dunkin:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping

UDOT is interested in understanding issues and concerns about the project location from the expertise of your agency. You are invited to attend an agency scoping meeting, to be held on Tuesday, March 19, 2019 from 3:30 - 4:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075.

A public open house will also be held on Tuesday, March 19, 2019 from 5:30 - 7:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075. The public is invited to comment regarding potential issues to be evaluated in the Study. Agency representatives are welcome to attend the open house.

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If you have any questions or would like to discuss in more detail the project or your agency's respective roles and responsibilities during the preparation of this SES and you are unable to attend the agency scoping meeting, please contact me at:

Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Ms. Betsy Chapoose, Director, Cultural Rights & Protection
Ute Indian Tribe of the Uintah & Ouray Reservation
P.O. Box 190
Fort Duchesne, UT 84026

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Ms. Chapoose:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping
UDOT is interested in understanding issues and concerns about the project location from the expertise of your agency. You are invited to attend an agency scoping meeting, to be held on Tuesday, March 19, 2019 from 3:30 - 4:30 p.m. at the Syracuse Arts Academy, Antelope Campus Junior High, 2893 West 1700 South, Syracuse, UT 84075.

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If you have any questions or would like to discuss in more detail the project or your agency's respective roles and responsibilities during the preparation of this SES and you are unable to attend the agency scoping meeting, please contact me at:

Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Mr. Mertin Bow, Band Chairman
Cedar Band of Paiute Indians
600 North 100 East/ PO Box 235
Cedar City, UT 84721

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Bow:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping

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Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Mr. Robert Pete, Cultural Resources Representative
Cedar Band of Paiute Indians
601 North 100 East/ PO Box 235
Cedar City, UT 84721

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Pete:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

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Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Mr. Patrick Charles, Band Chairman
Shivwits Band of Paiute Indians
6060 West 3650 North
Ivins, UT 84738

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Mr. Charles:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping

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If you have any questions or would like to discuss in more detail the project or your agency's respective roles and responsibilities during the preparation of this SES and you are unable to attend the agency scoping meeting, please contact me at:

Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

JASON E. DAVIS, P.E.
Deputy Director of Engineering and Operations

TERIANNE S. NEWELL, P.E.
Deputy Director of Planning and Investment

March 4, 2019

Ms. Sabrina Redfoot, Cultural Resource Director
Shivwits Band of Paiute Indians
6060 West 3650 North
Ivins, UT 84738

Subject: State Route 193 State Environmental Study, Davis County, Utah
UDOT Project No. S-0199(245), PIN 16518
Initiation of Environmental Scoping

Dear Ms. Redfoot:

The Utah Department of Transportation (UDOT) is initiating a State Environmental Study (SES), evaluating potential extension of S.R. 193 in Syracuse City, Davis County, Utah.

Your agency has been identified as one that may have an interest in the project, or expertise and/or jurisdiction regarding issues pertaining to this study. With this letter, we invite input and recommendations in the development of the State Environmental Study.

Study Background

S.R. 193 currently terminates at 3000 West. In the SES, UDOT will evaluate alternatives for extending S.R. 193 to the west, providing connectivity to the future West Davis Corridor and potentially connecting with S.R. 110 (4500 West). UDOT will develop and evaluate alternative alignments for the extension of S.R. 193. A public hearing on the draft SES is expected in fall 2019.

Scoping
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If you have any questions or would like to discuss in more detail the project or your agency's respective roles and responsibilities during the preparation of this SES and you are unable to attend the agency scoping meeting, please contact me at:

Liz Robinson
Cultural Resources Program Manager
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114
lizrobinson@utah.gov

Please copy your request to:

Andrea Moser
BIO-WEST, Inc.
1063 West 1400 North
Logan, UT 84321
amoser@bio-west.com

Thank you for your cooperation and interest in this project.

Sincerely,

Liz Robinson
Cultural Resources Program Manager

Enclosure: Project Location Map
cc: Andrea Moser

Antelope Drive
ENVIRONMENTAL STUDY
SR-127; 4500 W. to 2000 W.

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

Key Stakeholder Scoping Meeting Agenda

March 19, 2019

Introductions and Project Overview (5 min) – Rex Harris

Environmental Study Process (5 min) – Elisa Albury

Use study process graphic

Project Details – Andrea Moser

Antelope Drive (5 min) – use slides showing boards

SR-193 (5 min) – use slides showing boards

Issues and Concerns from the Group (30 min) – HG Kunzler

We will use a kmz file that shows both study areas and includes a layer for wetlands and WDC alignment. These will be turned off unless we need to show them.

Tiffany and Laura will keep separate notes for each project for documentation.

Wrap up/How to Comment (5 min) – Tiffany Carlson

Antelope Drive
ENVIRONMENTAL STUDY
SR-127; 4500 W. to 2000 W.

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W

Project:
SR-193 and Antelope Drive

Meeting Purpose:
Key Stakeholder Meeting

Meeting Time/Date:
March 19, 2019
3:30 pm – 4:30 pm

Location:
Syracuse Arts Academy

Name:	Representing:	Phone:	Email:
Tiffany Carlson	Lochner PI	801-699-1958	tcarlson@hwlochner.com
Laura Ingersoll	Lochner PI	801-664-1447	lingersoll@hwlochner.com
Connor C Roberts	Lochner PI	385-333-5603	connor.roberts@hwlochner.com
Boyd Davis	West Point	801-776-0970	bdavis@westpointcity.org
Troy Moyes	West Point	801-614-5256	tmoyes@westpointcity.org
Kip Billings	WFRC	801-363-4250	kip@wfrc.org
Dale Pfister	Syracuse Arts Academy	801-784-5211	dpfister@saacharter.org

UDOT Keeping Utah Moving

Appendix B

Public Scoping Meeting Advertisement

For Immediate Release

UDOT to Hold Public Open House for State Environmental Studies (SES's) on SR-193 and Antelope Drive

Studies beginning to evaluate SR-193 and Antelope Drive near the future West Davis Corridor

OGDEN (March 15, 2019) — The Utah Department of Transportation (UDOT) will host a public scoping meeting to provide information about two State Environmental Studies (SES) that are being prepared in West Point and Syracuse, Utah. One study will evaluate a potential extension of SR-193 and the other will evaluate potential improvements to Antelope Drive (SR-127).

The public scoping meeting will be held Tuesday, March 19 from 5:30 to 7:30 p.m. at Syracuse Arts Academy, Antelope Campus Junior High (2893 West 1700 South, Syracuse, UT 84075). The public is invited to visit at any time during the meeting to speak with project representatives, learn about the environmental studies, and provide written comments on the studies. There are two studies being prepared:

- In the SR-193 SES, UDOT will evaluate alternatives for extending the road to the west, providing connectivity to the future West Davis Corridor (WDC) and potentially connecting to 4500 West.
- The Antelope Drive SES will evaluate the capacity, connectivity, and safety needs for Antelope Drive near the future WDC interchange. As part of the Antelope Drive study, the preliminary design of the WDC/Antelope Drive interchange may also be reevaluated.

The official public scoping comment period for these two studies run from March 19 to April 18, 2019. Official comments regarding the respective studies may be submitted by email or on the study websites.

- For SR-193, submit comments to: sr193extension@utah.gov, or at http://www.udot.utah.gov/sr193extension
- For Antelope Drive, submit comments to: antelopedriveimproved@utah.gov, or at www.udot.utah.gov/antelopedriveimproved.

For any other questions or concerns, please contact the study hotline at (385) 275-2887

-UDOT-

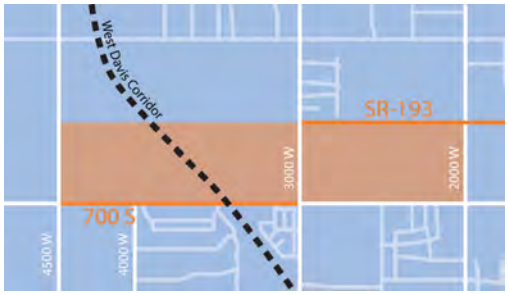
Media Contact:
Rex Harris
UDOT Project Manager
rexharris@utah.gov
Phone: (801) 791-3926

03/08/19

View this email in your browser

SR-193 ENVIRONMENTAL STUDY
4500 W. to 3000 W.

The Utah Department of Transportation (UDOT) is preparing a State Environmental Study (SES) to evaluate a potential extension of SR-193 in Syracuse. SR-193 currently ends at 3000 West. Through this study, UDOT will evaluate alternatives for extending the road to the west, providing connectivity to the future West Davis Corridor and potentially connecting to 4500 West.



Antelope Drive ENVIRONMENTAL STUDY
SR-127; 4500 W. to 2000 W.

UDOT is preparing a SES to evaluate potential improvements to SR-127 (Antelope Drive) in Syracuse. The future West Davis Corridor (WDC) will intersect Antelope Drive near the Syracuse Arts Academy. The SES will evaluate the capacity, connectivity, and safety needs for Antelope Drive near this new interchange. The preliminary design of the WDC/Antelope Drive interchange may also be reevaluated.

UDOT will hold a combined public scoping meeting for both projects to gather input from the community and provide details about the environmental study process.

YOU'RE INVITED

OPEN HOUSE

Tuesday, March 19, 2019
Come anytime between 5:30 PM and 7:30 PM

Syracuse Arts Academy (Antelope Campus) Jr. High
2893 W 1700 S, Syracuse, UT 84075

The open house will be accessible according to the requirements of the Americans with Disabilities Act (ADA). If you have any special language, audio or visual needs please contact the project team at least 72 hours prior to the meeting so that accommodations can be provided.

Comments will be accepted at the public meeting. You may also comment from March 19 to April 18, 2019 on the project websites or via email (see details below).

Contact Our Public Involvement Team

Hotline: (385) 275-2887

Email: sr193extension@utah.gov
antelopedriveimproved@utah.gov

Website: udot.utah.gov/sr193extension
udot.utah.gov/antelopedriveimproved

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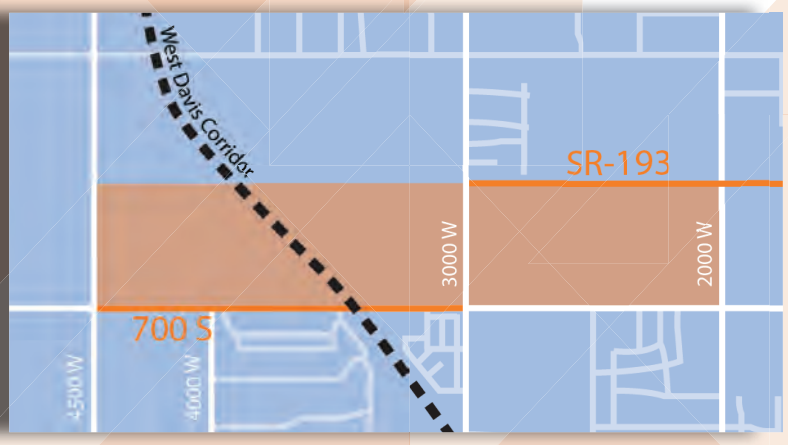
UDOT Keeping Utah Moving

SR-193

ENVIRONMENTAL STUDY

4500 W. to 3000 W.

The Utah Department of Transportation (UDOT) is preparing a State Environmental Study (SES) to evaluate a potential extension of SR-193 in Syracuse. SR-193 currently ends at 3000 West. Through this study, UDOT will evaluate alternatives for extending the road to the west, providing connectivity to the future West Davis Corridor and potentially connecting to 4500 West.



