1.0 | Project Summary Information

1.1 Project Name (35 letters max) Highland, 4800 West

1.2 Project Type Road - Widen

1.3 Limits (descriptions should be identifiable. i.e: intersections, place names, landmarks, 35 characters max) 4800 West – SR 92 intersection

1.4 Project Description (summary of project) The 4800 West – SR 92 intersection is one of the few main routes in and out of Alpine through Highland city. This project proposes the addition of a designated right turn lane to separate the current single south bound through-right turn lane. This will greatly reduce the bottle neck at this intersection for the residences of eastern Alpine and north eastern Highland as they commute to SR 92. The project includes the purchase of right-of-way and the construction of the designated right turn lane with improvements at the 4800 West - SR 92 intersection.

1.5 Sponsor (jurisdiction, agency name) Highland City

1.6 Project Manager Todd Trane
   Office Phone 801-226-0393  Cell Phone 801-369-4768
   Fax 801-226-0394  Email ttrane@jub.com

1.7 Total Project Cost (includes local match and additional funds) $417,000
   PE Cost $28,000
   ROW Cost $11,000
   Construction Cost $302,000
   Funds already available to project (less local match) NA
   MPO Federal Funds Request (includes 6.77% local match) $417,000

1.8 Local/Regional Significance
   Is project in local general plan? Yes
   Is project in MPO transportation plan? No
   Is project on a corridor on the Utah State Functional Class Map? Yes

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

1.10 Leadership Approval (local=mayor, manager, commissioner; state=dept. head). Acknowledges knowledge, support and approval to submit project to Mountainland.

[Signature]  [City Administrator]  3/23/16

Position  Date
2.0 | Project Scope
Enter NA for answers to questions not applicable to your project.

2.1 Describe purpose and need of project.
The purpose of the proposed project is to reduce the bottle neck at intersection of 4800 West and SR 92 for the residences of eastern Alpine and north eastern Highland as they commute to SR 92 east bound.

2.2 Describe existing service/conditions
The 4800 West – SR 92 intersection is one of the few main routes in and out of Alpine through Highland city. Currently, at this intersection there is only a through-right turn lane from 4800 West to get onto SR 92 which creates major backup along 4800 West.

2.3 Highway Project Information

<table>
<thead>
<tr>
<th>SR# or FA#</th>
<th>Intersection with SR 92</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning Mile Post</td>
<td>NA</td>
</tr>
<tr>
<td>End Mile Post</td>
<td>NA</td>
</tr>
<tr>
<td>Length of project</td>
<td>620 feet</td>
</tr>
<tr>
<td>Existing number of Travel Lanes</td>
<td>Two</td>
</tr>
<tr>
<td>Width of facility</td>
<td>Existing asphalt approximately 44 feet wide</td>
</tr>
<tr>
<td>Facility surface type</td>
<td>Asphalt</td>
</tr>
</tbody>
</table>

2.4 Transit / Pedestrian Facility Project Information

<table>
<thead>
<tr>
<th>Route#</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of project</td>
<td>NA</td>
</tr>
<tr>
<td>What is the expected use of the facility or program?</td>
<td></td>
</tr>
</tbody>
</table>
What services are provided in the operating of this project?
NA

2.5 Describe any equipment to be purchased (buses, ITS, etc.).
With the relocation of a signal pole, the purchase of some equipment may be required.

2.6 Describe how project is consistent with local plans.
This project is part of the Highland City Master Transportation Plan.

2.7 Describe how project is consistent with Utah County ITS plan.
The project is improving a signaled intersection that is part of the current ITS system.

2.8 If phased or segmented, describe how the phase has logical termini and what will future phases consist of.
The project will consist of only this phase.

2.9 Is project being coordinated with or constructed with a larger project?
This project is not part of another project.

2.10 Describe how project will alleviate congestion on this or other facilities.
By adding a designated right turn lane, the through traffic will be separated from the right turn traffic. This will allow for more traffic to flow through the intersection at one time. The congestion at this intersection would be alleviated greatly.

2.11 Describe any traffic improvements. (i.e. lanes, signal coordination, ITS, turn lanes, bus pullouts, etc.)
A right turn lane will be added to this intersection. This will also require the relocation of the one signal arm.

2.12 Describe any safety improvements for vehicular and pedestrian traffic. (i.e. raised median, channelization of turn movements, barriers, parkway strips, etc.)
The addition of the right turn lane will separate through traffic from the right turn traffic. This will decrease congestion, allow for more uniform flow of movements, and eliminate right turn traffic from attempting to squeeze through on the shoulder.

2.13 How are complete streets addressed with this project? (plan for pedestrians, bikes, transit, trails, ITS)
This project will further complete the full intersection cross section providing a lane for each movement.

