

APPENDIX A

DOCUMENT	PREPARED	CONTACT
I-15 Northbound; Bangerter Highway to I-215 Traffic Memos	Horrocks Engineers Michael Heaps, P.E.	Michael Heaps Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Wasatch Front Regional Transportation Plan (RTP): 2015-2040 Project List	Wasatch Front Regional Council	Nicole Tolley Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Resolution of the Wasatch Front Regional Council Approving Amendment 6 to the Wasatch Front RTP: 2015-2040 with Air Quality Memorandum 38	Wasatch Front Regional Council	Nicole Tolley Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Copper View Park LWCFA Documentation	----	Nicole Tolley Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
I-15 Northbound; Bangerter Highway to I-215 Self-completion Survey Questionnaire	Rocky Mountain Social Science Dr. Richard Krannich	Nicole Tolley Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Project of Air Quality Concern (POAQC) Memo	Horrocks Engineers Judy Imaly	Judy Imaly Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Air Quality Memo	Horrocks Engineers Judy Imaly	Judy Imaly Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Noise Report	Horrocks Engineers Stephanee Eastman, P.E.	Stephanee Eastman, P.E. Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Reconnaissance Level Survey	Horrocks Engineers Nancy Calkins	Nicole Tolley Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602
Reconnaissance Level Survey Addendum	Horrocks Engineers Nancy Calkins	Nicole Tolley Horrocks Engineers 2162 W. Grove Parkway, Suite 400 Pleasant Grove, Utah 84602

I-15 NORTHBOUND; BANGERter HIGHWAY TO I-215 TRAFFIC MEMO

PREPARED BY

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CONTACT

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To: I-15 NB Project Team
From: Horrocks Traffic Group
Date: July 10, 2018
Subject: I-15 Northbound No Build Traffic Analysis

Memorandum

PURPOSE

This memorandum describes the traffic analysis performed in support of the I-15 Northbound Environmental Study. The memorandum details data collection efforts, roadway configurations, study methodology, model calibration and traffic operations for 2017 existing and 2040 future conditions.

DATA COLLECTION

Data collected for the project included roadway geometry, field visits to observe existing traffic conditions, volume and speed information collected from the UDOT Performance Measurement Systems (PeMS), and travel time information collected from UDOT's HERE data tool (iPeMS). Traffic counts were obtained at each of the I-15 exit and entrance ramps between Bangerter Highway and I-215 and at two I-15 mainline locations. These were performed to collect volumes and vehicle classifications and to verify PeMS data.

ROADWAY CONFIGURATIONS

2017 – The study area consists of a nine-mile stretch of northbound I-15 in Salt Lake County, beginning south of Bangerter Highway and extending north of I-215. The current northbound cross section consists of four to five general purpose lanes, a high-occupancy vehicle lane (HOV) and an auxiliary lane at some locations. The interstate has a posted speed limit of 70 mph.

2040 – For 2040 base conditions, it was assumed that a second HOV lane would be in place per the Wasatch Front Regional Council (WFRC) Regional Transportation Plan.

TRAFFIC SOFTWARE

The basic tools used for the traffic analysis included the WFRC Regional Travel Demand Model (TDM) and Vissim traffic simulation software from the PTV Group.

The TDM predicts future travel demand based on projections of land use, socioeconomic patterns, and transportation system characteristics. The model is run using the Cube software (currently version 6.4.3).

VisSim is a microscopic simulation software program that is used to perform detailed traffic operations analysis.

The following table details the analysis type and use of each of the software packages.

Software Package	Use/Analysis Type	Output/Performance Measure
WFRC Cube Travel Demand Model v8.1	Development of future travel demand	Daily and peak hour turning movement volumes
VISSIM v10.0-8	Basic Freeway Segments, Weaving Areas	Density, Speed, Percent of Traffic Demand Served
	Ramp Junctions	Density, Speed, Percent of Traffic Demand Served

Table 1 – Traffic Software

REGIONAL TRAVEL DEMAND MODEL OVERVIEW

WFRC is the designated metropolitan planning organization for the Wasatch Front including Salt Lake, Weber, and Davis counties. Mountain Land Association of Governments (MAG) is the designated metropolitan planning organization for Utah and Wasatch counties. These agencies work in partnership with UDOT, UTA, local governments, and other stakeholders to develop long-range transportation plans for the communities within their jurisdictions. WFRC and MAG also maintain a regional

TDM for their jurisdictional areas. References to “the model” in this report refer to the scripts and data maintained by WFRC and MAG, not to the Cube software.

The TDM is a state-of-the-practice tool that allows transportation analysts to input various land use and growth scenarios for different road and transit networks to forecast the expected traffic for each scenario. At its core, it uses the common four step modeling process which consists of trip generation, trip distribution, mode split, and trip assignment.

Based on a review in August 2013 (Transportation Planning Certification Review for the Wasatch Front Regional Planning Area), FHWA and the Federal Transit Administration certified that the transportation planning process carried out by WFRC met transportation planning requirements. The WFRC/MAG travel demand model has been reviewed by experts from the FHWA Resource Center, and the model has been shared at numerous federal conferences as a best practice (FHWA 2013). The travel demand model was found to be acceptable for planning and NEPA purposes by FHWA. It will be used for this study to generate future demand volumes for the build and no build scenarios.

The study utilized the model from the Lehi Technology Corridor Study, a previous I-15 study in the Lehi area just to the south of the study area. Many improvements were made to the model for the Lehi Technology Corridor study, including traffic analysis zone (TAZ) splits and additional local roadways. Because of the close proximity between study areas, it was desirable to use the same model for improved accuracy and consistency.

TRAVEL DEMAND MODEL MODIFICATIONS AND IMPROVEMENTS

As mentioned in the previous section, some TAZs were split in the model. TAZs are geographical areas represented in the model which specify socioeconomic data such as population, households, employment, and vehicle ownership. The model uses the information in each TAZ for trip generation, trip distribution, and mode split. Trips generated by each TAZ are loaded onto the roadway network using special links called centroid connectors. The model then uses the roadway network in an iterative process to assign routes for each trip destination.

The original TAZ in the model are well suited for regional traffic forecasts but generally do not provide adequate detail for a smaller-scale study. Smaller TAZs can provide better loading of traffic onto the roadway network. For these reasons, many of the original TAZs within Lehi study area and Lehi City boundaries were split into smaller zones. Two additional zones were split in the current study area. In most instances, the TAZs were split along barriers such as existing or planned roads, rivers, railroads, and/or major land-use changes. After the splits, the socioeconomic data from the original TAZs were distributed into the new zones. It was assumed that variables such as income and household size for the smaller TAZs were the same as the original TAZs.

PEAK HOUR VOLUMES

2017 Volumes – AM and PM peak hour volumes were obtained from UDOT’s PeMS which collects real-time data on the I-15 corridor. The PeMS data was supplemented and/or verified with manual traffic count data performed in August 2017. Peak hour truck percentages were also obtained from the manual traffic counts. The volumes from PeMS and the counts were adjusted to balance between the I-15 mainline and ramp exits and entrances. An origin-destination study was performed using the 2017 travel demand model for each entrance ramp in the study corridor. The results were used to help determine trip routes which were input into the Vissim microsimulation software. 2017 volumes are available in the appendix.

2040 Volumes - The TDM generates volumes for a three-hour AM and three-hour PM period, so it was necessary to convert the three-hour volumes to one-hour volumes by using a factor of 0.40 in the AM and 0.37 in the PM. The factors were calculated based on traffic count data in the TDM area. The 2017 balanced traffic volumes along with the 2017 and 2040 model output data were used for calculating volumes as described in the UDOT document “Utah Travel Demand Forecasting,” which follows Chapter 8 of the National Cooperative Highway Research Program’s (NCHRP) Report 255. This process involves comparing the 2017 model volumes with actual 2017 count data. The difference between the two volumes is used to make an adjustment to the 2040 volumes. This helps to correct for errors in the model where it might be over-predicting or under-predicting volumes. The final 2040 volumes were converted to trip route volumes for Vissim analysis with origin-destination

percentages based on the final 2017 volumes. 2040 volumes are available in the appendix.

VISSIM MODEL OVERVIEW

Model Limits - The Vissim model extends south of Bangerter Highway on the south end to north of I-215 on the north end. The model includes all entrance and exit ramps between Bangerter Highway and I-215 including ramp meters. Ramp terminal intersections were not included in the model; however, signals were included per existing conditions for the left and right turn movements to help replicate queuing at the ramp terminals.

Geometry – Roadway geometric features such as the number of lanes, curvature, and HOV access areas were built into the Vissim model using aerial photography, CADD and field visits.

Analysis Period - Traffic was modeled for 4-hour periods in the AM and PM between 6:00 AM to 10:00 AM and 3:00 PM to 7:00 PM. The time periods were selected to capture the beginning and end of the AM and PM congested periods.

Vehicle Composition - The vehicle composition, including truck percentages used for the model's vehicle inputs, was determined using a combination of manual traffic counts, information from previous UDOT I-15 Vissim models, and PeMS data. Details of the vehicle composition used for the analysis are contained in the appendix.

Routing - Origin-destination pairs used to route vehicles through the model's network were determined using the select-link analysis tool from the WFRC TDM and supplemented with Bluetooth data collected

between 9000 South and I-215. Truck traffic and HOV traffic were routed separately from general traffic. Truck traffic was routed separately because of the significant difference in truck percentages between the entrance/exit ramps and mainline I-15.

MODEL CALIBRATION

The Vissim software is based on two different driving behavior models, the Wiedemann-74 and Wiedemann-99 methodologies. The Wiedemann-74 model is used primarily in urban traffic conditions, and the Wiedemann-99 model is used for inter-urban motorway or freeway conditions. Since the model only includes I-15 mainline and the entrance and exit ramps, the Wiedemann-99 methodology was used.

Criteria used in calibrating the Vissim model were taken from FHWA's Traffic Analysis Toolbox Volume III: Guidelines for Applying Traffic Microsimulation Modeling Software (FHWA, 2004). The calibration uses the GEH statistic to compare observed vs modeled volume flow. The formula used to calculate the GEH statistic is:

$$GEH = \sqrt{\frac{2(E - V)^2}{(E + V)}}$$

Where E equals the modeled volumes and V equals the observed volume.

Based on FHWA's document the following calibration criteria and targets were used:

Criteria and Measure	Calibration Acceptance Targets	Condition Met?
Hourly Flows, Model Versus Observed		
Within 400 veh/h, for Flow >2700 veh/h	> 85% of cases	Yes
Sum of All Link Flows	Within 5% of sum of all link counts	Yes
GEH Statistic < 5 for Individual Link Flows	> 85% of cases	Yes
GEH Statistic for Sum of All Link Flows	GEH < 4 for sum of all link counts	Yes
Travel Times, Model Versus Observed		
Travel Times Within 15%	> 85% of cases	Yes
Visual Audits		
Individual Link Speeds: Visually Acceptable Speed-Flow Relationship	To analyst's satisfaction	Yes
Bottlenecks: Visually Acceptable Queueing	To analyst's satisfaction	Yes

Table 2 – Calibration Criteria and Targets

The Vissim model was calibrated by testing various combinations of driver behavior parameter adjustments against field measurements and observations. Two different sets of driving behavior parameters were developed, one for I-15 between Bangerter Highway and 10600 South, and another for I-15 between 10600 South and I-215. The tight interchange spacing between Bangerter Highway and 10600 South appears to lend itself to different driving behaviors

compared to the section between 10600 South and I-215.

Based on the comparison of the Vissim model outputs to field measurements (travel times, traffic flows, and speeds) the Vissim model meets the calibration targets and accurately represents AM and PM peak hour conditions.

Tables and figures detailing the calibration analysis are contained in the appendix.

MEASURES OF EFFECTIVENESS

The primary measure of effectiveness (MOE) used for this analysis was Level of Service (LOS) determined by freeway density. LOS is a term used by the Highway Capacity Manual (HCM) to describe the traffic operations of an intersection or highway segment based on congestion and delay. LOS ranges from A (almost no congestion or delay) to F (traffic demand exceeds capacity and roadway experiences long queues and delay).

A LOS grade was assigned to each segment for AM and PM peak hours based on thresholds obtained from the 6th Edition HCM as determined from the Vissim analysis. The following table details the LOS thresholds for freeway segments based on the number of passenger cars per mile per lane (pc/mi/ln):

LOS	Traffic Conditions		Freeway Density (pc/mi/ln)	
			Basic Segment	Weave/ Merge/ Diverge Segment
Acceptable	A	Free Flow Operations / Insignificant Delays	$0 \leq 11$	$0 \leq 10$
	B	Smooth Operations / Short Delays	$11 \leq 18$	$10 \leq 20$
	C	Stable Operations / Acceptable Delays	$18 \leq 26$	$20 \leq 28$
	D	Approaching Unstable Operations / Tolerable Delays	$26 \leq 35$	$28 \leq 35$
Unacceptable	E	Unstable Operations / Significant Delays Begin	$35 \leq 45$	$35 \leq 43$
	F	Very Poor Operations / Excessive Delays Occur	> 45	> 43

Table 3 - Level of Service Parameters

hour. The PM peak hour operates worse around the 9000 South area. This is in large part because of the heavy entrance ramp volume on Bangerter Highway in the AM and heavy 9000 South entrance ramp volume in the PM. The congested period lasts roughly two hours during the AM peak period and two and a half hours during PM.

2040 Traffic Conditions Summary –

Under 2040 No Build conditions, congestion worsens despite the additional HOV/HOT lane. From Bangerter Highway to I-215 the I-15 NB corridor experiences LOS F conditions with the congested period extending to 3+ hours in both the AM and PM peak periods. LOS information for each of the freeway segments is contained in the appendix.

TRAFFIC OPERATIONS

2017 Traffic Conditions Summary –

Under current conditions during the AM and PM peak periods, the I-15 NB corridor experiences LOS E/F conditions from Bangerter Highway to the 7200 South and I-215 exit ramps area. Generally, the AM peak hour operates worse from 12300 South to 10600 South when compared to the PM peak



APPENDIX

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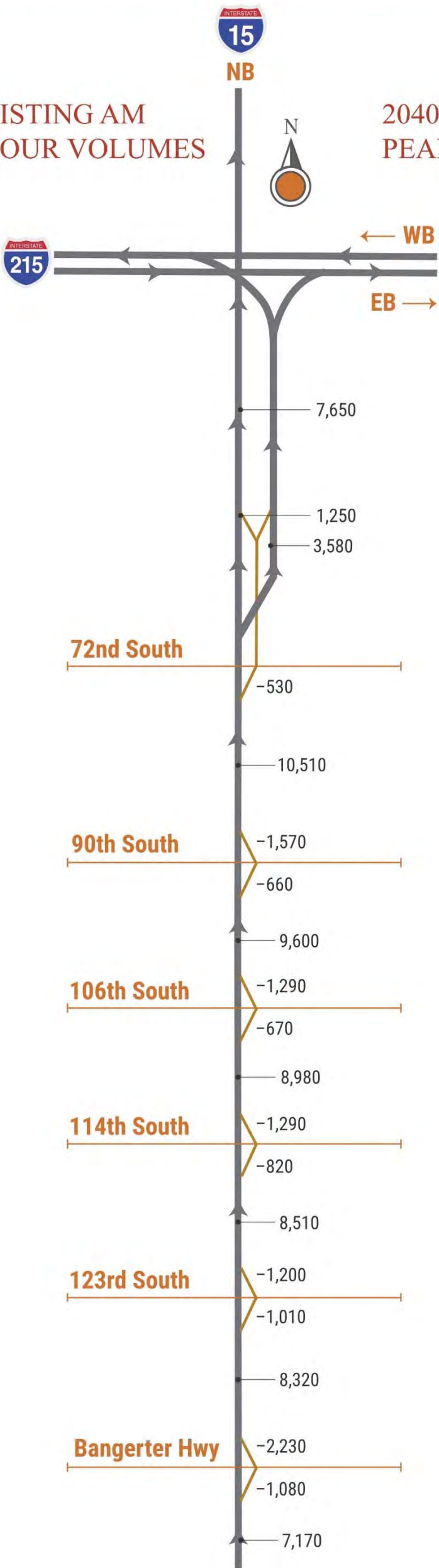
IPEMS vs Vissim Speed Comparison

2017 I-15 Traffic Analysis Summary

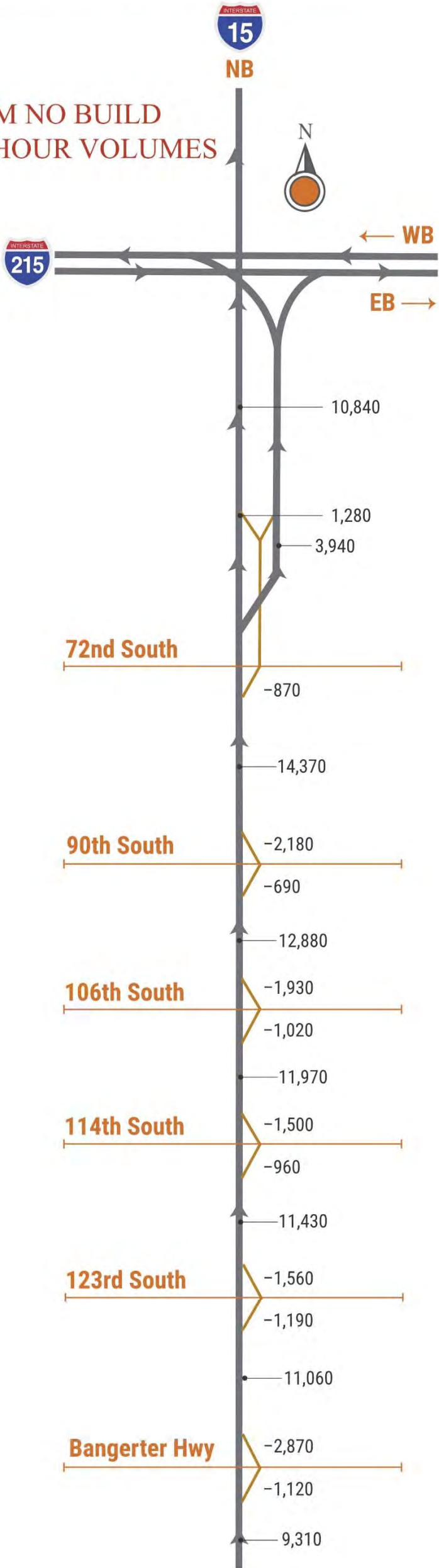
2040 I-15 Traffic Analysis Summary

I-15 NORTHBOUND VOLUME FIGURE

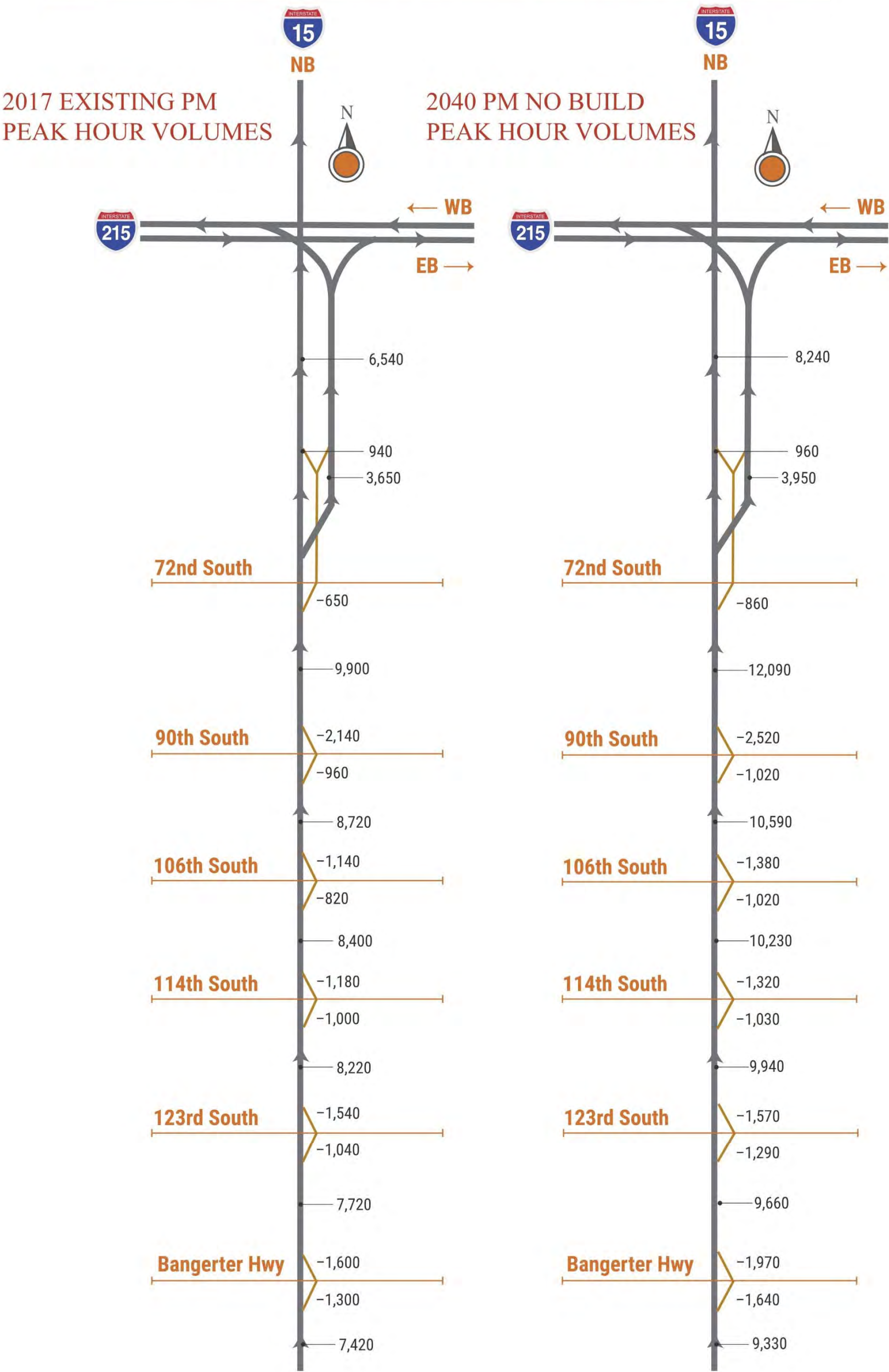
2017 EXISTING AM
PEAK HOUR VOLUMES



2040 AM NO BUILD
PEAK HOUR VOLUMES



I-15 NORTHBOUND VOLUME FIGURE



VISSIM VEHICLE COMPOSITION

2017 AM

<u>Freeway</u>	Relative Flow
1: Car	0.257
2: Sports Car	0.193
3: SUV/VAN	0.329
4: Pickups	0.164
5: HGV Small	0.025
6: HGV Big	0.031

<u>Ramps</u>	Relative Flow
1: Car	0.283
2: Sports Car	0.193
3: SUV/VAN	0.321
4: Pickups	0.167
5: HGV Small	0.024
6: HGV Big	0.012

2017 PM

<u>Freeway</u>	Relative Flow
1: Car	0.247
2: Sports Car	0.185
3: SUV/VAN	0.316
4: Pickups	0.158
5: HGV Small	0.059
6: HGV Big	0.035

<u>Ramps</u>	Relative Flow
1: Car	0.287
2: Sports Car	0.195
3: SUV/VAN	0.325
4: Pickups	0.169
5: HGV Small	0.018
6: HGV Big	0.006

2040 AM

<u>Freeway</u>	Relative Flow
1: Car	0.252
2: Sports Car	0.189
3: SUV/VAN	0.322
4: Pickups	0.161
5: HGV Small	0.033
6: HGV Big	0.042

<u>Ramps</u>	Relative Flow
1: Car	0.282
2: Sports Car	0.192
3: SUV/VAN	0.320
4: Pickups	0.167
5: HGV Small	0.026
6: HGV Big	0.013

2040 PM

<u>Freeway</u>	Relative Flow
1: Car	0.245
2: Sports Car	0.184
3: SUV/VAN	0.314
4: Pickups	0.157
5: HGV Small	0.062
6: HGV Big	0.037

<u>Ramps</u>	Relative Flow
1: Car	0.286
2: Sports Car	0.195
3: SUV/VAN	0.325
4: Pickups	0.169
5: HGV Small	0.019
6: HGV Big	0.006

DRIVING BEHAVIOR PARAMETERS

Calibration Parameter	Description	Default Value	Freeway: 146th to 106th	Freeway: 106th to I-215
CC0	Standstill distance:	4.92 ft	6.15 ft	4.92 ft
CC1	Headway Time:	0.90 sec	1.68 sec	1.25 sec
CC2	Following Variation:	13.12 ft	13.12 ft	13.12 ft
CC3	Threshold for Entering 'Following' State:	-8.00 sec	-8.00 sec	-8.00 sec
CC4	Negative 'Following' Threshold:	-0.35 ft/s	-0.35 ft/s	-0.35 ft/s
CC5	Positive 'Following Threshold':	0.35 ft/s	0.35 ft/s	0.35 ft/s
CC6	Speed Dependency of Oscillation:	11.44	11.44	11.44
CC7	Oscillation Acceleration:	0.82 ft/s ²	0.82 ft/s ²	0.82 ft/s ²
CC8	Standstill Acceleration:	11.48 ft/s ²	11.48 ft/s ²	11.48 ft/s ²
CC9	Acceleration at 50 mph:	4.92 ft/s ²	4.92 ft/s ²	4.92 ft/s ²



2017 TRAVEL TIME COMPARISON - AM

Time Period	From	To	Vissim Travel Time (Seconds)	iPeMS Travel Time (Seconds)	Difference	% Difference	<= 15% Difference
6:00 - 7:00	Bangerter Hwy	12300 S	74	71	3	4%	Yes
	12300 S	11400 S	61	63	-2	-2%	Yes
	11400 S	10600 S	76	77	-1	-1%	Yes
	10600 S	9000 S	102	101	1	1%	Yes
	9000 S	7200 S	120	122	-2	-2%	Yes
	Total		433	434	-1	0%	Yes
7:00 - 8:00	Bangerter Hwy	12300 S	118	124	-7	-5%	Yes
	12300 S	11400 S	97	111	-14	-12%	Yes
	11400 S	10600 S	128	125	3	3%	Yes
	10600 S	9000 S	108	130	-22	-17%	No
	9000 S	7200 S	142	147	-4	-3%	Yes
	Total		593	637	-44	-7%	Yes
8:00 - 9:00	Bangerter Hwy	12300 S	113	116	-4	-3%	Yes
	12300 S	11400 S	125	106	20	19%	No
	11400 S	10600 S	145	123	22	18%	No
	10600 S	9000 S	114	135	-20	-15%	Yes
	9000 S	7200 S	147	154	-7	-4%	Yes
	Total		644	633	11	2%	Yes
9:00 - 10:00	Bangerter Hwy	12300 S	71	76	-5	-6%	Yes
	12300 S	11400 S	60	67	-7	-10%	Yes
	11400 S	10600 S	80	84	-4	-5%	Yes
	10600 S	9000 S	103	110	-8	-7%	Yes
	9000 S	7200 S	128	135	-8	-6%	Yes
	Total		442	472	-31	-6%	Yes



2017 TRAVEL TIME COMPARISON - PM

Time Period	From	To	Vissim Travel Time (Seconds)	PEMS Travel Time (Seconds)	Difference	% Difference	<= 15% Difference
3:00 - 4:00	Bangerter Hwy	12300 S	75	74	1	2%	Yes
	12300 S	11400 S	66	66	0	0%	Yes
	11400 S	10600 S	78	84	-6	-8%	Yes
	10600 S	9000 S	108	118	-10	-8%	Yes
	9000 S	7200 S	127	141	-15	-10%	Yes
	Total		454	483	-29	-6%	Yes
4:00 - 5:00	Bangerter Hwy	12300 S	96	96	0	0%	Yes
	12300 S	11400 S	104	98	6	6%	Yes
	11400 S	10600 S	105	123	-19	-15%	Yes
	10600 S	9000 S	144	153	-8	-5%	Yes
	9000 S	7200 S	166	161	4	3%	Yes
	Total		614	632	-18	-3%	Yes
5:00 - 6:00	Bangerter Hwy	12300 S	115	108	6	6%	Yes
	12300 S	11400 S	114	116	-2	-2%	Yes
	11400 S	10600 S	116	144	-27	-19%	No
	10600 S	9000 S	210	171	40	23%	No
	9000 S	7200 S	191	171	20	12%	Yes
	Total		745	709	36	5%	Yes
6:00 - 7:00	Bangerter Hwy	12300 S	83	89	-6	-7%	Yes
	12300 S	11400 S	76	84	-8	-9%	Yes
	11400 S	10600 S	78	113	-35	-31%	No
	10600 S	9000 S	159	142	17	12%	Yes
	9000 S	7200 S	170	155	15	10%	Yes
	Total		566	583	-17	-3%	Yes



I-15 TRAFFIC – OBSERVED VS MODELED (2017 AM)

Segment	Vissim Input 1-Hr Volumes (Observed)				Vissim Output 1-Hr Volumes (Modeled)				GEH Factor				GEH < 5			
	6:00 AM	7:00 AM	8:00 AM	9:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM
I-15 NB Mainline	6,875	7,583	7,025	6,301	6,688	7,454	7,285	6,527	2.3	1.5	3.1	2.8	Yes	Yes	Yes	Yes
7200 So On-Ramp to I-15	1,149	1,265	1,169	1,047	1,110	1,288	1,140	986	1.2	0.6	0.9	1.9	Yes	Yes	Yes	Yes
I-15 NB Mainline	5,726	6,318	5,856	5,254	5,595	6,176	6,151	5,542	1.7	1.8	3.8	3.9	Yes	Yes	Yes	Yes
I-215 C/D Off-Ramp	3,406	3,677	3,328	2,929	3,130	3,480	3,398	3,092	4.8	3.3	1.2	3.0	Yes	Yes	Yes	Yes
I-15 NB Mainline	9,132	9,995	9,184	8,183	8,728	9,645	9,528	8,611	4.3	3.5	3.6	4.7	Yes	Yes	Yes	Yes
7200 So Off-Ramp	505	544	492	432	450	514	512	463	2.5	1.3	0.9	1.5	Yes	Yes	Yes	Yes
I-15 NB Mainline	9,637	10,539	9,676	8,615	9,252	10,205	10,057	9,043	4.0	3.3	3.8	4.6	Yes	Yes	Yes	Yes
9000 So On-Ramp	1,443	1,588	1,468	1,315	1,381	1,589	1,485	1,315	1.6	0.0	0.4	0.0	Yes	Yes	Yes	Yes
I-15 NB Mainline	8,194	8,951	8,208	7,300	7,919	8,644	8,584	7,630	3.1	3.3	4.1	3.8	Yes	Yes	Yes	Yes
9000 So Off-Ramp	629	677	611	537	586	627	640	550	1.7	2.0	1.2	0.6	Yes	Yes	Yes	Yes
I-15 NB Mainline	8,823	9,628	8,819	7,837	8,556	9,277	9,250	8,108	2.9	3.6	4.5	3.0	Yes	Yes	Yes	Yes
10600 So On-Ramp	1,185	1,305	1,206	1,081	1,161	1,242	1,227	1,089	0.7	1.8	0.6	0.2	Yes	Yes	Yes	Yes
I-15 NB Mainline	7,638	8,323	7,613	6,756	7,424	8,034	7,999	6,976	2.5	3.2	4.4	2.7	Yes	Yes	Yes	Yes
10600 So Off-Ramp	639	688	620	543	594	660	632	561	1.8	1.1	0.5	0.8	Yes	Yes	Yes	Yes
I-15 NB Mainline	8,277	9,011	8,233	7,299	8,057	8,707	8,587	7,465	2.4	3.2	3.9	1.9	Yes	Yes	Yes	Yes
11400 So On-Ramp	1,186	1,305	1,207	1,080	1,132	1,263	1,263	1,096	1.6	1.2	1.6	0.5	Yes	Yes	Yes	Yes
I-15 NB Mainline	7,091	7,706	7,026	6,219	6,957	7,490	7,312	6,318	1.6	2.5	3.4	1.3	Yes	Yes	Yes	Yes
11400 So Off-Ramp	783	841	757	663	749	796	775	670	1.2	1.6	0.7	0.3	Yes	Yes	Yes	Yes
I-15 NB Mainline	7,874	8,547	7,783	6,882	7,765	8,375	8,046	6,930	1.2	1.9	3.0	0.6	Yes	Yes	Yes	Yes
12300 So On-Ramp	1,103	1,214	1,123	1,005	1,076	1,149	1,131	1,000	0.8	1.9	0.2	0.2	Yes	Yes	Yes	Yes
I-15 NB Mainline	6,771	7,333	6,660	5,877	6,697	7,268	6,850	5,905	0.9	0.8	2.3	0.4	Yes	Yes	Yes	Yes
12300 So Off-Ramp	965	1,036	931	815	939	1,016	936	807	0.8	0.6	0.2	0.3	Yes	Yes	Yes	Yes
I-15 NB Mainline	7,736	8,369	7,591	6,692	7,659	8,299	7,696	6,692	0.9	0.8	1.2	0.0	Yes	Yes	Yes	Yes
Bangerter On-Ramp	2,050	2,257	2,086	1,867	2,009	2,216	2,060	1,841	0.9	0.9	0.6	0.6	Yes	Yes	Yes	Yes
I-15 NB Mainline	5,686	6,112	5,505	4,825	5,665	6,135	5,536	4,832	0.3	0.3	0.4	0.1	Yes	Yes	Yes	Yes

I-15 TRAFFIC – OBSERVED VS MODELED (2017 PM)

Segment	Vissim Input 1-Hr Volumes (Observed)				Vissim Output 1-Hr Volumes (Modeled)				GEH Factor				GEH < 5			
	3:00 PM	4:00 PM	5:00 PM	6:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM
I-15 NB Mainline	6,409	6,797	6,223	5,621	6,282	6,410	6,338	6,222	1.6	4.8	1.5	7.8	Yes	Yes	Yes	No
7200 So On-Ramp to I-15	922	974	895	814	943	971	905	877	0.7	0.1	0.3	2.2	Yes	Yes	Yes	Yes
I-15 NB Mainline	5,487	5,823	5,328	4,807	5,355	5,443	5,442	5,349	1.8	5.1	1.6	7.6	Yes	No	Yes	No
I-215 C/D Off-Ramp	3,645	3,772	3,525	3,304	3,487	3,578	3,524	3,520	2.6	3.2	0.0	3.7	Yes	Yes	Yes	Yes
I-15 NB Mainline	9,132	9,595	8,853	8,111	8,830	9,015	8,947	8,854	3.2	6.0	1.0	8.1	Yes	No	Yes	No
7200 So Off-Ramp	650	672	629	591	633	615	633	632	0.7	2.2	0.2	1.7	Yes	Yes	Yes	Yes
I-15 NB Mainline	9,782	10,267	9,482	8,702	9,515	9,697	9,582	9,478	2.7	5.7	1.0	8.1	Yes	No	Yes	No
9000 So On-Ramp	2,100	2,218	2,038	1,852	2,026	2,150	1,990	1,980	1.6	1.5	1.1	2.9	Yes	Yes	Yes	Yes
I-15 NB Mainline	7,682	8,049	7,444	6,850	7,523	7,699	7,563	7,331	1.8	3.9	1.4	5.7	Yes	Yes	Yes	No
9000 So Off-Ramp	962	992	930	876	903	956	929	916	1.9	1.2	0.0	1.3	Yes	Yes	Yes	Yes
I-15 NB Mainline	8,644	9,041	8,374	7,726	8,470	8,755	8,546	8,056	1.9	3.0	1.9	3.7	Yes	Yes	Yes	Yes
10600 So On-Ramp	1,119	1,182	1,085	987	1,098	1,150	1,092	971	0.6	0.9	0.2	0.5	Yes	Yes	Yes	Yes
I-15 NB Mainline	7,525	7,859	7,289	6,739	7,378	7,657	7,450	6,983	1.7	2.3	1.9	2.9	Yes	Yes	Yes	Yes
10600 So Off-Ramp	823	847	795	751	787	843	805	754	1.3	0.1	0.4	0.1	Yes	Yes	Yes	Yes
I-15 NB Mainline	8,348	8,706	8,084	7,490	8,174	8,496	8,210	7,685	1.9	2.3	1.4	2.2	Yes	Yes	Yes	Yes
11400 So On-Ramp	1,158	1,223	1,124	1,021	1,118	1,249	1,119	1,019	1.2	0.7	0.1	0.1	Yes	Yes	Yes	Yes
I-15 NB Mainline	7,190	7,483	6,960	6,469	7,072	7,261	7,076	6,659	1.4	2.6	1.4	2.3	Yes	Yes	Yes	Yes
11400 So Off-Ramp	1,005	1,033	971	920	991	1,024	990	927	0.4	0.3	0.6	0.2	Yes	Yes	Yes	Yes
I-15 NB Mainline	8,195	8,516	7,931	7,389	8,101	8,306	8,044	7,565	1.0	2.3	1.3	2.0	Yes	Yes	Yes	Yes
12300 So On-Ramp	1,511	1,596	1,466	1,333	1,478	1,495	1,447	1,377	0.9	2.6	0.5	1.2	Yes	Yes	Yes	Yes
I-15 NB Mainline	6,684	6,920	6,465	6,056	6,631	6,835	6,548	6,141	0.6	1.0	1.0	1.1	Yes	Yes	Yes	Yes
12300 So Off-Ramp	1,047	1,074	1,011	960	1,051	1,085	1,017	952	0.1	0.3	0.2	0.3	Yes	Yes	Yes	Yes
I-15 NB Mainline	7,731	7,994	7,476	7,016	7,677	7,951	7,498	7,042	0.6	0.5	0.3	0.3	Yes	Yes	Yes	Yes
Bangerter On-Ramp	1,570	1,659	1,524	1,385	1,540	1,633	1,499	1,369	0.8	0.6	0.6	0.4	Yes	Yes	Yes	Yes
I-15 NB Mainline	6,161	6,335	5,952	5,631	6,142	6,333	5,961	5,647	0.2	0.0	0.1	0.2	Yes	Yes	Yes	Yes

VISSIM TRAFFIC ANALYSIS SUMMARY (2017 AM)

Segment	Type	6:00 AM		7:00 AM		8:00 AM		9:00 AM	
		Average Density (pc/hr/ln)	LOS	Average Density (pc/hr/ln)	LOS	Average Density (pc/hr/ln)	LOS	Average Density (pc/hr/ln)	LOS
I-15 NB Mainline	Basic Freeway	19.9	C	22.6	C	21.8	C	19.6	C
7200 South On-Ramp	Merge	19.4	B	22.1	C	21.3	C	19.1	B
I-15 NB Mainline	Basic Freeway	16.6	B	18.7	C	18.5	C	16.7	B
I-215 Off-Ramp	Diverge	25	C	30.4	D	29.8	D	25.4	C
7200 South Off-Ramp	Diverge	27.9	C	36	E	36.3	E	28.7	D
I-15 NB Mainline	Basic Freeway	26	C	41.4	E	40.8	E	28.7	D
9000 South On-Ramp	Merge	24.4	C	34.3	D	38.9	E	27.2	C
I-15 NB Mainline	Basic Freeway	26	C	30.9	D	32.5	D	25.7	C
9000 South Off-Ramp	Diverge	29.8	D	36.3	E	39.6	E	30.1	D
I-15 NB Mainline	Basic Freeway	20.8	C	22.8	C	23.1	C	20.3	C
10600 South On-Ramp	Merge	21.8	C	24.5	C	24.8	C	20.5	C
I-15 NB Mainline	Basic Freeway	24.4	C	30.6	D	32.6	D	22.8	C
10600 South Off-Ramp	Weave	27.5	C	45.1	F	47.6	F	26.2	C
11400 South On-Ramp	Weave	27.1	C	53.7	F	55.6	F	26.5	C
I-15 NB Mainline	Basic Freeway	22.6	C	49.5	F	54.9	F	22.3	C
11400 South Off-Ramp	Weave	24	C	44.7	F	51.9	F	21.7	C
12300 South On-Ramp	Weave	23.2	C	42.5	E	51.9	F	21.1	C
I-15 NB Mainline	Basic Freeway	21.3	C	34.9	D	44.4	E	18.2	C
12300 South Off-Ramp	Diverge	24.4	C	35.6	E	33.8	D	20	B
I-15 NB Mainline	Basic Freeway	23.6	C	44.7	E	36.8	E	19.7	C
Bangerter Hwy On-Ramp	Merge	18	B	52	F	38.6	E	15.5	B
I-15 NB Mainline	Basic Freeway	16.8	B	20.3	C	17	B	14	B

VISSIM TRAFFIC ANALYSIS SUMMARY (2017 PM)

Segment	Type	3:00 PM		4:00 PM		5:00 PM		6:00 PM	
		Average Density (pc/hr/ln)	LOS	Average Density (pc/hr/ln)	LOS	Average Density (pc/hr/ln)	LOS	Average Density (pc/hr/ln)	LOS
I-15 NB Mainline	Basic Freeway	19.4	C	19.9	C	19.6	C	19.3	C
7200 South On-Ramp	Merge	18.8	B	19.3	B	19.1	B	18.8	B
I-15 NB Mainline	Basic Freeway	17	B	17.7	B	17.7	B	17.4	B
I-215 Off-Ramp	Diverge	28	C	33.1	D	33.1	D	29.7	D
7200 South Off-Ramp	Diverge	34.4	D	41.1	E	40.3	E	37.6	E
I-15 NB Mainline	Basic Freeway	31.3	D	47.3	F	49.6	F	46.2	F
9000 South On-Ramp	Merge	27.7	C	51.6	F	63.6	F	51.2	F
I-15 NB Mainline	Basic Freeway	26.7	D	36.3	E	47.8	F	34.8	D
9000 South Off-Ramp	Diverge	36.6	E	57.8	F	74.4	F	59	F
I-15 NB Mainline	Basic Freeway	21.9	C	36.1	E	60.5	F	40.2	E
10600 South On-Ramp	Merge	22.6	C	26.9	C	36.6	E	24	C
I-15 NB Mainline	Basic Freeway	26.2	D	32.2	D	39.3	E	25.7	C
10600 South Off-Ramp	Weave	27.8	C	38.1	E	40.6	E	26.5	C
11400 South On-Ramp	Weave	27.1	C	41.3	E	40.5	E	25.9	C
I-15 NB Mainline	Basic Freeway	24.4	C	35.4	E	35.8	E	23.3	C
11400 South Off-Ramp	Weave	28.2	D	35.2	E	36.8	E	27.6	C
12300 South On-Ramp	Weave	28.5	D	46.6	F	45.8	F	31.5	D
I-15 NB Mainline	Basic Freeway	22.3	C	42.7	E	45.3	F	27.2	D
12300 South Off-Ramp	Diverge	25.1	C	37.2	E	36.9	E	26.3	C
I-15 NB Mainline	Basic Freeway	24	C	33.3	D	36.2	E	25.2	C
Bangerter Hwy On-Ramp	Merge	18.5	B	24.2	C	34.2	D	21.5	C
I-15 NB Mainline	Basic Freeway	19.7	C	20.6	C	19.9	C	18.5	C

VISSIM TRAFFIC ANALYSIS SUMMARY (2040 AM)

Segment	Type	6:00 AM		7:00 AM		8:00 AM		9:00 AM	
		Average Density (pc/hr/ln)	LOS	Average Density (pc/hr/ln)	LOS	Average Density (pc/hr/ln)	LOS	Average Density (pc/hr/ln)	LOS
I-15 NB Mainline	Basic Freeway	52.7	F	72.5	F	69	F	65.4	F
7200 South On-Ramp	Merge	53.4	F	77.6	F	73.7	F	69.9	F
I-15 NB Mainline	Basic Freeway	44.4	E	108.7	F	109.9	F	104.3	F
I-215 Off-Ramp	Diverge	31.8	D	79	F	81.7	F	75.5	F
7200 South Off-Ramp	Diverge	35.1	E	68.2	F	71.2	F	65.1	F
I-15 NB Mainline	Basic Freeway	36.5	E	71.3	F	74	F	69.8	F
9000 South On-Ramp	Merge	36.9	E	91.2	F	99	F	94.3	F
I-15 NB Mainline	Basic Freeway	33.2	D	86.2	F	93.2	F	87.6	F
9000 South Off-Ramp	Diverge	59.5	F	97.8	F	104.8	F	100.8	F
I-15 NB Mainline	Basic Freeway	41.5	E	100.6	F	110.3	F	105.3	F
10600 South On-Ramp	Merge	31.5	D	85.7	F	101.9	F	96.5	F
I-15 NB Mainline	Basic Freeway	28.6	D	76.3	F	94.4	F	87.5	F
10600 South Off-Ramp	Weave	33.7	D	66.7	F	86.7	F	82.3	F
11400 South On-Ramp	Weave	41.3	E	77.2	F	92.8	F	86.1	F
I-15 NB Mainline	Basic Freeway	34.9	D	86.1	F	111.3	F	100.6	F
11400 South Off-Ramp	Weave	33.7	D	79.1	F	106.3	F	99.6	F
12300 South On-Ramp	Weave	35.4	E	82.1	F	110.3	F	103.1	F
I-15 NB Mainline	Basic Freeway	27.9	D	90.6	F	130	F	123.6	F
12300 South Off-Ramp	Diverge	32.1	D	73.5	F	116	F	108.9	F
I-15 NB Mainline	Basic Freeway	36.7	E	75.9	F	120.1	F	112.2	F
Bangerter Hwy On-Ramp	Merge	39.8	E	104	F	135.2	F	131.5	F
I-15 NB Mainline	Basic Freeway	23.1	C	103.9	F	154.5	F	148.5	F

VISSIM TRAFFIC ANALYSIS SUMMARY (2040 PM)

Segment	Type	3:00 PM		4:00 PM		5:00 PM		6:00 PM	
		Average Density (pc/hr/ln)	LOS	Average Density (pc/hr/ln)	LOS	Average Density (pc/hr/ln)	LOS	Average Density (pc/hr/ln)	LOS
I-15 NB Mainline	Basic Freeway	23.8	C	23.7	C	23.9	C	22.9	C
7200 South On-Ramp	Merge	23.2	C	23.2	C	23.4	C	22.3	C
I-15 NB Mainline	Basic Freeway	20.8	C	20.6	C	21	C	20.3	C
I-215 Off-Ramp	Diverge	29.8	D	29.2	D	30.2	D	28.7	D
7200 South Off-Ramp	Diverge	39.4	E	38.8	E	40.7	E	38.7	E
I-15 NB Mainline	Basic Freeway	39.9	E	50.2	F	53.8	F	51.1	F
9000 South On-Ramp	Merge	41.4	E	69.9	F	76.4	F	70.4	F
I-15 NB Mainline	Basic Freeway	32.7	D	55.5	F	49.2	F	43.7	E
9000 South Off-Ramp	Diverge	50.6	F	73.3	F	76.2	F	79.5	F
I-15 NB Mainline	Basic Freeway	28.7	D	54.1	F	76.4	F	80	F
10600 South On-Ramp	Merge	24.8	C	32.8	D	48.6	F	49.2	F
I-15 NB Mainline	Basic Freeway	29.5	D	32.9	D	43.2	E	43.6	E
10600 South Off-Ramp	Weave	38.9	E	41.5	E	44.7	F	44.2	F
11400 South On-Ramp	Weave	45.5	F	53.5	F	52.5	F	46.4	F
I-15 NB Mainline	Basic Freeway	37.6	E	53.6	F	51.6	F	40	E
11400 South Off-Ramp	Weave	36.8	E	48.6	F	50.1	F	40.4	E
12300 South On-Ramp	Weave	36.4	E	56.8	F	60.6	F	54.1	F
I-15 NB Mainline	Basic Freeway	26.3	D	50.3	F	63.7	F	54.5	F
12300 South Off-Ramp	Diverge	33.9	D	40.4	E	46	F	39.7	E
I-15 NB Mainline	Basic Freeway	45.4	F	50	F	53.3	F	49.1	F
Bangerter Hwy On-Ramp	Merge	63.3	F	83.8	F	86.7	F	81.7	F
I-15 NB Mainline	Basic Freeway	46	F	78.5	F	82.4	F	73	F



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To: I-15 NB Project Team
From: Horrocks Traffic Group
Date: July 12, 2018
Subject: I-15 Northbound Alternatives Analysis

Memorandum

PURPOSE

This memorandum describes the alternatives analysis performed for the I-15 Northbound Environmental Study. Each alternative will be defined, and the results from the Vissim microsimulation models for the 2040 design year will be presented. In addition, results will be provided from a phasing study which was performed for interim years. Finally, the results will be presented from a sensitivity analysis which was performed for the Full CD Road alternative using higher projected volumes for 2040.

ALTERNATIVES DESCRIPTIONS

The following alternatives were considered during the I-15 Northbound Environmental Study:

No-Action – No additional improvements to I-15 other than the second HOV/HOT lane proposed in the 2040 Regional Transportation Plan. The two HOV/HOT lanes are included in all alternatives except the Full CD Road which only needs a single HOV/HOT lane.

North CD Road – Consists of a collector-distributor road from 9000 South to 7200 South. This road combines the I-15 exits for 7200 South and I-215 into a single exit and moves it south of the 9000 South entrance ramp creating a braided ramp alignment.

North CD with Added General Purpose Lane – In addition to the North CD Road described above, this alternative adds a general purpose lane to I-15 from Bangerter Highway to 10600 South.

Full CD Road – Includes the North CD Road described above and a south collector-distributor road from Bangerter Highway to 9000 South. The South CD Road begins after the Bangerter Highway interchange exit ramp and braids with the entrance ramp. All northbound accesses to 12300 South, 11400 South, 10600 South, and the 9000 South exit occur from the South CD Road. It ties back into I-15 after the North CD Road exit from I-15 creating braided ramps and keeping traffic weaving on I-15 mainline minimized. The two CD roads are connected by a ramp located before the braid. Under this alternative, I-15 mainline has a single HOV/HOT lane and three general purpose lanes from Bangerter Highway to 7200 South. The two HOV/HOT lanes shown in the RTP are not needed where the two CD roads are provided.

