

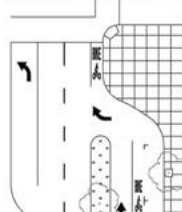


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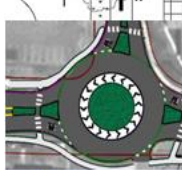
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1.0 | Project Summary Information



- 1.1 **Project Name** (35 letters max) **Lehi 2300 West Roadway Widening**
- 1.2 **Project Type** Road - Widen
- 1.3 **Limits** (descriptions should be identifiable. i.e: intersections, place names, landmarks, 35 characters max) **2300 West, Lehi Main Street to 2100 North**



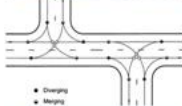
- 1.4 **Project Description** (summary of project) Lehi 2300 West is a master planned major arterial road that provides vital connectivity to four major State facilities including Pioneer Crossing, 2100 North, I-15, and SR-92. In December of 2018 this roadway was extended and widened northward, across I-15, and connected to SR-92. It also extends southward from Pioneer Crossing, and will connect to the currently funded Pony Express Parkway extension from Saratoga Springs. This proposed project is to widen 2300 West to a 5-lane cross section from Lehi Main Street to 2100 North. This project completes a gap in the arterial roadway network by connecting the existing 5-lane section on Triumph Boulevard to Main Street. This project includes completing all sidewalks along both sides of the roadway to increase walkability. Today, 2300 West carries nearly 14,000 weekday ADT, which is a significant increase from 3,900 ADT in 2014. This project will provide regional connectivity for trips to and from the Saratoga Springs and Eagle Mountain area to I-15, SR-92, Highland & Alpine.



- 1.5 **Sponsor** (jurisdiction, agency name) **Lehi City**



- 1.6 **Project Purpose and Regional Objective** (summary of why to build the project and how it is regional in nature) **The proposed project completes a gap in the arterial and State road network by providing a completed 5-lane arterial connection between Main Street and 2100 North. The proposed road connection provides critical pedestrian connections to three schools as well as adding the needed vehicular capacity through Lehi to Saratoga Springs and Eagle Mountain.**



- 1.7 **Contact Information**
Project Manager Brad Kenison
Office Phone 385-201-2529
Cell Phone 801-836-1020
Email bkenison@lehi-ut.gov



- 1.8 **Cost Estimate**
Total Project Cost (include matches, pledged funds, etc.) **\$9,396,000**
MPO funding request (include any match) **\$8,678,000**
PE Cost \$1,010,000



ROW Cost \$412,000

Construction Cost \$6,755.000

Soft Match proposed for project \$718,000

- 1.9 Air Quality Benefit** (summarize CM/AQ Report, NA for non-CM/AQ eligible projects)
N/A

2.0 | Project Scope

- 2.1 Project Name** (35 letters max) **Lehi 2300 West Roadway Widening**
- 2.2 Limits** (descriptions should be identifiable. i.e: intersections, place names, landmarks, 35 characters max) **The project starts at the intersection of 2300 West and Lehi Main Street and ends at 2300 West and 2100 North.**
- 2.3 Length of project** **1.79 Miles**
- 2.4 Project Description** (summary of project) This proposed project is to widen 2300 West to a 5-lane cross section from Lehi Main Street to 2100 North. This project includes completing all sidewalks along both sides of the roadway to increase walkability.
- 2.5 Project Type Road - Widen**
- 2.6 Describe purpose and need of project** The proposed project completes a gap in the arterial and State road network by providing a completed 5-lane arterial connection between Main Street and 2100 North. The proposed road connection provides needed capacities through Lehi and to allow connectivity to Saratoga Springs and Eagle Mountain.
- 2.7 What is the expected use of the facility or program?** Transportation
- 2.8 Project Purpose and Regional Objective** (summary of why to build the project and how it is regional in nature) The proposed project is a regional corridor that connects with SR-92, I-15, 2100 North, Lehi Main Street, and Pioneer Crossing.
- 2.9 Describe existing conditions/service** The existing roadway includes two travel lanes, some areas include a center turning lane and some areas do not have a center turning lane. Much of the road has been widened with development and other areas still include a soft shoulder.
- 2.10 Describe how project is consistent with local or agency plans.** 2300 West is identified on the Lehi City Master Transportation Plan as a 5-lane arterial. 2300 West is shown on MAG's TransPlan50 and identifies 2300 West as a phase 1 roadway project. The 2300 West corridor is also identified on Functional Class Map.
- 2.11 Describe how project incorporates ITS needs.** Where possible, fiber conduits will be installed as part of this project to tie the future traffic signals together
- 2.12 If phased or segmented, describe how the phase has logical termini and what will future phases consist of.** The proposed phase extends from Main Street to 2100 North. The next future phase would extend the roadway from Pioneer Crossing to Main Street. Future phasing beyond that would extend the roadway south of Pioneer Crossing to ultimately tie into Pony Express Parkway.
- 2.13 Is project being coordinated with or constructed with a larger project?** This project is a