2.14 Describe traffic control changes at intersections. (include info to warrant changes)
The project will add a right turn lane to the SB leg of the intersection along with any signal updates required.
2.15 What right-of-way is already secured?
4560 SF

2.16 What additional right-of-way is needed?
710 SF

2.17 Describe utility work to be performed and indicate who will do the work.
Relocation of two service power poles will need relocation. This work will be performed by Rocky Mountain Power.

2.18 What type of environmental work will most likely be needed?
Environmental Assessment

2.19 Facility Design

<table>
<thead>
<tr>
<th></th>
<th>Current Conditions</th>
<th>Design Year 2024</th>
<th>Design Year w/o Improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Daily Traffic</td>
<td>12,785</td>
<td>16,000</td>
<td>14,000</td>
</tr>
<tr>
<td>Level of Service</td>
<td>F</td>
<td>C or Better</td>
<td>F</td>
</tr>
<tr>
<td>Functional Class</td>
<td>Major Collector</td>
<td>Major Collector</td>
<td>Major Collector</td>
</tr>
<tr>
<td>Design Speed</td>
<td>35 MPH</td>
<td>35 MPH</td>
<td>35 MPH</td>
</tr>
<tr>
<td>*Accident Rate</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Transit Ridership</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Ped/Trail Usage</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Park and Ride Usage</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</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?
   Right turn lane is added to the intersection to separate the through from the right turn traffic to reduce the congestion at the intersection.

b) Reduces congestion by reducing the number of vehicles.
   This project does not reduce the number of vehicles on the road but helps to relieve the existing congestion problem.

c) Reduces the need for additional highway lanes for peak hour capacity.
   This project is not close enough to any highways to be of any impact.

d) Increases the efficiency of transportation system through traffic management measures.
   The addition of the right turn lane will allow for right turn and through movements to be independent and signalized to provide more efficient movements through the intersection.

e) Adds turning movements to relieve a congested intersection.
   A dedicated right turn lane will be added.

f) Design year number of users. Users include the average AADT for highways and users per day for transit, trails, and other projects.
   15,748 AADT

g) 2020 V/C data (computed by MPO staff)
   4800 W has a 2024 PM peak V/C of 1.12.

3.2 Mode Choice (25 points)
Explain if the project...

a) Benefits multiple transportation systems (transit and highway, pedestrian and transit). Transit and Highway systems benefit from this project.

b) Promotes alternative transportation solution to SOV use.
School bus routes will be alleviated of congestion at this intersection an may become more desirous to use.

c) Creates or improves linkages between transportation modes. School buses will become more efficient picking up school kids and delivering them to school when the congestion time is not a factor.

d) Reduces physical, psychological, or economic barriers to carpool, bike, walk, or transit use. Greatly reduces the congestion of the intersection.

e) Provides incentives to carpool, bike, walk, or transit use. School busses will not get stuck in the congestion and get to the schools on time.

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

a) Provides cost effective emission reductions (amount of reduction justifies cost). Yes, the emissions from idling vehicles will be greatly reduced.

b) Helps efforts to attain and maintain national air quality standards. Yes, the emissions from idling vehicles will be greatly reduced.

c) Minimizes environmental impacts or reduces existing impacts (e.g. air/water/noise pollution). Yes, the emissions from idling vehicles will be greatly reduced.

d) Enhances the natural, cultural, or historic environment. Reducing the congestion at this intersection will help improve and maintain the historic rural feeling of the area.

e) Mitigates invasive impacts to existing neighborhoods/commercial areas (minimal relocations). The reduction of congestion at this intersection will reduce the long lines that block the nearby houses and their driveways.

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

a) Corrects/improves a verified or potential safety or accident problem. Vehicles will no longer squeeze down the narrow shoulder to turn right.

b) Improves information/communications for traffic operations and emergency responders. Dedicated lanes to each movement will improve emergency responder ability to navigate the intersection.

c) Reduces severity of crashes. More efficient and controlled vehicle movements will reduce the severity of crashes.
d) Enhances safe movement of pedestrian, bicycle traffic. 
   More efficient and controlled vehicle movements will provide safer movement for pedestrians.

e) Provides an intermodal safety improvement (e.g. separation of vehicles-trains, vehicles-pedestrian).
   A segment of incomplete sidewalk will be completed and will allow for pedestrians to be separated from vehicles.

3.5 Other Considerations (15 points)

Explain if the project...

a) Effectively distributes funding throughout the MPO area.
   Yes, the low cost of this project allows for more funding to other projects.

b) Phases project in a manner that the MPO can use limited funds efficiently.
   There is only one phase. This will save funds by not requiring tasks to be repeated.

c) Cost effectiveness is appropriate for the amount of improvement made.
   The improvements of this project far outweigh the cost.

d) Benefits transportation users from adjacent municipalities.
   Although this intersection is located in Highland City, Alpine City uses this intersection as a main route in and out of their City. This improvement will greatly benefit Alpine City.

e) Is supported by elected officials.
   The Highland City Council supports this project.
4.0 | Air Quality Report

All projects that are eligible for CM/AQ and CM/AQ-PM2.5 funds must complete this report (see CM/AQ Eligibility list at www.mountainland.org/tipselection). These funds are eligible for projects and programs countywide.