SR-193 Extension Team
Phone: 385-275-2887
Email: sr193extension@utah.gov
Website: udot.utah.gov/sr193extension

Antelope Drive

ENVIRONMENTAL STUDY

SR-127; 4500 W. to 2000 W.

UDOT is preparing a SES to evaluate potential improvements to SR-127 (Antelope Drive) in Syracuse. The future West Davis Corridor (WDC) will intersect Antelope Drive near the Syracuse Arts Academy. The SES will evaluate the capacity, connectivity, and safety needs for Antelope Drive near this new interchange. The preliminary design of the WDC/Antelope Drive interchange may also be reevaluated.

Antelope Drive Improved Team
Phone: 385-275-2887
Email: antelopedriveimproved@utah.gov
Website: udot.utah.gov/antelopedrimproved

UDOT Keeping Utah Moving

Return To:
H.W. Lochner,
3995 South 700 East, Suite 450
Salt Lake City, UT 84107

UDOT will hold a combined public scoping meeting for both projects to gather input from the community and provide details about the environmental study process.

YOU'RE INVITED

OPEN HOUSE

Tuesday, March 19, 2019
Come anytime between 5:30 PM and 7:30 PM

Syracuse Arts Academy (Antelope Campus) Jr. High
2893 W 1700 S, Syracuse, UT 84075

The open house will be accessible according to the requirements of the Americans with Disabilities Act (ADA). If you have any special language, audio or visual needs please contact the project team at least 72 hours prior to the meeting so that accommodations can be provided.

Comments will be accepted at the public meeting. You may also comment from March 19 to April 18, 2019 on the project websites or via email (details on other side).

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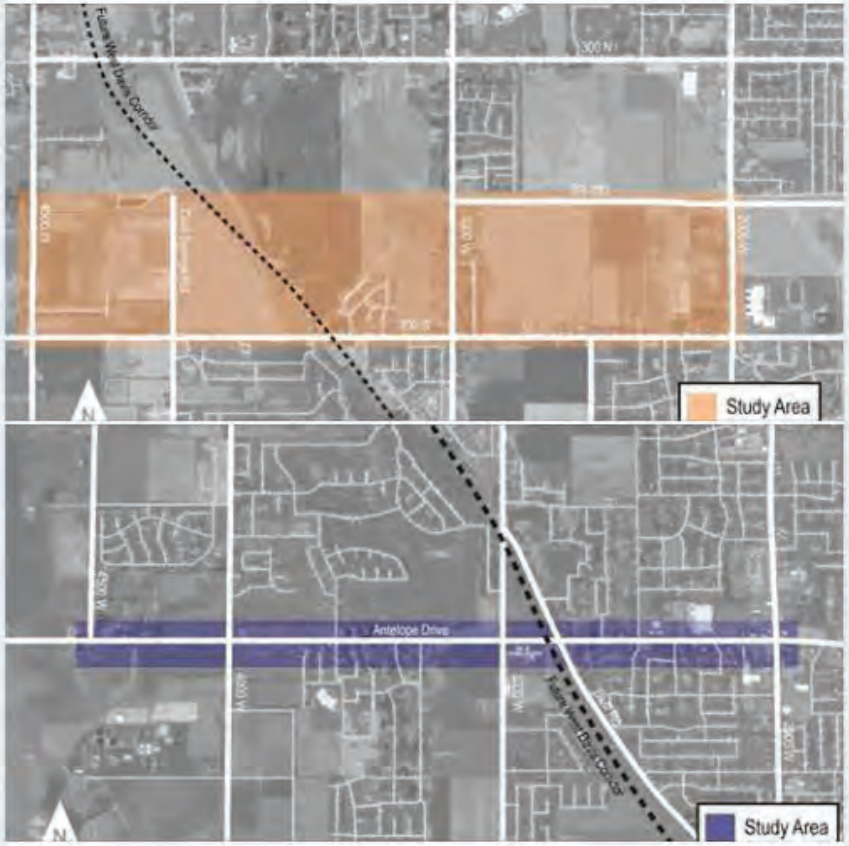
Utah DOT
March 18 at 2:04 PM

Davis County residents:

UDOT will hold a public scoping meeting for potential improvements to S.R. 193 and Antelope Drive, near the future West Davis Corridor. The meeting will be held on Tuesday, March 19 from 5:30 to 7:30 p.m. at the Syracuse Arts Academy - Antelope Campus (2893 West 1700 South, Syracuse, UT 84075).

Come visit the open house at any time during the meeting to speak with project representatives, learn about the environmental studies, and provide written comme... See More



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UDOT Region One @UDOTRegionOne · Mar 19

TONIGHT: UDOT holding public scoping meeting for potential improvements to SR-193 and Antelope Dr. from 5:30 to 7:30 p.m., Syracuse Arts Academy, 2893 W. 1700 S., Syracuse. Speak with the project teams and provide your comments. INFO? Call 385-275-2887.

1

UDOT Region One @UDOTRegionOne · Mar 18

TOMORROW, MAR 19: UDOT holding public scoping meeting for potential improvements to SR-193 and Antelope Dr. from 5:30 to 7:30 p.m., Syracuse Arts Academy, 2893 W. 1700 S., Syracuse. Speak with the project teams and provide your comments. INFO? Call 385-275-2887.

1 2

UDOT Region One @UDOTRegionOne · Mar 17

TUESDAY, MAR 19: UDOT holding public scoping meeting for potential improvements to SR-193 and Antelope Dr. from 5:30 to 7:30 p.m., Syracuse Arts Academy, 2893 W. 1700 S., Syracuse. Speak with the project teams and provide your comments. INFO? Call 385-275-2887.

1 4

Appendix C

Public Scoping Meeting Materials

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

UTAH DEPARTMENT OF TRANSPORTATION SIGN-IN SHEET
~~Project Description: I-15, SR-97 (5600 South) Environmental Study~~
~~Project Number: S-I15-8(159)338~~
~~Pin: 15685~~

Antelope Drive
ENVIRONMENTAL STUDY
SR-127; 4500 W. to 2000 W.

The Utah Department of Transportation monitors attendance to ensure non-discrimination. We appreciate you providing this information.

Name (Please print or write clearly)	[redacted]	Which Project Are You Interested In?	OPTIONAL	
Dennis Montgomery		[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Velma Montgomer		[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Joe Myers Kristie Myers		[ ] SR-193 [X] Antelope Drive	[ ] Male [X] Female (mother) [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
		[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
		[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
		[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
		[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
		[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
		[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
		[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other

This information will only be used to monitor attendance at public meetings and for data collection purposes, as specified by law (CFR 23 200.9(4)).
Sign In sheet will become part of the public record for this project.

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

UTAH DEPARTMENT OF TRANSPORTATION SIGN-IN SHEET
~~Project Description: I-15; SR-97 (5600 South) Environmental Study~~
~~Project Number: S-I15-8(159)338~~
~~Pin: 15685~~

Antelope Drive
ENVIRONMENTAL STUDY
SR-127; 4500 W. to 2000 W.

The Utah Department of Transportation monitors attendance to ensure non-discrimination. We appreciate you providing this information.

Name (Please print or write clearly)	Email address	Address (City, State and Zip)	Phone Number	Which Project Are You Interested In?	OPTIONAL	
Angella Ball	[redacted]			[✓] SR-193 [ ] Antelope Drive	[ ] Male [✓] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
Jessica Oliverson				[✓] SR-193 [ ] Antelope Drive	[ ] Male [✓] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
Jeff Davis				[✓] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [✓] Black [ ] Hispanic [✓] White [ ] Other
Phil Cook				[X] SR-193 [X] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Mukena Phelps Dan Phelps				[✓] SR-193 [✓] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
Von Schneiter				[X] SR-193 [ ] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[X] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Cindy Heacle				[ ] SR-193 [✓] Antelope Drive	[ ] Male [✓] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [✓] Other American
Lonnie Weston				[✓] SR-193 [✓] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
[illegible]				[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other

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Antelope Drive
ENVIRONMENTAL STUDY
SR-127; 4500 W. to 2000 W.

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Name (Please print or write clearly)	Email address	Address (City, State and Zip)	Phone Number	Which Project Are You Interested In?	OPTIONAL	
Charlotte Wright	[redacted]			[ ] SR-193 [✓] Antelope Drive	[ ] Male [✓] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Brian Torgerson	[redacted]			[ ] SR-193 [✓] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
Bonnie Hansen	[redacted]			[✓] SR-193 [ ] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
MARK SANDBERG	[redacted]			[✓] SR-193 [ ] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Lanny Hallwood	[redacted]			[ ] SR-193 [✓] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
Jay & Susan Stuart	[redacted]			[ ] SR-193 [✓] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Bruce Redd	[redacted]			[✓] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Ken + Norma Patterson	[redacted]			[ ] SR-193 [✓] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Donelan	[redacted]			[✓] SR-193 [✓] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other

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Name (Please print or write clearly)	Email address	Address (City, State and Zip)	Phone Number	Which Project Are You Interested In?	OPTIONAL	
Irvin Kano	[redacted]			[ ] SR-193 [x] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Robert Adams				[ ] SR-193 [X] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
(2) Michael Smyers				[ ] SR-193 [✓] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Brady Haws				[X] SR-193 [ ] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[X] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Andrew Gempertline				[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Phyllis Cook				[ ] SR-193 [✓] Antelope Drive	[ ] Male [✓] Female [✓] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Kenneth Hellewell				[✓] SR-193 [✓] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
Sharon Tanner				[X] SR-193 [X] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Mike Gailey				[X] SR-193 [X] Antelope Drive	[ ] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other