Left Exit – This alternative relocates the I-215 exit ramp to the left side of the I-15 northbound lanes within the median. The ramp is grade separated over I-15 and then ties into the existing I-125 CD road. The HOV/HOT lanes are suspended north of 9000 South in order to accommodate the I-215 exiting traffic.

Left Exit with Added General Purpose Lane – In addition to the Left Exit alternative described above, this alternative adds a general purpose lane to I-15 from Bangerter Highway to 10600 South.

General Purpose Lane Only – This alternative adds a general purpose lane to I-15 from Bangerter Highway to 7200 South. No additional improvements other than the second HOV/HOT lane proposed in the 2040 RTP are included.

congestion, and 3) Active in Network vehicles are still within the network at the end of the time period. The following figure and tables summarize the results of the Vissim models.

VISSIM RESULTS SUMMARY

The alternatives that were considered during the I-15 Northbound Environmental Study were modeled using the Vissim microsimulation software. The models were run 10 times for each alternative using a random seed increment of one for each run and the results were averaged. Data were collected to compare the alternatives including average speeds, total network delay, and vehicles served.

The delay data includes both network delay and latent delay, which is delay assigned to vehicles that were not able to enter the network due to congestion. The vehicles served data includes three types, 1) Vehicles Arrived are the vehicles that travel through the network to their destination and exited the network, 2) Latent Demand are the vehicles that are unable to enter the network due to

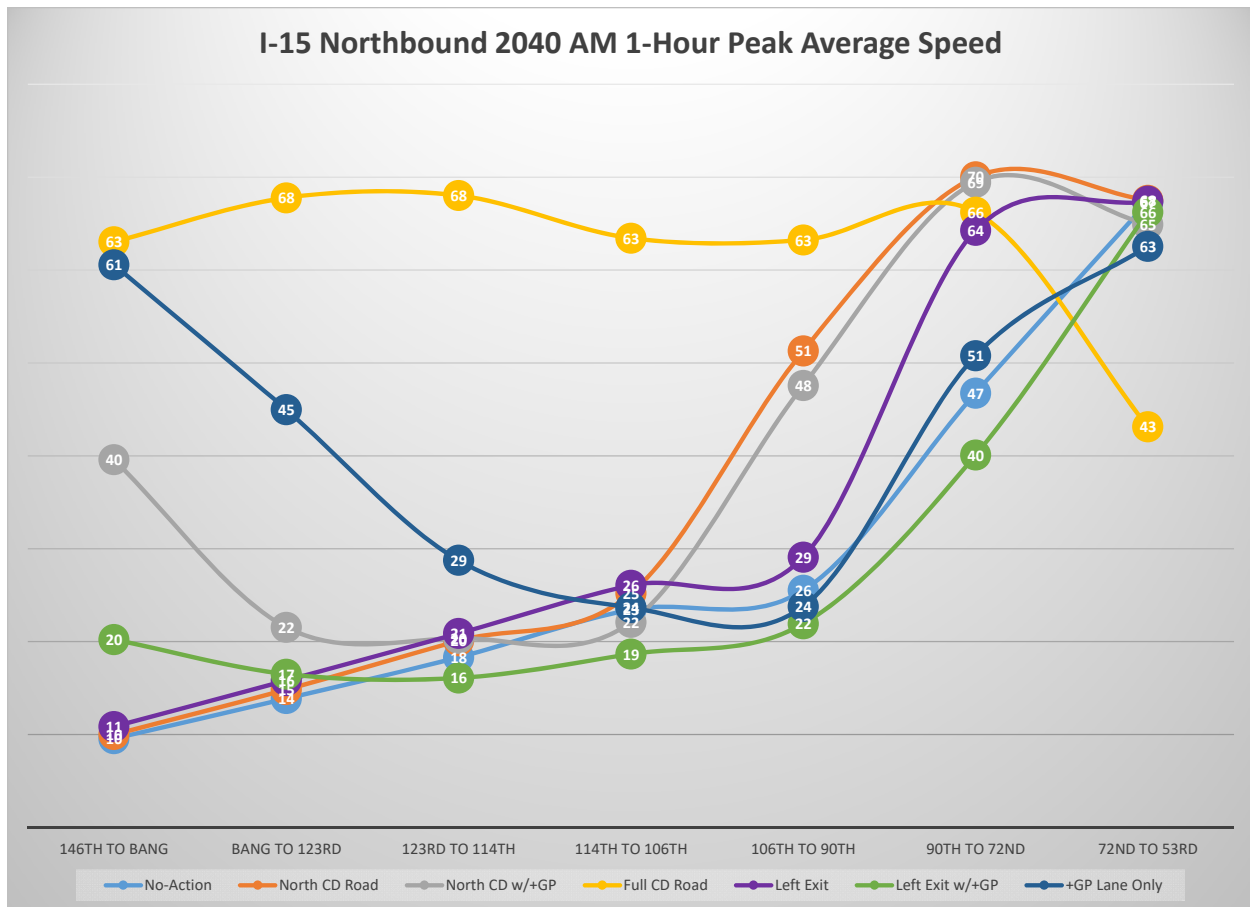


Figure 1: I-15 Northbound AM 1-Hour Peak Average Speed

Table 1: Network-Wide Delay Summary – AM 4-Hour Period

2040 Scenario	Network Delay (Hr)	Latent Delay (Hr)	Combined Delay (Hr)
No-Action	11,549	8,993	20,542
North CD Road	9,321	10,410	19,730
North CD with +GP Lane	5,426	898	6,324
Full CD Road	2,705	859	3,563
Left Exit	9,915	7,731	17,647
Left Exit with +GP Lane	9,924	2,088	12,012
+GP Lane (Bangerter to I-215)	5,325	134	5,459



Table 2: Vehicles Served Summary - AM 1-Hour Peak Period

2040 Scenario	Vehicles Arrived	Latent Demand	Active in Network	Total Vehicles
No-Action	19,652	4,531	5,483	29,666
North CD Road	19,992	5,068	4,517	29,577
North CD with +GP Lane	21,940	624	3,774	26,338
Full CD Road	22,696	502	2,523	25,721
Left Exit	20,125	3,866	4,920	28,911
Left Exit with +GP Lane	20,952	1,254	5,487	27,693
+GP Lane (Bangerter to I-215)	22,102	101	3,906	26,109

WASATCH FRONT REGIONAL TRANSPORTATION PLAN (RTP): 2015-2040 PROJECT LIST

PREPARED BY

Wasatch Front Regional Council

CONTACT

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Functional Classification,” shown as **Map 7-6**, graphically illustrates the Wasatch Front Region’s (1) freeways, (2) principal arterials, (3) minor arterials, and (4) collector streets. Freeway systems are the largest traffic facilities built with complete control of access and high design speeds and provide the greatest mobility for regional traffic. Principal arterial streets serve the major centers of activity of a metropolitan area and the longest projected trips. Minor arterials interconnect with and augment the urban principal arterial system and provide for trips of moderate length at a somewhat lower level of travel mobility than principal arterials. These facilities place more emphasis on land access to adjoining or nearby properties than freeways or major arterials, and offer

movement within communities. However, ideally they should not penetrate identifiable neighborhoods. Finally, collector streets provide for both land access service and movement for local traffic within residential, commercial, and industrial areas. This particular road classification may penetrate neighborhoods distributing trips from arterial streets through developed areas to ultimate destinations. Conversely, collector roads can also be expected to collect traffic from local streets and channel it onto the arterial system. [Appendix L](#) entitled, “Street Functional Classification” provides a more complete description of various highway and street classification types.

TABLE 7 - 4 2015-2040 RTP HIGHWAY PROJECT LIST

			PHASE 1: 2015-2024		
ID#	PROJECT	DESCRIPTION	PHASE 2: 2025-2034		
			PHASE 3: 2035-2040	COST	
			Unfunded (U))		
SALT LAKE COUNTY, EAST-WEST FACILITIES					
S-1	Sports Complex Boulevard (2400 North) I-215 East Frontage Road to Redwood Road	New Construction: 0 to 2 lanes	Collector / 0.5 miles / Local	Needed Phase - 1	2015 - \$4,400,000
		ROW:2015 - 0 ft./2040 - 66 ft.	Bike Routes: None	Funded Phase - 1	Phased - \$5,300,000
S-3	California Avenue Mountain View Corridor to 4800 West	Widening: 2 to 4 lanes	Minor Arterial / 1.3 miles / Local	Needed Phase - 3	2015 - \$10,000,000
		ROW:2015 - 110 ft./2040 - 110 ft.	Bike Routes: Priority	Funded Phase - 3	Phased - \$24,700,000
S-4	I-80 1300 East to I-215 (East)	Widening: 6 to 8 lanes	Freeway / 3.3 miles / I-80	Needed Phase - 2	2015 - \$181,500,000
		ROW:2015 - 328 ft. / 2040 - 328 ft.	Bike Routes: None	Funded Phase - 2	Phased - \$326,900,000
S-5	I-80 I-215 (East) to Lambs Canyon	Widening: 3 EB to 4 EB lanes	Freeway / 8.0 miles / I-80	Needed Phase - 1	2015 - \$36,900,000
		ROW:2015 - 328 ft. / 2040 - 328 ft.	Bike Routes: None	Funded Phase - 1	Phased - \$44,900,000
S-6	2100 South I-15 to 1300 East	Operational	Minor Arterial / 2.6 miles / Local	Needed Phase - 1	2015 - \$6,500,000
		ROW:2015 - 86 ft. / 2040 - 86 ft.	Bike Routes: Base	Funded Phase - 2	Phased - \$11,700,000
S-7	SR-201 I-80 (West) to SR-111 Bypass	Widening: 4 to 6 lanes	Freeway / 9.0 miles / SR-201	Needed Phase - 2	2015 - \$198,000,000
		ROW:2015 - 300 ft. / 2040 - 300 ft.	Bike Routes: None/Priority	Funded Phase - 2	Phased - \$356,600,000
S-8	SR-201 SR-111 Bypass to Mountain View Corridor	Widening: 4 to 6 lanes	Freeway / 4.6 miles / SR-201	Needed Phase - 2	2015 - \$101,200,000
		ROW:2015 - 300 ft. / 2040 - 300 ft.	Bike Routes: Priority	Funded Phase - 2	Phased - \$182,300,000
S-9	SR-201 Mountain View Corridor to I-15	Widening: 6 to 6+HOT lanes	Freeway / 6.0 miles / SR-201	Needed Phase - 1	2015 - \$132,000,000
		ROW:2015 - 300 ft. / 2040 - 300 ft.	Bike Routes: None	Funded Phase - 2	Phased - \$237,700,000
S-164	2400 South 7200 West to 6750 West	New Construction: 0 to 2 lanes	Collector / 0.5 miles / Local	Needed Phase - 2	2015 - \$6,100,000
		ROW:2015 - 0 ft. / 2040 - 86 ft.	Bike Routes: Base	Funded Phase - 2	Phased - \$11,000,000
S-165	2400 South 6400 West to 5600 West	New Construction: 0 to 2 lanes	Collector / 1.3 miles / Local	Needed Phase - 1	2015 - \$15,900,000
		ROW:2015 - 0 ft. / 2040 - 86 ft.	Bike Routes: None/Base/Priority	Funded Phase - 1	Phased - \$19,400,000
S-166	2400 South 3200 West to 2700 West	New Construction: 0 to 4 lanes	Collector / 0.5 miles / Local	Needed Phase - 2	2015 - \$6,100,000
		ROW:2015 - 0 ft. / 2040 - 86 ft.	Bike Routes: None	Funded Phase - 2	Phased - \$11,000,000
S-10	Parkway Boulevard (2700 South) 7200 West to 5600 West	Widening: 2 to 4 lanes	Collector / 2.0 miles / Local	Needed Phase - 1	2015 - \$15,400,000
		ROW:2015 - 86 ft. / 2040 - 86 ft.	Bike Routes: Priority	Funded Phase - 1	Phased - \$18,700,000
S-11	3300 South/ 3500 South I-215 (West) to Highland Drive	Operational	Principal Arterial / 5.2 miles / SR-171	Needed Phase - 1	2015 - \$13,000,000
		ROW:2015 - 126 ft. / 2040 - 126 ft.	Bike Routes: None/Base/Priority	Funded Phase - 2	Phased - \$23,400,000
S-12	3500 South SR-111 Bypass to 7200 West	Widening: 2 to 4 lanes	Principal Arterial / 2.2 miles / SR-171	Needed Phase - 3	2015 - \$20,900,000
		ROW:2015 - 66 ft. / 2040 - 100 ft.	Bike Routes: Base/Priority	Funded Phase - U	Phased - \$51,500,000
S-13	3500 South 7200 West to Mountain View Corridor	Widening: 2 to 4 lanes	Principal Arterial / 1.8 miles / SR-171	Needed Phase - 2	2015 - \$17,100,000
		ROW:2015 - 66 ft. / 2040 - 100 ft.	Bike Routes: None	Funded Phase - 2	Phased - \$30,800,000

S-14	3500 South Mountain View Corridor to 4000 West	Widening: 2/4 to 6 lanes ROW:2015 - 80 ft. / 2040 - 100 ft.	Principal Arterial / 2.2 miles / SR-171 Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$19,300,000 Phased - \$23,400,000
S-15	4100 South 7200 West to 5600 West	Widening: 2 to 4 lanes ROW:2015 - 76 ft. / 2040 - 99 ft.	Minor Arterial / 2.0 miles / Local Bike Routes: Priority	Needed Phase - 3 Funded Phase - 3	2015 - \$37,800,000 Phased - \$93,200,000
S-16	4700 South 5600 West to 4000 West	Widening: 2 to 4 lanes ROW:2015 - 80 ft. / 2040 - 110 ft.	Principal Arterial / 2 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$38,600,000 Phased - \$69,500,000
S-17	4700 South 4000 West to I-215	Widening / Operational: 4 to 6 lanes ROW:2015 - 110 ft. / 2040 - 110 ft.	Principal Arterial / 1.8 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$12,300,000 Phased - \$15,000,000
S-18	4500 South / 4700 South Redwood Road to I-15	Widening: 4 to 6 lanes ROW:2015 - 150 ft. / 2040 - 150 ft.	Principal Arterial / 2.0 miles / SR-266 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$29,600,000 Phased - \$53,300,000
S-19	4500 South 900 East to Highland Drive	Widening: 2 to 4 lanes ROW:2015 - 80 ft. / 2040 - 110 ft.	Principal Arterial / 1.3 miles / SR-266 Bike Routes: Base	Needed Phase - 2 Funded Phase - 3	2015 - \$12,100,000 Phased - \$29,700,000
S-20	5400 South SR-111 to Mountain View Corridor	Widening: 2 to 4 lanes ROW:2015 - 70 ft. / 2040 - 100 ft.	Minor Arterial / 1.6 miles / SR-173 Bike Routes: Base	Needed Phase - 2 Funded Phase - 2	2015 - \$14,900,000 Phased - \$26,800,000
S-21	5400 South SR-111 to Mountain View Corridor	Widening: 4 to 6 lanes ROW:2015 - 70 ft. / 2040 - 100 ft.	Minor Arterial / 1.6 miles / SR-173 Bike Routes: Base	Needed Phase - 3 Funded Phase - U	2015 - \$14,900,000 Phased - \$36,600,000
S-22	5400 South Mountain View Corridor to 4800 West	Widening: 4 to 6 lanes ROW:2015 - 65 ft. / 2040 - 100 ft.	Minor Arterial / 2.0 miles / SR-173 Bike Routes: Base	Needed Phase - 2 Funded Phase - 2	2015 - \$39,100,000 Phased - \$70,400,000
S-24	5400 South Redwood Road to State Street	Operational ROW:2015 - 100 ft. / 2040 - 100 ft.	Minor Arterial / 2.7 miles / SR-173 Bike Routes: None/Base/Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$6,800,000 Phased - \$8,200,000
S-25	6200 South SR-111 to Mountain View Corridor	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 110 ft.	Minor Arterial / 0.7 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$9,500,000 Phased - \$11,500,000
S-26	6200 South SR-111 to Mountain View Corridor	Widening: 4 to 6 lanes ROW:2015 - 0 ft. / 2040 - 110 ft.	Minor Arterial / 0.7 miles / Local Bike Routes: Priority	Needed Phase - 3 Funded Phase - 3	2015 - \$9,500,000 Phased - \$23,300,000
S-167	6200 South Mountain View Corridor to Redwood Road	Widening: 4 to 6 lanes ROW:2015 - 86 ft. / 2040 - 110 ft.	Minor Arterial / 5.6 miles / Local Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$50,200,000 Phased - \$90,400,000
S-168	Winchester Street 1300 West to State Street	Widening: 2 to 4 lanes ROW:2015 - 68 ft. / 2040 - 86 ft.	Collector / 2.1 miles / Local Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$50,200,000 Phased - \$90,300,000
S-169	6200 South 3000 East to Wasatch Boulevard	Widening : 4 to 6 lanes ROW:2015 - 125 ft. / 2040 - 125 ft.	Principal Arterial / 0.5 miles / SR-190 Bike Routes: None	Needed Phase - 3 Funded Phase - U	2015 - \$3,900,000 Phased - \$9,500,000
S-28	7000 South Bangerter Highway to Redwood Road	Widening: 3 to 4 lanes ROW:2015 - 80 ft. / 2040 - 99 ft.	Minor Arterial / 2.0 miles / Local Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$17,400,000 Phased - \$21,200,000
S-29	7000 South / 7200 South Redwood Road to Bingham Junction Boulevard	Widening: 4 to 6 lanes ROW:2015 - 100 ft. / 2040 - 123 ft.	Principal Arterial / 1.3 miles / SR-48 Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$25,000,000 Phased - \$30,400,000
S-30	7000 South / 7200 South Bingham Junction Boulevard to I-15	Widening: 4 to 6 lanes ROW:2015 - 123 ft. / 2040 - 123 ft.	Principal Arterial / 0.5 miles / SR-48 Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$44,400,000 Phased - \$54,000,000
S-31	Fort Union Boulevard Union Park Boulevard to 3000 East	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Minor Arterial / 2.8 miles / Local Bike Routes: Base/Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$7,000,000 Phased - \$8,500,000
S-32	7800 South SR-111 to New Bingham Highway	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 120 ft.	Minor Arterial / 3.5 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$40,800,000 Phased - \$49,600,000
S-33	New Bingham Highway 10200 South to 9000 South	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 110 ft.	Principal Arterial / 3.0 miles / SR-48 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$30,100,000 Phased - \$74,100,000
S-34	9000 South SR-111 to New Bingham Highway	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 110 ft.	Principal Arterial / 1.2 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$16,200,000 Phased - \$29,200,000
S-35	9000 South 5600 West to Bangerter Highway	Widening: 4 to 6 lanes ROW:2015 - 100 ft. / 2040 - 123 ft.	Principal Arterial / 2.5 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$25,000,000 Phased - \$45,100,000
S-36	9000 South Bangerter Highway to Redwood Road	Widening: 4 to 6 lanes ROW:2015 - 100 ft. / 2040 - 123 ft.	Principal Arterial / 1.9 miles / SR-209 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$31,100,000 Phased - \$55,900,000
S-198	9000 South Redwood Road to I-15	Widening: 4 to 6 lanes ROW:2015 - 100 ft. / 2040 - 123 ft.	Principal Arterial / 2.0 miles / SR-209 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$23,200,000 Phased - \$28,300,000
S-170	9000 South I-15 to 700 East	Operational ROW:2015 - 110 ft. / 2040 - 110 ft.	Principal Arterial / 1.6 miles / SR-209 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$4,000,000 Phased - \$4,900,000

S-171	9400 South Monroe Street to State Street	Widening: 2 to 4 lanes ROW:2015 - 76 ft. / 2040 - 110 ft.	Collector / 0.4 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$4,200,000 Phased - \$5,200,000
S-172	9400 South State Street to Ski Connection Road	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Minor Arterial / 1.5 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$3,800,000 Phased - \$4,600,000
S-173	Little Cottonwood Road Eastdale Drive to Wasatch Boulevard	Operational ROW:2015 - 100 ft. / 2040 - 100 ft.	Principal Arterial / 1.6 miles / SR-209 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$4,000,000 Phased - \$7,200,000
S-37	10200 South SR-111 to Mountain View Corridor	Widening: 2 to 4 lanes ROW:2015 - 82 ft. / 2040 - 110 ft.	Collector / 1.6 miles / Local Bike Routes: Priority	Needed Phase - 2 Funded Phase - 3	2015 - \$14,700,000 Phased - \$36,200,000
S-38	South Jordan Parkway (11000 South) SR-111 to Mountain View Corridor	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 110 ft.	Minor Arterial / 1.8 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$24,300,000 Phased - \$43,800,000
S-39	South Jordan Parkway (11000 South) Mountain View Corridor to 5600 West	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 110 ft.	Minor Arterial / 0.3 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$4,100,000 Phased - \$4,900,000
S-40	10600 South / 10400 South Bangerter Highway to Redwood Road	Widening: 4 to 6 lanes ROW:2015 - 110 ft. / 2040 - 110 ft.	Principal Arterial / 2.0 miles / SR-151 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$27,400,000 Phased - \$49,300,000
S-199	10600 South / 10400 South Redwood Road to I-15	Widening: 4 to 6 lanes ROW:2015 - 110 ft. / 2040 - 110 ft.	Principal Arterial / 2.1 miles / SR-151 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$18,500,000 Phased - \$22,500,000
S-41	10600 South 1700 East to Highland Drive	Widening: 2 to 4 lanes ROW:2015 - 86 ft. / 2040 - 86 ft.	Minor Arterial / 0.5 miles / Local Bike Routes: Base	Needed Phase - 2 Funded Phase - 2	2015 - \$3,900,000 Phased - \$6,900,000
S-42	11800 South Bacchus Highway to 6000 West	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 99 ft.	Minor Arterial / 1.9 miles / Local Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$17,900,000 Phased - \$32,300,000
S-45	11400 South 1300 East to Highland Drive	Widening: 2 to 4 lanes ROW:2015 - 80 ft. / 2040 - 99 ft.	Minor Arterial / 1.1 miles / Local Bike Routes: None/Priority	Needed Phase - 3 Funded Phase - 3	2015 - \$9,600,000 Phased - \$23,600,000
S-46	Herriman Parkway (12600 South) 7300 West to 6000 West	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 110 ft.	Principal Arterial / 1.7 miles / Local Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$23,000,000 Phased - \$27,900,000
S-47	12600 South Mountain View Corridor to Bangerter Highway	Widening: 4 to 6 lanes ROW:2015 - 123 ft. / 2040 - 123 ft.	Principal Arterial / 1.1 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$1,400,000 Phased - \$1,700,000
S-174	12600 South Bangerter Highway to Redwood Road	Operational ROW:2015 - 100 ft. / 2040 - 100 ft.	Principal Arterial / 2.4 miles / SR-71 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$6,000,000 Phased - \$10,800,000
S-48	12300 South / 12600 South Redwood Road to I-15	Widening: 4 to 6 lanes ROW:2015 - 100 ft. / 2040 - 100 ft.	Principal Arterial / 2.6 miles / SR-71 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$52,000,000 Phased - \$93,700,000
S-197	12300 South / 12600 South I-15 to 700 East	Widening: 4 to 6 lanes ROW:2015 - 100 ft. / 2040 - 100 ft.	Principal Arterial / 1.0 miles / SR-71 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$7,700,000 Phased - \$9,400,000
S-175	Herriman Main Street 7300 West to 6200 West	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Minor Arterial / 1.4 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$3,500,000 Phased - \$6,300,000
S-49	Riverton Boulevard 4570 West to 13400 South	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 89 ft.	Collector / 0.9 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$11,200,000 Phased - \$13,600,000
S-177	14600 South 1000 West to Porter Rockwell Road	Widening: 2 to 4 lanes ROW:2015 - 76 ft. / 2040 - 110 ft.	Minor Arterial / 1.0 miles / SR-140 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$9,500,000 Phased - \$23,400,000
S-54	Traverse Ridge Road Highland Drive to Mike Weir Drive	Widening: 2 to 4 lanes ROW:2015 - 89 ft. / 2040 - 99 ft.	Minor Arterial / 1.3 miles / Local Bike Routes: Base	Needed Phase - 3 Funded Phase - 3	2015 - \$10,700,000 Phased - \$26,400,000
S-55	Porter Rockwell Road Mountain View Corridor to 14600 South / I-15	New Construction/Widening: 0/2 to 6 lanes ROW:2015 - 0 ft. / 2040 - 167 ft.	Principal Arterial / 2.9 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$75,700,000 Phased - \$92,100,000

SALT LAKE COUNTY, NORTH-SOUTH FACILITIES

S-56	SR-111 Magna Bypass SR-201 to SR-111	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 113 ft.	Principal Arterial / 2.6 miles / SR-111 Bike Routes: None/Priority	Needed Phase - 3 Funded Phase - U	2015 - \$38,400,000 Phased - \$94,600,000
S-57	SR-111 / Bacchus Highway 5400 South to South Jordan Parkway (11000 South)	Widening: 2 to 4 lanes ROW:2015 - 106 ft. / 2040 - 113 ft.	Principal Arterial / 7.4 miles / SR-111/ Local Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$67,900,000 Phased - \$122,200,000
S-58	7300 West South Jordan Parkway (11000 South) to 13100 South	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 113 ft.	Collector / 2.9 miles / Local Bike Routes: None	Needed Phase - 3 Funded Phase - 3	2015 - \$42,800,000 Phased - \$105,500,000
S-178	SR-111 / 8400 West SR-201 to 2700 South	Widening: 2 to 3 lanes ROW:2015 - 72 ft. / 2040 - 113 ft.	Principal Arterial / 0.5 miles / SR-111 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$5,500,000 Phased - \$9,900,000
S-179	Prosperity Road Crimson View Drive (10400 South) to 11800 South	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Collector / 1.8 miles / Local Bike Routes: None	Needed Phase - 2 Funded Phase - 2	2015 - \$22,000,000 Phased - \$39,700,000
S-180	6400 West 11800 South to Herriman Main Street	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Collector / 1.6 miles / Local Bike Routes: None/Base	Needed Phase - 1 Funded Phase - 1	2015 - \$19,600,000 Phased - \$23,800,000
S-60	Mountain View Corridor I-80 to SR-201	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 328 ft.	Principal Arterial / 3.2 miles / SR-85 Bike Routes: None	Needed Phase - 2 Funded Phase - 3	2015 - \$660,000,000 Phased - \$1,626,700,000
S-61	Mountain View Corridor SR-201 to 4100 South	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 328 ft.	Principal Arterial / 3.1 miles / SR-85 Bike Routes: None/Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$410,000,000 Phased - \$498,800,000
S-64	Mountain View Corridor Porter Rockwell Road to Utah County Line	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 328 ft.	Principal Arterial / 2.4 miles / SR-85 Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$105,000,000 Phased - \$127,700,000
S-65	Mountain View Corridor I-80 to SR-201	Widening and Interchanges: 4 to 6 lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 3.2 miles / SR-85 Bike Routes: None	Needed Phase - 3 Funded Phase - U	2015 - \$195,000,000 Phased - \$480,600,000
S-66	Mountain View Corridor SR-201 to 4100 South	Widening and Interchanges: 4 to 6 lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 3.1 miles / SR-85 Bike Routes: None/Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$215,000,000 Phased - \$387,200,000
S-67	Mountain View Corridor 4100 South to 5400 South	Widening and Interchanges: 4 to 6 lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 2.2 miles / SR-85 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$70,000,000 Phased - \$126,100,000
S-68	Mountain View Corridor 5400 South to 9000 South	Widening and Interchanges: 4 to 6 lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 4.7 miles / SR-85 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$193,300,000 Phased - \$348,000,000
S-69	Mountain View Corridor 9000 South to 10200 South	Widening and Interchanges: 4 to 6 lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 1.6 miles / SR-85 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 3	2015 - \$65,800,000 Phased - \$162,200,000
S-70	Mountain View Corridor 10200 South to Porter Rockwell Road	Widening and Interchanges: 4 to 6 lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 8.9 miles / SR-85 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 3	2015 - \$366,000,000 Phased - \$902,000,000
S-71	Mountain View Corridor Porter Rockwell Road to Utah County Line	Widening and Interchanges: 4 to 6 lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 2.4 miles / SR-85 Bike Routes: None	Needed Phase - 2 Funded Phase - 2	2015 - \$41,300,000 Phased - \$74,400,000
S-72	Mountain View Corridor SR-201 to Utah County Line	Widening: 6 to 6+HOT lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 26 miles / SR-85 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$86,700,000 Phased - \$213,600,000
S-73	5600 West I-80 to SR-201	Widening: 2 to 4 lanes ROW:2015 - 86 ft. / 2040 - 150 ft.	Principal Arterial / 2.8 miles / SR-172 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$34,100,000 Phased - \$41,500,000
S-74	5600 West SR-201 to 6200 South	Operational ROW:2015 - 100 ft. / 2040 - 100 ft.	Principal Arterial / 6.0 miles / SR-172 Bike Routes: Base	Needed Phase - 1 Funded Phase - 2	2015 - \$15,000,000 Phased - \$27,000,000
S-76	5600 West 6200 South to New Bingham Highway	Operational ROW:2015 - 100 ft. / 2040 - 100 ft.	Minor Arterial / 3.1 miles / Local Bike Routes: Base	Needed Phase - 1 Funded Phase - 2	2015 - \$7,800,000 Phased - \$14,000,000

S-75	5600 West 7800 South to New Bingham Highway	Widening: 2 to 4 lanes ROW:2015 - 80 ft. / 2040 - 100 ft.	Minor Arterial / 1.1 miles / Local Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$9,600,000 Phased - \$11,700,000
S-77	5600 West New Bingham Highway to Old Bingham Highway	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 100 ft.	Minor Arterial / 1.4 miles / Local Bike Routes: Base/Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$13,300,000 Phased - \$23,900,000
S-78	5600 West Old Bingham Highway to South Jordan Parkway	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Collector / 1.2 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$14,700,000 Phased - \$17,900,000
S-80	5600 West Connection 5600 West to 11800 South	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 66 ft.	Collector / 0.7 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$6,100,000 Phased - \$7,500,000
S-181	Fort Herriman Parkway Herriman Main Street to 13400 South	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Collector / 0.8 miles / Local Bike Routes: Base	Needed Phase - 2 Funded Phase - 2	2015 - \$9,500,000 Phased - \$17,200,000
S-81	4800 West SR-201 Frontage Road to Lake Park Boulevard	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Collector / 1.0 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$12,200,000 Phased - \$14,900,000
S-82	4800 West Kestrel Rise Drive (10900 S.) to Mountain View Corridor	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 66 ft.	Collector / 0.9 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$10,100,000 Phased - \$12,200,000
S-83	4570 West 12600 South to 13400 South	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 89 ft.	Collector / 1.0 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$12,400,000 Phased - \$15,100,000
S-84	4570 West 13400 South to Juniper Crest	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 89 ft.	Collector / 1.5 miles / Local Bike Routes: None	Needed Phase - 2 Funded Phase - 2	2015 - \$18,600,000 Phased - \$33,500,000
S-85	4150 West 12600 South to Riverton Boulevard	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 89 ft.	Collector / 0.5 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$6,200,000 Phased - \$7,500,000
S-200	4000 West / 4150 West 12600 South to Riverton Boulevard	New Construction/Widening: 2/0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 89 ft.	Collector / 1.0 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$12,400,000 Phased - \$15,100,000
S-86	3600 West 13400 South to 14400 South	Widening: 2 to 4 lanes ROW:2015 - 73 ft. / 2040 - 86 ft.	Collector / 1.3 miles / Local Bike Routes: Priority	Needed Phase - 3 Funded Phase - 3	2015 - \$10,900,000 Phased - \$26,900,000
S-182	2700 West 5400 South to 6200 South	Widening: 2 to 4 lanes ROW:2015 - 86 ft. / 2040 - 86 ft.	Minor Arterial / 1.0 miles / Local Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$7,700,000 Phased - \$13,900,000
S-89	I-215 Redwood Road to I-80	Widening / Operational: 6 to 8 lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 4.8 miles / I-215 Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$76,400,000 Phased - \$92,900,000
S-183	I-215 SR-201 to 4700 South	Operational ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 3.1 miles / I-215 Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$15,500,000 Phased - \$18,900,000
S-90	I-215 Frontage Road SR-201 to 4700 South	New Construction: 0 to 1 lanes ROW:2015 - 0 ft. / 2040 - 66 ft.	Collector / 7.4 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 2	2015 - \$65,000,000 Phased - \$117,100,000
S-91	Redwood Road Davis County Line to 1000 North	Widening: 2 to 4 lanes ROW:2015 - 110 ft. / 2040 - 110 ft.	Principal Arterial / 2.3 miles / SR-68 Bike Routes: Base	Needed Phase - 2 Funded Phase - 2	2015 - \$29,700,000 Phased - \$53,500,000
S-92	Redwood Road 1000 North to 6200 South	Operational ROW:2015 - 100 ft. / 2040 - 100 ft.	Principal Arterial / 10.5 miles / SR-68 Bike Routes: None/Base/Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$26,200,000 Phased - \$31,900,000
S-93	Redwood Road 9000 South to Bangerter Highway	Widening: 4 to 6 lanes ROW:2015 - 66 ft. / 2040 - 100 ft.	Principal Arterial / 6.0 miles / SR-68 Bike Routes: None/Base/Priority	Needed Phase - 2 Funded Phase - 3	2015 - \$57,000,000 Phased - \$140,400,000
S-94	Redwood Road 9000 South to 11400 South	Operational ROW:2015 - 100 ft. / 2040 - 100 ft.	Principal Arterial / 3.0 miles / SR-68 Bike Routes: None/Base/Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$7,500,000 Phased - \$13,500,000
S-95	Redwood Road 12600 South to Bangerter Highway	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 123 ft.	Principal Arterial / 1.5 miles / SR-68 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$17,700,000 Phased - \$21,600,000
S-96	Redwood Road Bangerter Highway to Porter Rockwell Road	Widening: 4 to 6 lanes ROW:2015 - 100 ft. / 2040 - 123 ft.	Principal Arterial / 2.7 miles / SR-68 Bike Routes: Priority	Needed Phase - 3 Funded Phase - Unfunded	2015 - \$27,000,000 Phased - \$66,600,000
S-184	1300 West 5400 South to 9400 South	Widening: 2 to 4 lanes ROW:2015 - 60 ft. / 2040 - 86 ft.	Collector / 5.0 miles / Local Bike Routes: Priority	Needed Phase - 3 Funded Phase - 3	2015 - \$45,400,000 Phased - \$111,800,000

S-98	Bingham Junction Boulevard 7800 South to 8400 South	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Collector / 1.0 miles / Local Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$12,200,000 Phased - \$14,900,000
S-99	Galena Park Boulevard 12300 South to 13490 South	Widening: 2 to 4 lanes ROW:2015 - 70 ft. / 2040 - 89 ft.	Collector / 1.6 miles / Local Bike Routes: Base/Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$13,900,000 Phased - \$16,900,000
S-100	Lone Peak Parkway 11400 South to 12650 South	Widening: 2 to 4 lanes ROW:2015 - 65 ft. / 2040 - 99 ft.	Minor Arterial / 1.2 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$11,400,000 Phased - \$20,500,000
S-101	Lone Peak Parkway 12650 South to Bangerter Highway	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 99 ft.	Minor Arterial / 1.9 miles / Local Bike Routes: None/Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$24,600,000 Phased - \$29,900,000
S-102	600 West Bangerter Highway to 14600 South	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 70 ft.	Minor Arterial / 1.4 miles / Local Bike Routes: None	Needed Phase - 3 Funded Phase - 3	2015 - \$14,000,000 Phased - \$34,500,000
S-103	I-15 Collectors and Distributors 7800 South to 10600 South	New Construction: 0 to 1 lanes ROW:2015 - 0 ft. / 2040 - 70 ft.	Collector / 7.3 miles / Local Bike Routes: None	Needed Phase - 2 Funded Phase - 2	2015 - \$73,000,000 Phased - \$131,400,000
S-186	I-15 Davis County Line to Utah County Line	Operational ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 26.5 miles / I-15 Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$66,300,000 Phased - \$80,600,000
S-187	I-15 HOT with Ramps 600 North to Bangerter Highway	Widening: 8+2 HOT to 8+4 HOT lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 19.8 miles / I-15 Bike Routes: None	Needed Phase - 2 Funded Phase - 3	2015 - \$356,400,000 Phased - \$878,400,000
S-202	Monroe Street 9000 South to 10000 South	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 70 ft.	Collector / 1.0 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$11,000,000 Phased - \$13,400,000
S-107	Cottonwood Street 4500 South to Vine Street	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Collector / 0.9 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$10,000,000 Phased - \$12,200,000
S-188	Cottonwood Street Vine Street to Winchester Street	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Collector / 2.4 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$6,000,000 Phased - \$10,800,000
S-108	State Street 600 South to I-215	Operational ROW:2015 - 100 ft. / 2040 - 100 ft.	Principal Arterial / 8.6 miles / SR-89 Bike Routes: None/Base	Needed Phase - 1 Funded Phase - 2	2015 - \$21,500,000 Phased - \$38,700,000
S-109	State Street I-215 to 12300 South	Operational ROW:2015 - 100 ft. / 2040 - 100 ft.	Principal Arterial / 7.3 miles / SR-89 Bike Routes: None	Needed Phase - 1 Funded Phase - 2	2015 - \$18,300,000 Phased - \$32,900,000
S-110	State Street 8000 South to 9000 South	Widening: 4 to 6 lanes ROW:2015 - 100 ft. / 2040 - 100 ft.	Principal Arterial / 1.2 miles / SR-89 Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$9,200,000 Phased - \$11,200,000
S-189	State Street 10600 South to 11400 South	Widening: 4 to 6 lanes ROW:2015 - 100 ft. / 2040 - 100 ft.	Principal Arterial / 1.0 miles / SR-89 Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$7,700,000 Phased - \$9,400,000
S-111	900 East 3300 South to 4500 South	Operational ROW:2015 - 66 ft. / 2040 - 66 ft.	Collector / 1.8 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$4,500,000 Phased - \$5,500,000
S-112	900 East / 700 East Fort Union Boulevard to 9400 South	Widening: 4 to 6 lanes ROW:2015 - 106 ft. / 2040 - 123 ft.	Principal Arterial / 3.0 miles / SR-71 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 3	2015 - \$29,100,000 Phased - \$71,700,000
S-113	700 East 11400 South to 12300 South	Widening: 2 to 4 lanes ROW:2015 - 80 ft. / 2040 - 110 ft.	Principal Arterial / 1.2 miles / SR-71 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$11,100,000 Phased - \$20,100,000
S-190	1300 East 1300 South to Van Winkle Expressway	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Minor Arterial / 5.7 miles / Local Bike Routes: Base/Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$14,300,000 Phased - \$17,300,000
S-114	Union Park Boulevard / 1300 East Fort Union Boulevard to 7800 South	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Minor Arterial / 1.2 miles / Local Bike Routes: None/Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$3,000,000 Phased - \$3,600,000
S-115	Highland Drive 3900 South to Van Winkle Expressway	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Minor Arterial / 3.4 miles / Local Bike Routes: None/Base	Needed Phase - 1 Funded Phase - 2	2015 - \$8,500,000 Phased - \$15,300,000
S-116	2000 East Fort Union Boulevard to 9400 South	Widening: 4 to 6 lanes ROW:2015 - 114 ft. / 2040 - 114 ft.	Principal Arterial / 3.1 miles / Local Bike Routes: Priority	Needed Phase - 3 Funded Phase - 3	2015 - \$27,300,000 Phased - \$67,200,000
S-117	Highland Drive 9400 South to 9800 South	Widening: 2 to 4 lanes ROW:2015 - 114 ft. / 2040 - 114 ft.	Principal Arterial / 0.6 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$5,300,000 Phased - \$6,400,000
S-118	Highland Drive 9800 South to Draper City Limit	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 114 ft.	Principal Arterial / 2.9 miles / Local Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$6,300,000 Phased - \$113,400,000
S-119	Highland Drive Draper City Limit to 14600 South	Widening: 2 to 4 lanes ROW:2015 - 106 ft. / 2040 - 114 ft.	Principal Arterial / 5.6 miles / Local Bike Routes: Priority	Needed Phase - 3 Funded Phase - 3	2015 - \$51,600,000 Phased - \$127,300,000
S-120	Highland Drive Connection Traverse Ridge Road to 13800 South	Widening: 2 to 4 lanes ROW:2015 - 106 ft. / 2040 - 110 ft.	Principal Arterial / 1.3 miles / Local Bike Routes: Base	Needed Phase - 3 Funded Phase - 3	2015 - \$10,300,000 Phased - \$25,300,000

S-191	3000 East 6200 South to 7000 South	Widening: 2 to 4 lanes ROW:2015 - 100 ft. / 2040 - 100 ft.	Collector / 0.8 miles / Local Bike Routes: None/Priority	Needed Phase - 3 Funded Phase - 3	2015 - \$6,200,000 Phased - \$15,200,000
S-121	500 South / Foothill Boulevard 1300 East to 2300 East	Operational ROW:2015 - 100 ft. / 2040 - 100 ft.	Principal Arterial / 2.4 miles / SR-186 Bike Routes: None/Base	Needed Phase - 1 Funded Phase - 1	2015 - \$6,000,000 Phased - \$7,300,000
S-122	Foothill Boulevard 2300 East to I-80	Widening: 4 to 6 lanes ROW:2015 - 100 ft. / 2040 - 100 ft.	Principal Arterial / 1.5 miles / SR-186 Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$11,600,000 Phased - \$14,100,000
S-192	Wasatch Boulevard 4500 South to 6200 South	Widening: 2 to 4 lanes ROW:2015 - 86 ft. / 2040 - 86 ft.	Minor Arterial / 3.2 miles / Local Bike Routes: Priority	Needed Phase - 3 Funded Phase - 3	2015 - \$24,600,000 Phased - \$60,700,000
S-193	Wasatch Boulevard Bengal Boulevard to Little Cottonwood Canyon	Widening: 2 to 4 lanes ROW:2015 - 150 ft. / 2040 - 150 ft.	Principal Arterial / 2.7 miles / Local Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$23,800,000 Phased - \$42,800,000

SALT LAKE COUNTY, SPOT FACILITIES

S-123	SR-201 Interchange @ I-80	Upgrade	Freeway / SR-201 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$15,000,000 Phased - \$27,000,000
S-124	SR-201 Interchange @ SR-111 Bypass	New Construction	Freeway / SR-201 Bike Routes: Priority	Needed Phase - 3 Funded Phase - Unfunded	2015 - \$38,000,000 Phased - \$93,700,000
S-125	SR-201 Interchange @ 8400 West	New Construction	Freeway / SR-201 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$38,000,000 Phased - \$93,700,000
S-126	SR-201 Interchange @ 7200 West	New Construction	Freeway / SR-201 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$38,000,000 Phased - \$68,400,000
S-127	SR-201 Interchange @ I-215	Upgrade	Freeway / SR-201 Bike Routes: None	Needed Phase - 1 Funded Phase - 2	2015 - \$107,000,000 Phased - \$192,700,000
S-129	I-80 Interchange @ 5600 West	Upgrade	Freeway / I-80 Bike Routes: None	Needed Phase - 3 Funded Phase - U	2015 - \$15,000,000 Phased - \$37,000,000
S-130	5600 West Railroad Crossing @ 750 South	New Construction: 2 to 4 lanes	Minor Arterial / SR-172 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$20,000,000 Phased - \$24,300,000
S-132	Bangerter Highway Interchange @ California Avenue	New Construction	Freeway / SR-154 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$38,000,000 Phased - \$93,700,000
S-133	Bangerter Highway Interchange @ SR-201	Upgrade	Freeway / SR-154 Bike Routes: None	Needed Phase - 1 Funded Phase - 2	2015 - \$107,000,000 Phased - \$192,700,000
S-134	Bangerter Highway Interchange @ Lake Park Boulevard (2700 South)	New Construction	Freeway / SR-154 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$38,000,000 Phased - \$93,700,000
S-135	Bangerter Highway Overpass @ 3100 South	New Construction	Freeway / SR-154 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$20,000,000 Phased - \$49,300,000
S-136	Bangerter Highway Interchange @ 3500 South	New Construction	Freeway / SR-154 Bike Routes: None	Needed Phase - 3 Funded Phase - U	2015 - \$38,000,000 Phased - \$93,700,000
S-137	Bangerter Highway Interchange @ 4100 South	New Construction	Freeway / SR-154 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$38,000,000 Phased - \$93,700,000
S-138	Bangerter Highway Interchange @ 4700 South	New Construction	Freeway / SR-154 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$38,000,000 Phased - \$93,700,000
S-139	Bangerter Highway Interchange @ 5400 South	New Construction	Freeway / SR-154 Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$38,000,000 Phased - \$46,200,000
S-140	Bangerter Highway Interchange @ 6200 South	New Construction	Freeway / SR-154 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 3	2015 - \$38,000,000 Phased - \$93,700,000
S-141	Bangerter Highway Interchange @ 7000 South	New Construction	Freeway / SR-154 Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$38,000,000 Phased - \$46,200,000
S-143	Bangerter Highway Interchange @ 9000 South	New Construction	Freeway / SR-154 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$38,000,000 Phased - \$46,200,000
S-144	Bangerter Highway Interchange @ 9800 South	New Construction	Freeway / SR-154 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$38,000,000 Phased - \$68,400,000
S-145	Bangerter Highway Interchange @ 10400 South	New Construction	Freeway / SR-154 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$38,000,000 Phased - \$46,200,000

S-146	Bangerter Highway Interchange @ 11400 South	New Construction	Freeway / SR-154 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$38,000,000 Phased - \$46,200,000
S-147	Bangerter Highway Interchange @ 12600 South	New Construction	Freeway / SR-154 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$38,000,000 Phased - \$68,400,000
S-148	Bangerter Highway Interchange @ 13400 South	New Construction	Freeway / SR-154 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$38,000,000 Phased - \$68,400,000
S-149	Bangerter Highway Interchange @ 2700 West	New Construction	Freeway / SR-154 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$38,000,000 Phased - \$68,400,000
S-151	Bangerter Highway Interchange @ 600 West	New Construction	Freeway / SR-154 Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$38,000,000 Phased - \$46,200,000
S-152	Bangerter Highway Interchange @ I-15	Upgrade	Freeway / SR-154 Bike Routes: None	Needed Phase - 2 Funded Phase - U	2015 - \$107,000,000 Phased - \$263,700,000
S-154	I-215 Interchange @ 5400 South	New Construction	Freeway / I-215 Bike Routes: Base	Needed Phase - 3 Funded Phase - U	2015 - \$45,000,000 Phased - \$110,900,000
S-155	I-215 Interchange @ Redwood Road (South)	Upgrade	Freeway / I-215 Bike Routes: None	Needed Phase - 1 Funded Phase - 2	2015 - \$15,000,000 Phased - \$27,000,000
S-156	I-15 Interchange @ 100 South (HOT Ramps)	New Construction	Freeway / I-15 Bike Routes: Base	Needed Phase - 3 Funded Phase - U	2015 - \$45,000,000 Phased - \$110,900,000
S-157	I-15 Interchange @ I-215 (South)	Upgrade	Freeway / I-15 Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$107,000,000 Phased - \$130,200,000
S-194	I-15 Interchange @ 7200 South	Upgrade	Freeway / I-15 Bike Routes: Base	Needed Phase - 1 Funded Phase - 2	2015 - \$15,000,000 Phased - \$27,000,000
S-195	I-15 Interchange @ 9400 South	New Construction	Collector / I-15 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$45,000,000 Phased - \$54,700,000
S-196	I-80 Interchange @ State Street	Upgrade	Freeway / I-80 Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$15,000,000 Phased - \$18,200,000
S-158	13800 South Overpass @ I-15	New Construction: 0 to 2 lanes	Collector / Local Bike Routes: Priority	Needed Phase - 3 Funded Phase - 3	2015 - \$20,000,000 Phased - \$49,300,000
S-159	14600 South Rail Road Structure @ D&RGW	Upgrade: 1 to 2 lanes	Minor Arterial / SR-140 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$20,000,000 Phased - \$49,300,000
S-161	I-80 Interchange @ I-215 to Foothill Drive	Upgrade	Freeway / I-80 Bike Routes: None	Needed Phase - 1 Funded Phase - 2	2015 - \$107,000,000 Phased - \$192,700,000
S-162	I-215 Interchange @ 4500 South	Upgrade	Freeway / I-215 Bike Routes: Base	Needed Phase - 2 Funded Phase - 2	2015 - \$15,000,000 Phased - \$27,000,000
S-201	I-215 Interchange @ 6200 South	Upgrade	Freeway / I-215 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$15,000,000 Phased - \$37,000,000
S-163	Avalanche snow shed over Little Cottonwood Canyon Road @ Whitepine Chutes	New Construction	Minor Arterial / SR-210 Bike Routes: Base	Needed Phase - 3 Funded Phase - U	2015 - \$20,000,000 Phased - \$49,300,000

DAVIS COUNTY, EAST-WEST FACILITIES

D-1	1800 North West Davis Corridor to 2000 West	Widening: 2 to 4 lanes ROW:2015 - 80 ft. / 2040 - 120 ft.	Minor Arterial / 2.0 miles / SR-37 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$21,800,000 Phased - \$39,300,000
D-2	1800 North 2000 West to SR-126	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 120 ft.	Minor Arterial / 2.0 miles / SR-37 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$23,300,000 Phased - \$28,400,000
D-3	SR-193 Extension West Davis Corridor to 3000 West	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 110 ft.	Principal Arterial / 0.7 miles / SR-193 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$9,500,000 Phased - \$17,000,000
D-70	SR-193 Extension 3000 West to 2000 West	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 110 ft.	Principal Arterial / 1.0 miles / SR-193 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$13,500,000 Phased - \$16,400,000
D-50	SR-193 I-15 to Hill Field Road (SR-232)	Widening: 4 to 6 lanes ROW:2015 - 110 ft. / 2040 - 150 ft.	Principal Arterial / 1.5 miles / SR-193 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$16,400,000 Phased - \$29,500,000
D-6	SR-193 Hill Field Road (SR-232) to US-89	Operational ROW:2015 - 150 ft. / 2040 - 150 ft.	Principal Arterial / 3.4 miles / SR-193 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$8,500,000 Phased - \$15,300,000

