

# **Environmental Re-evaluation**

September 29, 2009

**Final** 

Submitted pursuant to 42 U.S.C. 4332(2)(c) and 49 U.S.C. 303

by

Federal Highway Administration Utah Department of Transportation Utah Transit Authority

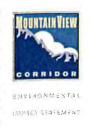
FHWA-UT-EIS-07-02-F

\*SP-0067(3)0









September 25, 2009

Mr. James Christian Federal Highway Administration 2520 West 4700 South, Suite 9A Salt Lake City, UT 84118-1847

Subject: Mountain View Corridor, Salt Lake County and Utah County Final

> Environmental Impact Statement and Final Section 4(f) Evaluation dated September 2008; Record of Decision dated November 17, 2008

Re: Mountain View Corridor Environmental Re-evaluation #2

**UDOT Project Number \*SP-0067(3)0** 

Dear Mr. Christian:

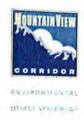
In the fall of 2008, a Final Environmental Impact Statement (EIS) and Section 4(f) Evaluation for the Mountain View Corridor (MVC), Salt Lake and Utah Counties, was completed (September 2008) and approved through the issuance of a Record of Decision (ROD) (November 17, 2008) from the Federal Highway Administration (FHWA). After the ROD was issued, the Utah Department of Transportation (UDOT) revised the design of the 5800 West Freeway Alternative (Salt Lake County Selected Alternative) from 6200 South to Redwood Road at about 16000 South based on moredetailed engineering studies and additional coordination with stakeholders. The revised design also included the north portion of the 2100 North Freeway Alternative in Salt Lake County (Utah County Selected Alternative). Details of the revised design and the re-evaluation analysis are provided in Attachment A to this letter. If you approve of these design changes, please sign on the concurrence line on page 3.

The general area studied for environmental impacts for this re-evaluation did not change from the environmental study area from the Final EIS for the Selected Alternatives. The limits of this re-evaluation are from 6200 South to Redwood Road in Salt Lake County. The connection to Redwood Road from the MVC will be made by South Hills Boulevard, which will connect to Redwood Road about 2 miles south of Bangerter Highway (about 16000 South). Currently, UDOT is planning to start construction in the spring of 2010.

The following proposed design modifications are included in this re-evaluation:

- Provide frontage roads from Old Bingham Highway (10200 South) to South Hills Boulevard (16000 South).
- Connect the MVC to Redwood Road by constructing South Hills Boulevard.

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- Refine intersection connections between the MVC and cross streets.
- Improve trail and bicycle lane connections with other existing and proposed trails.

The proposed changes are a result of continued coordination with stakeholders and further design studies. During this coordination, several stakeholders commented that frontage roads could provide improved mobility as well as allow better planning with the future roadway grid system in the undeveloped area from South Jordan to Herriman. Those stakeholders also felt that the frontage road system would better integrate into the types of land use that are proposed in the future from Old Bingham Highway to South Hills Boulevard. Because this area is undeveloped, the Cities and landowners adjacent to the MVC anticipate that the frontage road concept would allow better planning with the future transportation system planned in the area. In addition, during the final design process, it was determined that further refinement to the cross street connections to the MVC were required.

# **Changes in Impact Status or Document Compliance**

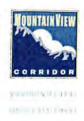
Attachment A provides the detailed re-evaluation analysis for the design changes from 6200 South to Redwood Road. Our environmental team has reviewed the refinement areas and evaluated any changes from the revised design against the analysis in the Final EIS. Table 1 summarizes the environmental impacts that have changed.

Table 1. Summary of Re-evaluation Analysis

Environmental	Impacts Changed?				
Resource	Yes	No	Comments		
Land Use			An additional 153 acres of land (a 9% increase) would be converted to roadway use, 63 acres are associated with South Hill Boulevard and improvements to cross streets, and 90 acres are associated with the frontage roads. The proposed design modifications would be consistent with state, regional, and local land-use plans.		
Farmland	Х		An additional 73 acres of non-irrigated and irrigated farmland (an 8% increase) would be converted to roadway use. No change in impacts to prime, unique, or state important farmlands. No change in impacts to agriculture protection areas.		
Community Impacts		X			
Environmental Justice		Χ			
Transportation	X		Design modifications would improve trip distribution and reduce congestion and delay on adjacent roads compared to the Selected Alternatives. Overall, there would be a 3% reduction in hours of delay on all roads in the study area compared to the Selected Alternatives analyzed in the Final EIS.		
Economics	Х		The additional 153 acres of right-of-way (a 9% increase) required for the proposed design modifications would further reduce potential city property tax revenues by 0.06% compared to the Selected Alternatives analyzed in the Final EIS.		
Joint Development		Χ			

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Environmental	Impacts Changed?		Comments		
Resource Ye		No			
Pedestrian and Bicyclist Issues	X		e Final EIS identified crossings of one existing and 37 proposed trails. Under the desigr diffications, three additional proposed trails would be crossed. All trail crossings would accommodated.		
Air Quality		X			
Noise	X		The number of residences that meet or exceed UDOT's Noise-Abatement Criteria would increase from 536 to 614. Most of the increase in affected residences is a result of new residential development that has been platted and/or constructed since the Final EIS noise analysis was conducted and is not a result of the proposed design modifications.		
Water Quality	X		No adverse impacts to water quality were identified in the Final EIS. Under the design modifications, there would be an additional 89 acres of impervious surface (a 13% increase). Water quality modeling conducted for the design modifications showed that the increase in impervious surfaces would not cause adverse impacts to water quality and overall impacts would be the same as those identified in the Final EIS.		
Ecosystems	X		An additional 34 acres of wildlife habitat (an 11% increase) would be converted to roadway use by the proposed design modifications. There would be no change to impact to wetlands or threatened or endangered species. The overall impacts would be the same as those identified in the Final EIS.		
Floodplains	X		The Final EIS identified impacts to 20 acres of floodplains. Under the proposed design modifications, an additional 7 acres (a 35% increase) would be affected. As stated in the Final EIS, any floodplain impacts would be minor because bridges and culverts would meet UDOT's floodplain design standards and the requirements of local floodplain ordinances.		
Historic, Archaeological, and Paleontological Resources	Х		Under the proposed design modifications, two additional archaeological sites, 42SL287 (Provo Reservoir Canal/Murdock Ditch, eligible under Criterion A) and 42SL450 (Jordan River Aqueduct) would be crossed. Impacts would be no adverse effect to 42SL287 and no historical properties affected for 42SL450.		
Hazardous Waste		Χ			
Visual Resources		Χ			
Energy		Χ			
Construction Impacts		Χ			
Indirect Effects	100	Х			
Cumulative Impacts		Х			
Permits, Reviews, and Approvals		Х			
Section 4(f) Resources	Х		Two additional 4(f) properties would be crossed. There would be no adverse effects on Site 42SL287 and no historical properties affected on Site 42SL450. Therefore, the 4(f) use of Site 42SL287 would be <i>de minimis</i> , and for Site 42SL450 there would be no 4(f) use.		
Sequencing		Х			

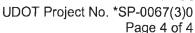
### Conclusion

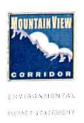
Through this re-evaluation, UDOT has determined that the design changes to the Selected Alternatives (5800 West Freeway Alternative and the 2100 North Freeway

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udot.utah.gov/mountainview FEDERAL HIGHWAY ADMINISTRATION 1.800.596.2556 FEDERAL TRANSIT ADMINISTRATION **UTAH DEPARTMENT OF TRANSPORTATION UTAH TRANSIT AUTHORITY** WASATCH FRONT REGIONAL COUNCIL MOUNTAINLAND ASSOCIATION OF GOVERNMENTS





Alternative) from 6200 South to Redwood Road would not affect the ability of the Selected Alternatives described in the Final EIS to meet the project's stated purpose. Additionally, UDOT believes that the impacts of these changes are not individually or cumulatively significant or significantly different from those described in the Final EIS and ROD. In addition, UDOT has considered changes in the affected environment as well as other new information available at the time of this re-evaluation and believes that there is no new information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts that would result in significant environmental impacts not evaluated in the EIS. For these reasons, UDOT recommends to FHWA that a supplemental EIS is not warranted and that the proposed design changes can be approved consistent with 23 CFR 771.129(b)(c).

If you approve of these design changes, please sign on the concurrence line below. If you have any questions or concerns or need additional information, please contact me at (801) 965-4327 or rstromness@utah.gov.

Sincerely,

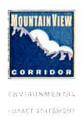
Rebecka Stromness, PE

Environmental Program Manager

Based on the information in this re-evaluation, FHWA has concluded that a supplemental EIS is not warranted and that the proposed design changes can be approved consistent with 23 CFR 771.129(b)(c).

Division Administrator





UDOT Project No. \*SP-0067(3)0 Page 4 of 4

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If you approve of these design changes, please sign on the concurrence line below. If you have any questions or concerns or need additional information, please contact me at (801) 965-4327 or rstromness@utah.gov.

Sincerely,

Rebecka Stromness, PE

Environmental Program Manager

Based on the information in this re-evaluation, FHWA has concluded that a supplemental EIS is not warranted and that the proposed design changes can be approved consistent with 23 CFR 771.129(b)(c).

Division Administrator

10/5/09 Date

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## **Attachment A**

# **Mountain View Corridor Re-evaluation #2**

5800 West Freeway Alternative and 2100 North Freeway Alternative from 6200 South to Redwood Road, Salt Lake County, Utah

CHAPTER 1:	PURPOSE OF AND NEED FOR ACTION	1-1
1.1	Project Purpose and Need	1-4
1.2	Independent Utility	1-5
1.3	Public Involvement in the Re-evaluation Process	1-5
CHAPTER 2:	ALTERNATIVES	2-1
2.1	Changes to the Selected Alternatives from the Final EIS	2-3
2.2	Project Implementation	2-9
2.3	Transit	2-9
2.4	Cost	2-10
CHAPTER 3:	RE-EVALUATION ANALYSIS	3-1
3.1	Land Use (Chapter 4 of the Final EIS).	3-3
	3.1.1 Affected Environment	3-3
	3.1.2 Environmental Consequences	3-4
3.2	Farmlands (Chapter 5 of the Final EIS)	3-5
	3.2.1 Affected Environment	
	3.2.2 Environmental Consequences	
3.3	Community Impacts (Chapter 6 of the Final EIS)	3-6
3.4	Environmental Justice (Chapter 7 of the Final EIS)	3-6
3.5	Transportation (Chapter 8 of the Final EIS)	3-6
	3.5.1 Affected Environment	
	3.5.2 Environmental Consequences	3-6
3.6	Economics (Chapter 9 of the Final EIS)	
	3.6.1 Affected Environment	
	3.6.2 Environmental Consequences	
3.7	Joint Development (Chapter 10 of the Final EIS)	
3.8	Considerations Relating to Pedestrians and Bicyclists (Chapter 11 of the Final EIS)	
	3.8.1 Affected Environment	
2.0	3.8.2 Environmental Consequences	
3.9	Air Quality (Chapter 12 of the Final EIS)	
	3.9.1 Affected Environment	
	3.9.3 Methodology	
3.10	Noise (Chapter 13 of the Final EIS)	
3.10	3.10.1 Affected Environment	
	3.10.2 Environmental Consequences	
	3.10.3 Methodology	
	3.10.4 Noise Impacts	
0.11	3.10.5 Noise-Abatement Measures	
3.11	Water Quality (Chapter 14 of the Final EIS)	
	3.11.1 Affected Environment	
2 12	•	
3.12	Ecosystem Resources (Chapter 15 of the Final EIS)	
	3.12.1 Affected Environmental  3.12.2 Environmental Consequences	

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3.13	Floodplains (Chapter 16 of the Final EIS)	3-32
	3.13.1 Affected Environment	3-32
	3.13.2 Environmental Consequences	3-32
3.14	Historic, Archaeological, and Paleontological Resources (Chapter 17 of the Final EIS)	3-33
	3.14.1 Affected Environment	
2.15	3.14.2 Environmental Consequences	
3.15	Hazardous Waste Sites (Chapter 18 of the Final EIS)	
3.16	Visual Resources (Chapter 19 of the Final EIS)	
	3.16.1 Affected Environment	
3.17	Energy (Chapter 20 of the Final EIS)	
3.18	Construction Impacts (Chapter 21 of the Final EIS)	3-35
3.19	Short-Term Uses versus Long-Term Productivity (Chapter 22 of the Final EIS)	3-35
3.20	Irreversible and Irretrievable Commitment of Resources (Chapter 23 of the Final EIS)	3-35
3.21	Indirect Effects (Chapter 24 of the Final EIS)	3-35
3.22	Cumulative Impacts (Chapter 25 of the Final EIS)	3-36
3.23	Permits, Reviews, and Approvals (Chapter 26 of the Final EIS)	3-36
3.24	Mitigation Summary (Chapter 27 of the Final EIS)	3-37
3.25	Section 4(f) Evaluation (Chapter 28 of the Final EIS)	3-37
3.26	Sequencing (Chapter 29 of the Final EIS)	3-37
3.27	Public and Agency Consultation and Coordination (Chapter 30 of the Final EIS)	3-37
3.28	Project Implementation (Phasing) (Chapter 36 of the Final EIS)	3-38
	Figures	
Figure 1-1. Mour	ntain View Corridor Study Area Map	1-3
Figure 2-1. Mour	ntain View Corridor Project – Salt Lake County	2-2
Figure 2-2. Front	age Road Concept Cross-Sections – Salt Lake County	2-4
	ntain View Corridor – Salt Lake County Trail Locations	
Figure 2-4. Front	age Road Concept with Community Trail – Illustration	2-8
Figure 2-5. Herri	man City Conceptual Transit Alignment	2-11
Figure 3-1. Front	age Road Concept Phase 1 – Salt Lake County	3-39
_	age Road Concept Phase 2 – Salt Lake County	
Figure 3-3. Front	age Road Concept Phase 3 – Salt Lake County	3-41

### **Tables**

Table 2-1. Comparison of the Costs of the 5800 West and 2100 North Freeway Alternatives (in 2007	
Dollars)	2-10
Table 3-1. Summary of Re-evaluation Analysis	3-2
Table 3-2. Comparison of Land-Use Impacts	3-4
Table 3-3. Comparison of Farmland Impacts	3-5
Table 3-4. Comparison of Hours of Daily Delay	3-7
Table 3-5. Comparison of Congestion Levels for Key Road Segments	3-7
Table 3-6. Highest Modeled Concentrations of Carbon Monoxide along the MVC	3-14
Table 3-7. Comparison of Mobile-Source Air Toxics Emissions from the Salt Lake County Roadway Alternatives in 2030	3-16
Table 3-8. Comparison of Noise Impacts	3-18
Table 3-9. Noise Barrier Evaluation	3-22
Table 3-10. Comparison of Water Quality Impacts	3-26
Table 3-11. Comparison of Numeric Modeled Pollutant Concentrations in Barney's Creek	3-27
Table 3-12. Comparison of Wildlife Habitat Fragmentation Impacts	3-30
Table 3-13. Comparison of Wetland and Linear Aquatic Feature Impacts	3-32
Table 3-14. Comparison of Floodplain Impacts	3-33

## **Appendices**

Appendix A. Design Modifications

Appendix B. Noise Barrier Evaluation

Appendix C. Cultural Resources

Appendix D. Correspondence

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# **Chapter 1: Purpose of and Need for Action**

This re-evaluation analyzes the design modifications made to the Mountain View Corridor (MVC) Selected Alternatives (5800 West Freeway Alternative and 2100 North Freeway Alternative) after completion of the Final Environmental Impact Statement (EIS) and Section 4(f) Evaluation in September 2008 and approval of the Record of Decision (ROD) in November 2008. The changes to the Selected Alternatives are based on further refinement of the design and additional coordination with community stakeholders. (See Section 1.3, Public Involvement in the Re-evaluation Process, for more information about stakeholder coordination.)

The purpose of this re-evaluation is to determine whether a supplemental EIS is required due to the proposed changes in the project and the availability of new information or changed circumstances. The following proposed design modifications are included in this re-evaluation:

- Provide frontage roads from Old Bingham Highway (10200 South) to South Hills Boulevard (16000 South).
- Connect the MVC to Redwood Road by constructing South Hills Boulevard
- Refine intersection connections between the MVC and cross streets.
- Improve trail and bicycle lane connections with other existing and proposed trails.

The MVC is a transportation improvement project that proposes roadway and transit solutions for meeting the projected travel demand in western Salt Lake County and northwestern Utah County in 2030. The MVC study area evaluated in the Final EIS included western Salt Lake County south of Interstate 80 (I-80) and west of Bangerter Highway and northwestern Utah County west of Interstate 15 (I-15), south of the Salt Lake County line, and north of Utah Lake. In the ROD, the Federal Highway Administration (FHWA) selected the 5800 West Freeway Alternative in Salt Lake County and the 2100 North Freeway Alternative in Utah County for implementation. The Utah Transit Authority (UTA) worked with FHWA during the MVC EIS process and identified the 5600 West Transit Alternative with Dedicated Right-of-Way Transit Option as its preferred transit solution. UTA is currently pursuing funding for phases of the MVC transit component.

**A A** 

UDOT has obtained funding to construct only a portion of the MVC project in Salt Lake County. The initial Salt Lake County project is currently funded from 9000 South to Redwood Road (about 16000 South); however, based on funding and the bidding climate, it is possible that the project could be extended farther north to 6200 South. Therefore, this re-evaluation covers the MVC project from 6200 South in West Jordan to Redwood Road (about 16000 South) in Herriman (see Figure 1-1 below). This segment of the MVC travels through unincorporated land in Salt Lake County and the cities of South Jordan, West Jordan, Herriman, and Riverton. The segment includes the 5800 West Freeway Alternative and the very northern portion of the 2100 North Freeway Alternative in Salt Lake County as described in the Final EIS.

This re-evaluation has been prepared in accordance with FHWA Technical Advisory T6640.8A (Section XI, Re-evaluations) and 23 Code of Federal Regulations (CFR) 771.129, Re-evaluations.

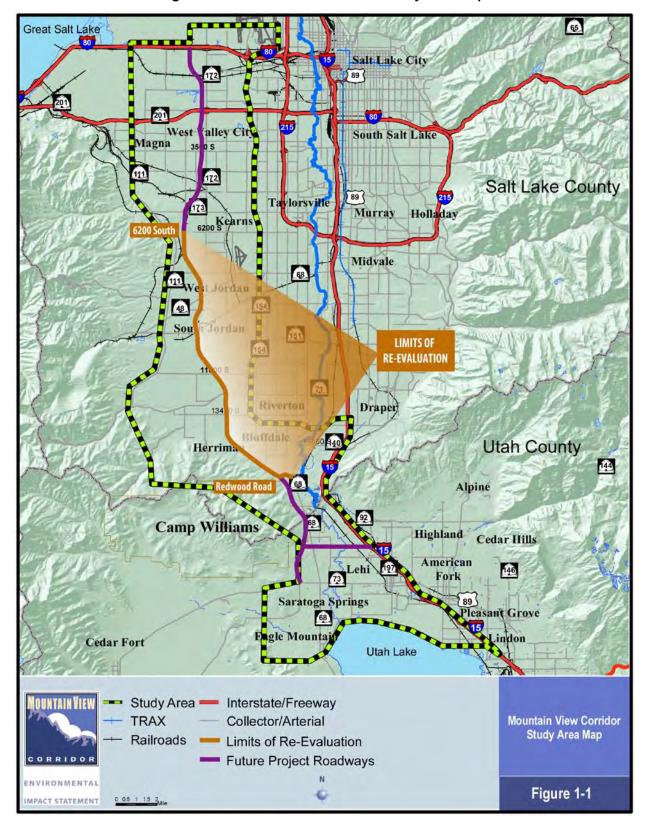


Figure 1-1. Mountain View Corridor Study Area Map

# 1.1 Project Purpose and Need

The purpose of and need for the MVC project are described in Chapter 1, Purpose of and Need for Action, of the Final EIS. The overall purpose of and need for the project have not changed since the publication of the Final EIS. In summary, the MVC as proposed and as described in this re-evaluation is primarily intended to achieve the following objectives:

- Improve Regional Mobility by Reducing Roadway Congestion. Improve regional mobility for automobile, transit, and freight trips by reducing roadway congestion compared to the No-Action conditions on roadways serving the major north-south travel movements in the Salt Lake County portion of the study area and the major east-west and north-south travel movements in the Utah County portion of the study area.
- Improve Regional Mobility by Supporting Increased Transit
   Availability. Improve regional mobility by supporting increased
   availability of transit compared to the No-Action conditions as an
   alternative to automobile trips for the major north-south travel
   movements in the Salt Lake County portion of the study area and the
   major east-west and north-south travel movements in the Utah County
   portion of the study area.

Other secondary objectives of the project are as follows:

- Support Local Growth Objectives. Support local economic development and growth objectives as expressed through locally adopted land-use and transportation plans and policies, including the principles reflected in the Growth Choices Vision by providing transportation improvements that complement locally established land-use plans.
- Increase Roadway Safety. Reduce accident rates and the number of high-accident locations (compared to the No-Action conditions) on the roadways serving the major north-south travel movements in the Salt Lake County portion of the study area and the major east-west and northsouth travel movements in the Utah County portion of the study area.
- Support Increased Bicycle and Pedestrian Options. Support increased availability of bicycle and pedestrian options consistent with the adopted regional transportation plans in the portions of the study area in Salt Lake and Utah Counties.

The proposed design modifications do not change the original MVC project concept or project purpose; therefore, the purpose of and need for the project are still valid.

## 1.2 Independent Utility

The project as proposed in this re-evaluation will function as intended with the construction of any additional transportation improvements in the study area. The project will not restrict consideration of alternatives for other reasonably foreseeable transportation improvements. In addition, the proposed design modifications to the MVC cross-section (frontage roads) would not require changes to the cross-section or other design elements of the adjoining sections of the MVC project.

### 1.3 Public Involvement in the Re-evaluation Process

To receive public input on the proposed design modifications, UDOT held a public meeting at 6:00 PM on July 30, 2009, at the South Jordan Senior Center in South Jordan. The meeting was advertised by sending notices to the city contacts to distribute and post. A total of 505 e-mails were sent out to residents, and an ad ran in *The Salt Lake Tribune* on July 15, 2009.

The focus of the open house was UDOT's frontage road concept. Aerial maps showing the corridor were posted in two areas; these maps allowed residents and stakeholders to see their property and home in relation to the proposed alignment. The re-evaluation team members walked residents through the boards and helped attendees understand the maps. The boards highlighted the transit, sidewalk, and bicycle lane components of the design modifications and the planned phasing and construction. Attendees could sign up to receive e-mail updates at the sign-in table. There were 23 people in attendance. No written comments were received at the meeting.