phase of a larger project to complete the master-planned 2300 West roadway corridor from 1900 South to I-15

- 2.14 Describe how project will alleviate congestion on this or other facilities. This facility provides a regional corridor parallel to Redwood Road that would provide an alternate route between I-15 and Pioneer Crossing. The proposed roadway widening would provide needed capacity for 2300 West, which has experienced exponential increases in ADT over the past several years.
- 2.15 Describe any traffic improvements. (i.e lanes, signal coordination, ITS, turn lanes, bus pullouts, etc.) The project includes 5 vehicular travel lanes (2 lanes each direction, with a center turn lane). Signal coordination is expected with a future phase, as fiber conduits will be installed where possible along this construction corridor.
- 2.16 Describe any safety improvements for vehicular, transit, and pedestrian traffic. (i.e. raised median, channelization of turn movements, barriers, parkway strips, etc.) Sidewalks and planter strips are proposed to be completed for the length of this project.
- 2.17 How are complete streets addressed with this project? (plan for pedestrians, bikes, transit, trails, ITS) The proposed project provides improved walkability by completing sidewalks for the length of the project. There are three schools along this corridor that would benefit from having completed and connected sidewalks.
- 2.18 What right-of-way is already secured, what is needed? Approximately 80 percent of the right-of-way along this corridor has been previously secured, and the remaining right-of-way will be secured with Lehi City local government funds
- 2.19 Describe utility work to be performed and indicate who will do the work. Work required by the widening of the road will be covered as part of the project construction cost. Any master-planned utilities, if required, will be installed at the cost of the city.
- 2.20 What type of environmental work will most likely be needed? Environmental Accessment
- 2.21 State Route # or Federal Aid Route # n/a
- 2.22 Existing and proposed number of Travel Lanes There are existing sections that include two or three lanes. The project proposes a complete 5-lane section between Lehi Main Street and 2100 North.
- 2.23 Current and proposed width of facility (detail ROW, lanes, shoulders, ped/planter). The complete ROW is planned at 80 feet. The cross section includes 5-foot sidewalks, 4-foot planters, 11-foot travel lanes, and a 14-foot center turn lane.
- 2.24 Facility surface type. Asphalt roadway with concrete sidewalks.
- 2.25 Describe any traffic improvements. (i.e lanes, signal coordination, ITS, turn lanes, bus pullouts,

etc.) The project includes 5 vehicular travel lanes (2 lanes each direction, with a center turn lane). Signal coordination is expected with a future phase, as fiber conduits will be installed where possible along this construction corridor.

2.26 Describe traffic control changes at intersections. (include info to warrant changes) It is expected that traffic signal bases and traffic signals will be installed at the intersection of 2300 West and 900 North. The 900 North traffic signal will be installed with Lehi City local government funds.

2.27 Transit Route # n/a?

2.28 What services are provided in the operating of this project? Vehicular, pedestrian (via sidewalks), bus routes (existing or future?)