D-51	Antelope Drive (SR-127) 4500 West to West Davis Corridor	Widening: 2 to 4 lanes ROW:2015 - 60 ft. / 2040 - 86 ft.	Minor Arterial / 1.7 miles / SR-127 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$15,400,000 Phased - \$38,000,000
D-7	Antelope Drive (SR-127) West Davis Corridor to 2000 West	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 110 ft.	Minor Arterial / 0.8 miles / SR-127 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$8,000,000 Phased - \$9,800,000
D-10	Gordon Avenue (1000 North) 1600 East to US-89	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Collector / 1.3 miles / Local Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$15,900,000 Phased - \$28,700,000
D-11	West Hill Field Road 3650 West (Layton) to 2200 West (Layton)	Widening: 2 to 4 lanes ROW:2015 - 60 ft. / 2040 - 110 ft.	Minor Arterial / 1.5 miles / Local Bike Routes: None	Needed Phase - 2 Funded Phase - 3	2015 - \$15,500,000 Phased - \$38,200,000
D-52	Gentile Street Main Street to Fairfield Road	Widening: 2 to 4 lanes ROW:2015 - 68 ft. / 2040 - 86 ft.	Minor Arterial / 1.1 miles / Local Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$29,500,000 Phased - \$53,200,000
D-12	Layton Parkway West Davis Corridor / 2700 West to 1700 West	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Minor Arterial / 1.0 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$12,200,000 Phased - \$14,900,000
D-13	200 North (Kaysville) West Davis Corridor to I-15	Widening: 2 to 4 lanes ROW:2015 - 60 ft. / 2040 - 99 ft.	Minor Arterial / 2.3 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$22,400,000 Phased - \$27,300,000
D-53	Shepard Lane West Davis Corridor to I-15	New Construction: 0 to 2/4 lanes ROW:2015 - 0 ft. / 2040 - 100 ft.	Minor Arterial / 1.2 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$15,600,000 Phased - \$19,000,000
D-15	Center Street Legacy Parkway to US-89	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Collector / 1.6 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$4,000,000 Phased - \$4,900,000
DAVIS COUNTY, NORTH-SOUTH FACILITIES					
D-16	West Davis Corridor Weber County Line to Antelope Drive (SR-127)	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 320 ft.	Freeway / 4.8 miles / SR-67 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$79,700,000 Phased - \$143,500,000
D-17	West Davis Corridor Antelope Drive (SR-127) to I-15/US-89/ Legacy Parkway	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 320 ft.	Freeway / 14.2 miles / SR-67 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$500,000,000 Phased - \$608,300,000
D-18	West Davis Corridor Weber County Line to Antelope Drive (SR-127)	Corridor Preservation ROW:2015 - 0 ft. / 2040 - 320 ft.	Freeway / 4.8 miles / SR-67 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$24,300,000 Phased - \$29,600,000
D-20	2000 West (SR-108) Weber County Line to 300 North	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 110 ft.	Principal Arterial / 2.5 miles / SR-108 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$65,900,000 Phased - \$80,200,000
D-54	2000 West (SR-108) 300 North to Antelope Drive (SR-108)	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 110 ft.	Principal Arterial / 2.0 miles / SR-108 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$52,700,000 Phased - \$64,200,000
D-21	2000 West Antelope Drive (SR-108) to West Davis Corridor	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 99 ft.	Collector / 1.4 miles / Local Bike Routes: Base	Needed Phase - 3 Funded Phase - 3	2015 - \$13,200,000 Phased - \$32,600,000
D-55	1000 West 800 North to Antelope Drive	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Collector / 2.5 miles / Local Bike Routes: Base/Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$6,300,000 Phased - \$7,600,000
D-56	500 West Antelope Drive to 1980 South	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 84 ft.	Collector / 0.5 miles / Local Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$6,100,000 Phased - \$7,400,000
D-57	500 West 1980 South to Gordon Avenue (2700 South)	Operational ROW:2015 - 84 ft. / 2040 - 84 ft.	Collector / 0.5 miles / Local Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$1,300,000 Phased - \$1,500,000
D-22	3650 West (Layton) 700 North to Gentile Street	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 99 ft.	Collector / 0.8 miles / Local Bike Routes: Base	Needed Phase - 3 Funded Phase - 3	2015 - \$10,300,000 Phased - \$25,500,000
D-23	2700 West (Layton) 650 North to Layton Parkway	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 99 ft.	Collector / 1.2 miles / Local Bike Routes: None/Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$15,500,000 Phased - \$18,900,000
D-58	Main Street / State Street (SR-126) 300 North to Layton Parkway	Operational ROW:2015 - 100 ft. / 2040 - 100 ft.	Principal Arterial / 5.5 miles / SR-126 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$13,800,000 Phased - \$16,700,000
D-59	1000 East SR-193 to Antelope Drive	Operational ROW:2015 - 66 ft. / 2040 - 70 ft.	Collector / 1.0 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$6,500,000 Phased - \$7,900,000

D-25	I-15 Weber County Line to Hill Field Road (SR-232)	Widening: 6 to 6+HOT lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 6.3 miles / I-15 Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$109,600,000 Phased - \$133,300,000
D-60	University Park Boulevard SR-193 to Antelope Drive	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Collector / 1.0 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 2	2015 - \$2,500,000 Phased - \$4,500,000
D-27	Church Street Extension I-84 to SR-193	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 66 ft.	Minor Arterial / 4.6 miles / Local Bike Routes: Base	Needed Phase - 3 Funded Phase - 3	2015 - \$100,400,000 Phased - \$247,500,000
D-61	Redwood Road Center Street (North Salt Lake) to Salt Lake County Line	Widening: 2 to 4 lanes ROW:2015 - 110 ft. / 2040 - 110 ft.	Principal Arterial / 1.4 miles / SR-68 Bike Routes: Base/Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$10,800,000 Phased - \$13,100,000
D-24	Redwood Road 500 South to 2600 South	Widening: 2 to 4 lanes ROW:2015 - 100 ft. / 2040 - 110 ft.	Principal Arterial / 1.6 miles / SR-68 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$13,200,000 Phased - \$23,700,000
D-69	1250 West / 650 West 1900 North to 1275 North	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 66 ft.	Collector / 1.0 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$8,800,000 Phased - \$10,700,000
D-28	US-89 I-84 to Antelope Drive	Widening: 4 to 6 lanes ROW:2015 - 120 ft. / 2040 - 150 ft.	Freeway / 5.5 miles / US-89 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$107,700,000 Phased - \$265,500,000
D-29	US-89 Antelope Drive to I-15 (Farmington)	Widening: 4 to 6 lanes ROW:2015 - 120 ft. / 2040 - 150 ft.	Freeway / 8.9 miles / US-89 Bike Routes: Base/Priority	Needed Phase - 2 Funded Phase - 3	2015 - \$174,300,000 Phased - \$429,600,000
D-71	US-89 Oak Hills Drive to Nicholls Road	New Construction: 0 to 2 lanes ROW:2015 - 60 ft. / 2040 - 60 ft.	Freeway / 2.5 miles / US-89 Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$13,300,000 Phased - \$16,100,000
D-62	Farmington Frontage Road Connection Lagoon Drive to 200 West (SR-227)	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 70 ft.	Collector / 0.1 miles / Local Bike Routes: None	Needed Phase - 2 Funded Phase - 2	2015 - \$1,000,000 Phased - \$1,800,000
DAVIS COUNTY, SPOT FACILITIES					
D-30	1800 North Overpass @ 500 West Railroad Crossing	New Construction: 2 to 4 lanes ROW:2015 - ft. / 2040 - ft.	Minor Arterial / SR-37 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$20,000,000 Phased - \$24,300,000
D-31	I-15 Interchange @ 1800 North	New Construction	Freeway / I-15 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$45,000,000 Phased - \$54,700,000
D-32	I-15 Interchange @ 650 North	Upgrade	Freeway / I-15 Bike Routes: Base	Needed Phase - 1 Funded Phase - 2	2015 - \$15,000,000 Phased - \$27,000,000
D-63	I-15 Interchange @ SR-193	Upgrade	Freeway / I-15 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$45,000,000 Phased - \$54,700,000
D-33	I-15 Interchange @ Antelope Drive	Upgrade	Freeway / I-15 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$15,000,000 Phased - \$27,000,000
D-34	1200 North Overpass (Layton) @ I-15	New Construction: 0 to 4 lanes	Collector / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$20,000,000 Phased - \$24,300,000
D-36	I-15 Interchange @ Shepard Lane	New Construction	Freeway / I-15 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$45,000,000 Phased - \$54,800,000
D-37	I-15 Interchange @ Parrish Lane	Upgrade	Freeway / I-15 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$15,000,000 Phased - \$27,000,000
D-64	Porter Lane Overpass @ I-15	New Construction: 0 to 2 lanes	Collector / Local Bike Routes: None	Needed Phase - 3 Funded Phase - 3	2015 - \$20,000,000 Phased - \$49,300,000
D-38	I-15 Interchange @ 500 West	Upgrade	Freeway / I-15 Bike Routes: None	Needed Phase - 3 Funded Phase - U	2015 - \$15,000,000 Phased - \$37,000,000
D-65	500 South @ 800 West Railroad Crossing	New Construction	Minor Arterial / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$20,000,000 Phased - \$36,000,000
D-41	2600 South / 1100 North @ 1050 West Railroad Crossing	New Construction	Minor Arterial / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$20,000,000 Phased - \$36,000,000
D-42	Legacy Parkway Interchange @ Center Street	New Construction	Freeway / SR-67 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$38,000,000 Phased - \$93,700,000
D-66	Center Street @ 300 West Railroad Crossing	New Construction	Collector / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$20,000,000 Phased - \$36,000,000
D-43	I-215 Interchange @ Legacy Parkway	Upgrade	Freeway / I-215 Bike Routes: None	Needed Phase - 3 Funded Phase - U	2015 - \$107,000,000 Phased - \$263,700,000

D-67	I-215 Interchange @ Redwood Road	Upgrade	Freeway / I-215 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$15,000,000 Phased - \$18,200,000
D-44	I-215 Interchange @ I-15 / US-89	Upgrade	Freeway / I-215 Bike Routes: None	Needed Phase - 3 Funded Phase - U	2015 - \$107,000,000 Phased - \$263,700,000
D-68	I-215 Interchange @ I-15 / US-89	Intermediate Int. Improvements	Freeway / I-215 Bike Routes: None	Needed Phase - 1 Funded Phase - 2	2015 - \$15,000,000 Phased - \$27,000,000
D-45	US-89 Interchange @ Antelope Drive	New Construction	Freeway / US-89 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$38,000,000 Phased - \$68,400,000
D-46	US-89 Interchange @ Gordon Avenue	New Construction	Freeway / US-89 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$38,000,000 Phased - \$68,400,000
D-47	US-89 Interchange @ Oak Hills Drive (SR-109)	New Construction	Freeway / US-89 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$33,000,000 Phased - \$59,400,000
D-48	US-89 Interchange @ 400 North (Fruit Heights)	New Construction	Freeway / US-89 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$33,000,000 Phased - \$40,100,000
D-49	Nicholl's Road Overpass @ US-89	New Construction: 0 to 2 lanes	Collector / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$15,000,000 Phased - \$18,200,000
WEBER COUNTY, EAST-WEST FACILITIES					
W-1	Skyline Drive (North) US-89 to 450 East	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Collector / 3.2 miles / Local Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$39,200,000 Phased - \$47,700,000
W-2	Skyline Drive (North) 450 East to 2600 North	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Collector / 3.1 miles / Local Bike Routes: Base/Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$37,900,000 Phased - \$68,300,000
W-45	2700 North 4200 West to I-15	Operational ROW:2015 - 80 ft. / 2040 - 80 ft.	Minor Arterial / 3.2 miles / SR-134 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$8,000,000 Phased - \$14,400,000
W-67	2700 North I-15 to US-89	Widening ROW:2015 - 106 ft. / 2040 - 106 ft.	Principal Arterial / 0.9 miles / SR-134 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$7,900,000 Phased - \$9,600,000
W-46	2550 North US-89 to Washington Boulevard/400 East	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Collector / 1.7 miles / Local Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$4,300,000 Phased - \$5,200,000
W-3	1700 North US-89 to Washington Boulevard/400 East	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 66 ft.	Collector / 1.1 miles / Local Bike Routes: None	Needed Phase - 2 Funded Phase - 2	2015 - \$9,700,000 Phased - \$17,400,000
W-4	Larsen Lane US-89/Wall Avenue to Washington Boulevard/400 East	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 89 ft.	Minor Arterial / 0.5 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$4,500,000 Phased - \$5,400,000
W-47	Pioneer Road (400 North) 4700 West to I-15	Operational ROW:2015 - 88 ft. / 2040 - 88 ft.	Collector / 3.9 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$9,800,000 Phased - \$17,600,000
W-5	Pioneer Road (400 North) I-15 to 1200 West	Re-stripe: 2 to 4 lanes ROW:2015 - 110 ft. / 2040 - 110 ft.	Collector / 0.9 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$0 Phased - \$0
W-48	North Street 530 West to Monroe Boulevard	Operational ROW:2015 - 70 ft. / 2040 - 70 ft.	Collector / 1.6 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$4,000,000 Phased - \$4,900,000
W-49	1200 South 11000 West to West Weber Corridor	Operational ROW:2015 - 110 ft. / 2040 - 110 ft.	Principal Arterial / 4.9 miles / Local Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$12,300,000 Phased - \$14,900,000
W-6	1200 South West Weber Corridor to 4700 West	Widening: 2 to 4 lanes ROW:2015 - 76 ft. / 2040 - 110 ft.	Principal Arterial / 2.3 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$33,800,000 Phased - \$41,200,000
W-7	1200 South (SR-39) 4700 West to I-15	Widening: 2 to 4 lanes ROW:2015 - 76 ft. / 2040 - 110 ft.	Principal Arterial / 4.0 miles / SR-39 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$50,000,000 Phased - \$60,800,000
W-50	17th Street 1200 West to Wall Avenue	Operational ROW:2015 - 70 ft. / 2040 - 70 ft.	Collector / 1.6 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$4,000,000 Phased - \$4,900,000
W-8	20th Street Wall Avenue to Harrison Boulevard	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Minor Arterial / 1.6 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$4,000,000 Phased - \$4,900,000
W-9	21st Street Wall Avenue to Adams Avenue	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Minor Arterial / 0.6 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$1,500,000 Phased - \$1,800,000
W-10	24th Street I-15 to Lincoln Avenue	Widening: 2 to 4 lanes ROW:2015 - 86 ft. / 2040 - 110 ft.	Minor Arterial / 1.6 miles / SR-53 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$114,300,000 Phased - \$205,900,000

W-51	2550 South 4700 West to I-15	Operational ROW:2015 - 89 ft. / 2040 - 89 ft.	Collector / 4.6 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$11,500,000 Phased - \$14,000,000
W-52	3300 South 4700 West to Midland Drive	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Collector / 3.4 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$8,500,000 Phased - \$10,300,000
W-13	4000 South (SR-37) West Weber Corridor to Midland Drive	Widening: 2 to 4 lanes ROW:2015 - 86 ft. / 2040 - 110 ft.	Minor Arterial / 2.8 miles / SR-37 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$25,100,000 Phased - \$30,500,000
W-53	4000 South (SR-37) Midland Drive to 1900 West (SR-126)	Operational ROW:2015 - 110 ft. / 2040 - 110 ft.	Minor Arterial / 1.2 miles / SR-37 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$3,000,000 Phased - \$3,600,000
W-12	Country Hills Drive Adams Avenue to Gramercy Avenue	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 99 ft.	Minor Arterial / 0.6 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$5,700,000 Phased - \$6,900,000
W-15	4400 South 1900 West (SR-126) to 700 West	Operational ROW:2015 - 110 ft. / 2040 - 110 ft.	Collector / 1.6 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$4,000,000 Phased - \$4,900,000
W-17	5600 South / 5500 South West Weber Corridor to 3500 West	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 86 ft.	Principal Arterial / 2.1 miles / SR-97 Bike Routes: Base/Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$18,400,000 Phased - \$33,100,000
W-18	5600 South 3500 West to 1900 West (SR-126)	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 86 ft.	Principal Arterial / 2.0 miles / SR-97 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$37,500,000 Phased - \$67,600,000
W-54	5600 South 1900 West (SR-126) to I-15	Widening: 5 to 6 lanes ROW:2015 - 106 ft. / 2040 - 106 ft.	Principal Arterial / 0.2 miles / SR-97 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$1,500,000 Phased - \$1,900,000
W-55	Falcon Hill Road Connector I-15 to 1150 West	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Collector / 2.4 miles / Local Bike Routes: None	Needed Phase - 3 Funded Phase - 3	2015 - \$29,400,000 Phased - \$72,400,000
WEBER COUNTY, NORTH-SOUTH FACILITIES					
W-19	West Weber Corridor I-15 (North) to 4000 South	Corridor Preservation ROW:2015 - 0 ft. / 2040 - 220 ft.	Freeway / 14.8 miles / SR-67 Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$51,600,000 Phased - \$62,700,000
W-20	West Weber Corridor 4000 South to Davis County Line	Corridor Preservation ROW:2015 - 0 ft. / 2040 - 220 ft.	Freeway / 2.7 miles / SR-67 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$9,400,000 Phased - \$11,400,000
W-21	West Weber Corridor 4000 South to 5500 South	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 220 ft.	Freeway / 1.8 miles / SR-67 Bike Routes: Priority	Needed Phase - 2 Funded Phase - U	2015 - \$13,900,000 Phased - \$34,200,000
W-22	West Weber Corridor 5500 South to Davis County Line	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 220 ft.	Freeway / 1.0 miles / SR-67 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$16,600,000 Phased - \$29,900,000
W-24	4700 West 4600 South to 4800 South	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 110 ft.	Collector / 0.3 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$4,100,000 Phased - \$4,900,000
W-66	4700 West 4800 South to 5500 South	Operational ROW:2015 - 66 ft. / 2040 - 66 ft.	Collector / 0.9 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$23,000,00 Phased - \$2,700,000
W-25	3500 West 1200 South to Midland Drive	Operational ROW:2015 - 110 ft. / 2040 - 110 ft.	Collector / 4.6 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$11,500,000 Phased - \$20,700,000
W-56	Midland Drive (SR-108) I-15 to 1900 West (SR-126)	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Minor Arterial / 1.4 miles / SR-108 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$17,100,000 Phased - \$20,800,000
W-14	Midland Drive (SR-108) 1900 West (SR-126) to Hinkley Drive (SR-79)	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 110 ft.	Principal Arterial / 0.9 miles / SR-108 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$23,700,000 Phased - \$42,700,000
W-26	3500 West / Midland Drive (SR-108) 4275 South to Davis County Line	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 110 ft.	Principal Arterial / 2.5 miles / SR-108 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$65,900,000 Phased - \$80,200,000
W-27	1900 West / 2000 West (SR-126) 2700 North to 1200 South	Widening: 2 to 4 lanes ROW:2015 - 66 ft. / 2040 - 150 ft.	Principal Arterial / 4.3 miles / SR-126 Bike Routes: Priority	Needed Phase - 2 Funded Phase - U	2015 - \$56,900,000 Phased - \$140,300,000
W-28	1900 West (SR-126) Riverdale Road to 5600 South	Widening: 4 to 6 lanes ROW:2015 - 100 ft. / 2040 - 150 ft.	Principal Arterial / 0.4 miles / SR-126 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$4,600,000 Phased - \$5,600,000
W-29	I-15 Box Elder County Line to 2700 North	Widening: 4 to 6 lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 2.4 miles / I-15 Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$13,700,000 Phased - \$16,700,000
W-30	I-15 I-84 to Davis County Line	Widening: 6 to 6+HOT lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 2.9 miles / I-15 Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$50,400,000 Phased - \$61,400,000
W-57	1200 West 12th Street to 17th Street	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Collector / 0.5 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$1,300,000 Phased - \$1,500,000

W-58	1200 West 17th Street to 21st Street	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Collector / 0.6 miles / Local Bike Routes: None	Needed Phase - 2 Funded Phase - 2	2015 - \$7,300,000 Phased - \$13,200,000
W-59	150 East 2700 North to Larsen Lane	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 70 ft.	Collector / 2.5 miles / Local Bike Routes: None	Needed Phase - 2 Funded Phase - 3	2015 - \$25,000,000 Phased - \$61,600,000
W-60	400 / 450 East Skyline Drive to 3700 North	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 70 ft.	Collector / 0.4 miles / Local Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$4,000,000 Phased - \$4,900,000
W-33	400 / 450 East 3300 North to 2600 North	Widening: 2 to 4 lanes ROW:2015 - 68 ft. / 2040 - 89 ft.	Collector / 0.8 miles / Local Bike Routes: Base	Needed Phase - 1 Funded Phase - 1	2015 - \$7,000,000 Phased - \$8,600,000
W-61	Washington Boulevard 12th Street to Riverdale Road	Operational ROW:2015 - 150 ft. / 2040 - 150 ft.	Principal Arterial / 3.1 miles / SR-89 Bike Routes: None/Base/Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$7,800,000 Phased - \$14,000,000
W-34	Monroe Boulevard 3100 North to 1300 North	New Construction: 0/2 to 4 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Minor Arterial / 2.4 miles / Local Bike Routes: None/Base	Needed Phase - 2 Funded Phase - 2	2015 - \$29,400,000 Phased - \$52,900,000
W-35	Harrison Boulevard / Mountain Road 2600 North to 12th Street	Operational ROW:2015 - 86 ft. / 2040 - 86 ft.	Collector / 4.7 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$11,800,000 Phased - \$14,300,000
W-36	Harrison Boulevard 12th Street to Country Hills Drive	Operational ROW:2015 - 110 ft. / 2040 - 110 ft.	Principal Arterial / 3.9 miles / SR-203 Bike Routes: None/Base/Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$9,800,000 Phased - \$11,900,000
W-37	Harrison Boulevard Country Hills Drive to US-89	Widening: 4 to 6 lanes ROW:2015 - 99 ft. / 2040 - 123 ft.	Principal Arterial / 2.3 miles / SR-203 Bike Routes: Base/Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$23,200,000 Phased - \$41,700,000
W-38	US-89 Harrison Boulevard to I-84	Widening: 4 to 6 lanes ROW:2015 - 120 ft. / 2040 - 150 ft.	Freeway / 1.7 miles / US-89 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$33,300,000 Phased - \$60,000,000
W-39	Skyline Drive 1. Quail Run Drive to 4600 South 2. Ogden City Limits to Megan Circle	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Collector / 0.5 miles / Local Bike Routes: Base/Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$6,400,000 Phased - \$7,700,000

WEBER COUNTY, SPOT FACILITIES

W-62	I-15 Interchange @ 2700 North	Upgrade	Freeway / I-15 Bike Routes: Priority	Needed Phase - 2 Funded Phase - 3	2015 - \$15,000,000 Phased - \$37,000,000
W-63	I-15 Interchange @ Pioneer Road	Upgrade	Freeway / I-15 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$15,000,000 Phased - \$37,000,000
W-64	400 North @ 530 West Railroad Crossing	New Construction	Collector / Local Bike Routes: Base	Needed Phase - 1 Funded Phase - 2	2015 - \$20,000,000 Phased - \$36,000,000
W-41	I-15 Interchange @ 24th Street	Upgrade	Freeway / I-15 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$45,000,000 Phased - \$54,700,000
W-65	4000 South @ 2500 West Railroad Crossing	New Construction	Minor Arterial / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$20,000,000 Phased - \$36,000,000
W-43	I-15 Interchange @ 5600 South	Upgrade	Freeway / I-15 Bike Routes: Base	Needed Phase - 1 Funded Phase - 2	2015 - \$15,000,000 Phased - \$27,000,000
W-44	US-89 Interchange @ I-84	Upgrade	Freeway / US-89 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$107,000,000 Phased - \$263,700,000

BOX ELDER COUNTY, EAST-WEST FACILITIES

B-1	Wilson Lane (1500 North) Promontory Road (SR-13)/Watery Lane to 950 West	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 86 ft.	Minor Arterial / 1.0 miles / Local Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$12,200,000 Phased - \$14,900,000
B-2	1200 South Commerce Way to US-89	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 66 ft.	Collector / 0.5 miles / Local Bike Routes: None	Needed Phase - 3 Funded Phase - 3	2015 - \$4,400,000 Phased - \$10,800,000

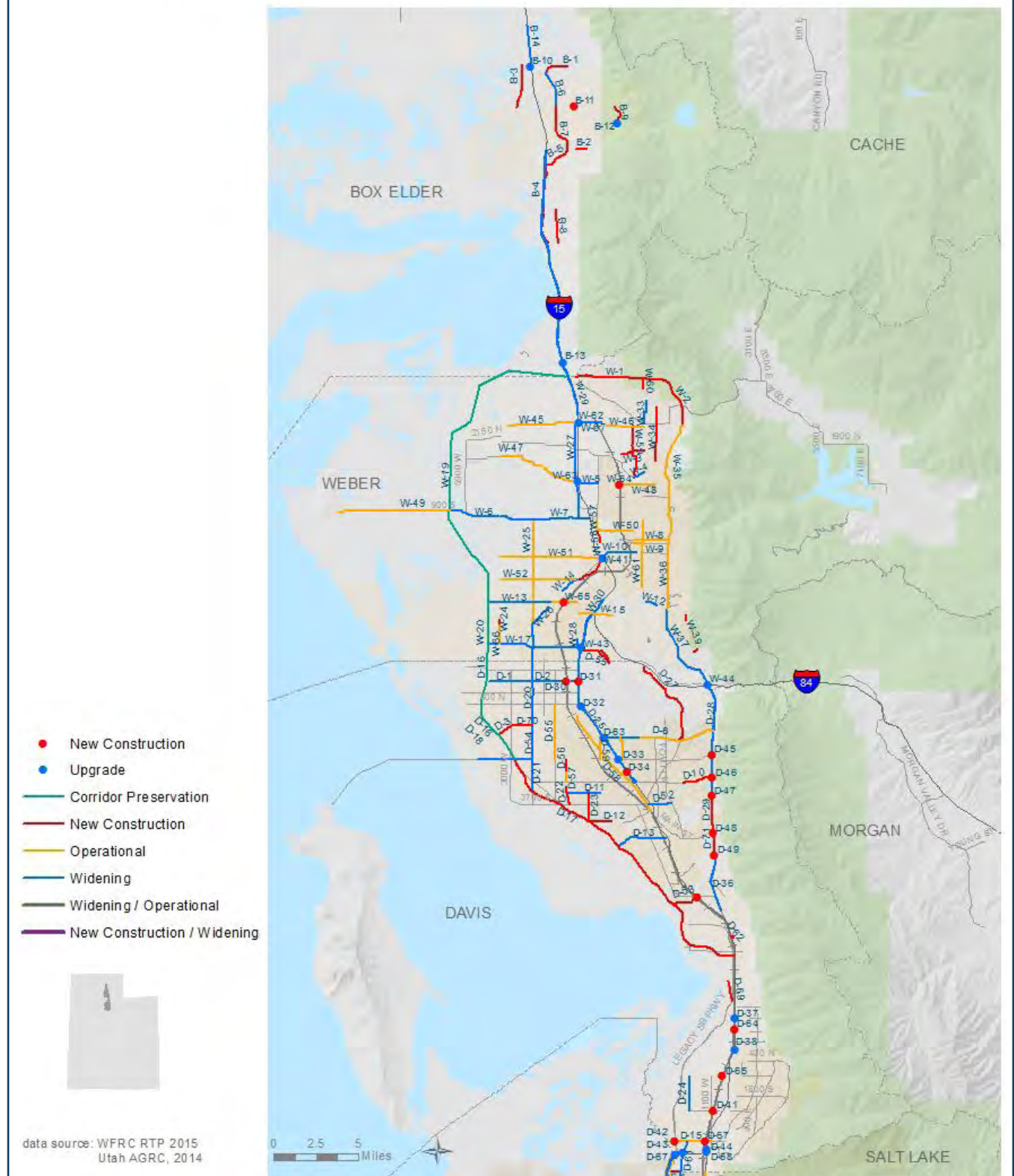
BOX ELDER COUNTY, NORTH-SOUTH FACILITIES

B-3	2400 West Promontory Road (SR-13) to Forest Street	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 80 ft.	Collector / 2.0 miles / Local Bike Routes: None	Needed Phase - 3 Funded Phase - 3	2015 - \$51,000,000 Phased - \$125,800,000
B-14	I-15 3000 North to US-91	Widening: 4 to 6 lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 5.4 miles / I-15 Bike Routes: None	Needed Phase - 3 Funded Phase - U	2015 - \$97,200,000 Phased - \$239,600,000
B-4	I-15 US-91 to Weber County Line	Widening: 4 to 6 lanes ROW:2015 - 328 ft. / 2040 - 328 ft.	Freeway / 9.5 miles / I-15 Bike Routes: None	Needed Phase - 1 Funded Phase - 1	2015 - \$54,300,000 Phased - \$66,000,000
B-5	I-15 Frontage Road US-91 to 750 North (SR-315)	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 60 ft.	Collector / 5.1 miles / Local Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$63,200,000 Phased - \$113,800,000
B-6	1200 West Promontory Road (SR-13) to Forest Street	Widening: 2 to 4 lanes ROW:2015 - 106 ft. / 2040 - 106 ft.	Collector / 1.7 miles / Local Bike Routes: Priority	Needed Phase - 2 Funded Phase - 2	2015 - \$41,000,000 Phased - \$73,900,000
B-7	1200 West Forest Street to US-91	New Construction: 0 to 4 lanes ROW:2015 - 0 ft. / 2040 - 106 ft.	Collector / 1.8 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$39,600,000 Phased - \$48,200,000
B-8	Perry Street 3600 South to 750 North (SR-315)	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 66 ft.	Collector / 1.5 miles / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 1	2015 - \$13,200,000 Phased - \$16,000,000
B-9	Highland Boulevard Karleen Drive to US-89 / US-91	New Construction: 0 to 2 lanes ROW:2015 - 0 ft. / 2040 - 66 ft.	Collector / 0.8 miles / Local Bike Routes: Priority	Needed Phase - 2 Funded Phase - 3	2015 - \$19,000,000 Phased - \$46,900,000

BOX ELDER COUNTY, SPOT FACILITIES

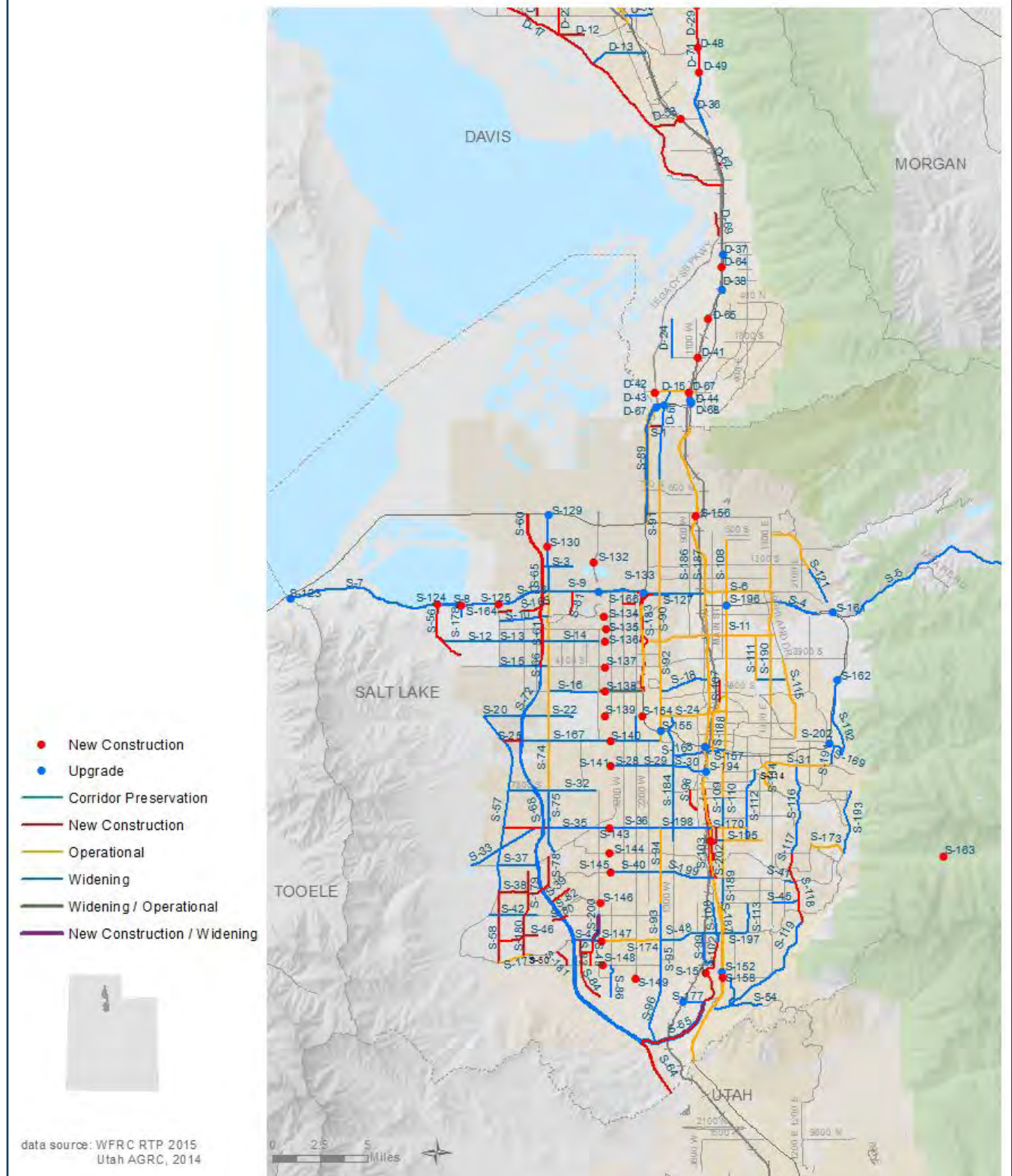
B-10	I-15 Interchange @ Promontory Road (SR-13)	Upgrade	Freeway / I-15 Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$15,000,000 Phased - \$27,000,000
B-11	Forest Street Overpass @ 900 West Railroad Crossing	New Construction	Minor Arterial / Local Bike Routes: Priority	Needed Phase - 1 Funded Phase - 2	2015 - \$20,000,000 Phased - \$36,000,000
B-12	US-89 / US-91 Interchange @ 200 South (SR-90)	Upgrade	Principal Arterial / SR-91 Bike Routes: Priority	Needed Phase - 3 Funded Phase - U	2015 - \$45,000,000 Phased - \$110,900,000
B-13	I-15 Interchange @ SR-126	Upgrade	Freeway / I-15 Bike Routes: Priority	Needed Phase - 2 Funded Phase - U	2015 - \$15,000,000 Phased - \$37,000,000

MAP 7 - 1

2015 - 2040 WASATCH FRONT REGIONAL TRANSPORTATION PLAN
HIGHWAY PROJECTS BY TYPE: DAVIS, WEBER AND BOX ELDER COUNTIES

MAP 7 - 2

2015 - 2040 WASATCH FRONT REGIONAL TRANSPORTATION PLAN
HIGHWAY PROJECTS BY TYPE: SALT LAKE COUNTY



2015 - 2040 WASATCH FRONT REGIONAL TRANSPORTATION PLAN HIGHWAY PROJECTS BY PHASE: DAVIS, WEBER AND BOX ELDER COUNTIES

Phase 1: 2015 - 2024

Phase 2: 2025 - 2034

Phase 3: 2035 - 2040

Unfunded

Phase 1: 2015 - 2024

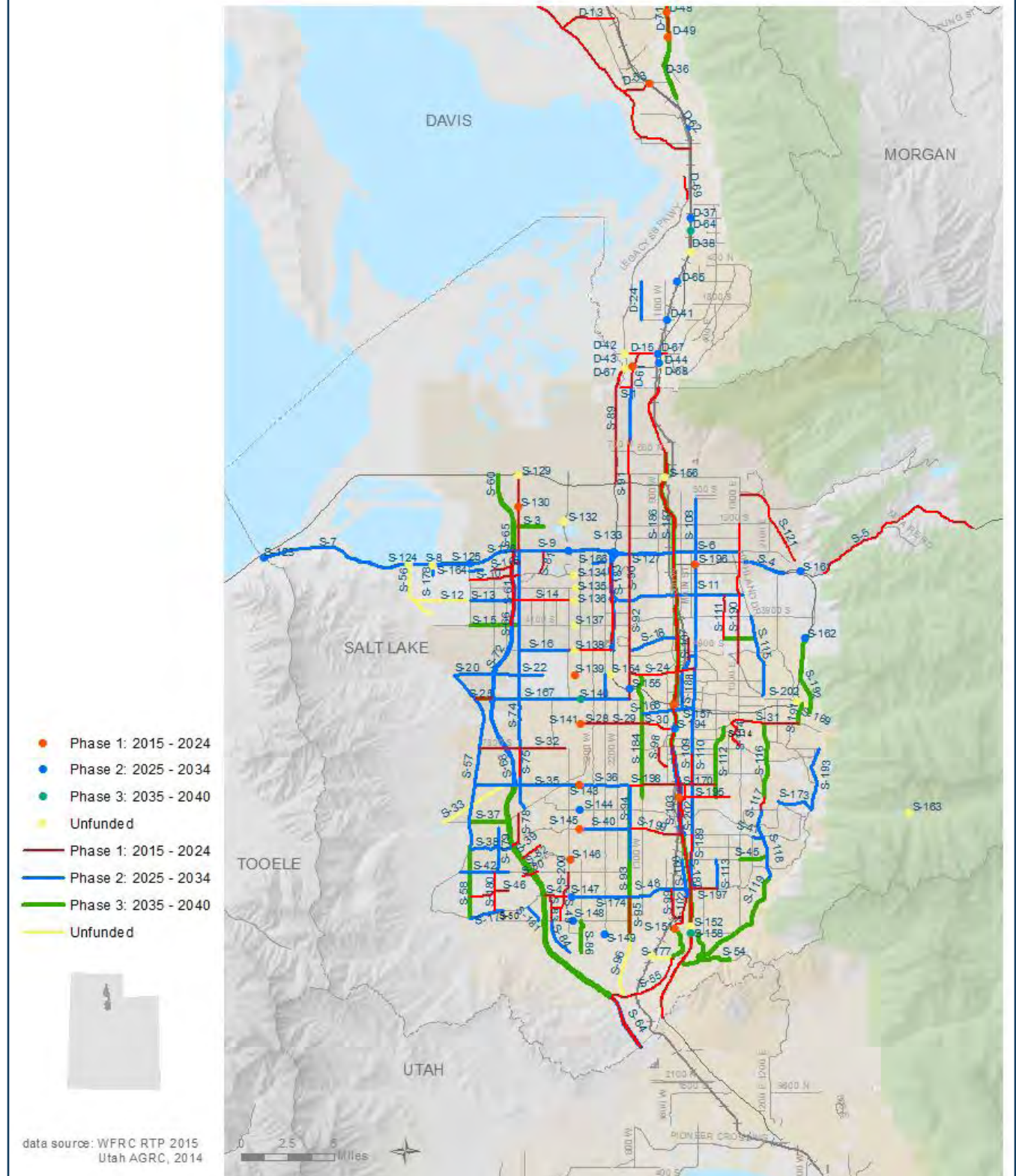
Phase 2: 2025 - 2034

Phase 3: 2035 - 2040

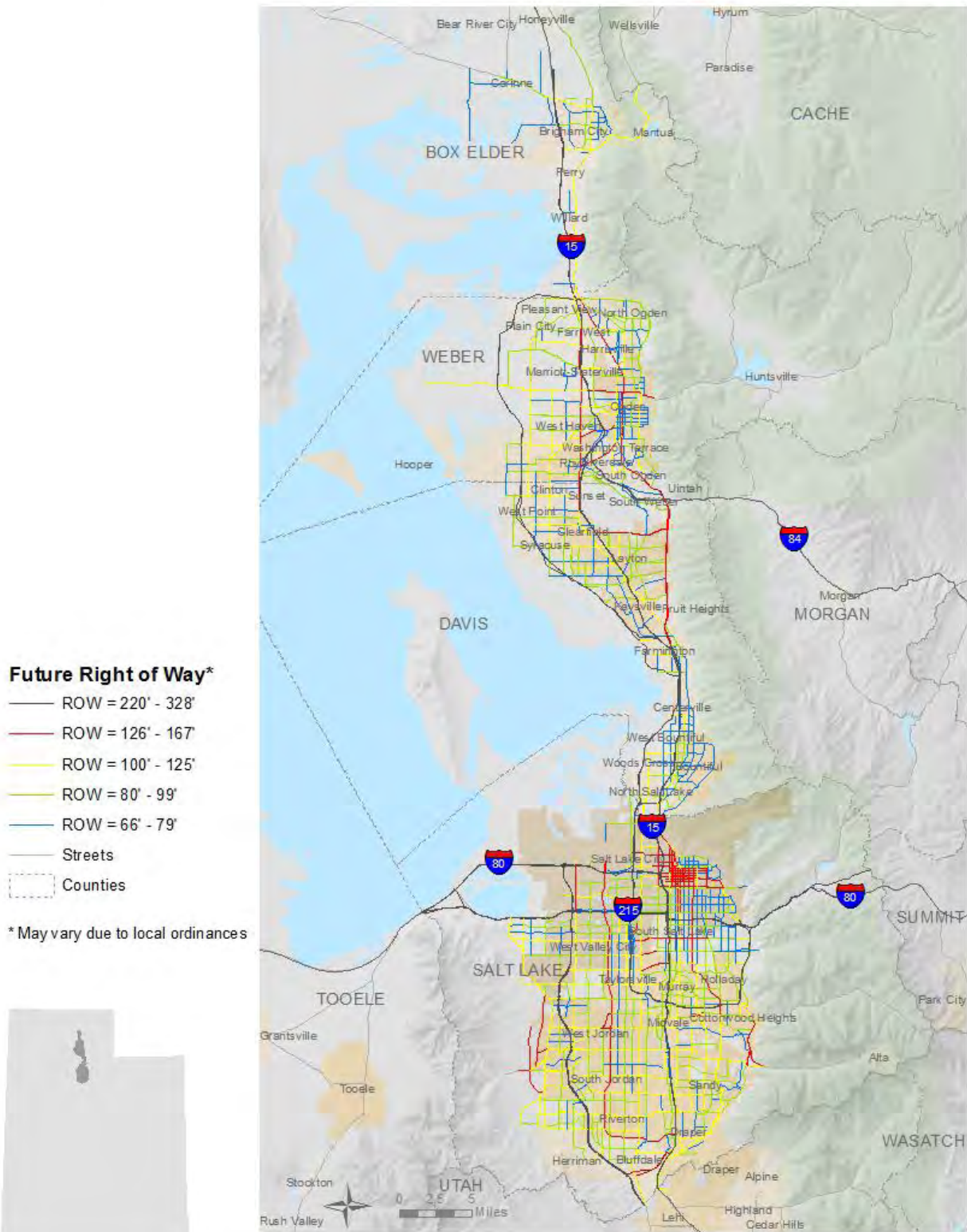
Unfunded

data source: WFRCTP 2015
Utah AGRC, 2014

MAP 7 - 4







2015 - 2040 WASATCH FRONT REGIONAL TRANSPORTATION PLAN
HIGHWAY PROJECTS BY PHASE: SALT LAKE COUNTY

MAP 7 - 5

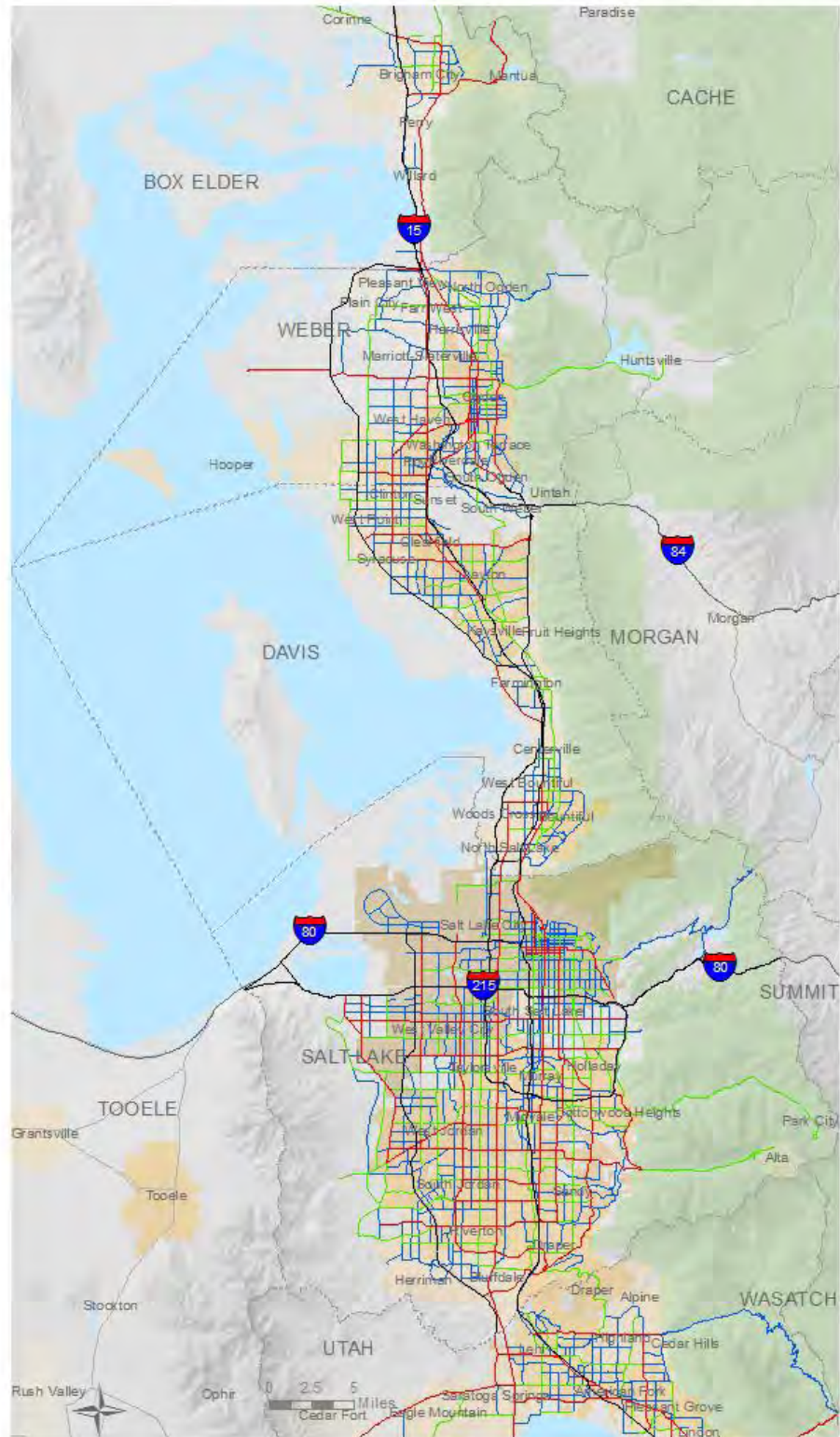
2015 - 2040 WASATCH FRONT REGIONAL TRANSPORTATION PLAN
FUTURE RIGHT-OF-WAY

MAP 7 - 6

2015 - 2040 WASATCH FRONT REGIONAL TRANSPORTATION PLAN
FUTURE FUNCTIONAL CLASSIFICATION**Future Classification***

-  Principal Arterial
-  Minor Arterial
-  Collector
-  Freeway
-  Streets
-  Counties

* May vary due to local ordinances



Data Source: UDOT, WFRC

RESOLUTION OF THE WASATCH FRONT REGIONAL COUNCIL APPROVING AMENDMENT 6 TO THE WASATCH FRONT RTP: 2015-2040 WITH AIR QUALITY MEMORANDUM 38

PREPARED BY

Wasatch Front Regional Council

CONTACT

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AMENDMENT NUMBER 6 PROJECT OVERVIEWS

UTAH DEPARTMENT OF TRANSPORTATION

Cost: \$135 Million

1. Widening on I-15

This request is for the widening of one additional lane northbound on I-15 from Bangerter Highway to I-215. This additional lane is needed to ensure the safe movement of autos as they change lanes along I-15. The additional lane is also part of the planned I-15 connector / distributor system. This I-15 improvement project is funded through the Transportation Investment Fund (TIF) and is a new Phase 1 project.

WEST VALLEY CITY AND KEARNS

Cost: \$15 Million

2. Widening of 4700 South

West Valley City is requesting an amendment to the 2015 RTP that would allow for the widening of 4700 South to five lanes from 4000 West to 5600 West. This project allows for capacity improvements for east / west traffic flow. The street profile would include two travel lanes in both directions with a center turn lane, uniform geometrics and horizontal geometry, a four-foot shoulder, and the addition of bicycles lanes. This project is multi-jurisdictional with possible funding provided by STP and local sources. This amendment would move this project from Phase 2 to Phase 1 in the RTP.