**A A** 

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# **Chapter 2: Alternatives**

Chapter 2, Alternatives, of the Final EIS describes the MVC alternative development process. This re-evaluation describes proposed changes to the Selected Alternatives (see Figure 2-1 below) from 6200 South to Redwood Road at about 16000 South. The following design modifications are proposed:

- Provide frontage roads from Old Bingham Highway (10200 South) to South Hills Boulevard (16000 South).
- Connect the MVC to Redwood Road by constructing South Hills Boulevard.
- Refine intersection connections between the MVC and cross streets.
- Improve trail and bicycle lane connections with other existing and proposed trails.

The proposed changes are a result of continued coordination with stakeholders and further design studies. During the coordination, several stakeholders commented that frontage roads could provide improved mobility as well as allow better planning with the future roadway grid system in the undeveloped area from South Jordan to Herriman. Those stakeholders also felt that the frontage road system would better integrate into the types of land use that are proposed in the future from Old Bingham Highway to South Hills Boulevard. Because this area is undeveloped, the Cities and landowners adjacent to the MVC anticipate that the frontage road concept would allow better planning with the future transportation system planned in the area. In addition, during the final design process, it was determined that further refinement to the cross street connections to the MVC were required.

15 **Mountain View** 80 CORRIDOR Salt Lake City ENVIRONMENTAL IMPACT STATEMENT 89 201 LEGEND: 80 2700 S Magna 5800 West Freeway Alternative South 3500 S Salt Lake West Diamond Interchanges Valley City 4100 S 4700 S 4715 S Single Point Interchanges System Interchanges **Taylorsville** 5300 5 Potential Transit Alignments Murray Kearns 215 UTA Planned Light Rail (LRT) or Bus Rapid Transit (BRT) Routes (Not part of Mountain View Corridor EIS) 6200 South 6200 S Copperton Midvale 7800 S 7800 S Jordan LIMITS OF 10200 Old Bingham Hwy. **RE-EVALUATION** South Sandy 11400 S Herriman Draper N Riverton **NOT TO SCALE** Bluffdale **Mountain View** South Hills Blvd. (NEW) **Corridor Project -**Salt Lake County LIMITS OF PROPOSED FRONTAGE ROAD CONCEPT Figure 2-1

Figure 2-1. Mountain View Corridor Project – Salt Lake County

# 2.1 Changes to the Selected Alternatives from the Final EIS

During the EIS process, the MVC project was preliminarily designed to a level of about 25%. This preliminary design was based on one continuous road from I-80 in Salt Lake County to I-15 in Utah County. UDOT is proposing to modify the MVC described in the Final EIS and ROD as follows (see Appendix A, Design Modifications):

#### Frontage Roads

The design in the Final EIS did not include the use of frontage roads in Salt Lake County. To better accommodate distribution of local traffic and connect to the local road grid system, UDOT is proposing frontage roads from Old Bingham Highway to South Hills Boulevard. These roads would operate similar to the arterials proposed in the Final EIS Phase 1 implementation plan (see Chapter 36, Project Implementation [Phasing], of the Final EIS). In full build-out (2030), the frontage roads would become one-way roads with two lanes in each direction (see Figure 2-2 below). The frontage roads would be designed to allow access to only city streets, with up to five access points per mile. No private access will be allowed.

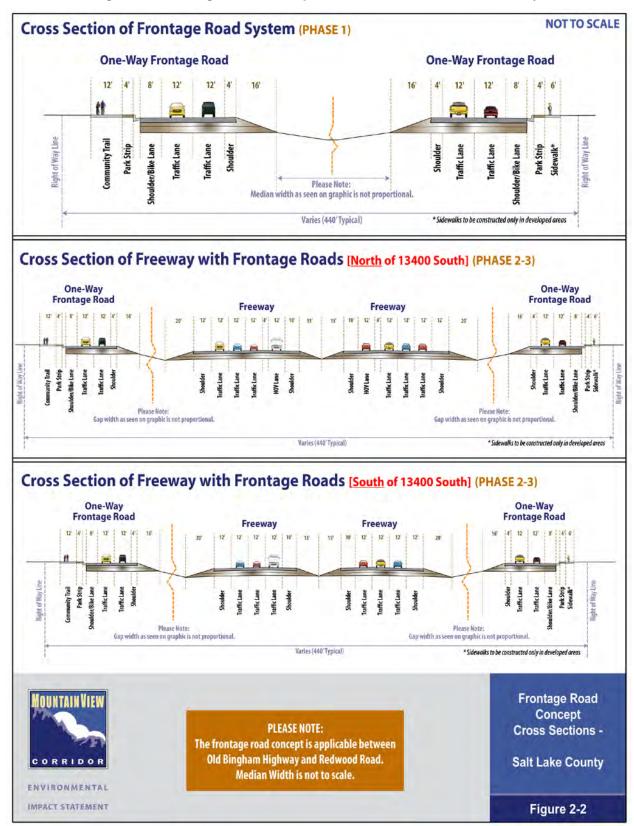
#### South Hills Boulevard

o The initial Salt Lake County project of the MVC would end just north of the Salt Lake County—Utah County line west of Redwood Road at about 16000 South. To provide access to the MVC from Redwood Road, South Hills Boulevard would need to be constructed. This road would be five lanes wide and just over 0.5 mile long. The construction of South Hills Boulevard was not evaluated as part of the 2100 North Freeway Alternative but was evaluated in the Final EIS under the Arterials Alternative as a Porter Rockwell Boulevard arterial (see Appendix A, Figure A-01).

#### Juniper Crest Road

o The frontage roads would provide increased access along the MVC and would establish a road grid. This would help local traffic circulate, so there would be little additional benefit from carrying Juniper Crest Road over the MVC on a grade-separated overpass. Therefore UDOT would not carry the road over the MVC on an overpass but would connect Juniper Crest Road to the frontage roads on either side of the MVC (see Appendix A, Figure A-02).

Figure 2-2. Frontage Road Concept Cross-Sections – Salt Lake County



#### • 13400 South

To provide a connection to the local road system at 13400 South, the four traffic lanes with turn lanes analyzed in the Final EIS would need to be extended an additional 575 feet on the west side and 625 feet on the east side of the MVC along the cross street. To provide a connection to Herriman City's planned 13200 South street, the ramps to and from the north at 13400 South would need to be shifted north of 13200 South (see Appendix A, Figure A-03).

#### • 12600 South

o To provide a connection to the MVC at 12600 South, the four traffic lanes with turn lanes analyzed in the Final EIS would need to be extended an additional 600 feet on the west and 450 feet on the east. Due to the addition of the frontage roads, there is not enough right-of-way width to provide a full interchange at 12600 South. Because the right-of-way is limited, there would be no northbound off ramp or southbound on ramp at 12600 South (see Appendix A, Figure A-04).

#### • 11800 South

The Final EIS did not evaluate a connection of the MVC to 11800 South. Construction of frontage roads would allow this connection, but the addition of a connection would constrain movement between the Daybreak Parkway ramps to and from the south and 11800 South. To address this constraint, the diamond interchange at Daybreak Parkway must be modified to create a split diamond interchange with movement to and from the south connecting to 11800 South (see Appendix A, Figure A-05).

#### Daybreak Parkway

To provide a connection at Daybreak Parkway–MVC, the four traffic lanes with turn lanes analyzed in the Final EIS would need to be extended an additional 1,250 feet on the west and 350 feet on the east. The ramp movements to and from the south would also need to be shifted to the south to connect to 11800 South (see Appendix A, Figure A-05).

#### • South Jordan Parkway

 In order to match the most recent street plan of the City of South Jordan, the orientation of South Jordan Parkway would need to be adjusted to connect to the MVC interchange (see Appendix A, Figure A-06).

#### Old Bingham Highway

The Final EIS did not evaluate a connection of the MVC to Old Bingham Highway. To provide access, the EIS footprint would need to be widened to accommodate turn lanes from the frontage roads (see Appendix A, Figure A-07).

#### 9000 South

 At 9000 South, the footprint analyzed in the Final EIS would need to be extended to allow the connection of 9000 South from 5600 West to New Bingham Highway (see Appendix A, Figure A-08).

### • New Bingham Highway

o Improvements at the intersection of 5600 West and New Bingham Highway would be required to facilitate traffic movements east to west along New Bingham Highway. New Bingham Highway would be closed at the MVC and traffic diverted to 9000 South or 5600 West (see Appendix A, Figure A-08) including any trail accommodations.

#### • 7800 South

To provide a connection at the 7800 South–MVC intersection, the four traffic lanes with turn lanes analyzed in the Final EIS would need to be extended an additional 775 feet on the east side and 800 feet on the west side of the MVC (see Appendix A, Figure A-09).

#### 6200 South

To provide a connection at the 6200 South–MVC intersection, the four traffic lanes with turn lanes analyzed in the Final EIS would need to be extended an additional 500 feet on the east side and 450 feet on the west side of the MVC (see Appendix A, Figure A-10).

### • Trail and Bicycle Lanes

o In the Final EIS, a trail was identified in three segments of the 5800 West Freeway Alternative (2700 South to 7800 South, 11400 South to 12600 South, and 13400 South to the Utah County line). As part of the design modifications, a trail would be built between 6200 South and 7800 South and from Old Bingham Highway (10200 South) to South Hills Boulevard (about 16000 South) (see Figure 2-3 below). The trail would be 12 feet wide between Old Bingham Highway and South Hills Boulevard. The proposed frontage roads would include a bicycle lane (see Figure 2-4 below). The final location of the trail adjacent to the frontage roads would be determined during the final design phase of the project. Portions of the trail could be constructed by adjacent property owners outside of the right-of-way required for the MVC project.

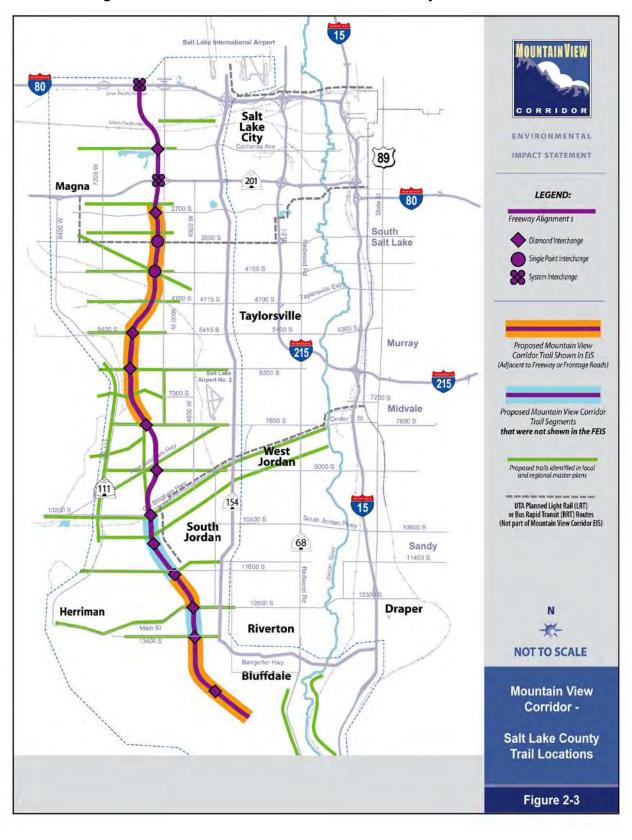
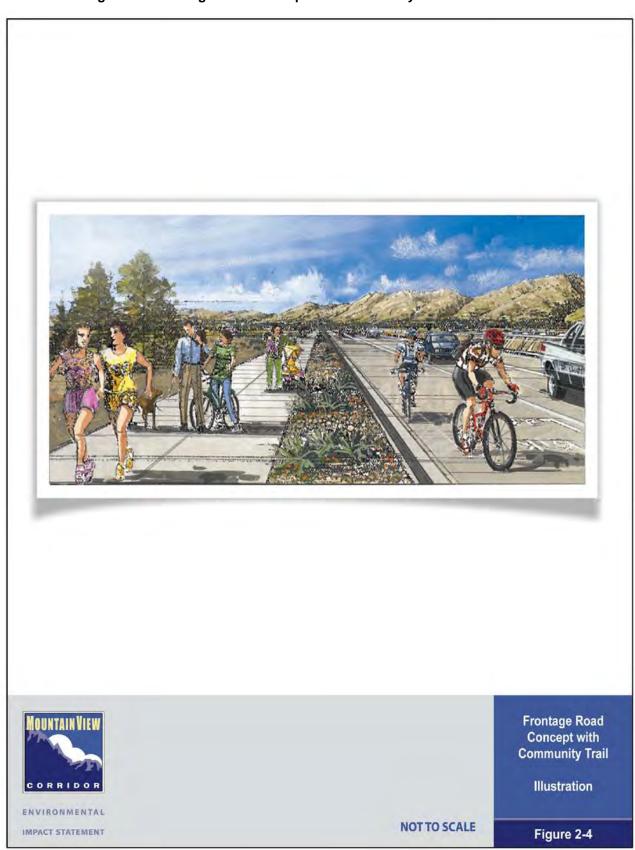


Figure 2-3. Mountain View Corridor - Salt Lake County Trail Locations

Figure 2-4. Frontage Road Concept with Community Trail – Illustration



#### Drainage Design

 To provide adequate stormwater storage and conveyance based on the more-detailed engineering conducted for this re-evaluation, the location and size of several detention basins were updated throughout the affected section.

#### • Utility Relocations

 Due to the revised footprint, the utility relocations were adjusted so that they are consistent with the updated design.

Construction of some of the access connections in this re-evaluation might be the responsibility of the Cities or Salt Lake County. UDOT will continue to coordinate with the Cities and County as it continues to develop the final design.

# 2.2 Project Implementation

Through collaborative discussions with stakeholders, UDOT developed a phased approach to project implementation for the roadway component of the MVC in both Salt Lake and Utah Counties. In each county, project implementation will proceed in three phases. These project implementation phases are described in Chapter 36, Project Implementation (Phasing), of the Final EIS.

Although implementing the proposed frontage roads would change the overall MVC cross-section, it would not change the basic Phase 1 concept that includes implementing transit, constructing an arterial road in Phase 1, constructing signalized intersections, constructing interchanges at SR 201 and I-80, and constructing the segment between 2700 South to 4700 South at grade as much as possible (see Table S-6, Summary of MVC Phasing for the 5600 West Transit Alternative, and Table S-7, Summary of MVC Phasing for the 5800 West Freeway Alternative, in the Summary chapter of the Final EIS). Phases 2 and 3 of the MVC project would not change from those described in the Final EIS except that the Phase 1 arterial road between Old Bingham Highway and South Hills Boulevard would become a frontage road.

## 2.3 Transit

As part of the MVC EIS process, UTA selected the 5600 West Transit Alternative with Dedicated Right-of-Way Transit Option. This transit line, which will be constructed and operated by UTA, will run from Herriman to the Salt Lake City International Airport when completed. If UTA plans a future extension of the transit system south of Herriman, the MVC would be able to accommodate the transit line within the right-of-way without the acquisition of additional

property, and the MVC would be able to accommodate a transit crossing of the corridor. UTA would be responsible for obtaining the appropriate environmental clearances for the extension south of Herriman.

After the MVC Final EIS was released, the City of Herriman adopted a new Transportation Master Plan. The Transportation Master Plan included a mass transit element with the vision of improving the integration of transit with the local regional network to reduce private automobile trips, reduce congestion and improve air quality, improve mobility choices, and encourage the diversity of links between neighborhood systems and citywide regional systems. Figure 2-5 below shows the conceptual transit alignment identified in the City's plan. The City of Riverton has also expressed a desire to improve transit within its city limits. Appendix D, Correspondence, provides more information about Herriman's and Riverton's future transit plans.

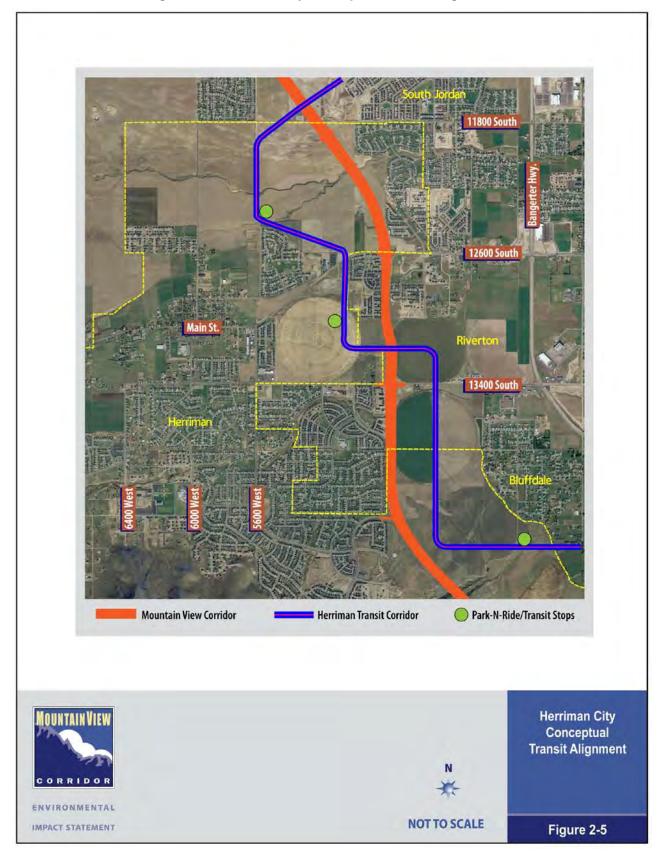
### 2.4 **Cost**

Table 2-1 compares the costs of the 5800 West Freeway Alternative that was evaluated in the Final EIS and the alternative as modified in this re-evaluation. The cost estimate below includes design, right-of-way, construction, utility relocations, and environmental mitigation. The actual cost of construction will likely be higher due to inflation.

Table 2-1. Comparison of the Costs of the 5800 West and 2100 North Freeway Alternatives (in 2007 Dollars)

Alternative	2007 Cost
5800 West Freeway Alternative	
In the Final EIS	\$2,157,000,000
In this Re-evaluation	\$2,235,000,000
Percent change	3.6%
2100 North Freeway Alternative	
In the Final EIS	\$950,000,000
In this Re-evaluation	\$948,000,000
Percent change	-0.21%

Figure 2-5. Herriman City Conceptual Transit Alignment



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# **Chapter 3: Re-evaluation Analysis**

The re-evaluation analysis evaluates design modifications to the MVC 5800 West Freeway Alternative and 2100 North Freeway Alternative in Salt Lake County from 6200 South to Redwood Road. No other changes in the Salt Lake County portion of the MVC project are being considered at this time, so no other changes are considered in this re-evaluation. The portion of the initial Salt Lake County MVC project from 6200 South to Redwood Road includes the cities of West Jordan, South Jordan, Herriman, and Riverton.

The analysis in this re-evaluation uses as its basis the MVC Final EIS and Section 4(f) Statement approved by FHWA in September 2008. The statements, studies, and conclusions documented in the Final EIS have been examined and analyzed in three steps, and the findings of each of the steps are documented in this re-evaluation.

Step 1 consisted of identifying changes in the proposed design and right-of-way requirements of the initial Salt Lake County MVC project between 6200 South in West Jordan and Redwood Road in Herriman since approval of the Final EIS. These changes are summarized in Chapter 2, Alternatives. In Step 2, current environmental conditions were analyzed to identify changes that have occurred since the Final EIS was issued. In Step 3, the environmental consequences of the proposed action, as described in the Final EIS, were analyzed in light of the design/right-of-way and environmental changes that have occurred since the Final EIS.

The conclusions in the Final EIS were compared to these changes to determine whether any of the changes would result in significant environmental impacts that were not evaluated in the EIS. For ease of comparison, resource categories appear in this re-evaluation in the same order in which they appear in the Final EIS.

If the affected environment or environmental consequences have changed, this is noted in the specific resource sections below, and the changes are compared to those reported in the Final EIS to determine if any substantial new impacts would occur. If no changes to the resource are expected, this is also noted. The analysis in this re-evaluation is based on the complete MVC project in 2030. Table 3-1 below summarizes the environmental analysis in this chapter.

Table 3-1. Summary of Re-evaluation Analysis

Environmental		acts		
Resource	Yes	No	Comments	
Land Use	X		An additional 153 acres of land (a 9% increase) would be converted to roadway use. 63 acres are associated with South Hill Boulevard and improvements to cross streets, and 90 acres are associated with the frontage roads. The proposed design modifications would be consistent with state, regional, and local land-use plans.	
Farmland	Х		An additional 73 acres of non-irrigated and irrigated farmland (an 8% increase) would be converted to roadway use. No change in impacts to prime, unique, or state important farmlands. No change in impacts to agriculture protection areas.	
Community Impacts		Х		
Environmental Justice		Х		
Transportation	X		Design modifications would improve trip distribution and reduce congestion and delay on adjacent roads compared to the Selected Alternatives. Overall, there would be a 3% reduction in hours of delay on all roads in the study area compared to the Selected Alternatives analyzed in the Final EIS.	
Economics	Х		The additional 153 acres of right-of-way (a 9% increase) required for the proposed design modifications would further reduce potential city property tax revenues by 0.06% compared to the Selected Alternatives analyzed in the Final EIS.	
Joint Development		Х		
Pedestrian and Bicyclist Issues	X		The Final EIS identified crossings of one existing and 37 proposed trails. Under the design modifications, three additional proposed trails would be crossed. All trail crossings would be accommodated.	
Air Quality		Х		
Noise	X		The number of residences that meet or exceed UDOT's Noise-Abatement Criteria would increase from 536 to 614. Most of the increase in affected residences is a result of new residential development that has been platted and/or constructed since the Final EIS noise analysis was conducted and is not a result of the proposed design modifications.	
Water Quality	Х		No adverse impacts to water quality were identified in the Final EIS. Under the design modifications, there would be an additional 89 acres of impervious surface (a 13% increase). Water quality modeling conducted for the design modifications showed that the increase in impervious surfaces would not cause adverse impacts to water quality and that overall impacts would be the same as those identified in the Final EIS.	
Ecosystems	X		Final EIS.  An additional 34 acres of wildlife habitat (an 11% increase) would be converted to roadway use by the proposed design modifications. There would be no change to impacts to wetlands or threatened or endangered species. The overall impacts would be the same as those identified in the Final EIS.	

