



# CITY OF ELLENSBURG

Public Works Department  
501 North Anderson Street; Ellensburg, WA 98926  
Ph: (509) 962-7230 Fax: (509) 962-7127

March 17, 2011

QUADCO Lead Agency  
Attn. Derek Pohle, PE  
Grant County Public Works  
124 Enterprise St. SE  
Ephrata, WA 98823

RE: QUADCO UPWP Project Application – SFY 12/13  
GIS Right of Way Mobile Mapping

Dear Derek,

Please find attached a completed grant application to the UPWP SFY 12/13 program. Thank you in advance for your consideration of the request.

Please do not hesitate to contact me with any questions you may have.

Sincerely,

Ryan A. Lyyski, PE  
City Engineer

File 11-041

# QUADCO REGIONAL TRANSPORTATION PLANNING ORGANIZATION

## Application for SFY12/13 UPWP Transportation Planning Project Funding

**Due: 3:00 p.m. March 18, 2011 - To Be AT LEAD AGENCY (not postmarked)**

**Applications can be submitted by single signed hard copy by mail, OR signed copy (signature in colored ink) scanned in PDF format and submitted by email to:**

[dpohle@co.grant.wa.us](mailto:dpohle@co.grant.wa.us)

**Applications must be Signed by Appropriate Agency Representatives**

**(NO Faxed Copies shall be accepted)**

Agency Name: City of Ellensburg (Kittitas County Partner)

Project Name: GIS Right of Way Mobile Mapping

Road/Street Name: All Public City/County Public Rights of Way

Location Map Included  Yes  No

### **PROJECT DESCRIPTION**

PROVIDE A BRIEF DESCRIPTION OF YOUR PROJECT INCLUDING WORK ITEMS ANTICIPATED AND TIMELINES FOR COMPLETION.

The City of Ellensburg has partnered with Kittitas County to further the development of agency's GIS systems. The project will employ a consultant to utilize a mobile scanner to scan all right-of-ways within Kittitas County and City of Ellensburg, (excluding private roads, the interstate highway and USFS roads). The mobile scanner uses LIDAR and GPS to generate a 3D point cloud of all surfaces within a 30 meter radius of the sensor, with an accuracy of +/- 25 mm. The point data can be used for generating highly accurate GIS data for transportation related features along the right-of-ways or for updating the location of existing GIS features. The information can then be used to extract precise measurements of features and distances with a three dimensional accuracy of +/- 25 millimeters. With this data the Agencies can accurately locate features within these right-of-ways such as trees, power poles, curbs, ditches, roadside obstructions, etc., as well as accurately measuring characteristics of those features such as pole heights, curb dimensions, etc. Analyzing the data can allow us to better determine problem areas in need of safety and traffic flow improvements.

In addition to the 3D point cloud data, the mobile scanner generates 3D panoramic imagery at a defined interval along every road segment scanned by the device, (typically every 20 feet). The panoramic images can be accessed through ArcGIS. The location of each image appears as a point symbol on the map. Clicking on the point opens the panoramic image, allowing the user to view the image 360° in all axes. The imagery will provide users with a high resolution panoramic view of any segment of road, providing a visual record of the position and condition of features at a specific point in time.

The agencies see great value in the information generated by this project. Both the City and the County feel that funding this project would provide a valuable tool for planning, structure inventory, road management and preliminary engineering tasks. With these elements, our

Agencies will have the ability to accurately estimate future improvements, review existing drainage deficiencies in isolated areas, investigate potential sight distance issues and outline potential problem areas that will require further investigation. In addition to the directly measurable elements, the Agencies will be able to efficiently manage future field work by eliminating unnecessary trips in the field to collect data or complete initial measurements. (For additional information see Exhibit "A")

The work would likely be completed in the late summer/fall of 2011.

**Total Project Cost:** \$ 52,000  
 (City and County would provide in-kind match to this work)

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**BENEFITS TO REGIONAL SYSTEM**

Transportation System Operation and Safety

1. HOW DOES THE PROPOSED STUDY PROVE TO BENEFIT IN THE SOUND, EFFECTIVE, AND SAFE OPERATION OF THE TRANSPORTATION SYSTEM?