BLUFFDALE CITY

Cost: \$6.12 Million

3. Operational Improvements on 14600 South

This project calls for operational improvements on 14600 South from Redwood Road to Porter Rockwell Blvd. The amendment redefines the project from widening to operation improvements and the new construction of a roadway segment near Redwood Road. This major collector connects Redwood Road to I-15 at the 14600 South interchange. In addition to operational improvements, such as a center turn lanes and upgrades to existing roadway geometrics, this project also includes bicycle and pedestrian elements. It will help link communities with recreational trails, such as the Jordan River Parkway. This amendment modifies the scope of a project and moves an unfunded project to Phase 1 with possible funding sources from Salt Lake County corridor preservation money, STP, and local funds.

SALT LAKE CITY

Cost: \$21.3 Million

4. New Construction of the 700 South and a new Railroad Bridge

Salt Lake City is requesting an amendment that will allow for the new construction of 700 South from 5600 West to approximately 5300 West. This project also includes an upgrade to the existing Union Pacific railroad bridge on 700 South near 4800 West. The new bridge will improve safety for autos and trains. The realignment of 700 South will move the intersection approximately 400 feet to the north, which will improve sight lines and safety. Funding sources include possible Union Pacific money, Salt Lake City funds, Salt Lake County funds, or other grants. This Phase 1 project is new to the RTP.

HOOVER CITY

Cost: \$3.9 Million

5. Operation Improvements on 5500 West

This proposed amendment calls for operational improvements on 5500 West from 3500 South to 5500 South, along with a functional classification change to a major collector.

The widening of a narrow two-lane roadway will include 12-foot lanes, paved shoulders, curb, gutter and sidewalk, and will address near and future traffic and safety concerns in a growing community. Potential funding sources include STP and local money. This is a new Phase 1 RTP project.

PLAIN CITY

Cost: \$7.4 Million

6. Operation Improvements on 2800 North / North Plain City Road

A request to amend the RTP from Plain City is asking for operational improvements on 2800 North and North Plain City Road from 4200 West to SR-126. Also requested is a change in functional classification to a Minor Collector. This project will provide for increased safety with the addition of a shoulder and the reconfiguration of the street cross-section. The project is being developed in close cooperation with Farr West City. Funding for these improvements includes possible STP and local sources. This Phase 1 project is new to the RTP.

Air Quality Memorandum

REPORT NO. 38 - DRAFT

DATE April 10, 2018

SUBJECT CONFORMITY ANALYSIS FOR AMENDMENT #6 OF THE WFRC 2015-2040 REGIONAL TRANSPORTATION PLAN.

ABSTRACT The FAST Act and the Clean Air Act Amendments (CAAA) require that all regionally significant highway and transit projects in air quality non-attainment and maintenance areas be derived from a “conforming” Regional Transportation Plan and Transportation Improvement Program. A conforming Plan or Program is one that has been analyzed for emissions of controlled air pollutants and found to be within emission limits established in the State Implementation Plan (SIP) or within guidelines established by the Environmental Protection Agency (EPA) until such time that a SIP is approved. This conformity analysis is made by the Wasatch Front Regional Council (WFRC), as the Metropolitan Planning Organization for the Salt Lake- West Valley and Ogden-Layton Urbanized Areas, and submitted to the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) for their concurrence. This conformity analysis is being prepared according to the transportation conformity rulemakings promulgated by the EPA as of March 2010 and according to FHWA final rulemakings found in the FAST legislation. The EPA approved MOVES model for estimating vehicle emissions was used for this conformity analysis.

This conformity analysis addresses the emissions impact of the November 2017 amendments to 2015-2040 RTP which are described in detail in Appendix 4. The projected vehicle activity is based on Version 8.1 of the WFRC travel demand model and the 2012 Household Travel Survey of trip making activity. For a detailed description of projects included in the 2040 RTP, see http://www.wfrc.org/new_wfrc/index.php/projects/project-lists and select the link for “Highway Projects List” or “Transit Projects List”. Refer to Appendices 2 and 3 of this document for projects in Box Elder and Tooele Counties.

Wasatch Front Regional Council

295 North Jimmy Doolittle Road
Salt Lake City, Utah 84116

Based on the analysis presented in this document, the amended WFRC 2015-2040 RTP conforms to the State Implementation Plan or the Environmental Protection Agency interim conformity guidelines for all pollutants in applicable non-attainment or maintenance areas. Therefore, all transportation projects in Box Elder, Weber, Davis, Salt Lake, and Tooele Counties included in the amended 2015-2040 RTP are found to conform.

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A. Conformity Requirements

Conformity Process

Since the commencement of the federal transportation planning requirements in the late 1960s, further requirements (most recently the 2015 Fixing America's Surface Transportation Act (FAST) and the 1990 Clean Air Act Amendments) have added to the responsibilities and the decision making powers of local governments through the Metropolitan Planning Organization. The Wasatch Front Regional Council (WFRC) is the Metropolitan Planning Organization for the Salt Lake/West Valley and Ogden / Layton Urbanized Areas. This report summarizes WFRC's conformity analysis of the 2015-2040 RTP with the Division of Air Quality's State Implementation Plan (SIP) and the Environmental Protection Agency's interim conformity guidelines. This conformity analysis is subject to public and agency review, and requires the concurrence of the Federal Highway Administration and Federal Transit Administration.

In November, 1993, the Environmental Protection Agency and the U.S. Department of Transportation issued rules establishing the procedures to be used to show that transportation plans and programs conform to the SIP. The conformity rules establish that federal funds may not be used for transportation projects that add capacity in areas designated as "non-attainment (or maintenance) with respect to the National Ambient Air Quality Standards", until and unless a regional emissions analysis of the Plan and TIP demonstrates that the projects conform to the SIP. This restriction also applies to "regionally significant" transportation projects sponsored by recipients of federal funds even if the regionally significant transportation project uses local funds exclusively.

Davis and Salt Lake Counties, Salt Lake City, Ogden City and portions of Weber, Box Elder and Tooele Counties are designated as non-attainment (or maintenance) for one or more air pollutants. Specifically, there are four areas in the Wasatch Front region for which the conformity rules apply. These areas are listed in Table 1 below.

Table 1
Wasatch Front Region Non-attainment Designations

Area	Designation	Pollutant
Salt Lake City	Maintenance Area	Carbon Monoxide (CO)
Ogden City	Maintenance Area	Carbon Monoxide (CO)
	Moderate Non-Attainment Area	Particulate Matter (PM ₁₀)
Salt Lake County	Moderate Non-Attainment Area	Particulate Matter (PM ₁₀)
Salt Lake (including Davis, Salt Lake, and portions of Weber, Box Elder, and Tooele Counties)	Serious Non-Attainment Area	Particulate Matter (PM _{2.5})

The CAAA established requirements for conformity. These requirements are outlined in 40 CFR 93.109 and include the following:

- Latest planning assumptions
- Transportation Control Measures (TCM)
- Emissions budget
- Project from a conforming plan and TIP
- PM₁₀ control measures
- Latest emissions model
- Consultation
- Currently conforming plan and TIP
- CO and PM₁₀ “hot spots”

Each of these requirements will be discussed in the following paragraphs.

Latest Planning Assumptions

Current travel models are based on socioeconomic data and forecasts from local building permits, the Utah Division of Workforce Services, and the Governor’s Office of Management and Budget (GOMB). Base year socioeconomic data are for calendar year 2011. Forecasts of population and employment by traffic analysis zone were developed by WFRC in 2013 and are controlled to county-level forecasts published by GOMB in October, 2012.

Latest Emissions Model

The conformity analysis presented in this document is based on EPA mobile source emissions models: MOVES2014a for tailpipe emissions and AP-42 section 13.2.1 for paved road dust emissions. The application of these models will be discussed in greater detail in the Emissions Model section of this document.

Consultation Process

Section 105 of 40 CFR Part 93 (Conformity Rule) requires, among other things, interagency consultation in the development of conformity determinations. To satisfy this requirement, the State Division of Air Quality (DAQ) prepared a Conformity SIP to outline the consultation procedures to be used in air quality and transportation planning. The Conformity SIP also defines the membership of the Interagency Consultation Team (ICT) as representatives from DAQ, WFRC, Mountainland Association of Governments, Utah Department of Transportation, Utah Transit Authority, EPA, FHWA, and the FTA. The Conformity SIP has been approved by EPA. WFRC followed the consultation procedures as outlined in the Conformity SIP in the preparation of this conformity analysis. As part of the public involvement procedures referenced in the Conformity SIP, WFRC presented this report to the Regional Growth Committee for review and comment. The TransCom committee includes a member of the Utah Air Quality Board as well as representatives of UDOT, UTA, and FHWA. Management level staff members from the Utah Division of Air Quality are notified of meetings and agendas of the above committees. The Utah Division of Air Quality and other members of the ICT were also provided with a copy of this report during the public comment period for the 2015-2040 RTP.

This Conformity Analysis for the 2015-2040 RTP was made available for public inspection and comment for a 30-day period in accordance with EPA conformity regulations. This analysis was also posted on the WFRC website during the comment period. Notification of the comment period was sent by electronic mail to interested stakeholders. In addition, public comment was taken during various committee meetings of the Wasatch Front Regional Council.

TCM Implementation

A conformity analysis for the 2015-2040 RTP must certify that the RTP does not interfere with the implementation of any Transportation Control Measure (TCM) identified in the applicable State Implementation Plan (SIP). There is one TCM from the original SIP section for the 1-hour ozone standard which has been carried forward to the current ozone maintenance plan, even though the 1-hour ozone standard has been revoked. This TCM, the employer-based trip reduction program, applies to local, state, and federal government employers. The program emphasizes measures to reduce the drive-alone rate such as subsidized bus passes, carpooling, telecommuting, and flexible work schedules. UTA has in place the ECO pass discount for a number of large employers including the University of Utah and Weber State University. Ridesharing, telecommuting, and flexible work schedules are programs currently managed, promoted, or operated by UTA Rideshare and the UDOT Travelwise program. Congestion Mitigation and Air Quality (CMAQ) funds and other transportation funds are used to support these ongoing programs.

Emissions Budget

A comparison of mobile source emission estimates to emission budgets defined in the SIP is outlined in this document in Section D - Conformity Determination.

Currently Conforming Plan and TIP

The existing 2040 RTP for the Wasatch Front Area conforms to State air quality goals and objectives as noted in a letter from FHWA and FTA dated March 7, 2018. The existing 2018-2023 TIP for the Wasatch Front Area was also found to conform and this was noted in a letter from FHWA and FTA dated September 11, 2017.

Projects from a Conforming Plan and TIP

TIP Time Frame - All projects which must be started no later than 2023 in order to achieve the transportation system envisioned by the 2015-2040 RTP are included in the 2018-2023 TIP. The TIP is fiscally constrained, meaning that only those projects with an identified source of funds are included in the TIP. Estimated funding availability is based on current funding levels and reasonable assumptions that these funds will continue to be available. Conformity for the 2018-2023 TIP is addressed separately in Air Quality Memorandum 36a.

Regionally Significant

All regionally significant projects, regardless of funding source (federal, state, or local) are included in the RTP. All regionally significant projects are also included in the regional emissions analysis of the RTP. Regionally significant projects are identified as those projects functionally classified as a principal arterial or higher order facility, and certain minor arterials as identified through the interagency consultation process (see Appendix 1 for a complete definition of regionally significant projects). The latest Utah Department of Transportation Functional Classification map is used to identify functional classification. Interstate highways, freeways, expressways, principal arterials, certain minor arterials, light rail, and commuter rail are treated as regionally significant projects.

Because of their relative impact on air quality, all regionally significant projects regardless of funding source must be included in the regional emissions analysis, and any significant change in the

design or scope of a regionally significant project must also be reflected in the analysis. All regionally significant projects have been included in the regional emissions analysis, and the modeling parameters used for these projects are consistent with the design and scope of these projects as defined in the RTP. In order to improve the quality of the travel model, minor arterials and collectors, as well as local transit service, are also included in the regional travel model (and thus the regional emissions analysis) but these facilities are not considered regionally significant since they do not serve regional transportation needs as defined by EPA. For a list of projects included in this conformity analysis, see http://www.wfrc.org/new_wfrc/index.php/projects/project-lists and select the link for “Highway Projects List” or “Transit Projects List”. Refer to Appendices 2 and 3 of this document for projects in Box Elder and Tooele Counties.

CO, PM₁₀ and PM_{2.5} “Hot Spot” Analysis

In addition to the regional emissions conformity analysis presented in this document, specific projects within carbon monoxide (CO) and particulate matter (PM₁₀ and PM_{2.5}) non-attainment areas are required to prepare a “hot spot” analysis of emissions. The “hot spot” analysis serves to verify whether localized emissions from a specific project will meet air quality standards. This requirement is addressed during the NEPA phase of project development before FHWA or FTA can issue final project approval.

FHWA has issued guidance on quantitative PM₁₀ and PM_{2.5} “hot spot” analysis to be used for the NEPA process. This guidance can be found at:

<http://www.epa.gov/otaq/stateresources/transconf/projectlevel-hotspot.htm>.

PM₁₀ Control Measures

Construction-related Fugitive Dust - Construction-related dust is not identified in the Utah SIP as a contributor to the PM₁₀ non-attainment area. Therefore, there is no conformity requirement for construction dust. Section 93.122(d) (1) of 40 CFR reads as follows:

“For areas in which the implementation plan does not identify construction-related fugitive PM₁₀ as a contributor to the non-attainment problem, the fugitive PM₁₀ emissions associated with highway and transit project construction are not required to be considered in the regional emissions analysis.”

In the Utah PM₁₀ SIP, construction-related PM₁₀ is not included in the inventory, nor is it included in the attainment demonstration or control strategies. Control of construction-related PM₁₀ emissions are mentioned in qualitative terms in Section IX.A.7 of the SIP as a maintenance measure to preserve attainment of the PM₁₀ standard achieved by application of the control strategies identified in the SIP. Section IX.A.7.d of the SIP requires UDOT and local planning agencies to cooperate and review all proposed construction projects for impacts on the PM₁₀ standard. This SIP requirement is satisfied through the Utah State Air Quality Rules. R307-309-4 requires that sponsors of any construction activity file a dust control plan with the State Division of Air Quality.

Other Conformity Requirements

Transit Fares - Transit fares have increased periodically and will continue to increase in response to rising operating costs. The RTP assumes that transit fare revenues will cover a constant percentage of all transit operating cost, so future fare increases are consistent with the Plan. With any price increase some market reaction is expected. While there have been some short term fluctuations in transit patronage in response to fare increases, the implementation of light rail service and other transit improvements has retained and increased transit patronage consistent with the levels anticipated by the RTP.

Plans to expand light rail service, to increase and enhance bus service, and to extend commuter rail operations are moving forward. These transit projects are envisioned in the Plan and the steps necessary to implement these projects are moving forward including various voter approved sales tax increases for transit funding.

B. Transportation Modeling

Improvement to the WFRC travel demand model practice and procedure is an ongoing process. This conformity analysis is based on the latest version (8.1) of the travel demand model. Version 8.1 of the travel demand model updates the former 2007 base year with socio-economic data and transportation networks for the new 2011 base year. The new model also incorporates the results of the 2012 Household Travel Survey conducted by WFRC. Version 8.1 of the model adds more traffic analysis zones, and the transit mode choice portion of the model has been enhanced. Details of Version 8.1 of the travel model are documented in a report titled “WFRC/MAG Version 8.1 Travel Demand Model Documentation” which is available upon request.

Planning Process

Federal funding for transportation improvements in urban areas requires that these improvements be developed through a comprehensive, coordinated, and continuous planning process involving all affected local governments and transportation planning agencies. The planning process is certified annually by the Regional Council and reported to the Federal Highway Administration and Federal Transit Administration. Every four years FHWA and FTA conduct a comprehensive certification review. The certification review of August 2013 found that the WFRC planning process meets federal requirements. Recommendations were made to improve WFRC’s planning process and these are being addressed.

The documentation of the planning process includes at a minimum, a twenty-year Regional Transportation Plan updated at least every four years; and a four-year Transportation Improvement Program (capital improvement program) updated and adopted at least every four years. The planning process includes the involvement of local elected officials, state agencies, and the general public.

Travel Characteristics

The WFRM travel model is used to estimate and forecast highway Vehicle Miles Traveled (VMT) and vehicle speeds for Weber, Davis, and Salt Lake Counties. A separate travel model is used to estimate VMT and speed in Tooele County. For VMT and speed estimates in Box Elder County, WFRM relied on forecasts provided by the Utah Department of Transportation. The WFRM travel demand model is based on the latest available planning assumptions and a computerized representation of the transportation network of highways and transit service. The base data for the travel demand model is reviewed regularly for accuracy and updates. The travel model files used for this conformity analysis are available upon request.

Shown below in Table 2 is a summary of weekday VMT for the cities and counties in designated non-attainment areas. Totals for VMT are given for various air quality analysis years from 2019 to 2040. Note that the VMT values for Box Elder and Tooele Counties are not for the entire county but only that portion of the county designated as non-attainment for a criteria pollutant.

Table 2

Vehicle Miles Traveled (HPMS Adjusted Average Winter Weekday)

	2019	2024	2034	2040
Salt Lake City	6,958,685	7,406,200	8,301,230	8,732,972
Ogden City	1,524,886	1,645,496	1,838,034	1,955,595
Salt Lake County	31,323,413	33,380,866	38,670,273	41,666,107
Davis County	8,109,488	8,841,503	9,872,390	10,401,947
Weber County	5,459,687	5,760,571	6,775,625	7,274,467
Box Elder County*	2,582,199	2,846,983	3,378,619	3,738,885
Tooele County*	2,336,172	2,621,722	3,379,647	4,158,310

**non-attainment portion of the county*

Peak and Off-Peak Trip Distribution

The modeled VMT and the modeled vehicle speed depend on the number of vehicle trips assigned for each time period (AM, midday, PM, and evening) defined in the travel demand model. The percentage of trips by purpose varies for each time period. The percentages in Table 3 and Table 4 below are based on data from the 2012 Household Travel Survey.

Table 3
Percent of Trips by Time of Day

Trip Purpose	AM	Mid Day	PM	Evening	Grand Total
Home Based - Other	11%	27%	24%	37%	100%
Home Based - Personal Business	9%	50%	25%	16%	100%
Home Based - School	40%	29%	26%	5%	100%
Home Based - Shopping	2%	43%	26%	29%	100%
Home Based - Work	35%	18%	28%	19%	100%
Non-home Based - Non-work	6%	46%	25%	23%	100%
Non-home Based - Work	13%	49%	29%	9%	100%
Grand Total	15%	34%	26%	25%	100%

Table 4
Percent of Trips by Purpose

Trip Purpose	AM	Mid Day	PM	Evening	Grand Total
Home Based - Other	25%	26%	31%	50%	33%
Home Based - Personal Business	3%	8%	5%	4%	5%
Home Based - School	19%	6%	7%	1%	7%
Home Based - Shopping	1%	13%	10%	12%	10%
Home Based - Work	37%	8%	17%	12%	16%
Non-home Based - Non-work	7%	25%	18%	18%	19%
Non-home Based - Work	8%	13%	11%	3%	9%
Grand Total	100%	100%	100%	100%	100%

Comparison of Modeled Speeds with Observed Data

WFRC continues to adjust modeled speeds to improve consistency with samples of observed speeds. Observed speed data were collected in 2013 through a FHWA program known as “Here Data” that uses cell phone signals to track vehicle movements. The observed speeds for freeways and arterials during AM and PM periods of congestion were compared to speeds estimated using the WFRC travel demand model for the 2011 base year. A review of median speeds for the three-county WFRC model area is shown in Table 5. WFRC area modeled speeds are within -3.2% to 3.1% of observed Here Data speeds.

Table 5
WFRC Planning Area Modeled Speeds Compared to Observed Speeds

	Arterial		Freeway	
	AM Peak	PM Peak	AM Peak	PM Peak
2011 Modeled Speeds (mph)	33	30	66	63
2013 Observed Speeds (mph)	32	31	64	64
Percent Difference	3.1%	-3.2%	3.1%	-1.6%

C. Emission Modeling

I/M Programs

Assumptions for the input files for EPA's MOVES vehicle emissions model include I/M programs in Salt Lake, Davis, and Weber Counties. Box Elder and Tooele Counties do not presently have I/M programs.

VMT Mix

The VMT mix describes how much a particular vehicle type is used in the transportation network. While no longer a required input for the MOVES model as it was for MOBILE6.2, VMT mix is used in several instances to generate the input files required to run the MOVES model. The national default VMT mix found in the MOVES database was used to disaggregate local vehicle type data collected in 2014. The local vehicle type data is collected by UDOT as part of the federal HPMS data collection system and is based on automated counters which classify vehicles based on vehicle length. The UDOT classification is used to calculate control percentages for light duty (LD) vehicles and heavy duty (HD) vehicles for each facility type. The EPA default VMT mix is then applied to disaggregate the two UDOT control percentages into detailed percentages for the thirteen vehicle classes used in MOVES.

Vehicle Weights

Facility specific VMT mix data described above was also used to estimate the average vehicle weight on each facility type. Since vehicle weight affects the rate of re-entrained road dust emissions estimated using the AP-42 method, vehicle weight variations on different facilities will affect the amount of fugitive dust created. The VMT mix for each facility type was used to estimate an average vehicle weight for each facility type with the following results:

<u>Facility</u>	<u>Average Vehicle Weight</u>
Urban - Freeway	6,500 lbs, or 3.25 tons
Urban - Arterial	6,100 lbs, or 3.05 tons
Urban - Local	3,900 lbs, or 1.95 tons

Post Model Adjustments

For conformity analyses prior to 2000, the WFRC applied post model adjustments to vehicle emission estimates. Emission credits for work trips were modeled for reductions in single occupant vehicle rates based primarily on increased investments in transit service and rideshare programs, and the projected increase in telecommuting. Other less significant post model adjustments were also estimated for incident management, pavement re-striping, and signal coordination. Additional emission reducing programs and projects supported by CMAQ funds such as park and ride lots, bicycle facilities, transit vehicles, intelligent transportation systems (ITS), and intersection improvements have also been implemented.

WFRC believes that these programs have a positive effect in reducing vehicle emissions. In practice, however, WFRC has found that documenting the air quality benefits of these programs can be challenging. WFRC will continue to support these emission reduction programs, but credits from these programs have not been included in this conformity analysis.

MOVES Inputs

The MOVES model is a very data intensive computer program based on the MySQL database software. Through the interagency consultation process the required MOVES inputs reflecting local conditions have been established.

Data files defining local conditions by county and year are required inputs to the MOVES model including vehicle population, emission testing programs, fuel supply, fuel formulation, meteorological conditions, and vehicle age. Vehicle population estimates are based on 2014 registration data by county and the estimated VMT for the same year. This vehicle population to VMT ratio is then applied to model projections of VMT to estimate future year vehicle population. By estimating vehicle population in this way the calculation considers the effects of human population and employment projections, as well as mode choice options that are included in the travel demand model.

Vehicle activity input files for the MOVES model are generated by the WFRC travel demand model using a customized in-house program for this purpose. The MOVES input files required include data for ramp fractions, road distribution, speed distribution, and VMT by vehicle type for each county (Box Elder, Davis, Salt Lake, Tooele, and Weber) and analysis year (PM_{2.5} base year for interim conformity 2008, 2019, 2024, 2034, and 2040) as required for operating the MOVES model.

The input files listed above are read into the MOVES program as database files. The input database folders in Table 6 below contain the database files used for each county and year modeled using MOVES2014a for this conformity analysis. The results of the MOVES model are stored in the output database “Conf17_out” for each county and analysis year identified in Table 6.

Table 6
MOVES Data – Input Database Folders

Box Elder	Weber	Davis	Salt Lake	Tooele	Salt Lake City	Ogden
conf17_be_2008w_IN	conf17_we_2008w_IN	conf17_da_2008w_IN	conf17_sl_2008w_IN	conf17_to_2008w_IN		
conf17_be_2019w_IN	conf17_we_2019w_IN	conf17_da_2019w_IN	conf17_sl_2019w_IN	conf17_to_2019w_IN	conf17_sc_2019w_IN	conf17_og_2019w_IN
Conf17_be_2024w_IN	Conf18_we_2024wa_IN	Conf18_da_2024w_IN	Conf18_sl_2024w_IN	Conf18_to_2024w_IN	Conf18_sc_2024w_IN	Conf18_og_2024w_IN
Conf17_be_2034w_IN	Conf18_we_2034w_IN	Conf18_da_2034w_IN	Conf18_sl_2034w_IN	Conf18_to_2034w_IN	Conf18_sc_2034w_IN	Conf18_og_2034w_IN
Conf17_be_2040w_IN	Conf18_we_2040w_IN	Conf18_da_2040w_IN	Conf18_sl_2040w_IN	Conf18_to_2040w_IN	Conf18_sc_2040w_IN	Conf18_og_2040w_IN

Road Dust Estimates

In January 2011, the EPA released new guidance for estimating dust emissions from paved roads. These guidelines are published in Chapter 13.2.1 of the AP-42 document. The new formula is

$$E = k (sL)^{0.91} \times (W)^{1.02}$$

where: E = particulate emission factor (grams/mile),
 k = particle size multiplier for particle size range and units of interest (for PM_{10} , $k=1.0$ and for $PM_{2.5}$ $k=0.25$),
 sL = road surface silt loading (grams per square meter - g/m^2), and
 W = average weight (tons) of the vehicles traveling the road.

Based on vehicle type counts on roads in the WFRC region, average vehicle weights for local roads, arterials, and freeways are 1.95, 3.05, and 3.25 tons respectively. The silt load (sL) factor varies by highway functional class and by traffic volume. The default silt load factors found in Table 13.2.1-2 of the AP-42 document are summarized below.

Traffic Volume	Functional Class	Silt Load (grams/meter²)
500-5,000	local roads	0.200
5,000-10,000	arterial roads	0.060
limited access	freeways	0.015

A precipitation reduction factor is also applied to the above equation using the following expression:

$$(1 - P/4N)$$

Where: P = number of "wet" days with at least 0.254 mm (0.01 in) of precipitation during the averaging period, and
 N = number of days in the averaging period (e.g., 365 for annual, 91 for seasonal, 30 for monthly).

The AP-42 guidance recommends a value of 90 precipitation days per year for the Wasatch Front region. Using these values, the precipitation reduction factor yields a value of 0.9384. Combined with the basic road dust emission rate, the net $PM_{2.5}$ and PM_{10} road dust factors by highway functional class are as follows:

Functional Class	PM_{10} Road Dust Rate (grams/mile)	$PM_{2.5}$ Road Dust Rate (grams/mile)
local roads	0.429	0.107
arterials	0.226	0.057
freeways	0.068	0.017

D. Conformity Determination

The following conformity findings for the 2015-2040 Regional Transportation Plan for the Wasatch Front are based on the transportation systems and planning assumptions described in this report and the EPA approved vehicle emissions model (MOVES2014).

Salt Lake City CO Conformity

The carbon monoxide maintenance plan for Salt Lake City was approved by EPA effective September 30, 2005 as recorded in the Federal Register (Vol. 70, No. 146, August 1, 2005). The maintenance plan defines a motor vehicle emission budget for the years 2005 and 2019 of 278.62 tons/day. Table 7 below demonstrates that projected mobile source emissions are within the emission budget defined in the maintenance plan for the 2019 budget year. The other years listed in Table 7 are in accordance with requirements of the Conformity Rule (40 CFR Part 93) as noted in the table.

From this demonstration it is concluded that the Amended RTP conforms to the applicable controls and goals of the State Implementation Plan (Maintenance Plan) for Carbon Monoxide in Salt Lake City.

Table 7

Salt Lake City - CO Conformity Determination

Year	^b 2019	^b 2024	^c 2034	^c 2040
Budget[#] (tons/day)	278.62	278.62	278.62	278.62
<i>emission rate (grams/mile)</i>	5.30	4.86	2.19	1.76
<i>seasonal VMT</i>	6,958,685	7,406,200	8,301,230	8,732,972
Projection* (tons/day)	40.67	39.68	20.08	16.98
Conformity (Projection < Budget?)	Pass	Pass	Pass	Pass

a - attainment year, b - budget year, c - 10-year rule, d - no budget 5-year rule, e - last year of Plan,

[#] Federal Register Vol. 70 No. 146, August 1, 2005, Table V-2.

* Projection = Emission Rate x Seasonal VMT / 453.6 grams per pound / 2,000 pounds per ton.

Ogden CO Conformity

The carbon monoxide maintenance plan for Ogden City was approved by EPA effective November 14, 2005 as recorded in the Federal Register (Vol. 70, No. 177, September 14, 2005). The maintenance plan defines a motor vehicle emission budget for the years 2005 and 2021 of 75.36 and 73.02 tons/day respectively. Table 8 below demonstrates that projected mobile source emissions are within the emission budget defined in the maintenance plan for the 2021 budget year. The other years listed in Table 8 are in accordance with requirements of the Conformity Rule (40 CFR Part 93) as noted in the table.

From this demonstration it is concluded that the 2015-2040 RTP conforms to the applicable controls and goals of the State Implementation Plan (Maintenance Plan) for Carbon Monoxide in Ogden City.

Table 8
Ogden City - CO
Conformity Determination

	<i>c</i>	<i>b</i>	<i>c</i>	<i>c</i>	<i>e</i>
Year	2019	2021	2024	2034	2040
Budget[#] (tons/day)	75.36	73.02	73.02	73.02	73.02
<i>emission rate (grams/mile)</i>	6.01	5.40	4.55	2.43	1.88
<i>seasonal VMT</i>	1,524,886	1,573,130	1,645,496	1,838,034	1,955,595
Projection* (tons/day)	10.10	9.36	8.25	4.92	4.06
Conformity (Projection < Budget?)	Pass	Pass	Pass	Pass	Pass

a - attainment year, *b* - budget year, *c* - 10-year rule, *d* - no budget 5-year rule, *e* - last year of Plan,

[#] Federal Register Vol. 70 No. 177, September 14, 2005, Table V-2.

* Projection = Emission Rate x Seasonal VMT / 453.6 grams per pound / 2,000 pounds per ton.

Ogden PM10 Conformity

Ogden City was designated as a PM₁₀ non-attainment area in August of 1995 based on PM₁₀ violations in 1993 or earlier. Since a PM₁₀ SIP for Ogden has not yet been approved by EPA, it must be demonstrated that Ogden PM₁₀ emissions are either less than 1990 emissions or less than “no-build” emissions. The analysis years 2019, 2024, 2034, and 2040 were selected in accordance with the requirements of 40 CFR Section 93.119(e).

PM₁₀ emissions are present in two varieties referred to as primary and secondary PM₁₀. Primary PM₁₀ consists mostly of fugitive road dust but also includes particles from brake wear and tire wear and some “soot” particles emitted directly from the vehicle tailpipe. The methods defined in the January 2011 version of the EPA publication known as “AP-42” were used to estimate dust from paved roads. Secondary PM₁₀ consists of gaseous tailpipe emissions that take on a particulate form through subsequent chemical reactions in the atmosphere. Nitrogen oxides are the main component of secondary PM₁₀ emissions with sulfur oxides a distant second.

As summarized in Tables 9a and 9b, emission estimates for the 2015-2040 RTP satisfy the “Build < 1990” test for secondary PM₁₀ (NO_x precursors) and primary PM₁₀ (direct tailpipe particulates, brake wear, tire wear, and road dust) in Ogden City. The 1990 emission estimates based on the Mobile6.2 vehicle emissions model for the 2003 conformity analysis have been updated for this conformity analysis using the MOVES model and the January 2011 AP-42 road dust methodology for consistency with current emission modeling requirements. Specifically, the NO_x precursor budget (1990 emission estimate) changes from 4.57 tons/day to 6.92 tons/day, and the direct PM₁₀ budget (1990 estimate) changes from 2.28 tons/day to 1.28 tons/day. The 1990 primary PM₁₀ estimate for Ogden City includes emissions from the unpaved access road to the Ogden landfill which was closed in 1998.

For projections of primary PM₁₀ emissions, no credit was taken for a number of programs adopted since Ogden City last violated the PM₁₀ standard. These particulate reducing programs include covered load ordinances, increased frequency of street sweeping, and reduced application of deicing and skid resistant materials (salt and sand). Documentation of these programs has been provided by Ogden City but the actual benefits of these programs are not included in the emission projections below. Other areas that have estimated the benefit of these programs have found a silt load reduction of over 30% for effective street sweeping programs and a 5% silt load reduction when limiting the amount of sand and salt applied to the roads. Ogden City has also implemented a number of specific projects that have a positive effect in reducing particulate emissions including park and ride lots, storm water improvements, shoulder widening and edge striping, and addition of curb and gutter on several projects.

From this demonstration it is concluded that the 2015-2040 RTP conforms under the Emission Reductions Criteria for areas without motor vehicle emissions budgets for PM₁₀ in Ogden City.

Table 9a

Ogden City - PM₁₀ (NO_x Precursor) Conformity Determination

	<i>d</i>	<i>c</i>	<i>c</i>	<i>e</i>
Year	2019	2024	2034	2040
1990 Emissions (tons/day)	6.92	6.92	6.92	6.92
<i>emission rate (grams/mile)</i>	0.93	0.54	0.26	0.21
<i>seasonal VMT</i>	1,524,886	1,645,496	1,838,034	1,955,595
Projection* (tons/day)	1.57	0.97	0.52	0.46
Conformity (Projection < 1990 Emissions?)	Pass	Pass	Pass	Pass

a - attainment year, *b* - budget year, *c* - 10-year rule, *d* - no budget 5-year rule, *e* - last year of Plan,

* Projection = Emission Rate x Seasonal VMT / 453.6 grams per pound / 2,000 pounds per ton.

Table 9b

Ogden City - PM10 (Primary Particulates)**
Conformity Determination

	<i>d</i>	<i>c</i>	<i>c</i>	<i>e</i>
Year	2019	2024	2034	2040
1990 Emissions (tons/day)	1.28	1.28	1.28	1.28
<i>emission rates (grams/mile)</i>				
<i>total exhaust particulates</i>	0.0335	0.0180	0.0090	0.0079
<i>brake particulates</i>	0.0605	0.0614	0.0620	0.0628
<i>tire particulates</i>	0.0131	0.0127	0.0128	0.0128
<i>road dust particulates</i>	0.2618	0.2619	0.2578	0.2569
<i>seasonal VMT</i>	1,524,886	1,645,496	1,838,034	1,955,595
Projection* (tons/day)	0.62	0.64	0.69	0.73
Conformity (Projection < 1990 Emissions?)	Pass	Pass	Pass	Pass

** Includes total PM10 exhaust particulates, road dust, tire wear, and brake wear.

a - attainment year, b - budget year, c - 10-year rule, d - no budget 5-year rule, e - last year of Plan,

* Projection = Emission Rate x Seasonal VMT / 453.6 grams per pound / 2,000 pounds per ton.

Salt Lake County PM₁₀ Conformity

The PM₁₀ SIP for Salt Lake County does not define a budget beyond the year 2003. Therefore, conformity tests are required only for analysis years which are identified in accordance with 40 CFR 93.118. All analysis years after 2003 must meet the 2003 budgets for primary particulates and secondary particulates (see the discussion above under Ogden PM₁₀ Conformity for an explanation of primary and secondary PM₁₀ emissions). The State air quality rule R307-310 allows a portion of the surplus primary PM₁₀ budget to be applied to the secondary PM₁₀ budget for conformity purposes. However, for the analysis years 2019, 2024, 2034, and 2040, no budget adjustments were necessary.

Table 10
Salt Lake County - PM₁₀ Budgets
Direct (Dust) and Precursor (NO_x) PM₁₀ Emission Budgets
 (tons/day)

Year	2019	2024	2034	2040
Total PM₁₀ Budget[#]	72.60	72.60	72.60	72.60
<i>Direct PM₁₀ Budget to be Traded</i>	0.00	0.00	0.00	0.00
Direct PM₁₀ Budget	40.30	40.30	40.30	40.30
NO_x Precursor PM₁₀ Budget	32.30	32.30	32.30	32.30

Table 11a and Table 11b below demonstrate that projected mobile source emissions are within the emission budget defined in the SIP. The years listed in Table 10a and Table 10b are in accordance with requirements of the Conformity Rule (40 CFR Part 93) as noted in the tables.

From this demonstration it is concluded that the 2015-2040 RTP conforms to the applicable controls and goals of the State Implementation Plan for PM₁₀ in Salt Lake County.

Table 11a
Salt Lake County - PM₁₀ (NO_x Precursor)
Conformity Determination

Year	^c 2019	^c 2024	^c 2034	^e 2040
Budget[#] (tons/day)	32.30	32.30	32.30	32.30
<i>emission rate (grams/mile)</i>	0.66	0.47	0.24	0.20
<i>seasonal VMT</i>	31,323,413	33,380,866	38,670,273	41,666,107
Projection* (tons/day)	22.77	17.16	10.26	9.40
Conformity (Projection < Budget?)	Pass	Pass	Pass	Pass

a - attainment year, b - budget year, c - 10-year rule, d - no budget 5-year rule, e - last year of Plan,

[#] WFRC Memo to Jeff Houk of EPA, April 15, 1994.

* Projection = Emission Rate x Seasonal VMT / 453.6 grams per pound / 2,000 pounds per ton.

Table 11b
Salt Lake County - PM10 (Primary Particulates)**
Conformity Determination

Year	^c 2019	^c 2024	^c 2034	^e 2040
Budget[#] (tons/day)	40.30	40.30	40.30	40.30
<i>emission rates (grams/mile)</i>				
<i>total exhaust particulates</i>	0.0304	0.0202	0.0099	0.0088
<i>brake particulates</i>	0.0446	0.0493	0.0514	0.0508
<i>tire particulates</i>	0.0112	0.0115	0.0117	0.0116
<i>road dust particulates</i>	0.2101	0.2053	0.2008	0.1971
<i>seasonal VMT</i>	31,323,413	33,380,866	38,670,273	41,666,107
Projection* (tons/day)	10.23	10.54	11.67	12.32
Conformity (Projection < Budget?)	Pass	Pass	Pass	Pass

** Includes total PM10 exhaust particulates, road dust, tire wear, and brake wear.

[#] WFRM Memo to Jeff Houk of EPA, April 15, 1994.

a - attainment year, b - budget year, c - 10-year rule, d - no budget 5-year rule, e - last year of Plan,

* Projection = Emission Rate x Seasonal VMT / 453.6 grams per pound / 2,000 pounds per ton.

Salt Lake PM_{2.5} Conformity

Davis, Salt Lake, and portions of Weber, Tooele, and Box Elder Counties have been designated as a non-attainment area under the new PM_{2.5} standard (35 µg/m³) that was established in 2006. Work has begun on a PM_{2.5} section of the State Implementation Plan which will establish a motor vehicle emission budget for emissions associated with PM_{2.5}. Until the PM_{2.5} SIP is completed and approved by EPA, PM_{2.5} interim conformity requirements apply. EPA interim conformity for PM_{2.5} emissions requires that future NOx emissions (a precursor to PM_{2.5}) and primary particulate emissions not exceed 2008 levels.

Table 12a below demonstrates that projected mobile source emissions of NOx (a precursor to PM_{2.5} emissions) in the five-county PM_{2.5} non-attainment area are less than 2008 NOx emissions. Table 12b below demonstrates that projected mobile source emissions of VOC (also a precursor to PM_{2.5} emissions) in the five-county PM_{2.5} non-attainment area are less than 2008 VOC emissions. Table 12c below demonstrates that direct particle emissions of PM_{2.5} in the five-county PM_{2.5} non-attainment area are also less than 2008 direct particle emissions. Direct particle emissions include exhaust emissions of elemental carbon, organic carbon, and sulfates (SO₄); and mechanical emissions from brake wear and tire wear.

From this demonstration it is concluded that the RTP conforms under the interim conformity guidelines for PM_{2.5} areas without an approved motor vehicle emissions budget for the Salt Lake PM_{2.5} non-attainment area.

Table 12a

**Salt Lake Area[#] - PM2.5 (NOx Precursor)
Conformity Determination**

	^c	^c	^c	^e
Year	2019	2024	2034	2040
2008 Emissions (tons/day)	97.98	97.98	97.98	97.98
<i>emission rate (grams/mile)</i>	0.75	0.50	0.26	0.22
<i>seasonal VMT</i>	49,810,959	53,451,645	62,076,554	67,239,716
Projection* (tons/day)	41.44	29.70	17.78	16.56
Conformity (Projection < Budget?)	Pass	Pass	Pass	Pass

[#] Salt Lake PM2.5 Non-Attainment Area includes: Davis, Salt Lake, and portions of Weber, Box Elder and Tooele Counties.

a - attainment year, b - budget year, c - 10-year rule, d - no budget 5-year rule, e - last year of Plan,

* Projection = Emission Rate x Seasonal VMT / 453.6 grams per pound / 2,000 pounds per ton.

Table 12b

**Salt Lake Area[#] - PM2.5 (VOC Precursor)
Conformity Determination**

	^c	^c	^c	^e
Year	2019	2024	2034	2040
2008 Emissions (tons/day)	61.35	61.35	61.35	61.35
<i>emission rate (grams/mile)</i>	0.54	0.41	0.27	0.25
<i>seasonal VMT</i>	49,810,959	53,451,645	62,076,554	67,239,716
Projection* (tons/day)	29.42	23.86	18.75	18.35
Conformity (Projection < Budget?)	Pass	Pass	Pass	Pass

[#] Salt Lake PM2.5 Non-Attainment Area includes: Davis, Salt Lake, and portions of Weber, Box Elder and Tooele Counties.

a - attainment year, b - budget year, c - 10-year rule, d - no budget 5-year rule, e - last year of Plan,

* Projection = Emission Rate x Seasonal VMT / 453.6 grams per pound / 2,000 pounds per ton.

Table 12c
Salt Lake Area[#] - PM_{2.5} (Direct PM Emissions^{})**
Conformity Determination

Year	^c 2019	^c 2024	^c 2034	^e 2040
2008 Emissions (tons/day)	7.33	7.33	7.33	7.33
<i>emission rate (grams/mile)</i>	0.09	0.08	0.07	0.07
<i>seasonal VMT</i>	49,810,959	53,451,645	62,076,554	67,239,716
Projection* (tons/day)	4.94	4.60	4.63	4.84
Conformity (Projection < Budget?)	Pass	Pass	Pass	Pass

[#] Salt Lake PM_{2.5} Non-Attainment Area includes: Weber, Davis, Salt Lake, and portions of Box Elder and Tooele Counties.

a - attainment year, b - budget year, c - 10-year rule, d - no budget 5-year rule, e - last year of Plan,

* Projection = Emission Rate x Seasonal VMT / 453.6 grams per pound / 2,000 pounds per ton.

** Direct PM for interim conformity includes total PM_{2.5} exhaust particulates, brake wear, tire wear, and road dust.

Salt Lake and Davis County Ozone Conformity

The 1-hour ozone standard was revoked on June 19, 2005. Therefore, a conformity analysis under the 1-hour ozone standard in Salt Lake and Davis Counties is no longer required.

The previous 8-hour ozone standard was 75 ppb. All counties within the Wasatch Front area are in attainment of the previous 8-hour ozone standard.

A new ozone standard of 70 ppb was approved October 2015. Areas of non-attainment for the new ozone standard will be designated by EPA in May 2018. Any designated non-attainment areas will be required to demonstrate conformity for ozone precursor emissions beginning October 2018.

Appendix – 1

Definition of Regionally Significant Projects

**Process for Determining Regionally Significant Facilities
for Purposes of Regional Emissions Analysis (see CFR 93.105.2.c.1.ii)**

Background: 40 FR 93.101 defines “regionally significant project” and associated facilities for the purpose of transportation conformity. The federal definition does not specifically include minor arterials. The following definitions and processes will be used by the Wasatch Front Regional Council (WFRC) and Mountainlands Association of Governments (MAG) in consultation with DAQ, UDOT, UTA, FHWA, FTA, and EPA to determine which facilities shall be considered regionally significant for purposes of regional emissions analysis. It is the practice of the MPO to include minor arterials and collectors in the travel model for the purpose of accurately modeling regional VMT and associated vehicle emissions. The inclusion of minor arterials and collectors in the travel model, however, does not identify these facilities as regionally significant.

1. Any new or existing facility with a functional classification of principal arterial or higher on the latest UDOT Functional Classification Map shall be considered regionally significant (see <http://www.dot.utah.gov/index.php/m=c/tid=1228>).
2. Any fixed guide-way transit service including light rail, commuter rail, or portions of bus rapid transit that involve exclusive right-of-way shall be considered regionally significant.
3. As traffic conditions change in the future, the MPO’s - in consultation with DAQ, UDOT, FHWA, and EPA (and UTA and FTA in cases involving transit facilities) - will consider 1) the relative importance of minor arterials serving major activity centers, and 2) the absence of principal arterials in the vicinity to determine if any minor arterials in addition to those listed in Exhibit A should be considered as regionally significant for purposes of regional emissions analysis.

Exhibit A
Minor Arterials Determined to be Regionally Significant
for Purposes of Regional Emissions Analysis

40 FR 93.105(c)(ii), “Consultation – Interagency consultation procedures: Specific processes” specifies that Interagency Consultation shall include a process to identify which minor arterials should be considered as “regionally significant” for the purpose of regional emissions analysis. In consultation with DAQ, UDOT, FHWA, and EPA; and based on inspection and engineering judgment of current traffic conditions; and based on application of the “Process for Determining Regionally Significant Facilities for Purposes of Regional Emissions Analysis” agreed upon by the aforementioned agencies; the WFRC designated eight minor arterials as regionally significant.

Since 2015, all but one of the minor arterials referenced above have been reclassified with the functional type of principal arterial and are therefore by definition regionally significant. The remaining minor arterial to be considered as regionally significant for emissions analysis is listed below. It should also be noted that all collectors, minor arterials, and principal arterials are included in the highway network used in the WFRC travel demand model.

Davis County
none

Salt Lake County
none

Weber County
SR-79 (Hinckley Drive): SR-108 to I-15

**Process for Determining Significant Change in Design Concept and Scope
for Purposes of Regional Emissions Analysis (see CFR 93.105.2.c.1.ii)**

Changes to regionally significant projects may or may not necessitate a new regional emissions analysis. The following definitions and processes will be used to determine what changes to project concept and scope are to be considered significant or not for purposes of regional emissions analysis.

1. Adding or extending freeway auxiliary lanes or weaving lanes between interchanges is not considered a significant change in concept and scope since these lanes are not normally included in the travel model.
2. Adding or extending freeway auxiliary/weaving lanes from one interchange to a point beyond the next interchange is considered a significant change in concept and scope.
3. A change to a regionally significant project defined in the Regional Transportation Plan that does not change how the project is defined in the travel model is not considered a significant change in concept and scope. These changes include but are not limited to lane or shoulder widening, cross section (other than the number of through lanes), alignment, interchange configuration, intersection traffic control, turn lanes, continuous or center turn lanes, and storage lanes.
4. A change to a regionally significant project defined in the Regional Transportation Plan that does alter the number of through lanes, lane capacity, or speed classification as defined in the travel model is considered a significant change in concept and scope.
5. Advancing or delaying the planned implementation of a regionally significant project that does not result in a change in the transportation network described in the travel model for any horizon year (as defined in CFR 93.101) is not considered a significant change in concept and scope.
6. Advancing or delaying the planned implementation of a regionally significant project that does result in a change in the transportation network described in the travel model for any horizon year (as defined in CFR 93.101) is considered a significant change in concept and scope.
7. Project changes not addressed in the above statements will be decided on a case by case basis through consultation by representatives from DAQ, WFRC, MAG, UDOT, UTA, FHWA, FTA, and EPA.