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Name (Please print or write clearly)	Email address	Address (City, State and Zip)	Phone Number	Which Project Are You Interested In?	OPTIONAL	
Cindy Hellewell	[redacted]			[X] SR-193 [ ] Antelope Drive	[ ] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Lori Bronkhorst				[X] SR-193 [X] Antelope Drive	[ ] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Nicole Bigelow				[X] SR-193 [X] Antelope Drive	[ ] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Robert Rowe				[ ] SR-193 [X] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Lynette Hilton				[X] SR-193 [X] Antelope Drive	[ ] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
FERN FREEMAN				[X] SR-193 [X] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
BRETT JENSEN				[X] SR-193 [X] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Vicky B. Hansen				[ ] SR-193 [X] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Richard Loock				[X] SR-193 [X] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other

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Name (Please print or write clearly)	Email address	Address (City, State and Zip)	Phone Number	Which Project Are You Interested In?	OPTIONAL	
Pru Thornley	[redacted]			[X] SR-193 [ ] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Grant Tanner				[X] SR-193 [X] Antelope Drive	[X] Male [X] Female [X] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [X] Other Hispanic
Bruce Schofield				[ ] SR-193 [X] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
[illegible]				[ ] SR-193 [X] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Dennis Boyer				[ ] SR-193 [X] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Terry & Sally Pietsch				[ ] SR-193 [X] Antelope Drive	[X] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Rob & Jodie Shadbolt				[ ] SR-193 [X] Antelope Drive	[X] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Terry Ellis				[X] SR-193 [X] Antelope Drive	[ ] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Bart Priest				[X] SR-193 [ ] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other

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Name (Please print or write clearly)	Email address	Address (City, State and Zip)	Phone Number	Which Project Are You Interested In?	OPTIONAL	
Pat Hale	[redacted]			[X] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Debbie Bemel				[X] SR-193 [ ] Antelope Drive	[ ] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Chuck Weight				[ ] SR-193 [X] Antelope Drive	[X] Male [ ] Female [X] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Nina Rizer Frank Smith				[X] SR-193 [X] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Steve & Linda Gates				[X] SR-193 [ ] Antelope Drive	[X] Male [X] Female [X] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Jennie Carbine				[ ] SR-193 [X] Antelope Drive	[ ] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Shawn Bennett				[X] SR-193 [ ] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Wendy Thompson				[ ] SR-193 [X] Antelope Drive	[ ] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Tracy Erin Holm				[ ] SR-193 [X] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other

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Name (Please print or write clearly)	Email address	Address (City, State and Zip)	Phone Number	Which Project Are You Interested In?	OPTIONAL	
Dale Cheney	[redacted]	[redacted]	[redacted]	[ ] SR-193 [✓] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
Terry Palmer	[redacted]	[redacted]	[redacted]	[✓] SR-193 [✓] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
BRIGHAM MELLOR	[redacted]	[redacted]	[redacted]	[✓] SR-193 [ ] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
GERALD STRUHS	[redacted]	[redacted]	[redacted]	[✓] SR-193 [✓] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
Patrick Olivers on	[redacted]	[redacted]	[redacted]	[✓] SR-193 [ ] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
FRANKLIN SMITH	[redacted]	[redacted]	[redacted]	[✓] SR-193 [✓] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [✓] Other
Karen Waite	[redacted]	[redacted]	[redacted]	[ ] SR-193 [X] Antelope Drive	[ ] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Dave Cole	[redacted]	[redacted]	[redacted]	[X] SR-193 [X] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Lisa Bingham	[redacted]	[redacted]	[redacted]	[X] SR-193 [X] Antelope Drive	[ ] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other

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Sign In sheet will become part of the public record for this project.

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

UTAH DEPARTMENT OF TRANSPORTATION SIGN-IN SHEET
Project Description: I-15; SR-97 (5600 South) Environmental Study
Project Number: S-I15-8(159)338
Pin: 15685

Antelope Drive
ENVIRONMENTAL STUDY
SR-127; 4500 W. to 2000 W.

The Utah Department of Transportation monitors attendance to ensure non-discrimination. We appreciate you providing this information.

Name (Please print or write clearly)	Email address	Address (City, State and Zip)	Phone Number	Which Project Are You Interested In?	OPTIONAL	
Carter Haake	[redacted]			[X] SR-193 [X] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Smith Don	[redacted]			[X] SR-193 [ ] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Jordan Savage	[redacted]			[ ] SR-193 [X] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Larry Parker	[redacted]			[X] SR-193 [X] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Mike McBride	[redacted]			[X] SR-193 [X] Antelope Drive	[X] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Dana Lowe	[redacted]			[ ] SR-193 [X] Antelope Drive	[ ] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Lonn Hunter	[redacted]			[X] SR-193 [X] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Ken Nelson	[redacted]			[X] SR-193 [ ] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
George & Heike Bell	[redacted]			[X] SR-193 [X] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other

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~~Project Description: I-15; SR-97 (5600 South) Environmental Study~~
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~~Pin: 15685~~

Antelope Drive
ENVIRONMENTAL STUDY
SR-127; 4500 W. to 2000 W.

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Name (Please print or write clearly)	Email address	Address (City, State and Zip)	Phone Number	Which Project Are You Interested In?	OPTIONAL	
Dale Hammon	[redacted]	[redacted]	[redacted]	[✓] SR-193 [✓] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
Misti Parker	[redacted]	[redacted]	[redacted]	[✓] SR-193 [ ] Antelope Drive	[ ] Male [✓] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Becky Mike Meehan	[redacted]	[redacted]	[redacted]	[✓] SR-193 [✓] Antelope Drive	[✓] Male [✓] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
Stephen & Sarah Burrow	[redacted]	[redacted]	[redacted]	[✓] SR-193 [✓] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [✓] Black [ ] Hispanic [✓] White [ ] Other
Robert Browning	[redacted]	[redacted]	[redacted]	[✓] SR-193 [✓] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
Donald Holley	[redacted]	[redacted]	[redacted]	[✓] SR-193 [✓] Antelope Drive	[✓] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other
Aaron & Glady Largen	[redacted]	[redacted]	[redacted]	[✓] SR-193 [✓] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Cindy Gooch	[redacted]	[redacted]	[redacted]	[ ] SR-193 [✓] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
shirley waite	[redacted]	[redacted]	[redacted]	[ ] SR-193 [✓] Antelope Drive	[ ] Male [✓] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [✓] White [ ] Other

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SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

UTAH DEPARTMENT OF TRANSPORTATION SIGN-IN SHEET
~~Project Description: I-15; SR-97 (5600 South) Environmental Study~~
~~Project Number: S-I15-8(159)338~~
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Antelope Drive
ENVIRONMENTAL STUDY
SR-127; 4500 W. to 2000 W.

The Utah Department of Transportation monitors attendance to ensure non-discrimination. We appreciate you providing this information.

Name (Please print or write clearly)	Email address	Address (City, State and Zip)	Phone Number	Which Project Are You Interested In?	OPTIONAL	
Corey Wilcox	[redacted]			[X] SR-193 [+] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Beverly Williamson				[ ] SR-193 [ ] Antelope Drive	[ ] Male [X] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
~~Jno Myers~~				[X] SR-193 [X] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
Mary Elizabeth Davis				[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
Spencer Davis				[X] SR-193 [X] Antelope Drive	[X] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [X] White [ ] Other
				[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
				[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
				[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other
				[ ] SR-193 [ ] Antelope Drive	[ ] Male [ ] Female [ ] Person with Disability	[ ] American Indian/Alaskan Native [ ] Asian/Pacific Islander [ ] Black [ ] Hispanic [ ] White [ ] Other

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Sign In sheet will become part of the public record for this project.

WELCOME

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

Antelope Drive
ENVIRONMENTAL STUDY
SR-127; 4500 W. to 2000 W.

SR-193

ENVIRONMENTAL STUDY

4500 W. to 3000 W.

Evaluate potential extension of SR-193, providing connectivity to the future West Davis Corridor and possible connection to 4500 West.

Antelope Drive

ENVIRONMENTAL STUDY

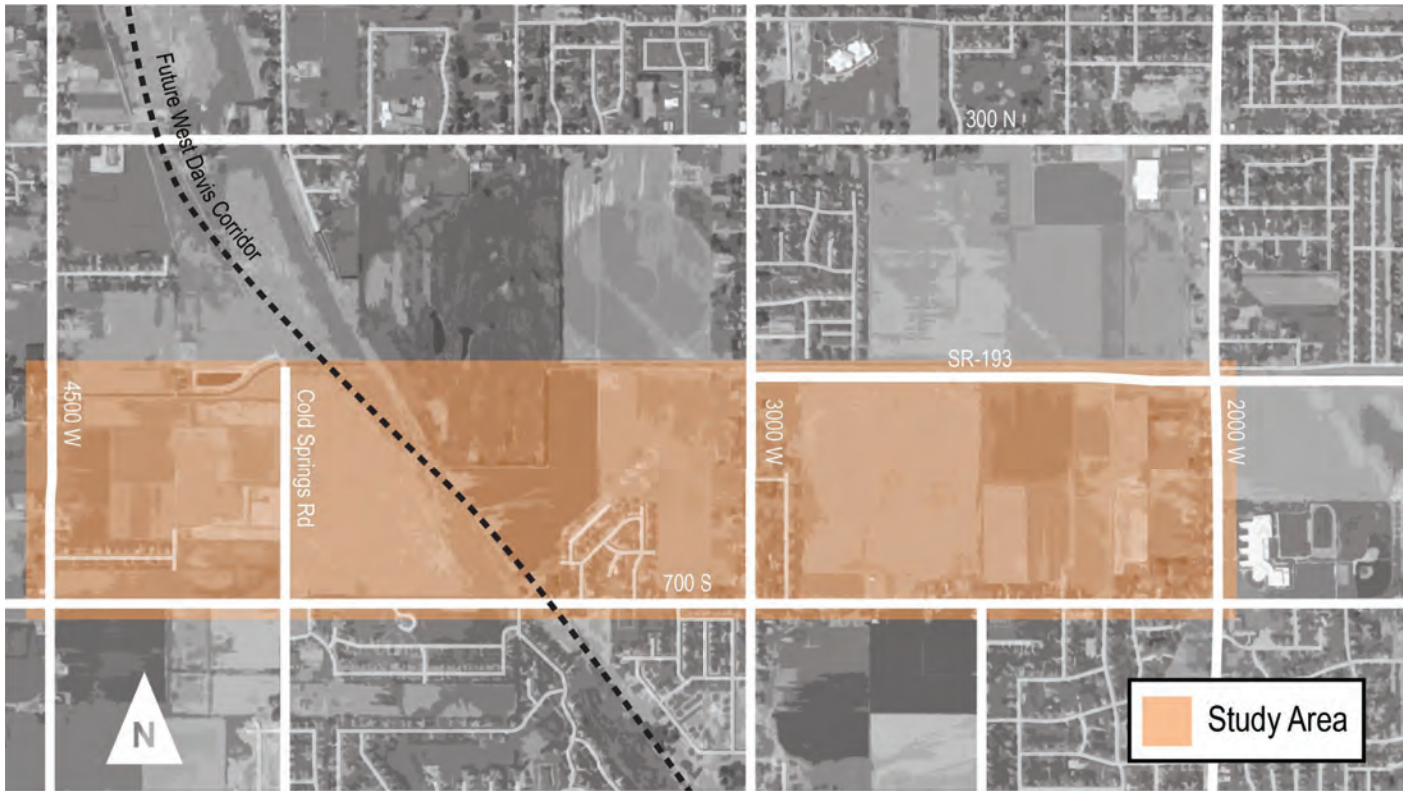
SR-127; 4500 W. to 2000 W.

