1.0 | Project Summary Information

1.1 Project Name (35 letters max) Deployment of Continuous Count Stations (CCS) on Interstate 15 in Utah County

1.2 Project Type ITS - Equipment

1.3 Limits (descriptions should be identifiable. i.e: intersections, place names, landmarks, 35 characters max) See attached spreadsheet for a list of locations

1.4 Project Description (summary of project) Installation of up to 18 Continuous Count Stations on I-15 from the Salt Lake County line MP-288.272 to Santaquin or MP 242.447.

1.5 Sponsor (jurisdiction, agency name) Utah Department of Transportation Program
Development and Traffic Operations Center

1.6 Project Manager Bradley Cameron and Nicolas Virgen
Office Phone 801-887-3719; 801-965-4325   Cell Phone 801-514-5722
Fax 801-965-3807   Email bcameron@utah.gov; nvirgen@utah.gov

1.7 Total Project Cost (includes local match and additional funds) $276,000
PE Cost $30,000
ROW Cost N/A
Construction Cost $246,000
Funds already available to project (less local match) $0
MPO Federal Funds Request (includes 6.77% local match) $276,000

1.8 Local/Regional Significance
Is project in local general plan? Yes
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)
CCS will provide prompt and accurate traffic volume data to the traffic management and operation center that will enable them to provide better traffic
management on interstate ramps and ramp metering cycles. Proper ramp metering contributes to reduction in emissions from vehicles idling, and acceleration/deceleration on ramps.

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

\[\text{Signature} \quad \text{Position} \quad \text{Date}\]

3.29.16
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 this project is to deploy needed additional Continuous Count Stations (CCS) also known as permanent counters or Automated Traffic Recorders (ATRs) in several locations on Interstate 15 (I-15) in Utah County. With only 3 permanent counters currently on I-15 in urbanized area, Utah County does not have a good coverage of Continuous Count Stations. The gaps between the counters are large and additional CCSs are needed in order to provide better range for traffic data collection and fill the existing gaps. These stations are permanently installed traffic counters that will provide critical and instant traffic data to the traffic operation center and traffic management and monitoring group. Information from these CCS is obtained for a period of 24-hours a day for 365 days in a year. The data is then used by end users for analysis and to make better decisions (i.e. ramp metering, develop better adjustment factors for calculating AADT, track traffic volume trends, etc.). End users also will be able to get instant and more accurate needed traffic volume data.

2.2 Describe existing service/conditions
Currently, there are only a few permanent counters on I-15 in Utah County. In order to have better understating of traffic flow between intersections and obtain more accurate traffic count data and traffic management, there is a pressing need to add about 18 continuous count stations or permanent counters from the Salt Lake county line to Santaquin. Please see attachments for the existing and proposed locations of these counters.

2.3 Highway Project Information

<table>
<thead>
<tr>
<th>SR# or FA#</th>
<th>SEE ATTACHED</th>
</tr>
</thead>
</table>

| Beginning Mile Post | 242.447 |
| End Mile Post | 288.272 |
| Length of project | 46 miles |
| Existing number of Travel Lanes | VARIES, 10 LANES |
| Width of facility | VARIES |
Facility surface type.
Asphalt and concrete

2.4 Transit / Pedestrian Facility Project Information

Route#
N/A

Length of project
N/A

What is the expected use of the facility or program?
N/A

What services are provided in the operating of this project?
N/A

2.5 Describe any equipment to be purchased (buses, ITS, etc.).
Any needed ITS and Traffic Monitoring related Equipment such as ADR 2000 w/contact closure boards, Click 100, ATMS setup, Detectors, fiber switches, wireless radios, fiber drop cables, and any other applicable equipment for the purpose of connecting to CCSs/ATR's.

2.6 Describe how project is consistent with local plans.
Installation of new and upgraded existing CCS/ATR's can be connected into existing signal/device communication infrastructure.

2.7 Describe how project is consistent with Utah County ITS plan.
It should be viewed as an addition to expanding ATMS system.