Appendix-2

Box Elder County Highway and Transit Projects 2040 RTP

Box Elder County

Box Elder County Regionally Significant Project List – January 2015

Line	Source	County	Need Phase	Constrained Phase	Capacity Need	Priority Score	Improvement Type	Project Name	Project Description	Cost 2014	Route	Begin	End
1	LRP	Box Elder/Cache	STIP 2016	1	Before 2012	44	Passing Lane	SR-30 MP 97 to MP 101	Add one travel lane in each direction	\$5,000,000	0030	97.00	101.34
9	LRP	Box Elder/Cache	3	2	begin by Phase 1	27	Widening	SR- 30 MP 95.1 to MP 102.3, SR- 38 to SR- 23	Add one travel lane in each direction	\$32,040,000	0030	95.10	102.30
10	LRP	Box Elder	4	2		36	Passing Lane	I- 84 Widen WB from MP 17.3 to MP 19.9	Add one travel lane in WB direction	\$7,150,000	0084	17.30	19.90
11	LRP	Box Elder	4	2		43	Passing Lane	I- 84 Widen EB from MP 6.8 to MP 17.7	Add one travel lane in EB direction	\$29,975,000	0084	6.80	17.70
13	LRP	Box Elder	2	2	before 2012	28	Widening	SR- 30 MP 90.7 to MP 95.1, I- 15 to SR- 38 (Collinston)	Add one travel lane in each direction	\$19,580,000	0030	90.70	95.10
14	Model	Box Elder	3	3		25	Widening	I- 15 Widen from MP 365.7 to MP 372.6, SR- 13 to Honeyville (WFRC boundary from MP 365.7 to 368.3)	Add one travel lane in each direction	\$22,145,000	0015	368.30	372.60
15	LRP	Box Elder	4	3		43	Passing Lane	I- 84 Widen WB from MP 29.3 to MP 32.3	Add one travel lane in WB direction	\$8,250,000	0084	29.30	32.30
16	LRP	Box Elder	4	3		37	Passing Lane	I- 84 Widen EB from MP 25.3 to MP 29.7	Add one travel lane in EB direction	\$12,100,000	0084	25.30	29.70
17	LRP	Box Elder	4	3		46	Passing Lane	I- 84 Widen WB from MP 33.5 to MP 35.6	Add one travel lane in WB direction	\$5,775,000	0084	33.50	35.60
22	Model	Box Elder	4	4		37	Widening	I- 15 Widen from MP 372.6 to MP 379.5, Honeyville to Tremonton	Add one travel lane in each direction	\$35,535,000	0015	372.60	379.50

Appendix-3

Highway and Transit Projects
2040 RTP

Tooele County

Tooele Valley RPO Long Range Plan Highway Projects February 9, 2015

Phase 1 (To be built by 2025)

Main Street (SR-138) in Grantsville (West St – Center St, and Bowery St – SR-112)
Widen from 1 lane to 2 lanes per direction

SR-36 (Stockton Town – Skyline Drive)
Widen from 1 lane to 2 lanes per direction

Tooele Parkway (SR-112 – Droubay Road)
New collector, 1 lane per direction

Midvalley Highway (SR-138 – I-80)
New freeway, 2 lanes per direction

Midvalley Highway (SR-36 – Utah Avenue)
New principal arterial, 2 lanes per direction

SR-112 (Sheep Lane - Utah Ave)
Widen from 1 lane to 2 lanes per direction

Sheep Lane (SR-112 – SR-138)
Widen from 1 lane to 2 lanes per direction

SR-138 (SR-112 – Midvalley Highway)
Widen from 1 lane to 2 lanes per direction

I-80 (SR-36 – SR-201)
Widen from 2 lanes to 3 lanes per direction

SR-112 (SR-138 – Sheep Lane)
Widen from 1 lane to 2 lanes per direction

400 West (2000 North – Village Blvd)
New collector, 1 lane per direction

1000 North (SR-36 – Droubay Road)
Widen from 1 lane to 2 lanes per direction

Tooele Boulevard (SR-36 – Vine St)
New collector, 1 lane per direction

Bates Canyon Road (1200 West – 400 West)
New collector, 1 lane per direction

Village Boulevard (SR-138 – current western terminus)
New collector, 1 lane per direction

Appendix-4

RTP Amendments

2015 – 2040 Regional Transportation Plan WFRC Proposed 2040 RTP Amendment #6

Capacity Changes

- **UDOT** – Phase 1, Widening of one additional general purpose lane northbound on I-15 from Bangerter Hwy. to I-215. (New project to RTP). Level 3.
- **Bluffdale** – Phase 1, Operational Improvement on 14600 South from Redwood Road (realign straight to Redwood Road – see map) to Porter Rockwell. (Re-define project from widening to operations and change termini). Level 2.
- **Salt Lake City** – Phase 1, New Construction of 700 South grade-separated railroad bridge near 4800 West. Phase 1, New Construction of 700 South from 5600 West to approximately 5300 West (see map). (New projects to RTP). Level 2.
- **Hooper** – Phase 1, Operational Improvement on 5500 West from 3500 South to 5500 South, and functional classification change to Major Collector. (New project to RTP). Level 2.
- **Multijurisdictional (West Valley/Kearns)** - Phase 1, Widening to 5 lanes on 4700 South from 5600 West to 4000 West. (Phase 2 to phase 1). Level 3.
- **Plain City** – Phase 1, Operational on 2800 North/North Plain City Road from 4200 West to SR-126 and functional classification change. (New project to RTP). Level 2.

2015 – 2040 Regional Transportation Plan WFRC Proposed 2040 RTP Amendment #5

1. **Needs Conformity** - 5600 W BRT may be considered a "fixed guideway" so removing it from Phase 1 would be a significant change in scope.
 - a. 5600 West Transit (Salt Lake County)
 - i. Remove Phase 1 BRT from 6200 South to 2700 South
 - ii. Add Phase 1 Express Bus/Core Route from Old Bingham LRT Station to the International Center to the SLCIA to downtown SLC (latest discussion was this part on North Temple). Ivan Hooper, Avenue Consultants will have frequency, hours of operation, station location, etc...
2. **Does NOT need Conformity** - 7200 W is not a principal arterial
 - a. 7200 West (Salt Lake County)
 - i. Add Phase 2 New Construction from 700 North to SR-201 as a 3 lane facility
3. **Does NOT need Conformity** - 700 N is not a principal arterial
 - a. 700 North/7200 West/1400 North (Salt Lake County)
 - i. Add Phase 1 New Construction on 700 North from 5600 West to 7200 West, 7200 West from 700 North to 1400 North, and 1400 North from 7200 West to 8000 West as a 3 lane facilities
4. **Does NOT need Conformity** - 8000 W is not a principal arterial
 - a. 8000 West (Salt Lake County)
 - i. Add Phase 1 New Construction from 1400 North to the north I-80 Frontage Road
5. **Needs Conformity** - Wasatch Blvd. is a principal arterial so moving from Phase 2 to Phase 1 would be a significant change in scope.
 - a. Wasatch Blvd. (Cottonwood Heights) (this project may be removed if funding hasn't been allocated yet)
 - i. Change from Phase 2 to Phase 1 from Bengal Blvd to 9600 South
6. **Does NOT need Conformity** - 1100 N is not a principal arterial
 - a. 1100 North (Harrisville City)
 - i. Add Phase 1 New Construction from 140 West to 140 East as a 3 lane facility
7. **Does NOT need Conformity** - 3600 W is not a principal arterial
 - a. 3600 West (Plain City)
 - i. Add Phase 1 Operational from 2600 North to 1975 North
8. **Does NOT need Conformity** - Depot Drive is not a principal arterial
 - a. Depot Drive (Weber County)
 - i. Add Phase 1 New Construction from 12th Street to the Weber County Sheriff Office and Juvenile Multi-Use Facility as a 2 lane facility

AMENDMENT NUMBER 4 PROJECT OVERVIEWS

PROJECTS GUIDED BY STATE REQUIREMENTS FOR INCLUSION IN THE REGIONAL TRANSPORTATION PLAN (RTP)

Projects Seeking Corridor Preservation Funding

The following amendment requests are based on the State requirement that community applicants who are interested in utilizing local Corridor Preservation Funds must first have their project as part of the WFRC's RTP. Funding for these amendment projects has not yet been determined, but amendment into the RTP is the first step to allow communities to pursue local corridor preservation funds to finance these improvements.

HERRIMAN CITY

1. Operational Improvements on 6000 West

Cost: \$2.5 Million

This project calls for a new Phase 2 operational improvement along 6000 West from Herriman Parkway to Herriman Main Street. Benefits of this amendment would include the completion of the road cross-section, including curb, gutter, sidewalks, and storm drain improvements.

2. Operational Improvements on 6400 West

Cost: \$1.9 Million

This request is for a new Phase 1 operational improvement project on 6400 West from Herriman Main Street to 13400 South to help reduce traffic congestion and complete the road's cross-section, including curb, gutter, sidewalks, and storm drain improvements.

3. Operational Improvements on 7300 West

Cost: \$2.5 Million

This is a new Phase 3 operational improvement project on 7300 West from Herriman Main Street and Rose Canyon Road. Operational improvements would help complete the road cross-section, including curb, gutter, sidewalks, and storm drainage.

SOUTH JORDAN CITY

4. Widening of Riverfront Parkway

Cost: \$1.8 Million

This request is for a new Phase 1 widening project on Riverfront Parkway between 11050 South and 11400 South from three to five lanes. Benefits of this amendment include a consistent cross-section to 11400 South, along with accommodating increased traffic volumes along Riverfront Parkway.

5. Operation Improvements on 2700 West

Cost: \$4 Million

This request is for a new Phase 1 operational improvement on 2700 West from 9800 South to 11400 South. The widening of 2700 West will allow for a center turn lane to be added to the road's cross-section. This, in turn, will improve traffic flow which adding needed curb, gutter, sidewalks, and storm drainage improvements.

COTTONWOOD HEIGHTS

6. Operational Improvements on Bengal Boulevard

Cost: \$2.6 Million

This request is for a new Phase 1 operational improvement on Bengal Boulevard from Highland Drive to 2325 East. This would include a roundabout joining both 2300 East and 2325 East.

Benefits would include improved traffic safety and flow, especially for pedestrians traveling to and from a nearby school. This project would complete the road's cross-section with curb, gutter, sidewalks, and storm drain improvements.

7. Widening of Fort Union Boulevard

Cost: \$3.6 Million

This request is for a new Phase 1 widening project on Fort Union Boulevard between 3000 East and Wasatch Boulevard from two to four lanes. Benefits of this amendment include a consistent cross-section on Fort Union to Wasatch Boulevard, along with addressing increased traffic volumes along Fort Union Boulevard.

MURRAY CITY

8. Widening of Vine Street

Cost: \$10 Million

This project calls for the widening of Vine Street in Murray City between 900 East and the Van Winkle Expressway as a new, Phase 1 project. Benefits of this amendment include a consistent cross-section on Vine Street, along with addressing increased traffic volumes and the completion of the road cross-section, including curb, gutter, sidewalks, and storm drain improvements.

CLEARFIELD CITY

9. New Construction of Depot Street

Cost: \$2 Million

This request is for the extension of Depot Street from SR-193 (700 South) to the Clearfield FrontRunner Station (approximately 1250 South). This new Phase 1 project would be a three lane major collector facility providing improved street connectivity, better connection to the transit via the FrontRunner Station and would serve a planned major economic development project creating hundreds of new jobs.

SALT LAKE COUNTY

10. Operational Improvements on 8000 West

Cost: \$2 Million

This is a new Phase 1 project that would widen 8000 West between SR-201 and 3100 South. The project would realign the intersection at 2700 South, resulting safety and traffic congestion improvements, along with improving local street connectivity.

Projects Seeking Weber County Sales Tax Funding

The following amendment request is based on the State requirement that community applicants who are interested in utilizing 3rd quarter local sales tax funds must first have their project as part of the WFRC's Regional Transportation Plan. Funding for this amendment project has not yet been determined, but this first step will allow communities to pursue this avenue of possible revenues to finance these improvements.

CITY OF MARIOTT-SLATERVILLE

11. Operation Improvement on 1200 West

Cost: \$5.6 Million

This request is for an extension of a current Phase 1 operational improvement on 1200 West in the City of Marriott-Slaterville from 1200 South to 2700 North. The amendment would provide better traffic flow along 1200 West and would deliver a consistent cross-section including curb, gutter, sidewalks, and storm drain improvements.

MAJOR CAPACITY PROJECTS

Projects Seeking STP Funding

The following amendment requests are major capacity projects that must be included in Phase 1 of the RTP in order to be eligible for Urban Surface Transportation Program (STP) funding administered by the Wasatch Front Regional Council. Funding for these amendment projects has not yet been determined, but this first step will allow communities to pursue this avenue of possible revenues to finance these improvements.

DRAPER CITY

12. Widening of Lone Peak Parkway

Cost: \$6 Million

This request is to move the widening project on Lone Peak Parkway from 12300 South to 12650 South from three to five lanes from Phase 2 to Phase 1. The widening and realignment will provide a consistent cross-section to Bangerter Highway, provide better traffic flow along Lone Peak Parkway, and will support a direct connection to the FrontRunner Station.

TAYLORSVILLE CITY

13. New Construction of I-215 Frontage Road

Cost: \$14.5 Million

This request is to move the new southbound I-215 Frontage Road between 4100 South and 4700 South from Phase 2 to Phase 1. This facility would provide congestion and safety improvement on both 4700 South and 2700 West, along with providing improved access to development between 2700 West and I-215.

KAYSVILLE AND LAYTON CITY

14. Widening of Main Street

Cost: \$3.1 Million

This request is for the widening of Main Street from three to five lanes from 300 West in Kaysville City to Layton Parkway in Layton City. The amendment would be for a new Phase 1 project that would provide a consistent cross-section. The project would address increased traffic volumes along Main Street.

Projects to Utilize TIF Funding

The following amendment requests are major capacity projects that must be included in Phase 1 of the RTP in order to be eligible for the Transportation Investment Fund (TIF) Program administered by the Utah Department of Transportation (UDOT).

UTAH DEPARTMENT OF TRANSPORTATION

15. Bangerter Highway Interchange at 4700 South

Cost: \$44.3 Million

The Utah Department of Transportation is requesting that the current intersection at Bangerter Highway and 4700 South be replaced with a freeway interchange and moved from Unfunded to Phase 1. This improvement will provide a continuous freeway cross-section from 4700 South to I-15. East and West traffic flow will improve, along with an increase in safety.

16. Bangerter Highway Interchange at 13400 South

Cost: \$43.2 Million

The Utah Department of Transportation is requesting that the current intersection at Bangerter Highway and 13400 South be replaced with a freeway interchange and moved from Phase 2 to Phase 1. This improvement will provide a continuous freeway cross-section from 4700 South to I-15. East and West traffic flow will improve, along with an increase in safety.

17. Widening of US Highway 89

Cost: Currently Funded

This request from the Utah Department of Transportation is to extend the currently funded US-89 project from Farmington City to Antelope Drive to now extend to I-84. The amendment would include the widening from four to six lanes and move this project from the unfunded portion of the RTP to Phase 1. Benefits of this improvement would help traffic flow along this major arterial, increase safety, and is part of an overall plan to upgrade this facility to a north / south freeway.

For Information Only

Finally, two additional UDOT projects may be funded with the TIF. Neither project requires amendment into the 2015-2040 RTP; both are included for information only.

UTAH DEPARTMENT OF TRANSPORTATION

18. Construction of Interstate 15 Braided Ramp

Cost: \$130 Million

The Utah Department of Transportation anticipates the new construction of a northbound braided ramp on I-15 between 9000 South and I-215. An existing operational project is already in the 2015-2040 RTP making an amendment unnecessary. However, the project details are provided for member information. This type of improvement will provide better traffic flow and helps to address increased northbound traffic volumes along I-15. This project will also provide relief to congestion at the 7200 South and 9000 South interchanges.

19. Construction of SR-201 Extension

Cost: \$100 Million

This request is outside the geographic purview of the WFRC Regional Transportation Plan, but is included for information to WFRC members due to its interaction with the 2015-2040 RTP. The project calls for extending and new construction of SR-201 from the SR-201/I-80 connection to the I-80/SR-36 connection. This project is a parallel facility alongside of I-80 and would allow for an emergency bypass, provide better traffic flow, and addresses increased traffic volumes on I-80.

2015 – 2040 Regional Transportation Plan Amendment Number 3 – November 2016

Amendment #3 proposed projects changes for the 2015-2040 RTP

- S-140 - Bangerter Highway Interchange @ 6200 South - Move from Phase 3 to Phase 1
- S-147 - Bangerter Highway Interchange @ 12600 South - Move from Phase 2 to Phase 1
- S-144 - Bangerter Highway Interchange @ 9800 South - Move from Phase 2 to Phase 1
- S-5 - I-80 from I-215 (East) to Lambs Canyon - Move from Phase 1 to Phase 2

2015 – 2040 Regional Transportation Plan Amendment Number 2 – May 2016

UTAH DEPARTMENT OF TRANSPORTATION

1. SR-209, 9000 South; From I-15 to 700 East - This project is currently in Phase 1 and is listed as an “operational” project. The proposed change is to make it a “widening” project.
2. SR-68, Redwood Road – There are two proposed changes:
 - From 9000 South to 11400 South - This project is an operational project and is currently in Phase 2. The proposed change would be to move the project forward to Phase 1
 - From 9000 South to Bangerter Highway - This project is a widening of the road and is currently in Phase 3. The proposed change would move the project forward to Phase 1

OGDEN CITY

3. Valley Drive; From 20th Street to SR-39 - Since funding is being sought through the local option sales tax, this proposed change would be to include this new project in the current RTP.
4. 2nd Street; From Washington Blvd. to Monroe Street - Since funding is being sought through the local option sales tax, this proposed change would be to include this new project in the current RTP.
5. 17th Street; From Wall Avenue to Washington Blvd. - Since funding is being sought through the local option sales tax, this proposed change would be to include this new project in the current RTP.
6. 26th Street; From Wall Avenue to Washington Blvd. - Since funding is being sought through the local option sales tax, this proposed change would be to include this new project in the current RTP.

NORTH ODGEN CITY

7. 2600 North; From Washington Blvd. to approximately Fruitland Drive - This is a new widening project, and since funding is being sought, this proposed change would be to include this project in the current RTP.

HARRISVILLE CITY

8. Wall Avenue Extension; North from Larsen Lane. This request is for this project to be removed from the current RTP.

BLUFFDALE CITY

9. 14000 South Road; From 2700 West to 3600 West - Since funding is being sought, this proposed change would be to include this new project in the current RTP.

2015-2040 Regional Transportation Plan Amendment Number 1 - October 2015

BACKGROUND:

Every four years the Wasatch Front Regional Council (WFRC) prepares and adopts a regional transportation plan (RTP) to identify and implement needed transportation improvements. The WFRC adopted the current RTP in May 2015. While the RTP receives considerable review before being formally adopted, the identification of new funding sources, the determination of the final environmental impact statements, or the rapid development of certain projects, may warrant a change to the RTP. A process has been formally adopted by WFRC to consider periodic revisions.

Recently, the WFRC received requests from the Utah Department of Transportation (UDOT), the Utah Transit Authority (UTA), and Layton City to amend the 2015-2040 RTP to consider the changes listed below.

WFRC staff has analyzed the potential financial implications of including these projects in Phase 1 and determined that there are adequate resources available and potential cost savings from a reprioritization of projects. The plan is able to maintain its fiscal constraint while accommodating construction of these projects in phase I. WFRC is reviewing the air quality impacts to ensure that all applicable air quality conformity requirements are met; results will be provided at the meeting.

The formal public comment period will take place from November 2 to December 1. The WFRC staff, UDOT, UTA, and Layton City representatives will present these amendments to the Regional Growth Committee's Ogden-Layton Technical Advisory Committee and the Salt Lake County PlanTac on December 16, 2015. The Regional Growth Committee and the Regional Council will review all comments and make a final recommendation in January 2016.

UDOT PROPOSED MODIFICATIONS TO THE 2015-2040 RTP

US-89 Improvements

Total Cost: \$275 million

The Utah Department of Transportation is making a request to amend the current 2015-2040 RTP for (1) construction of new interchanges at Antelope Drive, Gordon Avenue, Oak Hills Drive and 400 North, (2) construction of frontage roads from Oak Hills Drive to Eagle Way, (3) construction of two overpasses at Crestwood Road and Nicholls Road, (4) potential widening of US-89 from 4 to 6 lanes from just north of the US-89/I-15 interchange in Farmington to Antelope Drive. The 2015-2040 RTP includes the Interchange at 400 North, the overpass at Nicholls Road, and frontage roads from Oak Hills Drive to Nicholls Road in Phase 1. The proposed amendment includes the following modifications to the RTP.

- 1. New Construction of US-89 Interchange @ Antelope Drive**
This project will be moved from Phase 2 to Phase 1.
- 2. New Construction of US-89 Interchange @ Gordon Avenue**
This project will be moved from Phase 2 to Phase 1.
- 3. New Construction of US-89 Interchange @ Oak Hills Drive**
This project will be moved from Phase 2 to Phase 1.
- 4. Widening of US-89 from Antelope Drive to I-15 (Farmington)**
This project will be moved from Phase 3 to Phase 1.

5. New Construction of US-89 Frontage from Eagle Way to Oak Hills Drive

The frontage road project limits will be extended to Eagle Way in the south. This project is currently in Phase 1.

6. New Construction of Crestwood Road Overpass @ US-89

This new project provides connectivity for pedestrians, bicycles, and vehicular traffic across US-89 and is requested to be included in Phase 1.

While these elements are presented as separate projects in the current RTP and proposed amendment, they are part of the preferred alternative developed for the US-89 Environmental Impact Statement (EIS) completed in 1996. Since the completion of the EIS, UDOT has worked to construct elements of the preferred alternative. With this project, there is an opportunity to complete most of the remaining elements of the preferred alternative. The priority components include the construction of the interchanges, the overpasses, and the frontage roads. The widening project is included in the amendment because UDOT believes a favorable bidding climate could result in enough project savings to complete the widening from Antelope Drive to I-15 in Farmington. The widening from 4 to 6 lanes from I-84 to Antelope Drive is not part of this project. The current cost estimate for the US-89 project is \$275 million and is funded from UDOT's Transportation Improvement Fund (TIF).

Project benefits include costs savings due to project efficiencies and future inflation costs, improved traffic flow, delay reductions from the elimination of at-grade intersections, and improved access and connectivity with the development of the frontage road system and overpasses.

UTA PROPOSED MODIFICATIONS TO THE 2015-2040 RTP

7. Ogden-Weber State University Corridor - Transit Project 11

Cost: \$ 41.0 million

The Utah Transit Authority is making a request to amend the current 2015-2040 RTP to include 25th Street as the approved alignment in Ogden City with the project mode as a modern Bus Rapid Transit (BRT) system in mixed flow traffic and with exclusive lanes. Currently, the RTP indicates that 30th Street would be the preferred alignment, with the mode undetermined. On July 28, 2015, the Ogden City Council and Mayor adopted Resolution #2015-24 approving a locally preferred alternative (LPA) for the Ogden/WSU Transit Project Study. This project is in Phase 1 of the RTP and the Environmental Assessment is expecting to be completed in 2016/2017.

Layton City PROPOSED MODIFICATIONS TO THE 2015-2040 RTP

8. Gordon Avenue from 1600 East to US-89

Cost: \$ 28.7 million

Layton City is coordinating with UDOT on the US-89 improvements from Antelope Drive to I-15 in Farmington. As part of the US-89 project, an interchange at Gordon Avenue will be constructed. This project is a new facility and will connect US-89 with the existing Gordon Avenue at 1600 East in Layton. The construction of Gordon Avenue is a vital component of the US-89 improvement project and will improve safety, connectivity and accessibility for state and local emergency services, citizens and pedestrians and bicyclist. The project is currently in Phase 2, and Layton City is requesting this project be moved to Phase 1 due to the change in the US-89 project. Layton City does not have full funds for this project but is planning on utilizing impact fees and pursuing alternative sources.

PROPOSED ADDITIONS TO THE 2015-2040 RTP

9. I-15 Improvements

Total Cost: \$250 million

The entire I-15 project includes the (1) construction of southbound auxiliary lanes from SR-201 to SR-71 (12300 South), (2) construction of an additional southbound general purpose lane from SR-201 to 12300 South (SR-71), (3) upgrade of the I-215/I-15 Interchange, and (4) construction of Managed Motorways along the corridor. The 2015-2040 RTP includes an operational project on I-15 throughout Salt Lake County and an Interchange upgrade at I-215/I-15 in Phase 1. The proposed amendment calls for an additional southbound general purpose lane in Phase 1 from SR-201 to 12300 South (SR-71).

This project was originally programmed for construction in FY 2015-2016. UDOT put the project on hold to evaluate additional alternatives, including advanced ramp metering (Managed Motorways), freeway to freeway ramp meeting, whether to include a GP lane and whether to extend the project to 12300 South (SR-71) from its original terminus of 9000 South (SR-209). The evaluation concluded that the project should move forward with the components outlined above. The current cost estimate for the Salt Lake County I-15 project as outlined above is \$250 million and is funded from UDOT's Transportation Improvement Fund (TIF).

Project benefits include congestion/delay reduction, safety improvements, the elimination of physical choke points, and improved main-line capacity to handle traffic inflow from adjacent facilities including I-80, SR-201, and I-215.

10. I-15 Operational Projects in Weber County

Total Cost: \$80 million

11. I-15 Operational Projects in Davis County

Operational improvements can include a variety of different project types including axillary lanes, ramp extensions and technology enhancements. One technology enhancement UDOT is evaluating is the concept of Managed Motorways. Managed Motorways are smart freeways that prevent congestion by continuously monitoring traffic flows and controlling access to the freeway with state-of-the-art ramp metering signal technologies that are more precise and sophisticated than other applications currently in use. Current project estimates for managed motorways in Davis and Weber Counties in \$80 million. Project benefits include improved facility capacity, travel reliability and safety performance during heavy traffic demand periods by effectively preventing congestion. Preliminary analysis indicates that freeway facilities with these improvements could see a 20% increase vehicle carrying capacity and a 30% reduction in crashes. UDOT requests that this project be included in Phase 1.

COPPER VIEW PARK LWCFA DOCUMENTATION

CONTACT

Nicole Tolley
Horrocks Engineers
2162 W. Grove Parkway, Suite 400
Pleasant Grove, Utah 84602

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF OUTDOOR RECREATION LAND AND WATER CONSERVATION FUND PROJECT PROPOSAL	FOR BOR USE ONLY	
	State or Territory	Project Number
	Geographic Code	Congressional District
	Latitude ____° ____' ____" Longitude ____° ____' ____" Date Received	

PART I

1. Project Title COPPERVIEW PARK PHASE I	2. County Salt Lake
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3. Brief description of project

This proposal is for the first phase development of 13 acres located just south of Midvale City and adjacent to Interstate 15 and will provide the following: Site preparation (13 acres); grading (13 acres); underground electrical lines (5,000 feet); sprinkling system (13 acres); lawn planting (13 acres); tree planting (50 trees); and design by Recreation and Parks Department

4. Applicant's name, address and phone number Salt Lake County Commission William E. Dunn, Chairman City & County Building Salt Lake City, Utah 84111 Phone: 801-328-7307	5. a. Total project costs \$ 76,176 Federal assistance requested 50% \$ 38,088 b. Source(s) of remainder of funds: Salt Lake County Budget
6. Other Federal Grant? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes," attach an explanation of nature of the grant, indicate whether independent or supplemental, and give name of the granting agency.	7. Previous L&WCF Grant? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Project Number _____
8. <input checked="" type="checkbox"/> New <input type="checkbox"/> Addition	
9. SITE ORIENTATION <input type="checkbox"/> Marine <input type="checkbox"/> Lakes, including reservoirs <input type="checkbox"/> Rivers or streams <input checked="" type="checkbox"/> Non-aquatic	10. Time-Distance Classification A. <input checked="" type="checkbox"/> Neighborhood B. <input type="checkbox"/> Community/Town C. <input type="checkbox"/> Metropolitan/Regional D. <input type="checkbox"/> Overnight E. <input type="checkbox"/> Weekend/Vacation
11. Census Classification <input checked="" type="checkbox"/> Urban <input type="checkbox"/> Rural	12. Page numbers from State Plan: 3.62; 3.105; 4.74; & 5.25 If appropriate, attach a narrative explanation.

13. Ownership:

☒ Fee Simple ☐ Less than Fee (Specify) _____
 If leased, is lessor: ☐ Federal ☐ State/Local Government ☐ Private
 Original term in years _____

If any outstanding rights are to be held by others, attach an explanation of how they will affect the project.

FOR USE BY STATE LIAISON OFFICE ONLY

On behalf of the Governor, I request this application be considered for financial assistance under the terms of the Land and Water Conservation Fund Act of 1965 (78 Stat. 897), as amended, the Bureau of Outdoor Recreation Manual, and other pertinent directives and policies of the BOR and the Department of the Interior.

William E. Dunn
Signature

State Liaison Officer
Title

OCT 21 1971
Date

FOR STATE USE Compliance with Civil Rights Requirements is assured (Part I Attachment I)

The project has been reviewed and approved by the Utah State Clearinghouse in accord with B.O.B. A-95 (Part I Attachment II).

Part I

1. Project title is limited to 36 spaces.
2. If project is located in more than one county but not statewide, give the name of the county in which the major portion of the project is located. If "Statewide", so indicate. All planning projects are statewide.
3. Describe the property to be acquired or developed, its outstanding features and its location. If part of a larger recreation complex, describe the relationship of this project to the total area.
4. Applicant's name includes the name of the applying agency as well as the name and title of the agency head if appropriate. Include zip code in the address and area code in the telephone number.
5.
 - a. Enter the total estimated cost of the project, and the percent and dollar amount of Federal assistance requested.
 - b. Indicate the source or sources of the balance of the funds needed for this project.
6. If other Federal assistance has been given or promised for any work within the boundaries of the park or recreational site affected by this request, describe the nature and extent of such assistance. Include the name of the grantor agency and whether the assistance is independent of this request or supplemental to it.
7. Indicate whether there has been a previous Land and Water Conservation Fund grant for the park or recreational site affected by this request.
8. For acquisition projects, indicate whether this is a new area or an addition to an existing area. For development projects, indicate whether these facilities are being placed on a new area or will be an addition, expansion, or replacement of facilities in an existing area.
9. Self-explanatory.
10. Check one of the following categories to indicate the relationship of the area to its primary users:
 - A. Neighborhood areas serve primary users within walking distance.
 - B. Community/Town areas serve primary users within a fifteen minute driving distance.
 - C. Metropolitan/Regional areas serve primary users within a one hour driving distance.
 - D. Overnight use areas serve primary users within a three hour driving distance.
 - E. Weekend/Vacation areas serve primary users over three hours driving distance from the project.

Primary users are defined as those users comprising 80 percent of the total users of the project site.
11. An urban project is located in an incorporated or unincorporated place of 25,000 inhabitants or more. All other projects are rural.
12. Provide the State Plan page numbers which support this project. If the project cannot be clearly supported in this manner, provide a narrative explanation.
13. For acquisition projects, indicate the proposed interest to be acquired. For development projects, indicate the existing interest the applicant holds in the property to be developed.

ATTACHMENTS

For all projects, attach a properly executed civil rights Assurance of Compliance form and provide all information required by the instructions accompanying that form. For acquisition or development projects, complete Parts II and III in accord with the instructions on the Part II Cost Analysis form. For State planning projects, refer to Subparagraph 635.2.5A and Illustration 1, 635.2.5A of the Outdoor Recreation Grants-in-Aid Manual for additional documentation requirements.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF OUTDOOR RECREATION

Land and Water Conservation Fund

Project Application

PART II

COPPERVIEW PARK PHASE I**Development Cost Analysis**

BOR Project Number

Stage

☒ Initial☐ Revised☐ FinalDate **September 21, 1971**

Facility		Estimated No. of Units			* Code	Estimated Cost	Facility		Estimated No. of Units			* Code	Estimated Cost
		Units	No	FL					Units	No	FL		
A	Family Campground	Sites					J	Winter Sports	Acres				
	1 Tent Sites	Each						1 Ski Lift	Each				
	2 Trailer/Camper Site	Each						2 Ski Slope	Acres				
	X Support Facilities							3 Ski Jump	Each				
B	Group Campground	Capacity						4 Sled/Toboggan Run	Each				
	X Support Facilities							5 Ice Rink	Each				
C	Picnic Ground	Sites						X Support Facilities					
	1 Family Site	Each					K	Hunting	Acres				
	2 Group Shelter	Each						1 Habitat Improv.	Acres				
	X Support Facilities							X Support Facilities					
D	Sports and Playfields	Acres					L	Fishing					
	1 General Purpose	Each						1 Pier	Each				
	2 Baseball/Softball	Each						2 Stream Improve.	Miles				
	3 Football/Soccer	Each						X Support Facilities					
	4 Tot Lot	Each					M	Impoundments	Acres				
	5 Tennis Court	Each					N	Other					68,000
	6 Multi-purpose Court	Each						1 Site preparation	Acres	13		1	2,600
	7 Rifle/Pistol Range	Each						2 Grading	Acres	13		1	6,500
	8 Trap/Skeet Field	Each						3 Sprinkling System	Acres	13	30	1	29,700
	9 Archery Range	Each						4 Contingencies					3,200
	X Support Facilities							X Support Facilities					26,000
E	Golf Course	Acres						X Support Facilities					26,000
	1 Regular	#Holes						1 Site Improvement	Acres				()
	2 Par 3	#Holes						2 Landscaping	Acres	13	40	1	16,000
	3 Driving Range	Each						3 Fencing	Feet				()
	X Support Facilities							4 Sewer System	Feet				()
F	Swimming Pool	Each						5 Visitor Info/Ser. Bd.	Each				()
	1 Pool	Each						6 Comfort Station	Each				()
	2 Wading Pools	Each						7 Concession Building	Each				()
	3 Spray Pools	Each						8 Maint/Stor. Adm. Bd.	Each				()
	X Support Facilities							9 Equipment	Each				()
G	Beach	Miles						10 Road	Miles				()
	X Support Facilities							11 Parking	#Spaces				()
H	Boating							12 Electrical System	Feet	5000		1	10,000
	1 Launch Ramp	Each						13 Water System	Feet				()
	2 Berths	Each						14 Signs	Each				()
	3 Boat Lift	Each					Y	Project Administration					8,176
	X Support Facilities							1 State Administration					4,176
I	Trails	Miles						2 Design and Engineer					3,500
	1 Hiking	Miles						3 Construction Super.					500
	2 Horse	Miles						Total Estimated Cost					76,176
	3 Bicycle	Miles											
	4 Motorized	Miles											
	5 Nature	Miles											
	X Support Facilities												

*Code 1. Contract; 2. Force Account

FOR STATISTICAL PURPOSES ONLY

The answer to the following questions will not affect consideration of the project for funding. If you don't have firm estimates, make a reasonable guess. If you cannot make a reasonable guess, leave blank

- Estimated annual operations and maintenance costs of the facilities added by this project \$ 1,000
- Estimated annual visitation of the facilities added by this project 19,200
- Estimated annual revenue from entrance or user fees \$ None
- Estimated life in years of each line item for which assistance is requested. Answer in Column FL above.

FOR FINAL BILLING ONLY

I hereby certify that construction has been completed in accordance with plans and specifications on file, that the plans and specification are consistent with the scope of the project approved by the Bureau of Outdoor Recreation, and the numbers of units and costs shown above are the actual numbers of units and costs of the completed work.

Signature of State Liaison Officer

Date

PART II

1. A separate cost analysis must be completed for each project, project amendment affecting cost or scope or each stage of a staged project. An "as built" cost analysis must accompany each final billing.
2. The Units column will contain the number of acres, feet, miles, etc. for each category and subcategory for which assistance is requested. If the facility you propose to construct is not listed show under "other."
3. Enter the appropriate code (1 Contract, 2 Force Account) in the Code column.
4. Give the total estimated cost in dollars for each item.
5. The total cost of all items listed under subcategory "X Support Facilities" must equal the total cost of all items listed under category "X Support Facilities."

PART III

For development projects, attach the following additional documentation:

1. Estimates

- A. Provide an estimated cost breakdown by major work element.
- B. Indicate the work that will be done by force account and the work that will be done by contract.

2. Agreements

- A. List any current agreements with other agencies, individuals, or organizations for participating in this project, including its later operation and maintenance.
- B. Describe any contemplated agreements with others for participating in this project, including its later operation and maintenance.

3. Maps

- A. State, county, or city maps indicating the geographic location of the project.
- B. A site plan drawn to scale showing the exterior boundaries of the area to be developed. Annotate all existing improvements and show the proposed location of all facilities for which Fund Assistance is requested. Identify by stage if a staged project.
- C. When construction includes any buildings, a preliminary design or architectural concept and a floor plan must be submitted for each building. The Bureau may request additional details when necessary.

PROJECT ADMINISTRATION

Additional documentation such as copies of construction plans and specifications, bid summaries, contracts, leases, agreements, etc., may be required upon request by the Bureau.

COPPERVIEW PARK

Part III

1. Estimate

A. A descriptive outline of proposed accomplishments and estimated costs are as follows:

1. Site Preparation (13 Acres)	\$ 2,600
2. Grading (13 Acres)	6,500
3. Sprinkling System and Water Meter (13 Acres)	29,700
4. Landscaping Lawn Planting (13 Acres), Tree Planting (50 Trees)	16,000
5. Electrical power to restrooms and primary cable for sprinkling system and park lighting	<u>10,000</u> \$64,800
5% Contingency	<u>3,200</u> \$68,000
6% Design & Supervision	<u>4,000</u>
TOTAL DEVELOPMENT COSTS	\$72,000
STATE ADMINISTRATIVE SURCHARGE (5.8% Development Costs - Matching	<u>4,176</u>
TOTAL PROJECT COST ELIGIBLE FOR MATCHING	\$76,176

PART III.

1. Estimates

- B. Salt Lake County Recreation & Park Department and/or Midvale City will be responsible for all proposed developments and will accomplish the work by contract. Contracts will be negotiated by open competitive bidding as specified in the Administrative Responsibility and Fiscal Procedures Statement. Prospective bidders will be notified prior to bidding that Federal Funds are involved in the project.

2. Agreements

- A. There is an agreement being prepared between Salt Lake County the land owners and Midvale City, for the purpose of park maintenance, development and operation of Copperview Park.
- B. Midvale City in agreement with Salt Lake County, will be the only organization to have any agreement to participate in this project, including its later operation and maintenance.

3. Maps

- A. A map of Utah locating Salt Lake County is appended as Attachment Part III 3A(1). A map of Salt Lake County showing location of project park area is appended as Attachment Part III (3A(2). A map of the park area showing location of the park and noting all streets is appended as Attachment Part III 3A(3).
- B. A master plan of Copperview Park and area to be developed is appended as Attachment Part III 3B(1).

DI Form 1350
(October 1968)

Illustration No. 1

U. S. DEPARTMENT OF THE INTERIOR
ASSURANCE OF COMPLIANCE
(TITLE VI, CIVIL RIGHTS ACT OF 1964)

SALT LAKE COUNTY CORPORATION


(hereinafter called "Applicant-Recipient")
HEREBY AGREES THAT IT will comply with Title VI of the Civil Rights Act of 1964 (P.L. 88-352) and all requirements imposed by or pursuant to the Department of the Interior Regulation (43 CFR 17) issued pursuant to that title, to the end that, in accordance with Title VI of that Act and the Regulation, no person in the United States shall, on the ground of race, color, religion, sex, or national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Applicant-Recipient receives financial assistance from the Bureau of Outdoor Recreation and Hereby Gives Assurance That It will immediately take any measures to effectuate this agreement.

If any real property or structure thereon is provided or improved with the aid of Federal financial assistance extended to the Applicant-Recipient by the Bureau of Outdoor Recreation, this assurance obligates the Applicant-Recipient, or in the case of any transfer of such property, any transferee for the period during which the real property or structure is used for a purpose involving the provision of similar services or benefits. If any personal property is so provided, this assurance obligates the Applicant-Recipient for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant-Recipient for the period during which the Federal financial assistance is extended to it by the Bureau of Outdoor Recreation.

THIS ASSURANCE is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts, property, discounts or other Federal financial assistance extended after the date hereof to the Applicant-Recipient by the bureau or office, including installment payments after such date on account of arrangements for Federal financial assistance which were approved before such date. The Applicant-Recipient recognizes and agrees that such Federal financial assistance will be extended in reliance on the representations and agreements made in this assurance, and that the United States shall reserve the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant-Recipient, its successors, transferees, and assignees, and the person or persons whose signature appear below are authorized to sign this assurance on behalf of the Applicant-Recipient.

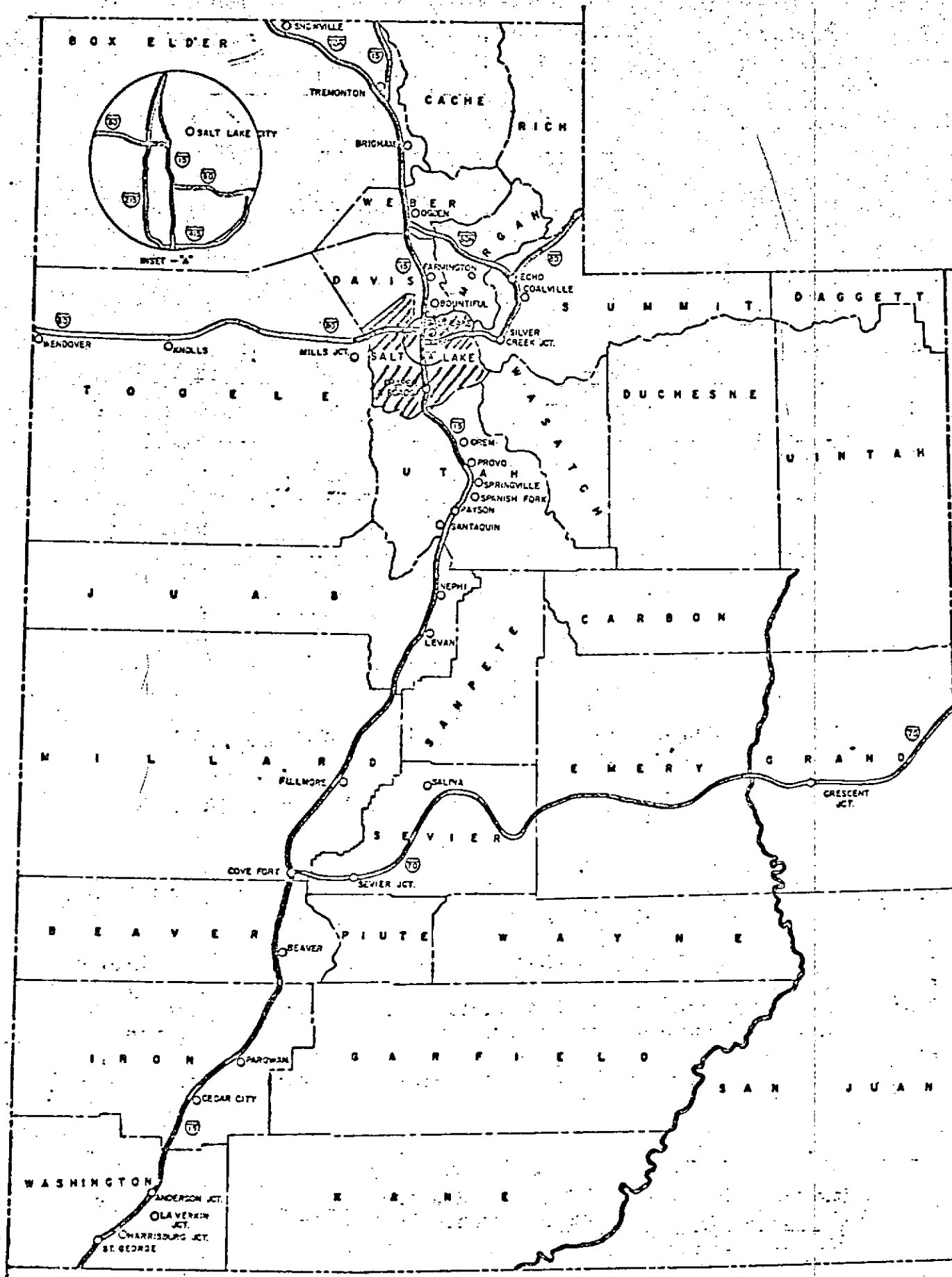
DATED

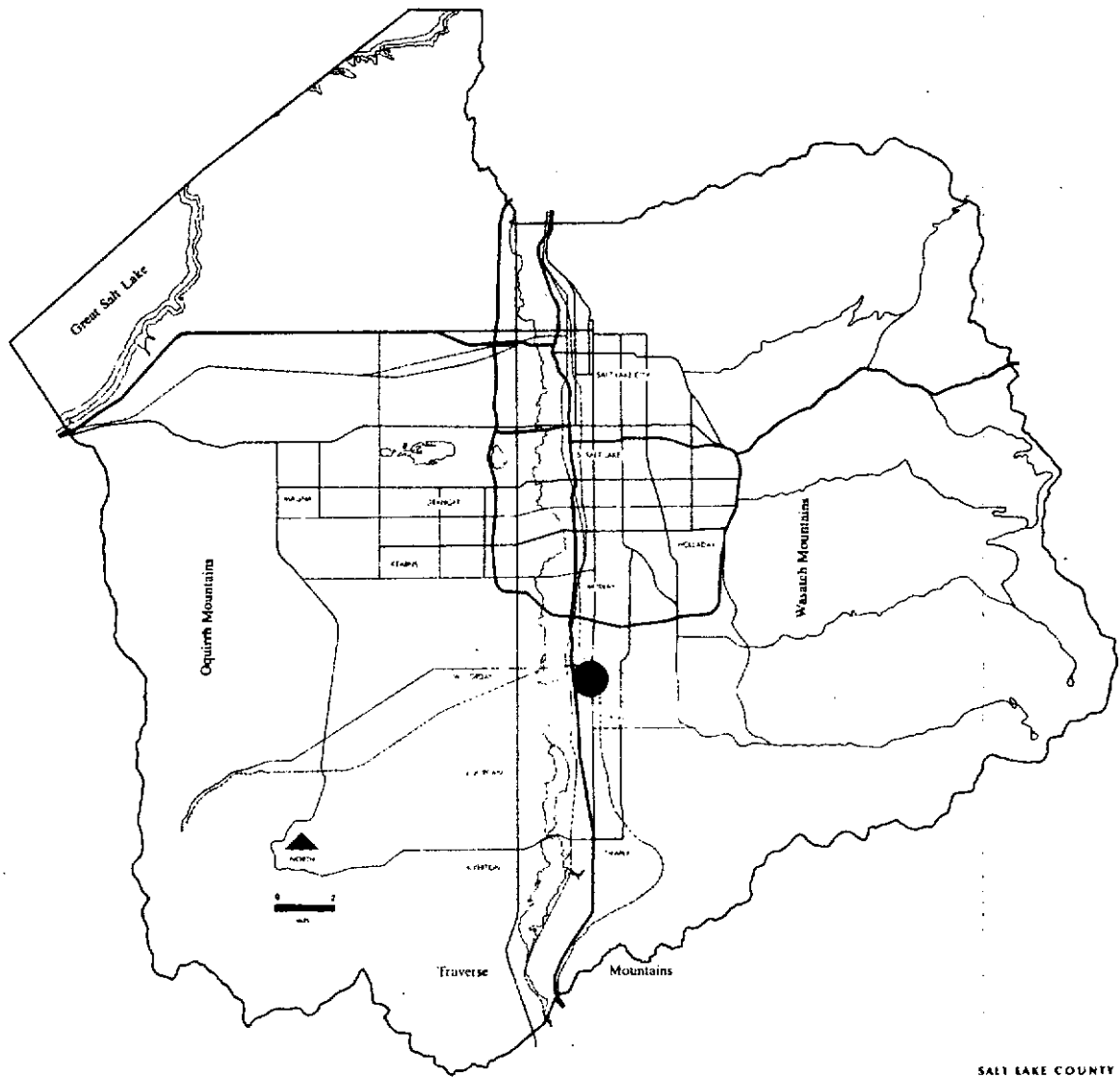
SALT LAKE COUNTY
APPLICANT-RECIPIENT

By 
(President) Chairman of Board or Comparable
authorized Official)

City & County Building, Salt Lake City, Utah 84111

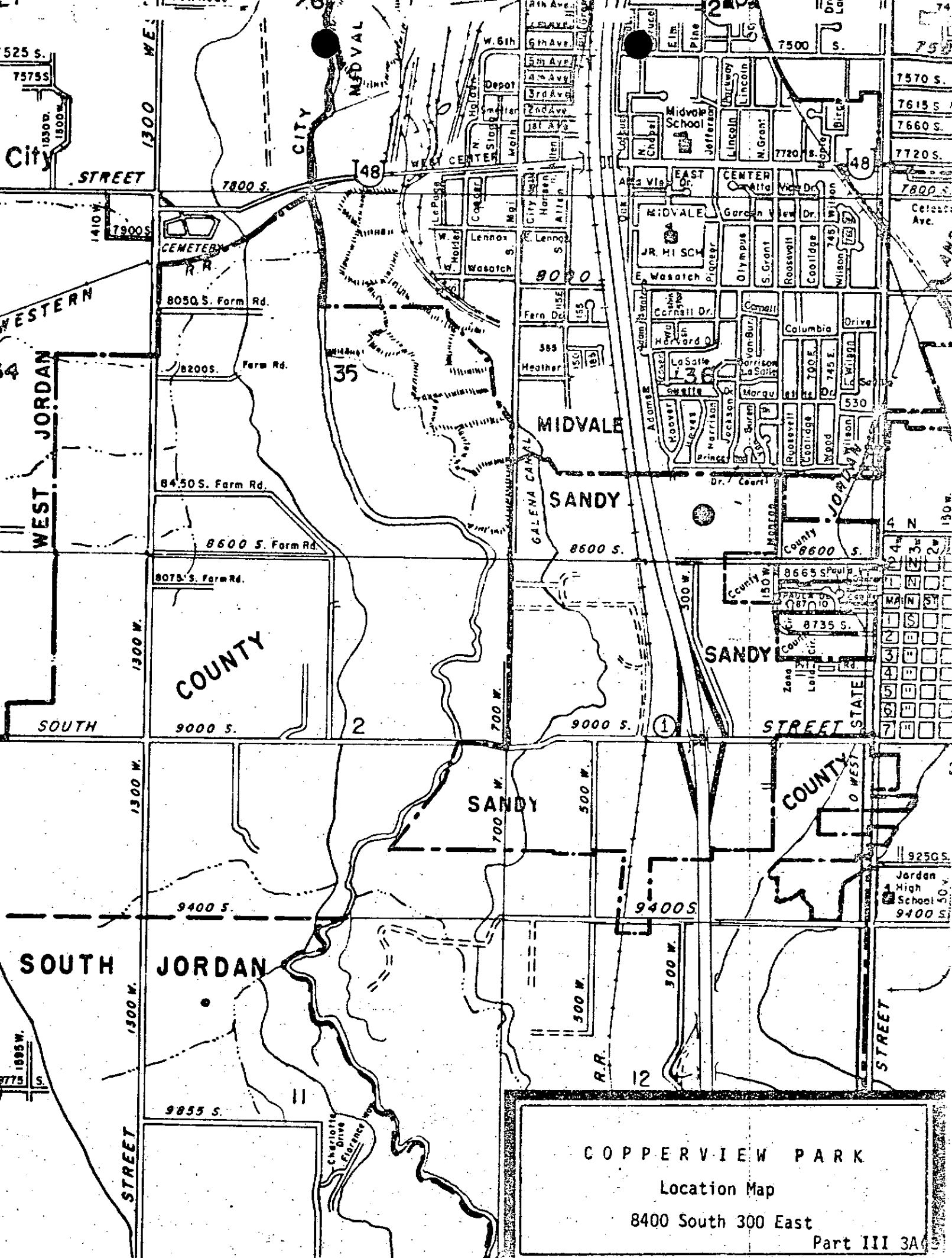
APPLICANT-RECIPIENT'S MAILING ADDRESS





SALT LAKE COUNTY

LOCATION MAP
COPPERVIEW PARK



COPPERVIEW PARK

Location Map

8400 South 300 East

Part III 3A

LAND AND WATER CONSERVATION FUND CONTRACT BETWEEN
STATE OF UTAH AND PARTICIPANT

<u>Copperview Park Phase I</u>		<u>49-00109</u>
Project Title		Project Number
<u>December 1, 1971 to June 30, 1974</u>	<u>December 1, 1971 to June 30, 1974</u>	
Project Period	Period Covered by Agreement	
<hr/>		
Total Direct Project Cost	\$ <u>72,000.00</u>	(1)
Total Direct Cost This Segment	\$ <u>52,260.72,000.00</u>	(2)
Surcharge (State Administrative Assessment - <u>5.8</u> %, Line 2)	\$ <u>940.68 4,176.00</u>	(3)
Total Segment Cost Eligible for Federal Funding	\$ <u>53,200.68 76,176.00</u>	(4)
Federal Participation This Segment (50%, Line 4)	\$ <u>38,088.00</u>	(5)
Surcharge (State Recreation Plan Maintenance Assessment - <u>2</u> %, Line 2)	\$ <u>1,440.00</u>	(6)
Cost of This Segment to <u>Salt Lake County</u> (Participant)	\$ <u>39,528.00</u>	(7)

THIS AGREEMENT, made and entered into this First day of December 19 71, between the STATE OF UTAH, acting by and through the Executive Director, Department of Natural Resources, hereinafter referred to as the Executive Director, and Salt Lake County qualifying under this agreement either as an agency or a political subdivision of the State of Utah, and hereinafter referred to as the Participant.

