1.0 | Project Summary Information

1.1 Project Name (35 letters max) PHASE 1: Relocate State Street traffic signal from 1200 South to 1150 South State Street (add traffic signal at 1000 South State St. PHASE 2: 1150 South Road Construction and State Street widening.

1.2 Project Type Road - New Construction

1.3 Limits (descriptions should be identifiable. i.e: intersections, place names, landmarks, 35 characters max) 1150 South; State Street to Orem Blvd - and - State Street; University Parkway to 1000 South

1.4 Project Description (summary of project) The funding for this project will aid in the first phase of a two phase project that improves regional access (by connecting 1150 South from 800 East to Orem Blvd) and relieves congestion on State Street (by extending southbound left turn storage at the University Parkway intersection). The project is proposed to be phased with the first phase realigning the east leg of 1150 South to square up with State Street and the future west leg of 1150 South. The second phase would construct the west leg of 1150 South between State Street and Orem Blvd. In Phase 1, the traffic signal at 1200 South & State Street will be removed and a new signal will be installed at 1150 South. The 1200 South intersection would be converted to a right-in/right-out configuration. To provide left turn access to/from Orem Blvd and State Street, a traffic signal is proposed at 1000 South & State Street. The signal relocation from 1200 South to 1150 South will significantly aid in improving State Street traffic signal coordination in the area and make it possible to provide additional left turn queue storage. Due to the regional benefit in general and benefits to State Street operations, UDOT will be a joint project sponsor. Phase 1 is a logical first phase, and reasonable as a stand-alone project, as it provides most of the capacity benefits on State Street with some of the regional connectivity enhancements by allowing the 1200 South signal to be relocated to 1150 South and southbound left turn storage to be extended on State Street.

1.5 Sponsor (jurisdiction, agency name) Orem City

1.6 Contact Information
Project Manager  Paul R. Goodrich, P.E.
Office Phone  801-229-7320
Cell Phone  801-592-4160
Fax  801-229-7191
Email  prgoodrich@orem.org

1.7 Cost Estimate
Total Project Cost (include matches, pledged funds, etc.)  $2,689,000
MPO funding request (include any match)  $1,689,000
   PE Cost  $281,000
   ROW Cost  $84,000
   Construction Cost  $1,773,000
Soft Match proposed for project 0

1.8 Project Rank (rank this project compared to your other submittals)
   4

1.9 Air Quality Benefit (summarize CM/AQ Report, NA for non-CM/AQ eligible projects)
   NA
2.0 | Project Scope
Always enter "NA" rather than leave an answer blank...

2.1 Describe purpose and need of project.
Orem 1150 South has been identified as regionally significant as it provides a University Parkway alternate route from 800 East to the UVU Campus and many points in-between. This road is part of a regionally significant street grid network system. State Street is also experiencing high levels of congestion which could be significantly relieved by adjusting signal spacing and extending vehicle storage capacity.

2.2 Describe existing service/conditions
The existing intersection of University Parkway & State Street operates at LOS E in the Saturday mid-day conditions. The southbound left turn movement only has about 200 feet of dual left turn lane storage. Queues regularly exceed the available storage and back into and block the thru lanes. 1150 South is the primary east-west route through University Place between State Street and 800 East. 1150 South is stop-controlled at State Street. Due to heavy volumes on State Street, most vehicles on 1150 South desiring to turn left onto State Street make their way to 1200 South where there is signal, albeit one with very little available storage on the east leg.

2.3 Highway Project Information (for non-highway projects go to 2.4)

2.3.1 State Route # or Federal Aid Route #
US-89 (State Street)

2.3.2 Beginning Mile Post
337.9

2.3.3 End Mile Post
338.3

2.3.4 Length of project
0.28 Miles

2.3.5 Existing and proposed number of Travel Lanes
Existing: 7/Proposed: 7

2.3.6 Current and proposed width of facility (detail ROW, lanes, shoulders, ped/planter).
Current Facility width: ROW 135' to 118', 11' lanes, 0 to 10' shoulders, 8' sidewalks, no park strip. Proposed Facility width: ROW 135' to 118', 11' lanes, 0 to 8' shoulders, 8' sidewalks, no park strip.

