1.0 | Project Summary Information

1.1 Project Name (35 letters max) Deployment of Continuous Count Stations (CCS) on Several Principal Arterial Routes 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) Please see attached spreadsheet and the kmz file for the list of routes, their limits and locations.

1.4 Project Description (summary of project) Installation of 16 or more non-intrusive Continuous Count Stations (CCS) on various Principal Arterial Routes in urbanized areas of Utah County.

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) enter cost
   PE Cost $40,000
   ROW Cost N/A
   Construction Cost $440,000
   Funds already available to project (less local match) $0
   MPO Federal Funds Request (includes 6.77% local match) $480,000

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) Additional CCS will provide critical and needed traffic volume data which will
enable traffic operation and management center to provide better signal timing and coordination at intersections. This reduction in vehicles idling at intersections would help with reduction in emission.

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

Signature

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 this project is to deploy needed additional Continuous Count Stations (CSS) also known as Automated Traffic Recorders (ATRs) on many Principal Arterial Routes in Utah County. Currently Utah County does not have a good coverage of the needed Continuous Count Stations on their major routes. There are around 5 active continuous counters on the Principal Arterial Routes in the urbanized area of Utah County. The gap is large and additional CCS is needed to provide better traffic data 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 with information for a period of 24-hours a day for 365 days in a year. The data is then used for analysis and to make better decisions on I.e. signal coordination/timing, develop better adjustment factors for calculating AADT, track traffic volume trends, etc. End users also will be able to get instant and more accurate traffic data.

2.2 Describe existing service/conditions
Existing service condition consists of very few Continuous Count Stations (CCS) on major Principal Arterial routes in urbanized area of Utah County. For better and accurate traffic data, there is a pressing need to add more CCS.

2.3 Highway Project Information

SR# or FA#
See Attachments

Beginning Mile Post
See Attachments

End Mile Post
See Attachments

Length of project
See Attachments

Existing number of Travel Lanes
Varies

Width of facility.
Varies

Facility surface type.
Mostly Asphalt

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 mostly new CCS/ATR's with the possibility of getting 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 expansion of the ATMS system.

2.8 If phased or segmented, describe how the phase has logical termini and what will future phases consist of.
Based on availability of future funding, there are additional locations (see attachment) that could use CCS and become another phase of this project in the future.

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 managing traffic and signal timing/coordination at intersections which will ultimately help with alleviating some congestion.

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 signals coordination and timing at intersections by the traffic operation center would help to reduce congestion and idling time.

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)
Traffic control provides improvement of intersections signal coordination and timing by the traffic management and operation center.

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 installation may be needed to connect to existing fiber network. 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>
</tr>
</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>
</tr>
<tr>
<td>Functional Class</td>
<td>PRINCIPAL ARTERIAL</td>
<td>PRINCIPAL ARTERIAL</td>
<td>PRINCIPAL ARTERIAL</td>
</tr>
<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>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 may provide timely improvement at intersections signal coordination/timing may help with relief to some congestion.

b) Reduces congestion by reducing the number of vehicles. It may provide information for existing VMS’s to provide an alternate facility and timely improvement at intersections signal coordination/timing may help with relieving congestion

c) Reduces the need for additional highway lanes for peak hour capacity. Perhaps with better and instant traffic volume data to the traffic management and operation center will help achieve better traffic management and signal timing that may help with congestion problems at certain intersections.

d) Increases the efficiency of transportation system through traffic management measures. Needed traffic volume data in timely manner will help to make better decisions and determine efficiency measures needed

e) Adds turning movements to relieve a congested intersection. With available traffic volume data at the intersection, better decisions could be made by the traffic management and operation center on signal coordination/timing and if any other congestion 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 segements on various identified Principal Arterial route, average AADT is about 25,000 (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...
Mountainland MPO

[PROJECT PRIORITAZION CONCEPT REPORT]

a) Benefits multiple transportation systems (transit and highway, pedestrian and transit). Highways, Asset Management, Pems.

b) Promotes alternative transportation solution to SOV use.