WHEREAS, the United States has enacted Public Law 88-578, generally known and identified as the Land and Water Conservation Fund Act of 1965, 78 Stat. 897 (1964), which provides certain federal funds to be made available to participating state agencies or political subdivisions for the acquisition and development of land and water projects for recreation uses by the general public; and

WHEREAS, the Executive Director and the Participant desire to accomplish the Project hereinafter described, and the Executive Director has contracted with the Bureau of Outdoor Recreation, an agency of the United States, for Federal reimbursement for

certain costs of this Project as set forth below, and it is now necessary for the Executive Director and the Participant to execute this agreement for the qualification and completion of said project:

NOW, THEREFORE, by virtue of the authority contained in Title 63, Chapter 28, Utah Code Annotated 1953, as amended, and in consideration of the promises, covenants and conditions hereinafter set forth, it is hereby mutually agreed as follows:

A. DEFINITIONS

1. The term "BOR" as used herein means the Bureau of Outdoor Recreation, United States Department of the Interior.

2. The term "Director" as used herein means the Director of the Bureau of Outdoor Recreation, or any representative lawfully delegated the authority to act for such Director.

3. The term "Executive Director" as used herein means the Executive Director, Utah State Department of Natural Resources, or any representative lawfully delegated the authority to act for such Executive Director.

4. The term "Manual" as used herein means the Bureau of Outdoor Recreation Grant-in-Aid Manual.

5. The term "Project" as used herein means that project or project segment which is the subject of this agreement.

6. The term "State" as used herein means the State of Utah.

7. The term "Participant" as used herein shall mean the State agency or local governmental unit that is a party to this agreement.

8. The term "Federal Funds" as used herein means those monies made available by the United States of America as matching money for projects under the Land and Water Conservation Fund Act of 1965, 78 Stat. 897 (1964).

B. PROJECT EXECUTION

1. The Participant shall at no cost to the State or Executive Director execute, complete, operate and maintain the approved Project in accordance with the Manual, the attached (to Participant's copy of Agreement only) Project Proposal and applicable plans and specifications, which documents are by this reference made a part hereof. Failure to render satisfactory progress or to complete this or any other Project which is the subject of Federal assistance under this program to the satisfaction of the Director or Executive Director may be cause for the suspension of all obligations of the United States and the State under this agreement.

2. The Participant shall indemnify the State and its officers, agents, and employees against and hold the same free and harmless from any and all claims, demands, losses, costs, and/or expenses of liability due to, or arising out of, either in whole or in part, whether directly or indirectly, the organization, development, construction, operation or maintenance of the Project.

3. In the event of default by the Participant which default is not cured by the Participant within thirty (30) days after receipt of written notice from the Executive Director, the State may in addition to any other remedies take possession of the Project and construct, operate or maintain the Project as the Executive Director may deem necessary to fulfill requirements of the Federal Government, and the Participant agrees to reimburse the Executive Director for any costs or expenses incurred by the State thereby.

4. Construction contracted for by the Participant shall meet the following requirements:

(a) Contracts for construction in excess of the Participant's legal limitations (\$12,000 for cities of the first class; \$4,000 for cities of the second and third classes - Reference Section 10-7-20 Utah Code Annotated, 1953, as amended), but which in no case shall exceed \$12,000, shall be awarded through a process of competitive open bidding. Copies of all bids and contracts shall be submitted for inspection by the Director or Executive Director upon request.

(b) The Participant shall inform all bidders on contracts for construction in excess of \$10,000 that Federal Funds are being used to assist in construction.

(c) Written change orders to contracts for construction in excess of \$10,000 shall be issued for all necessary changes in the facility. Such orders shall be made a part of the Project file and shall be kept available for audit upon request.

(d) The Participant shall incorporate, or cause to be incorporated, into all construction contracts the following provisions:

"During the performance of this contract, the contractor agrees as follows:

"(1) The contractor will not discriminate against any employee or applicant for employment because of race, creed, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this non-discrimination clause.

"(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will

receive consideration for employment without regard to race, color, religion, sex, or national origin.

"(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

"(4) The contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

"(5) The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

"(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any such rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

"(7) The contractor will include the provisions of Paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event the contractor becomes involved in, or is threatened with litigation with a subcontractor or vendor as a result of such direction by the contracting agency,

the contractor may request the United States to enter into such litigation to protect the interests of the United States."

(e) The Participant shall:

(1) comply with the above provisions in construction work carried out by itself;

(2) assist and cooperate actively with the Executive Director and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the above contract provisions and with the rules, regulations, and relevant orders of the Secretary of Labor;

(3) obtain and furnish to the Executive Director and to the Secretary of Labor such information as they may require for the supervision of such compliance;

(4) enforce the obligation of contractors and subcontractors under such provisions, rules, regulations, and orders;

(5) carry out sanctions and penalties for violation of such obligations imposed upon contractors and subcontractors by the Secretary of Labor or the Executive Director pursuant to Part II, Subpart D, of Executive Order No. 11246 of September 24, 1965; and

(6) refrain from entering into any contract with a contractor debarred from Government contracts under Part II, Subpart D, of Executive Order No. 11246 of September 24, 1965.

5. The Participant shall secure completion of the work in accordance with the approved construction plans and specifications, and shall secure compliance with all applicable Federal, State and local laws and regulations, and will provide the Executive Director with written assurances of such compliance as requested.

6. The Participant shall permit periodic site visits by the Director or Executive Director to ensure work progress in accordance with the approved Project, including a final inspection upon Project completion.

7. In the event funds should not be available for future stages of the Project, the Participant shall bring the Project to a point of usefulness agreed upon by the Participant and the Executive Director.

8. All significant deviations from the Project proposal shall be submitted to the Executive Director for approval prior to taking any action required by the deviation(s).

9. Acquisition cost of real property shall be based upon the appraisal of a competent appraiser. Reports of such appraisers shall be furnished to the Executive Director as requested.

10. Development plans and specifications shall be furnished to the Executive Director as requested.

C. PROJECT COSTS

1. The Participant hereby represents to and assures the Executive Director that it has available sufficient funds to meet its share of the cost of the Project and has the good faith intention of using such funds for completing the Project, and that no financial assistance has been received, promised or committed under any other Federal program with regard to the specific proposals covered by this agreement.

2. The Participant will prepare and submit billing statements (see Item H-3) of eligible Project expenditures to the Executive Director, who will in turn forward a formal billing statement to BOR. The Executive Director will add to each such billing statement an amount equal to 5.8 percent of direct Project expenditures, which assessment will be paid equally by the Participant and BOR. The entire amount assessed will be withheld by the Executive Director from Federal Funds received from BOR in response to the billing, thus precluding the need for the Participant to advance its share of such surcharge. Funds so received will be used to defray costs of program administration.

3. An amount equal to 2 percent of the total estimated Project cost will be required to meet outdoor recreation plan maintenance costs. This assessment is not to be matched by Federal Funds and becomes the sole responsibility of the Participant. The Participant agrees to pay the total amount shown on Line 6 of the summary of costs on Page 1 of this agreement to the Executive Director upon receipt of the initial reimbursement of Federal Funds from the Executive Director. Adjustments of imbalances in this surcharge which are in excess of \$5.00 will be corrected within fifteen (15) days after project termination.

4. The Executive Director will release to the Participant all Federal Funds received for this Project except for the surcharge noted in Item C-2 above. It is understood that the Executive Director may withhold five (5) percent of the Federal reimbursement until Project termination and final audit.

5. The Participant agrees to make immediate monetary restitution for any disallowances of costs or expenditures on unauthorized activities which are disclosed through audit or inspection by the Director or Executive Director.

6. Project costs eligible for assistance shall be determined upon the basis of criteria set forth in the Manual or in written regulations which may be provided by the Executive Director.

D. PROJECT ADMINISTRATION

1. The Participant shall promptly submit such reports and in such form as the Executive Director may request.

2. Property and facilities acquired or developed pursuant to this agreement shall be available for inspection by the Director or Executive Director.

3. Interest earned on funds granted pursuant to this agreement shall not be available for expenditure by the Participant, but shall be disposed of according to instructions issued by the Director.

4. The Participant may ordinarily dispose of Project income which is derived from recreation sources such as admission and entrance fees, user charges, and proceeds from concession operations. However, if the Project involves acquisition of assets--e.g., buildings, timber, a growing grain crop--which are not essential to development of recreation uses of the Project area and disposal of such capital assets results or will result in financial return to the Participant, such disposal should be completed prior to final billing to BOR and proceeds from the disposition credited to the Project cost at the time of this final settlement. Of any such non-recreation income that accrues subsequent to project settlement, 50 percent will be paid by the Participant to the State. No expenditures for Project maintenance, protection, or other responsibilities of the Participant shall be made from such non-recreation income prior to division of the State and Participant shares.

E. PROJECT TERMINATION

1. The Participant may upon written notice to the Executive Director unilaterally rescind this agreement at any time prior to the commencement of the Project. After Project commencement, this agreement may be rescinded, modified, or amended only by mutual agreement. The Project shall be deemed commenced when the Participant makes any expenditure or incurs any obligation with respect to the Project.

2. Failure by the Participant to comply with the terms of this agreement or any similar agreement may be cause for the suspension of all obligations of the United States or the State hereunder and may result in a declaration by the State that the Participant is ineligible to receive Federal Funds for future projects.

3. Failure by the Participant to comply with the terms of this agreement shall not be cause for the suspension of all obligations of the United States or State hereunder if, in the judgment of the Director, such failure was due to no fault of the Participant. In such case, any amount required to settle at minimum costs any irrevocable obligations properly incurred shall be eligible for assistance under this agreement.

F. CONFLICT OF INTEREST

1. No official or employee of the State or Participant who is authorized in his official capacity to negotiate, make, accept, or approve, or to take part in such decisions regarding a contract or subcontract in connection with this Project shall have any financial or other personal interest in any such contract or subcontract.

2. No person performing services for the Participant in connection with this Project shall have a financial or other interest other than his employment or retention by the Participant, in any contract or subcontract in connection with this Project. No officer or employee of such person retained by the Participant shall have any financial or other personal interest in any real property acquired for this Project unless such interest is openly disclosed upon the public records of the Participant, and such officer, employee or person has not participated in the acquisition for or on behalf of the Participant.

3. No member of or delegate to Congress shall be admitted to any share or part of this agreement, or to any benefit to arise hereupon, unless such benefit shall be in the form of an agreement made with a corporation for its general benefits.

4. The Participant shall be responsible for enforcing the above conflict of interest provisions.

G. HATCH ACT

No officer or employee of the Participant whose principal employment is in connection with any activity which is financed in whole or in part pursuant to this agreement shall take part in any of the political activity prescribed in the Hatch Political Activity, 5 U.S.C. 118k (1964), with the exceptions therein enumerated.

H. FINANCIAL RECORDS

1. The Participant shall maintain a separate Project ledger of expenditures with supporting documents and records clearly referenced. Copies of such ledgers, documents, and records shall be provided with each billing to the Executive Director which will support expenditures claimed. Original ledgers of expenditures and of the supporting documents and records shall be available to the Director or Executive Director for auditing at reasonable times, and shall be retained by the Participant for three years following Project termination and performance of a final audit by the Director.

2. The Participant may use any generally accepted accounting system, provided such system meets the minimum requirements set forth in the Manual and written regulations which may be provided by the Executive Director.

3. Interim billings will be submitted to the Executive Director within 25 days after completion of each element of work, payment on a contract, or payment for each parcel of land. Final billing must be submitted within 60 days after the Project period expires or all work covered by the Project has been completed whichever shall occur first. Billings must be prepared and submitted by the department responsible for maintaining the Participant's overall financial records and certified by the signature of the officer responsible for such records.

I. USE OF FACILITIES

1. The Participant shall not at any time convert any property or facility acquired or developed pursuant to this agreement to other than a public outdoor recreation use without the prior approval of the Executive Director.

2. The Participant shall operate and maintain all property so as to appear attractive and inviting to the public. Sanitation and sanitary facilities shall be maintained in accordance with applicable State and local public health standards. Properties shall be kept reasonably safe for public use. Fire prevention, lifeguard and similar activities shall be maintained at levels reasonable to prevent loss of the lives of users. Buildings, roads, trails and other structures and improvements shall be kept in reasonable repair throughout their

estimated lifetime so as to prevent undue deterioration. All maintenance and operations shall be in accordance with the standards set forth in the Manual, written regulations which may be provided by the Executive Director, or applicable State or local statutes and regulations.

3. The Participant shall not discriminate against any person on the basis of race, color, religion, sex, or national origin in the use of any property or facility acquired or developed pursuant to this agreement, and shall comply with the terms and intent of Title VI of the Civil Rights Act of 1964, 78 Stat. 241 (1964), and of the regulations promulgated pursuant to such Act by the Secretary of the Interior and contained in 43 CFR 17 (1964).

4. The Participant shall not discriminate against any person on the basis of residence, except to the extent that reasonable differences in admission or other fees may be maintained on the basis of residence.

J. MANUAL

The Local Agency shall comply with the policies and procedures set forth in the Manual and written regulations which may be provided. Said Manual and regulatory releases are hereby incorporated into and made a part of this agreement.

BE IT FURTHER PROVIDED, that unless otherwise authorized by the State in writing prior to the execution of this agreement, the Participant agrees to use all Federal Funds received hereunder for the purpose of acquiring and developing other recreation areas for use by the general public. The Participant may utilize such funds for such purposes without the prior approval or the supervision or involvement of the State, but shall use a good faith effort to comply with this reservation and to achieve the greatest public recreational advantage from funds so expended; and

FURTHER, the Participant shall diligently prosecute all phases and aspects of the subject project in a timely and businesslike manner and shall in all respects comply with the terms, conditions, covenants and other obligations of this agreement. It is understood and agreed that the Participant shall have the basic responsibility for all phases and aspects of the project, and that all phases of the Project are subject to review and acceptance by the State and BOR as set forth herein.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the year and day first above written.

SALT LAKE COUNTY

Name of Participant

✓ Wm E. Dunn, Chairman
Authorized Officer of Participant

STATE OF UTAH

By and through

DEPARTMENT OF NATURAL RESOURCES

Gordon E. Harmston
Gordon E. Harmston
Executive Director

BOARD OF COUNTY COMMISSIONERS

Title of Signing Officer

AMENDMENT TO LAND AND WATER
CONSERVATION FUND AGREEMENT
BETWEEN STATE OF UTAH AND PARTICIPANT

THIS AMENDMENT to Agreement No. LW- 49-00109 is hereby made and agreed upon this 15th day of April, 19 74, by the State of Utah, acting through the Executive Director of the Department of Natural Resources, and by Salt Lake County (Participant), pursuant to terms and authorities of the Land and Water Conservation Fund Act of 1965, 78 Stat. 897 (1964).

The State and Participant mutually agree that said agreement is amended as follows:

CHANGE OF PROJECT PERIOD

From December 1, 1971 to June 30, 1974

To December 1, 1971 to December 31, 1975

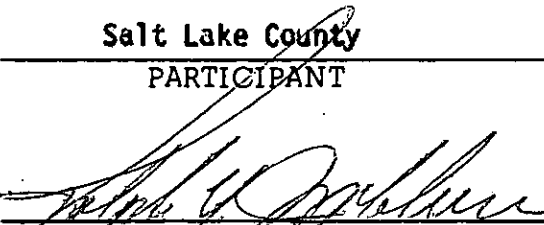
AND CHANGE OF PERIOD COVERED BY THIS AGREEMENT

From December 1, 1971 to June 30, 1974

To December 1, 1971 to December 31, 1975

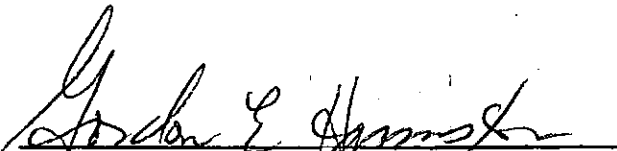
In all other respects the agreement to which this is an amendment, and the plans and specifications relevant thereto, shall remain in full force and effect. In witness whereof the parties hereto have executed this amendment as of the date entered above.

Salt Lake County
PARTICIPANT


Authorized Officer of Participant
RALPH Y. MCCLURE, CHAIRMAN
BOARD OF COUNTY COMMISSIONERS

Title of Signing Officer
Date 7-1-74

STATE OF UTAH
By and Through
DEPARTMENT OF NATURAL RESOURCES


Gordon E. Harmston, Executive Director

AMENDMENT TO LAND AND WATER
CONSERVATION FUND AGREEMENT
BETWEEN STATE OF UTAH AND PARTICIPANT

THIS AMENDMENT to Agreement No. LW- 49-00109 is hereby made and agreed upon this 13th ~~15th~~ day of November ~~DEC.~~, 19 75, by the State of Utah, acting through the Executive Director of the Department of Natural Resources, and by Salt Lake County (Participant), pursuant to terms and authorities of the Land and Water Conservation Fund Act of 1965, 78 Stat. 897 (1964).

The State and Participant mutually agree that said agreement is amended as follows:

CHANGE OF PROJECT PERIOD

From December 1, 1971 to December 31, 1975

To December 1, 1971 to December 31, 1976

AND CHANGE OF PERIOD COVERED BY THIS AGREEMENT

From December 1, 1971 to December 31, 1975

To December 1, 1971 to December 31, 1976

In all other respects the agreement to which this is an amendment, and the plans and specifications relevant thereto, shall remain in full force and effect. In witness whereof the parties hereto have executed this amendment as of the date entered above.

Salt Lake County

PARTICIPANT

Ralph Y. McClure
Authorized Officer of Participant

RALPH Y. MCCLURE

STATE OF UTAH

By and Through

DEPARTMENT OF NATURAL RESOURCES

Gordon E. Harmston
Gordon E. Harmston, Executive Director

CHAIRMAN, BOARD OF COUNTY COMMISSIONERS
Title of Signing Officer

AMENDMENT TO LAND AND WATER
CONSERVATION FUND AGREEMENT
BETWEEN STATE OF UTAH AND PARTICIPANT

THIS AMENDMENT to Agreement No. LW- 49-00109 is hereby made and agreed upon this second day of December, 19 76, by the State of Utah, acting through the Executive Director of the Department of Natural Resources, and by Salt Lake County (Participant), pursuant to terms and authorities of the Land and Water Conservation Fund Act of 1965, 78 Stat. 897 (1964).

The State and Participant mutually agree that said agreement is amended as follows:

ADD:

Sprinkler System and water hook-up

CHANGE OF PROJECT PERIOD:

From: December 1, 1971 to December 31, 1976
To: December 1, 1971 to December 31, 1977

In all other respects the agreement to which this is an amendment, and the plans and specifications relevant thereto, shall remain in full force and effect. In witness whereof the parties hereto have executed this amendment as of the date entered above.

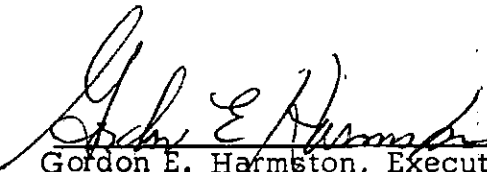
SALT LAKE COUNTY


PARTICIPANT
Chairman, Board of County
Commissioners

Authorized Officer of Participant

Title of Signing Officer

STATE OF UTAH
By and Through
DEPARTMENT OF NATURAL RESOURCES


Gordon E. Harmston, Executive Director

AMENDMENT TO LAND AND WATER
CONSERVATION FUND AGREEMENT
BETWEEN STATE OF UTAH AND PARTICIPANT

THIS AMENDMENT to Agreement No. LW- 49-00109 is hereby made and agreed upon this 24th day of April May, 19 78, by the State of Utah, acting through the Executive Director of the Department of Natural Resources, and by Salt Lake County (Participant), pursuant to terms and authorities of the Land and Water Conservation Fund Act of 1965, 78 Stat. 897 (1964).

The State and Participant mutually agree that said agreement is amended as follows:

- DELETE:
1. Approximately 3 acres to be used as a Multi-purpose Center
 2. Water hook-up
 3. Trees

Any reference to the Bureau of Outdoor Recreation (BOR) contained in the agreement or in any attachments incorporated thereto, shall hereinafter be considered a reference to the Heritage Conservation and Recreation Service (HCRS).

In all other respects the agreement to which this is an amendment, and the plans and specifications relevant thereto, shall remain in full force and effect. In witness whereof the parties hereto have executed this amendment as of the date entered above. "APPROVED AS TO FORM

Salt Lake County Attorney's Office

Date 5/9/78

By Ralph W. Bennett
Deputy County Attorney"

Salt Lake County

PARTICIPANT

STATE OF UTAH

By and Through

DEPARTMENT OF NATURAL RESOURCES

By Wm E. Dunn
Authorized Officer of Participant

Gordon E. Harmston
Gordon E. Harmston, Executive Director
ATTEST:

Chairman, Board of County Commissioners
Title of Signing Officer

W. Sterling Evans
Salt Lake County Clerk

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Outdoor Recreation
Land and Water Conservation Fund Project Agreement

State Utah	Project Number 49-00109
Project Title Copperview Park Phase I	
Period Covered Date of Approval by this Agreement to June 30, 1974	Project Period Date of Approval to June 30, 1974
Project Scope (Description of Project)	

This proposal is for the first phase development of 13 acres located just south of Midvale City and adjacent to Interstate 15 and will provide the following: site preparation (13 acres); grading (13 acres); lawn planting (13 acres); tree planting (50 trees); and design by Salt Lake County Recreation and Parks Department.

49-035-1120
Utah/Salt Lake/Midvale

Project Stage Covered by this Agreement

Complete project (Phase I)

<p>Project Cost</p> <table style="width: 100%;"><tr><td>Total Cost</td><td style="text-align: right;">\$ <u>76,176.00</u></td></tr><tr><td>Fund Support</td><td style="text-align: right;"><u>50</u> %</td></tr><tr><td>Fund Amount</td><td style="text-align: right;">\$ <u>38,088.00</u></td></tr><tr><td>Cost of this Stage</td><td style="text-align: right;">\$ <u>76,176.00</u></td></tr><tr><td>Assistance this Stage</td><td style="text-align: right;">\$ <u>38,088.00</u></td></tr></table>	Total Cost	\$ <u>76,176.00</u>	Fund Support	<u>50</u> %	Fund Amount	\$ <u>38,088.00</u>	Cost of this Stage	\$ <u>76,176.00</u>	Assistance this Stage	\$ <u>38,088.00</u>	<p>The following attachments are hereby incorporated into this agreement:</p> <ol style="list-style-type: none">1. General Provisions2. Project Proposal 49-001093. _____4. _____
Total Cost	\$ <u>76,176.00</u>										
Fund Support	<u>50</u> %										
Fund Amount	\$ <u>38,088.00</u>										
Cost of this Stage	\$ <u>76,176.00</u>										
Assistance this Stage	\$ <u>38,088.00</u>										

The United States of America, represented by the Director, Bureau of Outdoor Recreation, United States Department of the Interior, and the State named above (hereinafter referred to as the State), mutually agree to perform this agreement in accordance with the Land and Water Conservation Fund Act of 1965, 78 Stat. 897 (1964), and with the terms, promises, conditions, plans, specifications, estimates, procedures, project proposals, maps, and assurances attached hereto and hereby made a part hereof.

The United States hereby promises, in consideration of the promises made by the State herein, to obligate to the State the amount of money referred to above, and to tender to the State that portion of the obligation which is required to pay the United States' share of the costs of the above project stage, based upon the above percentage of assistance. The State hereby promises, in consideration of the promises made by the United States herein, to execute the project described above in accordance with the terms of this agreement.

The following special project terms and conditions were added to this agreement before it was signed by the parties hereto:

This agreement is not subject to the provisions of Section B.2(d) of the attached General Provisions dated December 1965.

The State shall transfer to Salt Lake County all funds granted hereunder except a surcharge for State Administrative expenses in the amount of 5.8% of the direct project cost as indicated in the attached project proposal.

In witness whereof, the parties hereto have executed this agreement as of the date entered below

THE UNITED STATES OF AMERICA

By

(Signature)

ACTING REGIONAL DIRECTOR

(Title)

Bureau of Outdoor Recreation
United States Department of
the Interior

Date

DEC 1 1971

STATE

Utah

(State)

By

(Signature)

Gordon E. Harnston

(Name)

State Liaison Officer

(Title)

NOTIFICATION OF CONT-IN-AID ACTION								Do Not Use This Space	
1. STATE APPLICATION IDENTIFIER			2. (Reserved for use by State central information reception agency)						
3. GRANTOR: a. Federal agency Department of the Interior									
b. Organizational unit Bureau of Outdoor Recreation									
c. Administering office—(1) Name Pacific Southwest Regional Office									
(2) Address—Street or P.O. Box 450 Golden Gate Ave. PO Box 36062				City San Francisco		State California		Zip Code 94102	
4. FEDERAL AGENCY GRANT IDENTIFIER: a. Code 49-00109			b. Title Copperview Park Phase I						
c. Purpose Development will include site preparation, grading, underground electrical linge, sprinkling system, lawn planting, tree planting, in the existing 13 acre park.									
5. GRANTEE: a. Name Salt Lake County									
b. Address—Street or P.O. Box City and County Building				City Salt Lake City		State Utah		Zip Code 84111	
6. GRANTEE TYPE (Check only the single most applicable box)									
a. State <input type="checkbox"/>	b. Inter- state <input type="checkbox"/>	c. County <input checked="" type="checkbox"/>	d. City <input type="checkbox"/>	e. School district <input type="checkbox"/>	f. Special unit <input type="checkbox"/>	g. Community action <input type="checkbox"/>	h. Sponsored organization <input type="checkbox"/>	i. Other <input type="checkbox"/>	
7. APPLICATION RECEIPT DATE Year Month Day 71 10 26			8. ACTION DATE Year Month Day 71 12 1		9. EFFECTIVE STARTING DATE Year Month Day 71 12 1		10. ENDING DATE Year Month Day 74 6 30		
11. TYPE OF ACTION (Check as many boxes as apply to this action)									
a. New grant <input checked="" type="checkbox"/>		b. Continuation grant <input type="checkbox"/>		c. Supplemental grant (Identify agency in item 16) <input type="checkbox"/>		d. Change in existing grant			
				(1) Increase in duration <input type="checkbox"/>		(2) Decrease in duration <input type="checkbox"/>		(3) Cancellation <input type="checkbox"/>	
						(4) Increase(\$) <input type="checkbox"/>		(5) Decrease(\$) <input type="checkbox"/>	
12. AMOUNT OF CONTRIBUTION				b. State		c. Local		d. Other	
a. Federal—(1) basic \$ 38,088				(2) Supplemental \$		\$ 38,088		\$	
13. CATALOG OF FEDERAL DOMESTIC ASSISTANCE PROGRAM (if none, clarify in item 16)				a. Program Number 15.400			b. Supplemental Program Number		
14. AUTHORIZATION									
a. Federal Budget Accounts			10-16-5005-0-2-405						
b. Public Laws			PL Title Sec. P.L. 88-578, Sec. 5			PL Title Sec.			
c. U.S. Code			16 USC 4601 - 4						
15. FACILITY LOCATION: (For facility grant actions only)									
a. City Midvale				b. County Salt Lake					
16. REMARKS State Liaison Officer: Mr. Gordon E. Harmston Department of Natural Resources 225 State Capitol Building Salt Lake City, Utah 84114									

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Outdoor Recreation

GRANTS PROCESSING CONTROL SHEET

☐ Project Agreement

☒ Amendment to Project Agreement

State or Territory

Utah

Project Number

49-00109.1

County

Salt Lake

Project Title Copperview Park Phase I

Applicant Salt Lake County Commission

Assistance Requested \$ Ext p j pd to 12/31/75

☐ Planning

☐ Acquisition

☒ Development

☐ Combination

Received

Date
4/15/74

KELLY

We hereby acknowledge receipt of the above project agreement or amendment to project agreement on the date shown. The project number shown above has been assigned to this transaction. We will advise you shortly of any additional information or material that may be needed, and we will notify you of our final action on this request as soon as possible after the decision has been made.

(Regional Office Stamp)

APR 15 1974

Sincerely yours,

Jewel L. Kelly
Authorized Signature

FOR STATE USE

UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Outdoor Recreation

State UTAH
Project Amendment No. 49-00109, 3

AMENDMENT TO PROJECT AGREEMENT

THIS AMENDMENT TO Project Agreement No. 49-00109 is hereby made and agreed upon by the United States of America, acting through the Director of the Bureau of Outdoor Recreation and by the State of Utah, pursuant to the Land and Water Conservation Fund Act of 1965, 78 Stat. 897 (1964).

The State and the United States, in mutual consideration of the promises made herein and in the agreement of which this is an amendment, do promise as follows:

That the above-mentioned agreement is amended by adding the following:

ADD:

Sprinkler system and water hook-up.

CHANGE OF PROJECT PERIOD:

From: December 1, 1971 to December 31, 1976
To: December 1, 1971 to December 31, 1977

CHANGE OF PERIOD COVERED BY THIS AGREEMENT:

From: December 1, 1971 to December 31, 1976
To: December 1, 1971 to December 31, 1977

State's letter dated November 17, 1976 is adequate justification for this increase of time.

In all other respects the agreement of which this is an amendment, and the plans and specifications relevant thereto, shall remain in full force and effect. In witness whereof the parties hereto have executed this amendment as of the date entered below.

THE UNITED STATES OF AMERICA

STATE

By Florine Burke
(Signature)
for ASSISTANT REGIONAL DIRECTOR
RECREATION ASSISTANCE
(Title)

Bureau of Outdoor Recreation
United States Department of
the Interior

Date 12/2/76

Utah
(State)
By Gordon E. Harmston
(Signature)

Gordon E. Harmston
(Name)

State Liaison Officer
(Title)

FEDERAL ASSISTANCE		2. APPLICANT'S APPLICATION	a. NUMBER N/A	3. STATE APPLICATION IDENTIFIER	a. NUMBER N/A
1. TYPE OF ACTION (Mark appropriate box) <input type="checkbox"/> PREAPPLICATION <input checked="" type="checkbox"/> APPLICATION <input type="checkbox"/> NOTIFICATION OF INTENT (Opt) <input type="checkbox"/> REPORT OF FEDERAL ACTION	b. DATE Year month day 19 76 11 11	Leave Blank		b. DATE Year month day ASSIGNED 19	
4. LEGAL APPLICANT/RECIPIENT				5. FEDERAL EMPLOYER IDENTIFICATION NO. N/A	
a. Applicant Name : Gordon E. Harmston, Executive Director b. Organization Unit : Department of Natural Resources c. Street/P.O. Box : 438 State Capitol d. City : Salt Lake City e. County : Salt Lake f. State : Utah g. ZIP Code: 84114 h. Contact Person (Name & telephone No.) : Lyle T. Bennett; (801) 533-5691				6. PRO-GRAM (From Federal Catalog) a. NUMBER 150400 b. TITLE Outdoor Recreation - Acquisition, Development and Planning	
7. TITLE AND DESCRIPTION OF APPLICANT'S PROJECT Copperview Park (Phase I) To amend project to extend project period to December 31, 1977 and to add sprinkler system to project scope. Salt Lake County Parks and Recreation 3383 South 300 East Salt Lake City, Utah 84115				8. TYPE OF APPLICANT/RECIPIENT A-State H-Community Action Agency B-Interstate I-Higher Educational Institution C-Substate J-Indian Tribe D-District K-Other (Specify): E-City F-School District G-Special Purpose District Enter appropriate letter A	
10. AREA OF PROJECT IMPACT (Names of cities, counties, States, etc.) Sandy City, Midvale City				11. ESTIMATED NUMBER OF PERSONS BENEFITING N/A	
13. PROPOSED FUNDING				12. TYPE OF APPLICATION A-New C-Revision E-Augmentation B-Renewal D-Continuation Enter appropriate letter C	
a. FEDERAL \$ N/A .00		b. APPLICANT N/A .00		15. TYPE OF CHANGE (For 12c or 12e) A-Increase Dollars F-Other (Specify): B-Decrease Dollars C-Increase Duration D-Decrease Duration E-Cancellation Increase project scope Enter appropriate letter(s) C F /	
c. STATE .00		d. LOCAL .00		16. PROJECT START DATE Year month day 19 77 10 1	
e. OTHER .00		f. TOTAL \$.00		17. PROJECT DURATION 72 Months	
18. ESTIMATED DATE TO BE SUBMITTED TO FEDERAL AGENCY 19 76 11 16				19. EXISTING FEDERAL IDENTIFICATION NUMBER 62-00000	
20. FEDERAL AGENCY TO RECEIVE REQUEST (Name, City, State, ZIP code) Bureau of Outdoor Recreation, Denver, Colorado 80225				21. REMARKS ADDED <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
22. THE APPLICANT CERTIFIES THAT		a. To the best of my knowledge and belief, data in this preapplication/application are true and correct, the document has been duly authorized by the governing body of the applicant and the applicant will comply with the attached assurances if the assistance is approved. (1) N/A (2) (3)			
23. CERTIFYING REPRESENTATIVE Gordon E. Harmston State Liaison Officer		b. SIGNATURE 		c. DATE SIGNED Year month day 19 76 11 15	
24. AGENCY NAME Department of the Interior				25. APPLICATION RECEIVED 19	
26. ORGANIZATIONAL UNIT Bureau of Outdoor Recreation				27. ADMINISTRATIVE OFFICE Mid-Continent Region	
29. ADDRESS PO Box 25387, Denver Federal Center, Denver, Colorado 80225				28. FEDERAL APPLICATION IDENTIFICATION N/A	
31. ACTION TAKEN <input type="checkbox"/> a. AWARDED <input type="checkbox"/> b. REJECTED <input type="checkbox"/> c. RETURNED FOR AMENDMENT <input type="checkbox"/> d. DEFERRED <input type="checkbox"/> e. WITHDRAWN		32. FUNDING a. FEDERAL \$.00 b. APPLICANT .00 c. STATE .00 d. LOCAL .00 e. OTHER .00 f. TOTAL \$.00		33. ACTION DATE 19	
				34. STARTING DATE 19	
				35. CONTACT FOR ADDITIONAL INFORMATION (Name and telephone number) (303) 234-2634	
				36. ENDING DATE 19	
				37. REMARKS ADDED <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
38. FEDERAL AGENCY A-95 ACTION		a. In taking above action, any comments received from clearinghouses were considered. If agency response is due under provisions of Part 1, OMB Circular A-95, it has been or is being made. b. FEDERAL AGENCY A-95 OFFICIAL (Name and telephone no.)			

GRANTS PROCESSING CONTROL SHEET

☐ Project Agreement

☒ Amendment to Project Agreement

Project Number
49-00109.3

County
Salt Lake

Project Title Cooperview Park Phase I

Add to scope & Inc fd amt

Applicant Salt Lake County Commission

Assistance Requested \$ to 12/31/77

☐ Planning

☐ Acquisition

☒ Development

☐ Combination

Date

11/29/76

Monie

Received

We hereby acknowledge receipt of the above project agreement or amendment to project agreement on the date shown. The project number shown above has been assigned to this transaction. We will advise you shortly of any additional information or material that may be needed, and we will notify you of our final action on this request as soon as possible after the decision has been made.

(Regional Office Stamp)

Sincerely yours,

11/30/76

[Signature]
Authorized Signature

FOR STATE USE

RECEIVED

DEC 2 1976

OUTDOOR REG.

UNITED STATES
DEPARTMENT OF THE INTERIOR
Bureau of Outdoor Recreation

State Utah
Project Amendment No. 109.4

AMENDMENT TO PROJECT AGREEMENT

THIS AMENDMENT TO Project Agreement No. 49-00109 is hereby made and agreed upon by the United States of America, acting through the Director of the Bureau of Outdoor Recreation and by the State of Utah, pursuant to the Land and Water Conservation Fund Act of 1965, 78 Stat. 897 (1964).

The State and the United States, in mutual consideration of the promises made herein and in the agreement of which this is an amendment, do promise as follows:

That the above-mentioned agreement is amended by adding the following:

DELETE:

1. Approximately 3 acres to be used as a Multi-purpose Center
2. Water hook up
3. Trees

Any reference to the Bureau of Outdoor Recreation (BOR) contained in the agreement or in any attachments incorporated thereto, shall hereinafter be considered a reference to the Heritage Conservation and Recreation Service (HCRS).

In all other respects the agreement of which this is an amendment, and the plans and specifications relevant thereto, shall remain in full force and effect. In witness whereof the parties hereto have executed this amendment as of the date entered below.

THE UNITED STATES OF AMERICA

STATE

By Florine Burke
(Signature)
ASSISTANT REGIONAL DIRECTOR
RECREATION ASSISTANCE
(Title)
Bureau of Outdoor Recreation
United States Department of
the Interior

Date 4/14/78

Utah
(State)
By Gordon E. Harmston
(Signature)
Gordon E. Harmston
(Name)
State Liason Officer
(Title)

FEDERAL ASSISTANCE			2. APPLICANT'S APPLICATION	3. NUMBER 49-00109	4. STATE APPLICATION IDENTIFIER	5. NUMBER N/A
1. TYPE OF ACTION <input type="checkbox"/> PREAPPLICATION <input checked="" type="checkbox"/> APPLICATION (Mark appropriate box) <input type="checkbox"/> NOTIFICATION OF INTENT (Opt.) <input type="checkbox"/> REPORT OF FEDERAL ACTION			a. DATE Year month day 19 78 4 3		b. DATE ASSIGNED Year month day 19	
4. LEGAL APPLICANT/RECIPIENT			5. FEDERAL EMPLOYER IDENTIFICATION NO. N/A			
a. Applicant Name : Gordon E. Harmston, Executive Director b. Organization Unit : Department of Natural Resources c. Street/P.O. Box : 438 State Capitol d. City : Salt Lake City a. County : Salt Lake e. State : Utah b. ZIP Code: 84114 f. Contact Person (Name & telephone No.) : Steve Roberts (801) 533-5691			6. PRO. GRAM (From Federal Catalog) a. NUMBER 115-4000 b. TITLE Outdoor Recreation - Acquisition, Development and Planning			
7. TITLE AND DESCRIPTION OF APPLICANT'S PROJECT			8. TYPE OF APPLICANT/RECIPIENT			
TITLE: Copperview Park (Phase I) SPONSOR: Salt Lake County Delete 3 acres and water supply from the project agreement.			A-State B-Interstate C-Substate District D-County E-City F-School District G-Special Purpose District H-Community Action Agency I-Higher Educational Institution J-Indian Tribe K-Other (Specify): Enter appropriate letter <input type="checkbox"/> A			
10. AREA OF PROJECT IMPACT (Names of cities, counties, States, etc.) Salt Lake County, Utah			11. ESTIMATED NUMBER OF PERSONS BENEFITING N/A		12. TYPE OF APPLICATION A-New C-Revision E-Augmentation B-Renewal D-Continuation Enter appropriate letter <input type="checkbox"/> C	
13. PROPOSED FUNDING			14. CONGRESSIONAL DISTRICTS OF:		15. TYPE OF CHANGE (For 15a or 15b)	
a. FEDERAL \$ N/A b. APPLICANT c. STATE d. LOCAL N/A e. OTHER f. TOTAL \$ N/A			a. APPLICANT N/A b. PROJECT Second 16. PROJECT START DATE Year month day 19 77 12 17. PROJECT DURATION 85 Months 18. ESTIMATED DATE TO BE SUBMITTED TO FEDERAL AGENCY Year month day 19		A-Increase Dollars F-Other (Specify): B-Decrease Dollars C-Increase Duration D-Decrease Duration E-Cancellation Amend Scope Enter appropriate letter(s) <input type="checkbox"/> E <input type="checkbox"/> I <input type="checkbox"/> J	
20. FEDERAL AGENCY TO RECEIVE REQUEST (Name, City, State, ZIP code) Heritage Conservation & Recreation Service, Denver, Colorado 80225			21. REMARKS ADDED <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
22. THE APPLICANT CERTIFIES THAT			23. CERTIFYING REPRESENTATIVE			
a. To the best of my knowledge and belief, data in this preapplication/application are true and correct, the document has been duly authorized by the governing body of the applicant and the applicant will comply with the attached assurances if the assistance is approved. (1) (2) (3)			b. If required by OMB Circular A-95 this application was submitted, pursuant to instructions therein, to appropriate clearinghouses and all responses are attached: N/A No response <input type="checkbox"/> Response attached <input type="checkbox"/>			
24. AGENCY NAME Department of the Interior			25. APPLICANT'S SIGNATURE Gordon E. Harmston		26. DATE SIGNED Year month day 1978 4 6	
27. ORGANIZATIONAL UNIT Heritage Conservation & Recreation Service			28. ADMINISTRATIVE OFFICE Mid-Continent Region		29. FEDERAL APPLICATION IDENTIFICATION N/A	
30. ADDRESS P. O. Box 25387, Denver Federal Center, Denver, Colorado 80225			31. ACTION TAKEN		32. FUNDING	
<input checked="" type="checkbox"/> a. AWARDED <input type="checkbox"/> b. REJECTED <input type="checkbox"/> c. RETURNED FOR AMENDMENT <input type="checkbox"/> d. DEFERRED <input type="checkbox"/> e. WITHDRAWN			a. FEDERAL \$ N/A b. APPLICANT c. STATE d. LOCAL e. OTHER f. TOTAL \$		33. ACTION DATE Year month day 19 78 04 14 34. CONTACT FOR ADDITIONAL INFORMATION (Name and telephone number) Florine Burke (303) 234-2634	
35. FEDERAL AGENCY A-95 ACTION			36. FEDERAL AGENCY A-95 OFFICIAL (Name and telephone no.) Same		37. REMARKS ADDED <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

I-15 NORTHBOUND; BANGERter HIGHWAY TO I-215 SELF-COMPLETION SURVEY QUESTIONNAIRE

PREPARED BY

H Rocky Mountain Social Science
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Section 1: Neighborhood Social Conditions

The questions in this section ask about your experiences and activities in the neighborhood where you live. For each question, please check the one box that best represents your situation or opinion.

1. How long have you lived in your current house in this neighborhood?

<input type="checkbox"/> Less than one year	<input type="checkbox"/> Eleven to twenty years
<input type="checkbox"/> One to two years	<input type="checkbox"/> Twenty-one to thirty years
<input type="checkbox"/> Three to five years	<input type="checkbox"/> Thirty-one to forty years
<input type="checkbox"/> Six to ten years	<input type="checkbox"/> Over forty years

2. Do you own this home, or are you renting or leasing it?

<input type="checkbox"/> Own (or are buying)
<input type="checkbox"/> Renting or leasing
<input type="checkbox"/> Some other arrangement

3. Out of the ten houses located nearest to yours, how many adults who live in these houses do you know on a first-name basis?

<input type="checkbox"/> None	<input type="checkbox"/> Six to nine
<input type="checkbox"/> One or two	<input type="checkbox"/> Ten to twelve
<input type="checkbox"/> Three to five	<input type="checkbox"/> More than twelve

4. How often do you get out in your neighborhood for a walk, jog or bicycle ride that takes you farther than one block away from your home?

<input type="checkbox"/> Never or almost never	<input type="checkbox"/> Once every month or two
<input type="checkbox"/> Less than once a year	<input type="checkbox"/> Once or twice a month
<input type="checkbox"/> Once or twice a year	<input type="checkbox"/> Several times a month
<input type="checkbox"/> Several times a year	<input type="checkbox"/> Once a week or more

5. Besides members of your own household, do you have any adult relatives living in this neighborhood?

<input type="checkbox"/> No
<input type="checkbox"/> Yes

6. How many of your close personal friends live in this neighborhood?

<input type="checkbox"/> None	<input type="checkbox"/> Four or five
<input type="checkbox"/> One	<input type="checkbox"/> Six to ten
<input type="checkbox"/> Two or three	<input type="checkbox"/> More than ten

7. On average, how often do you visit or get together with any of your neighbors for informal social activities such as friendly visiting, playing cards, cookouts, or having dinner together?

<input type="checkbox"/> Never or almost never	<input type="checkbox"/> Once every month or two
<input type="checkbox"/> Less than once a year	<input type="checkbox"/> Once or twice a month
<input type="checkbox"/> Once or twice a year	<input type="checkbox"/> Several times a month
<input type="checkbox"/> Several times a year	<input type="checkbox"/> Once a week or more

8. Do you expect to move away from your current home within the next two to three years?
- | | | | |
|---|----------------------|---|--------------------------|
| ' | Definitely WILL move | ' | Probably WILL NOT move |
| ' | Probably WILL move | ' | Definitely WILL NOT move |
| ' | Uncertain | | |
9. Suppose that for some reason you had to move away from this neighborhood. How sorry or pleased would you be to leave?
- | | | | |
|---|-------------------------------------|---|---------------------------|
| ' | Very sorry to leave | ' | Somewhat pleased to leave |
| ' | Somewhat sorry to leave | ' | Very pleased to leave |
| ' | Would not care one way or the other | | |

Section 2: Transportation and Traffic Conditions

The questions in this section ask that you share your views about current community traffic conditions, and your use of area roadways.

10. To begin, which of the following best describes your normal travel patterns when going to and from work?
- | | |
|---|---|
| ' | I am not currently employed, so do not travel to work |
| ' | I operate a home-based business, so do not regularly travel to work |
| ' | I work for an employer but usually work from home, so do not regularly travel to work |
| ' | I regularly walk or bicycle to work |
| ' | I regularly use public transportation (UTA bus or TRAX) to get to work |
| ' | I regularly drive less than 5 miles one-way to work |
| ' | I regularly drive between 5 and 10 miles one-way to work |
| ' | I regularly drive more than 10 miles one-way to work |
11. On average, how often do you or members of your household drive on the northbound section of I-15 located between Bangerter Highway and I-215?
- | | | | |
|---|----------------------------|---|------------------------|
| ' | Daily, or almost every day | ' | Once or twice a month |
| ' | Several times a week | ' | Less than once a month |
| ' | Several times a month | ' | Rarely or never |
12. In your opinion, how much of a problem is traffic congestion on that portion of northbound I-15?
- | | |
|---|-------------------------------|
| ' | No congestion problems at all |
| ' | Minor problems |
| ' | Moderate problems |
| ' | Serious problems |
13. In your opinion, how much of a problem is traffic safety on that portion of northbound I-15?
- | | |
|---|---------------------------|
| ' | No safety problems at all |
| ' | Minor problems |
| ' | Moderate problems |
| ' | Serious problems |
14. In your opinion, for travelers on I-15 northbound how much of a problem is traffic congestion at any of the **off-ramps** between Bangerter Highway and I-215?
- | | |
|---|-------------------------------|
| ' | No congestion problems at all |
| ' | Minor problems |
| ' | Moderate problems |
| ' | Serious problems |

15. In your opinion, for travelers on I-15 northbound how much of a problem is traffic congestion at any of the **on-ramps** between Bangerter Highway and I-215?
- ' No congestion problems at all
 - ' Minor problems
 - ' Moderate problems
 - ' Serious problems

Section 3: Possible Impacts of Changes to the I-15 NB Corridor

As indicated in information provided with this questionnaire, transportation actions being considered by UDOT include the addition of a new "Collector-Distributor" roadway that would be located parallel to and immediately east of the existing I-15 corridor between Bangerter Highway and I-215. If approved, construction of the Collector-Distributor roadway would require removal of a number of homes and other existing structures located nearest to I-15, particularly at Oak Street, Adams Street, and Hoover Street. Although decisions about project design characteristics or alternatives have not been finalized, we would like you to consider how these actions might affect the surrounding community, your neighborhood, and you along with other members of your household.

16. If the proposed transportation improvements occurred, and they included construction of a new Collector-Distributor roadway directly east of I-15, what is your opinion about the overall effects such actions would have on *your community as a whole*?
- | | |
|--------------------------------|-----------------------|
| ' Very positive | ' Moderately negative |
| ' Moderately positive | ' Very negative |
| ' Neither positive or negative | |
17. If the proposed transportation improvements occurred, what is your opinion about the overall effects such actions would have on *this neighborhood*?
- | | |
|--------------------------------|-----------------------|
| ' Very positive | ' Moderately negative |
| ' Moderately positive | ' Very negative |
| ' Neither positive or negative | |
18. If the proposed transportation improvements occurred, what is your opinion about the effects such actions would have on *you and your family*?
- | | |
|--------------------------------|-----------------------|
| ' Very positive | ' Moderately negative |
| ' Moderately positive | ' Very negative |
| ' Neither positive or negative | |
19. If the proposed transportation improvements did include construction of a new Collector-Distributor roadway, nearly all homes and other structures located between I-15 and several local streets (Oak Street, Adams Street and Hoover Street) would need to be removed. What is your opinion about the overall effects this might have on *this neighborhood*?
- | | |
|--------------------------------|-----------------------|
| ' Very positive | ' Moderately negative |
| ' Moderately positive | ' Very negative |
| ' Neither positive or negative | |

20. If the proposed transportation improvements did include construction of a new Collector-Distributor roadway, nearly all homes and other structures located between I-15 and several local streets (Oak Street, Adams Street and Hoover Street) would need to be removed. What is your opinion about the overall effects this might have on *you and your family*?