2.8 If phased or segmented, describe how the phase has logical termini and what will future phases consist of.
This will be one phase project on Interstate 15 in Utah County. Any future phases would be based on need for CCS and perhaps expansion in other counties

2.9 Is project being coordinated with or constructed with a larger project?
N/A

2.10 Describe how project will alleviate congestion on this or other facilities.
Data retrieved from these Continuous Count Stations will help the traffic management and operation center to make better decisions on better managing traffic on ramp metering which will ultimately help with alleviating some congestion on mainline.

2.11 Describe any traffic improvements. (i.e. lanes, signal coordination, ITS, turn lanes, bus pullouts, etc.)
Traffic data from these permanent stations are critical in decision making and to provide better
traffic management. Improvements mostly to ramp metering cycles will ultimately improve traffic on mainline.

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

N/A

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

N/A

2.14 Describe traffic control changes at intersections. (include info to warrant changes)

N/A

2.15 What right-of-way is already secured?

N/A

2.16 What additional right-of-way is needed?

Project will be constructed on the existing right-of-way.

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

Depending on the location, additional fiber and power may need to be installed to connect to existing fiber. Work will be done by low bid construction contractor.

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

Categorical Exclusion

2.19 Facility Design

<table>
<thead>
<tr>
<th></th>
<th>Current Conditions</th>
<th>Design Year Click here to enter</th>
<th>Design Year w/o Improvements</th>
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</thead>
<tbody>
<tr>
<td>Average Daily Traffic</td>
<td>SEE ATTACHMENTS</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>Level of Service</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>Functional Class</td>
<td>INTERSTATE</td>
<td>INTERSTATE</td>
<td>INTERSTATE</td>
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<tr>
<td>Design Speed</td>
<td>VARIES</td>
<td>VARIES</td>
<td>VARIES</td>
</tr>
<tr>
<td>*Accident Rate</td>
<td>VARIES</td>
<td>VARIES</td>
<td>VARIES</td>
</tr>
<tr>
<td>Transit Ridership</td>
<td>VARIES</td>
<td>VARIES</td>
<td>VARIES</td>
</tr>
<tr>
<td>Ped/Trail Usage</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Park and Ride Usage</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</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?
   It does not provide an alternate facility but timely improvement at ramp metering coordination may help with relieving some congestion

b) Reduces congestion by reducing the number of vehicles.
   Better ramp metering are proven and effective congestion mitigation strategy on main road

c) Reduces the need for additional highway lanes for peak hour capacity.
   Perhaps with better and instant traffic volume data to the traffic operation center will achieve better traffic management and ramp metering cycles

d) Increases the efficiency of transportation system through traffic management measures.
   Data will be used to determine efficiency measures needed

e) Adds turning movements to relieve a congested intersection.
   Provides traffic volume data for making better decisions and provide better mitigations strategies are needed

f) Design year number of users. Users include the average AADT for highways and users per day for transit, trails, and other projects.
   Design year number will still need to be determined. However, for this project segment, average AADT is about 109,000 (2014 data)

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).
   Highways, Asset Management, Pems.

b) Promotes alternative transportation solution to SOV use.
c) Creates or improves linkages between transportation modes.  
N/A

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

e) Provides incentives to carpool, bike, walk, or transit use.  
N/A

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

a) Provides cost effective emission reductions (amount of reduction justifies cost).  
Reduction in emission from vehicles idling in queue on ramps. By providing instant and accurate traffic volume data to the traffic operation center will provide better traffic management, travel time data and volume.

b) Helps efforts to attain and maintain national air quality standards.  
Better ramp metering will help with relieving traffic congestion and air quality

c) Minimizes environmental impacts or reduces existing impacts (e.g. air/water/noise pollution).  
It may reduce emission levels at ramps

d) Enhances the natural, cultural, or historic environment.  
N/A

e) Mitigates invasive impacts to existing neighborhoods/commercial areas (minimal relocations).  
N/A