N/A

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 at intersections. By providing better traffic volume data to the traffic management and operation center, will enable them to provide better signal coordination and timing that will ultimately help with reducing emission at intersections.

b) Helps efforts to attain and maintain national air quality standards.
Better signal timing and coordination at intersections may help with efforts to reduce idling time and emission.

c) Minimizes environmental impacts or reduces existing impacts (e.g. air/water/noise pollution).
Reduction in emission level by providing better signal coordination and timing at intersections

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 and available traffic volume data will help with better traffic management decisions and may help to improve safety and reduce collisions.

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

c) Reduces severity of crashes. Better and available traffic volume data will help to draw better traffic management decisions that may help improve safety and reduce crashes.

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 will be all 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 (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 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.

Continuous Count Stations or Automated Traffic Recorders provide needed traffic volume data information to our traffic management and operation center that will help them better manage traffic condition and make better decisions. In addition to calculating more accurate travel time that helps travelers make better decisions on whether to stay on this road or take an alternative route, this data will also help with creating a more efficient signal coordination and timing at intersections. Reducing prolonged periods of idling due to congestion at intersections, may reduce vehicle emissions and fuel consumption.
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 $40,000
b) Environmental Work $0
c) Construction $375,000
d) UDOT Review (project cost $<500k = $5k, $>500K $10k) $5,000
e) Construction Engineering $30,000
f) Subtotal $450,000
g) Inflated Cost Factor (inflate to year of construction) 1.0
h) Total Project Cost (enter total cost, not funding request) Click here to enter text.
i) Additional Funds (less local match) Available to Project NA
j) MPO Federal Funds Request (includes 6.77% local match) $480,000

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
## Utah County Continuous Count Stations on PA's

<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>0052 MP 0.464 - 1.543</td>
<td>None</td>
<td>Click 100, ADR 2000 w/ Contact closure boards</td>
<td>$30,000</td>
<td>Requires 2 Wavetronix heads due to distance between EB &amp; WB lanes. Could be done with one pole and one cabinet in middle, or two poles and two cabinets for each direction.</td>
<td>32,945</td>
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<tr>
<td>0068 MP 30.977 - 31.719</td>
<td>None</td>
<td>Click 100, ADR 2000 w/ Contact closure boards</td>
<td>$30,000</td>
<td>20,000</td>
<td></td>
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<tr>
<td>0077 MP 7.146 - 8.539</td>
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<td>$30,000</td>
<td>29,985</td>
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<tr>
<td>0085 MP 1.073 - 2.977</td>
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<td>Click 100, ADR 2000 w/ Contact closure boards</td>
<td>$30,000</td>
<td>18,335</td>
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<td>20,615</td>
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<tr>
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<td>0089 MP 349.264 - 350.056</td>
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<td>$30,000</td>
<td>25,795</td>
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<td>0092 MP 0.783 - 3.908</td>
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<td>Click 100, ADR 2000 w/ Contact closure boards</td>
<td>$30,000</td>
<td>Lane configuration in equipment will need additional setup</td>
<td>21,735</td>
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<tr>
<td>0114 MP 0.000 - 1.061</td>
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<tr>
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<td>0129 MP 1.782 - 2.959</td>
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<td>0156 MP 10.494 - 11.540</td>
<td>None</td>
<td>Click 100, ADR 2000 w/ Contact closure boards</td>
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<td>15,230</td>
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<tr>
<td>0265 MP 0.725 - 1.713</td>
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<td>Click 100, ADR 2000 w/ Contact closure boards</td>
<td>$30,000</td>
<td>46,805</td>
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<tr>
<td>2960 MP 0.556 - 1.509</td>
<td>None</td>
<td>Click 100, ADR 2000 w/ Contact closure boards</td>
<td>$30,000</td>
<td>28,785</td>
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### Cost Breakdown

- **PE Cost**: $40,000.00
- **Env**: $0.00
- **Construction Cost**: $375,000.00
- **UDOT Review**: $5,000.00
- **CE Cost**: $30,000.00
- **Subtotal**: $450,000.00
- **6.77% Match**: $30,465.00
- **Total**: $480,465.00
Utah County Continuous Count Stations on PA's

0092
MP 0.783 - 3.908
Directions: To here - From here