2.29 Describe any equipment to be purchased (buses, ITS, etc.). n/a

2.3 Facility Design

	Current Conditions	2030 w/o Improvement	2030 Improvement
Average Daily Traffic	13,970	22,000	27,000
Level of Service	C	F	C
Functional Class	Major Collector	Major Collector	Major Arterial
Design Speed	35	35	35
*Accident Rate	88.6 / 100M VMT	88.6 / 100M VMT	66.5 / 100M VMT
Transit Ridership	enter text	enter text	enter text
Ped/Trail Usage	enter text	enter text	enter text
Park and Ride Usage	enter text	enter text	enter text

3.0 | Project Ranking

The following categories are used by MPO staff to score each project. The points associated with each category show the total points MPO staff can give. MPO staff rank each project based on the responses below to create the MPO Technical Score. The MPO Technical Score List will be made available to the MPO TAC Committee for their use in making final project selection recommendations. The MPO Technical Score will weigh 25% of the overall total score when the Final Project Ranking List is created. Only questions pertaining to the proposed project type (transit, highway, its, etc.) should be answered. **Please note, if a question pertinent to the project is not answered, zero points will be given.**

3.1 Congestion Relief (25 Points)

Explain if the project...

- a) Provides additional capacity that corrects an identified congested problem. **Yes, the project increases roadway capacity by providing an extra travel lane each direction, and helps to resolve intersection conflicts with the installation of a traffic signal at 900 North. The project also increases roadway capacity by adding an additional lane between the two one-way frontage roads at 2100 North, allowing additional vehicles to pass through this very congested intersection.**
- b) Reduces congestion by adding to highway grid and dispersing vehicles. **Yes, the project reduces traffic congestion with the added lane of vehicular travel in both the north/south directions, as well as providing the additional center turn lane which allows for vehicles to “stack” within intersection turn pockets versus impeding straight-through vehicle volumes.**
- c) Increases the efficiency of transportation system through traffic management measures. **Yes, the project increases the efficiency of the transportation system, particularly with the additional signal at 900 North and the proposed widening of 2300 West between the 2100 North one-way roadways.**
- d) Provides an improvement on a larger, regional facility. **Yes, this project is planned to make improvements between the one-way roadway of 2100 north, which will significantly improve north/south traffic flows in this area. Additionally, 2300 West is a major north/south corridor and provides a regional roadway connection which serves the residents of Lehi, Saratoga, Eagle Mountain, Highland and Alpine**
- e) Adds turning movements to relieve a congested intersection. **Yes, as the project provides protected turning movements with the inclusion of the center turn lane which allows for straight-through traffic to pass unimpeded.**

3.2 Mode Choice (25 points)

Explain if the project...

- a) Benefits multiple transportation systems (transit and highway, pedestrian and transit). **Yes, the project benefits multiple transportation systems, particular by providing highway connections to Main Street, 2100 North and I-15. Also, pedestrian travel is greatly enhanced due the the proposed construction of sidewalks along the entire corridor (which directly services three schools). Additionally this project benefits transit by being constructed to a width that accommodates bus transit, etc.**
- b) Reduces the need for additional highway lanes for peak hour capacity. **Yes, this project reduces the need for additional highway lanes for peak hour capacity because it provides interconnectivity between highway systems.**
- c) Creates or improves linkages between transportation modes. **Yes, this project improves linkages between transportation modes by creating a higher capacity connection between Pioneer Crossing, Main Street, 2100 North, I-15 and SR-92**
- d) Reduces physical, psychological, or economic barriers to carpool, bike, walk, or transit use. **This project reduces these barriers by providing a higher-capacity roadway which will decrease travel times to and from regional transportation corridors**
- e) Provides incentives to carpool, bike, walk, or transit use. **Yes, this project provides incentive to walk, particularly since sidewalks will be installed on each side of the roadway from 300 North to 2100 North.**

3.3 Environmental Quality (15 points)

Explain if the project...

- a) Receives high air quality score based on CM/AQ review. **n/a**
- b) Project is designed to minimize environmental impacts or reduce existing impacts (e.g. air/water/noise pollution/relocations). **Yes, This project is designed to reduce air and noise pollution, as vehicles are expected to travel with less delay that in current situations.**
- c) Mitigates invasive impacts to existing neighborhoods/commercial areas (minimal relocations). **This project is minimally invasive upon existing neighborhoods because the roadway/pedestrian cross-section has been reduced to a minimum width possible.**

3.4 Safety (15 points)

Explain if the project...

