1.0 | Project Summary Information

1.1 Project Name (35 letters max) 1600 North Widening (1200 West Intersection Improvement)

1.2 Project Type Environmental Work

1.3 Limits (descriptions should be identifiable, i.e: intersections, place names, landmarks, 35 characters max) Widen 1600 N (1200 West to State Street), improve 1200 West Intersection

1.4 Project Description (summary of project) This Project will widen 1600n from 3-lanes to 5-lanes. We currently have federal funding for widening improvements on 1600 North from State street to 275 West. A few years ago we used federal funding to widen 1600 North through the State Street intersection. This request is for the Environmental process and for the improvements to the 1200 West intersection on 1600 North

1.5 Sponsor (jurisdiction, agency name) Orem City

1.6 Contact Information
   Project Manager Paul Goodrich
   Office Phone 801.229.7320
   Cell Phone 801.592.4160
   Fax Click here to enter text.
   Email prgoodrich@orem.org

1.7 Cost Estimate
   Total Project Cost $866,000
   PE Cost $77,190
   ROW Cost $20,480
   Construction Cost $643,250
   Funds already available to project Click here to enter text.
   Soft Match proposed for project 6.667%

1.8 Regional Significance
   Is project in MPO transportation plan? Yes
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)
   Improvements to 1200 West intersection
2.0 | Project Scope
Enter NA for answers to questions not applicable to your project.

2.1 Describe purpose and need of project.
This project will widen 1600 North from 3-lanes to 5-lanes to improve the flow of traffic. 1600 North is a vital corridor for north Orem and it is the only east/west corridor with a freeway interchange with only two travel lanes. By 2040 the AADT will range from 27,000 to 32,000 per MAG.

2.2 Describe existing service/conditions
1600 North through State Street to 275 West has one travel lane in each direction with a center two way left turn lane.

2.3 Highway Project Information

SR# or FA#
FAR 2946

Beginning Mile Post
n/a

End Mile Post
n/a

Length of project
.9 miles

Existing number of Travel Lanes
One in each direction

Width of facility.
50' of asphalt. 63' back of walk/back of walk

Facility surface type.
Asphalt

2.4 Transit / Pedestrian Facility Project Information

Route#
UTA bus route 862

Length of project
.9 miles

What is the expected use of the facility or program?
Improve sidewalks, update to ADA requirements, provide connectivity, separate sidewalk from travel lanes where feasible.

**What services are provided in the operating of this project?**  
Connectivity to Parks, Residents, Shopping, Schools, and churches

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

2.6 Describe how project is consistent with local plans.  
Matches MPO plan, and local City Master Plan/General Plan

2.7 Describe how project is consistent with Utah County ITS plan.  
This project does not interfere with the June 2008 ITS plan/

2.8 If phased or segmented, describe how the phase has logical termini and what will future phases consist of.  
The first phase will include the clearing the Environmental process for the entire project length and also improving the existing 1200 West intersection. Future phases will include designing the widening of 1600 North, the three final phases will include constructing the widening; for a total of 5 phases.

2.9 Is project being coordinated with or constructed with a larger project?  
It will be phased into smaller pieces and phased over 5 phases.

2.10 Describe how project will alleviate congestion on this or other facilities.  
The project will add one lane in each direction alleviating parallel facilities in the east/west direction.

2.11 Describe any traffic improvements. (i.e lanes, signal coordination, ITS, turn lanes, bus pullouts, etc.)  
Two new travel lanes, signal modifications, improved ADA as needed, turn lanes and bus pullouts will be an option depending the amount of ROW needed or required.

2.12 Describe any safety improvements for vehicular and pedestrian traffic. (i.e. raised median, channelization of turn movements, barriers, parkway strips, etc.)  
This project will likely require whole property takes due to the nature of the widening. These takes are usually more than the project will actually need to build the roadway. The leftover or extra ROW can be used to provide improvements that would increase safety.

2.13 How are complete streets addressed with this project? (plan for pedestrians, bikes, transit, trails, ITS)  
As detailed in 2.12, the extra ROW required to be taken can be used to add better bus stops, wider trails or walks, and landscaped areas.
2.14 Describe traffic control changes at intersections. (include info to warrant changes)
Future signalized intersections will be identified and planned for and existing intersections will be upgraded as needed.

2.15 What right-of-way is already secured?
minimal

2.16 What additional right-of-way is needed?
350,000 sq ft. of full take and under 10,000 sq ft of partial take.

2.17 Describe utility work to be performed and indicate who will do the work.
There will be some utility laterals or manholes affected by the project. There will also be some drainage requirements that will be added to accommodate the additional runoff.