Environmental	Impacts Changed?		Comments		
Resource Yes No		No			
Floodplains	X		The Final EIS identified impacts to 20 acres of floodplains. Under the proposed design modifications, an additional 7 acres (a 35% increase) would be affected. As stated in the Final EIS, any floodplain impacts would be minor because bridges and culverts would meet UDOT's floodplain design standards and the requirements of local floodplain ordinances.		
Historic, Archaeological, and Paleontological Resources	Х		Under the proposed design modifications, two additional archaeological sites, 42SL287 (Provo Reservoir Canal/Murdock Ditch, eligible under Criterion A) and 42SL450 (Jordan River Aqueduct), would be crossed. Impacts would be no adverse effect to 42SL287 and no historical properties affected for 42SL450.		
Hazardous Waste		Х			
Visual Resources		Х			
Energy		Х			
Construction Impacts		Х			
Indirect Effects		Х			
Cumulative Impacts		Х			
Permits, Reviews, and Approvals		Х			
Section 4(f) Resources	X		Two additional 4(f) properties would be crossed. There would be no adverse effects on Site 42SL287 and no historical properties affected on Site 42SL450. Therefore, the 4(f) use of Site 42SL287 would be <i>de minimis</i> , and for Site 42SL450 there would be no 4(f) use.		
Sequencing		Х			

# 3.1 Land Use (Chapter 4 of the Final EIS)

#### 3.1.1 Affected Environment

The proposed design modifications to the initial Salt Lake County MVC project would occur in West Jordan, South Jordan, Herriman, and Riverton. A review of the Cities' plans found that there were no changes to the South Jordan, West Jordan, or Riverton general plans and transportation plans since the Final EIS was issued. Updates to the Herriman general and transportation plans are discussed below. The WFRC Regional Transportation Plan (RTP) has not been updated since the Final EIS was issued.

#### 3.1.1.1 Herriman

Herriman updated its general and transportation plans in March 2009 (Civil Science 2008; City of Herriman 2009). These updated plans were not evaluated in the MVC Final EIS. The Herriman 2020 Plan describes the City's land-use

plan for the future and includes the MVC project. The plan states that attention must be paid to the development patterns adjacent to the MVC and that development adjacent to the roadway should include high-density commercial and industrial development (Herriman 2009). Herriman's Transportation Master Plan states that the MVC project will provide city residents with access to regional freeway systems without having to use surface streets. The plan also says that the City should work with UDOT to develop a one-way collector-distributor road alongside the MVC from 11800 South to 13400 South as a way to help distribute trips in the city and reduce congestion on east-west streets (Civil Science 2008). The plan included a mass transit element with the vision of improving the integration of transit with the local regional network to reduce private automobile trips, reduce congestion and improve air quality, improve mobility choices, and encourage the diversity of links between neighborhood systems and citywide regional systems.

### 3.1.2 Environmental Consequences

The proposed design modifications would convert an additional 153 acres to roadway use. Of the total converted acres, 63 acres are associated with South Hill Boulevard and improvements to cross streets, and 90 acres are associated with the frontage roads. Table 3-2 lists the types of land that would be converted. The additional land-use impacts would be about 9% greater than the impacts of the alternative evaluated in the Final EIS. Overall, the impacts to land use from the proposed design modifications would be similar to those analyzed in the Final EIS, and the results of the analysis would not change.

**Table 3-2. Comparison of Land-Use Impacts** 

	Total Acres	- Additional	
Land Use	Final EIS	Proposed Design Modifications	Acres Converted
Agriculture	398	505	107
Commercial	38	46	8
Industrial	130	133	3
Institutional	190	195	5
No data	278	284	6
Open space	340	343	3
Low-density residential	99	109	10
Medium-density residential	210	219	9
High-density residential	25	25	0
Camp Williams	28	30	2
Total	1,736	1,889	153

The land-use totals shown in this table from the Final EIS include both the 5800 West Freeway Alternative and the 2100 North Freeway Alternative in Salt Lake County.

As stated in the Final EIS, the land-use and transportation plans of the cities along the MVC project identified the need for a future freeway facility, and therefore the MVC was consistent with local and regional land-use plans, policies, and controls. The proposed design modifications still provide a future freeway facility and would be consistent with the plans. The revisions since the Final EIS to the Herriman general and transportation plans still identify the need for the MVC project, so the MVC would be consistent with these plans. The design modifications would be consistent with the Wasatch Front Regional Council's (WFRC) Regional Transportation Plan (RTP), which includes the MVC as a freeway.

# 3.2 Farmlands (Chapter 5 of the Final EIS)

### 3.2.1 Affected Environment

The affected environment described in the Final EIS is still valid and therefore this section has not been updated.

### 3.2.2 Environmental Consequences

The proposed design modifications would have additional impacts on farmlands. As shown in Table 3-3, the impacts to irrigated croplands and non-irrigated cropland would increase slightly. Most of the non-irrigated croplands are currently planned for development.

**Table 3-3. Comparison of Farmland Impacts** 

Farmland Resource	Final EIS	Proposed Design Modifications	Additional Farmland Acres Converted <sup>a</sup>
Irrigated cropland (acres)	120	129	9
Non-irrigated cropland (acres)	770	834	64
Prime/unique farmland (acres)	23	23	0
State important farmland (acres)	0	0	0
Agriculture Protection Areas	0	0	0
Indirect impacts (acres)	3	3	0

<sup>&</sup>lt;sup>a</sup> The total acres of farmland converted is based on actual land being farmed. The farmland converted in Table 3-2 above, Comparison of Land-Use Impacts, is based on land-use zoning and not an area actually being farmed.

There would be no additional prime/unique farmland impacts from the proposed design modifications, so the NRCS-CPA-106 rating form submitted for the MVC project in Salt Lake County would not change (142 points). Overall, the impacts to farmland from the proposed design modifications would be similar to those identified in the Final EIS, and the results of the analysis would not change.

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# 3.3 Community Impacts (Chapter 6 of the Final EIS)

No new community facilities, recreational resources, or public services and utilities were identified in the design modification areas and no additional resources would be affected; therefore, these resources are not evaluated in detail in this re-evaluation. In addition, the proposed modifications would not change the analyses of community cohesion or quality of life in the MVC Final EIS. The design modifications would require one additional potential residential relocation at 4932 West 13400 South in Herriman. The frontage roads and other design modifications would improve emergency vehicle access by providing more access to the local street network.

# 3.4 Environmental Justice (Chapter 7 of the Final EIS)

No new low-income or minority populations were identified in the design modification areas and no additional environmental justice populations would be affected; therefore, this resource is not evaluated in detail in this re-evaluation.

# 3.5 Transportation (Chapter 8 of the Final EIS)

#### 3.5.1 Affected Environment

The affected environment described in the Final EIS is still valid and therefore this section has not been updated.

## 3.5.2 Environmental Consequences

The transportation impacts for this re-evaluation compare the 5800 West Freeway Alternative evaluated in the Final EIS to the 5800 West Freeway Alternative with the proposed design modifications in 2030. The same WFRC model version (6.0) from the Final EIS was used in the re-evaluation analysis with the same inputs except for changes made to land uses in the Daybreak area and the addition of transportation analysis zones to account for recent development trends in the project area. The modifications to the model slightly changed the volume-to-capacity (V/C) ratios presented in the Final EIS for the 5800 West Freeway Alternative.

Overall, the proposed design modifications would improve trip distribution and reduce congestion and delay on adjacent roads compared to the Final EIS 5800 West Freeway Alternative. As shown in Table 3-4 below, the proposed design modifications would shorten the hours of daily delay on all roads compared to the 5800 West Freeway Alternative in the Final EIS. Daily delay on all arterial streets in the study area would be reduced by at least 7% with east-west arterials having the greatest reduction in daily delay at 10%. Freeways would experience a

1% increase in daily delay because the frontage roads would increase accessibility to the MVC freeway.

Table 3-4. Comparison of Hours of Daily Delay

Alternative	East-West Arterials	North-South Arterials	All Arterial Streets	Freeways	All Roads
Final EIS Hours	6,900	8,300	15,200	15,300	30,500
Proposed Design Modifications Hours Change vs. Final EIS design	6,200 –10%	7,900 -5%	14,100 -7%	15,500 +1%	29,600 -3%

Table 3-5 compares the V/C ratios for key road segments in Salt Lake County under the Final EIS 5800 West Freeway Alternative and the proposed design modifications. As shown by the shaded cells, with the proposed design modifications, five segments would operate at a higher V/C ratio compared to the Final EIS 5800 West Freeway Alternative. The Final EIS 5800 West Freeway Alternative would have 10 segments operate at a higher V/C ratio than the proposed design modifications. Overall, the design modifications would result in slightly lower V/C ratios on some roads. Shaded cells in Table 3-5 indicate that the V/C ratio would be higher under the proposed design modifications compared to the Final EIS design.

Table 3-5. Comparison of Congestion Levels for Key Road Segments

	2030 V/C Ratio <sup>b</sup> (PM Peak Period)		
Segment <sup>a</sup>	Final EIS	Proposed Design Modifications	
Freeways			
I-15, (SB) State Route (SR) 201 to I-215	0.93	0.94	
I-15, (NB) SR 201 to I-215	0.71	0.71	
I-15, (SB) I-215 to Bangerter Highway	0.99	0.99	
I-15, (NB) I-215 to Bangerter Highway	0.78	0.78	
I-15, (SB) Bangerter Highway to Point of the Mountain	0.82	0.82	
I-15, (NB) Bangerter Highway to Point of the Mountain	0.63	0.64	
I-80, (WB) 7200 West to Bangerter Highway	0.86	0.85	
I-80, (EB) 7200 West to Bangerter Highway	0.60	0.61	
I-80, (WB) Bangerter Highway to I-215	0.79	0.79	
I-80, (EB) Bangerter Highway to I-215	0.94	0.94	
I-80, (WB) I-215 to I-15	0.74	0.73	
I-80, (EB) I-215 to I-15	0.78	0.78	
SR 201, (WB) SR 111 to Bangerter Highway	0.83	0.83	
SR 201, (EB) SR 111 to Bangerter Highway	0.66	0.66	
SR 201, (WB) Bangerter Highway to I-15	0.95	0.95	
SR 201, (EB) Bangerter Highway to I-15	0.90	0.90	

	2030 V/C Ratio <sup>b</sup> (PM Peak Period)		
Segment <sup>a</sup>	Final EIS	Proposed Design Modifications	
North-South Principal Arterials			
SR 111, SR 201 to 3500 South SR 111, 3500 South to 6200 South SR 111, 6200 South to New Bingham Highway 7200 West, I-80 to SR 201	0.87 0.99 1.02 0.68	0.87 0.99 1.01 0.68	
7200 West, SR 201 to 4100 South 5600 West, I-80 to SR 201 5600 West, SR 201 to 3500 South 5600 West, 3500 South to 6200 South 5600 West, 6200 South to 9000 South	0.82 0.73 0.80 0.99 0.96	0.81 0.73 0.80 0.98 0.96	
East-West Principal Arterials			
California Avenue, 7200 West to Bangerter Highway 2700 South, SR 111 to 5600 West 2700 South, 5600 West to Bangerter Highway 3500 South, 8400 West to 5600 West 3500 South, 5600 West to Bangerter Highway	0.66 0.83 0.90 0.78 0.93	0.66 0.83 0.90 0.77 0.93	
4100 South, SR 111 to 5600 West 4100 South, 5600 West to Bangerter Highway 5400 South, SR 111 to Bangerter Highway 6200 South, SR 111 to Bangerter Highway 7800 South, SR 111 to Bangerter Highway	0.71 0.92 0.84 0.88 0.80	0.72 0.93 0.84 0.88 0.80	
9000 South, SR 111 to Bangerter Highway 11400 South/11800 South, SR 111 to Bangerter Highway 12600 South, 5600 West to Bangerter Highway 13400 South, 5600 West to Bangerter Highway	0.91 0.90 1.06 0.88	0.90 0.88 1.03 0.82	
13400 South, Sout West to Bangerter Highway	0.88	∪.ŏ∠	

 $<sup>^{\</sup>rm a}$  SB = southbound; NB = northbound; WB = westbound; EB = eastbound.

b V/C ratios: Less than 0.5 = minor to no congestion; 0.5 to 0.74 = moderate congestion; 0.75 to 0.99 = heavy congestion; 1.0 or higher = severe congestion, stop-and-go traffic. V/C ratios are based on the WFRC model version 6.0.

## 3.6 Economics (Chapter 9 of the Final EIS)

#### 3.6.1 Affected Environment

The affected environment described in the Final EIS is still valid and therefore this section has not been updated.

## 3.6.2 Environmental Consequences

As described in Section 3.5, Transportation, of this re-evaluation, the overall congestion on all roads in the study area would decrease by 3% with the proposed design modifications; therefore, travel time, congestion, and cost savings to the traveling public would improve compared to the alternative analyzed in the Final EIS. Because the design modifications would not require any additional business relocations, commerce and employment impacts would not change. It is possible that the proposed frontage roads could improve commerce by allowing more access points along the frontage roads (up to five per mile) and easier access to the MVC freeway.

The property value analysis in the Final EIS would be the same as for the proposed design modifications. The additional 153 acres of right-of-way required for the proposed design modifications would reduce revenue by 0.91% for all cities affected by the road, which is higher than the Final EIS design that would reduce revenue by 0.85%.

Overall, the impacts to economics from the proposed design modifications would be similar to those identified in the Final EIS, and the results of the analysis would not change.

# 3.7 Joint Development (Chapter 10 of the Final EIS)

No new joint development opportunities were identified during the re-evaluation process; therefore, this resource is not evaluated in detail.

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# 3.8 Considerations Relating to Pedestrians and Bicyclists (Chapter 11 of the Final EIS)

#### 3.8.1 Affected Environment

The affected environment described in the Final EIS is still valid and therefore this section has not been updated.

## 3.8.2 Environmental Consequences

#### 3.8.2.1 MVC Trail

As part of the final design process for the proposed design modifications, the proposed MVC trail was revised. The revision includes one continuous 12-footwide trail from Old Bingham Highway (10200 South) to South Hills Boulevard (about 16000 South) adjacent to the frontage road system. This frontage road segment would also include a bicycle lane. The revision adds new segments from the Final EIS design between 10200 South and 11400 South and from 12600 South to 13400 South. The final trail design would further improve the connectivity of the regional trail system. The final location of the trail adjacent to the frontage roads would be determined during the final design phase of the project. Portions of the trail could be constructed by adjacent property owners outside the right-of-way required for the MVC project. The trail segment between 6200 South and 7800 South is unchanged from that described in the Final EIS.

#### 3.8.2.2 Existing and Proposed Trails

The MVC project in Salt Lake County evaluated in the Final EIS would cross one existing trail and 37 proposed trails. All trail crossings would be accommodated by the MVC project in the Final EIS.

Under the design modifications, three additional proposed trails would be crossed. The crossings would be associated with the South Hills Boulevard extension between the MVC mainline and Redwood Road. As discussed in the Final EIS, all trail crossings would be accommodated including the three additional proposed trails affected by the proposed design modifications. The impacts to the three trails would be the same as those reported in the Final EIS under the Arterials Alternative for the Porter Rockwell Boulevard arterial.

Overall, the impacts to pedestrians and bicyclists from the proposed design modifications would be similar to those identified in the Final EIS, and the results of the analysis would not change.

## 3.9 Air Quality (Chapter 12 of the Final EIS)

#### 3.9.1 Affected Environment

The affected environment described in the Final EIS is still valid and therefore this section has not been updated.

## 3.9.2 Environmental Consequences

The air quality analysis for this re-evaluation compares the 5800 West Freeway Alternative design evaluated in the Final EIS to the 5800 West Freeway Alternative with the proposed design modifications in 2030. The same WFRC model version (6.0) from the Final EIS was used in the re-evaluation analysis with the same inputs except for changes made to land uses in the Daybreak area and the addition of transportation analysis zones to account for recent development trends in the project area.

As discussed in Section 3.9.3.3, Regional Air Quality, traffic volumes associated with the proposed design modifications are within about 2% to 3% of those used in the analyses for the MVC Final EIS. Because the traffic volumes are similar, the overall impact to regional air quality would be similar; therefore, the analysis in the MVC Final EIS is still valid.

Traffic volumes on the proposed frontage roads range from about 14,000 vehicles per day (vpd) to about 23,000 vpd, depending on location. Relative to the MVC freeway and other principal arterials in the project area, traffic volumes on the frontage roads are a small portion of overall traffic volumes.

As described in the MVC Final EIS, air quality impacts were evaluated using regulations, models, and methods approved by FHWA, the U.S. Environmental Protection Agency (EPA), and UDOT for such analyses.

## 3.9.3 Methodology

The FHWA publication *Guidance for Preparing and Processing Environmental* and Section 4(f) Documents (FHWA 1987) identifies the requirements for evaluating air quality impacts associated with transportation projects and provides guidance on completing mesoscale and microscale air quality evaluations.

Mesoscale evaluations look at regional air quality impacts and are typically conducted by the local metropolitan planning organization (in this case, WFRC). Microscale evaluations look at local ("hot-spot") air quality impacts, primarily at the road or intersection level. The mesoscale and microscale air quality evaluations were used in the re-evaluation determine whether the project would

cause the National Ambient Air Quality Standards (NAAQS) to be exceeded and would conform to the approved State Implementation Plans.

In addition, FHWA's Easy Mobile Inventory Tool (EMIT) was used to update emission estimates of transportation-related mobile-source air toxics (MSATs) in the analysis area.

#### 3.9.3.1 Mesoscale Evaluations of Regional Air Quality

The WFRC included the MVC project (as described in the MVC Final EIS) as a "regionally significant" project in their most recent transportation conformity analyses. The most recent mesoscale evaluation for Salt Lake County is the *Conformity Analysis for the WFRC 2030 Regional Transportation Plan* (WFRC 2007). This conformity analysis found that all of the regionally significant transportation projects included in the analysis would conform to the emission budgets for CO (carbon monoxide) and PM<sub>10</sub> (particulate matter less than 10 microns in diameter) in the State Implementation Plan. That plan included full build-out of the 5800 West Freeway Alternative (the Preferred Roadway Alternative in Salt Lake County), and the conformity determination was made by FHWA and the Federal Transit Administration (FTA) on June 27, 2007. This conformity determination has not changed since the MVC Final EIS was issued.

### 3.9.3.2 Microscale Evaluations of Local Air Quality (CO and PM<sub>10</sub>)

For this re-evaluation, a microscale (hot-spot) analysis was conducted for CO and  $PM_{10}$  to update the analyses included in the MVC Final EIS.

#### Carbon Monoxide (CO) Methodology

A CO microscale (hot-spot) analysis was conducted at the 9000 South/5800 West Freeway interchange. The modeling parameters used for the analysis were the same as those used in the MVC Final EIS but were updated to reflect revised traffic volumes at the interchange.

#### Particulate Matter (PM) Methodology

The methodology for the  $PM_{10}$  and  $PM_{2.5}$  hot-spot analyses were the same as those described in the MVC Final EIS.

 $PM_{10}$ . The MVC re-evaluation project is located in a PM<sub>10</sub> non-attainment area in Salt Lake County (that is, the NAAQS for PM<sub>10</sub> are not being attained in this area). Therefore, this section updates the qualitative PM<sub>10</sub> hot-spot analysis prepared for the MVC Final EIS.

*PM*<sub>2.5</sub>. The MVC re-evaluation project is located in the northern Wasatch Front and Utah Valley proposed PM<sub>2.5</sub> non-attainment area. Since additional federal approvals for this project are expected after April 2010, project-level conformity will eventually apply to this project (assuming that the area is designated non-attainment for PM<sub>2.5</sub>), and the U.S. Department of Transportation will comply with whatever PM<sub>2.5</sub> conformity requirements apply at that time.

#### **Mobile-Source Air Toxics Methodology**

MSAT analyses were conducted using FHWA guidelines (FHWA 2006c). That analysis has been updated to reflect design changes associated with this reevaluation.

#### 3.9.3.3 Regional Air Quality

Evaluation of full build-out of the MVC project in 2030 was included in the MVC Final EIS. In that 2030 analysis, all regionally significant transportation and transit projects were determined to be in compliance with the CO and  $PM_{10}$  emission budgets in the State Implementation Plan with more than 50% of the emissions budget remaining in 2030 following construction of all regionally significant projects, including the MVC. Full build-out of the MVC as described in the MVC Final EIS would increase regional CO emissions by about 4% and  $PM_{10}$  emissions by less than 1% in 2030.

The proposed design modifications would involve a relatively small portion of the overall project, which would be modified to include frontage roads on the east and west sides of the MVC corridor between Old Bingham Highway and South Hills Boulevard. Revised traffic analyses prepared as part of the MVC reevaluation show that traffic volumes throughout the MVC project area will generally be the same or within about 2% to 3% of those considered in the MVC Final EIS analyses. In some areas, traffic volumes will decrease due to better distribution of local traffic.

After full build-out of the MVC and all other regionally significant transportation projects in 2030, more than 50% of the CO and  $PM_{10}$  emission budgets in the State Implementation Plan will remain. Therefore the small changes in traffic volume from the proposed design modifications would have a minor impact on CO and  $PM_{10}$  at the regional level.

#### 3.9.3.4 Local Air Quality (CO)

The highest modeled CO concentrations associated with the proposed project (at the 9000 South/5800 West interchange) are shown in Table 3-6.

Table 3-6. Highest Modeled Concentrations of Carbon Monoxide along the MVC

	1-Hour C	1-Hour Concentration (ppm)			8-Hour Concentration (ppm)		
Roadway Segment or Interchange	Existing Conditions <sup>a</sup>	5800 West Freeway Alternative (2030) <sup>b</sup>	NAAQS	Existing Conditions <sup>a</sup>	5800 West Freeway Alternative (2030) <sup>c</sup>	NAAQS	
9000 South/5800 West interchange design modifications	4.7	10.9 <sup>d</sup>	35	2.8	7.1 <sup>d</sup>	9	
9000 South/5800 West MVC mainline design modifications	4.7	11.0 <sup>d</sup>	35	2.8	7.2 <sup>d</sup>	9	

ppm = parts per million

9000 South/5800 West Interchange. The highest modeled 1-hour CO concentration at this interchange was 10.9 ppm, which was below the 1-hour NAAQS of 35 ppm. The highest modeled 8-hour concentration at the 9000 South/5800 West interchange was 7.1 ppm, which was below the 8-hour NAAQS of 9 ppm.

9000 South/5800 West Mainline. The highest modeled 1-hour CO concentration on the MVC mainline near the 9000 South/5800 West mainline was 11.0 ppm, which was below the 1-hour NAAQS of 35 ppm. The highest modeled 8-hour concentration on the mainline was 7.2 ppm, which was below the 8-hour NAAQS of 9 ppm.

There is very little development at the 9000 South interchange location. After the proposed design modifications are built, it is unlikely that people would spend extended periods of time (for example, 8 hours) standing at the MVC mainline or adjacent to the interchange on and off ramps, so the actual concentrations of CO that people would be exposed to would likely be much lower.

Detailed CO modeling for the 9000 South/5800 West interchange indicates that CO concentrations would be below the NAAQS for both the 1-hour and 8-hour CO standards and no local CO impacts are expected. In addition, historical data from regional monitoring stations also indicate that CO emissions are decreasing

<sup>&</sup>lt;sup>a</sup> Under the existing conditions, the MVC has not been built. There are currently no vehicle emissions associated with the MVC at these locations. The 1-hour and 8-hour concentrations are average background concentrations from air quality monitors near the proposed alignment.