- a) Corrects/improves a verified or potential safety or accident problem. **Safety should increase and accident rates should decrease (See Table 2.3) as the roadway is widened and traffic flows more smoothly. Additionally, pedestrian safety is dramatically improved as large portions of this corridor are used by school-aged children, and sidewalks are being provided along both sides of the roadway.**

- b) Improves information/communications for traffic operations and emergency responders. **This project will improve traffic operations/communications as fiber conduits are to be installed to tie the traffic signal operations of the major intersection together.**
- c) Enhances safe movement of pedestrian, bicycle traffic. **Pedestrian safety is dramatically improved as large portions of this corridor are used by school-aged children, and sidewalks are being provided along both sides of the roadway. Bicycle traffic is not encouraged along this roadway corridor, though it is encouraged along the Jordan River trail system to the west and the 1700 West roadway to the east.**

3.5 Other Considerations (20 points)

Explain if the project...

- a) Phases project in a manner that the MPO can use limited funds efficiently. **This project is phased so that the MPO can use limited funds efficiently. In fact, this project, as presented, is being phased-back even further than originally planned to preserve funds for other regional projects.**
- b) Additional funding above required match is pledged toward project (including any soft match). **Lehi City is committing approximately \$718K in improvements along this corridor which are expected to include the acquisition of all required property, construction of various power relocations, and the construction of the traffic signal at 900 North.**
- c) Project traverses between major regional centers. **Yes, the project connects Pioneer Crossing, Lehi Main Street, 2100 North, I-15 and SR-92.**
- d) Project is numbered project within the current RTP. **Yes, This project is number 28 of the Phase 1 Transplan50.**

4.0 | Air Quality Report

All projects that are eligible for CM/AQ and CM/AQ-PM_{2.5} funds must complete this report. These funds are eligible for projects and programs countywide. Contact Shauna Mecham at Mountainland AOG if you need help completing 4.4 Quantitative Analysis below, 801/229-3838 or smecham@mountainland.org.

4.1 Eligibility

CM/AQ funds can only be used for projects and programs that a direct benefit to air quality can be demonstrated. Highway expansion, such as new single occupancy vehicle lanes, is not eligible. **Turn lanes at congested intersections, transit programs, pedestrian and trail projects, signal modernization, ITS, and IM programs are typical eligible CM/AQ projects.**

4.2 CM/AQ Program

The purpose of the CM/AQ program is to fund transportation projects or programs that will contribute to attainment or maintenance of the National Ambient Air Quality Standards (NAAQS) in Ozone (O₃), Carbon monoxide (CO), Particulate Matter (PM₁₀) and PM_{2.5} non-attainment and maintenance areas. Provo is a maintenance area for CO, Utah County is a non-attainment area for PM₁₀ and PM_{2.5}.

4.3 Completing this Report

All projects eligible for CM/AQ funds must complete this report. Completing this report can be quite technical, Susan Hardy, Air Quality Coordinator at Mountainland, can help with filling out this report. Contact her at 801/229-3838 or smecham@mountainland.org

4.4 Quantitative Analyses

A quantitative assessment of how a proposed project or program is expected to reduce emissions is important to assist in selecting the most effective use of this fund. List below all travel benefits directly related to this project. Air quality benefit calculations must utilize the latest EPA approved emission model. The air quality analysis should include assessing emission reductions of transit, traffic flow improvements, ITS projects and programs, ridesharing, bicycle and pedestrian improvements. Complete at least one of the sections below. If quantitative analyses cannot be done, do a qualitative assessment in 4.3.

a) Vehicle Miles Traveled

Number of Vehicle Miles Traveled reduced (VMT): **n/a**

Average distance of trips reduced: **n/a**

Emission reduction per average weekday: **n/a**

b) Idling Time

Average idling time per vehicle reduced: **n/a**

Number of vehicles with reduced idling time: **n/a**

Emission reduction per average weekday: **n/a**

c) Vehicle Speed

Average change in vehicle speed (speed before and after): **n/a**

Number of vehicles affected: **n/a**

Emission reduction per average workday: **n/a**

4.5 Qualitative Assessment

Although a quantitative analyses of air quality impacts is required whenever possible, some improvements may not lend themselves to rigorous quantitative analysis, because of the projects characteristics or because practical experience is lacking to adequately analyze the project. In these cases, a qualitative assessment based on a reason and logical examination of how the project or program will decrease emissions and contribute to attainment or maintenance of a NAAQS is appropriate. *enter text*

