1.0 | Project Summary Information

1.1 Project Name (35 letters max) Provo Canyon Trail - Vivian Park to Deer Creek

1.2 Project Type Trail - New Construction

1.3 Limits (descriptions should be identifiable. i.e: intersections, place names, landmarks, 35 characters max) Project will begin at the current end of the Provo Canyon Trail at Vivian Park and continue to the Utah/ Wasatch County line. The larger project that this is a part of will continue to the existing trail below Deer Creek Dam.

1.4 Project Description (summary of project) This project will complete the trail in Provo Canyon from Vivian Park to Deer Creek dam in Wasatch County. The project will also need to work with the Heber Valley Railroad. This request is for the Utah County portion of the trail. This project will need to be done in conjunction with the Wasatch County portion and the Heber Valley Railroad projects.

1.5 Sponsor (jurisdiction, agency name) Utah County

1.6 Project Manager Richard Nielson
   Office Phone 801-851-8601   Cell Phone 801-404-7010
   Fax 801-851-8612   Email richardjn@utahcounty.gov

1.7 Total Project Cost (includes local match and additional funds) $1,602,000
   PE Cost $175,000
   ROW Cost $0
   Construction Cost $1,575,000
   Funds already available to project (less local match) $0
   MPO Federal Funds Request (includes 6.77% local match) $1,750,000

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? No not a highway project

1.9 Air Quality Benefit (summarize CM/AQ Report, NA for non-CM/AQ eligible projects)
This project is not eligible for CM/AQ funds

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

Signature: [Signature]

Position: [Position]

Date: [3/18/2016]
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 provide for the final segment of the Provo Canyon Trail, aka Provo River Parkway, in Utah County. It is part of a larger project that will connect the existing trails below Vivian Park and above Deer Creek Dam, thus providing a multi-use trail link between Utah Valley and Heber Valley. This will provide a safe route for non-motorized users through Provo Canyon.

2.2 Describe existing service/conditions
There is currently no trail facility in this part of the Canyon. Those users wishing to go through this part of the canyon must use the shoulders on US-189, a high speed, high volume highway.

2.3 Highway Project Information

SR# or FA#
na

Beginning Mile Post
na

End Mile Post
na

Length of project
na

Existing number of Travel Lanes
na

Width of facility.
na

Facility surface type.
na

2.4 Transit / Pedestrian Facility Project Information

Route#
Provo Canyon Trail

Length of project
1.1 miles in Utah County. Larger project is a total of 3.2 miles.
What is the expected use of the facility or program?
This project is expected to see heavy use in the summer months consistent with the lower portion

What services are provided in the operating of this project?
Trail use

2.5 Describe any equipment to be purchased (buses, ITS, etc.).
na

2.6 Describe how project is consistent with local plans.
This project is listed on the Utah County Transportation Master Plan and on the MAG trails plan

2.7 Describe how project is consistent with Utah County ITS plan.
na

2.8 If phased or segmented, describe how the phase has logical termini and what will future phases consist of.
This project, in conjunction with the Wasatch County project which will run concurrently, is the last segment of a multi-phased project for the Provo Canyon Trail

2.9 Is project being coordinated with or constructed with a larger project?
Yes, this project is part of the larger project with Wasatch County, UDOT, and the Heber Valley Railroad

2.10 Describe how project will alleviate congestion on this or other facilities.
This will remove non-motorized traffic from US-189 in Provo Canyon

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

2.12 Describe any safety improvements for vehicular and pedestrian traffic. (i.e. raised median, channelization of turn movements, barriers, parkway strips, etc.)
This will remove non-motorized traffic from US-189 in Provo Canyon and provide those users with a safe route.

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

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

2.15 What right-of-way is already secured?
This project will be constructed within the UDOT owned right of way for the Heber Valley Railroad.