Evaluate potential improvements to Antelope Drive for capacity, connectivity, and safety near the new West Davis Corridor interchange.

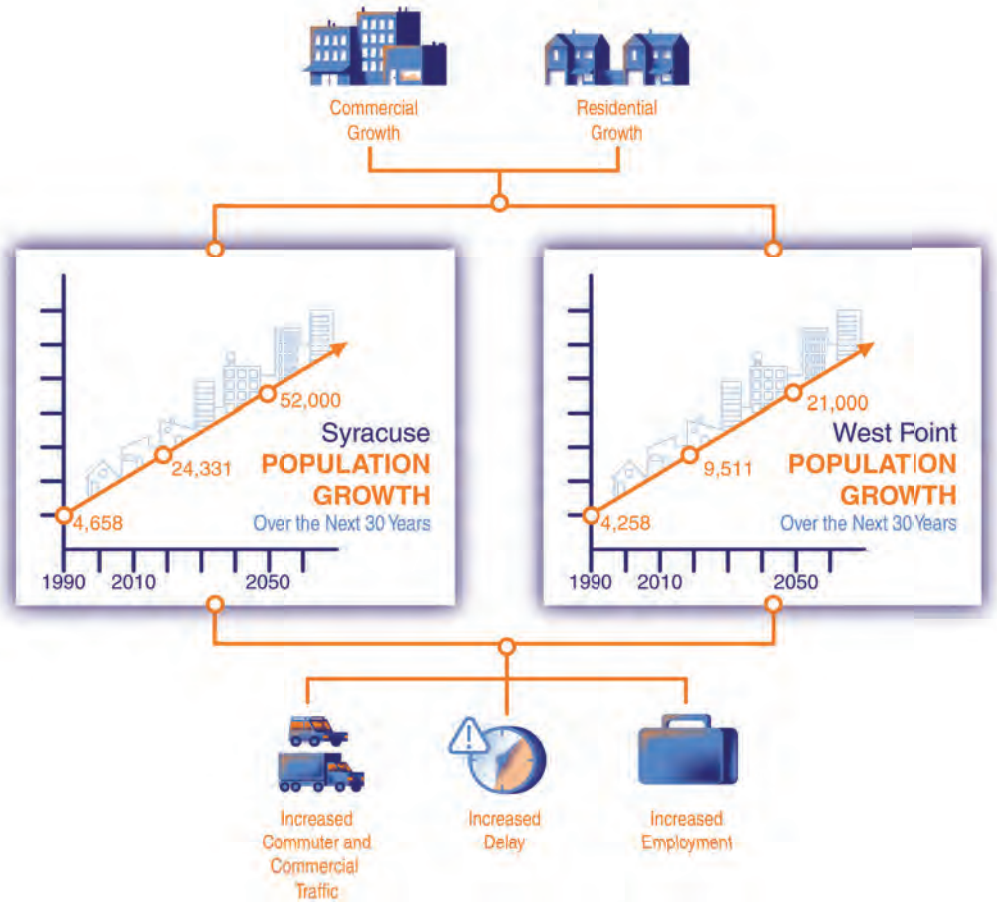
UDOT
Keeping Utah Moving

STUDY AREA

UDOT will evaluate social, economic, and natural environmental factors as part of the State Environmental Study Process. Proposed improvements will be evaluated within the following study area:



WHY IS THIS PROJECT NEEDED?

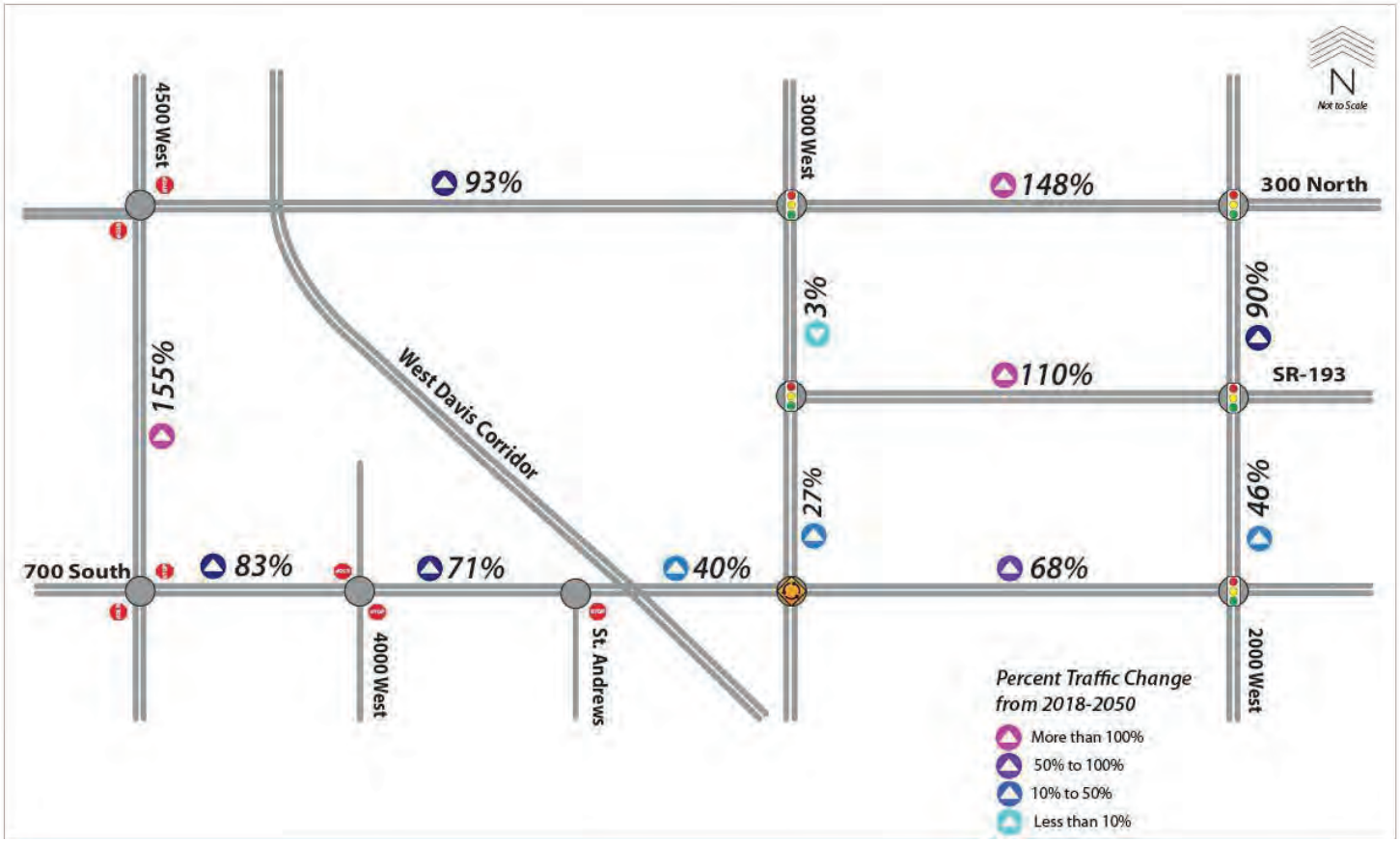


Over the next 30 years, residential and commercial growth is projected to increase by over 100%

This growth will lead to an increase in:

- Traffic
- Travel Delay
- Employment

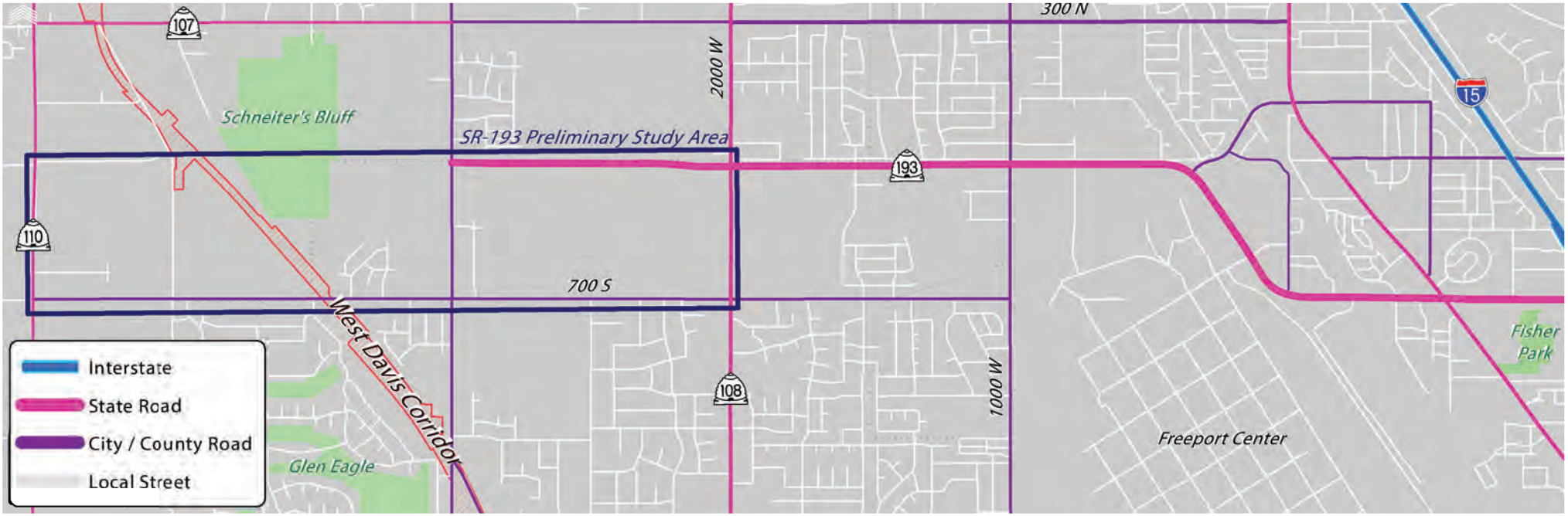
WHY IS THIS PROJECT NEEDED?