5.0 | Project Cost Estimate

To develop a project cost estimate, please supply a detailed cost breakdown of your unit costs, inflation, equipment, right-of-way, contingency, etc. Use the Concept Costs Estimate Excel form provided by UDOT (available on Mountainland.org website). Non-construction projects such as equipment purchases, operations, administration programs, studies, etc. can use other methods to develop estimated costs. All sheets or methods used should be submitted as part of the Supplemental Information accompanying the Concept Report.

5.1 Cost Summary

Summarize the information from the Costs Estimate Excel form or other method. Enter NA for items that do not apply to the project.

- a) Preliminary Engineering (today's cost) **\$888,527**
- b) Environmental Work (today's cost) **n/a**
- c) Construction (today's cost) **\$6,475,473**
- d) Project Review (today's cost) (project cost <\$500k = \$5k, >500K = \$10k) **\$10,000**
- e) Construction Engineering (today's cost) **\$389,000**
- f) Subtotal (today's cost) **\$7,763,000**
- g) Inflated Cost Factor (inflate to 2024) **1.23**
- h) Total 2024 Project Cost **\$9,396,000**
- i) Local/Other Funds Available to Project in 2024 (do not include required local match to MPO funds) **\$718,000**
- j) Grand Total 2024 Project Cost **\$9,396,000**
- k) **Total MPO Funding Request** (2024 cost, include 6.77% local match) **\$8,678,000**

6.0 | Supplemental Information

Please submit any supporting documentation including maps, diagrams, charts, cost estimates, etc. that will allow MPO and UDOT staff and any Technical Advisory Committee to make an informed decision regarding the proposed project. **Keep Supplemental Information submittals to 8 pages total.**

6.1 Concept Report Submittal

In order to facilitate the distribution of the Concept Reports and any supplemental information, **all Concept Reports shall be combined with any supplemental information and saved in PDF format as one document.** Please note that this might create a large data file that might be too large to email. Plan accordingly to submit your report in electronic format by the required due date. **Draft Concept Reports are due by February 13, 2020, 6pm, with the final due March 5, 2020, 6pm.**

6.2 Contacts, Questions

For help with the Concept Report or questions, please contact:

Bob Allen | 801/229-3813 | rallen@mountainland.org

PIN: PROJECT # PROJECT NAME: 2300 West - Lehi Main Street to 2100 North
Cost Estimate - Concept Level

Prepared By: B. Kenison, M. West

Date 3/23/2020

Proposed Project Scope: Roadway Widening - 2300 West Lehi Main Street to 2100 North

Approximate Route Reference Mile Post (BEGIN) =	0.000	(END) =	1.790
Project Length =	1.790	miles	9,450 ft
Current FY Year (July-June) =	2020		
Assumed Construction FY Year =	2024		
Construction Items Inflation Factor =	1.23	4 yrs for inflation	
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	3.25%		
Assumed Yearly Inflation for Right of Way (%/yr) =	4.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	16.0%		
Construction Engineering (% of Construction + Incentives) =	7.0%		

Construction Items	Cost	Remarks
Public Information Services	\$60,000	
Roadway and Drainage	\$3,980,345	
Traffic and Safety	\$371,150	
Structures	\$12,000	
Environmental Mitigation	\$160,211	
ITS	\$0	
Subtotal	\$4,583,706	
Items not Estimated (20%)	\$916,741	
Construction Subtotal	\$5,500,447	
P.E. Cost	P.E. Subtotal	16%
C.E. Cost	C.E. Subtotal	7%
Right of Way	Right of Way Subtotal	
Utilities	Utilities Subtotal	
Incentives	Incentives Subtotal	
Miscellaneous	Miscellaneous Subtotal	