<sup>&</sup>lt;sup>b</sup> Includes 1-hour background concentration of 4.7 ppm.

<sup>&</sup>lt;sup>c</sup> Includes 8-hour background concentration of 2.8 ppm.

<sup>&</sup>lt;sup>d</sup> Highest modeled CO concentration shown for all scenarios.

throughout the region, despite an increase in population and vehicle-miles traveled (see Table 12.3-2, Summary of CO Monitoring Data for Salt Lake and Utah Counties, in the MVC Final EIS).

# 3.9.3.5 Local Air Quality (Qualitative PM<sub>10</sub> and PM<sub>2.5</sub> Hot-Spot Analysis)

In the 2030 regional conformity analysis, all regionally significant transportation and transit projects were determined to be in compliance with the  $PM_{10}$  emission budgets in the State Implementation Plan with more than 50% of the regional emissions budget remaining in 2030. Regional emissions are shown in Table 12.4-6, Regional Mesoscale Air Quality with the Salt Lake County Roadway Alternatives in 2030, in the MVC Final EIS.

The proposed design modifications would have the same effect on overall  $PM_{10}$  emissions in the project area as the design analyzed in the Final EIS.

## Project-Related PM<sub>10</sub> and PM<sub>2.5</sub> Emissions

As described in the MVC Final EIS, vehicle emission rates are expected to decline by about 59% between 2005 and the expected MVC opening year of 2015, with an additional 25% reduction between 2015 and 2030. In other words, assuming the same national average ratio of light- and heavy-duty vehicles, 100,000 vehicles in 2005 would have the same PM<sub>2.5</sub> emissions as 244,000 vehicles in 2015 or 326,000 vehicles in 2030. EPA's MOBILE6.2 emissions model predicts that, relative to 2005, diesel particulate emission rates will decline by 80% by 2015 and by 95% by 2030. That is, 100,000 vehicles in 2005 would have the same diesel particulate emissions as 500,000 vehicles in 2015 or 2,000,000 vehicles in 2030 (see page 12-31 in the MVC Final EIS).

The relative contribution of regional and local sources to total ambient PM<sub>2.5</sub> concentrations along the Wasatch Front is currently unclear. However, it is worth noting that traffic volumes on I-15 increased by more than 28% between 2000 and 2005, but the average annual PM<sub>10</sub> concentration at a nearby monitor decreased by nearly 22% during this period, which suggests that local impacts from vehicle traffic might be a minor contributor to overall PM concentrations (see Section 12.4.3.2, 5800 West Freeway Alternative, in the MVC Final EIS for more information). In addition, PM<sub>2.5</sub> monitoring data collected between 2002 and 2006 indicate that annual average PM<sub>2.5</sub> concentrations have been decreasing (see Table 12.3-4, Summary of PM<sub>2.5</sub> Monitoring Data for Salt Lake and Utah Counties, in the MVC Final EIS).

Project-related PM<sub>10</sub> and PM<sub>2.5</sub> emissions associated with the proposed design modifications would be similar to those described in the MVC Final EIS.

#### 3.9.3.6 Mobile-Source Air Toxics (MSATs)

The mobile-source air toxics (MSAT) analysis was revised for the MVC reevaluation using updated traffic volumes and the same models and methodologies described in the MVC Final EIS.

Table 3-7 shows the MSAT modeling results for the proposed design modifications. The re-evaluation air quality analysis was based on revised travel demand modeling that was conducted to address changes in travel demand based on the frontage road concept and changes in the placement of some sections of the roadway cuts which could affect the dispersion characteristics of vehicle emissions. As described in the MVC Final EIS, annual MSAT emissions will decrease in future years due to EPA's ongoing programs to control hazardous air pollutants from mobile sources. Despite an increase of more than 70% in regional vehicle-miles traveled (VMT) between existing conditions and future years, MSAT emissions would decrease by about 44% to 86% depending on the individual constituent.

The revised MSAT emissions shown in Table 3-7 are, in general, about 1% to 2% higher than those reported in the MVC Final EIS as a result of VMT increasing from 15.2 million as identified in the Final EIS to 15.5 million based on the revised modeling conducted for the re-evaluation.

Table 3-7. Comparison of Mobile-Source Air Toxics Emissions from the Salt Lake County Roadway Alternatives in 2030

Alternative	Daily VMT (millions)	Acet- aldehyde	Acrolein	Benzene	1,3- Butadiene	Diesel Particulate Matter	Form- aldehyde
Existing conditions	7.3	12.3	1.42	110.0	14.4	44.9	31.9
No-Action	12.5	6.76	0.798	58.1	5.97	6.22	17.4
5800 West Freeway – Final EIS	15.2	8.08	0.953	69.6	7.28	7.59	20.7
5800 West Freeway – Proposed Design Modifications	15.5	8.19	0.966	70.5	7.37	7.69	21.0

#### **Greenhouse Gases and Climate Change**

The discussion of greenhouse gases and climate change is unchanged since the MVC Final EIS was issued.

## 3.10 Noise (Chapter 13 of the Final EIS)

#### 3.10.1 Affected Environment

The affected environment described in the Final EIS is still valid and therefore this section has not been updated.

### 3.10.2 Environmental Consequences

The noise analysis for this re-evaluation compares the 5800 West Freeway Alternative evaluated in the Final EIS to the 5800 West Freeway Alternative with the proposed design modifications in 2030. The design changes that would most affect noise levels are those associated with the addition of the frontage roads. Other design changes that would affect noise levels are relocating the alignment farther away from residential receptors and placing some road segments into cuts (these segments were modeled as at-grade segments in the Final EIS). The same WFRC model version (6.0) from the Final EIS was used in the re-evaluation analysis with the same inputs except for changes made to land uses in the Daybreak area and the addition of transportation analysis zones to account for recent development trends in the project area. The updated travel demand volumes were used in this noise analysis.

For continuity, the roadway segments described in this noise analysis correspond to those used in the Final EIS. Only the roadway segments that would be affected by design modifications are discussed.

## 3.10.3 Methodology

#### 3.10.3.1 Traffic Noise Impact Methodology

For this re-evaluation, the same methods described in the Final EIS were used to assess traffic noise impacts. Methods used and updates were as follows:

- 1. Existing activities and developed lands were updated from more recent (2006) aerial photographs of the MVC corridor.
- 2. Roadway cross-sections and alignments between 6200 South and the Utah County line were updated to reflect the design modifications.
- 3. Frontage roads not considered in the Final EIS were added to the noise models between Old Bingham Highway and South Hills Boulevard.
- 4. Future-year noise levels were predicted using the FHWA Traffic Noise Model, Version 2.5 (February 2004).
- 5. Noise impacts and mitigation measures for reducing noise impacts were evaluated using UDOT's guidelines for determining feasibility,

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- reasonableness, and cost-effectiveness as specified in UDOT's Noise Policy (September 2008).
- As described in the Final EIS and following UDOT's Noise Policy, freeflowing level of service (LOS) C traffic volumes were used in the noise models to estimate worst-case noise levels associated with the proposed project.
- 7. Vehicle mixes (cars versus trucks) for each affected roadway segment were the same as those used in the Final EIS.

### 3.10.4 Noise Impacts

As part of the noise analysis, the MVC project was divided into segments based on the location of existing and proposed developments. This re-evaluation involved segments 5 through 9 as described below and shown in Appendix B, Noise Barrier Evaluation. Most of the increase in affected residences is a result of the new residential developments that have been platted and/or constructed since the Final EIS noise analysis was conducted and is not a result of the design modifications.

As shown in Table 3-8, under the proposed design modifications the number of residences that meet or exceed UDOT's Noise-Abatement Criteria (NAC)<sup>1</sup> would increase from 536 in the Final EIS to 614. Most of the increase in the number of affected residences was a result of a new development in Segment 8 (51 residences), which increased the number of affected residences from 232 in the Final EIS to 283 in this re-evaluation. In some segments (Segments 7 and 9), the number of affected residences decreased or did not change because more-detailed design information showed larger roadway cuts than what was modeled in the Final EIS. The larger roadway cuts provided additional noise reduction.

**Table 3-8. Comparison of Noise Impacts** 

Noise Criterion	Final EIS	Proposed Design Modifications	Additional Noise Impacts
Meet or exceed UDOT NAC	536 <sup>a</sup>	614	78

<sup>&</sup>lt;sup>a</sup> In the Final EIS, 379 residences were reported as affected. Based on a review of the 2003 and 2006 aerial photographs, the number should have been 536. The revised number does not change the mitigation in the Final EIS.

<sup>&</sup>lt;sup>1</sup> For more information, see Table 13.3-1, UDOT's Noise-Abatement Criteria, in the MVC Final EIS.

#### 3.10.4.1 Segment 5 (5400 South to 7800 South)

In Segment 5, only the portion of the alignment south of 6200 South to 7800 South was included in the revised noise model. At this time, there are no project changes in the alignment north of 6200 South; therefore, the analysis included in the Final EIS from 5400 South to 6200 South remains valid.

Under the design modifications, no frontage roads are included in Segment 5 from 6200 South to 7800 South. Since the publication of the Final EIS, additional homes have been constructed between Cedar Hill Road and 7000 South, and this new residential development was included in the revised noise modeling for Segment 5. Other land uses in Segment 5 are the same as those described in the Final EIS.

In Segment 5, noise levels would increase by about 5 dBA to 20 dBA (decibels on the A-weighted scale) over existing conditions as identified in the Final EIS at residences nearest the alignment. The highest modeled noise levels in Segment 5 were those associated with the new homes south of Cedar Hill Road that were not included in the Final EIS.

The residential NAC of 66 dBA would be met or exceeded at 22 receptor locations representing about 67 residences in Segment 5.

### 3.10.4.2 Segment 6 (7800 South to Old Bingham Highway)

From 7800 South to Old Bingham Highway, land uses consist of undeveloped land on the west side of the MVC alignment with some residential and industrial development on the east side.

New residential development south of 8200 South on the east side of the MVC alignment was added to the noise model to reflect changes since the Final EIS. There are no frontage roads in Segment 6.

In Segment 6, noise levels would increase by 10 dBA to 20 dBA over existing conditions as identified in the Final EIS at residences nearest the alignment, with the highest increases resulting from new residential development just south of 7800 South that was not included in the noise modeling for the Final EIS.

The residential NAC would be met or exceeded at 18 residential receptor locations representing about 57 residences in Segment 6.

## 3.10.4.3 Segment 7 (Old Bingham Highway to 11800 South)

As described in the Final EIS, land uses south of Old Bingham Highway to 11800 South consist of undeveloped land on the west side of the alignment interspersed with a residential development just north of 11800 South (the

nearest residence is about 600 feet west of the proposed MVC alignment). Frontage roads were incorporated into the design for Segment 7.

In Segment 7, the MVC freeway would be below ground level near the residential development north of 11800 South, and the frontage roads would be above grade. The cut slope separating the MVC from the residential development acts as a noise barrier, reducing freeway noise at nearby residences compared to the noise level if the freeway were at grade. Noise levels would increase by 4 dBA to 9 dBA over existing conditions as identified in the Final EIS at residences in the development north of 11800 South.

Under this scenario, the residential NAC would not be met or exceeded at any residential receptor locations in Segment 7.

#### 3.10.4.4 Segment 8 (11800 South to 13400 South)

From 11800 South to 12600 South, land uses consist of undeveloped land on the west side of the alignment and residential developments on the east side of the MVC alignment. Residential developments vary in distance from the proposed alignment from about 375 feet near 11800 South to less than 200 feet near 12600 South. South of 12600 South, there are residential developments on both sides of the corridor. Proposed design modifications in this segment include the addition of frontage roads and changes to the roadway profile.

Since the publication of the Final EIS, new residential development has been constructed on the east side of the MVC alignment just north of 12600 South. Additional receptors were added to the noise model to account for this new development. Noise levels under in Segment 8 would increase by 7 dBA to more than 20 dBA over existing conditions as identified in the Final EIS.

Under this scenario, the residential NAC would be met or exceeded at 56 residential receptor locations representing about 283 residences in Segment 8.

#### **3.10.4.5** Segment 9 (13400 South to Utah County)

Land uses south of 13400 South to the Utah County line consist of residential development on the west side of the MVC alignment near 13400 South with undeveloped open space on the east side of the MVC alignment. Based on updated aerial photographs, no new residential developments have been constructed since the publication of the Final EIS. With the proposed design modifications, noise levels would either stay the same or would increase by up to 14 dBA depending on the distance to the residential receptor.

Under this scenario, the residential NAC would be met or exceeded at nine receptor locations representing about 17 residences in Segment 9.

#### 3.10.5 Noise-Abatement Measures

#### 3.10.5.1 Noise-Abatement Criteria

Noise-abatement measures were evaluated according to the UDOT Noise-Abatement Policy (UDOT 08A2-1) using the same feasibility and reasonableness criteria described in the Final EIS.

Under UDOT's policy, a noise barrier (or other noise-abatement measure) that will not reduce noise by at least 5 dBA for at least 75% of the first-row residences is not considered feasible.

Reasonableness factors suggest that common sense and good judgment have been applied in arriving at a decision to recommend a noise-abatement measure. (For example, does the noise-abatement measure satisfy the cost criterion established by the noise policy?) As a result, a noise barrier could be feasible (that is, provide the minimum required 5 dBA of noise reduction at 75% of the first-row residences), but not be reasonable (for example, by not meeting UDOT's cost criterion).

### 3.10.5.2 Noise-Abatement Methodology for the MVC Re-evaluation

The effectiveness of noise barriers is generally limited to areas within about 500 feet of the proposed right-of-way. Beyond this distance, noise barriers do not effectively reduce noise levels at individual residences. In addition, differences in terrain and elevation between the roadway and the nearby residences can reduce the effectiveness of noise barriers. The noise-abatement analysis discussed below was limited to those areas adjacent to each segment of the alignment where there were clustered residences that would potentially benefit from a noise barrier (that is, achieve at least a 5-dBA reduction in project-related noise levels) and would meet the UDOT cost-effectiveness criterion.

Table 3-9 below shows the abatement evaluation for each noise barrier that was considered in Segment 5 through Segment 9. Appendix B shows the location of each of the noise walls evaluated. UDOT will ballot the affected residents according to UDOT's Noise-Abatement Policy (UDOT 08A2-1).

**Table 3-9. Noise Barrier Evaluation** 

	Frontage	New	Number of		Barrier Evaluation
Segment	Road in Segment?	Development in Segment?	Residential Impacts (Re-evaluation)	Feasible and Reasonable?	Additional Information
<b>Segment 5</b> – 6200 South to 7800 South	No	Yes	67	Barrier 8: No	Would exceed UDOT's maximum allowed cost of \$30,000 per residence
Segment 6 – 7800 South to Old Bingham Highway	No	Yes	57	Barrier 9: Yes	14 feet high, 2,200 feet long
Segment 7 – Old Bingham Highway to 11800 South	Yes	No	0	No noise impacts – t	parrier evaluation not conducted
<b>Segment 8</b> – 11800 South to 13400 South	Yes	Yes	283	Barrier 11-A: No Barrier 11-B: No Barrier 11-C: Yes Barrier 12: Yes Barrier 13: Yes	Would not reduce noise by at least 5 dBA Would not reduce noise by at least 5 dBA 14 feet high, 1,250 feet long 14 feet high, 2,650 feet long 14 feet high, 1,400 feet long
Segment 9 – 13400 South to Utah County Line	Yes	Yes	17	Barrier 14-A: No	Would not reduce noise by at least 5 dBA

For each barrier considered, the feasibility and reasonableness of barrier heights between 6 feet and 16 feet were evaluated to determine the following:

- The number of benefiting residences (those noise-impacted residences receiving a 5-dBA noise reduction resulting from the abatement measure). Under UDOT's policy, a benefiting receiver is any noiseimpacted receiver at which noise is reduced by 5 dBA or more as a result of the noise barrier.
- 2. The maximum cost used to determine the reasonableness of a noiseabatement measure is \$30,000 per benefited receiver based on a barrier cost of about \$20 per square foot.
- 3. Whether 75% of first-row residences would benefit from the barrier.
- 4. The cost-effectiveness of the barrier (cost per benefiting residence).
- 5. An overall determination of whether the barrier is both feasible and reasonable (cost-effective).

#### 3.10.5.3 Noise-Abatement Measures

#### Segment 5 (5400 South to 7800 South)

The residential development just south of 6200 South on the east side of the proposed MVC corridor is more than 500 feet from the alignment. A barrier was modeled along the northbound off ramp at this location but would not provide the required 5 dBA or more of noise reduction to residences in the development. A noise barrier was not feasible at this location.

Barrier 8 (about 3,450 feet long) was modeled on the east side of the MVC alignment between Cedar Hill Road and 7000 South. At this location, a noise barrier 16 feet high would provide at least 5 dBA of noise reduction at 75% of the first-row residences between Cedar Hill Road and 7000 South and would be feasible under UDOT's feasibility criterion. Barriers less than 16 feet high would not reduce noise by at least 5 dBA at the first-row residences.

A 16-foot-high noise barrier would provide 5 dBA to 7 dBA of noise reduction to first-row residences and would benefit about 34 residences. A barrier at this location would cost about \$1,104,000. The barrier cost of \$32,470 per benefiting residence would exceed UDOT's maximum allowed cost of \$30,000 per residence.

A 16-foot-high noise barrier at this location would not be feasible and reasonable according to UDOT's noise-abatement criteria.

#### Segment 6 (7800 South to Old Bingham Highway)

Barrier 9 (about 2,200 feet long) was modeled on the east side of the MVC alignment from 8200 South to just south of Red Narrows Drive. A 14-foot-high noise barrier would provide 5 dBA to 7 dBA of noise reduction to at least 75% of first-row residences and would benefit about 24 individual residences. A barrier at this location would cost about \$616,000 (\$25,666 per benefitting residence).

A noise barrier 14 feet high would be feasible and reasonable according to UDOT's noise-abatement criteria.

#### Segment 7 (Old Bingham Highway to 11800 South)

There were no noise impacts at residences in Segment 7; therefore, no barrier analysis was conducted for Segment 7.

#### **Segment 8 (11800 South to 13400 South)**

Three noise barriers were evaluated on the east side of the MVC alignment between 11800 South and 12600 South on the east side of the proposed frontage road (Barriers 11-A, 11-B, and 11-C). South of 12600 South to 13400 South, two additional barriers were evaluated (Barriers 12 and 13 from the MVC Final EIS).

#### Barrier 11-A

Barrier 11-A was modeled on the east side of the frontage road between 11800 South and Black Powder Drive. At this location, the residential development is about 400 feet east of the frontage road. A 16-foot-high barrier at this location would not provide the required 5 dBA of noise benefit at residences in the development. Increasing the height of the barrier to 18 feet would reduce noise by at least 5 dBA at three of the 18 first-row residences but would not reduce noise by the required minimum of 5 dBA at least 75% of those first-row residences. Therefore, the 18-foot barrier would not be feasible under UDOT policy.

A noise barrier at this location would not be feasible or reasonable according to UDOT's noise-abatement criteria.

#### Barrier 11-B

Barrier 11-B was modeled just south of Barrier 11-A. The residential development in this location is more than 400 feet east of the frontage road. Similar to Barrier 11-A, a 16-foot-high barrier at this location would not provide the required 5 dBA of noise reduction at residences in the development. Increasing the height of Barrier 11-B to 18 feet would reduce noise by

2 to 3 dBA but would not reduce noise by the minimum of 5 dBA required by UDOT's noise policy.

A noise barrier at this location would not be feasible or reasonable according to UDOT's noise-abatement criteria.

#### Barrier 11-C

Barrier 11-C (about 1,250 feet long) was modeled on the east side of the frontage road between about Black Powder Drive and 12600 South. A barrier 14 feet high at this location would provide 5 dBA to 9 dBA of noise reduction to at least 75% of first-row residences and would benefit 15 individual residences. A 14-foothigh barrier at this location would cost about \$350,000 (\$23,333 per benefitting residence).

A noise barrier 14 feet high would be feasible and reasonable according to UDOT's noise-abatement criteria.

#### Barrier 12

Barrier 12 (about 2,650 feet long) was modeled on the west side of the frontage road alignment just south of 12600 South. A noise barrier 14 feet high would provide up to 11 dBA of noise reduction to at least 75% of first-row residences and would benefit about 52 residences. Barrier 12 would cost about \$742,000 (\$14,269 per residence).

A noise barrier 14 feet high would be feasible and reasonable according to UDOT's noise-abatement criteria.

#### Barrier 13

Barrier 13 (about 1,400 feet long) was modeled on the east side of the frontage road alignment south of 12600 South. Noise barriers were evaluated up to 14 feet high. A 14-foot-high wall would provide the required 5 dBA of noise reduction at 75% of the first-row residential receptors.

Barrier 13 would be feasible and reasonable according to UDOT's noiseabatement criteria.

#### Segment 9 (13400 South to Utah County)

Barrier 14-A (about 2,500 feet long) was modeled on the west side of the alignment south of 13400 South. Noise barriers between 6 feet and 16 feet high were modeled but would not provide the minimum required 5 dBA of noise reduction to at least 75% of the first-row residences. Increasing the height of the barrier to 18 feet would not reduce noise at any additional residences. Therefore,

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an 18-foot-high barrier would not be feasible according to UDOT's noiseabatement criteria.

Barrier 14-A would not be feasible according to UDOT's noise-abatement criteria.

## 3.11 Water Quality (Chapter 14 of the Final EIS)

#### 3.11.1 Affected Environment

There are no new impaired waters in the study area, and existing water quality has not changed. Therefore, the affected environment described in the Final EIS is still valid, and this section has not been updated.

## 3.11.2 Environmental Consequences

As shown in Table 3-10, with the proposed design modifications there would be no additional stream crossings and one additional impact to groundwater wells within the right-of-way. The proposed design modification would include about 89 acres of additional impervious area (a 13% increase) compared to the design in the Final EIS.

Table 3-10. Comparison of Water Quality Impacts

Additional

Water Quality Parameter	Final EIS	Additional Impacts Due to Proposed Design Modifications	Total Impacts
Impervious area added	671 acres	89 acres	760 acres
Stream crossings	12	0	12
Groundwater wells within right-of-way	63	1	64

This additional 89 acres in impervious area would increase stormwater runoff volumes and, if not mitigated, could increase impacts to receiving water bodies. However, the project is required to limit the rate of stormwater discharge to mimic existing conditions and would use detention basins or other water quality treatments to store excess runoff. The allowable discharge would be the same regardless of the impervious area added. Detention ponds provide longer retention times and the potential for additional water quality treatment. Therefore, this small increase in impervious area is not anticipated to have additional impacts to water quality in the water quality study area beyond those analyzed in the Final EIS.