By the year 2050 the traffic on the existing arterial roadways is expected to increase

WHAT TRANSPORTATION PROBLEMS EXIST?

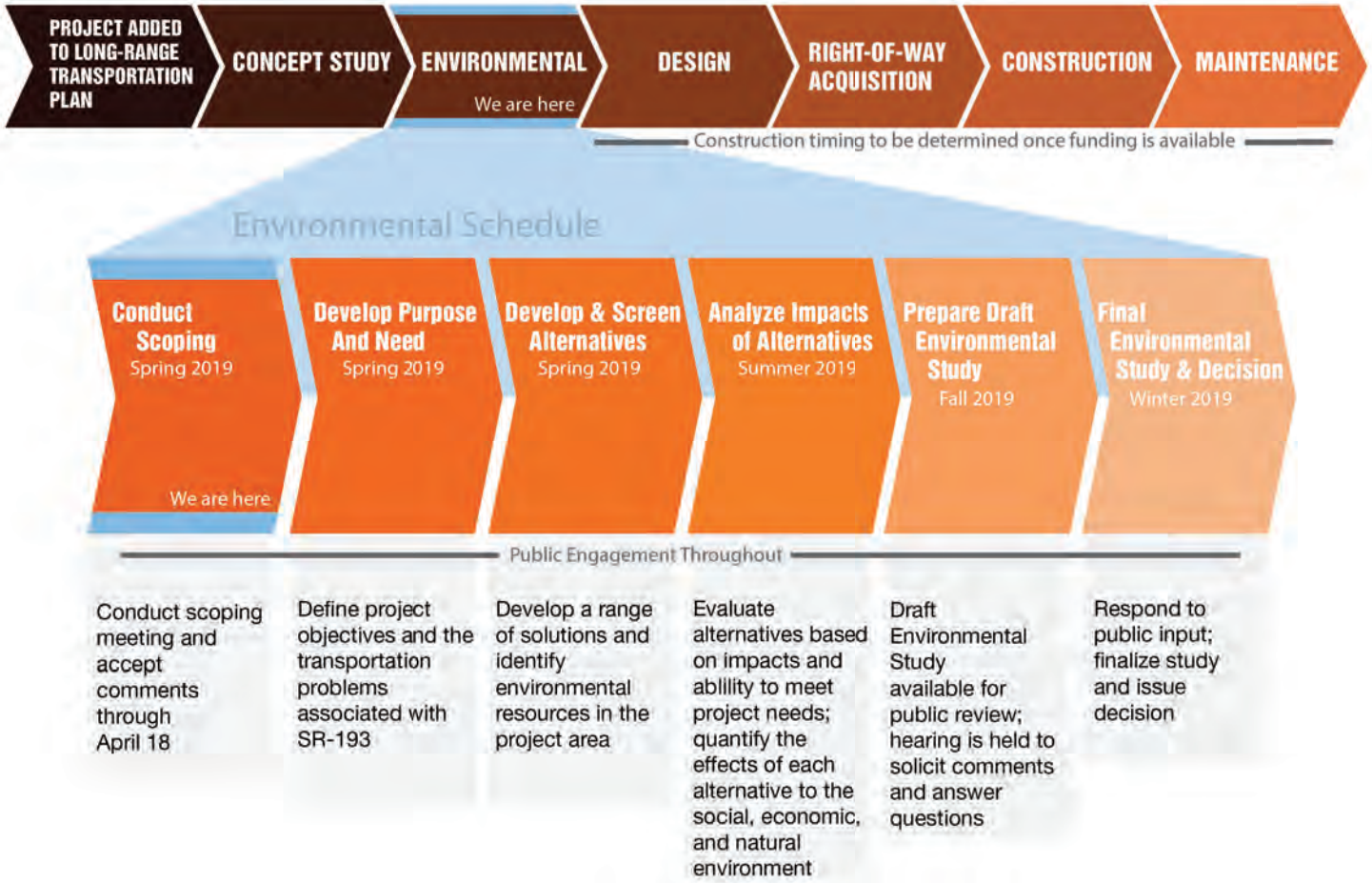
UDOT manages arterial roadways in the area (designated state routes). Connectivity of arterials provides efficient mobility. This study is focused on improving connectivity of state routes.



HOW IS THIS STUDY DIFFERENT FROM WEST DAVIS CORRIDOR?

	SR-193 Environmental Study	West Davis Corridor EIS
Purpose	**Roadway Extension** Evaluating extension of SR-193 to connect with other state routes	**20 Mile Corridor** Developing a **system-to-system network** that would connect I-15 with the west side of Davis County
Schedule	**One Year** (12 Months)	**Seven Years**
Alternatives	Likely to have narrower range of alternatives due to focused study area and project purpose	Broader range of alternatives due to larger study area and broader project purpose
Public Involvement	**Focused Outreach** - Two Municipalities - Fewer Stakeholders - 2 Public Meetings Planned	**Intensive Outreach** - Multiple Public municipalities - Many Stakeholders - Multiple public meetings

WHAT IS THE PROJECT PROCESS?



HOW DO I COMMENT?

The official public comment period is from March 19 through April 18, 2019. Comments must be postmarked or emailed to the project team by midnight on April 18, 2019 in order to be included in the official transcript for the public scoping period.

Written comments may be submitted by:

COMMENT FORMS
Fill out and turn in at the public scoping meeting

WEBSITE
Submit online at www.udot.utah.gov/sr193Extension

EMAIL
sr193extension@utah.gov

MAIL
Send to SR-193 Team,
c/o Avenue Consultants,
6605 S. Redwood Rd, Ste 200
West Jordan, UT 84084

WHAT ISSUES ARE IMPORTANT TO YOU?

Traffic Congestion

School Crossing Safety

Land Use

Property Impacts and Relocations

Economics

Air Quality

Community Character and Cohesion

Low Income and Minority Populations

Historic Properties

Visual Resources

Noise

Hazardous Materials

Parks and Open Space

Trails

Wetlands and Water

Wildlife

Threatened and Endangered Species

Other Issues

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name _____

Phone _____

Email _____

Address _____

Would you like to receive email updates? **Yes** or **No**

Mail To:

SR-193 Extension Project Team
c/o Avenue Consultants,
6605 S. Redwood Rd, Ste 200
West Jordan, UT 84084

Other Ways to Comment:

E: SR193extension@utah.gov

W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

_____

_____

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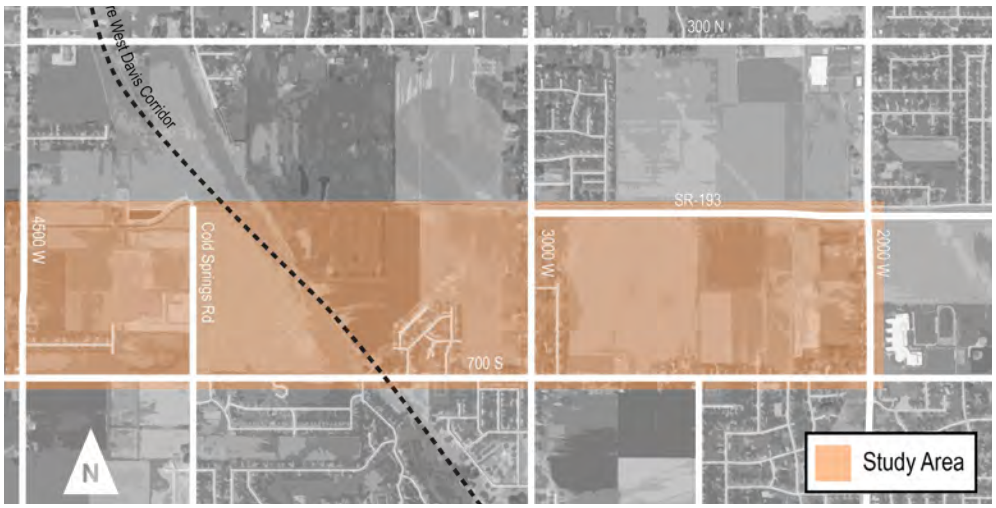
UDOT Keeping Utah Moving

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

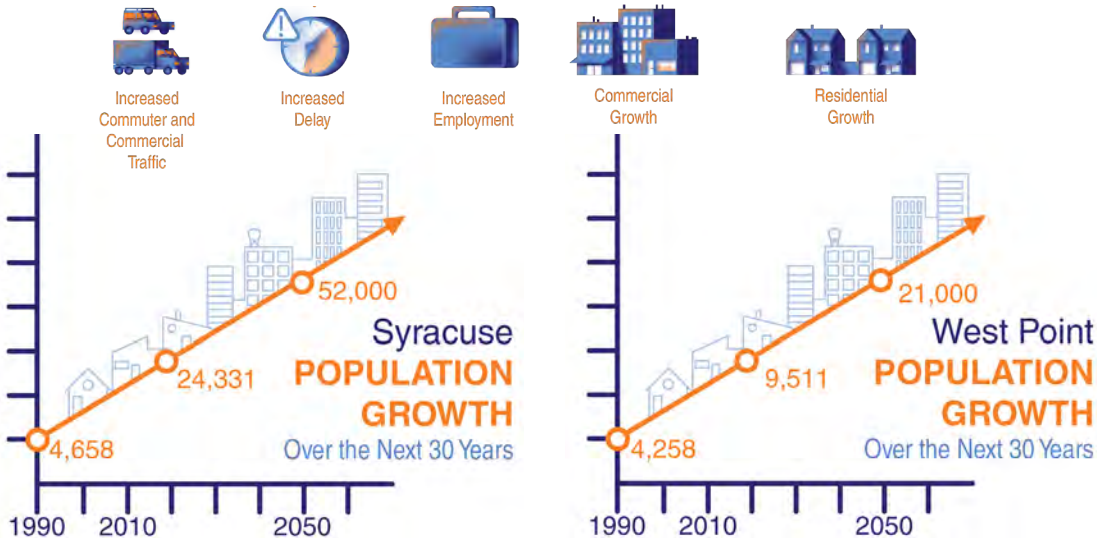
About the Project

The Utah Department of Transportation (UDOT) is preparing a State Environmental Study (SES) to evaluate a potential extension of SR-193 in Syracuse and West Point. SR-193 currently ends at 3000 West. Through this study, UDOT will evaluate alternatives for extending the road to the west, providing connectivity to the future West Davis Corridor and potentially connecting to 4500 West.



Why is this Project Needed?

Planning for growth and increased demand.



What is the Project Process?

Frequently Asked Questions

What is this project studying? How is this different from West Davis Corridor?

This study is focused on evaluating a potential extension of SR-193 in Syracuse and West Point, which currently terminates at 3000 West. The purpose of this study is to connect SR-193 to other state roads, including providing connectivity to the future West Davis Corridor and potentially connecting to 4500 West.

