1.0 | Project Summary Information

1.1 Project Name (35 letters max) Highland 6800 West

1.2 Project Type Road – Widen

1.3 Limits (descriptions should be identifiable. i.e: intersections, place names, landmarks, 35 characters max) 1120 N American Fork to 9600 N Highland

1.4 Project Description (summary of project) In previous years, American Fork City has completed 2 phases of road reconstruction and widening of 900 West (6800 West, Highland). Our proposal is to complete phase 3 of this project, which is to extend the road reconstruction and widening from 1120 N American Fork, the end of 900 West phase 2, to 9600 North Highland. The project will continue the same road cross section as constructed in phases 1 and 2. The current road condition is a narrow 2 lane road with no shoulders. The proposed road is a 3 lane section with a 14 foot median turn lane, 12 foot travel lanes, 6 foot bike lanes, and 4 foot shoulders (beyond the bike lanes). Work would also include construction of curb and gutter, and sidewalk/multi-use trail to provide recreational bike and pedestrian connectivity from the residential and recreational (Mitchell Hollow and the Lehi Equestrian park) areas north and east of the project, to the retail and commercial centers along State Street

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) $2,940,000
   PE Cost $146,000
   ROW Cost $433,000
   Construction Cost $1,967,000

   Funds already available to project (less local match) NA
   MPO Federal Funds Request (includes 6.77% local match) $2,940,000

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)
   N/A - This project will install a permissive left turn lane that will reduce thru vehicles
   stopping and idling while waiting for a left turning vehicle to clear. By improving the overall
   level of service (LOS) along the corridor, emissions should also be reduced. The addition of
   shoulders, sidewalks, and a multi-use trail will also encourage multi-modal transit. It is
   anticipated that, although certainly beneficial, the potential to reduce emissions is not
   significant enough to quality for CM / AQ funding eligibility.

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 this project is to improve safety along 6800 West by correcting the horizontal and vertical alignments, roadway geometry deficiencies, provide a complete street cross section, and improve multi-modal connectivity between residential and recreational areas north of the project and retail/commercial areas south of the project.

Two traffic studies have been performed for this regional area: one commissioned by American Fork City in 2008 (Hales Engineering, updated and verified in 2011); and one commissioned by Mountainland Association of Governments (MAG) in 2009 (Interplan/Lochner, Utah County East West Study, Jan. 12, 2009). Both studies identify this corridor as being of regional significance, and make consistent recommendations for lane configurations and needed improvements to provide an acceptable level of service (LOS).

2.2 Describe existing service/conditions
The existing roadway functions at a level of service (LOS) C during peak hours.

2.3 Highway Project Information

SR# or FA#
2888

Beginning Mile Post
1120 North, American Fork Utah

End Mile Post
9600 North, Highland Utah

Length of project
0.5 miles

Existing number of Travel Lanes
2

Width of facility.
Proposed 58 foot pavement width, plus a 10 foot multi-use path along the east side.

Facility surface type.
Flexible pavement

2.4 Transit / Pedestrian Facility Project Information

Route#
NA

Length of project
0.5 miles

What is the expected use of the facility or program?
Bike lanes will be striped along both sides of the roadway, and the planned multi-use sidewalk / trail is expected to be used by joggers and cyclists that currently use the roadway which has narrow or no shoulders or sidewalks.

What services are provided in the operating of this project?
Former agricultural parcels in the area have been and continue to be developed for residential use. This project will move turning vehicles out of the through lanes, thereby increasing safety and reducing congestion. Bike lanes, multi-use / sidewalk trail facilities will improve multi-modal connectivity to existing entertainment and retail centers.

2.5 Describe any equipment to be purchased (buses, ITS, etc.).
No equipment to be purchased.

2.6 Describe how project is consistent with local plans.
The improvements along this corridor have been coordinated with Utah County, Lehi City, American Fork City, and Highland City. All these entities recognize the importance of these corridor improvements to their residents.

2.7 Describe how project is consistent with Utah County ITS plan.
Infrastructure for ITS/AMTS (1D Conduits) and appropriately located junction boxes are being installed by this project, and will be available for use as the Utah County ITS plan is built out.

2.8 If phased or segmented, describe how the phase has logical termini and what will future phases consist of.
The overall project consists of reconstruction and widening from State Street, American Fork to 9600 North. Due to funding considerations, the project was segmented into primary segments: American Fork State Street to 760 North; American Fork 760 North to 1120 North; and 1120 N American Fork to 9600 N Highland. The proposed project will construct the segment from 1120 N American Fork to 9600 North Highland.