We believe this project would provide a valuable asset to both agencies. The information would allow the agencies to very accurately continue the GIS mapping work without having to send crews out in the field, reducing field surveys and costs. This project will aid in further depicting the physical features within the City's/County's transportation corridors (backbone of transportation system). This information will be a valuable tool for City/County transportation planners and developers when analyzing existing and future transportation corridors and neighborhoods. By having this information, the City/County will be able to enhance/guide the sound, effective and safe operation of the transportation system. The information can be used in several ways, such as safety assessment and development realistic project cost estimates without having to spend a large amount of field time.

Supporting Livable Communities

2. HOW DOES THE PROPOSED STUDY PROVE TO BENEFIT THE TRANSPORTATION INFRASTRUCTURE NEEDS OF THE REGION'S MAJOR SOURCES OF ECONOMIC DEVELOPMENT?

By partnering between the City/County, we will have a snapshot in time of topographic information along the agencies transportation infrastructure. This information can be used for current planning/construction projects and evaluation of future potential projects and impacts in response to economic development proposals. This information is expected to provide an incredible asset for the aid/planning of the existing/future infrastructure. Planning infrastructure improvements serving the economic development cores within the City and County would now be simpler and more effective.

Enhanced Mobility

3. HOW DOES THE PROPOSED STUDY PROVE TO BENEFIT INCREASED TRAVEL OPTIONS, EASY CONNECTIONS, AND/OR REDUCE DELAYS FOR PEOPLE AND GOODS?

Any improvements/enhancements made to the City/County GIS system will aid in existing system efficiency and future planning efforts. This information will be used in evaluating the existing transportation system and aid in planning efforts for the future. The future planning efforts will aid the evaluation for multimodal transportation and easy connections, whether these connections are for vehicles, bikes and/or multipurpose trails, ect. All of these items will eventually help lead to reduced delays for people and goods.

Investment Value, Local Support, Multi-jurisdictional Coordination, & Partnerships

4. HOW DOES THE PROPOSED STUDY DEMONSTRATE A COST-EFFECTIVE MANNER TO ACHIEVE A VIABLE SOLUTION TO A POTENTIAL OR RECOGNIZED PROBLEM? (ATTACH LETTERS OF LOCAL SUPPORT, COLLABORATIVE DECISION MAKING BETWEEN JURISDICTIONS AND PARTNERS, AND HOW THE STUDY COSTS WILL BE USED TOWARDS THE REGIONAL TRANSPORTATION PLAN. LIST SOURCES OF ALL FUNDS THAT WILL BE USED, INCLUDING THOSE FROM PARTNERSHIPS).

This project clearly shows collaboration by Kittitas County and the City of Ellensburg. The capabilities of the project are incredible and can provide efficiency and cost/time savings in transportation planning efforts in the future.

The City and County are committed to the continued development of their GIS systems. Both agencies are committing all of their time and work to the final execution and deployment of the information as in-kind match toward the project.

CERTIFICATION IS HEREBY GIVEN THAT THE INFORMATION PROVIDED IS ACCURATE AND ALL INFORMATION IS COMPLETE AND INCLUDED AS PART OF THE APPLICATION

Date: 3/17/11

  
\_\_\_\_\_  
SIGNATURE OF AUTHORIZED MEMBER AGENCY REPRESENTATIVE

City Engineer  
\_\_\_\_\_  
TITLE

  
\_\_\_\_\_  
SIGNATURE OF MEMBER AGENCY OFFICIAL RESPONSIBLE FOR ADMINISTRATION

PW Analyst  
\_\_\_\_\_  
TITLE

**City of Ellensburg (Partnered with Kittitas County)**

\_\_\_\_\_  
MEMBER AGENCY

**501 North Anderson Street**

\_\_\_\_\_  
ADDRESS

<b>Ellensburg</b>	<b>WA</b>	<b>98926</b>
_____ CITY	_____ STATE	_____ ZIP

<b>509-962-7230</b>	<b>509-962-7127</b>
_____ TELEPHONE	_____ FAX

EMAIL: [lyyskir@ci.ellensburg.wa.us](mailto:lyyskir@ci.ellensburg.wa.us)