Cost Estimate (ePM screen 505)	2020	2024
P.E.	\$889,000	\$1,010,000
Right of Way	\$352,000	\$412,000
Utilities	\$40,000	\$49,000
Construction	\$5,500,000	\$6,755,000
C.E.	\$389,000	\$442,000
Incentives	\$53,000	\$65,000
Aesthetics	0.75% \$41,000	\$50,000
Change Order Contingency	9.00% \$499,000	\$613,000
UDOT Oversight	\$0	\$0
Miscellaneous	\$0	\$0
TOTAL	\$7,763,000	\$9,396,000

PROPOSED COMMISSION REQUEST	TOTAL	\$7,763,000	TOTAL	\$9,396,000
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Total Funds Contributed by City
 (900 N. Traffic Signal, Power Improvements, Roadway Right-of-Way)

\$584,500

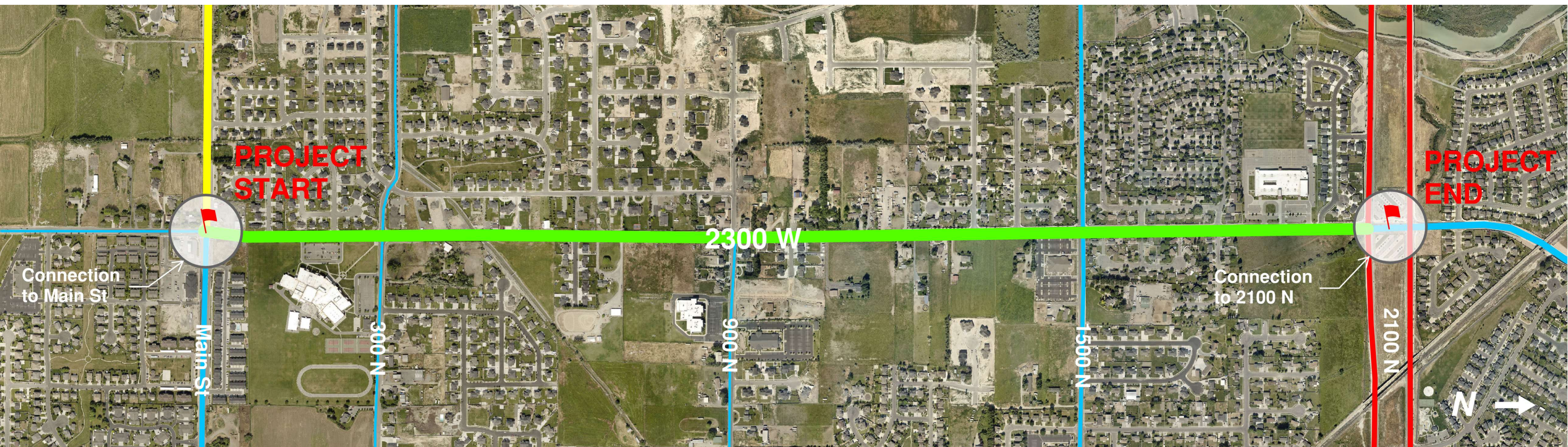
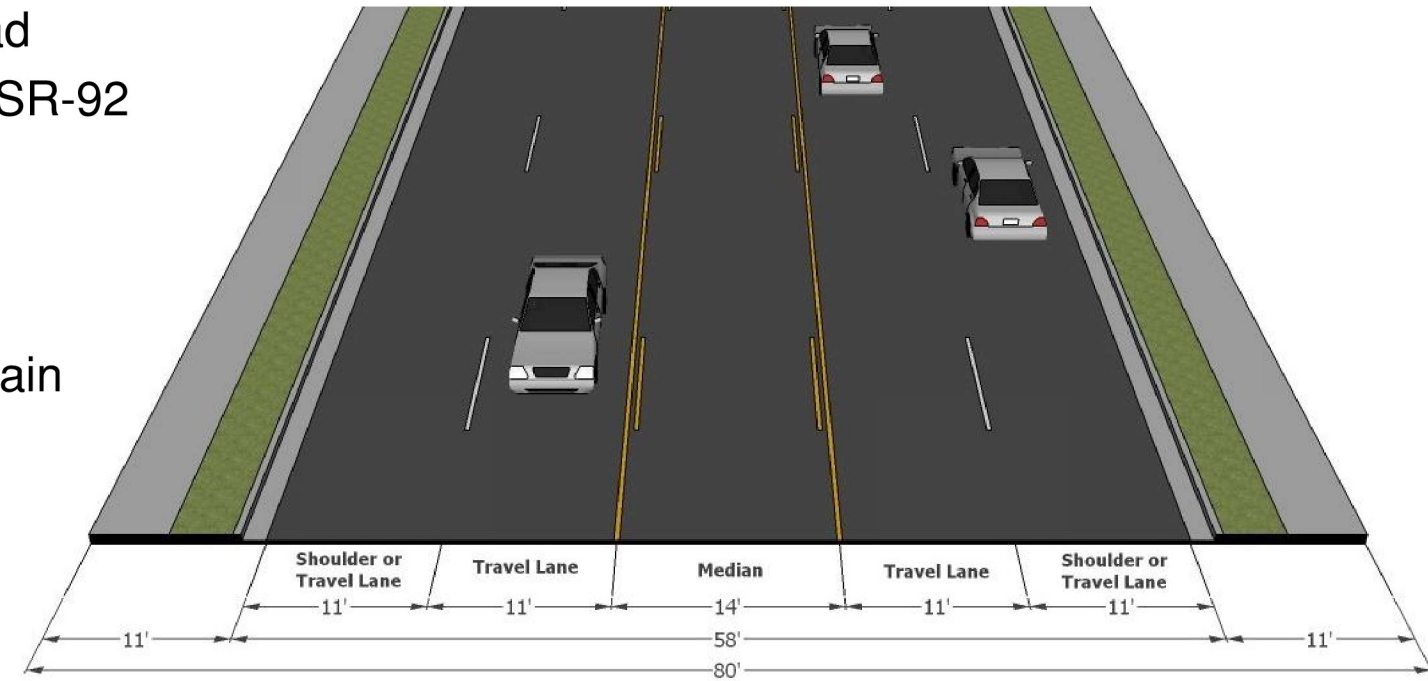
\$718,000