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

2.10 Describe how project will alleviate congestion on this or other facilities.
Construction of a permissive left turn median lane throughout this phase will remove vehicles entering subdivisions along the corridor from the through lanes, improving safety and reducing delay times. Widened shoulders with bike lanes, and the proposed multi-use trail will provide space for recreational cyclists and bicycle commuters outside the travel lanes.
2.11 Describe any traffic improvements. (i.e. lanes, signal coordination, ITS, turn lanes, bus pullouts, etc.)
The project widens the shoulders of the roadway to allow bike lanes to be striped throughout the corridor, and provides a center permissive left turn lane. The new roadway also corrects deficient horizontal and vertical alignments and roadway cross section geometry. A 10 foot wide multi-use trail / sidewalk is also planned along the east side of the roadway to connect to the Mitchell Hollow trail system and Lehi Equestrian Park just north of the project.

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 smooth the vertical profile, provide classification-appropriate lane and shoulder widths, re-stripe the temporary transitions near 820 North to the final s-curve configuration, and add a permissive left turn lane and shoulder throughout the project. Bike lanes will be striped thought the corridor tying to the bike lanes placed in 2012, to provide for multi-modal cyclists. In addition, sidewalks separated from the roadway with 5 foot parkstrips will be constructed to provide full connectivity with existing sidewalks north and south of the project. A multi-use trail / sidewalk will be constructed along the east side of the roadway to provide connectivity with the Mitchell Hollow trail system, and planned completion of trail segments south of the project.

2.13 How are complete streets addressed with this project? (plan for pedestrians, bikes, transit, trails, ITS)
This project provides for the needs of a variety of users by widening and improving the travelled way, adding designated bike lanes, installing sidewalks and a multi-use trail.

2.14 Describe traffic control changes at intersections. (include info to warrant changes)
This phase will not add any traffic control changes but build off those completed with the previous phase.

2.15 What right-of-way is already secured?
A large section of the right-of-way is already secured for the existing 2 lane street section. Existing widths vary according to recent development.

2.16 What additional right-of-way is needed?
An additional 1.47 acres will be required along the sides of the existing alignment. This property will need to be obtained by acquisition.

2.17 Describe utility work to be performed and indicate who will do the work.
Utility work included with the project will include storm drain improvements, conflicts created by the new storm drain system, and power pole relocations. All other relocation required will be preformed by the facility owner under franchise agreement.

2.18 What type of environmental work will most likely be needed?
Categorical Exclusion
2.19 Facility Design

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<tr>
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<th>Current Conditions</th>
<th>Design Year 2024</th>
<th>Design Year w/o Improvements</th>
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<td>Park and Ride Usage</td>
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</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 does not provide an alternate facility, however it does significantly improve the existing facility so that it will function safely and appropriately as a collector. This should reduce the number of vehicles trying to bypass this area on the adjacent local streets.

b) Reduces congestion by reducing the number of vehicles.
   Widened shoulders with striped bike lanes and multi-use trails will facilitate and encourage alternate use of transportation reducing the number of vehicles.

c) Reduces the need for additional highway lanes for peak hour capacity.
   This facility feeds directly into northeastern Lehi and Highland. Improvement of the entire corridor from State Street to Highland 10400 North will allow easy access into these areas from the Lehi Main Street, American Fork Main Street, and American Fork 500 East interchanges, ultimately allowing freeway congestion to more easily disperse into the residential areas in northern Utah County.

d) Increases the efficiency of transportation system through traffic management measures.
   This phase ties into the intersection completed by the previous phase at 1120 N American Fork which provides integrated signal timing through out the corridor will reduce delay and congestion as residential buildout in the area continues.

e) Adds turning movements to relieve a congested intersection.
   This project will install a permissive left turn lane that will reduce thru vehicles stopping and idling while waiting for a left turning vehicle to clear.

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 AADT = 16,250 vpd
   Multi-Use Trail = 15 users / hour estimated

g) 2020 V/C data (computed by MPO staff)
   6800 W has a 2024 PM peak V/C of 0.35.
Explain if the project...

a) Benefits multiple transportation systems (transit and highway, pedestrian and transit). This project will improve access to the I-15 American Fork Main Street and Lehi Main Street interchanges, and provide access for pedestrians and cyclists to the anticipated UTA light rail system along State Street near 900 West.

b) Promotes alternative transportation solution to SOV use.