The Final EIS analyzed the project's potential to increase salt concentrations (measured as total dissolved solids, or TDS) in receiving water bodies due to de-icing operations and the resulting impact on streams' water quality and beneficial uses. The total quantity of salt applied to the MVC would increase with the additional impervious area. However, the salt application rate (volume of salt per lane-mile) and the runoff per lane-mile would not change. Therefore, the TDS concentration (total salt per lane-mile divided by total runoff volume per lane-mile) in stormwater runoff, as modeled in the Final EIS, also would not change. Therefore, the TDS impact analysis and conclusions in the Final EIS are valid.

Barney's Creek was selected as a representative stream to analyze the effects of the design modifications on water quality. This numeric water quality analysis looked at the impacts of toxic metals that can be found in highway stormwater runoff on the wildlife-specific beneficial uses of Barney's Creek. Barney's Creek was selected because, compared to other streams in the area that are crossed by the MVC road, it has a smaller drainage area and lower in-stream flows. The MVC project, therefore, has the greatest potential to affect the water quality of Barney's Creek.

The overall percent increase in impervious area (13%) was added to the water quality model prepared for Barney's Creek in the Final EIS. Table 3-11 shows that the increase in impervious area would cause a very slight increase in zinc concentrations (from 0.031 mg/L [milligrams per liter] to 0.033 mg/L). The modeled concentration of metals is still in compliance with the water quality standards for the wildlife-specific beneficial uses listed in Utah Administrative Code Rule 317 (UAC R317).

Table 3-11. Comparison of Numeric Modeled Pollutant Concentrations in Barney's Creek

Pollutant of Concern	Final EIS	Proposed Design Modifications	UAC R317 Standard <sup>a</sup>
Copper	0.009 mg/L <sup>b</sup>	0.009 mg/L <sup>b</sup>	0.013 mg/L
Lead	0.001 mg/L <sup>b</sup>	0.001 mg/L <sup>b</sup>	0.065 mg/L
Zinc	0.031 mg/L <sup>b</sup>	0.033 mg/L <sup>b</sup>	0.120 mg/L

<sup>&</sup>lt;sup>a</sup> The UAC R317 standard is the highest in-stream concentration of the pollutant that can occur over a 3-year period.

The proposed water quality mitigation (detention basins or other similar water quality design measures) described in the Final EIS would not change for the proposed design modifications. The detention basins would be slightly larger in

b This is the highest in-stream concentration of the pollutant that is expected to occur over a 3-year period according to FHWA's modeling.

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areas where the impervious area is increased. As demonstrated above, the change due to the proposed design modifications is small, and therefore the analysis to impaired waters, water quality, and beneficial uses is unchanged from that described in the Final EIS.

# 3.12 Ecosystem Resources (Chapter 15 of the Final EIS)

#### 3.12.1 Affected Environment

A review of wildlife habitats and general wildlife species found that there was no change since the Final EIS; however, several federal and state species listings have been changed in Salt Lake County and are discussed below.

#### 3.12.1.1 Threatened, Endangered, and Sensitive Species

#### **Federally Listed Species**

The U.S. Fish and Wildlife Service (USFWS) has removed the Canada lynx (*Lynx canadensis*) from its list of occurrence for Salt Lake County. USFWS has changed the status of the slender moonwort (*Botrychium lineare*) by removing it as a candidate for federal listing. USFWS has also included Salt Lake County in the list of counties in which Ute ladies'-tresses (*Spiranthes diluvialis*) is present in Utah.

### **State Listed Species**

The State of Utah species of concern for Salt Lake County now include California floater (*Anodonta californiensis*) and the recently federally delisted bald eagle (*Haliaeetus leucocephalus*). Salt Lake County has also been included in the list of occurrence for the Bonneville cutthroat trout (*Oncorhynchus clarkii utah*), a conservation agreement species.

## 3.12.2 Environmental Consequences

The proposed design modifications would require additional land to be converted to roadway use. A small portion of these lands is considered to be wildlife habitat. Any differences between the proposed design modifications and the alternative evaluated in the Final EIS are discussed in the appropriate sections below.

The Final EIS analyses for wildlife noise impacts, water quality impacts to wildlife, and migratory birds would not change as a result of the proposed design modifications and are therefore not discussed below.

#### 3.12.2.1 Wildlife

#### **Habitat Loss (Analysis of Habitat Suitability Indexes)**

The proposed design modifications would convert an additional 34 acres of wildlife upland habitat to roadway use compared to the amount identified in the Final EIS. The additional upland habitat lost is located at or leads up to the southern terminus of the 5800 West Freeway Alternative in Salt Lake County (just north of Camp Williams). The proposed design modifications would also remove 1.2 acres of additional ephemeral drainage habitat at various locations along the alignment.

The additional 34 acres of upland habitat removed by the proposed design modifications are of high quality for mule deer and Brewer's sparrow (Habitat Suitability Index [HSI] = 0.7 to 0.9). For western meadowlark and red-tailed hawk, the additional affected uplands are of low quality (HSI = 0.1 to 0.3).

Of the additional 1.2 acres of ephemeral drainage habitat that would be removed by the proposed design modifications, about half (0.63 acre) is of high quality for western meadowlark (HSI = 0.76), moderate quality for Brewer's sparrow and red-tailed hawk (HSI = 0.50 to 0.53), and low quality for mule deer (HSI = 0.13). Of the remaining 0.54 acre, 0.38 acre is of high quality for Brewer's sparrow (HSI = 0.76), moderate quality for mule deer (HSI = 0.62), and low quality for western meadowlark and red-tailed hawk (HSI = 0 to 0.18). The remaining 0.16 acre is of low quality for all the species except for Brewer's sparrow, for which it is of moderate quality (HSI = 0.43).

Compared to the Final EIS design, the proposed design modifications would increase the impact acreage from the project footprint but would not affect the overall results of the analyses. The small changes in the alignment are mostly small expansions or contractions, or slight shifts, from what was described in the Final EIS.

#### Wildlife Habitat Fragmentation and Roadway Mortality

The impacts on wildlife habitat fragmentation and roadway mortality from the proposed design modifications would be similar to those from the Final EIS design. For the three habitat blocks that did change more than a few acres (blocks 11, 15, and 19), the differences are small decreases in the resulting fragmented blocks described in the Final EIS (see Table 3-12 below). For blocks 17 and 20, a few of resulting fragmented blocks described in the Final EIS were fragmented more. For block 17, one of the original 20-acre fragments was split again into two fragments (2 acres and 10 acres) by the proposed design modifications.

Block 20 was fragmented into two blocks of 9,315 acres and 855 acres by the Selected Alternative analyzed in the Final EIS and would be further fragmented into four blocks of 9,315 acres, 515 acres, 265 acres, and 60 acres by the proposed design modifications. Much of the land in the new fragments is already lightly developed or previously fragmented by the dispersed residential community in that area. The large, 9,315-acre, foothill upland habitat block (which directly connects to the wildlands farther to the west) still remains the same as described in the Final EIS.

Table 3-12. Comparison of Wildlife Habitat Fragmentation Impacts

	<b>Block Acreage</b>	Block F	Piece Acreage
Habitat Block Number <sup>a</sup>	Existing (from Final EIS)	Final EIS	Proposed Design Modifications <sup>b</sup>
3	110	70 / 25	NA
4	1,700	55 / 1,535 / 30	NA
5	675	540 / 50 / 15	NA
6	55	15 / 20 / 10	NA
7	95	45 / 20	NA
8	1,225	1,170	NA
9	510	365 / 80	NC
10	520	380 / 85	NC
11	345	90 / 215	85 / 215
12	45	10 / 20	NC
13	60	40 / 5	NC
New <sup>c</sup>	(50) <sup>c</sup>	_	45
14	100	50 / 30	NC
15	185	85 / 80	80 / 75
16	100	95	NC
17	825	745 / 20 / 30	740 / 30 / 2 / 10
18	925	495 / 395	NC
19	445	10 / 375	2 / 375
20	10,370	9,315 / 855	9,315 / 60 / 265 / 51

	Existing	Final EIS	Proposed Design Modifications
Number of Blocks	18 <sup>c</sup>	38	42
Max / Min Block Size	10,370 / 45	9,315 / 5	9,315 / 2
Average Block Size	1,015	460	416

<sup>&</sup>lt;sup>a</sup> The same numbering of habitat blocks from the 5800 West Freeway Alternative in the Final EIS is maintained. Blocks 1 and 2 were affected by only the 7200 West Freeway Alternative in the Final EIS.

b NA = not affected by the proposed design modifications; NC = no substantial change (<5 acres) from Final EIS analysis.</p>

Newly included habitat block not in Final EIS analysis.

One new block would be affected by the proposed design modifications. This piece of scrubby upland (previously used as agricultural land) would have one edge trimmed off and would lose about 5 acres.

Even with these differences in habitat fragmentation between the Final EIS design and the proposed design modifications, the overall results of the analysis are not substantially different from what was described in the Final EIS. The average block size and number of blocks between the Final EIS and the proposed design modifications remain similar, and the results of the Final EIS analysis would not change.

As described in the Final EIS, wildlife mortality due to the 5800 West Freeway Alternative would be low because the necessary right-of-way is already disturbed and is not highly used by wildlife. The area around the alternative could be used seasonally by migrating birds, but the increased risk of roadway mortality to mule deer and other larger wildlife would be low. The addition of the frontage roads might slightly increase wildlife mortality, but overall mortality rates are still expected to be low given the disturbed quality of the existing habitat.

#### 3.12.2.2 Threatened, Endangered, and Sensitive Species

### **Federally Listed Species**

The proposed design modifications would not affect any federally listed threatened, endangered, or candidate species, including the Ute ladies'-tresses that has been recently added to the Salt Lake County occurrence list. The proposed design modifications would not affect any known or potential Ute ladies'-tresses habitat, since the area is dominated by dry, upland fields (many of which are cultivated or otherwise already affected), ephemeral washes, and developed land.

#### **State Listed Species**

The impacts on state listed sensitive species from the proposed design modifications would be the same as those from the Final EIS design. With regard to the species newly included on the Salt Lake County occurrence list, there are no known occurrences or habitat within the right-of-way for either the California floater or the Bonneville cutthroat trout. For the bald eagle, there are 11 known mating pairs in Utah but no known nesting sites within a mile of the project right-of-way.

#### 3.12.2.3 Jurisdictional Wetlands

Table 3-13 compares the impacts to wetlands, canals, ephemeral washes, and riparian areas under the Final EIS design and the proposed design modifications. No additional wetlands, ephemeral washes, or riparian areas would be affected by the design modifications. The South Hills Boulevard extension to Redwood Road would cross the Provo Reservoir Canal/Murdock Ditch and result in an additional 183 feet of linear impacts to the canal. UDOT is coordinating this additional impact as part of the Section 404 permit process with the U.S. Army Corps of Engineers (USACE). Overall, the impacts to wetlands and linear aquatic features would be similar to those identified in the Final EIS, and the results of the analysis would not change.

Table 3-13. Comparison of Wetland and Linear Aquatic Feature Impacts

		Wetland Impacts (acres)		Impacts to Linear Aquatic Features (feet)		
Alternative	Primary	Secondary	Canal	Ephemeral Wash	Riparian	
Final EIS	30.19	89.18	70	4,419	9,606	
Proposed Design Modifications	30.19	89.18	254	4,282	9,606	
Additional wetlands/linear features affected	0	0	184	-137	0	

# 3.13 Floodplains (Chapter 16 of the Final EIS)

#### 3.13.1 Affected Environment

The affected environment described in the Final EIS is still valid and therefore this section has not been updated.

#### 3.13.2 Environmental Consequences

As shown in Table 3-14 below, with the proposed design modifications there would be no additional longitudinal, transverse, or length of crossing of a floodplain, and 7 additional floodplain acres would be affected as a result of the increased roadway width.

**Table 3-14. Comparison of Floodplain Impacts** 

Floodplain Parameter	Final EIS	Proposed Design Modifications	Additional Impacts
Total number of crossings (longitudinal)	0	0	0
Total number of crossings (transverse)	12	12	0
Total length of crossings (feet)	2,300	2,300	0
Total floodplain impacts (acres)	23	30	7

As stated in the Final EIS (page 16-18), any floodplain impact would be minor because bridges and culverts would meet the design standards in the UDOT Manual of Instruction and because the Federal Emergency Management Agency (FEMA) requirements and local floodplain ordinances would be followed. Overall, the impacts to floodplains from the proposed design modifications would be similar to those identified in the Final EIS, and the results of the analysis would not change.

# 3.14 Historic, Archaeological, and Paleontological Resources (Chapter 17 of the Final EIS)

#### 3.14.1 Affected Environment

As part of the re-evaluation process, a supplemental cultural resource inventory was conducted in June and July 2009 for those areas that were not previously inventoried during the EIS process. The design modifications required an inventory on 35.1 acres. No additional cultural resources were identified within the design modification inventory area.

## 3.14.2 Environmental Consequences

Two additional eligible archaeological sites, 42SL287 (Provo Reservoir Canal/Murdock Ditch, eligible under Criterion A) and 42SL450 (Jordan River Aqueduct) would be crossed by the proposed design modifications. The South Hills Boulevard extension to Redwood Road would cross these sites. (See Appendix C, Cultural Resources, for more information about the sites and a description of the crossing of the sites.) The crossings would be at the same location as the Porter Rockwell Boulevard arterial evaluated under the MVC Arterials Alternative. The Final EIS reported that the Porter Rockwell Boulevard crossing would have no adverse effect on Site 42SL287. Under the design modifications, Site 42SL287 would likely be spanned by a bridge or culvert.

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Such techniques would have a minor impact on the historical integrity or character of the site and there are no contributing features in this location; therefore, no adverse effect would occur.

Site 42SL450 would be crossed at a location where the aqueduct is entirely underground and the roadway would not affect the site. This would not affect the integrity or character of the site, and no historical properties would be affected.

The Final EIS reported that Site 42SL156, a prehistoric campsite, would be adversely affected by the 5800 West Freeway Alternative. The proposed design modifications would expand the impact as a result of the frontage roads. As part of the Final EIS process, UDOT developed a Memorandum of Agreement (MOA) to resolve the adverse effects associated with the site. UDOT will continue to comply with the MOA as part of the design modifications.

The State Historic Preservation Officer (SHPO) concurred with the above findings on August 10, 2009 (see Appendix C, Cultural Resources).

## 3.15 Hazardous Waste Sites (Chapter 18 of the Final EIS)

No new hazardous waste sites were identified in the design modification areas and no additional resources would be directly or indirectly affected; therefore, this resource is not evaluated in detail in this re-evaluation.

# 3.16 Visual Resources (Chapter 19 of the Final EIS)

#### 3.16.1 Affected Environment

The affected environment described in the Final EIS is still valid and therefore this section has not been updated.

## 3.16.2 Environmental Consequences

The main change to the visual environment from the proposed design modifications would be the frontage roads from Old Bingham Highway to South Hills Boulevard. This segment was evaluated in the Final EIS as part of key observation points (KOP) 10 and 11. The Final EIS reported that the 5800 West Freeway Alternative would add new bold lines that contrast with the existing area, but overall it would fit in with the urban development that is occurring in the project area. The visual contrast rating for the two KOPs was moderate. The proposed frontage roads would be similar to other arterial streets that are being built in this area as it changes from rural to urban. The frontage roads would have a similar visual impact as the proposed 5800 West Freeway Alternative and would result in the same contrast rating of moderate.

# 3.17 Energy (Chapter 20 of the Final EIS)

Version 6.0 of the WFRC travel demand model was used to determine daily VMT in Salt Lake County for the Final EIS design and the proposed design modifications. Overall energy consumption would increase by less than 1% with the proposed design modifications.

## 3.18 Construction Impacts (Chapter 21 of the Final EIS)

The basic construction activities evaluated in the Final EIS would not change as a result of the proposed design modifications; therefore, this resource is not evaluated in detail in this re-evaluation.

As stated in Chapter 21, Construction Impacts, of the Final EIS, construction easements could be required to allow UDOT access to some properties. UDOT would temporarily use these properties during construction, and compensation would be provided to the landowner. The property would be fully returned to the owner when the use of the property is no longer required, typically when construction is complete. These properties might be affected, but no long-term impacts are expected.

# 3.19 Short-Term Uses versus Long-Term Productivity (Chapter 22 of the Final EIS)

The analysis of short-term uses versus long term productivity in the Final EIS would not change as a result of the proposed design modifications.

# 3.20 Irreversible and Irretrievable Commitment of Resources (Chapter 23 of the Final EIS)

The analysis of irreversible and irretrievable commitment of resources in the Final EIS would not change as a result of the design modifications.

# 3.21 Indirect Effects (Chapter 24 of the Final EIS)

The indirect effects analysis in the Final EIS concluded that the amount of growth would be the same with or without the MVC, although the project could increase the pace of development and redirect some growth near interchanges. The proposed design modifications would have similar indirect effects by focusing development near the MVC corridor and around proposed access points and frontage roads.

# 3.22 Cumulative Impacts (Chapter 25 of the Final EIS)

The MVC Final EIS evaluated farmlands, air quality, water quality, and ecosystems for cumulative impacts. These resources are discussed below.

*Farmlands*. As stated in the Final EIS, the MVC alternatives would cause a direct loss of about 1,750 acres of agricultural land, or less than 1% of the total agricultural land currently in Salt Lake and Utah Counties. The proposed design modifications would cause a direct loss of an additional 73 acres of farmland, which would still be less than 1% of the total agricultural land in the two counties.

*Air Quality.* The cumulative air quality analysis in the Final EIS reported that all regionally significant transportation projects (including the MVC) would be in compliance with the NAAQS. The proposed design modifications would not change the compliance status of the regionally significant transportation projects.

Water Quality. The proposed design modifications would increase the amount of impervious surfaces by 89 acres, which would increase the potential for stormwater pollution. However, this increase in impervious surfaces would not change the beneficial-use classifications of or further impair water bodies in the area. In addition, the MVC project would include measures to control stormwater runoff and would use detention basins to minimize the amounts of pollutants that are discharged into nearby surface waters. The increase in impervious surfaces from the proposed design modifications would not change cumulative impacts analysis in the MVC Final EIS.

*Ecosystems*. The MVC alternatives evaluated in the Final EIS would cause a direct loss of about 500 acres of wildlife habitat, or less than 1.5% of what could be lost to anticipated development (about 40,000 acres by 2030). The proposed design modifications would cause a direct loss of an additional 34 acres of wildlife habitat. The proposed design modifications would not cause the loss of any additional wetlands. Overall, the analysis of cumulative impacts to ecosystems in the Final EIS would not change as a result of the proposed design modifications.

# 3.23 Permits, Reviews, and Approvals (Chapter 26 of the Final EIS)

No new permits from those listed in the Final EIS have been identified in the design modification areas. UDOT is in the process of obtaining a Section 404 Clean Water Act permit for the entire MVC project. Although no wetlands would be affected in the design modification areas, the modifications could cause

additional impacts to waters of the U.S. (a canal). During the final design process, if additional impacts to waters of the U.S. are identified, the MVC team will coordinate with USACE to ensure that all 404 permit requirements are met.

# 3.24 Mitigation Summary (Chapter 27 of the Final EIS)

No additional mitigation is required for the proposed design modifications. Changes to the noise barriers are discussed in Section 3.11, Noise-Abatement Measures, of this re-evaluation.

# 3.25 Section 4(f) Evaluation (Chapter 28 of the Final EIS)

No new Section 4(f) resources were identified in the design modification areas. Two additional historic sites would be crossed (42SL297 and 42SL450). UDOT in consultation with the SHPO determined that there would be no adverse effects on Site 42SL287 and no historical properties affected on Site 42SL450. Therefore, the 4(f) use of Site 42SL287 would be *de minimis*, and for Site 42SL450 there would be no 4(f) use. The SHPO has concurred with the above findings.

# 3.26 Sequencing (Chapter 29 of the Final EIS)

The quantitative sequencing analysis described in the Final EIS demonstrated that transit ridership is more heavily influenced by land use than by the presence of parallel infrastructure (roads along with transit). FHWA and UDOT anticipate that the inclusion of the frontage roads will have a minor effect on transit ridership and will not change the conclusions of the sequencing analysis in the Final EIS.

# 3.27 Public and Agency Consultation and Coordination (Chapter 30 of the Final EIS)

To receive public input on the proposed design modifications, UDOT held a public meeting at 6:00 PM on July 30, 2009, at the South Jordan Senior Center in South Jordan. The meeting was advertised by sending notices to the city contacts to distribute and post. A total of 505 e-mails were sent out to residents, and an ad ran in *The Salt Lake Tribune* on July 15, 2009.

The focus of the open house was UDOT's frontage road concept. Aerial maps showing the corridor were posted in two areas; these maps allowed residents and stakeholders to see their property and home in relation to the proposed alignment.

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The re-evaluation team members walked residents through the boards and helped attendees understand the maps. The boards highlighted the transit, sidewalk, and bicycle lane components of the design modifications and the planned phasing and construction. Attendees could sign up to receive e-mail updates at the sign-in table. There were 23 people in attendance. No comments were received at the public meeting.

# 3.28 Project Implementation (Phasing) (Chapter 36 of the Final EIS)

Through collaborative discussions with stakeholders, UDOT developed a phased approach to project implementation for the roadway component of the MVC in both Salt Lake and Utah Counties. In each county, project implementation would proceed in three phases. These project implementation phases are described in Chapter 36, Project Implementation (Phasing), of the Final EIS.

Although implementing the proposed frontage roads would change the overall MVC cross-section between Old Bingham Highway and South Hills Boulevard, it would not change the basic Phase 1 concept that includes implementing transit, constructing an arterial road in Phase 1, constructing signalized intersections, constructing interchanges at SR 201 and I-80, and constructing the segment between 2700 South to 4700 South at grade as much as possible (see Table S-6, Summary of MVC Phasing for the 5600 West Transit Alternative, and Table S-7, Summary of MVC Phasing for the 5800 West Freeway Alternative, in the Summary chapter of the Final EIS). Phases 2 and 3 of the MVC project would not change from those described in the Final EIS except that the Phase 1 arterial road between Old Bingham Highway and South Hills Boulevard would become a frontage road.

Figure 3-1 through Figure 3-3 below show the phasing with the proposed design modifications. As shown in Figure 3-1, the frontage road concept would be similar as the arterial road concept as part of Phase 1 described in the Final EIS. The main difference is that the arterial road concept constructed in Phase 1 as described in the Final EIS would become the MVC freeway mainline in Phase 2, whereas the frontage roads would be maintained for local access in Phase 2 and Phase 3 between Old Bingham Highway and South Hills Boulevard.