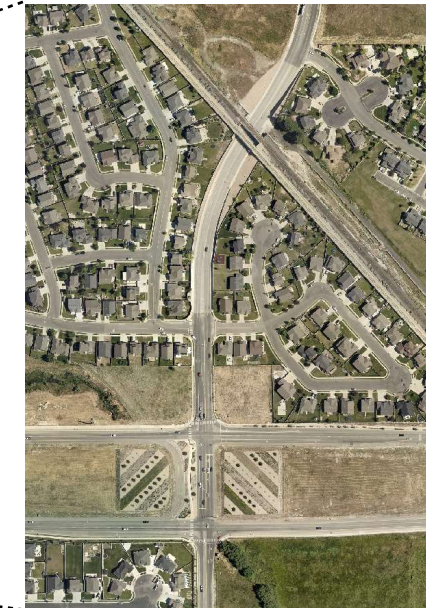
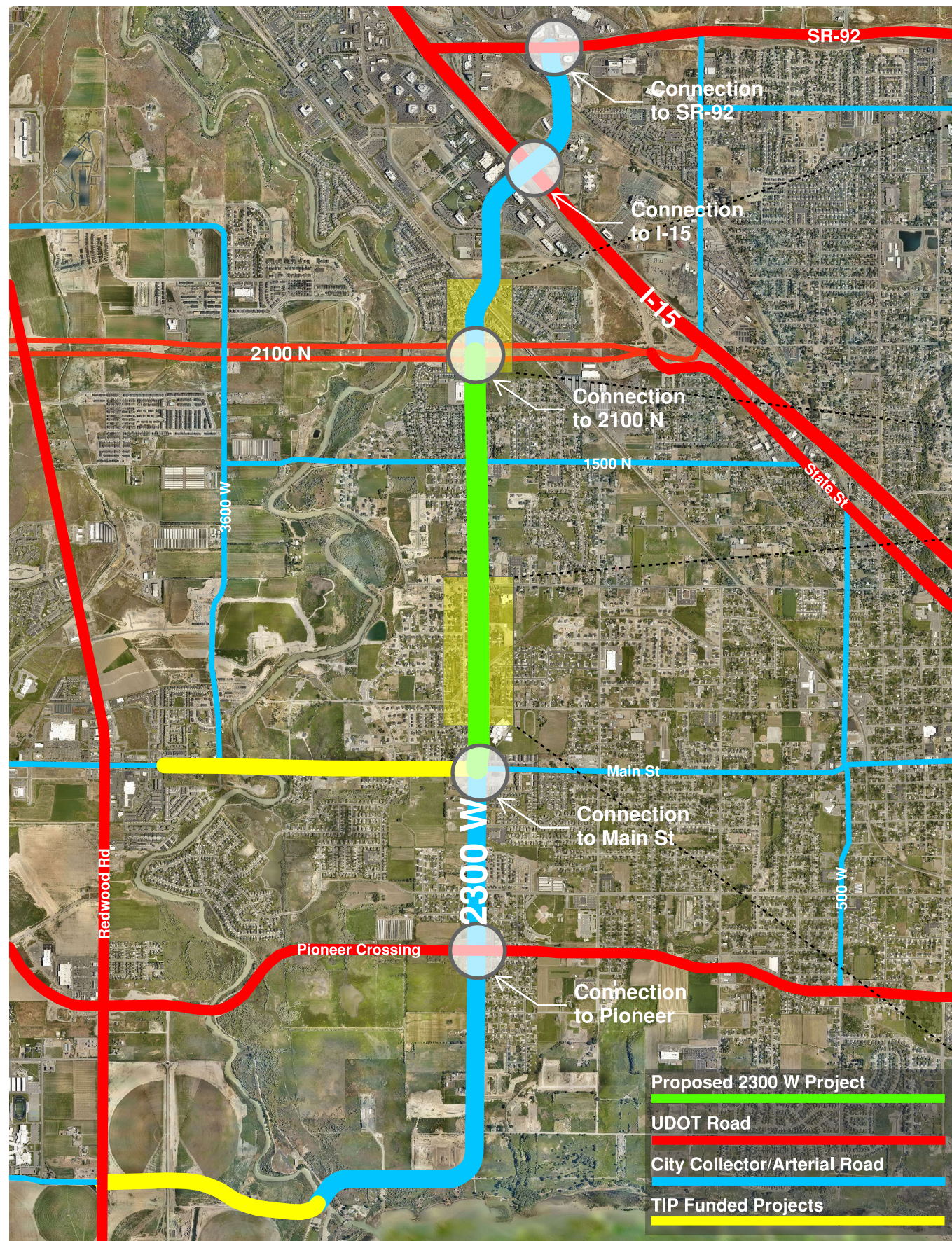
Total MPO Funding Request \$8,678,000