2.3.7 Facility surface type.
Concrete (State Street) and asphalt (1150 South)

2.3.8 Describe how project is consistent with local or agency plans.
Project is first phase of improvements that focuses on regional connectivity and congestion management.

2.3.9 Describe how project incorporates ITS needs.
   Project will include signal interconnect into fiber optic systems as well as traffic signal coordination.

2.3.10 If phased or segmented, describe how the phase has logical termini and what will future phases consist of.
   Phase 1 is a complete project with a logical termini, as it provides most of the capacity benefits on State Street with some of the regional connectivity enhancements by allowing the 1200 South signal to be relocated to 1150 South and southbound left turn storage to be extended on State Street.

2.3.11 Is project being coordinated with or constructed with a larger project?
   NA

2.3.12 Describe how project will alleviate congestion on this or other facilities.
   Phase 1 of the project will relocate the Orem 1200 South & State Street signal to 1150 South thereby providing more space for queuing between 1150 South and University Parkway, which will reduce southbound left turn queues at University Parkway from backing into the through lanes. The extra distance will also allow for better traffic progression on State Street.

2.3.13 Describe any traffic improvements. (i.e lanes, signal coordination, ITS, turn lanes, bus pullouts, etc.)
   Phase 1 of the project will relocate the Orem 1200 South & State Street signal to 1150 South thereby providing more space for queuing between 1150 South and University Parkway, which will reduce southbound left turn queues at University Parkway from backing into the through lanes. The extra distance will also allow for better traffic progression on State Street. A traffic analysis was performed for estimated 2024 conditions which showed that delay for the southbound left turn movement with 440 vehicles per hour would be reduced from 166 seconds of delay per vehicle to 101 seconds per vehicle, a reduction of 39%. The 95th percentile queue length for this same movement would go from over 800 feet to 500 feet. Total intersection delay would be reduced by 9% from 66 seconds per vehicle to 60 seconds.

2.3.14 Describe any safety improvements for vehicular and pedestrian traffic. (i.e. raised median, channelization of turn movements, barriers, parkway strips, etc.)
   Raised median is proposed to be installed on State Street between University Parkway and 1150 South as well between 1150 South and 1000 South. This median will control left turn movements onto and off of State Street to signalized intersections in the project area which will increase safety along the route. Extending southbound left turn storage capacity on State Street at University Parkway will improve safety by reducing the peak hour occurrences of the left turn queue backing up into State Street thru traffic.

2.3.15 How are complete streets addressed with this project? (plan for pedestrians, bikes, transit,
2.3.16 Describe traffic control changes at intersections. (include info to warrant changes)
Traffic signal will be removed at 1200 South and the intersection will be converted into right-in-right-out for both legs that connect to State Street. A new traffic signal will be added to 1150 South and 1000 South on State Street.

2.3.17 What right-of-way is already secured?
None

2.3.18 What additional right-of-way is needed?
Minor ROW will be needed for Phase 1 to facilitate some widening on State Street and realignment of the 1150 South intersection with State Street.

2.3.19 Describe utility work to be performed and indicate who will do the work.
Major utility impacts are not anticipated at this time.

2.3.20 What type of environmental work will most likely be needed?
Categorical Exclusion

2.4 Non-Highway Projects (Transit / ITS / Active Transportation, Park and Ride, etc.)

2.4.1 Transit Route #
No Transit Routes are located on State Street in project limits.

2.4.2 Length of project
NA

2.4.3 What is the expected use of the facility or program?
NA

2.4.4 What services are provided in the operating of this project?
NA

2.4.5 Describe any equipment to be purchased (buses, ITS, etc.).
NA

2.4.6 Describe how project is consistent with local or agency plans.
NA

2.4.7 Describe how project incorporates ITS needs.
NA
2.4.8 If phased or segmented, describe how the phase has logical termini and what will future phases consist of.
NA

2.4.9 Is project being coordinated with or constructed with a larger project?
NA

2.4.10 Describe how project will alleviate congestion on this or other facilities.
NA

2.4.11 Describe any traffic improvements. (i.e. lanes, signal coordination, ITS, turn lanes, bus pullouts, etc.)
NA

2.4.12 Describe any safety improvements for transit and pedestrian traffic. (i.e. raised median, channelization of turn movements, barriers, parkway strips, bridges, etc.)
NA