The bike lanes, sidewalks and multi-use trail will improve connectivity between residential and recreational areas at the north end of the project to commercial / retail areas on the south end of the project and a multi-use trail that links existing and planned segments of trail to a future transit system on State Street. In addition, by improving access to the planned UTA light rail, other commuting related SOV trips may be reduced.

c) Creates or improves linkages between transportation modes.

This project will improve connectivity between existing multi-use trail / sidewalk segments, and improve access to the anticipated UTA light rail system along State Street.

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

The existing roadway is narrow with no shoulders or sidewalk. As such, it creates a functional barrier for pedestrians and most cyclists from using the corridor to access the nearby recreational, commercial and retail centers. The new roadway will include bike lanes, shoulders, parkstrips, sidewalks and a new street lighting system. These improvements will reduce the perception that this is a dangerous roadway. Corrections to the horizontal and vertical alignments and other roadway geometrical considerations will improve safety and visibility for all users of the corridor.

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

While not directly providing incentive for multi-modal use, this project does reduce perceived disincentives (or negatives) for non-vehicle users as noted above.

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

a) Provides cost effective emission reductions (amount of reduction justifies cost).

The primary impetus of this project is not emission reduction, but instead it is driven by safety and capacity considerations. However, by improving the overall LOS along the corridor, emissions should also be reduced. Construction of the permissive left turn lane will reduce thru vehicles stopping and idling while waiting for a left turning vehicle to clear.

b) Helps efforts to attain and maintain national air quality standards.

This project supports efforts to improve air quality by reducing delay and congestion caused by
left turning vehicles creating queues while waiting for an acceptable gap, and by providing multi-modal access along the corridor with wide shoulders and multi-use trail/sidewalks.

c) Minimizes environmental impacts or reduces existing impacts (e.g. air/water/noise pollution). Construction of curb and gutter and storm drain conveyance facilities will allow storm drainage to be collected and treated, whereas currently roadway drainage runs uncontrolled and untreated into adjacent fields. Construction of planned improvements will reduce congestion and delay along the corridor caused by left turning vehicles.

d) Enhances the natural, cultural, or historic environment. Construction of the multi-use trail / sidewalks, parkstrips, and including street lighting will improve safe connectivity between adjacent subdivisions, nearby parks, and existing trail systems.

e) Mitigates invasive impacts to existing neighborhoods/commercial areas (minimal relocations). The alignment of the proposed roadway closely follows the existing roadway alignment and provides upgraded facilities such as striped bike lanes, sidewalk, parkstrip, and curb and gutter for adjacent property owners. These will better delineate the roadway, and serve as both visual cues and physical features to separate traffic from properties fronting the roadway. No home relocations will be necessary as part of this project.

3.4 Safety (20 points)

Explain if the project...

a) Corrects/improves a verified or potential safety or accident problem. The existing roadway undulates, largely following the terrain. There are no shoulders, and left turning vehicles block through lanes. This project will smooth and flatten the vertical curves, attenuate the undulations, and provide sufficient pavement width for wide shoulders and a median turn lane. Striped bike lanes will improve safety for cyclists.

b) Improves information/communications for traffic operations and emergency responders. Intersection signals and other communications were installed with the first two phases of this corridor.

c) Reduces severity of crashes. As previously noted, this project will correct several geometrical deficiencies of the roadway. Street lights will also be installed to improve nighttime visibility. Completion of the 700 North and 1120 North intersections and auxiliary lane improvements have directly improved safety and, correspondingly, should reduce the expected crash severity.

d) Enhances safe movement of pedestrian, bicycle traffic. This project will construct shoulders with striped bike lanes, sidewalks separated from the roadway by parkstrips, and a multi-use trail. Street lighting will also be installed. All of these
elements will contribute to and enhance the pedestrian and bicycle safety. They will also improve safety for vehicles as these users are removed and separated from the travelled way.

e) Provides an intermodal safety improvement (e.g. separation of vehicles-trains, vehicles-pedestrian).
   The wider shoulders with designated/striped bike lanes and parkstrips will provide separation between vehicle traffic and pedestrian and bicycle traffic, whereas now non-vehicle users are forced onto the travelled way.