'	Very positive	'	Moderately negative
'	Moderately positive	'	Very negative
'	Neither positive or negative		

21. In your own words, please tell us what you would consider to be the most important POSITIVE as well as the most NEGATIVE impacts of having these types of types of transportation actions take place along this portion of the I-15 corridor?

a). *Positive* impacts:

b). *Negative* impacts:

22. If the proposed transportation improvements did occur, what actions or design features can you think of that would help make the project something you could most easily live with?

Section 4: Impacts of a “No Build” Decision

As required by the National Environmental Policy Act, UDOT is also evaluating the impacts of selecting a “NO BUILD” option, which would maintain existing roadway conditions in the area of the I-15 Northbound corridor between Bangerter Highway and I-215. Please assume for the next several questions that this “No Build” option was selected.

23. If a NO BUILD option was selected, what is your opinion about the overall effects such a decision would have on *your community as a whole*?

'	Very positive	'	Moderately negative
'	Moderately positive	'	Very negative
'	Neither positive or negative		

24. If a NO BUILD option was selected, what is your opinion about the effects such a decision would have on *this neighborhood*?

'	Very positive	'	Moderately negative
'	Moderately positive	'	Very negative
'	Neither positive or negative		

25. If a NO BUILD option was selected, what is your opinion about the effects such a decision would have on *you and your family*?

'	Very positive	'	Moderately negative
'	Moderately positive	'	Very negative
'	Neither positive or negative		

26. In your own words, please tell us what you would consider to be the most important POSITIVE as well as NEGATIVE impacts of this NO BUILD option.

a). *Positive* impacts:

b). *Negative* impacts

Section 5: Personal and Household Characteristics

The last several questions ask about you and your family situation. These questions allow us to accurately describe the characteristics of local neighborhoods and populations, and check the accuracy of our sample against U.S. Census data on area populations. Please remember that we will report only grouped data that represent the combined responses of persons living in particular neighborhoods. No individuals' responses will be identified.

27. What is the **total number of people** (including all children and adults) living in your household at the present time? _____

28. How many of the people who live in your home are:

- a. Over the age of 65? _____
- b. Under the age of 18? _____

29. In what year were you born? _____

30. What is your sex?

- ' Male
- ' Female

31. Please select the racial or ethnic category or categories with which you most clearly identify (check as many as apply).

- | | |
|--|-----------------------------------|
| ' Hispanic/Latino (regardless of race) | ' Pacific Islander |
| ' White/Caucasian (non-Hispanic) | ' Native American/American Indian |
| ' African American/Black | ' Other (please specify): _____ |
| ' Asian | |

32. Please select the racial or ethnic category or categories with which other members of your household identify (check as many as apply).

- | | |
|--|-----------------------------------|
| ' Hispanic/Latino (regardless of race) | ' Pacific Islander |
| ' White/Caucasian (non-Hispanic) | ' Native American/American Indian |
| ' African American/Black | ' Other (please specify): _____ |
| ' Asian | |

33. To address federal requirements for evaluating potential impacts of the proposed road reconstruction project on area neighborhoods and households, we are required to ask about your household income. Please check the one box below that best approximates what you believe your total household income from all sources will be (before taxes) this year (e.g., for calendar year 2018).

- | | |
|------------------------|--------------------------|
| ' \$12,140 or less | ' \$38,061 to \$42,380 |
| ' \$12,141 to \$16,460 | ' \$42,381 to \$49,999 |
| ' \$16,461 to \$20,780 | ' \$50,000 to \$74,999 |
| ' \$20,781 to \$25,100 | ' \$75,000 to \$99,999 |
| ' \$25,101 to \$29,420 | ' \$100,000 to \$149,999 |
| ' \$29,421 to \$33,740 | ' \$150,000 to \$199,999 |
| ' \$33,741 to \$38,060 | ' \$200,000 or higher |

34. Which of the following sources do you rely on most heavily as a place to get news about events or issues affecting your local area?
- ' Newspaper
 - ' TV or radio
 - ' Social media (if so, which platforms or accounts do you use? _____)
 - ' Local city information sources (community newsletter, city website, etc.)
 - ' Some other source of news (please specify _____)
35. How do you most often communicate with your neighbors when you have information or thoughts about local community issues that you want to share?
- ' In-person conversations
 - ' Telephone conversations
 - ' Electronic interactions (email, social media, etc.)
 - ' Other (please specify _____)
36. Did you happen to attend a recent public open house concerning the transportation actions that are being considered for the I-15 Northbound corridor?
- ' No
 - ' Yes
37. How likely are you to attend a future public open house concerning possible transportation changes in your community?
- ' Very likely
 - ' Somewhat likely
 - ' Uncertain
 - ' Somewhat unlikely
 - ' Very unlikely

THANK YOU for your cooperation! *Feel free to use any available space, or a separate sheet of paper, to provide us with any additional information that you would like to share.*

Please seal your completed questionnaire in the envelope provided, and have it ready for a member of our research team when they stop by to pick it up. If you will not be home or prefer that we not knock on your door, please hang it on your doorknob using the plastic bag provided.

PROJECT OF AIR QUALITY CONCERN (POAQC) MEMO

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Project of Air Quality Concern Evaluation

I-15 Northbound; Bangerter Highway to I-215

November 2, 2018

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by UDOT pursuant to 23 USC 327 and a Memorandum of Understanding dated January 17, 2017, and executed by FHWA and UDOT.

Project Overview

The Utah Department of Transportation (UDOT) is preparing an Environmental Assessment to evaluate potential transportation-related improvements on northbound Interstate 15 (I-15) from State Route 54 (Bangerter Highway) to Interstate 215 (I-215) in Salt Lake County, Utah (see Study Area Map in Appendix A).

I-15 is a major transportation corridor in the western United States that begins near the border of the United States and Mexico in San Diego County and continues north to Alberta, Canada, passing through the states of California, Nevada, Arizona, Utah, Idaho, and Montana. I-15 is the primary north-south transportation corridor in Utah, with the majority of the Utah population living near the corridor.

The study area is approximately 9 miles long. It begins at Bangerter Highway and extends north to I-215. Throughout the study area, northbound I-15 varies from four to five general purpose lanes and one high-occupancy vehicle (HOV)/ express lane. Existing (2016) Average Daily Traffic (ADT) on I-15 (northbound and southbound) between Bangerter Highway and I-215 ranges between approximately 170,000 vehicles per day (vpd) and 259,000 vpd depending on the entering and exiting traffic volumes at each interchange. By the year 2040, the ADT on this same stretch of I-15 is projected to range between 258,000 vpd and 326,000 vpd, resulting in a substantial increase in traffic congestion.

The Preferred Alternative includes the construction of two separate collector-distributor (C/D) systems. Each C/D system would consist of a three-lane roadway that would be separated from mainline northbound I-15 by a concrete traffic barrier. Currently, I-15 northbound consists of four general purpose lanes, one HOV lane, and one auxiliary lane between the interchanges. After the project, I-15 northbound would consist of three general purpose lanes and one HOV lane, while the C/D system would consist of two general purpose lanes, plus one auxiliary lane between the interchanges.

The travel lanes for the C/D system would essentially be in the same location as now, but physically separated from the mainline of I-15, plus the addition of the auxiliary lane to facilitate entrance/exit movements. The C/D systems would connect to multiple interchanges, allowing I-15 mainline traffic to bypass exit and entrance ramps (see Figure 1 – Preferred Alternative and Figure 2 – Typical Section for Collector-Distributor, as well as the Preferred Alternative Maps in the Appendix).

The C/D system would facilitate traffic entering or exiting northbound I-15 at one of the interchanges included in the project area, thus allowing through traffic on I-15 to flow more smoothly, without congestion and weaving movements for traffic seeking to enter and exit the freeway. Also, the existing intersections would be shifted further east to accommodate the C/D system.

- **Northbound Collector-Distributor System A** – Collector-Distributor System A would separate from I-15 just prior to 9000 South and connect to the I-215 east/westbound entrance ramps. At 9000 South, connections would be provided to northbound I-15 and Collector-Distributor System A.
- **Northbound Collector-Distributor System B** – Collector-Distributor System B would separate from I-15 just after Bangerter Highway and would rejoin I-15 just prior to 9000 South. Collector-Distributor B would provide connections to the following locations: 12300 South, 11400 South, 10600 South, and 9000 South. At 9000 South, connections from Collector-Distributor B would be provided to northbound I-15, 9000 South, and Collector Distributor System A.



Figure 1. Preferred Alternative

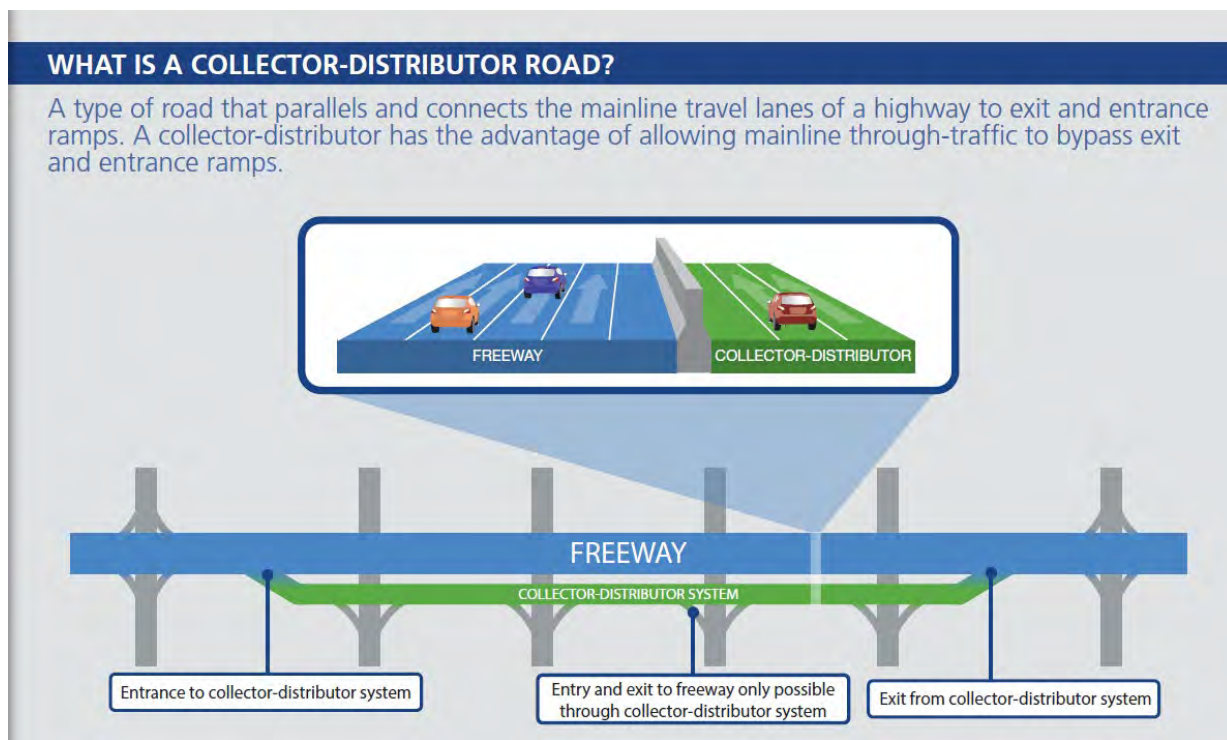


Figure 2. Typical Section for Collector-Distributor

Purpose and Need

The purpose of the project is to:

- Address the current and future travel demand on northbound I-15 from Bangerter Highway to I-215.
- Improve safety on northbound I-15 from Bangerter Highway to I-215.

The need for the project is based on the following:

- Current conditions indicate that various stretches of northbound I-15 within the study area are highly congested during peak hours resulting in excessive travel times and delays. By 2040, traffic on northbound I-15 is projected to grow substantially and congestion during peak travel times is expected to increase.
- Within the study area there were a total of 2,573 crashes from 2015 to 2017. Over half of those crashes (1,870) were front-to-rear collisions. Some contributing factors for front-to-rear collisions include unexpected lane changes and unexpected stops, which are often associated with congestion.

Study Area Attainment Status

The study area is located in Salt Lake County, Utah, which is within the Salt Lake PM₁₀, PM_{2.5}, and SO₂ Nonattainment Areas and the Salt Lake Ozone Maintenance Area. It is outside of the Salt Lake City CO Maintenance Area. Further, the EPA has recently classified the Wasatch Front (including all or part of Salt Lake, Davis, Weber, Tooele, and Utah counties) and parts of the Uinta Basin (portions of Uintah and Duchesne counties below 6,250 feet) as Marginal Nonattainment Areas for ozone, which is the least stringent classification for a nonattainment area and doesn't require the state to submit a formal SIP. Therefore, the study area is now located in a marginal nonattainment area for ozone.

On September 21, 2006, the Environmental Protection Agency (EPA) issued revisions to the National Ambient Air Quality Standards (NAAQS) for particle pollution. The EPA strengthened the 24-hour PM_{2.5} standard from the 1997 level of 65 µg/m³ to 35 µg/m³, and retained the current annual fine particle standard at 15 µg/m³. All or parts of seven Utah counties did not meet this new 24-hour standard, including Salt Lake County in which this project is located. The state had been attaining the old 24-hour standard, and continues to attain the annual PM_{2.5} standard at all locations. In 2017, the EPA reclassified the Salt Lake City PM_{2.5} nonattainment area from Moderate to Serious, requiring the state to comply with additional requirements for its PM_{2.5} State Implementation Plan (SIP).

On December 3, 2014, the Utah Air Quality Board approved a PM_{2.5} SIP meeting the moderate area planning requirements of both Subparts 1 and 4, of Part D, of title 1, of the Clean Air Act. A separate SIP was adopted for each of Utah's three nonattainment areas, which includes the Salt Lake City nonattainment area in which the project area is included. Also adopted were amendments to SIP Subsections IX.H. 11, 12, and 13, which contain emission limits and operating practices for the large stationary sources specifically addressed by the SIPs for the Salt Lake City nonattainment area. Due to the reclassification from Moderate to Serious, additional work on the SIP is ongoing to comply with the additional requirements for the Serious Area SIP. A public comment period on the Serious Area SIP ended June 16, 2018.

Project Assessment

FHWA projects must not cause or contribute to any new localized CO, PM₁₀, and/or PM_{2.5} violations, increase the frequency or severity of any existing CO, PM₁₀, and/or PM_{2.5} violations, or delay timely attainment of any NAAQS or any required interim emission reductions or other milestones in CO, PM₁₀, and PM_{2.5} nonattainment and maintenance areas. This criterion is satisfied without a hot-spot analysis in PM₁₀ and PM_{2.5} nonattainment and maintenance areas for FHWA projects that are not identified a projects of air quality concern (as discussed in § 93.123(b)(1)). If the project qualifies as a project of air quality concern, the hot-spot demonstration must be based on both i) quantitative analysis methods in accordance with 40 CFR 93.116(a), and ii) the consultation requirements of 40 CFR 93.105(c)(1)(i).

This project is not exempt under either 40 CFR 93.126 (specific exempt project types) or 40 CFR 93.128 (traffic signal synchronization projects). This memorandum assesses whether this project qualifies as a project of air quality concern that would require a project level conformity analysis.

Level Conformity Requirements

Projects of air quality concern are certain highway and transit projects that involve a significant level of diesel vehicle traffic or any other project that is identified in the PM_{2.5} or PM₁₀ SIP as a localized air quality concern, such as:

- i) New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;
- ii) Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;
- iii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
- iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and
- v) Projects in or affecting locations, areas, or categories of sites which are identified in the PM₁₀ or PM_{2.5} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

Appendix A of the *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas* provides examples of projects that would be considered projects of air quality concern under 40 CFR 93.123(b)(1)(i) and (ii), which are:

- A project on a new highway or expressway that serves a significant volume of diesel truck traffic, such as facilities with greater than 125,000 annual average daily traffic (AADT) and 8% or more of such AADT is diesel truck traffic;
- New exit ramps and other highway facility improvements to connect a highway or expressway to a major freight, bus, or intermodal terminal;
- Expansion of an existing highway or other facility that affects a congested intersection (operated at Level-of-Service D, E, or F) that has a significant increase in the number of diesel trucks; and,
- Similar highway projects that involve a significant increase in the number of diesel transit busses and/or diesel trucks.

Appendix A also provides examples of projects that would not qualify as projects of air quality concern under 40 CFR 93.123)(b)(1)(i) and (ii). These examples included:

- Any new or expanded highway project that primarily services gasoline traffic (i.e., does not involve a significant number or increase in the number of diesel vehicles), including such projects involving congested intersections operating at LOS D, E or F.
- An intersection channelization project or interchange configuration project that involves either turn lanes or slots, or lanes or movements that are physically separated. These kinds of projects improve freeway operations by smoothing traffic flow and vehicle speeds by improving weave and merge operations, which would not be expected to create or worsen PM_{2.5} or PM₁₀ violations; and,
- Intersection channelization projects, traffic circles or roundabouts, intersection signalization projects at individual intersections, and interchange reconfiguration projects that are designed to improve traffic flow and vehicle speeds, and do not involve any increases in idling. Thus, they would be expected to have a neutral or positive influence on PM_{2.5} or PM₁₀ emissions.

Project Analysis

New Highway with Significant Volume of Diesel Truck Traffic

Standard: New highway projects that have a significant number of diesel vehicles.

Analysis: This project does not involve a new highway with a significant number of diesel vehicles. This project involves the construction of two C/D systems adjacent to northbound I-15. Each C/D system would consist of a three-lane roadway that would be separated from mainline northbound I-15 by a concrete traffic barrier. The travel lanes for the collector-distributor system would essentially be in the same location as now, but physically separated from the mainline of I-15, plus the addition of the auxiliary lane to facilitate entrance/exit movements. The C/D systems allow I-15 mainline traffic to bypass exit and entrance ramps. The project would not include changing access points to major commercial, industrial, or other land use activities that typically impact commercial freight traffic and would not serve a significant volume of diesel truck traffic.

Expanded Highway with Significant Increase in Diesel Truck Traffic

Standard: Expanded highway projects that have a significant number of or significant increase in diesel vehicles.

Analysis: The project involves an expansion of I-15 in that an additional travel lane would be added to the I-15 mainline in Phase I and in Phase II, the auxiliary lane and two general purpose lanes would be shifted to be incorporated into the collector/distributor (C/D) system. Currently, I-15 northbound consists of four general purpose lanes, one HOV lane, and one auxiliary lane between the interchanges. After the project, I-15 northbound would consist of three general purpose lanes and one HOV lane, while the C/D system would consist of two general purpose lanes, plus one auxiliary lane between the interchanges.

However, there would be no significant increase in the number of diesel trucks in the project area as a result of this project. The diesel truck percentage in the design year of 2040 would remain the same or decrease from existing conditions, so with the anticipated increase in AADT, there would be a minor increase in the number of diesel trucks in the project area. See Table 1.

Table 1. AADT and Percent Diesel Truck Traffic for I-15 and C/D System from the Build Alternative

Road	Existing (2017)					No Build Alternative (2040)					Build Alternative (2040)					Change in 2040 Truck Volumes	
	AADT	Single-Unit		Combo-Unit		AADT	Single		Combo		AADT	Simple		Combo		Simple	Combo
		AADT	%	AADT	%		AADT	%	AADT	%		AADT	%	AADT	AADT		
Mainline	107,310					125,000					127,000					---	
5300 Off Ramp																	
Mainline	120,810	12,810	11%	7,370	6%	143,400	13,200	9%	8,000	6%	146,000	13,600	9%	8,200	6%	400	200
I-215 WB Ramp																	
Mainline	100,630					122,100					125,500					---	
I-215 EB Ramp																	
Mainline	93,820					114,700					118,400					---	
7200 S On Ramp to I-215 / 7200 S On Ramp to I-15																	
Mainline	79,190	7,950	10%	5,140	6%	98,800	8,100	8%	5,800	6%	103,400	8,700	8%	6,000	6%	600	200
I-215 C/D Off Ramp																	
Mainline	124,980					147,400					103,400					---	
C/D System											48,800				---		
7200 S Off Ramp																	
Mainline	132,860	12,420	9%	8,240	6%	157,200	12,400	8%	8,700	6%	103,400	12,900	8%	8,900	5%	500	200
C/D System											58,800						
9000 S On Ramp																	
Mainline	108,070					130,900					83,400					---	
C/D System											51,400				---		
9000 S Off Ramp																	
Mainline	118,890	9,510	8%	6,650	6%	143,600	9,700	7%	7,200	5%	82,600	10,200	7%	7,400	5%	500	200
C/D System											65,000						
10600 S On Ramp																	
Mainline	102,650					125,700					82,600					---	
C/D System											45,500				---		
10600 S Off Ramp																	
Mainline	112,610	9,010	8%	6,300	6%	138,500	9,400	7%	6,900	5%	82,600	9,800	7%	7,000	5%	400	100
C/D System											59,600						
11400 S On Ramp																	
Mainline	96,110					121,000					82,600					---	
C/D System											41,200				---		
11400 S Off Ramp																	
Mainline	109,570	8,000	7%	5,810	5%	135,000	8,400	6%	6,500	5%	82,600	8,700	6%	6,600	5%	300	100
C/D System											55,900						
12300 S On Ramp																	
Mainline	89,910					114,100					82,600					---	
C/D System											34,100				---		

Road	Existing (2017)					No Build Alternative (2040)					Build Alternative (2040)					Change in 2040 Truck Volumes	
	AADT	Single-Unit		Combo-Unit		AADT	Single		Combo		AADT	Simple		Combo		Simple	Combo
		AADT	%	AADT	%		AADT	%	AADT	%		AADT	%	AADT	AADT		
12300 S Off Ramp																	
Mainline	102,030	7,810	8%	5,710	6%	128,300	8,400	7%	6,400	5%	83,500	8,600	7%	6,400	5%	200	0
C/D System											48,300						
Bangerter On Ramp																	
Mainline	79,000					102,100					103,700					---	
Bangerter Off Ramp																	
Mainline	91,040	7,370	8%	5,460	6%	116,200	7,900	7%	6,100	5%	117,200	7,900	7%	6,200	5%	0	100
14600 S On Ramp																	
Mainline	81,580					105,900					106,400					---	

Source: Wasatch Front Regional Council Travel Demand Model (Version 8), obtained April 24, 2018.

Note: Diesel truck traffic for the Build Alternative is for combined I-15 Mainline and the C/D System.

For the Build Alternative, the diesel truck numbers represent a combined I-15 NB mainline and C/D System for a better comparison with the No Build, although it is likely that the I-15 NB mainline would have a higher percentage of diesel trucks since the C/D system is intended for more local traffic.

Further, the difference in diesel truck traffic between the Build and No Build Alternatives for the design year 2040 is even smaller than for the existing conditions, with the advantage of reducing congestion on the I-15 mainline to reducing idling and improve emissions.

For the I-15 mainline, the level of service (LOS) in the project area for the existing (2017) conditions and the No Action (2040) conditions is shown in Figure 3. As indicated, LOS for the existing conditions range from LOS B to LOS F across the corridor and LOS in the project area under the 2040 conditions without the project would be LOS F for almost the entirety of the corridor. For the Build Alternative, LOS in the project area would improve to an overall LOS D on I-15 mainline as a result of the proposed improvements. See Figure 4. The analysis was limited to the AM peak hour period, as that is the worst case scenario for traffic in the project area.



Figure 3. Existing (2017) and No Action (2040) Level of Service (AM Peak Period)

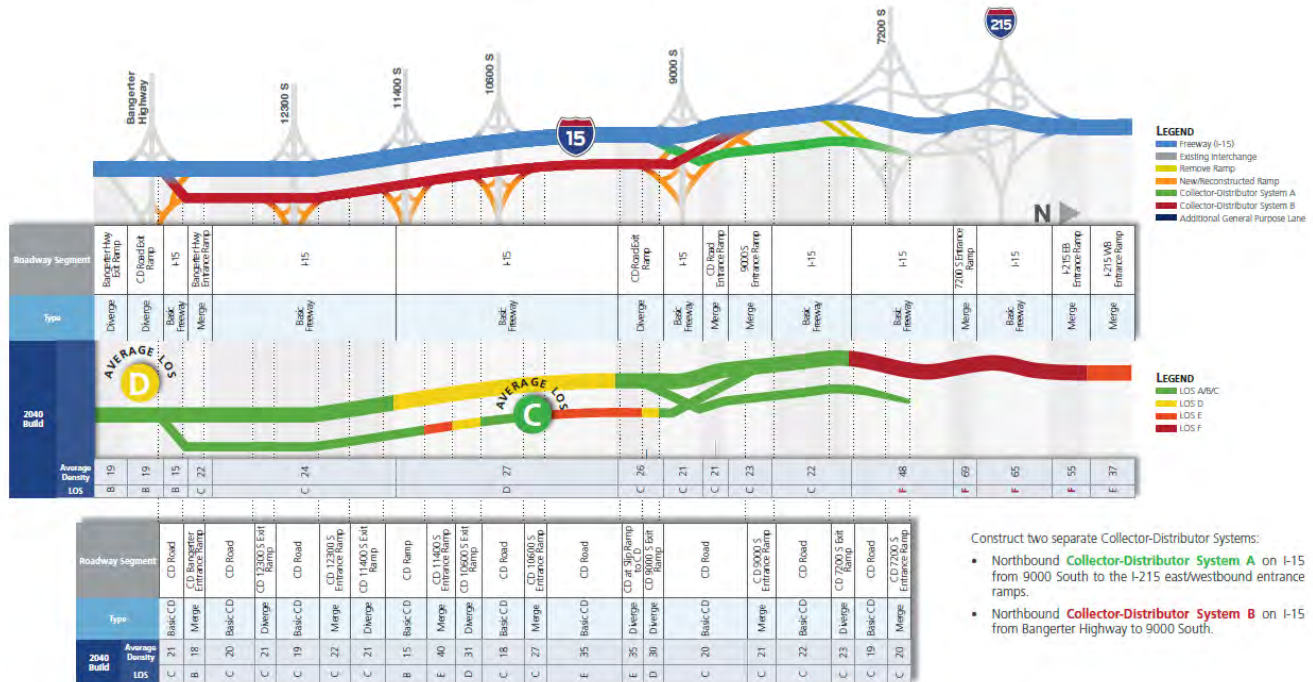


Figure 4. Build Alternative (2040) Level of Service (AM Peak Period)

Projects Affecting Congested Intersections

Standard: Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.

Analysis: The project does not propose to make any changes to intersections that are at LOS D, E, or F with a significant number of diesel vehicles or that will change to LOS D, E or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.

The C/D system is intended to improve traffic flow by removing access to the I-15 Mainline from the interchanges in the project area, thus allowing through traffic on I-15 to flow more smoothly, without congestion and weaving movements for traffic seeking to enter and exit the freeway. Two existing northbound lanes would be shifted from the current I-15 configuration to the C/D system and an auxiliary lane added to facilitate entrance/exit movements.

The C/D system would separate from I-15 at Bangerter Highway and would rejoin at 9000 South, where a second C/D system would begin. The first C/D system would provide connections to the following locations: 12300 South, 11400 South, 10600 South, and 9000 South. At 9000 South, connections from the first C/D system would be provided to northbound I-15, 9000 South, and the second C/D system. The second C/D system would separate from I-15 just prior to 9000 South and connect to the I-215 east/westbound entrance ramps and the 7200 South exit ramp. These connections are free-flow movements and are not intersections. However, the existing intersections with the cross-streets (12300 South, 11400 South, 10600 South, and 9000 South) would remain in the same configuration but would be shifted further to the east.

Based upon the percentages of diesel truck traffic in the area under both existing (using 2016 numbers) and future 2040 design conditions as shown in Table 1 above, there is not currently a significant amount of diesel truck traffic utilizing the existing intersections, nor is there expected to be a significant increase in diesel truck traffic related to the project in the design year that would utilize the new C/D system and associated intersections. The new system moves traffic desiring to access cross-streets off mainline I-15 to the collector-distributor systems. The intersections would essentially handle the same amount of traffic under both the Build and No-action scenarios, only the exact location of the intersections would be different. The existing intersections associated with the entrance/exit ramps would not change either in configuration or footprint with the exception of the shift to the east for the C/D system. Based upon the foregoing discussion, the project would not be considered a POAQC under this criteria.

New Bus and Rail Terminals

Standard: New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.

Analysis: This project does not involve construction of or connections to a new bus or intermodal terminal that accommodates a significant number of diesel vehicles.

Expanded Bus and Rail Terminals

Standard: Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location

Analysis: This project does not involve construction of or connections to an expanded bus or intermodal terminal that accommodates a significant number of diesel vehicles.

Improvements to Connect a Highway to a Major Freight, Bus, or Intermodal Terminal

Standard: New exit ramps and other highway facility improvements to connect a highway or expressway to a major freight, bus, or intermodal terminal

Analysis: This project does not involve construction of highway facility improvements to connect to a major freight, bus, or intermodal terminal.

Projects In or Affecting PM₁₀ or PM_{2.5} Sites of Violation or Possible Violation

Standard: Projects in or affecting locations, areas, or categories of sites which are identified in the PM₁₀ or PM_{2.5} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

Analysis: On November 14, 1991, Utah submitted a SIP for the Salt Lake and Utah County nonattainment areas. The SIP demonstrated attainment of the PM₁₀ standard for 10 years, 1993 through 2003. EPA published approval of the SIP on July 8, 1994 (59 FR 35036), and Utah achieved attainment of the standard in both areas by 1996. The control measures adopted as part of those plans have proven successful. Both the Salt Lake and the Utah County areas continue to show compliance with the federal health standards for PM₁₀. There are two distinct nonattainment areas for the 2006 PM_{2.5} standards residing entirely within the state of Utah. These are the Salt Lake City, UT, and Provo, UT nonattainment areas, which together encompass what is referred to as the Wasatch Front.). None of these areas has violated the annual 2006 NAAQS for PM_{2.5}.

For the 24-hour PM_{2.5} standard, the standard is met when a three-year average of 98th percentile values is less than or equal to 35 µg/m³. The nearest ambient air quality monitor to the project area is located at County

Hawthorne Annex Monitoring Station #49-035-3006 (located at 1675 South 600 East, Salt Lake City), which is approximately seven (7) to ten (10) miles north of the project area. According to the PM_{2.5} SIP for the Salt Lake City, UT Nonattainment Area, Section IX. Part A.21, there were noted exceedances of the 24-hour PM_{2.5} standard at the Hawthorne monitoring station, based on data for the 2008-2010, 2009-2011, and 2010-2012 averaging periods. The Salt Lake City, UT Nonattainment Area SIP stated that the exceedances of the 24-hr PM_{2.5} NAAQS are a result of the increased portion of the secondary PM_{2.5} that was chemically formed in the air and not primary PM_{2.5} emitted directly.

Project of Air Quality Concern Determination

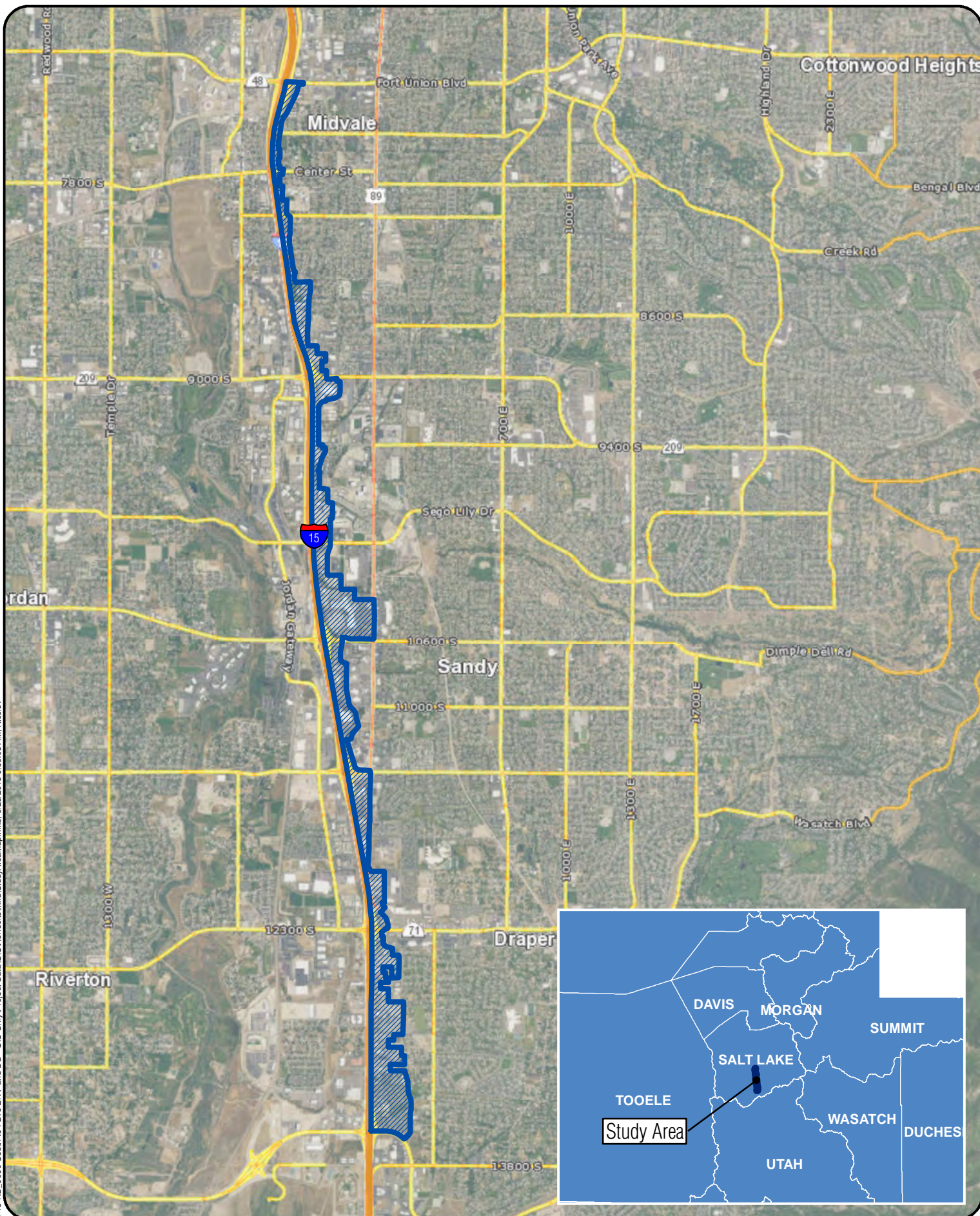
Standard: State whether the project is a POAQC and summarize the support for that determination. Document the relevant agencies that require interagency consultation on any input for the determination from federal, state, and local transportation and air agencies as necessary for this project per 40 CFR 93.105. This information will be included in any subsequent air quality analysis and project level conformity determination reports.


Answer: This project does not qualify as a project of air quality concern since it would not result in a significant increase in diesel traffic in the project area. The project is not expected to influence the vehicle mix in the project area nor attract a significant number of new diesel vehicles to the area. Although the proposed improvements do include an increase in capacity for the I-15 mainline, the proposed improvements are intended to reduce congestion and improve traffic flow on I-15, thereby increasing speeds and reducing idling and slow-downs. Therefore, this project is not a project of air quality concern.

Based upon the foregoing discussion, UDOT is presenting this project for interagency consultation per 40 CFR 93.105 as a project that is not a project of air quality concern and thereby will not require a PM₁₀ or PM_{2.5} hot-spot analysis.

Appendix: Maps

O:\2017\PG-108-1711 I-15 NB_9000 South to I-215 ENV and DB - GIS Only\Project Data\GIS\Herrocks\MapStudyArea\Map.mxd, 6/25/2018 9:55:06 AM, Nicole T