The WDC EIS was a more extensive study that looked at developing a 20-mile long system-to-system network to connect I-15 with the west side of Davis County. The EIS identified an alignment west of Schneiter's Bluff Golf Course. This study will examine a potential connection to the future WDC.

How will my input be used? Will you respond to my comments?

The project team will use comments provided during the scoping phase to identify issues and resources along the corridor and develop solutions to address those issues. We will not provide a direct response to comments received during this phase but a project team member will contact you if we need additional information. There will be another public meeting and comment period when the Draft Environmental Study is published in fall 2019.

Will my property be impacted?

UDOT will not know details of specific property impacts until a preliminary roadway concept is completed in fall 2019. Property impacts will be identified in the Draft Environmental Study. The project team will meet with impacted property owners after the Draft is published to help them understand the specific impact to their property and provide details about UDOT's right-of-way acquisition process.

When will this be constructed?

Construction funding is not currently available. If funding becomes available, the project could be constructed by late 2020 at the earliest.

Submitting your Comments Tonight

Fill out comment form and turn it in at the public scoping meeting

Submitting your Comments After Tonight

Email:
sr193extension
@utah.gov

Mail To:
SR-193 Team,
c/o Avenue Consultants
6605 S Redwood Rd,
Ste 200 West Jordan UT, 84084

Submit Online at:
udot.utah.gov/
sr193extension

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

A UDOT Project

The Utah Department of Transportation (UDOT) is preparing a State Environmental Study (SES) to evaluate a potential extension of SR-193 in Syracuse and West Point, Utah. SR-193 currently terminates at 3000 West. Through this study, UDOT will evaluate alternatives for extending the road to the west, providing connectivity to the future West Davis Corridor and potentially connecting to 4500 West. In preparing the SES, UDOT will evaluate the environmental and social impacts of the proposed extension.

Public Scoping

UDOT will hold a combined public scoping meeting for the SR-193 SES and the Antelope Drive SES (more information about that project is available here). The meeting will be in an open house format to gather input from the community and provide details about the environmental study process.

PUBLIC SCOPING MEETING

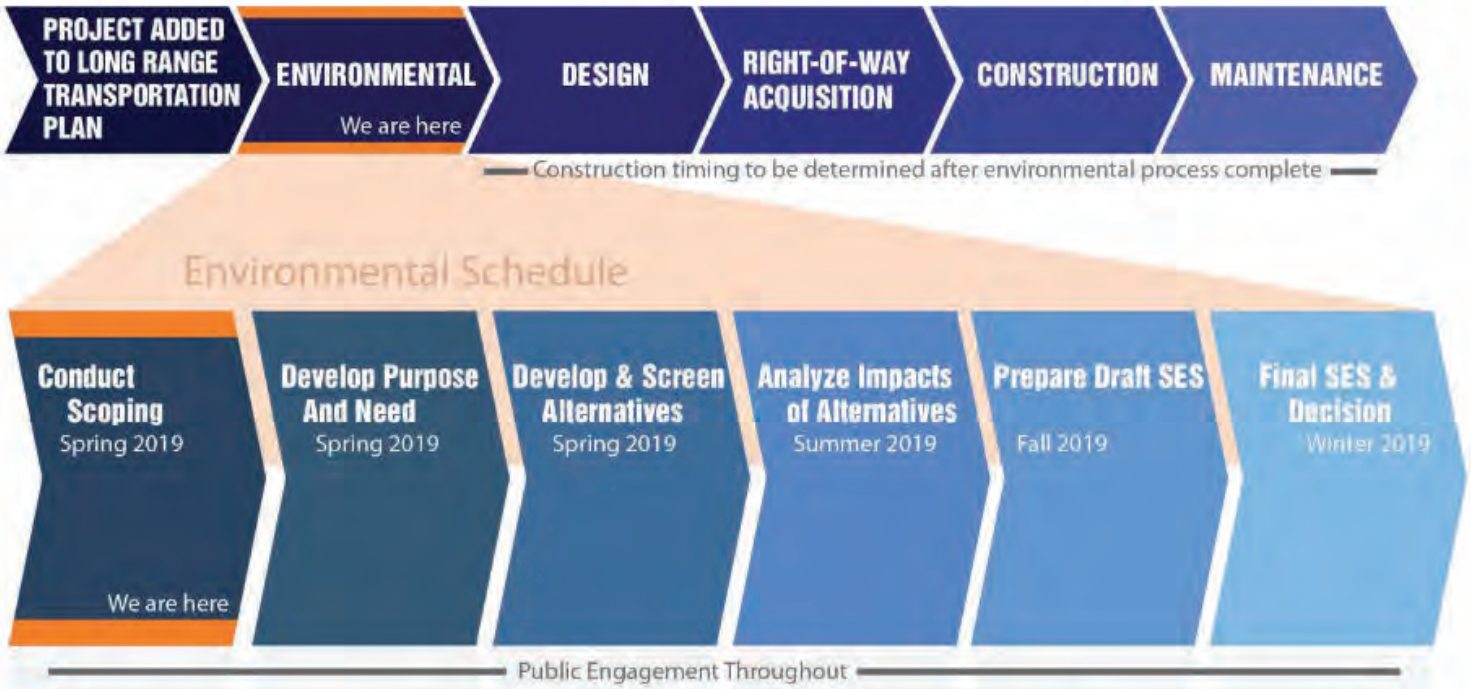
- Tuesday, March 19, 2019 | 5:30 to 7:30 p.m
- Syracuse Arts Academy | Antelope Campus Junior High
- 2893 West 1700 South, Syracuse, UT 84075

The open house will be accessible according to the requirements of the Americans with Disabilities Act (ADA). If you have any special language, audio or visual needs please contact the project team at least 72 hours prior to the meeting so that accommodations can be provided.

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

A UDOT Project

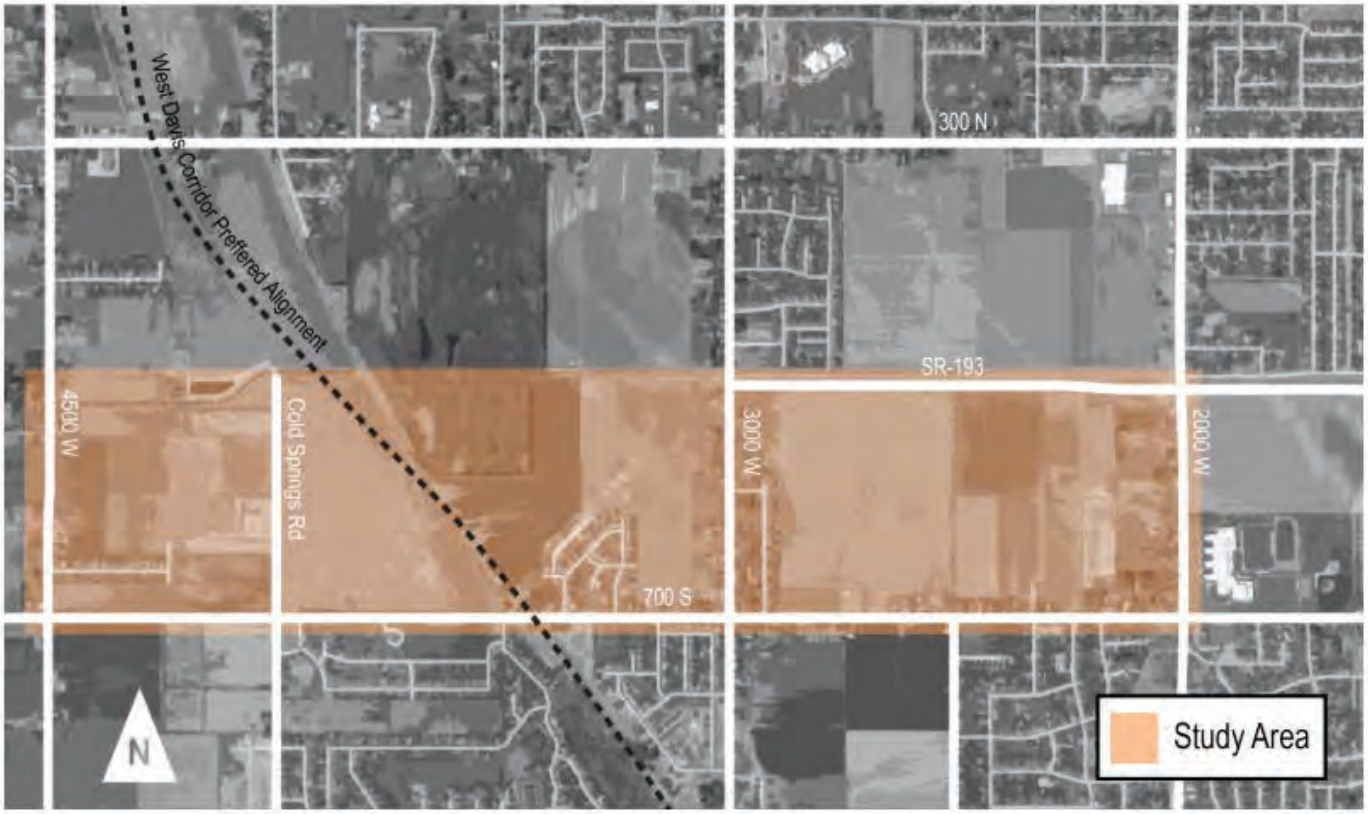
UDOT will assess the environmental impacts of the proposed action on the natural and built environment prior to making a decision. This process also provides opportunities for public review and comment.



Conduct scoping and accept comments through April 18, 2019	Define project objectives and the transportation challenges associated with the SR-193 corridor	Develop a range of solutions, identify environmental resources, and select a build alternative to evaluate in detail	Evaluate build alternative; quantify the effects to the social, economic, and natural environment	Draft SES available for public review; a hearing is held to solicit public comment on the Draft SES	Respond to public input; finalize SES and issue decision

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

A UDOT Project



STATEJOBS.UTAH.GOV

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by UDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated January 17, 2017, and executed by FHWA and UDOT.

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SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

A UDOT Project

Scoping Meeting Materials

UDOT held a public scoping meeting on Tuesday, March 19, at the Syracuse Arts Academy to gather input on a potential extension of SR-193 in Syracuse and West Point to extend the road to the west. Public comments will be accepted from March 19 through April 18, 2019.

Online commenting is available on the Contact tab. Copies of all materials presented at the meeting are available view and download below:

Meeting Boards

Download Here

Click the dots to navigate the meeting boards.