2.4.13 How are complete streets addressed with this project? (plan for pedestrians, bikes, transit, trails, ITS)
NA

2.4.14 What right-of-way is already secured?
NA

2.4.15 What additional right-of-way is needed?
NA

2.4.16 Describe utility work to be performed and indicate who will do the work.
NA

2.4.17 What type of environmental work will most likely be needed?
Choose an item.

2.5 Facility Design

<table>
<thead>
<tr>
<th></th>
<th>Current Conditions</th>
<th>Design Year 2024</th>
<th>Design Year w/o Improvements</th>
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</thead>
<tbody>
<tr>
<td>Average Daily Traffic</td>
<td>45,000</td>
<td>46,000</td>
<td>46,000</td>
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<tr>
<td>Level of Service</td>
<td>LOS C @ 1200 S LOS E @ Univ Pkwy</td>
<td>LOS B @ 1000 S LOS C @ 1150 S LOS E @ Univ Pkwy</td>
<td>LOS D @ 1200 S LOS E @ Univ Pkwy</td>
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<tr>
<td>Functional Class</td>
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<tr>
<td>Design Speed</td>
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<tr>
<td>*Accident Rate</td>
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<td>NA</td>
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<tr>
<td>Transit Ridership</td>
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</tr>
<tr>
<td>Ped/Trail Usage</td>
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<td>NA</td>
</tr>
<tr>
<td>Park and Ride Usage</td>
<td>NA</td>
<td>NA</td>
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</tbody>
</table>
3.0 | Project Ranking
The following categories will be used by MPO staff to score each project. The points associated with each category show what total points MPO staff can give. MPO staff's recommendations will be made available to the MPO TAC Committee for their use in making final project selection recommendations. MPO staff ranking is a tool to aid the MPO TAC Committee in their final selection. The committee is not required to pick projects solely on MPO staff ranks. Please note, if questions pertinent to the project are not answered, zero points will be given.

3.1 Congestion Relief (25 Points)
Explain if the project...

a) Provides an alternate transportation facility that corrects an identified congested problem. Improves access to an alternate transportation facility (1150 South) by signalizing 1150 South and State Street which will reduce congestion on University Parkway which is a regionally significant route. In particular, peak hour delay hour delay for the southbound left turn movement at University Parkway will be reduced from 166 seconds per vehicle down to 101 seconds. The overall intersection delay at this same location will be reduced by six seconds per vehicle from 66 to 60. The new 1150 South intersection will include additional westbound left turn storage and capacity, which will reduce left turn delay at the signal from 93 seconds per vehicle to 70 seconds.

b) Reduces congestion by reducing the number of vehicles. Improves access to an alternate transportation facility (1150 South) by signalizing 1150 South and State Street which will reduce the number of vehicles on University Parkway, which is a regionally significant route.

c) Reduces the need for additional highway lanes for peak hour capacity. Congestion will be reduced on University Parkway by improving access to an alternate route (1150 South). Congestion will be reduced on State Street by improving signal progression and extending southbound left turn storage capacity at University Parkway. Both of these capacity improvements reduced the need for additional highway lanes for peak hour capacity.

d) Increases the efficiency of transportation system through traffic management measures. Efficiency in the transportation system will be increated on University Parkway by improving access to an alternate route (1150 South). For State Street, improving signal progression will benefit the efficiency of the transportation system as well as extending southbound left turn storage capacity at University Parkway as it will reduce the peak hour occurrences of the left turn queue backing up into State Street thru traffic and reducing the efficiency of those lanes.

e) Adds turning movements to relieve a congested intersection. Extends southbound left turn movement capacity at University Parkway which will reduce congestion by reducing the peak hour occurrences of the left turn queue backing up into State Street thru traffic.
3.2 Mode Choice (25 points)
Explain if the project...

a) Benefits multiple transportation systems (transit and highway, pedestrian and transit). By reducing the number of vehicles and congestion on University Parkway for UTA's 811, 822, and 830 lines will be benefitted by improved headways.

b) Promotes alternative transportation solution to SOV use. By improving operations of the existing UTA lines ridership would theoretically improve and reduce SOV.

c) Creates or improves linkages between transportation modes. By improving the linkage between State Street and 800 East connectivity between UTA's 862 line will be improved.