Initial Phase 1 - One-Way Frontage Roads with Signals Mountain View Build NOTE: Not to Scale. **Project** Intersection Configuration Example. Phase 1 CORRIDOR **Plan View** ENVIRONMENTAL Future MVC IMPACT STATEMENT LEGEND Phase 1 Roadways Final EIS Phase 1 No Longer Applicable between Old Bingham Highway and Redwood Road. At-Grade Signalized ntersection Phase 1 Plan View Doiling Grass-Street LEGEND Cross-Stree SHIRE **Phase 1 Cross Section Phase 1 Cross Section** NOT TO SCALE Frontage Road Concept Phase 1 -Two General Two General Purpose Lanes Purpose Lanes Salt Lake County PLEASE NOTE: The frontage road concept is applicable between Old Bingham Highway and Redwood Road. Figure 3-1

Figure 3-1. Frontage Road Concept Phase 1 – Salt Lake County

**Future** Phase 2 - Grade Separated Freeway with Slip Ramps Mountain View Construction (IV) Frontinge Book (HB) MVC Mainline **Project** Phase 2 CORRIDOR Plan View ENVIRONMENTAL LEGEND IMPACT STATEMENT Final EIS Phase 2 No Longer Applicable between Old Bingham Highway and Redwood Road. Phase 2 Plan View LEGEND 1 Phase 2 Cross Section **Phase 2 Cross Section** Phase 2 Build NOT TO SCALE Frontage Road Two General Purpose Lanes Frontage Road Concept Phase 2 -Frontage Two General Purpose Lanes Salt Lake County PLEASE NOTE: The frontage road concept is applicable between Old Bingham Highway and Redwood Road. Figure 3-2

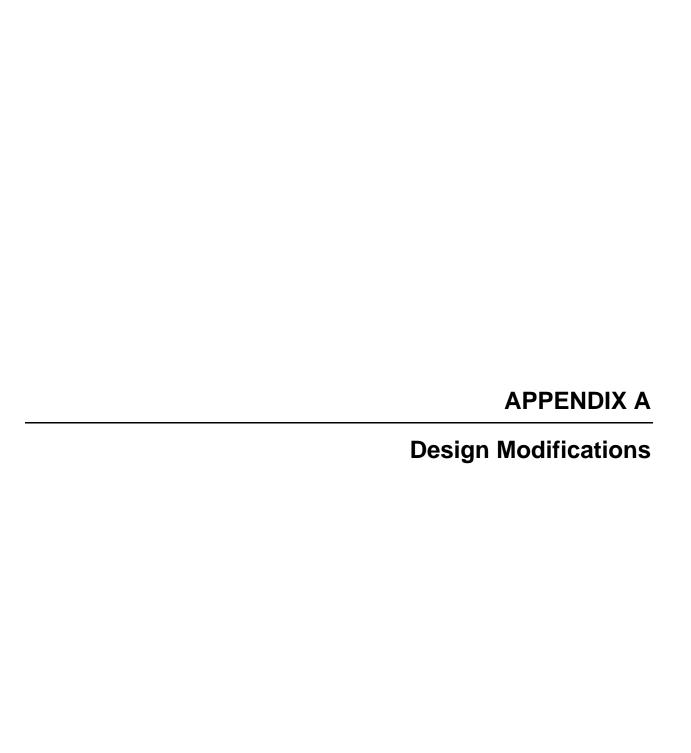
Figure 3-2. Frontage Road Concept Phase 2 – Salt Lake County

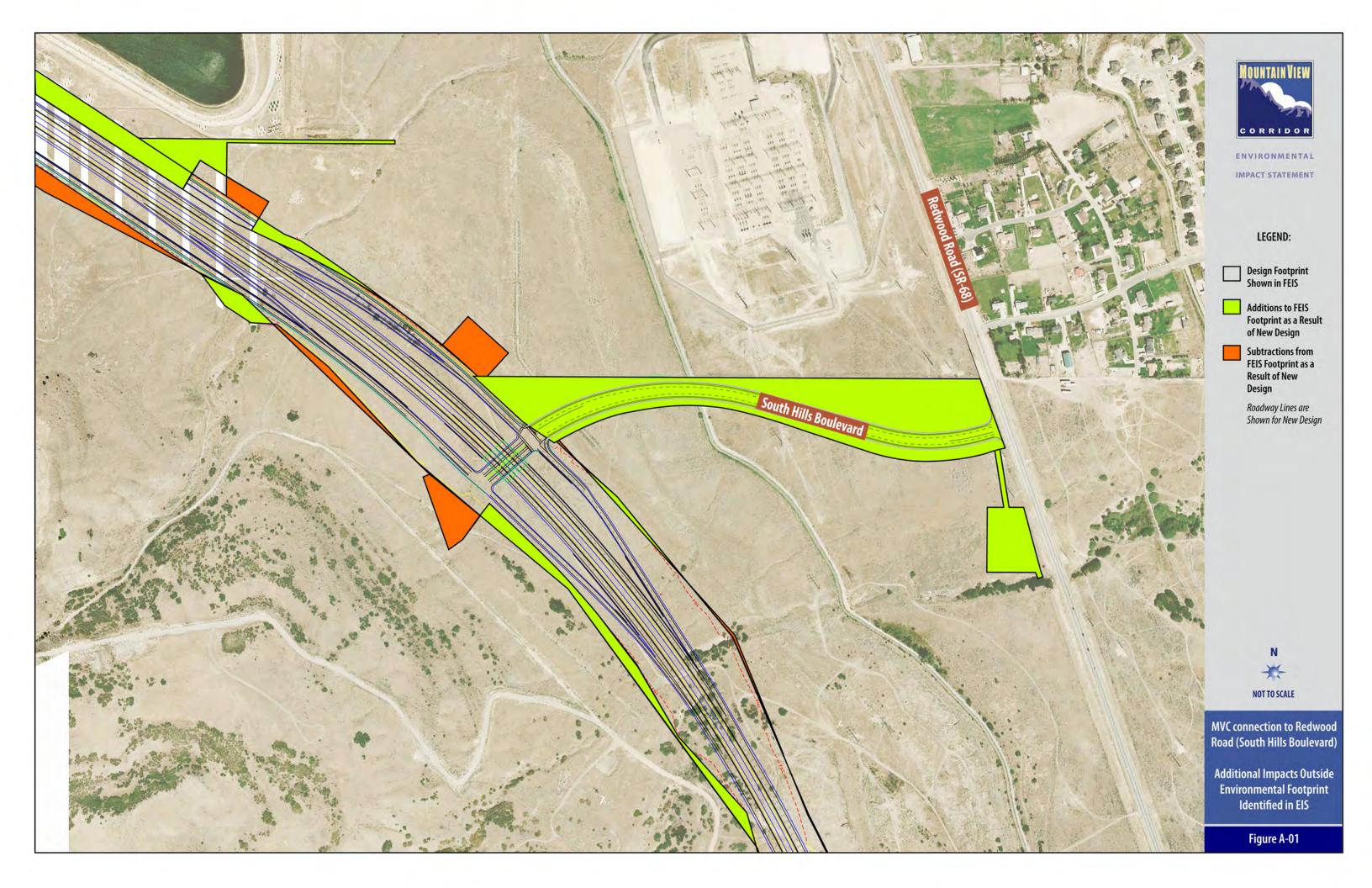
**Future** Phase 3 - Freeway (Full Build-Out) MOUNTAIN VIEW Construction MVE Frontige Road (SB) MVC Mainline **Project** Phase 3 CORRIDOR **Plan View** ENVIRONMENTAL LEGEND IMPACT STATEMENT Phase 3 Roadways SEC. 24.55 Final EIS Phase 3 No Longer Applicable between Old Bingham Highway and Redwood Road. Phase 3 Plan View LEGEND ( Mark **Phase 3 Cross Section Phase 3 Cross Section** Phase 3 Build **NOT TO SCALE** Frontage Road Two General Purpose Lane Frontage Road One General Purpose Lane Frontage Road Two General Concept Phase 3 -Purpose Lanes One HOV Lane One HOV Lane North of 13400 South North of 13400 South Salt Lake County PLEASE NOTE: The frontage road concept is applicable between Old Bingham Highway and Redwood Road. Figure 3-3

Figure 3-3. Frontage Road Concept Phase 3 - Salt Lake County

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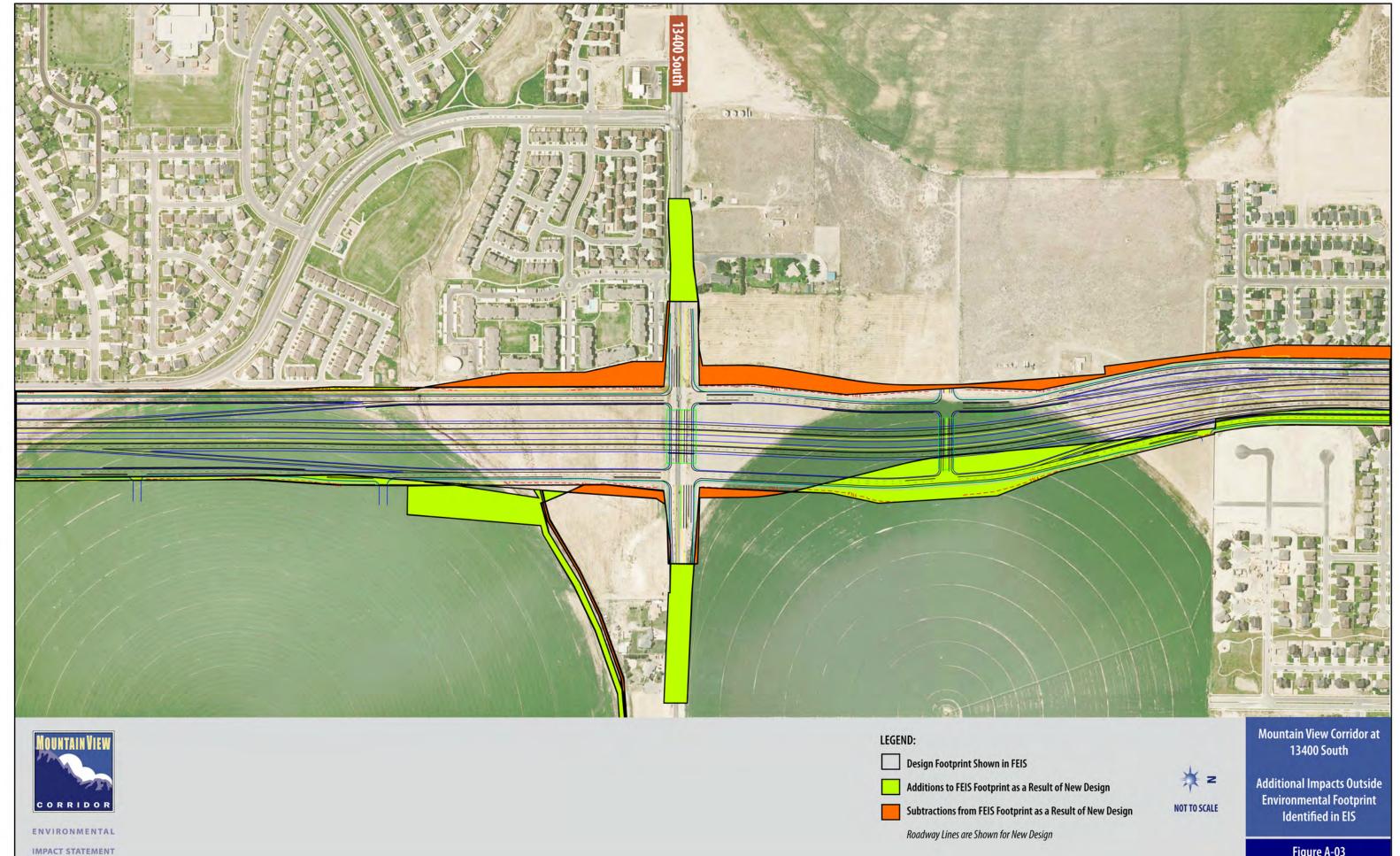
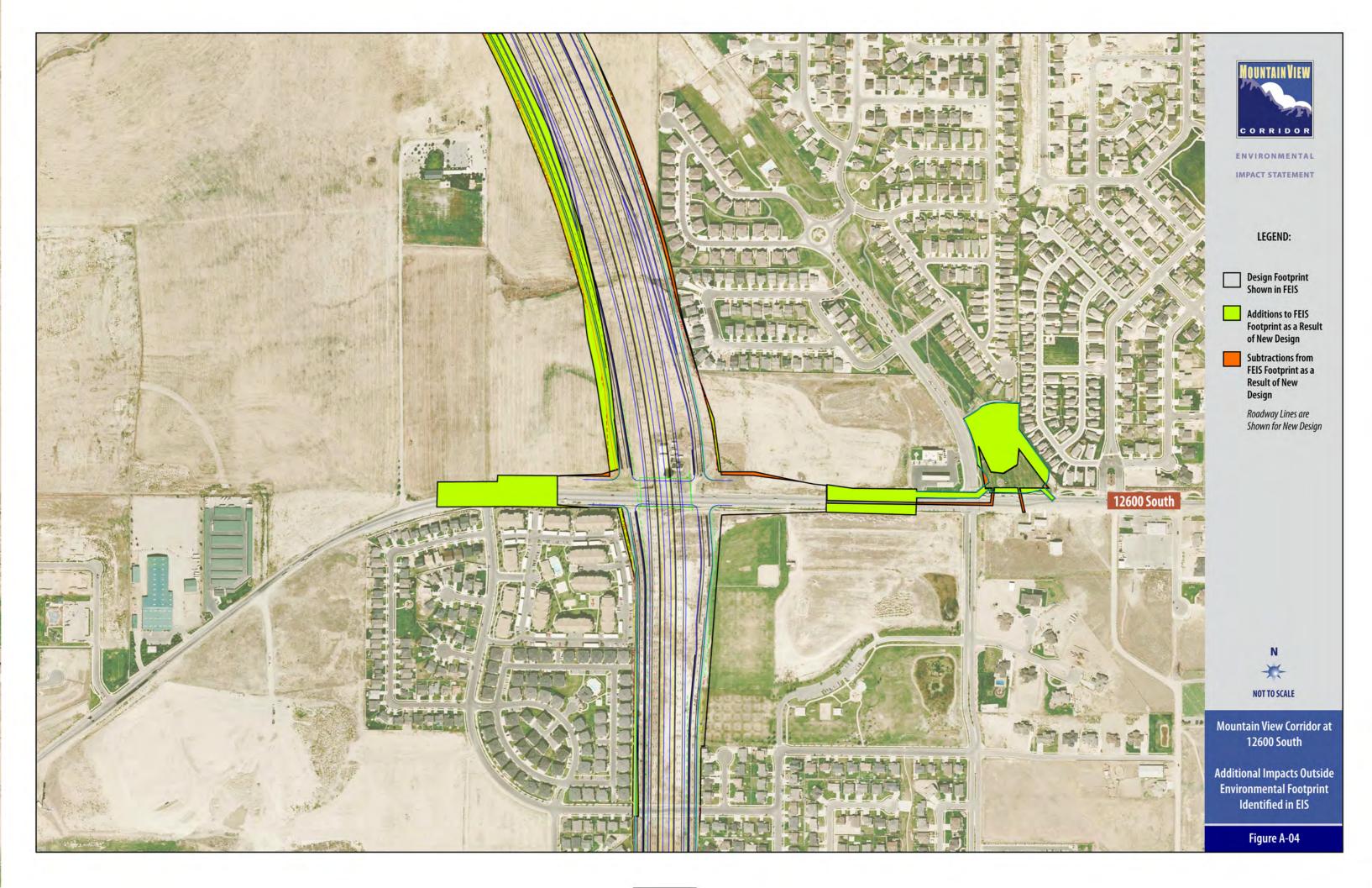
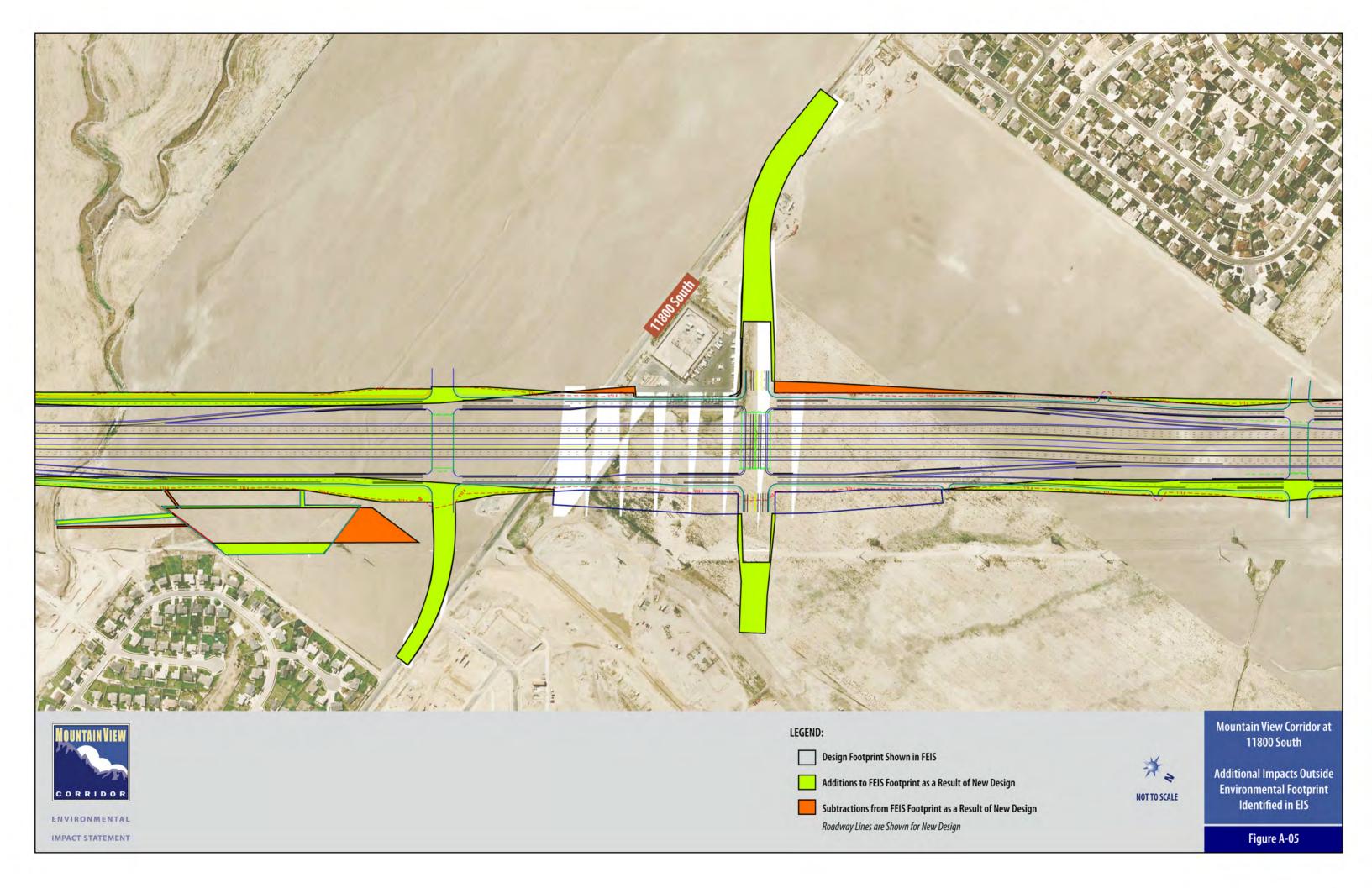
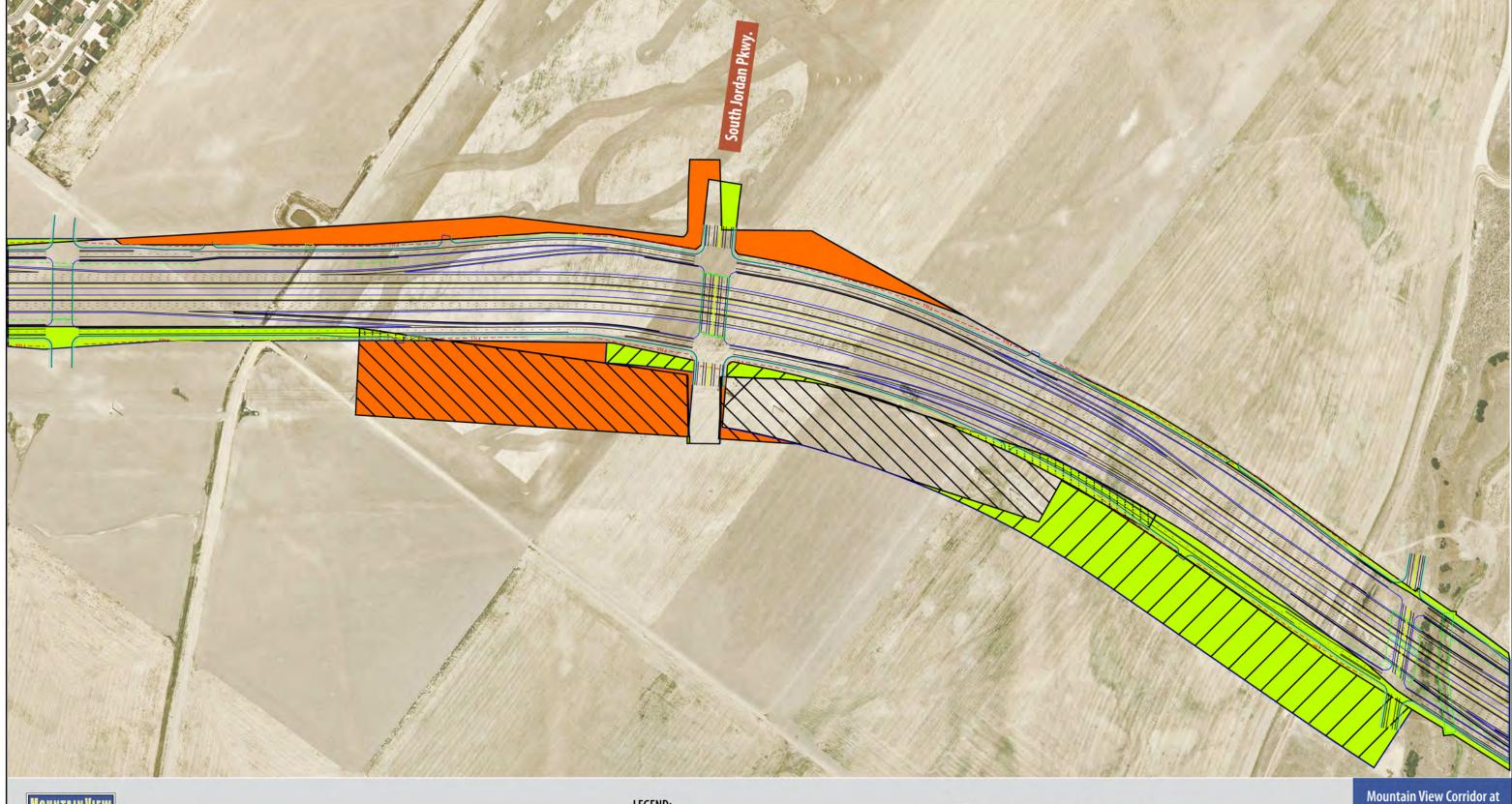
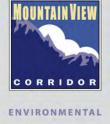