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

STUDY AREA

UDOT will evaluate social, economic, and natural environmental factors as part of the State Environmental Study Process. Proposed improvements will be evaluated within the following study area:

Meeting Handout and FAQ

Download Here

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

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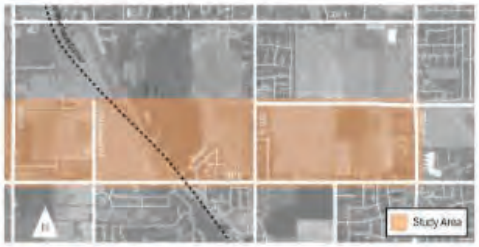

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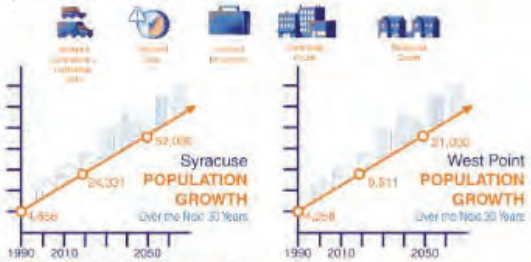
Planning for growth and increased demand.



What is the Project Process?

Frequently Asked Questions

What is this project studying? How is this different from West Davis Corridor?

This study is focused on evaluating a potential extension of SR-193 in Syracuse and West Point, which currently terminates at 3000 West. The purpose of this study is to connect SR-193 to other state roads, including providing connectivity to the future West Davis Corridor and potentially connecting to 4500 West.

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How will my input be used? Will you respond to my comments?

The project team will use comments provided during the scoping phase to identify issues and resources along the corridor and develop solutions to address those issues. We will not provide a

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Will my property be impacted?

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When will this be constructed?

Construction funding is not currently available. If funding becomes available, the project could be constructed by late 2020 at the earliest.

Submitting your Comments Tonight

Fill out comment form and turn it in at the public scoping meeting

Submitting your Comments After Tonight

Email
sr-93extension
@utah.gov

Mail To
SR-193 Team
c/o Avenue Consultants
6605 S Federal Rd.
Ste 200 West Jordan UT 84084

Submit Online at
udot.utah.gov/
sr193extension

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Contact information

Please contact our Public Involvement Team if you have any questions or concerns

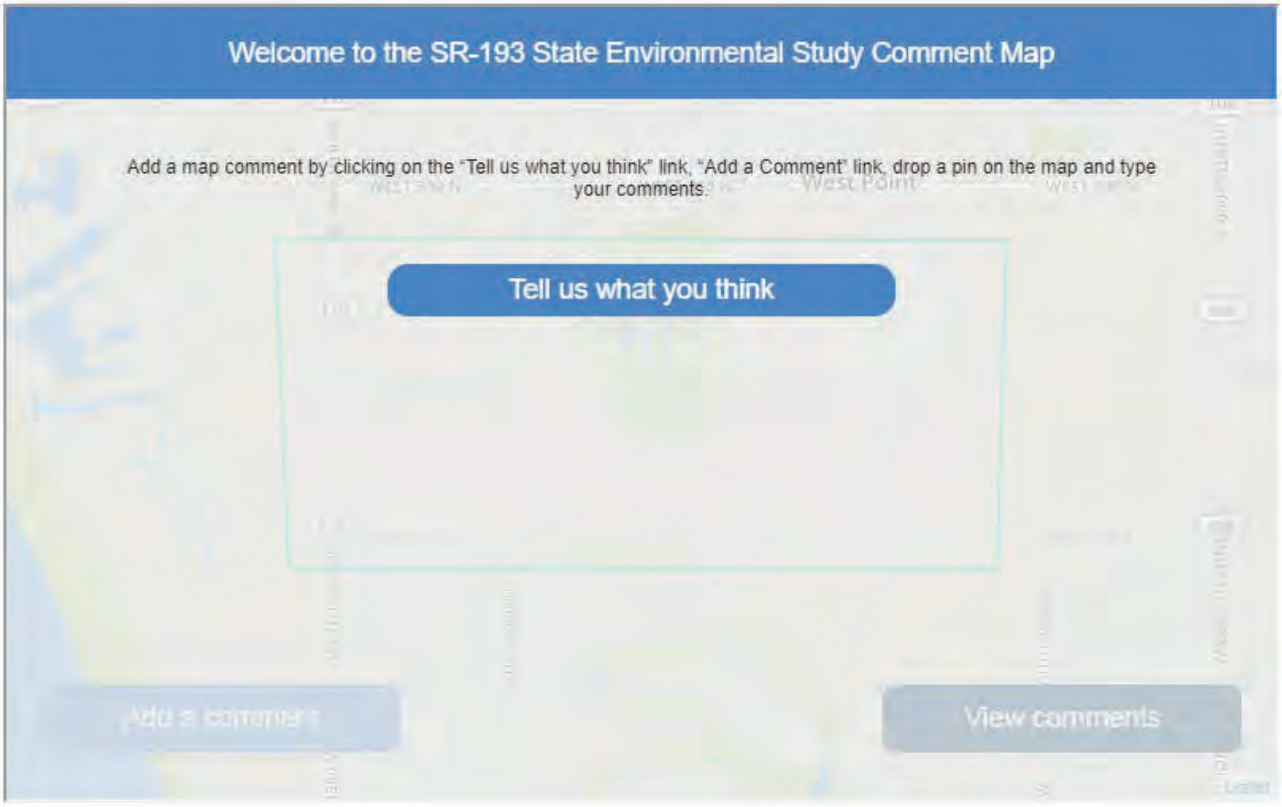
Phone: (385) 275-2887
Email: sr193extension@utah.gov

Online Commenting

Please use either the Comment Map **or** the Comment Form below to submit your online comments.

Comment Map

Please select a location on the map to submit your comments.



Comment Form

Please fill out the form below to submit your comments.

First Name

Last Name

Email Address

Phone Number

Would you like to subscribe to email updates?

- ☐ Yes
- ☐ No

What issues related to SR-193 are important to you? *

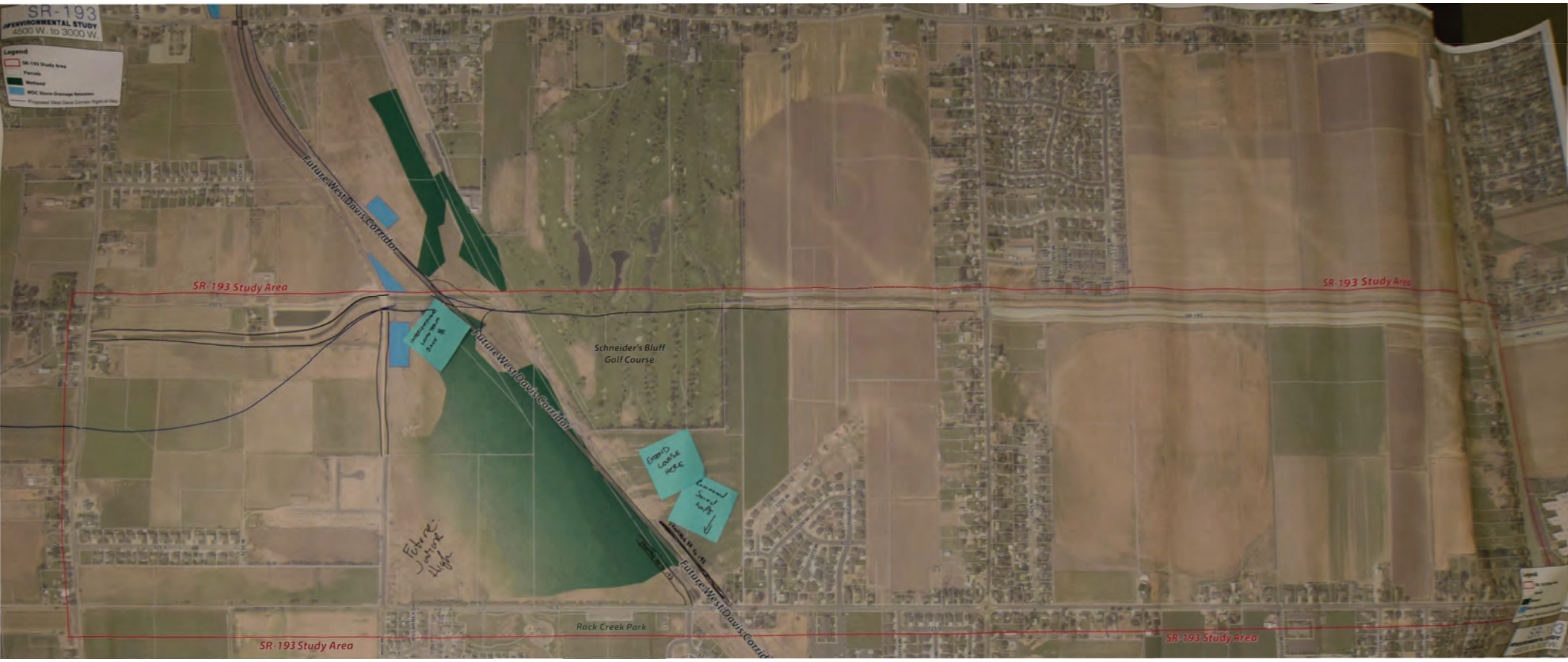
Submit

Comments provided to the project team will be reviewed and considered by UDOT as it develops the project. All comments received will be documented in the project record. The study team will contact you if they need additional information or clarification.

Comments made during the scoping period will be considered as UDOT prepares the Draft SES. Comments provided during the environmental process to UDOT are a matter of public record and subject to public release, if requested. For more information, see the Terms of Use at the bottom of the Utah.gov website.

Appendix D

Public Scoping Comments


SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.
Legend
SR-193 Study Area
Parcels
Wetland
WDC Storm Drainage Retention
Proposed West Davis Corridor Right-of-Way
SR-193 Study Area
SR-193 Study Area
SR-193 Study Area
SR-193 Study Area
Future West Davis Corridor
Future West Davis Corridor
Future West Davis Corridor
Schneider's Bluff
Golf Course
Rock Creek Park

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name Jessica Oliverson

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

SR-193 Extension Project Team
c/o Avenue Consultants,
6605 S. Redwood Rd, Ste 200
West Jordan, UT 84084

Other Ways to Comment:

E: SR193extension@utah.gov

W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

Why are we impacting lots of neighborsheods and homes to stay clear of the golf course.
If you go between the neighboor and the golf course it is a short term fix. what happens when you want to extend 193 to 4500 W?
It would be simple and a straight road to go through the Golf course.
GO STRAIGHT

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name Glady Larsen

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

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West Jordan, UT 84084

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COMMENTS

What issues related to SR-193 are important to you?

I am very interested in keeping bike trails in the area. Also, please do not use our neighborhood as a major exit.

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name Angella Ball

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

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6605 S. Redwood Rd, Ste 200
West Jordan, UT 84084

Other Ways to Comment:

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

Please consider putting the West Davis Cooridor interchange at SR-193 and NOT Antelope Dr.