d) Reduces physical, psychological, or economic barriers to carpool, bike, walk, or transit use. NA

e) Provides incentives to carpool, bike, walk, or transit use. NA

3.3 Environmental Quality (15 points)
Explain if the project...

a) Provides cost effective emission reductions (air quality score). By reducing congestion on State Street and University Parkway air quality will be improved.

b) Minimizes environmental impacts or reduces existing impacts (e.g. air/water/noise pollution). Impacts for this phase are minor and restricted to already impacted land. No environmental resources are anticipated to be harmfully impacted by this project.

c) Enhances the natural, cultural, or historic environment. NA

d) Mitigates invasive impacts to existing neighborhoods/commercial areas (minimal relocations). NA

3.4 Safety (20 points)
Explain if the project...

a) Corrects/improves a verified or potential safety or accident problem. Raised median is proposed to be installed on State Street between University Parkway and 1150 South as well between 1150 South and 1000 South. This median will control left turn movements onto and off of State Street to signalized intersections in the project area which will increase safety along the route. Extending southbound left turn storage capacity on State Street
at University Parkway will improve safety by reducing the peak hour occurrences of the left turn queue backing up into State Street thru traffic which reduced rear end collisions.

b) Improves information/communications for traffic operations and emergency responders.
   NA

c) Reduces severity of crashes.
   By providing raised median and restricting left turn movements to signalized intersections along State Street within the project area, crash severity will be significantly reduced.

d) Enhances safe movement of pedestrian, bicycle traffic.
   By placing the signal at 1150 South better bike/ped access is provided directly to 1150 South and into the commercial zone and 800 East - taking them off of State Street which is a higher volume and less pedestrian/bike friendly road.

e) Provides an intermodal safety improvement (e.g. separation of vehicles-trains, vehicles-pedestrian).
   By placing the signal at 1150 South better bike/ped access is provided directly to 1150 South and into the commercial zone and 800 East - taking them off of State Street which is a higher volume and less pedestrian/bike friendly road.

3.5 Other Considerations (15 points)
Explain if the project...

a) Effectively distributes funding throughout the MPO area.
   Click here to enter text.

b) Phases project in a manner that the MPO can use limited funds efficiently.
   This first phase is a relatively low cost phase that provides most of the regional connectivity as well as the improvements to State Street traffic operations.

c) Additional funding above required match is pledged toward project (including any soft match).
   UDOT has proposed contribution $1M to this project.

d) Project sponsor ranking of project.
   4

e) Project is numbered project within the current RTP.
   NA
4.0 | Air Quality Report

All projects that are eligible for CM/AQ and CM/AQ-PM2.5 funds must complete this report. These funds are eligible for projects and programs countywide. Contact Susan Hardy at Mountainland AOG if you need help completing 4.4 Quantitative Analysis below, 801/229-3842 or shardy@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 – 10 microns (PM₁₀), and PM₂.₅ non-attainment and maintenance areas. The city of Provo is a maintenance area for CO and Utah County is a non-attainment area for PM₁₀ and PM₂.₅.

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 801/229-3842 or shardy@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 Mobile 6. 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): Click here to enter text.
Average distance of trips reduced: Click here to enter text.
Emission reduction per average weekday: Click here to enter text.

b) Idling Time
Average idling time per vehicle reduced: Click here to enter text.
Number of vehicles with reduced idling time: Click here to enter text.
Emission reduction per average weekday: Click here to enter text.

C) Vehicle Speed
Average change in vehicle speed (speed before and after): Click here to enter text.
Number of vehicles affected: Click here to enter text.
Emission reduction per average weekday: Click here to enter text.
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.
Click here to 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. To do so, 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 show their 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 $271,000
b) Environmental Work $10,000
c) Construction $1,773,000
d) UDOT Review (project cost <$500k = $5k, >$500K = $10k) $10,000
e) Construction Engineering $150,000
f) Subtotal (in today's dollars) $2,246,000
g) Inflated Cost Factor (inflate to 2022) 1.22
h) Total 2022 Cost $2,689,000
i) Non-MPO Funds Available to Project $1,000,000
j) MPO Funding Request (includes 6.77% local match) $1,689,000

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 emailed. Plan accordingly to submit your report in electronic format (CD, DVD, Flash Drive) by the required due date. Concept Reports are due by March 8, 2018 at 6pm.

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

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

Shawn Eliot, AICP
801/229-3841