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.

This project will create a delay reduction for this intersection which will be an air quality benefit. Currently on weekday mornings, are cars back up over a 1/4 mile for almost 30 min to an hour. In order to calculate the total "hours delay reduction" a full traffic study would be required at this intersecion. This study was not able to happen in time for this report.
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 at www.mountainland.org/tipselection). 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 $28,000
   b) Environmental Work $1,000
   c) Construction $302,000
   d) UDOT Review (project cost <$500k = $5k, >$500k = $10k) $5,000
   e) Construction Engineering $38,000
   f) Subtotal $374,000
   g) Inflated Cost Factor (inflate to year of construction) 1.21
   h) Total Project Cost (enter total cost, not funding request) $417,000
   i) Additional Funds (less local match) Available to Project NA
   j) MPO Federal Funds Request (includes 6.77% local match) $417,000

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 with leadership signature, 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 Thursday 03/24/2016 at 6pm.

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

Bob Allen, AICP  
586 East 800 North, Orem UT 84051  
p.801/229-3813  f.801/229-3801  
email ballen@mountainland.org

Shawn Eliot, AICP  
586 East 800 North, Orem, UT 84097  
p.801/229-3841  f.801/229-3801  
email seliot@mountainland.org
ALPINE AND HIGHLAND CITY AREAS TO POTENTIALLY USE THE PROPOSED RIGHT TURN LANE

HIGHLAND CITY BOUNDARY

REUSE OF DRAWINGS THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF J-U-B ENGINEERS, Inc. AND IS NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF J-U-B ENGINEERS, Inc.
### Proposed Project Scope:
Widen 615 linear feet of existing street at one leg of intersection to add right turn lane

<table>
<thead>
<tr>
<th>Approximate Route Reference Mile Post (BEGIN) =</th>
<th>(END) =</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Length = 0.000 miles ft</td>
<td></td>
</tr>
<tr>
<td>Current FY Year (July-June) = 2016</td>
<td></td>
</tr>
<tr>
<td>Assumed Construction FY Year = 2020</td>
<td></td>
</tr>
<tr>
<td>Construction Items Inflation Factor = 1.21</td>
<td></td>
</tr>
<tr>
<td>4 yrs for inflation</td>
<td></td>
</tr>
<tr>
<td>Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) = 3.0%</td>
<td></td>
</tr>
<tr>
<td>Assumed Yearly Inflation for Right of Way (%/yr) = 3.0%</td>
<td></td>
</tr>
<tr>
<td>Items not Estimated (% of Construction) = 20.0%</td>
<td></td>
</tr>
<tr>
<td>Preliminary Engineering (% of Construction + Incentives) = 10.0%</td>
<td></td>
</tr>
<tr>
<td>Construction Engineering (% of Construction + Incentives) = 13.5%</td>
<td></td>
</tr>
</tbody>
</table>

**Construction Items**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Information Services</td>
<td>$1,000</td>
<td></td>
</tr>
<tr>
<td>Roadway and Drainage</td>
<td>$131,490</td>
<td></td>
</tr>
<tr>
<td>Traffic and Safety</td>
<td>$75,100</td>
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<tr>
<td>Structures</td>
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<tr>
<td>Environmental Mitigation</td>
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<td></td>
</tr>
<tr>
<td>ITS</td>
<td>$0</td>
<td></td>
</tr>
</tbody>
</table>

- **Subtotal**: $208,590
- **Items not Estimated (20%)**: $41,718
- **Construction Subtotal**: $250,308

#### Cost Estimate - Concept Level

<table>
<thead>
<tr>
<th>Item</th>
<th>2016</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.E.</td>
<td>$25,000</td>
<td>$28,000</td>
</tr>
<tr>
<td>Right of Way</td>
<td>$10,000</td>
<td>$11,000</td>
</tr>
<tr>
<td>Utilities</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Construction</td>
<td>$250,000</td>
<td>$302,000</td>
</tr>
<tr>
<td>C.E.</td>
<td>$34,000</td>
<td>$38,000</td>
</tr>
<tr>
<td>Incentives</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>0.75%</td>
<td>$2,000</td>
</tr>
<tr>
<td>Change Order Contingency</td>
<td>10.00%</td>
<td>$25,000</td>
</tr>
<tr>
<td>UDOT Oversight</td>
<td>$5,000</td>
<td>$6,000</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

- **TOTAL 2016**: $351,000
- **TOTAL 2020**: $417,000

#### Project Assumptions/Risks

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