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

2.19 Facility Design

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<th>Current Conditions</th>
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<th>Design Year w/o Improvements</th>
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<td>4.32+</td>
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<td>Park and Ride Usage</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? Widening parallel facilities could reduce congestion on 1600 North. However, this option may require more impact.

b) Reduces congestion by reducing the number of vehicles. This project will reduce congestion by adding an additional 2 lanes

c) Reduces the need for additional highway lanes for peak hour capacity. Click here to enter text.

d) Increases the efficiency of transportation system through traffic management measures. Traffic can be managed better having the ROW to add turn lanes at all intersections

e) Adds turning movements to relieve a congested intersection. This widening would have extra ROW to add turn pockets at intersections

f) Design year number of users. Users include the average AADT for highways and users per day for transit, trails, and other projects. 27000-32000

g) 2020 V/C data (computed by MPO staff) Click here to enter text.

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

a) Benefits multiple transportation systems (transit and highway, pedestrian and transit). This project will benefit vehicle traffic by allowing better bus service and pedestrian facilities

b) Promotes alternative transportation solution to SOV use. Click here to enter text.

c) Creates or improves linkages between transportation modes.
d) Reduces physical, psychological, or economic barriers to carpool, bike, walk, or transit use.
   Click here to enter text.

e) Provides incentives to carpool, bike, walk, or transit use.
   Click here to enter text.

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

a) Provides cost effective emission reductions (amount of reduction justifies cost).
   By adding lanes, there will be less congestion, ideling, and time stopped at intersections

b) Helps efforts to attain and maintain national air quality standards.
   Less idling and stop/starting helps air quality

c) Minimizes environmental impacts or reduces existing impacts (e.g. air/water/noise pollution).
   Click here to enter text.

d) Enhances the natural, cultural, or historic environment.
   Click here to enter text.

e) Mitigates invasive impacts to existing neighborhoods/commercial areas (minimal relocations).
   Click here to enter text.

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

a) Corrects/improves a verified or potential safety or accident problem.
   This project will allow the removal of two way left turn lanes which are sometimes seen as a safety problem. Turn lanes and medians can be added to better protect vehicles and pedestrians.

b) Improves information/communications for traffic operations and emergency responders.
   This project will add 2 additional lanes to remove vehicle traffic for emergency responders

c) Reduces severity of crashes.
   The existing severe crash rate is 7.55, with the average for a similar facility at 9.10. By improving operations, the crash rate should improve an stay below the average.

d) Enhances safe movement of pedestrian, bicycle traffic.
   Having more ROW to work with will allow the possiblity of enhances pedestrian and bicycle facilities
e) Provides an intermodal safety improvement (e.g. separation of vehicles-trains, vehicles-pedestrian).
   Pedestrian facilities and crossings will be able to be enhanced with this project.

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

a) Effectively distributes funding throughout the MPO area.
   This east/west arterial will be used by drivers other than Orem residents. This will serve as a major arterial that connects I-15 to State Street and beyond.

b) Phases project in a manner that the MPO can use limited funds efficiently.
   It is recommended that we phase the environmental and design of the project and construct the project in multiple phases.

c) Cost effectiveness is appropriate for the amount of improvement made.
   The cost to add capacity will improve the operations at all adjacent east/west facilities and 15 interchanges adjacent to 1600 North.

d) Benefits transportation users from adjacent municipalities.
   This project will benefit not only Orem, and Lindon, but others accessing BYU or other regional malls or shopping areas.

e) Is supported by elected officials.
   yes
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.

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 ($O_3$), Carbon monoxide (CO), Particulate Matter – 10 microns ($PM_{10})$, and $PM_{2.5}$ non-attainment and maintenance areas. The city of Provo is a maintenance area for CO and Utah County is a non-attainment area for $PM_{10}$ 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 801/229-3842 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 workday: 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.

The improvements to the 1200 West 1600 North intersection will increase air quality by providing a more efficient intersection.
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 $77,190
b) Environmental Work $250,000
c) Construction $643,325
d) UDOT Review (project cost ≤$500k = $5k, >$500k = $10k) $37,000
e) Construction Engineering $64,325
f) Subtotal $866,000
g) Inflated Cost Factor (inflate to year of construction) 1.11
h) Total Cost $956,000
i) Non-MPO Funds Available to Project 0
j) MPO Federal Funds Request (includes 6.77% local match) Click here to enter text.

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 Thursday 24 April 2014 at 6pm.

6.2 Contacts, Questions

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

Shawn Eliot, AICP
586 East 800 North, Orem, UT 84097
p.801/229-3841  f.801/229-3801
e-mail seliot@mountainland.org
PIN: PROJECT #: PROJECT NAME: 1600 North EA/1200 West Intersection Improvements
Cost Estimate - Concept Level

Prepared By: D. Ryan Koller
Date: 4/23/2014

Proposed Project Scope: Widening of 1600 North from 1300 West to State Street to accommodate two additional lanes in Orem.

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**PROJECT COMMISSION REQUEST** TOTAL | $956,000 |

Project Assumptions/Risks

1. 6" 3/4 HMA, 8" UTBC, 12" Granular Borrow
2. 
3. 
4. 
5. 
6. 
7. 
8. 
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10. 
11. 
12. 
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14.