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

a) Effectively distributes funding throughout the MPO area.
   The requested funds for this project represent a reasonable allocation of the limited available MAG funding. In addition to being of a reasonable size and scope, although sponsored by Highland City, this project also directly benefits residents of Lehi City, American Fork City, and Utah County. Because the project has such a wide area impact, it represents a well balanced benefit for the overall project cost.

b) Phases project in a manner that the MPO can use limited funds efficiently.
   This phase was limited to half mile of roadway inorder to be a quick and efficient project that would require limited funding.

c) Cost effectiveness is appropriate for the amount of improvement made.
   The estimated cost is consistent with the scope and length of the project in an urban setting.

d) Benefits transportation users from adjacent municipalities.
   As previously noted, this project directly benefits the residents of Highland City, Lehi City, American Fork City, and Utah County. With this understanding, these municipalities have coordinated to support a corridor from State Street to 10400 North Highland.

e) Is supported by elected officials.
   This project is supported by the Highland Mayor and City Council.
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.

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 $146,000
b) Environmental Work $30,000
c) Construction $1,967,000
d) UDOT Review (project cost <$500k = $5k, >500K = $10k) $10,000
e) Construction Engineering $137,000
f) Subtotal $2,290,000
g) Inflated Cost Factor (inflate to year of construction) 1.21
h) Total Project Cost (enter total cost, not funding request)) $2,940,000
i) Additional Funds (less local match) Available to Project NA
j) MPO Federal Funds Request (includes 6.77% local match) $2,940,000

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
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
**Proposed Project Scope:** Reconstruct and widen 1/2 mile of 3 lane street with bike lanes, sidewalks, and multi-use trail.

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<th>Construction Items</th>
<th>Cost 2016</th>
<th>Cost 2020</th>
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<tr>
<td>Public Information Services</td>
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<td>Roadway and Drainage</td>
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<td>ITS</td>
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**Subtotal:** $1,355,000

**Items not Estimated (20%):** $271,000

**Construction Subtotal:** $1,626,000

**P.E. Subtotal:** $130,080 (8%)

**C.E. Subtotal:** $121,950 (8%)

**Right of Way Subtotal:** $384,342

**Utilities Subtotal:** $0

**Incentives Subtotal:** $0

**Miscellaneous Subtotal:** $0

**Cost Estimate (ePM screen 505):**

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<th>2016</th>
<th>2020</th>
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**PROPOSED COMMISSION REQUEST TOTAL:** $2,474,000

**TOTAL:** $2,940,000

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**Project Assumptions/Risks**

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**Prepared By:** J-U-B Engineers  
**Date:** 3/22/2016

**Approximate Route Reference Mile Post (BEGIN) = NA (END) = NA**

**Project Length = 0.500 miles 2,640 ft**

**Current FY Year (July-June) = 2016**

**Assumed Construction FY Year = 2020**

**Construction Items Inflation Factor = 1.21 (4 yrs for inflation)**

**Assumed Yearly Inflation for Engineering Services (P.E and CE) (%/yr) = 3.0%**

**Assumed Yearly Inflation for Right of Way (%/yr) = 3.0%**

**Items not Estimated (% of Construction) = 20.0%**

**Preliminary Engineering (% of Construction + Incentives) = 8.0%**

**Construction Engineering (% of Construction + Incentives) = 7.5%**

---

**PIN: PROJECT # PROJECT NAME: HIGHLAND, 6800 West**

**Cost Estimate - Concept Level**

---

**Reconstruct and widen 1/2 mile of 3 lane street with bike lanes, sidewalks, and multi-use trail.**

---

**Public Information Services:** $15,000

**Roadway and Drainage:** $1,270,000

**Traffic and Safety:** $40,000

**Structures:** $0

**Environmental Mitigation:** $30,000

**ITS:** $0

---

**Subtotal:** $1,355,000

**Items not Estimated (20%):** $271,000

**Construction Subtotal:** $1,626,000

**P.E. Subtotal:** $130,080 (8%)

**C.E. Subtotal:** $121,950 (8%)

**Right of Way Subtotal:** $384,342

**Utilities Subtotal:** $0

**Incentives Subtotal:** $0

**Miscellaneous Subtotal:** $0

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<tr>
<td><strong>Miscellaneous</strong></td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$2,474,000</td>
<td>$2,940,000</td>
</tr>
</tbody>
</table>

**PROPOSED COMMISSION REQUEST TOTAL:** $2,474,000

**TOTAL:** $2,940,000

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**1 8**

**2 9**

**3 10**

**4 11**

**5 12**

**6 13**

**7 14**

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**3/22/2016**

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**Concept Level Est Form**

**Rev. 7/31/2013**