## Exhibit "A"

Mobile mapping systems now have the ability to acquire high density 360 degree imagery and point cloud data in a simultaneous process which can be used for a variety of transportation and public works applications. The LIDAR blankets everything in all directions including the road surface for 30 meters with 25 to 40 points per square inch; each having an extremely accurate XYZ coordinates. This data set then can be used in multiple platforms including 2D and 3D CAD, terrain and surface modeling, road design, and GIS (all of which the County currently possess) to perform a variety of maintenance, inventory, modeling, design, and construction functions. It will have a direct impact multiple facets of the public works job description; including but not limited to bridges, signage, ditches and culverts, roads surfaces, road design, road construction, access points, guardrails, tree and foliage control inventory and control, and stormwater management. Route viewer (the City/County's road imagery system) has already established itself as a valuable tool for many applications, and is in need of an update. Along with the fresh imagery, this data set would provide the additional functionality of a 360 degree field of view and the ability to access the point cloud data which will lie invisibly, but perfectly aligned beneath it. This will allow technicians and engineers to perform a variety of inventory, measurement, and data set construction and maintenance that currently require site visits. The importance of high density, accurate elevation data cannot be overemphasized. All modern road design software has the capacity to migrate this data in huge quantities into terrain and design applications to optimize and estimate the fill and haul requirements for everything from a simple access cut to the entire reconstruction or realignment of miles of road. It can be used in a variety of modeling functions within a GIS to obtain vital drainage and flow characteristics for all levels of rain and storm water runoff. Ultimately any accurate and precise coordinate data can be beneficial in a variety of genres and will enhance the GIS; which in turn improves the City/County's functionality and capacities on many fronts including emergency services, law enforcement, building, planning, demographics, assessment, and environmental and public health.



**KITTITAS COUNTY**  
**DEPARTMENT OF PUBLIC WORKS**

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Kirk Holmes, Director

March 14, 2011

Ellensburg Public Works Department  
Attn: Ryan Lyyski, PE  
City Hall, 501 North Anderson Street  
Ellensburg WA, 98926

RE: QUADCO UPWP Grant Opportunity for 2011

Dear Mr. Lyyski:

Kittitas County Public Works would be pleased to partner with the City of Ellensburg Public Works Department for the LIDAR UPWP grant opportunity. We understand the City of Ellensburg will be lead agency for this opportunity with our support.

Should you have any questions, please contact me at (509) 962-7690.

Respectfully:

A handwritten signature in black ink, appearing to read "D. D'Hondt", written in a cursive style.

Douglas D'Hondt, PE  
County Engineer



CITY OF ELLENSBURG



Kittitas County, Washington  
**BOARD OF COUNTY COMMISSIONERS**

District One  
Paul Jewell

District Two  
Alan Crankovich

District Three  
Obie O'Brien

March 17, 2011

Derek Pohle  
Grant County Public Works Department  
124 Enterprise St. S.E.  
Ephrata WA, 98823

RE: QUADCO UPWP Grant Opportunity for 2011

Dear Mr. Pohle:

Kittitas County and City of Ellensburg are requesting UPWP funds for LIDAR mapping of our roads. This system will allow us to acquire data that can be used for transportation, emergency and public works applications. It will improve public works maintenance, stormwater management, road design, and road construction abilities. It can facilitate Public Works' ability to identify transportation problems for needed road improvements. Such improvements can allow local goods to be better transported to the highways. This data can also improve the mapping abilities of emergency services, law enforcement, building, planning, assessment, and environmental and public health. Ultimately, we believe this data can help improve the County's ability to respond to important issues relating to the County roads which leads to improved public safety and commerce.

Thank you for your consideration. Should you have any questions, please contact me at (509) 962-7508.

Respectfully Submitted:

Paul Jewell, Chairman  
Kittitas County Board of County Commissioners