Figure A-03









IMPACT STATEMENT

LEGEND:

Design Footprint Shown in FEIS

Additions to FEIS Footprint as a Result of New Design

Subtractions from FEIS Footprint as a Result of New Design

Roadway Lines are Shown for New Design

Area of Utility Relocations shown in FEIS

Area of Utility Relocations shown in FEIS displaced by Roadway Footprint of New Design

Additions to Utility Relocation Footprint with New Design

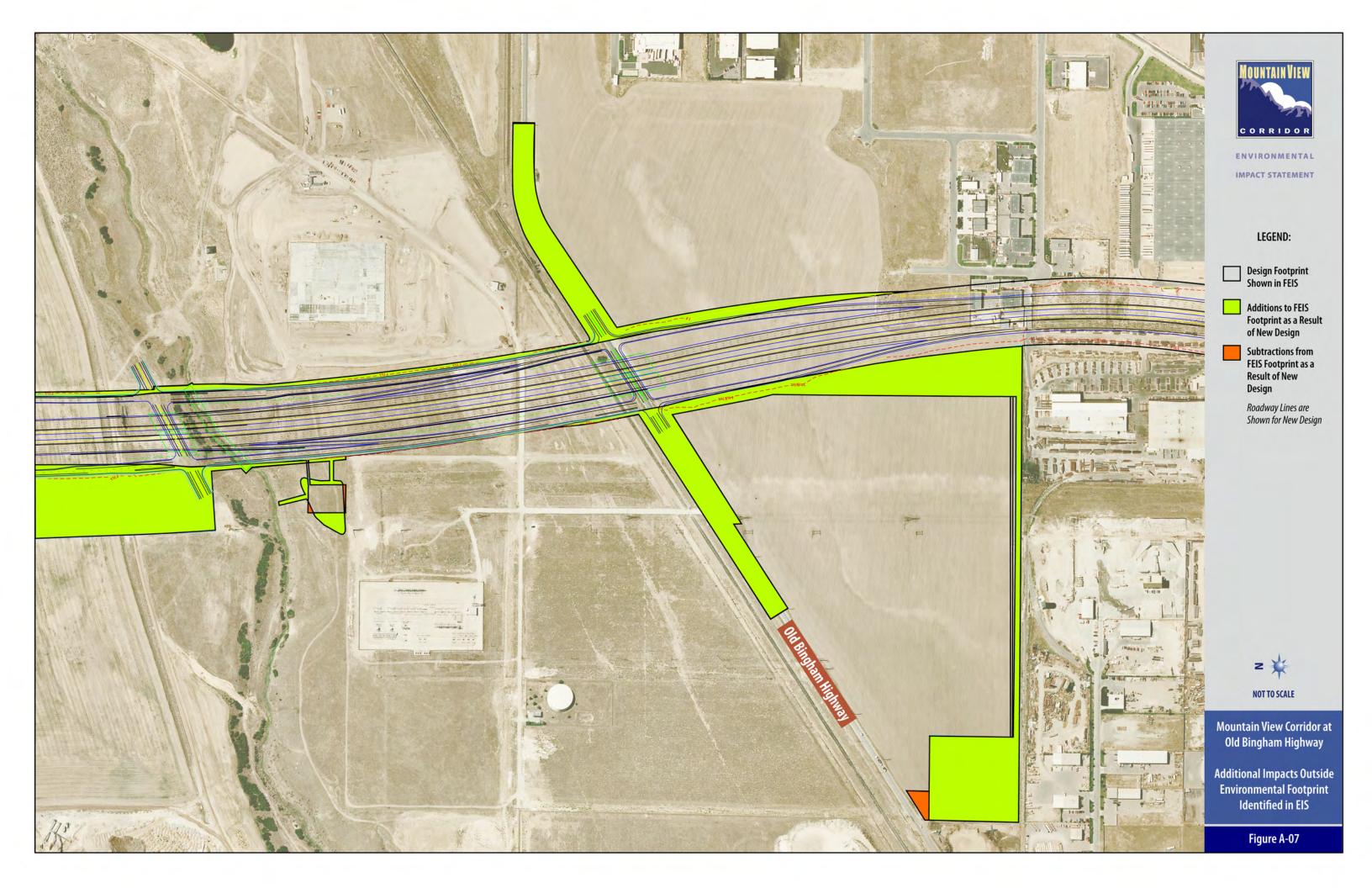
Subtractions from Utility Relocation Footprint with New Design

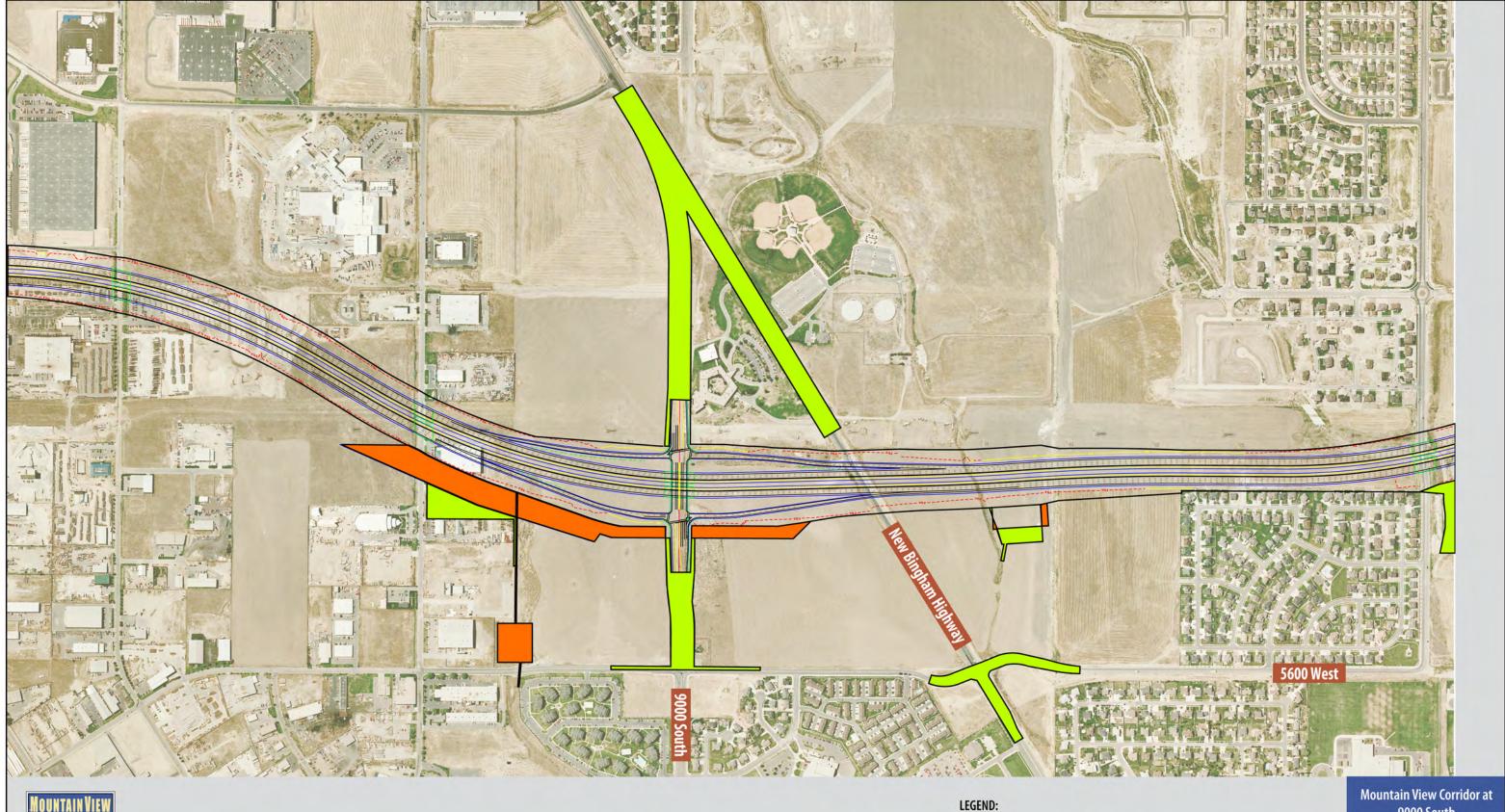


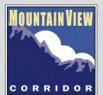
South Jordan Parkway

Additional Impacts Outside **Environmental Footprint** Identified in EIS

Figure A-06







ENVIRONMENTAL IMPACT STATEMENT

Docie

Design Footprint Shown in FEIS

Add

Additions to FEIS Footprint as a Result of New Design



Subtractions from FEIS Footprint as a Result of New Design

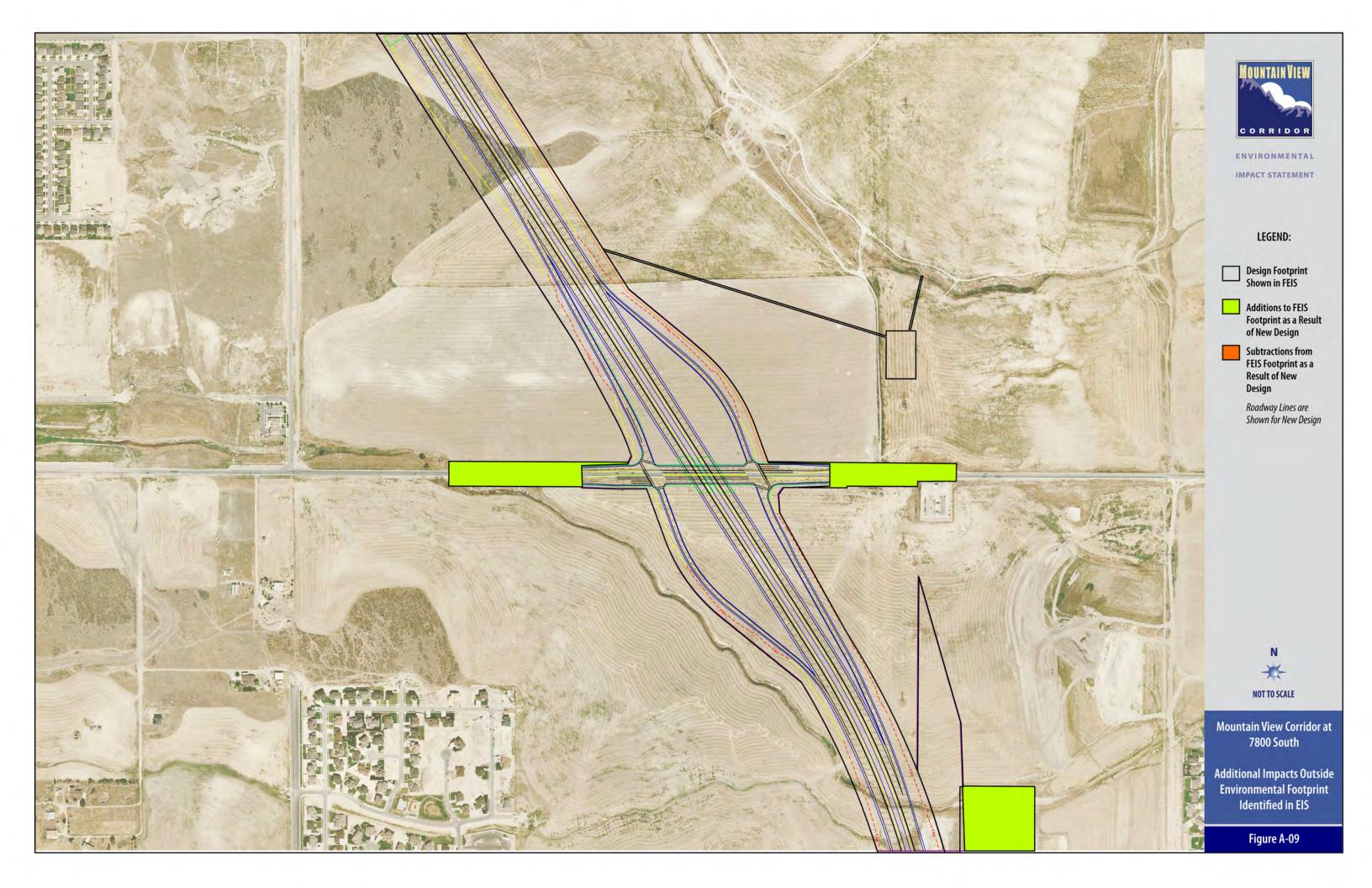
Roadway Lines are Shown for New Design

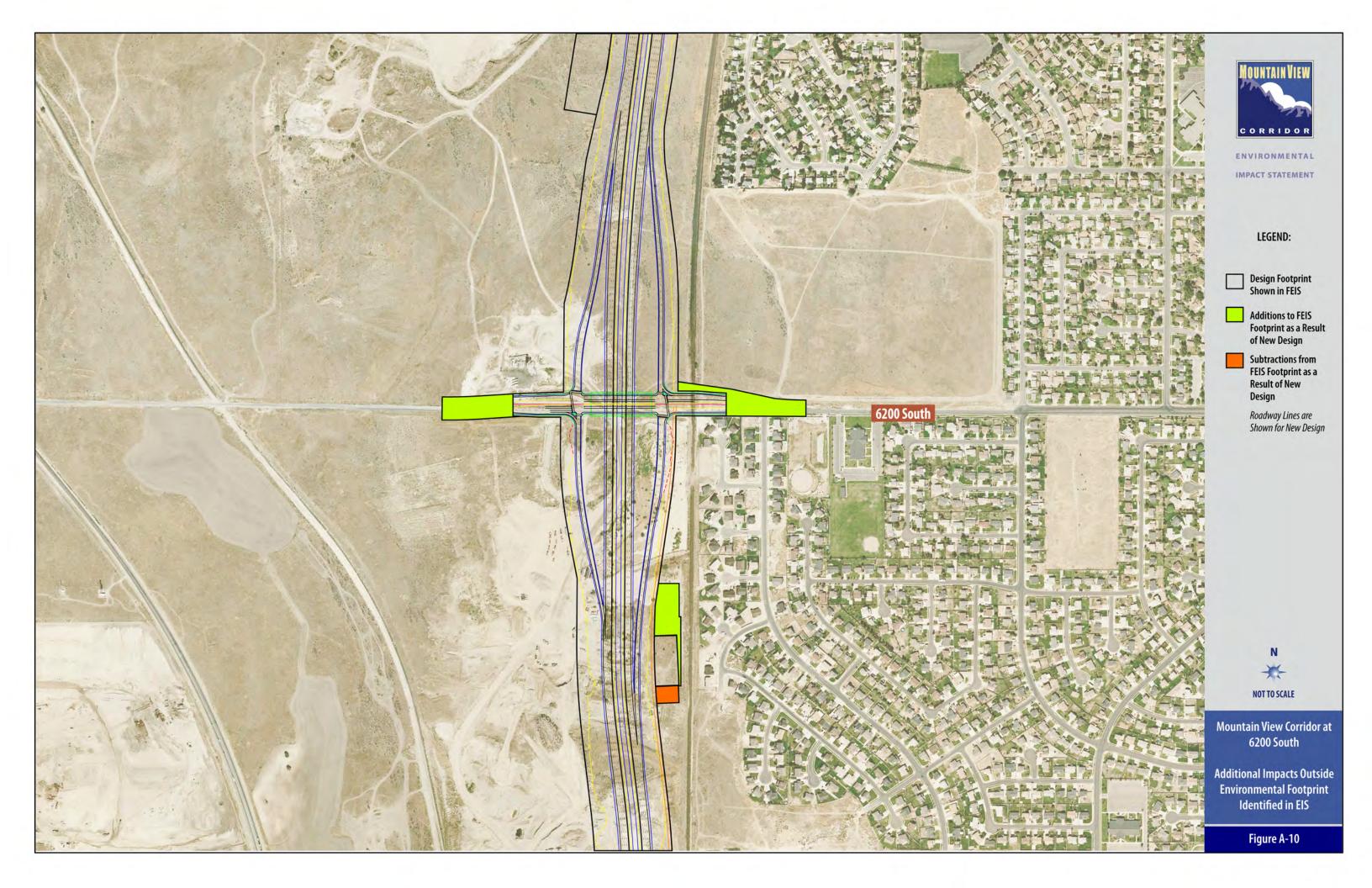


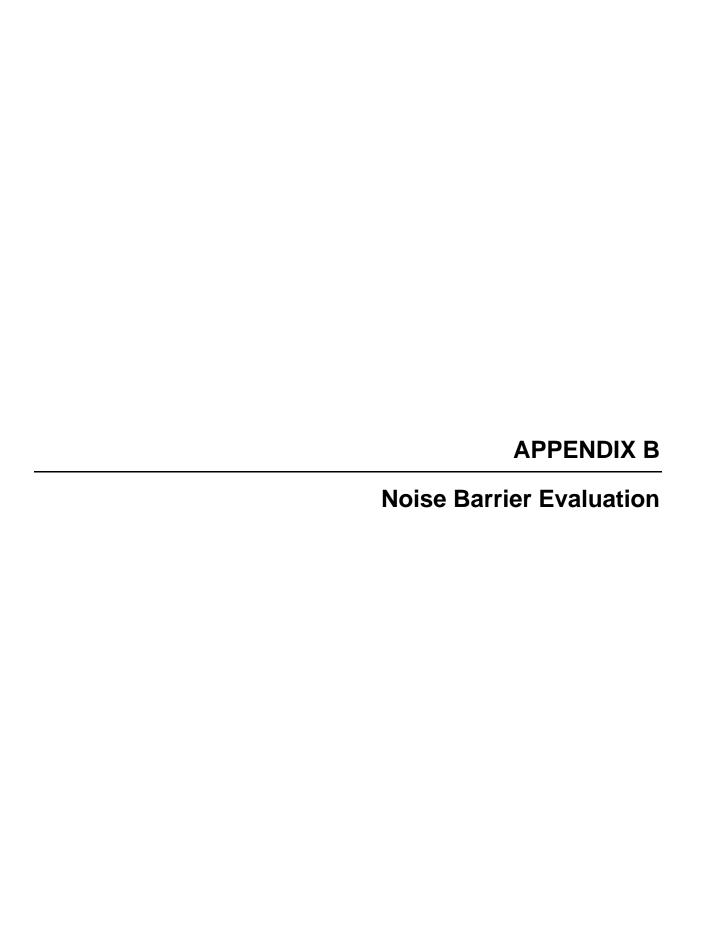
9000 South

Additional Impacts Outside Environmental Footprint Identified in EIS

Figure A-08

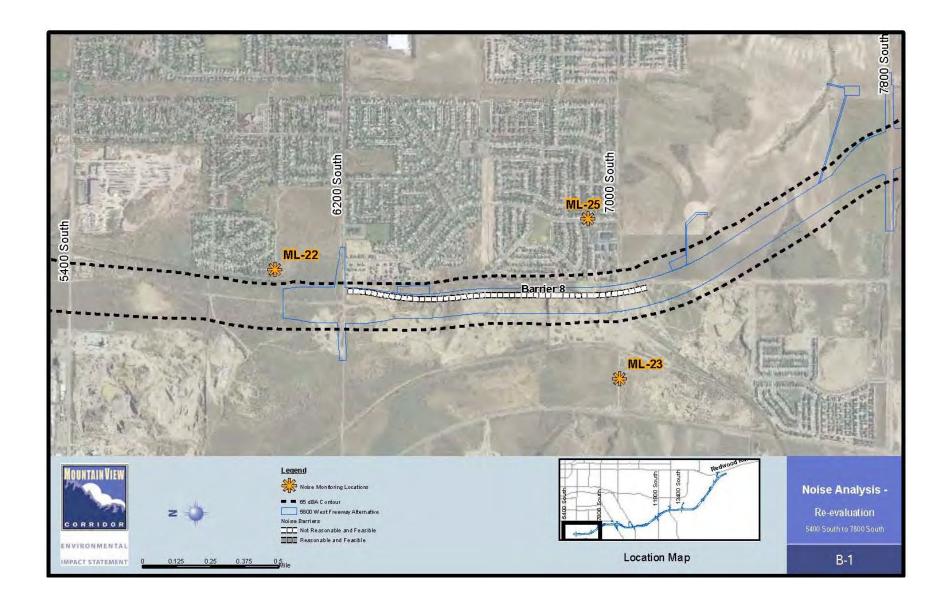


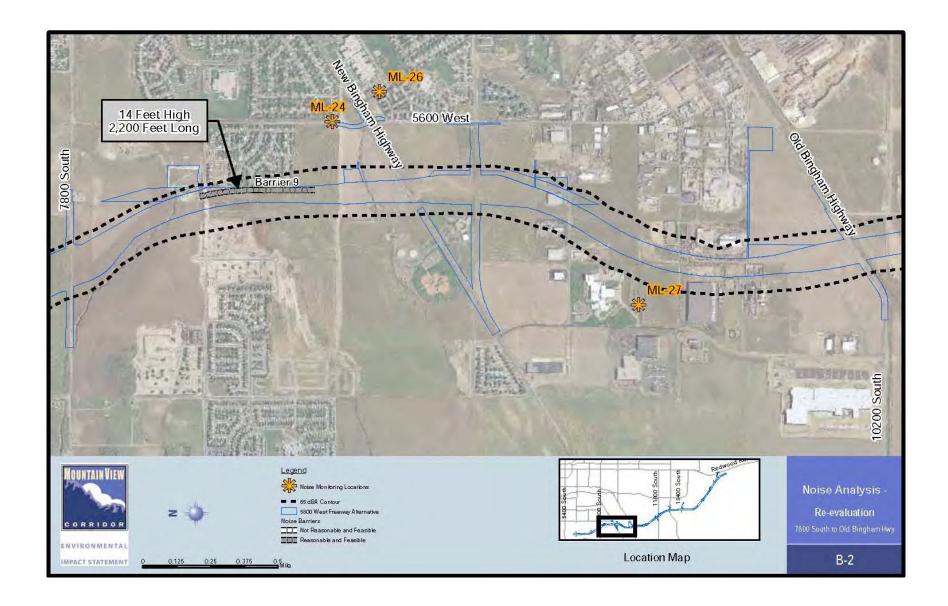


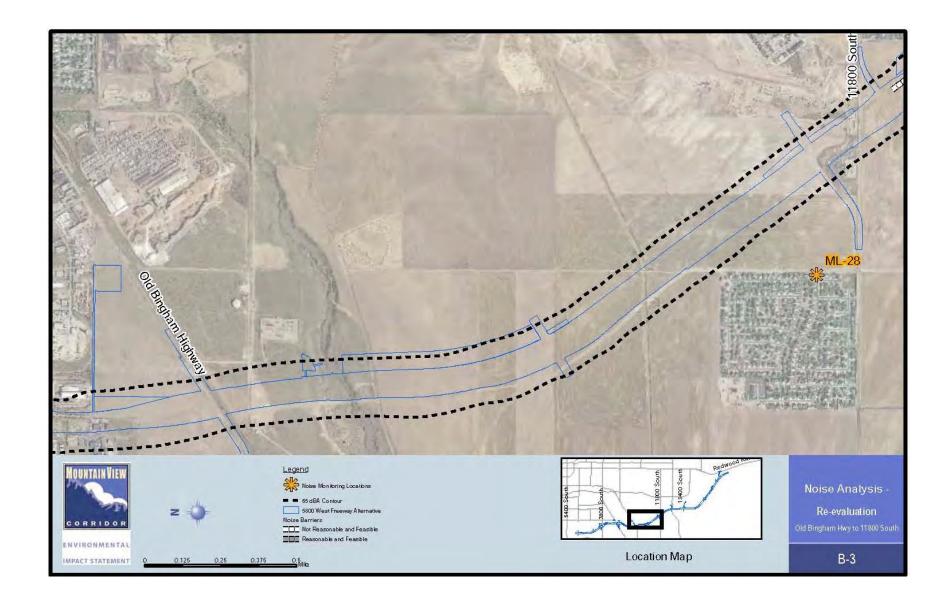


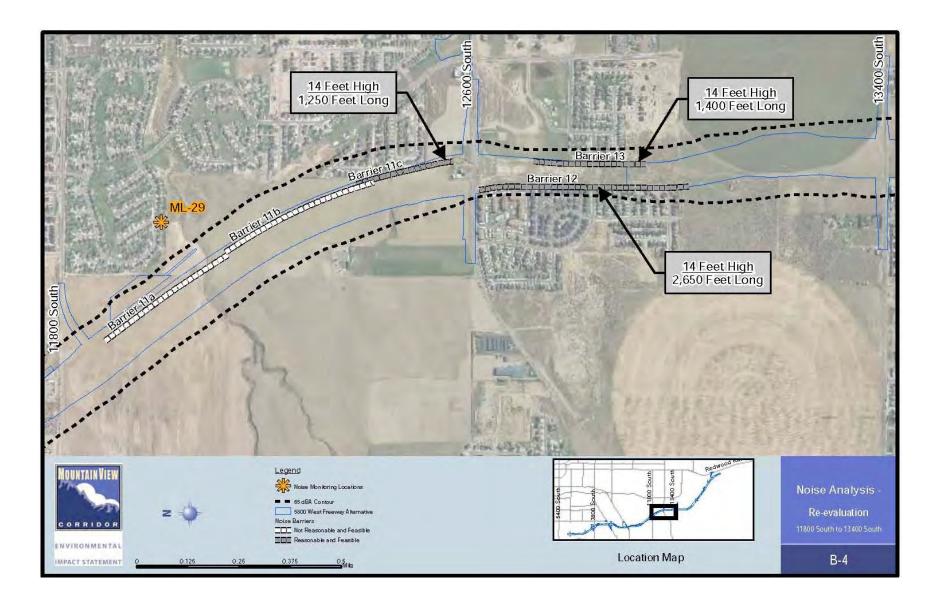
## **Appendix B: Noise Barrier Evaluation**