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

a) Corrects/improves a verified or potential safety or accident problem.  
Better ramp metering may reduce collisions systemwide

b) Improves information/communications for traffic operations and emergency responders.  
Will improve information on traffic volume to better estimate travel time, delays and ramp metering cycles

c) Reduces severity of crashes.  
Ramp metering help with reducing collisions. Washington State DOT reported 30% reduction on collisions system-wide.

d) Enhances safe movement of pedestrian, bicycle traffic.
N/A

e) Provides an intermodal safety improvement (e.g. separation of vehicles-trains, vehicles-pedestrian).
N/A

3.5 Other Considerations (15 points)

Explain if the project...

a) Effectively distributes funding throughout the MPO area. CCS/ATR's are located throughout the entire MPO boundary.

b) Phases project in a manner that the MPO can use limited funds efficiently.
Yes

c) Cost effectiveness is appropriate for the amount of improvement made.
Yes

d) Benefits transportation users from adjacent municipalities.
Yes

e) Is supported by elected officials.
Project ranked high and is supported by MAG TAC voting committee
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 ($O_3$), 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 analysis of air quality impacts is required whenever possible, some improvements may not lend themselves to rigorous quantitative analysis, because of the project's 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.

Continuous Count Stations provide instant traffic volume and classification data information that will help the traffic operation center better manage traffic conditions and make better decisions everywhere on the system. In addition to calculate more accurate travel time that help travelers make better decisions on whether to stay on I-15 or take an alternative route, this data also helps with creating a more efficient ramp metering cycle that properly manages the flow of traffic entering the freeway so vehicles can merge with mainline traffic with minimal disruption to traffic flow. Eliminating prolonged periods of stop-and-go conditions and idling time due to congestion can reduce vehicle emissions and fuel consumption on the freeway.
5.0 | Project Cost Estimate
To development 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 $30,000
b) Environmental Work $0
c) Construction $198,000
d) UDOT Review (project cost < $500k = $5k, > $500k = $10k) $5,000
e) Construction Engineering $25,000
f) Subtotal $258,000
g) Inflated Cost Factor (inflated to year of construction) 1.0
h) Total Project Cost (enter total cost, not funding request) $276,000
i) Additional Funds (less local match) Available to Project NA
j) MPO Federal Funds Request (includes 6.77% local match) $276,000

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 84097  
p.801/229-3813  f.801/229-3801  
e-mail ballen@mountainland.org

Shawn Eliot, AICP  
586 East 800 North, Orem UT 84097  
p.801/229-3841  f.801/229-3801  
e-mail seliot@mountainland.org
## Utah County Continuous Count Stations on I-15

<table>
<thead>
<tr>
<th>Route &amp; Milepost</th>
<th>Existing Equipment</th>
<th>Equipment needed</th>
<th>Estimated Cost</th>
<th>Notes</th>
<th>2014 AADT</th>
</tr>
</thead>
<tbody>
<tr>
<td>0015 MP 233.161 - 242.447</td>
<td>None</td>
<td>ATMS setup, Click 100, ADR 2000 w/ Contact closure boards</td>
<td>$30,000</td>
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<td>19,345</td>
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<td>21,260</td>
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<td>37,030</td>
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<td>48,010</td>
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<tr>
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<td>105,005</td>
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<td>2- HD 125’s, 2 Click 200’s</td>
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<td>$6,000</td>
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<td>102,495</td>
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<td>$30,000</td>
<td>No main line sensor. Too close to ramps. No existing equipment. Entire ATMS station needs to be installed</td>
<td>127,850</td>
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<td>167,390</td>
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<td>ATMS planned as part of Point Project.</td>
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<tr>
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<td>PE Cost</td>
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<td></td>
<td>Env</td>
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<td>6.77% Match total</td>
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<td>$275,466.60</td>
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Interstate 15 Proposed CCS Locations

0015
MP 283.985 - 289.272
Directions: To here - From here
0015

MP 272.716 - 275.279

Directions: To here - From here
0015
MP 269.035 - 270.609

Directions: To here - From here
0015
MP 248.845 - 250.923
Directions: To here - From here