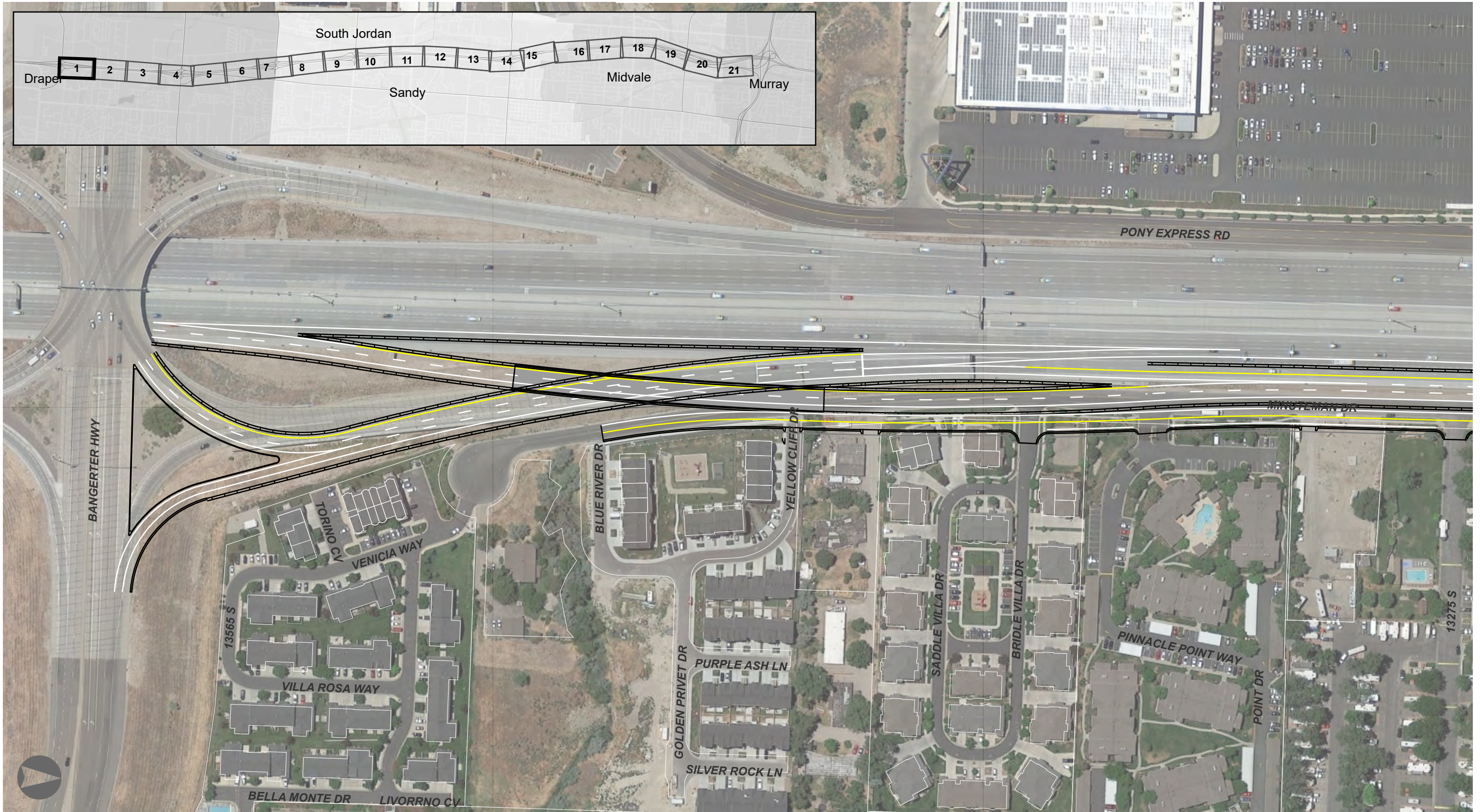
 Study Area

1 inch = 5,000 feet

0 5,000 10,000 Feet



**I-15 Northbound; Bangarter Highway to I-215
Study Area Map**



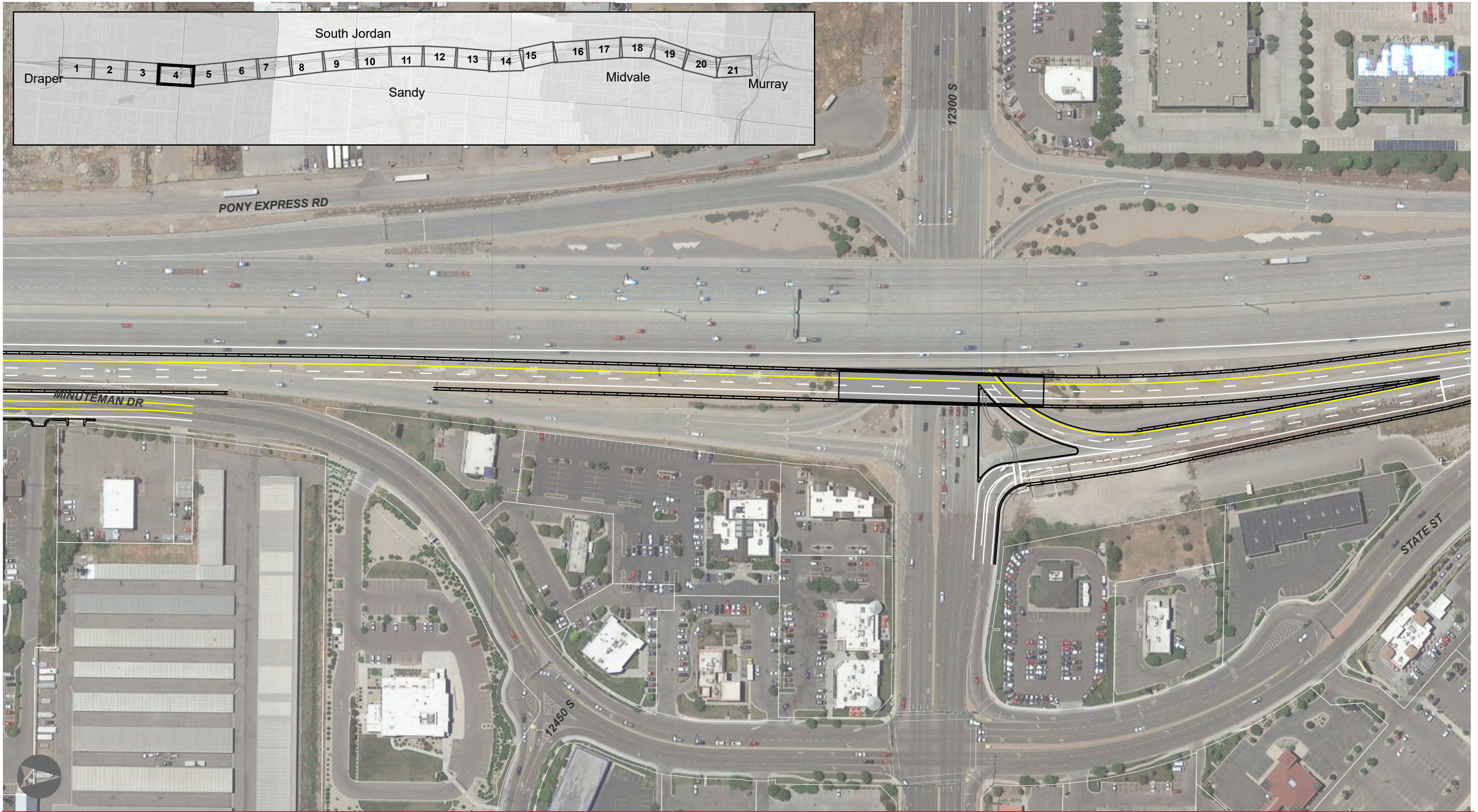
Preferred Alternative



Preferred Alternative



Preferred Alternative



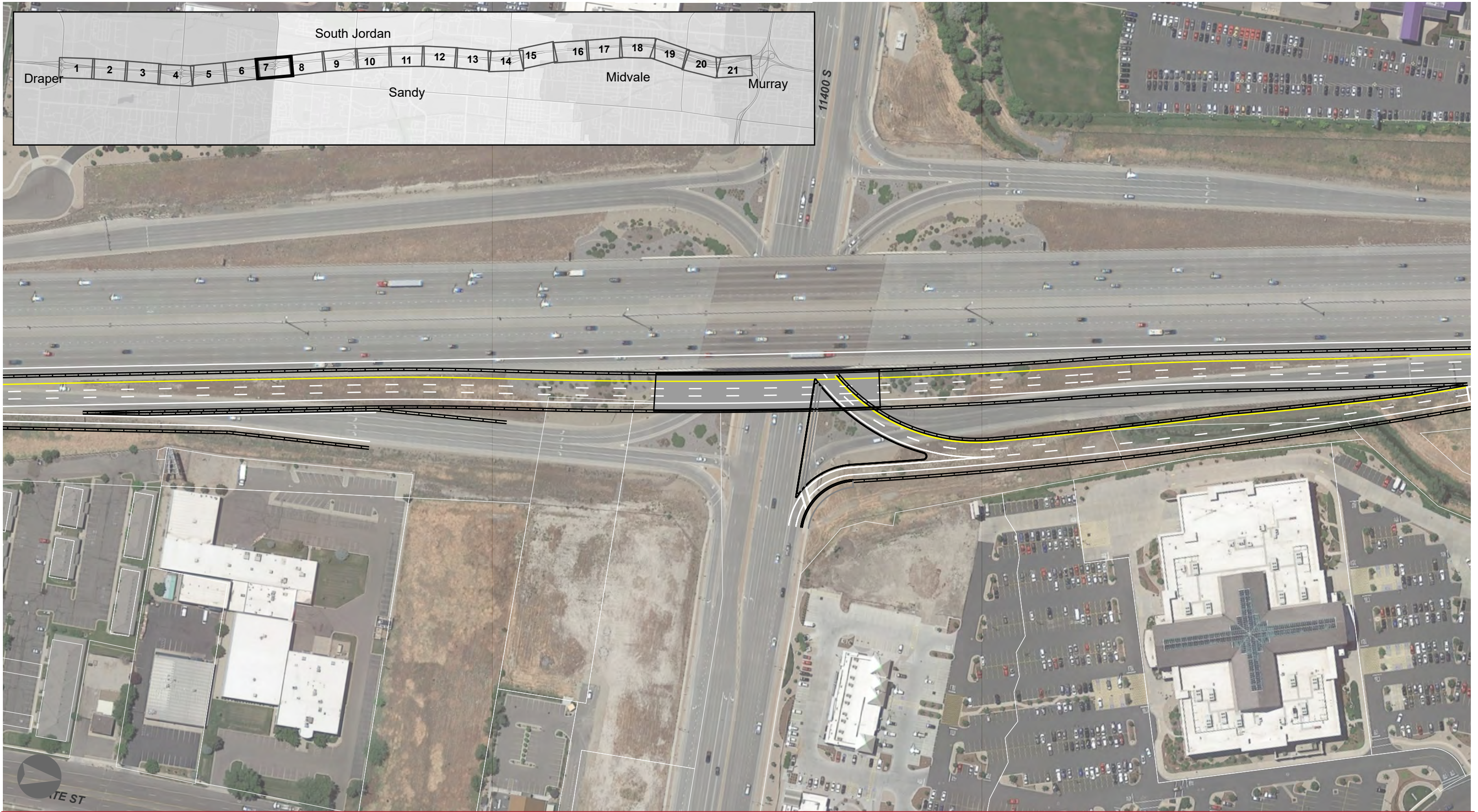
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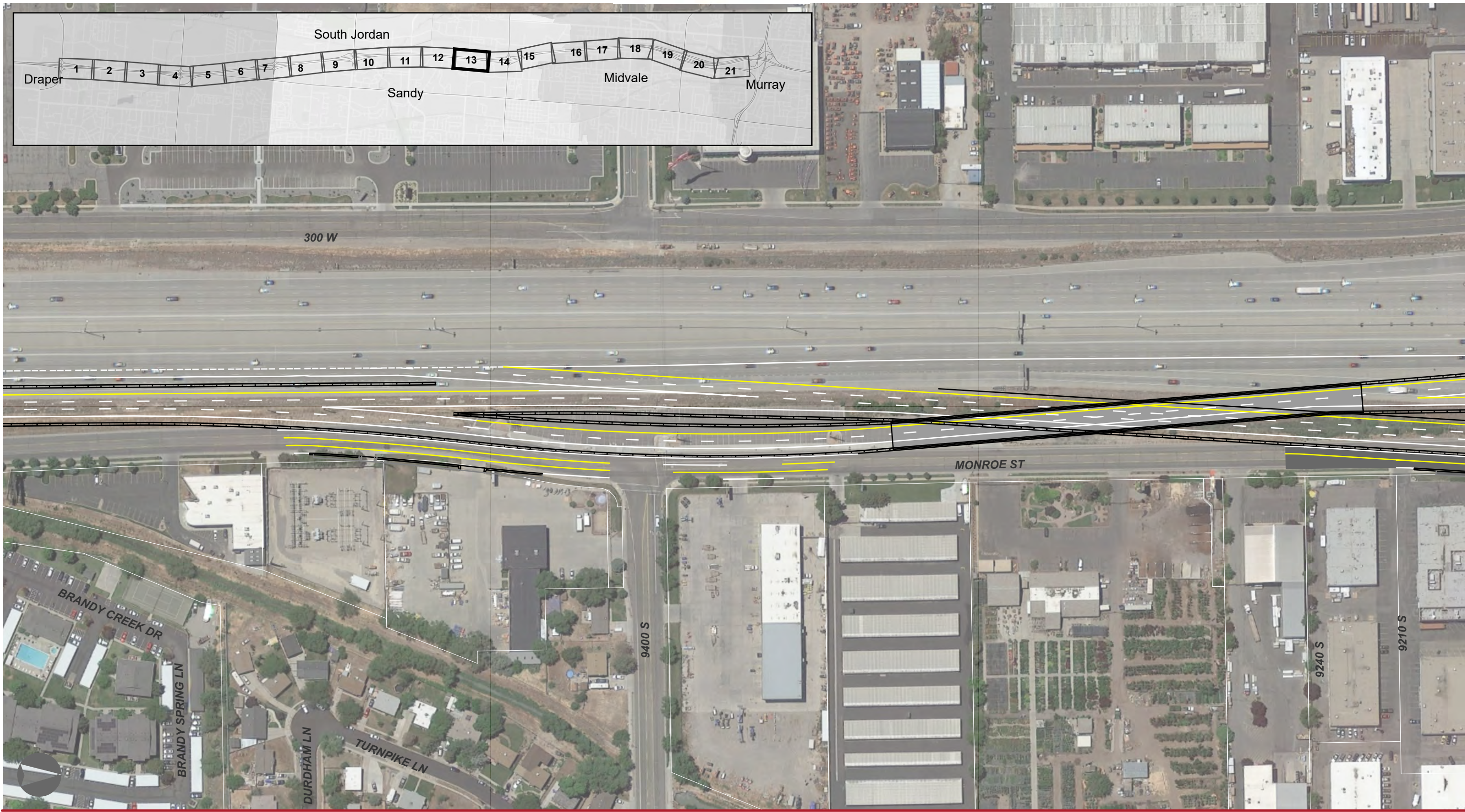
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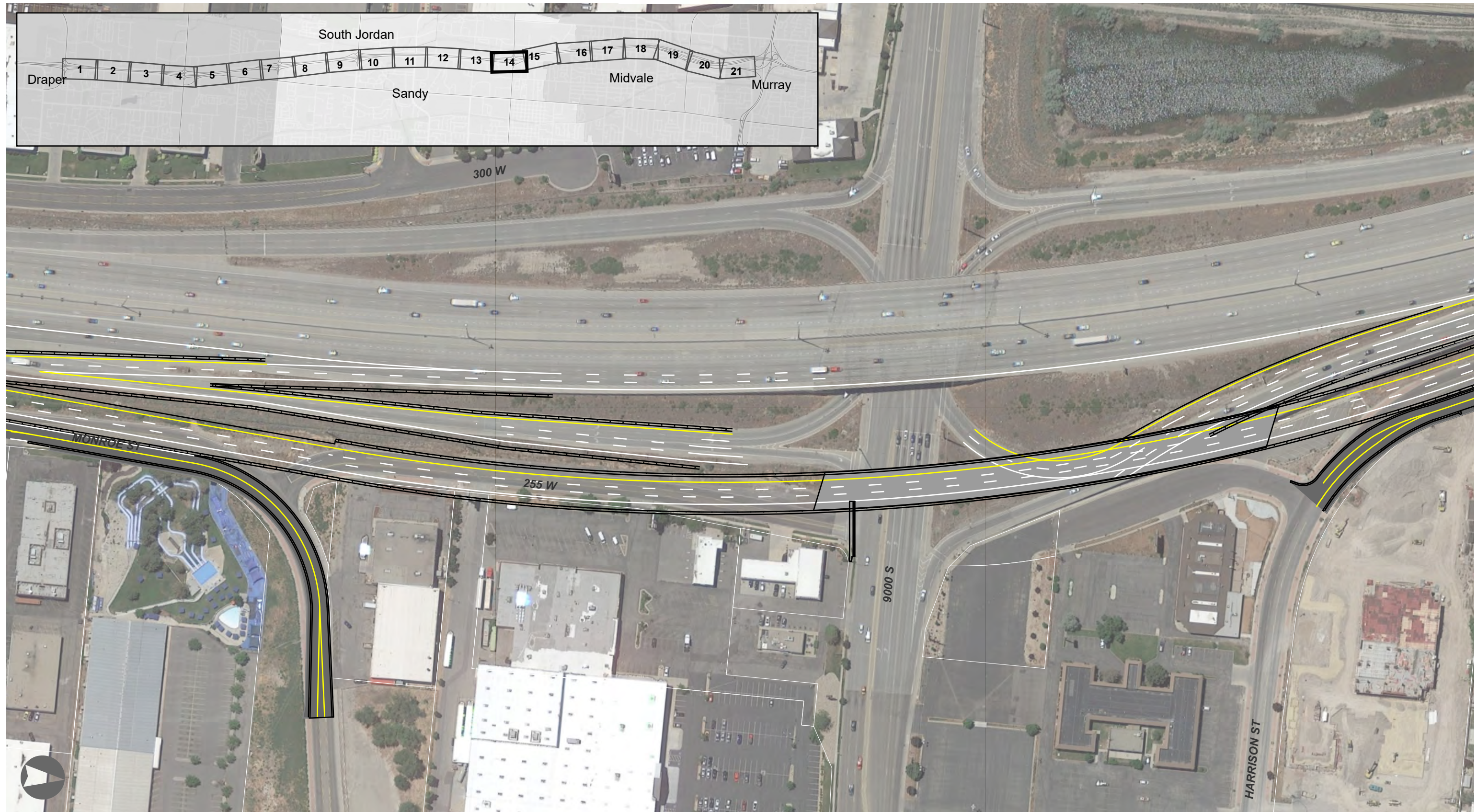
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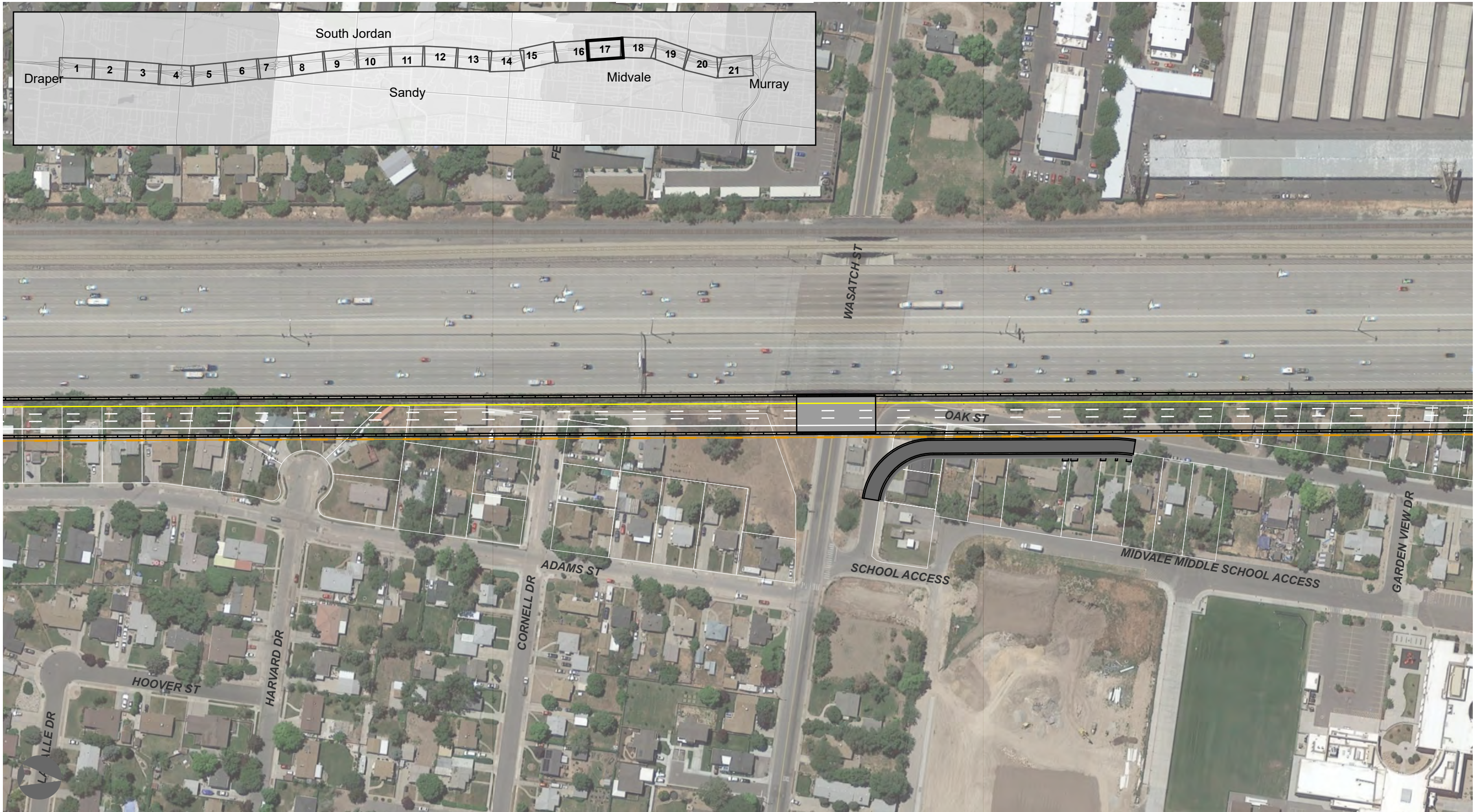
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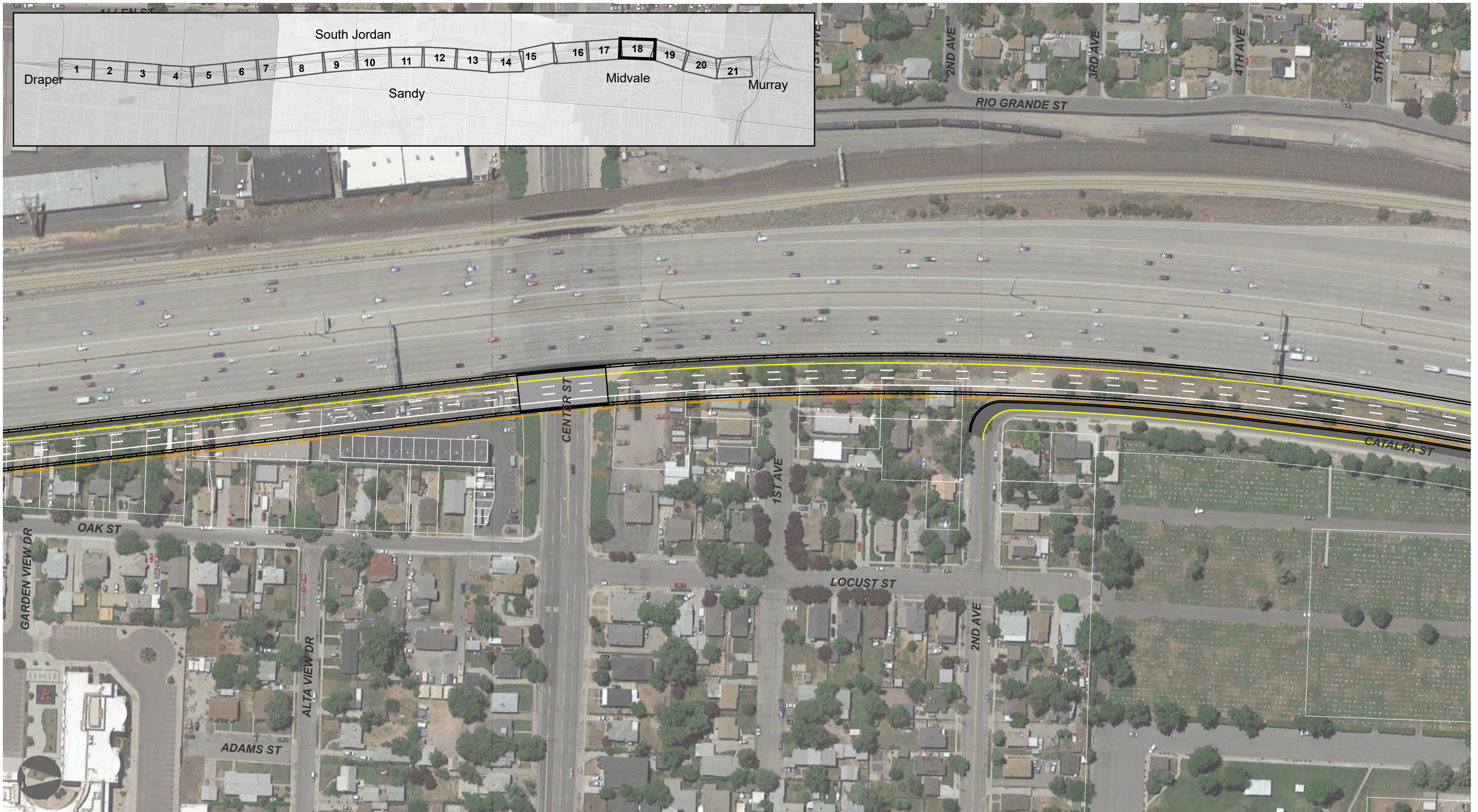
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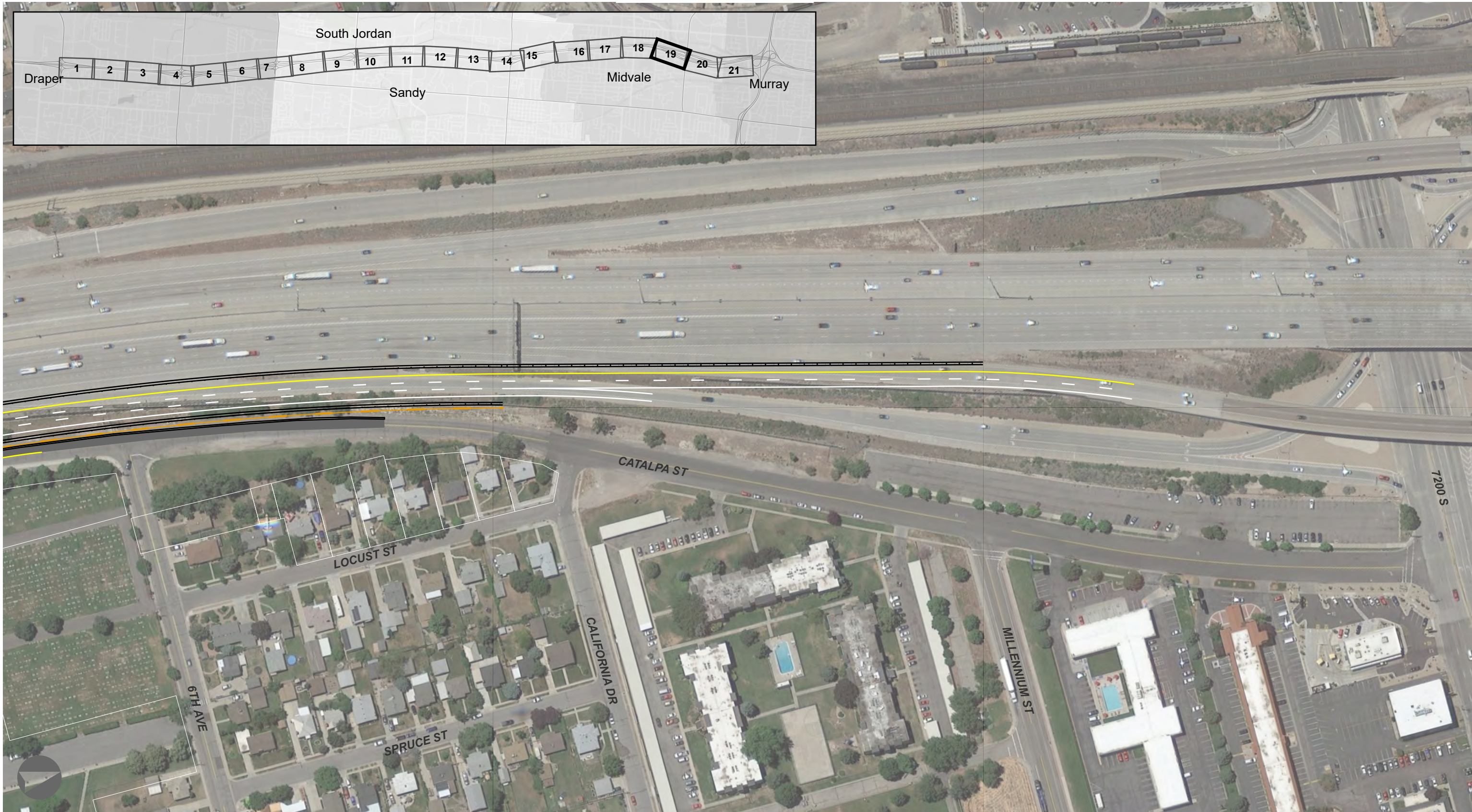
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Preferred Alternative



Preferred Alternative



Preferred Alternative

AIR QUALITY MEMO

PREPARED BY

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Memorandum on Air Quality

I-15 Northbound; Bangerter Highway to I-215

July 5, 2018

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by UDOT pursuant to 23 USC 327 and a Memorandum of Understanding dated January 17, 2017, and executed by FHWA and UDOT.

Project Overview

The Utah Department of Transportation (UDOT) is preparing an Environmental Assessment to evaluate potential transportation-related improvements on northbound Interstate 15 (I-15) from State Route 54 (Bangerter Highway) to Interstate 215 (I-215) in Salt Lake County, Utah (see Study Area Map in Appendix A).

The Preferred Alternative includes the construction of two separate collector-distributor systems. Each collector-distributor systems would consist of a three-lane roadway that would be separated from mainline northbound I-15 by a concrete traffic barrier. The collector-distributor systems would connect to multiple interchanges, allowing I-15 mainline traffic to bypass exit and entrance ramps (see Figure 1 and Preferred Alternative Maps in Appendix A).

- **Northbound Collector-Distributor System A** – Collector-Distributor System A would separate from I-15 just prior to 9000 South and connect to the I-215 east/westbound entrance ramps. At 9000 South, connections would be provided to northbound I-15 and Collector-Distributor System A.
- **Northbound Collector-Distributor System B** – Collector-Distributor System B would separate from I-15 just after Bangerter Highway and would rejoin I-15 just prior to 9000 South. Collector-Distributor B would provide connections to the following locations: 12300 South, 11400 South, 10600 South, and 9000 South. At 9000 South, connections from Collector-Distributor B would be provided to northbound I-15, 9000 South, and Collector Distributor System A.

Purpose and Need

Purpose

The purpose of the project is to:

- Address the current and future travel demand on northbound I-15 from Bangerter Highway to I-215.
- Improve safety on northbound I-15 from Bangerter Highway to I-215.

Need

The need for the project is based on the following:

- Current conditions indicate that various stretches of northbound I-15 are highly congested during peak hours and are inadequate in meeting the travel needs. By 2040, traffic on northbound I-15 is projected to grow substantially and congestion during peak travel times is expected to increase by more than 50%.
- Within the study area there were a total of 2,218 crashes from 2015 to 2017. Over half of those crashes (1,670) were front-to-rear collisions, which are highly associated with congestion.

Regulatory Background

National Ambient Air Quality Standards

The Clean Air Act Amendments (CAAA) of 1990 (42 USC 7401 et seq.) established the National Ambient Air Quality Standards (NAAQS) for airborne pollutants. The six criteria pollutants addressed in the NAAQS are:

- carbon monoxide (CO)
- particulate matter with a diameter of 10 micrometers or less (PM₁₀)
- particulate matter with a diameter of 2.5 micrometers or less (PM_{2.5})
- ozone (O₃)
- nitrogen dioxide (NO₂)
- lead (Pb)

The current NAAQS are shown in Table 1 - National Ambient Air Quality Standards.

Table 1. National Ambient Air Quality Standards

Pollutant	Primary/ Secondary	Level	Averaging Time	Violation Determination
Carbon Monoxide (CO)	Primary	9 ppm	8-hour	Not to be exceeded more than once per year
		35 ppm	1-hour	
Lead (Pb)	Primary/ Secondary	0.15 µg/m ³	Rolling 3- Month Average	Not to be exceeded
Nitrogen Dioxide (NO ₂)	Primary/ Secondary	53 ppb (0.053 ppm)	Annual	Annual mean
	Primary	100 ppb	1-hour	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
Particulate Matter (PM ₁₀)	Primary/ Secondary	150 µg/m ³	24-hour	Not to be exceeded more than once per year on average over 3 years
Particulate Matter (PM _{2.5})	Primary	12.0 µg/m ³	Annual	Annual mean, averaged over 3 years
	Secondary	15.0 µg/m ³	Annual	Annual mean, averaged over 3 years
	Primary/ Secondary	35 µg/m ³	24-hour	98th percentile, averaged over 3 years
Ozone (O ₃)	Primary/ Secondary	0.070 ppm (2015)*	8-hour	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Sulfur Dioxide (SO ₂)	Primary	75 ppb	1-hour	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	0.5 ppm	3-hour	Not to be exceeded more than once per year

Source: EPA (as of January 30, 2017 (<https://www.epa.gov/criteria-air-pollutants/naaqs-table>))

*Final rule signed October 1, 2015, and effective December 28, 2015.

Note: Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb), and micrograms per cubic meter of air (µg/m³). Primary standards set limits to protect public health, including the health of “sensitive” populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

If the NAAQS levels are exceeded, the area is designated a non-attainment area and the development of a State Implementation Plan (SIP) is required. The SIP sets allowable emissions levels to be met and identifies control strategies to meet the NAAQS for those specific criteria pollutants that experienced exceedances. All proposed transportation projects must conform to the SIP.

Transportation Conformity

A regional level analysis looks at the Long-Range Transportation Plan (LRTP) to see that all of the projects included in the LRTP, including the proposed project, conform to the control strategies and emissions levels set in the SIP. An individual project is said to conform to the SIP if, both by itself and in combination with the other planned transportation projects in the plan, it would not result in any of the following conditions (see 40 CFR 93.116):

- New violations of the NAAQS
- Increases in the frequency or severity of existing violations of the NAAQS
- Delays in attaining the NAAQS

Utah does not currently have an approved SIP for PM_{2.5}. Because Utah does not currently have an approved SIP for PM_{2.5}, interim conformity requirements apply, which require that future NO_x emissions (a precursor to PM_{2.5}) and primary particulate emissions not exceed 2008 levels. (NO_x is a generic term for the mono-nitrogen oxides NO and NO₂ (nitric oxide and nitrogen dioxide) and are produced from the reaction among nitrogen, oxygen and even hydrocarbons (during combustion), especially at high temperatures.)

Air Toxics

In addition to the criteria air pollutants for which there are NAAQS, the Environmental Protection Agency (EPA) also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary source (e.g., factories or refineries). Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act. MSATs are compounds emitted from highway vehicles and non-road equipment. The seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) are:

- Acrolein
- Benzene
- 1,3-butadiene
- Diesel exhaust particulate matter plus diesel exhaust organic gases (diesel PM)
- Formaldehyde
- Naphthalene
- Polycyclic organic matter

Greenhouse Gases

The issue of global climate change is an important national and global concern that is being addressed in several ways by the federal government. The transportation sector is the second-largest source of total greenhouse gases (GHGs) in the United States and the largest source of carbon dioxide (CO₂) emissions, the predominant greenhouse gas. In 2004, the transportation sector was responsible for 31% of all CO₂ emissions produced in the United States.

The principal anthropogenic (human-made) source of carbon emissions is the combustion of fossil fuels, which accounts for about 80% of anthropogenic emissions of carbon worldwide. Almost all (98%) of transportation-related greenhouse gas emissions result from the consumption of petroleum products such as gasoline, diesel fuel, jet fuel, and other residual fuels.

Affected Environment

Climate

Salt Lake City is located in the Salt Lake Valley, a northern Utah valley surrounded by mountains on three sides with the Great Salt Lake to the northwest. Salt Lake City normally has a semi-arid continental climate with four well-defined seasons. Summers are characterized by hot, dry weather, but the high temperatures during this season are usually not oppressive, since the relative humidity is generally low and the nights usually cool. Winters are cold, but usually not severe. Mountains to the north and east act as a barrier to frequent invasions of cold continental air. Occasionally, the snow cover is considerably more than 1 foot (300 mm) deep. Heavy fog can develop under temperature inversions in the winter and persist for several days.

Attainment Status

The study area is located in Salt Lake County, Utah, which is within the Salt Lake PM₁₀, PM_{2.5}, and SO₂ Nonattainment Areas. It is outside of the Salt Lake City CO Maintenance Area. In 2017, the EPA reclassified the Salt Lake City PM_{2.5} nonattainment area from Moderate to Serious. Further, the EPA has recently classified the Wasatch Front (including all or part of Salt Lake, Davis, Weber, Tooele, and Utah counties) and parts of the Uinta Basin (portions of Uintah and Duchesne counties below 6,250 feet) as Marginal Nonattainment Areas for Ozone, which is the least stringent classification for a nonattainment area and doesn't require the state to submit a formal SIP. Therefore, the study area is now located in a marginal nonattainment area for Ozone.

Existing Air Quality Data

The Utah Division of Environmental Quality (UDEQ) maintains a network of air quality monitoring stations throughout the area. In general, these monitoring stations are located where there are known air quality problems, usually in or near urban areas or close to specific emission sources. Other stations are located in remote areas to provide an indication of regional air pollution levels. Data from the Salt Lake County Hawthorne Annex Monitoring Station #49-035-3006 (located at 1675 South 600 East, Salt Lake City) was used to compile air quality data for the years of 2013-2017 (see Table 2).

Table 2. Existing Pollutant Data for the Project Area

Pollutants		NAAQS	Violation Determination	2013	2014	2015	2016	2017
SO ₂	1 hour (ppb)	75 ppb	99th percentile	6.4	5.5	5.1	13.3	3.3
NO ₂	1-hour (ppb)	53 ppb	Annual mean	18.0	14.4	15.64	18.09	12.69
O ₃	8-hour (ppm)	0.070 ppm	Annual fourth-highest daily maximum	0.077	0.072	0.081	0.074	0.081
PM ₁₀	24-hr (µg/m ³)	150 µg/m ³	Not to be exceeded more than once per year	86	110	80	86	84
PM ₂₅	24-hr (µg/m ³)	35 µg/m ³	98th percentile	58.8	43.3	29.3/ 28.8	42/ 34.4	35.7/ 38.5

Pollutants		NAAQS	Violation Determination	2013	2014	2015	2016	2017
CO	1-hour (ppm)	35 ppm	Not to be exceeded more than once per year	3.130	1.9	3.440	3.000	4.970

Source: All Criteria Pollutant Yearly Quicklook Summary Reports, Utah Division of Air Quality website (<http://www.airmonitoring.utah.gov/dataarchive/archall.htm>)

According to the Utah Division of Air Quality (UDAQ) 2017 Annual Report, emissions for criteria air pollutants either stayed the same or continued their downward trends in 2017. Utah remains in compliance with the CO, SO₂, and PM₁₀ NAAQS. Utah has never exceeded the NAAQS for NO₂. For ozone, exceedances of the new standard occurred in Weber, Davis, Salt Lake, and Utah Counties, as well as in Uintah and Duchesne Counties during the winter. For PM₁₀, there were no violations of the NAAQS for the last five years. For PM_{2.5}, Utah remains in compliance with the 1997 standard, but is not in compliance with the 2006 standard.

Environmental Consequences

No-action Alternative

Vehicle emission rates would continue to improve due to increasingly tougher EPA regulations regarding vehicle emissions, which would help to improve air quality in the study area. There would be no construction activities, so no temporary increase in particulate matter related to such activities would occur. The No-action Alternative would have an increase in per vehicle emissions due to continuing congestion and delays along northbound I-15 in the study area due to the increase in travel demand and the lack of improvements to it; however, the increase from the congestion would be more than offset by the improved vehicle emission rates.

Proposed Action

Regional Level Analysis

Based on the air quality conformity analysis conducted by the WFRC for the 2015-2040 Regional Transportation Plan and the Air Quality Memorandum #37 dated January 23, 2018, all the transportation projects in the 2015-2040 RTP conform to the SIP or the EPA interim conformity guidelines. This project is identified in WFRC's 2015-2040 Regional Transportation Plan (RTP) (a financially-constrained long-range plan) as a combination of two separate projects (I-15 Collectors and Distributors (7800 South to 10600 South) and I-15 Operational (Davis County Line to Utah County Line), as well as Construction of Interstate 15 Braided Ramp from Amendment 5 and Widening on I-15 in draft Amendment 6. A letter dated March 7, 2018 from the Federal Highway Administration (FHWA) in regards to the WFRC transportation plan Amendment #5 has met the conformity regulation for the Salt Lake County and Salt Lake City and Ogden City nonattainment areas. Public comment is now being sought in regards to Draft Amendment #6 and Draft Air Quality Memorandum #38 through August 4, 2018.

For PM₁₀, the Air Quality Memorandum #37 demonstrates that projected mobile source emissions are within the emissions budget defined in the SIP for Salt Lake County. For PM_{2.5}, the Air Quality Memorandum #37 demonstrates that projected mobile source emissions of NO_x in the five-county PM_{2.5} non-attainment area are less than 2008 NO_x and that direct particle emissions of PM_{2.5} are also less than 2008 PM_{2.5} emissions, which is what is required under the interim conformity requirements that are currently applicable to this area. Further, with support from WFRC, the USDAQ has been developing a new plan (or a new section of the SIP) to reduce PM_{2.5} related emissions to the point that the Wasatch Front Region will once again be in compliance with national PM_{2.5} standards. The improved vehicle emission technology and national standards enacted in 2004 and 2007 respectively will be instrumental in the UDAQ plan to achieve the new PM_{2.5} standard.

Project Level Analysis

Project level analysis is performed when a project is located in a non-attainment area for CO or PM₁₀/PM_{2.5} or in an area that was previously designated as non-attainment but has been subsequently redesignated as attainment, otherwise known as a maintenance area. Project level analysis may consist of either a qualitative or quantitative analysis or both.

Carbon Monoxide

The study area is not located in a non-attainment area for carbon monoxide; therefore, no project level analysis is required under transportation conformity rules.

Particulate Matter

A quantitative analysis for PM₁₀ and PM_{2.5} is only required for a “project of air quality concern” (see 40 CFR Section 93.123(b)(1)). No hot-spot analysis is required for projects that qualify as exempt (which are those projects consistent with 40 CFR 93.126 or 40 CFR 93.128) or for non-exempt projects that are not determined to be projects of air quality concern since the EPA has determined that these remaining projects would not have an adverse impact on air quality and meet the requirements of the CAA without further local analysis.

Projects of air quality concern are certain highway and transit projects that involve a significant level of diesel vehicle traffic or any other project that is identified in the PM_{2.5} or PM₁₀ SIP as a localized air quality concern, such as:

- i) new or expanded highway projects that have a significant number of or significant increase in diesel vehicles;
- ii) projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;
- iii) new bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
- iv) expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and
- v) projects in or affecting locations, areas, or categories of sites which are identified in the PM_{2.5} or PM₁₀ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The FHWA provided examples of projects that would not be considered projects of air quality concern. See the Transportation Conformity Guidance for Qualitative Hot-spot Analyses in PM₁₀ and PM_{2.5} Nonattainment and Maintenance Areas, issued March 2006. These examples included:

- Any new or expanded highway project that primarily services gasoline vehicle traffic (i.e., does not involve a significant number or increase in the number of diesel vehicles), including such projects involving congested intersections operating at Level-of-Service D, E, or F;
- An intersection channelization project or interchange configuration project that involves either turn lanes or slots, or lanes or movements that are physically separated. These kinds of projects improve freeway operations by smoothing traffic flow and vehicle speeds by improving weave and merge operations, which would not be expected to create or worsen PM_{2.5} or PM₁₀ violations; and,

- Intersection channelization projects, traffic circles or roundabouts, intersection signalization projects at individual intersections, and interchange reconfiguration projects that are designed to improve traffic flow and vehicle speeds, and do not involve any increases in idling. Thus, they would be expected to have a neutral or positive influence on PM_{2.5} or PM₁₀ emissions.

This project is not exempt under either 40 CFR 93.126 (specific exempt project types) or 40 CFR 93.128 (traffic signal synchronization projects). Further, this project does not qualify as a project of air quality concern since it would not result in a significant increase in diesel traffic in the study area. The project involves the addition of a collector/distributor system along the northbound side of I-15 to improve the efficiency of the access points to I-15, thereby reducing congestion on the main travel lanes. The project is not expected to influence the vehicle mix in the study area nor attract a significant number of new diesel vehicles to the area. See the Project of Air Quality Concern (POAQC) Evaluation prepared in connection with this project.

UDOT has determined that this project is not a project of air quality concern. Since the project has been determined to not be a project of air quality concern, no project level analysis is required for conformity purposes.

Mobile Source Air Toxics (MSAT)

MSAT analysis is based upon the Interim Guidance Update on MSAT in NEPA (December 6, 2012). FHWA developed a three-tiered approach for analyzing MSAT in NEPA documents, depending on specific project circumstances.

- Tier 1 – No potential for meaningful MSAT effects or exempt projects: No analysis is required, only documentation that the project qualifies as a categorical exclusion or an exempt project
- Tier 2 – Low potential for meaningful MSAT effects: A qualitative analysis is required
- Tier 3 – Higher potential for meaningful MSAT effects: A quantitative analysis is required, analyzing all seven priority MSATs

The improvements included in the project are intended to improve speed and reduce delays in the study area and to improve the operation of I-15 northbound without adding substantial new capacity or otherwise having a meaningful impact on MSAT emissions. The Preferred Alternative involves the addition of a frontage road system along the northbound side of I-15 to improve the efficiency of the access point to I-15, thereby reducing congestion on the main travel lanes. For design-year traffic, the I-15 NB Mainline was analyzed in segments based upon interchange access points with the highest traffic occurring in the 7200 to 9000 South segment (176,000 for average weekday traffic (AWDT) and 162,200 average daily traffic (AADT) with 6% trucks). The improvements included in the project are intended to improve speed and reduce delays in the study area and to improve the operation of I-15 without adding substantial new capacity or otherwise having a meaningful impact on MSAT emissions. Therefore, a qualitative MSAT analysis under Tier 2 was performed.

A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled “A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives,” found at: www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm.

For both the Preferred and No-action Alternatives, the amount of MSATs emitted would be proportional to the vehicle miles traveled (VMT), assuming that other variables such as fleet mix are the same for each alternative. The Preferred Alternative results in an approximately 25.4% increase in Vehicle Miles Traveled (VMT) and the No-action Alternative results in an approximately 22.4% increase in VMT in the study area over existing conditions (see Table

4). No appreciable difference was identified in VMT between the No-action and the Preferred Alternatives. Because the estimated VMT under each of the Alternatives are approximately the same, it is expected there would be no appreciable difference in overall MSAT emissions among the alternatives. In addition, traffic data regarding vehicles hours traveled (VHT) for the 2040 design year shows that there would be only approximately 3% greater VMT in the project area under the Preferred Alternative, as opposed to the No-action Alternative. See Table 4 – Vehicle Miles Traveled /Vehicle Hours Traveled for Existing, No-action, and Preferred Alternatives.

Table 3. AADT and Percent Diesel Truck Traffic for I-15 NB and C/D System from the Build Alternative

Roadway	Existing (2017)			No Build Alternative (2040)			Build Alternative (2040)		
	AADT	Diesel (Combo) Truck AADT	Diesel Truck %	AADT	Diesel (Combo) Truck AADT	Diesel Truck %	AADT	Diesel (Combo) Truck AADT	Diesel Truck %
I-15 NB Mainline	107,310	NA	NA	125,000	NA	NA	127,000	NA	NA
5300 Off Ramp									
I-15 NB Mainline	120,810	7,370	6%	143,400	8,000	6%	146,000	8,200	6%
I-215 WB Ramp									
I-15 NB Mainline	100,630	NA	NA	122,100	NA	NA	125,500	NA	NA
I-215 EB Ramp									
I-15 NB Mainline	93,820	NA	NA	114,700	NA	NA	118,400	NA	NA
7200 S On Ramp to I-215 / 7200 S On Ramp to I-15									
I-15 NB Mainline	79,190	5,140	6%	98,800	8,100	8%	103,400	6,000	6%
I-215 C/D Off Ramp									
I-15 NB Mainline	124,980	NA	NA	147,400	NA	NA	103,400	NA	NA
C/D System							48,800		
7200 S Off Ramp									
I-15 NB Mainline	132,860	8,240	6%	157,200	8,700	6%	103,400	8,900	5%
C/D System							58,800		
9000 S On Ramp									
I-15 NB Mainline	108,070	NA	NA	130,900	NA	NA	83,400	NA	NA
C/D System							51,400		
9000 S Off Ramp									
I-15 NB Mainline	118,890	6,650	6%	143,600	7,200	5%	82,600	7,400	5%
C/D System							65,000		
10600 S On Ramp									
I-15 NB Mainline	102,650	NA	NA	125,700	NA	NA	82,600	NA	NA
C/D System							45,500		
10600 S Off Ramp									
I-15 NB Mainline	112,610	6,300	6%	138,500	6,900	5%	82,600	7,000	5%
C/D System							59,600		
11400 S On Ramp									

Roadway	Existing (2017)			No Build Alternative (2040)			Build Alternative (2040)		
	AADT	Diesel (Combo) Truck AADT	Diesel Truck %	AADT	Diesel (Combo) Truck AADT	Diesel Truck %	AADT	Diesel (Combo) Truck AADT	Diesel Truck %
I-15 NB Mainline	96,110	NA	NA	121,000	NA	NA	82,600	NA	NA
C/D System							41,200		
11400 S Off Ramp									
I-15 NB Mainline	109,570	5,810	5%	135,000	6,500	5%	82,600	6,600	5%
C/D System							55,900		
12300 S On Ramp									
I-15 NB Mainline	89,910	NA	NA	114,100	NA	NA	82,600	NA	NA
C/D System							34,100		
12300 S Off Ramp									
I-15 NB Mainline	102,030	5,710	6%	128,300	6,400	5%	83,500	6,400	5%
C/D System							48,300		
Bangerter On Ramp									
I-15 NB Mainline	79,000	NA	NA	102,100	NA	NA	103,700	NA	NA
Bangerter Off Ramp									
I-15 NB Mainline	91,040	5,460	6%	116,200	6,100	5%	117,200	6,200	5%
14600 S On Ramp									
I-15 NB Mainline	81,580	NA	NA	105,900	NA	NA	106,400	NA	NA

Table 4. Daily Vehicle Miles Traveled for Existing 2017 Conditions, the No-action Alternative, and the Preferred Alternative

Segment	Existing (2017)	2040 No Build			2040 Build		
	VMТ (Daily)	VMТ (Daily)	Difference	Percent Change	VMТ (Daily)	Difference	Percent Change
I-15 NB Mainline	53,180	61,950	8,770	16.49%	62,940	9,760	18.35%
5300 Off Ramp							
I-15 NB Mainline	100,970	119,850	18,880	18.70%	122,030	21,060	20.8621
I-215 WB Ramp							
I-15 NB Mainline	36,480	44,260	7,780	21.33%	45,490	9,010	24.70%
I-215 EB Ramp							
I-15 NB Mainline	55,020	67,260	12,240	22.25%	69,430	14,410	26.19%
7200 S On Ramp to I-215 / 7200 S On Ramp to I-15							
I-15 NB Mainline	52,760	65,830	13,070	24.77%	68,900	16,140	30.59%
I-215 C/D Off Ramp							
I-15 NB Mainline	12,660	14,930	2,270	17.93%	15,420	2,760	21.80%

Segment	Existing (2017)	2040 No Build			2040 Build		
	VMT (Daily)	VMT (Daily)	Difference	Percent Change	VMT (Daily)	Difference	Percent Change
7200 S Off Ramp							
I-15 NB Mainline	215,430	254,900	39,470	18.32%	263,010	47,580	22.09%
9000 S On-Ramp							
I-15 NB Mainline	57,740	69,940	12,200	21.13%	72,020	14,280	24.73%
9000 S Off Ramp							
I-15 NB Mainline	171,810	207,520	35,710	20.78%	213,300	41,490	24.15%
10600 S On Ramp							
I-15 NB Mainline	58,200	71,270	13,070	22.46%	72,630	14,430	24.79%
10600 S Off Ramp							
I-15 NB Mainline	57,240	70,400	13,160	22.99%	72,280	15,040	26.28%
11400 S On Ramp							
I-15 NB Mainline	47,500	59,800	12,300	25.89%	61,180	13,680	28.80%
11400 S Off Ramp							
I-15 NB Mainline	81,420	100,320	18,900	23.21%	102,920	21,500	26.41%
12300 S On Ramp							
I-15 NB Mainline	43,980	55,820	11,840	26.92%	57,090	13,110	29.81%
12300 S Off Ramp							
I-15 NB Mainline	107,010	134,560	27,550	25.75%	137,290	30,280	28.30%
Bangerter On Ramp							
I-15 NB Mainline	38,720	50,040	11,320	29.24%	50,820	12,100	31.25%
Bangerter Off Ramp							
I-15 NB Mainline	96,130	122,700	26,570	27.64%	123,750	27,620	28.73%
14600 S On Ramp							
I-15 NB Mainline	40,590	52,690	12,100	29.81%	52,930	12,340	30.40%
Totals	1,326,840	1,624,040	297,200	22.40%	1,663,430	336,590	25.37%

Regardless of the alternative chosen, emissions would likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent between 2010 and 2040. The Energy Information Administration (EIA) projects a decline in light-duty vehicle energy use between 2018 and 2040 as improvements in fuel economy more than offset increases in light-duty vehicles (provided that the new fuel economy standards are not revoked or altered). The EIA predicts that although the miles that light-duty vehicles travel will increase five percent from 2017 to 2025, fuel consumption from those vehicles

will decrease 12 percent over the same period. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

The transportation improvements contemplated as part of the Preferred Alternative would have the effect of moving some traffic closer to nearby homes, schools, and businesses, as the Preferred Alternative would include the addition of a frontage road system which would put a new roadway nearer to local residences, schools and parks. Therefore, there may be localized areas along the corridor where ambient concentrations of MSATs could be higher under the Preferred Alternative than the No-action Alternative. However, the magnitude and the duration of these potential increases on nearby populations as compared to the No-action Alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts.

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, <http://www.epa.gov/iris/>). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are; cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, <http://pubs.healtheffects.org/view.php?id=282>) or in the future as vehicle emissions substantially decrease (HEI, <http://pubs.healtheffects.org/view.php?id=306>).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are many uncertainties in existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, as expressed by HEI (<http://pubs.healtheffects.org/view.php?id=282>). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA (<http://www.epa.gov/risk/basicinformation.htm#g>) and the HEI (<http://pubs.healtheffects.org/getfile.php?u=395>) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an “acceptable” level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA’s approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Construction-Related Fugitive Dust

Construction-related dust is not identified in the Utah SIP as a Contributor to the PM₁₀ non-attainment area. Therefore, there is no conformity requirement for construction dust. Section 93.122(e)(1) of 40 CFR reads as follows:

“For areas in which the implementation plan does not identify construction-related fugitive PM₁₀ as a contributor to the non-attainment problem, the fugitive PM₁₀ emissions associated with highway and transit project construction are not required to be considered in the regional emissions analysis.”

In the Utah PM₁₀ SIP, construction-related PM₁₀ is not included in the inventory, nor is it included in the attainment demonstration or control strategies. Control of construction-related PM₁₀ emissions are mentioned in qualitative terms in Section IX.A.7 of the SIP as a maintenance measure to preserve attainment of the PM₁₀ standard achieved by application of the control strategies identified in the SIP. Section IX.A.7.d of the SIP requires UDOT and local planning agencies to cooperate and review all proposed construction projects for impacts on the PM₁₀ standard. This

SIP requirement is satisfied through the Utah State Air Quality Rules. R307-309-4 requires that sponsors of any construction activity file a dust control plan with the State Division of Air Quality.

Climate Change

Climate change is a critical national and global concern. Human activity is changing the earth's climate by causing the buildup of heat-trapping greenhouse gas emissions through the burning of fossil fuels and other human activities. Carbon dioxide (CO₂) is the largest component of human produced emissions; other prominent emissions include methane (CH₄), nitrous oxide (N₂O) and hydrofluorocarbons (HFCs). These emissions are different from criteria air pollutants since their effects in the atmosphere are global rather than localized, and also since they remain in the atmosphere for decades to centuries, depending on the species.

The National Climate Assessment (NCA), released by the U.S. Global Change Resource Program, contains scenarios for regions and sectors, including energy and transportation. These scenarios discuss potential impacts that may result from climate change, broken down into nationwide sectors or by region of the country. The NCA includes Utah in the Southwest region. The scenario for this region states that this is the hottest and driest region with limited water resources. Climate change is anticipated to increase the heat in this region, affecting precipitation and snowpack and therefore the availability of water for agriculture, energy producers, and other consumers. The NCA scenario states that the decade of 2001-2010 was the warmest in the 110-year instrumental record, with temperatures almost 2 degrees F higher than historic averages and fewer cold air outbreaks. Regional annual average temperatures are projected to rise by 2.5 degrees F to 5.5 degrees F by 2041-2070 (so long as there is continued growth in global emissions) and 2.5 degrees F to 4.5 degrees F in the same period if global emissions are substantially reduced.

For the sector-based scenarios, the nationwide focus means that some of the identified potential impacts are not applicable to the study area (i.e., coastal impacts). Others are somewhat speculative at this point, as there are variations in the scenarios put forward. However, as stated in the Chapter 5 – Transportation of the NCA, “[c]limate change will affect transportation systems directly, through infrastructure damage [such as accelerated asphalt deterioration, increased stress on expansion joints on bridges and highways, etc.], and indirectly, through changes in trade flows, agriculture, energy use, and settlement patterns.” There may also be changes to snow removal needs and construction schedules.

Due to the location of the project in an urbanized area with minimal chances of flooding, hurricanes, or other major weather disruptions and because this is a new configuration of an existing interchange, there would be no appreciable climate-change related effects to this project versus the No-action Alternative. As for the resiliency of the infrastructure, the roadway structure will be designed to withstand adverse conditions for the anticipated lifespan of the roadway. Asphalt deterioration would occur as anticipated and would be addressed as needed as part of ongoing operational and maintenance activities.

Greenhouse Gases

Greenhouse gas emissions have accumulated rapidly as the world has industrialized, with concentration of atmospheric CO₂ increasing from roughly 300 parts per million in 1900 to over 400 parts per million today. Over this timeframe, global average temperatures have increased by roughly 1.5 degrees Fahrenheit (1 degree Celsius), and the most rapid increases have occurred over the past 50 years. Scientists have warned that significant and potentially dangerous shifts in climate and weather are possible without substantial reductions in greenhouse gas emissions. They commonly have cited 2 degrees Celsius (1 degree Celsius beyond warming that has already occurred) as the total amount of warming the earth can tolerate without serious and potentially irreversible climate effects. For warming to be limited to this level, atmospheric concentrations of CO₂ would need to stabilize at a maximum of

450 ppm, requiring annual global emissions to be reduced 40-70% below 2010 levels by 2050 (see IPCC, 2014: *Climate Change 2014: Synthesis Report Summary for Policymakers*. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change).

State and national governments in many developed countries have set GHG emissions reduction targets of 80 percent below current levels by 2050, recognizing that post-industrial economies are primarily responsible for GHGs already in the atmosphere. GHG emissions from vehicles using roadways are a function of distance travelled (expressed as vehicle miles travelled, or VMT), vehicle speed, and road grade. GHG emissions are also generated during roadway construction and maintenance activities. An estimate of GHG emissions in the study area is contained in Table 5, which shows that GHG emissions are expected to decrease from existing (2017) conditions to the design year of 2040 by approximately 38.5%.

Table 5. Comparison of 2017 and 2040 Greenhouse Gas Emission Estimates

Scenario	Daily VMT	Change in Daily VMT	Percent Change in Daily VMT	Fuel Consumption (gallons/day)	GHG Emissions (lbs/day)*	Percent Change
2017 Travel Demand	1,326,840	NA	NA	58,194.74	1,175,533.75	NA
2040 Travel Demand: No-action	1,624,040	297,200	22.40%	34,925.59	705,496.92	-40%
2040 Travel Demand: Preferred	1,663,430	336,590	25.37%	35,772.69	722,608.34	-38.5%

*GHG Emissions Factor of 20.2 lbs/gallon

For a comparison between the No-action and the Preferred Alternative, this project involves the construction of a Collector-Distributor road system which would not result in any meaningful changes to VMT, traffic speeds or to the road grade. The collector-distributor system would improve traffic flow in the area, thereby reducing congestion on I-15 and allowing for more fluid traffic speeds without stop-and-go conditions being so prevalent. Further, EPA's GHG emissions standards, implemented in concert with national fuel economy standards, would also help minimize GHG emissions. The Energy Information Administration (EIA) projects that vehicle energy efficiency (and thus, GHG emissions) on a per-mile basis will improve by 28% between 2012 and 2040. Thus, the study area will see a net reduction in GHG emissions under any of the alternatives.

Construction and subsequent maintenance of the project will generate GHG emissions. Preparation of the roadway corridor (e.g., earth-moving activities) involves a considerable amount of energy consumption and resulting GHG emissions; manufacture of the materials used in construction and fuel used by construction equipment also contribute GHG emissions. Typically, construction emissions associated with a new roadway account for approximately 5% of the total 20-year lifetime emissions from the roadway, although this can vary widely with the extent of construction activity and the number of vehicles that use the roadway.

Conclusion

The Preferred Alternative would not result in new violations of the NAAQS, increases in the frequency or severity of existing violations of the NAAQS, or delays in attaining the NAAQS. With highway improvement projects, the localized level of MSAT emissions for the Preferred Alternative in the study area could be higher relative to the No-action Alternative, but there are also offsets due to increases in speed and reductions in congestion (which are associated with lower MSAT emissions). On a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, would over time cause substantial reductions that, in almost all cases, would cause region-wide MSAT

levels to be substantially lower than today. There would be no appreciable climate-change related effects to the Preferred Alternative versus the No-action Alternative. As for the resiliency of the infrastructure, the roadway will be designed to withstand adverse conditions for its anticipated lifespan. Further, the study area will see a net reduction in GHG emissions under any of the alternatives.

Mitigation

No mitigation is required