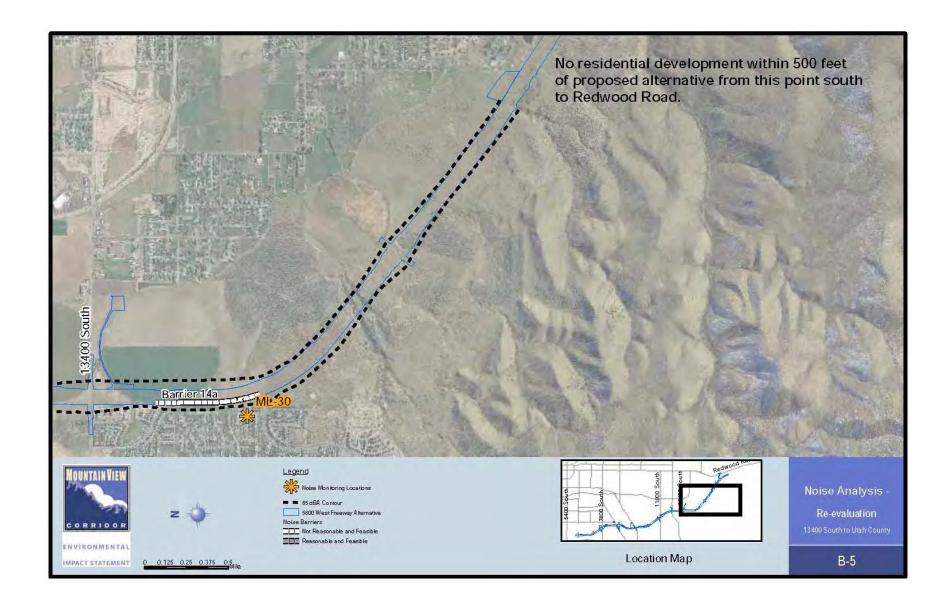
	Frontage New Road in Development Segment? in Segment?	Number of	Barrier Evaluation		
Segment		Development	Residential Impacts (Re-evaluation)	Feasible and Reasonable?	Additional Information
<b>Segment 5</b> – 6200 South to 7800 South	No	Yes	67	Barrier 8: No	Would exceed UDOT's maximum allowed cost of \$30,000 per residence
Segment 6 – 7800 South to Old Bingham Highway	No	Yes	57	Barrier 9: Yes	14 feet high, 2,200 feet long
Segment 7 – Old Bingham Highway to 11800 South	Yes	No	0	No noise impacts – barrier evaluation not conducted	
<b>Segment 8</b> – 11800 South to 13400 South	Yes	Yes	250	Barrier 11-A: No Barrier 11-B: No Barrier 11-C: Yes Barrier 12: Yes Barrier 13: Yes	Would not reduce noise by at least 5 dBA Would not reduce noise by at least 5 dBA 14 feet high, 1,250 feet long 14 feet high, 2,650 feet long 14 feet high, 1,400 feet long
Segment 9 – 13400 South to Utah County Line	Yes	Yes	32	Barrier 14: No	Would not reduce noise by at least 5 dBA

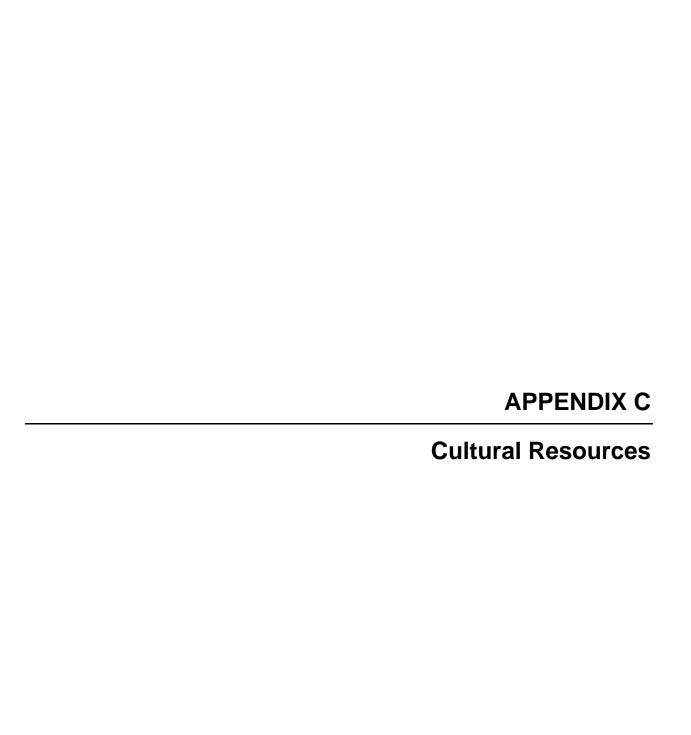














#### DEPARTMENT OF TRANSPORTATION

JOHN R. NJORD, P.E. Executive Director CARLOS M. BRACERAS, P.E. Deputy Director

JON M. HUNTSMAN, JR. Governor

GARY R. HERBERT Lieutenant Governor

August 10, 2009

Lori Hunsaker, Deputy State Historic Preservation Officer Division of State History 300 Rio Grande Salt Lake City, Utah 84101-1182

RE: Utah Antiquities Project U-09-ST-0339p. Mountain View Corridor Salt Lake County Preferred Alternatives – Reevaluated Survey Area Supplemental Cultural Resource Inventory.

UDOT Project No. \*SP-0067(3)0; Mountain View Corridor. Determination of Eligibility and Finding of Effect.

Dear Ms. Hunsaker,

The Utah Department of Transportation (UDOT) and the Federal Highway Administration (FHWA) contracted SWCA Environmental Consultants (SWCA) to conduct a cultural resources inventory for changes to the proposed project corridor that were made after the intensive-level survey of the alternatives selected by UDOT in the Record of Decision (ROD) for the MVC Environmental Impact Statement (EIS). The area of potential effects (APE) for the most recent design extends slightly outside of the previously-inventoried corridor in several areas.

In accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, 16 U.S.C. §470 et seq., and Utah Code Annotated (U.C.A.) §9-8-404, the FHWA, in partnership with UDOT, is taking into account the effects of this undertaking on historic properties, and will afford the Advisory Council on Historic Preservation (Council) and the USHPO an opportunity to comment on the undertaking. Please review this letter and, providing you agree with the finding contained herein, sign and date the signature line at the end of this letter and return to me.

On July 15-17 and 20, 2009, archaeologists from SWCA conducted the pedestrian inventory of the supplemental alignment under Utah State Antiquities Permit U-09-ST-0415m,p. Four previously-recorded sites and one newly-recorded site were located within the current APE for the supplemental alignment (Table 1). Site 42SL573 was updated during the current inventory and Site 42SL636 was recorded as a new site.

Received Aug 1 2 2009 USHPO Table 1. Site Summary and NRHP Eligibility

	Site Number	Name or Description	NRHP Recommendation	Finding of Effect	Section 4(f) Use
1	42 <b>S</b> L156	Bingham Creek Site	Eligible	Adverse Effect	None*
2	42SL287	Provo Reservoir Canal / Murdock Ditch	Eligible	No Adverse Effect	de minimis
3	42SL450	Jordan Aqueduct	Undetermined	No historical properties affected	None
4	42SL573	Historical Trash Dump	Not Eligible	No historical properties affected	None
5	42SL636	Historical Trash Scatter	Not Eligible	No historical properties affected	None

#### Site 42SL156 - The Bingham Creek Site

Site 42SL156 is located along an arable terrace above Bingham Creek in south Salt Lake Valley, Salt Lake County. The site consists of a large, sparse scatter of Fremont period ceramics, lithic debitage, and a small historical trash component and is one of the few sites in the Salt Lake Valley to provide potential for Fremont Complex farming and habitation. The site was originally recorded by Brigham Young University/Office of Public Archaeology (BYU/OPA) in 1989 (Talbot et al. 1991). Impacts noted at the time included extensive plowing and agricultural use. The site was revisited by Dames & Moore in 1990 for the Kern River Pipeline Project (Bruder and Rogge 1990) and more recently by SWCA in 2001 for the Williams Products Pipeline Project (Baxter et al. 2001) and by Alpine Archaeological Consultants (Alpine) in 2002 for the Kern River 2003 Expansion Project (Backer et al. 2001).

In 2002, SWCA conducted limited data recovery to relocate and investigate an intact cultural hearth feature. The feature was not located, despite several intensive sweeps of the site. Impacts to the site noted after BYU/OPA's visit to the site include vehicular and ATV traffic as well as soil removal for lead remediation by the Environmental Protection Agency (EPA). The 1991 EPA remediation removed from 6 to 18 inches of lead-contaminated topsoil from several areas around the site, primarily within the drainage itself (Edmisten 2005:1109).

Although it was difficult to determine what had happened to the feature between when it was identified in 2001 and when SWCA investigated the site in 2002, the feature may have been disturbed by the vehicular or ATV traffic in the area or the lead contamination remediation. SWCA performed six shovel scrapes to try to identify the feature, but was not able to relocate it.

The corridor of the MVC preferred alternative in Salt Lake County has been expanded within the boundary of the site from its original footprint, which goes through the center of the site. UDOT, in consultation with SHPO, is developing a Memorandum of Agreement (MOA) to resolve the adverse effects that will occur at the site as a result of implementing the preferred MVC alternative. The site has been determined eligible for nomination to the NRHP under Criterion D. The project alternative will have an **adverse effect** on the site. According to a letter to SHPO on Section 4(f) applicability, dated August 13, 2008, the FHWA has determined that 42SL156 is importantly mainly because of what can be learned from data recovery and has minimal value for preservation in place. As such, Section 4(f) does not apply to this site. This letter was signed by

Lori Hunsaker, letter August 10, 2009 Page 3 of 7

Mr. James Dykman, Deputy SHPO, on August 18, 2008, and again by Ms. Lori Hunsaker, Deputy SHPO, on August 3, 2009, concurring with the Section 4(f) use. According to the Programmatic Agreement (PA) executed in September 2008 between FHWA, UDOT, and SHPO, a Treatment Plan will be developed to address the effects of the project on the site. The Treatment Plan will be forthcoming as the final design of the MVC project nears completion.

#### Site 42SL287 - Provo Reservoir Canal / Murdock Ditch

Site 42SL287 is the Provo Reservoir Canal/Murdock Ditch, a canal that carries water from the Provo River located at the Murdock Diversion Dam. The canal is approximately 23 miles long and was originally built in the early 1900s by the Provo Reservoir Company (Bureau of Reclamation [BOR] 2004).

Numerous segments of the canal have been recorded previously in Salt Lake County as 42SL287, as well as in Utah County under site number 42UT947 (Heersink 2007; Langley 1996; Stokes and Easton 2004; Travis 1994). One additional segment in Salt Lake County and two additional segments in Utah County were recorded for the canal for the current project. The recorded segment of the canal in Salt Lake County is a U-shaped earthen ditch generally lined with large, angular rocks. The recorded segment is approximately 0.58 miles (0.94 km) long and ranges in width from 15 ft to 20 ft (4.5 m to 6 m). Two modern culverts were also identified along the canal during the survey.

The site has been determined eligible for nomination to the NRHP under Criterion A. The canal crosses proposed South Hill Boulevard alignment for the project and would probably be spanned by a bridge or culvert. This would likely minimally impact the integrity and character of the site, but not affect the canal and its eligibility overall. As a result, the project will have **no adverse effect** and a Section 4(f) *de minimis* use of site 42SL287.

#### Site 42SL450 – Jordan Aqueduct

Site 42SL450 is the Jordan Aqueduct, located in the southern portion of the Salt Lake Valley, terminates at the South Valley Water Treatment plant. The aqueduct was constructed in 1967 as part of the Central Utah Water Conservancy District (CUWCD) in order to convey Utah's Colorado River allocation to the Wasatch Front. The Jordan Aqueduct conveys water through Utah County to the west side of Salt Lake County, terminating at 3800 West and 2100 South, Salt Lake City (Salt Lake City 2000).

This site was noted during an evaluation of historic linear resources in the Salt Lake Valley in 2005 (Horn 2005:56), but was not field-verified at the time. The site was not evaluated for eligibility during the historic linear resources project (Horn 2005), since it was designed to identify linear resources and features from historical maps, topographic maps, and other historical sources. The site was also not evaluated during this project since there was no surface manifestation of the aqueduct within the project boundaries during the current project survey. Therefore, this site has not been evaluated for nomination to the NRHP under any criteria. The aqueduct would be crossed by the South Hill Boulevard extension of the MVC project. Given that the aqueduct is entirely subsurface, the extension would likely be placed over the aqueduct and would likely not affect the integrity of the site, which is as-yet unknown. Because the site

Lori Hunsaker, letter August 10, 2009 Page 4 of 7

has not been field-verified, the project would have **no historical properties affected** and no Section 4(f) use of the site.

#### Site 42SL573 – Historical Trash Dump

Site 42SL573 is a trash dump located along a series of low foothills on the western edge of the Salt Lake Valley that was originally recorded in 2004 (Easton et al. 2005; Stettler 2004). The site consists of a modern debris scatter with a small amount of historical material located along the banks of a deeply-incised, east-west-running drainage. Most of the historical materials date to the 1950s and 1960s. There were also two features, including a discrete scatter of historical debris and a rock-lined depression, which were not identified during the revisit to the site. Four additional features were identified, including a pile of unknown black material with associated glass (F-1), an area of cinderblocks, milled lumber, and shingles with associated in cans and glass (F-2), a pile of fieldstones of local origin with associated glass fragments from one container (F-3), and a two-track road along the southwestern edge of the site (F-4). A dense area of modern trash is also located in the western portion of the site. Diagnostic artifacts date from as early as the 1880s to the 1960s.

The site was previously determined to be not eligible under any criteria. The additional features identified during the current inventory did not add significant data to change the eligibility of the site. As such, the project will have **no historical properties affected** and no Section 4(f) use of the site.

### Section 4(f)

Pursuant to Section 6009 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and federal guidelines for its implementation, *de minimis* impact findings can be made for historic properties for which a finding of No Adverse Effect has been made under Section 106 of the National Historic Preservation Act (NHPA). Upon concurrence from SHPO with UDOT's finding of an Adverse Effect on the Bingham Creek Site, a finding of No Adverse Effect on the Provo Reservoir/Murdock Ditch, and No Historical Properties Affected for both the Jordan Aqueduct and the Jordan Narrows to Bingham Transmission Line (see Table 1), UDOT intends to have a finding of a *de minimis* impact for the Provo Reservoir Canal/Murdock Ditch, and no Section 4(f) use of the Jordan Aqueduct and Jordan Narrows to Bingham Transmission Line. Per the letter addressed to SHPO on August 13, 2008 and signed with concurrence on August 18, 2008 and August 3, 2009, UDOT finds that, while the Bingham Creek Site will be adversely effected by the project, the site cannot be preserved in place and is only eligible for the NRHP by Criterion D and Section 4(f) does not apply.

Lori Hunsaker, letter August 10, 2009 Page 5 of 7

Please do not hesitate to contact me at (801) 887-3410 or via email at rgruis@utah.gov if you have any questions or request additional information.

Sincerely,

Rachael Gruis

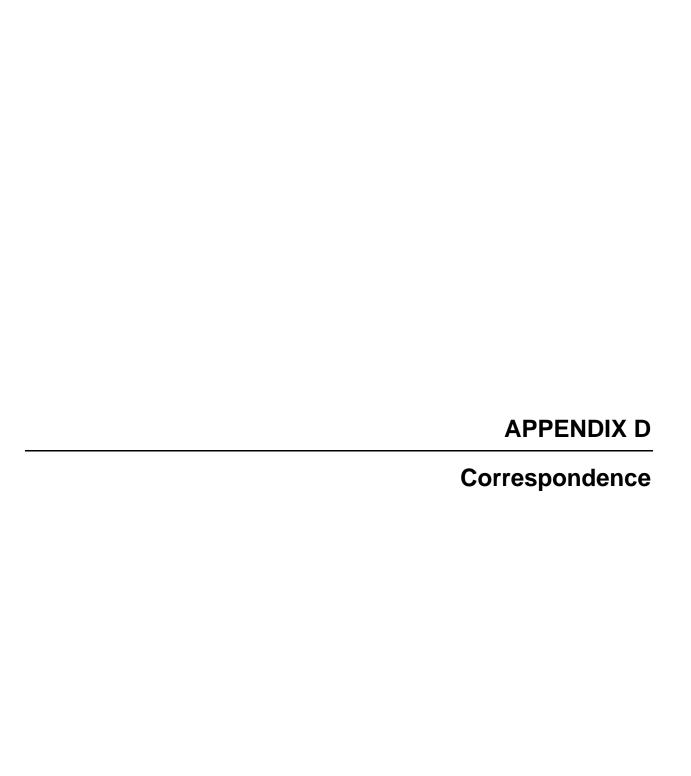
Regional NEPA/NHPA Specialist

cc: Reed Soper, Environmental Manager, Mountain View Corridor

I concur with the overall finding of an Adverse Effect for UDOT Project No. \*SP-0067(3)0; Mountain View Corridor; and that the UDOT has taken into account effects of the undertaking upon historic and archaeological resources in accordance with Section 106 and U.C.A. 9-8-404.

Lori Hunsaker

Deputy State Historic Preservation Officer



# **Appendix D: Correspondence**

Date	From	То	Regarding
September 1, 2009	Gordon M. Haight II, Herriman City	Teri Newell, UDOT	Herriman transit corridor
September 2, 2009	Bill Applegarth, Riverton City	Teri Newell, UDOT	Riverton City's position on transit



Teri Newell, PE Mountain View Corridor Project Manager Utah Department of transportation Region Two 2010 South 2760 West Salt Lake City, Utah 84104-4592

RE: Herriman Transit Corridor

Dear Ms. Newell,

This letter is to follow up on our discussion concerning the planned transit corridor through Herriman. The approved transit alignment has been adopted by the City Council and is part of the City's Transportation Master Plan. The transit corridor is generally parallel with the Mountain View Corridor and crosses the Mountain View Corridor at two locations. The City is planning for three park and ride lots within the City.

The City has secured property for one of the park and ride lots and a portion of the needed 40 right of way for the transit corridor. The City has discussed the other park and ride locations with the effected property owners as well as the transit alignment. Through development agreements as well as density bonus or development transfers the City is committed to obtain or persevering the needed right of way for a transit facility to serve Herriman and the South West area of Salt lake County. The property for the transit corridor we be obtained as developments are approved.

Let me know if you have any questions.

Sincerely

Gordon M. Haight II, PE, PTOE

City Engineer

Community Development Director

CC: Mayor Crane

Brett Wood Bryn McCarty



September 2, 2009

TeriAnne Newell Project Manager, Region II Utah Department of Transportation 2010 South 2760 West Salt Lake City, UT 84119

Dear Teri:

Riverton City and the MVC Team have had numerous discussions centering on the Mountain View Corridor and how it will affect our city. We have also discussed transit on several occasions, and we would like to formally state our position.

Riverton City is supportive of transit and sees it as an important component of city planning. While varying routes for transit in this area have been suggested, we strongly believe that formal alternatives analysis and environmental studies should be performed in order to help identify the most cost effective and environmentally responsible alignment for transit through the south end of the valley. Such a process will also maximize the opportunity for public involvement. We will continue to support transit and work to incorporate it appropriately into our city plans.

We have appreciated the opportunity to provide input to the Mountain View Corridor process.

Sincerely,

RIVERTON CITY

Bill Applegarth Mayor

12830 South 1700 West • P.O. Box 429 • Riverton, Utah 84065 • (801) 254-0704 • Fax (801) 254-1810 • www.rivertoncity.com

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