It's safer for our children, and already built as a throughfare. Please do not impact our schools more than they are. Putting the interchange at SR-193 makes more sense and is the most logical choice. Please feel free to contact me.

Sincerely,
Angella Ball

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name STEPHEN BURTON

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

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c/o Avenue Consultants,
6605 S. Redwood Rd, Ste 200
West Jordan, UT 84084

Other Ways to Comment:

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

LOOKING AT THE DIFFICULTY OF CANNALS & WETLANDS AND ROCK CREEK PARK THE MOST LOGICAL CHOICE FOR LONG TERM GROWTH AND ACCESS TO OUR GROWING COMMUNITY WOULD BE TO BUILD THE ROAD STRAIGHT THROUGH THE GOLF COURSE AND KEEP THE ROAD AT 50 MPH. ALSO THERE IS NOTHING KEEPING THE GOLF COURSE FROM SELLING IN THE FUTURE SINCE IT IS PRIVATE SO THAT SEEMS TO MAKE THE MOST SENCE.

THIS WOULD BE A GREAT OPPORTUNITY TO PROVE THAT PEOPLE AND THE LOCAL COMMUNITY ARE MORE IMPORTANT THAN A PRIVATE GOLF COURSE. ANY LAND THAT HAS BEEN PURCHASED FOR OTHER PLANS IN THE AREA COULD EASILY BE SOLD TO DEVELOPERS FOR HOMES AND A GREAT PROFIT COULD BE MADE FOR THE STATE.

THIS LEAVES THE WETLANDS ALONE, REDUCES TRAFFIC ON 700 S. DOES NOT DISTURB THE PARK THAT IS PROTECTED AND ALLOWS YOU TO KEEP WEST DAVIS CORRIDOR BUILT LOWER AND THAT WILL SAVE MONEY AND BE SAFER THAN CUTTING AROUND THE GOLF COURSE.

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name Jeanette Jensen

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

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6605 S. Redwood Rd, Ste 200
West Jordan, UT 84084

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

I would love to see the big inter-change for the West Davis Corridor to be located at the intersection of 193 instead of on Antelope. It makes more sense, and it troubles me to have so much going on right on top of SHA.

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name DONALD SMITH

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

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West Jordan, UT 84084

Other Ways to Comment:

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

WHERE W.D.C. COMES TO 700 SO KEEP W.D.C. FLAT AND BUILD A FRONTAGE RD ON ~~WEST~~ EAST SIDE OF W.D.C. TO CONNECT WITH 193 - W.D.C. INTERCHANGE. YOU COULD ALSO MAKE FRONTAGE RD. ALONG WEST SIDE OF W.D.C. FOR ST. ANDREWS DRIVE TO CONNECT TO 193

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name BRETT JENSEN

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

SR-193 Extension Project Team
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6605 S. Redwood Rd, Ste 200
West Jordan, UT 84084

Other Ways to Comment:

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

1- I WOULD LIKE TO SEE AN INTERCHANGE WITH THE WEST DAVIS CORRIDOR PUT INTO HWY 193 TO EASE ACCESS TO I-15.

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name Donald Holley

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

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West Jordan, UT 84084

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

SR193 needs To connect with The WDC at least, it would be great if it could go all The way To 4500W.

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name Bart Priest

[redacted]

Would you like to receive email updates? **Yes** or **No**

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West Jordan, UT 84084

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

I'm concerned about 700 S and what happens to that Road and the New Highway

Concerned about going clear to 4500 south to get to SR-193. Please think about 4000 to link up to SR-193

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name BRADY HAWS

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

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West Jordan, UT 84084

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

I AM IN FAVOR OF THE EXPANSION BUT AS A HOMEOWNER WITH THE POTENIAL OF HAVING SR-193 LITERALY IN MY BACK YARD I AM CONCERNED WITH THE ROUTING. I WOULD PREFER THE HIGHWAY STAY AS FAR AWAY FROM EXISTING RESIDENCES AS POSSIBLE. WITH THE POTENIAL GROWTH WEST OF 3,000 WEST I WONDER IF A 2 LANE HIGHWAY WOUL SUFFICE, HOWEVER, IF 193 CONNECTS TO WEST DAVIS, THIS WON'T WORK.

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name Dana Lowe

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

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West Jordan, UT 84084

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

We own a home we built on SR 193 – Antelope Dr. I'm concerned that you will not compensate us enough to offset the potential commercial value. It is close to the West Davis Corridor exits and very close to the proposed exit off the Bluff-Rd.

We just want to be dealt with ~~fairly~~ fairly.

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name Terry Ellis

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

Do not touch my land & the new homes being built there now.

Most reasonable route is the one we have been told was planned. from 3000 West curve. road around golf course and over to 700 South. Expand 700 So down to 4500 W. Would not interfere with current homes + developments. The Second most reasonable route is straight west to 4500 West from 3000 West.

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name Shawn Bennett

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

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West Jordan, UT 84084

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

The corridor will help relieve traffic on I-15, however a fear that some subdivisions have near me are where the offramps will be. I live right off 700s. and 4,000w. There was a potential plan for an offramp to go into the intersection of ~~4000s~~ 700s/4000w, this would be a lot of traffic for an intersection that will have houses feet away from the intersection. Having an intersection right connecting to the corridor will do a lot of ~~da~~ resale damage to the value of all the homes in the older subdivisions, as well as all the new houses being built on 700s and Cold Springs Road. I think an overpass over 700s/Bluff would be best and have offramps at Antelope/Bluff and have 193 ~~goir~~ go straight at Sneiters/Bluff golf course the South and around it to approx 3500 w.

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name GERALD STRUHC

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

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6605 S. Redwood Rd, Ste 200
West Jordan, UT 84084

Other Ways to Comment:

E: SR193extension@utah.gov

W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

PLEASE CONNECT 193 AT 200 SO – NOT 700 SO
NO INTERSECTION W WEST DAVIS CORRIDOR AND
700 SO.

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name Jennifer Struhs

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

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West Jordan, UT 84084

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

Connect 193 at 200 South. Take part of the golf course if necessary.

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name Ken Nelson

[redacted]

Would you like to receive email updates? **Yes** or **No**

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West Jordan, UT 84084

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

Our house is on 2nd South and 4550 W. We are concerned how SR-193 would affect our home and property. ~~How would~~ We are concerned about the increased traffic

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name FRANKLIN SMITH

[redacted]

Would you like to receive email updates? **Yes** or **No**

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West Jordan, UT 84084

Other Ways to Comment:

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

(1) How future development will impact potential home sellers and buyers.

(2) How to inform prospective buyers of proposed A) Immediate B) Short-term C) Long-term plans - either proposed, under study consideration or imminent (6-12 months out).

(3) Being informed with updates and knowing who to contact at UDOT.

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name Steven + Linda Gates

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

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West Jordan, UT 84084

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W: udot.utah.gov/SR193extension

COMMENTS

What issues related to SR-193 are important to you?

1. how this will impact our property 172 S 3000 W West Point
2. Will extension take some or all of our property
3. We didn't receive any notices about tonight to my - had contacted UDOT several times and were told flyers would be brought around to homes to notify his of Mtgs.
4. Traffic on 193 + 3000 has become horrible. I call this the "West Point 500" and with all the sirens from using 3000 W as a Major Thoroughway won't the noise get worse - feel like I live in Chicago
5. Will a barrier wall be put in place for homes North + West of barrier.
6. Our preference would be for UDOT to take our entire home and property vs taking front 12' of our yard. That totally destroys our property value.

UDOT

SR-193
ENVIRONMENTAL STUDY
4500 W. to 3000 W.

COMMENT FORM

CONTACT INFORMATION *(Optional)*

Name Jon Schneiter

[redacted]

Would you like to receive email updates? **Yes** or **No**

Mail To:

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6605 S. Redwood Rd, Ste 200
West Jordan, UT 84084

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COMMENTS

What issues related to SR-193 are important to you?

If the 193 extension takes out any part of the golf course, plan on purchasing the entire 156 acres. It will be difficult to have a 14 hole golf course.

We were told 20 years ago in a meeting with UDOT that the 193 would wrap around the south end of the course.

I believe this is more than likely the route it will be constructed upon, but just incase, I want to make sure UDOT is aware the only option if they pick a route through the course is purchasing the entire parcel. It is a bonus to have it in the community and provide open space and recreation that taxpayers don't have to subsidize.

Jon Schneiter

UDOT

Schneiters Bluff Golf Course

03/08/19

View this email in your browser

SR-193 ENVIRONMENTAL STUDY 4500 W. to 3000 W.

Antelope Drive ENVIRONMENTAL STUDY SR-127; 4500 W. to 2000 W.

Thank you for your interest in the SR-193 State Environmental Study (SES). The official thirty-day comment period for this study ended on April 18, 2019. All comments received during the official comment period will be considered in development of the Draft SES, which will be available this fall. We will have a public hearing in conjunction with the publication of the Draft SES.

Below is information related to the most frequently mentioned concerns the project team received during the comment period:

1. Corridor Alignment and Property Impacts

Primary concerns voiced at the Public Scoping meeting and via public comments focused on property impacts as they relate to corridor alignment along the adjacent golf course, Rock Creek Park, residential, future commercial, agricultural and wetland areas. The configuration of SR-193 in relation to the West Davis Corridor (WDC) were also voiced as an area of interest.

The project team will not know details of specific property impacts or specific corridor alignments until a preliminary roadway concept is completed. The project team will meet with impacted property owners after the draft document is published in fall of 2019 to help those impacted understand the specific impacts to their property as well as provide details about UDOT's right-of-way acquisition process.

2. Pedestrian Safety

As part of this project, the project team will identify and address other safety concerns including: school and pedestrian crossings (current and future), traffic and congestion, intersections, turn lanes, trails, bike paths and corridor speed.

3. Environmental Impacts

The project team received other various comments concerning impacts to water resources, noise impacts, and planned aesthetic treatments. All of these issues will be studied and addressed as part of the Draft SES.

Study Schedule and Timelines

- The project team will continue to evaluate traffic conditions and develop potential roadway concepts through summer 2019.
- A preferred alternative will be identified in the Draft SES, which will be published in fall 2019. We will hold a public hearing following publication of the document.
- The Final SES is scheduled to be completed in late 2019.

Thank you again for your interest in this project. Please contact us via email or phone if you have any questions.

SR-193 SES Public Involvement Team
sr193extension@utah.gov
385-275-2887

Contact Our Public Involvement Team

Hotline: (385) 275-2887

Email: sr193extension@utah.gov

Website: udot.utah.gov/sr193extension
udot.utah.gov/antelopedriveimproved

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