2.16 What additional right-of-way is needed?
none

2.17 Describe utility work to be performed and indicate who will do the work.
No utility work is needed, but there will be coordination with and some relocation of rail for the Heber Valley Railroad

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

2.19 Facility Design

<table>
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<th></th>
<th>Current Conditions</th>
<th>Design Year 2019</th>
<th>Design Year w/o Improvements</th>
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<tr>
<td>Average Daily Traffic</td>
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<td>Level of Service</td>
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<td>Design Speed</td>
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<td>na</td>
<td>na</td>
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<td>*Accident Rate</td>
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<td>Transit Ridership</td>
<td>na</td>
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<td>na</td>
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<tr>
<td>Ped/Trail Usage</td>
<td>na</td>
<td>1500</td>
<td>na</td>
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<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? This project provides an alternate facility for the non-motorized users in Provo Canyon. There is not an identified congestion problem in the area.

b) Reduces congestion by reducing the number of vehicles. During summer months this could reduce the cars in Provo Canyon as the trail could be used to commute between Utah Valley and Heber Valley.

c) Reduces the need for additional highway lanes for peak hour capacity. By providing a trail through the canyon, this project can reduce the need for additional highway lanes during peak hours.

d) Increases the efficiency of transportation system through traffic management measures. This project will help US-189 function better by providing an alternate route for cyclists that are currently using the highway.

e) Adds turning movements to relieve a congested intersection. This project does not have any intersections.

f) Design year number of users. Users include the average AADT for highways and users per day for transit, trails, and other projects. 1500

g) 2020 V/C data (computed by MPO staff) There is no model data available for trail projects

3.2 Mode Choice (25 points)

Explain if the project...

a) Benefits multiple transportation systems (transit and highway, pedestrian and transit). This will remove non-motorized traffic from US-189 in Provo Canyon and provide those users with a safe route. This project also provides access to the Provo River for recreation purposes.

b) Promotes alternative transportation solution to SOV use.
During summer months this could reduce the cars in Provo Canyon as the trail could be used to commute between Utah Valley and Heber Valley.

c) Creates or improves linkages between transportation modes.
   This project provides the final trail link between Utah Valley and Heber Valley.

d) Reduces physical, psychological, or economic barriers to carpool, bike, walk, or transit use.
   Because this project will connect the two valleys with a safe, non-motorized route, more users will likely use it to commute to work during the summer months.

e) Provides incentives to carpool, bike, walk, or transit use.
   In a survey conducted by MAG during 2015 at Vivian Park asking trail users about use of the proposed project, 97% said they would use the trail on a regular basis.

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

a) Provides cost effective emission reductions (amount of reduction justifies cost).
   The project will provide an alternate route in Provo Canyon that can be used by pedestrians and cyclists at a much lower cost than adding lanes to US-189.

b) Helps efforts to attain and maintain national air quality standards.
   This project will promote more alternative transportation between Utah Valley and Heber Valley.

c) Minimizes environmental impacts or reduces existing impacts (e.g. air/water/noise pollution).
   This project would have a minimal environmental impact as if follows the current Heber Valley Railroad corridor.

d) Enhances the natural, cultural, or historic environment.
   This project provides users with a way to better enjoy Provo Canyon, an area to exercise, and access to the Provo River.

e) Mitigates invasive impacts to existing neighborhoods/commercial areas (minimal relocations).
   There are no neighborhoods or commercial areas along this project.

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

a) Corrects/improves a verified or potential safety or accident problem.
   Provides an alternate route to US-189 in Provo Canyon and encourages non-motorized users to be off of the highway.

b) Improves information/communications for traffic operations and emergency responders.
c) Reduces severity of crashes. 
Be reducing the number of non-motorized users on US-189, the severity of the crashes associated with auto/ ped incidents will be greatly reduced.

d) Enhances safe movement of pedestrian, bicycle traffic. 
This Project provides a much safer route through Provo Canyon for the non-motorized users.

e) Provides an intermodal safety improvement (e.g. separation of vehicles-trains, vehicles-pedestrian).
This project separates the trail users from the high speed highway. It parallels the Heber Valley Railroad which operates as a low speed, scenic railway with a limited number of daily trains.

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

a) Effectively distributes funding throughout the MPO area. 
This project is outside of the urbanized area and would utilize County Sales Tax funds in the non-urbanized area.

b) Phases project in a manner that the MPO can use limited funds efficiently. 
This is the final phase of the project.

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

d) Benefits transportation users from adjacent municipalities. 
Connects the users in the Utah and Heber Valley's.

e) Is supported by elected officials. 
Has support from Utah and Wasatch County elected officials. Also has support from UDOT and Heber Valley Railroad.
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): na
Average distance of trips reduced: na
Emission reduction per average weekday: na

b) Idling Time
Average idling time per vehicle reduced: na
Number of vehicles with reduced idling time: na
Emission reduction per average weekday: na

C) Vehicle Speed
Average change in vehicle speed (speed before and after): na
Number of vehicles affected: na
Emission reduction per average workday: na
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.