Project Assumptions/Risks

1 Complete road reconstruction between 900 North and 1500 North...Old County Road	8
Power/Lighting Costs are equal to per lineal foot costs on 1200 West (through Lehi Power Co.) Power improvements between 900 North and 1500 north to be covered by City.	9
3 City installs signal at 900 North. Project covers costs of signal bases and conduits	10
4 25" roadway subbase will be required for new roadway construction, as it was on previous sections of this roadway	11
5	12
6	13
7	14

- Proposed improvements include widening to master-planned 5-lane arterial road
- Provides vital connectivity to Pioneer Crossing, Main Street, 2100 N, I-15, and SR-92
- Exponential increases in traffic since 2014 (3,400 ADT to 14,000 ADT)
- Traffic volumes continue to increase since opening of Triumph bridge over I-15
- Provides regional connectivity to Saratoga Springs and Eagle Mountain
- Proposed widened roadway connects to two funded MAG projects including: Main Street and Pony Express Parkway Phase 2
- Sections of 2300 West were funded by MAG for right-of-way, construction, and environmental





MAG funded a portion of the Frontrunner bridge and road widening between Pointe Meadow Drive and 2100 North (completed in 2013).



MAG funded a portion of the 2-lane road and right-of-way between 300 North and 900 North (completed in 2013).

LEHI 2300 WEST - CONNECTIVITY AND PAST PHASING



2300 West at North Pointe Elementary



2300 West at Main Street



2300 West at 1100 North



LEHI 2300 WEST - EXISTING CONDITIONS PHOTOS