na
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 $160,000
b) Environmental Work $240,000
c) Construction $1,064,000
d) UDOT Review (project cost <$500k = $5k, >$500k = $10k) $10,000
e) Construction Engineering $128,000
f) Subtotal $1,602,000
g) Inflated Cost Factor (inflated to year of construction) $148,000
h) Total Project Cost (enter total cost, not funding request) $1,750,000
i) Additional Funds (less local match) Available to Project $0
j) MPO Federal Funds Request (includes 6.77% local match) $1,750,000

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 84651
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
Figure 7: Provo Canyon Trail Segments

- 1) Vivian Park to the SR-92
- 2) SR-92 to Ault's Bridge
- 3) Ault Bridge to Horseshoe Bend
- 4) Horseshoe Bend to the Provo-Jordan River Parkway Trailhead.

Legend:
- Heber Valley Railroad
- Rivers or Streams

Scale:
- N
- 0 0.2 0.4 Miles
4.0 Design Alternatives and Solutions

Typical Cross Sections
When exploring the feasibility and cost of various portions of the trail, it was necessary to conceptualize typical cross sections of the various trail segments. These typical cross sections aided in determining separation, retention needs, materials, quantities, and spatial relations. Each cross section outlines the key features for each proposed trail segment as discussed previously in the document.

Vivian Park to SR-92 at Grade Alignment
The trail corridor varies in width from Vivian Park to the railroad crossing near SR-92. In most sections, the trail can be placed at grade with the railroad separated by either a 4-foot safety fence or cobble rock swale (see Figure 12). Minor retaining of the slope adjacent to the trail may be needed in some locations.

Figure 12: Typical cross section A from Vivian Park to SR-92.

Vivian Park to SR-92 Split Alignment
The trail corridor varies in width from Vivian Park to the railroad crossing near SR-92. In most sections, the trail can be placed at grade with the railroad, but in some areas, the corridor is too narrow. Rather than placing one large retaining wall adjacent to the trail to retain the slope, the team suggested constructing a grade separated trail that will be built into the slope with small retaining walls on either side of the trail as needed (see Figure 13).

Figure 13: Typical cross section B from Vivian Park to SR-92.
# Provo Canyon Trail Vivian Park to Horse Shoe Bend
## Engineer’s Cost Estimate

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>ITEM DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>TOTAL</th>
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<tr>
<td>1</td>
<td>12' Asphalt Trail (3' Depth)</td>
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<td>Ton</td>
<td>$45.00</td>
<td>$132,975.00</td>
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<td>2</td>
<td>Untreated Base Course (6' Base for Asphalt Trail)</td>
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<td>Ton</td>
<td>$25.00</td>
<td>$102,175.00</td>
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<tr>
<td>3</td>
<td>Removal of Existing Railroad Bridge (Option 2 Only)</td>
<td>1</td>
<td>Lump</td>
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<td>4</td>
<td>Cut</td>
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<td>Cubic Yard</td>
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<td>5</td>
<td>Fill</td>
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<td>Cubic Yard</td>
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<td>6</td>
<td>Haul Off Cost For Excess Cut</td>
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<td>Cubic Yard</td>
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<td>7</td>
<td>Relocation of Railroad Tracks</td>
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<td>Linear Foot</td>
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<td><strong>AMENITIES</strong></td>
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<td>8</td>
<td>Contech Pedestrian Bridge (Option 1 Only)</td>
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<td>Each</td>
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<td>9</td>
<td>Railroad/Pedestrian Combo Bridge (Option 2 Only)</td>
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<td>10</td>
<td>4' High Chainlink Safety Fence</td>
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<td>11</td>
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<td>12</td>
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<td>$9,620.00</td>
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| Engineering Option 1 (10%) | $306,382.00 |
| Contingency Option 1 (10%)  | $306,382.00 |
| Engineering Option 2 (10%)  | $386,382.00 |
| Contingency Option 2 (10%)  | $386,382.00 |
| **TOTAL Option 1:**         | $3,676,584.00 |
| **TOTAL Option 2:**         | $4,636,584.00 |

*Because exact topography is unknown cut and fill quantities are general estimates and will likely vary.

*Due to limited access for relocation of the railroad tracks an exaggerated unit price has been used. If access and coordination between crews and the railroad are optimal, unit price could be substantially lower.*
<table>
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<th></th>
<th>RR</th>
<th>County &amp; RR combined by county</th>
<th>PE Cost (10%)</th>
<th>Environmental Work (15%)</th>
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<th>2018</th>
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