

CITY COUNCIL AGENDA ITEM
CITY OF SHORELINE, WASHINGTON

AGENDA TITLE:	Motion Authorizing the City Manager to Execute a Contract with Transmap Corporation in the Amount of \$127,003.68 to Implement the Pavement Management and Right-of-way Asset Inventory Project
DEPARTMENT:	Public Works Department
PRESENTED BY:	Dan Repp, Utilities and Operations Manager
ACTION:	<input type="checkbox"/> Ordinance <input type="checkbox"/> Resolution <input checked="" type="checkbox"/> Motion <input type="checkbox"/> Discussion <input type="checkbox"/> Public Hearing

PROBLEM/ISSUE STATEMENT:

The purpose of this report is to request the City Council to authorize the City Manager to enter into a contract with Transmap Corporation in the amount of \$127,003.68 for professional services needed to complete the Pavement Management and Right-of-way (ROW) Asset Inventory Project. The project will complete a citywide pavement condition assessment and collect and incorporate ROW asset data into the City's asset management system.

RESOURCE/FINANCIAL IMPACT:

The City Council has authorized \$1,500,000 in the 2014 CIP Budget for the Annual Road Surface Maintenance Program. Within the Road Surface Management Program, \$150,000 was allocated for the pavement management system upgrade including pavement condition ratings, asset inventory, and integrating the information into the City's data management systems. This project cost of \$127,003.68 is less than the available budget.

RECOMMENDATION

Staff recommends the City Council move to authorize the City Manager to execute a professional services contract with Transmap Corporation for \$127,003.68 for services needed to complete a Citywide pavement condition assessment and to collect and incorporate ROW asset data into the Cityworks System.

Approved By: City Manager **DT** City Attorney **JA**

INTRODUCTION

The Pavement Management and ROW Asset Inventory Project addresses two important issues for City infrastructure maintenance. First, the project will complete a pavement condition assessment for 165 centerline miles of City roads. The condition assessment includes calculating a pavement condition rating which will be used to define and guide pavement maintenance priorities in the future. Pavement condition information will be stored in the City asset management system (Cityworks) and a specific pavement management software (MicroPaver) so asset condition can be tracked through time. Second, the project will complete an inventory of ROW assets (e.g. sidewalks, ADA Ramps, traffic signs and signals, pavement markings, etc.) and deliver the data into the Cityworks and GIS systems. Having a detailed ROW asset inventory will allow staff to track asset condition and develop systematic and prioritized work plans for improvement and maintenance projects. The Project also supports the City's commitment to appropriately and proactively manage its assets.

BACKGROUND

Pavement Management

Streets begin to deteriorate from the moment they are constructed. There are several factors that affect pavement life which makes it difficult to predict exactly how long a street will last before it will need to be resurfaced or rebuilt. Streets with higher traffic volumes and with vehicles carrying heavy loads (typically arterial streets) will deteriorate more quickly than less traveled streets. Weather (rain, extreme heat or cold) can also greatly affect pavement performance. In addition the base material and underlying soil supporting the roadway, the type of pavement (concrete versus asphalt) and the age of pavement all play a part in how long the pavement surface will last. Industry standard suggests that an average pavement life is 18 years before there is a significant drop in condition. The pavement condition assessment and resulting rating will assist staff in developing priorities for maintaining and improving the infrastructure in a more proactive manner.

Conducting a pavement condition assessment on a regular basis is standard industry practice. Some agencies, such as the Washington State Department of Transportation for example, do ratings as frequently as every two years. A common target for cities conducting pavement condition assessments is every three to five years. The City has conducted pavement assessments several times in the past; first in 1999, again in 2002 and finally in 2008. Between 2008 and now, staff has been working on developing GIS and asset management systems to support all City assets, including streets and their pavement management requirements.

Staff will use pavement condition ratings to prioritize and schedule pavement maintenance activities such as overlays, bituminous surface treatments, crack sealing, and pavement patching.

Asset Management

The City is responsible for ensuring that its system of public assets stays in good working order. Infrastructure asset management is the combination of management, financial, economic, engineering, and other practices applied to physical assets with the

objective of providing the required level of service in the most cost-effective manner. It includes considering the whole life cycle (design, construction, commissioning, operating, maintaining, repairing, modifying, replacing and decommissioning/disposal) of infrastructure assets. Asset management programs incorporate detailed asset inventories, operation and maintenance tasks, and long-range financial planning to maximize asset life and therefore minimize costs. Asset management is the tool staff uses to keep City assets in good working order.

In 2013, the City made a decision to implement Azteca Cityworks, as Geographic Information System (GIS) centric Computerized Maintenance Management System (CMMS) to improve the methods and means by which the City can track the maintenance (labor, equipment, and materials) and condition of its streets, traffic, surface water, parks, and facility assets. CMMS via Cityworks is now part of a new asset management approach to be implemented City wide in the next several years.

DISCUSSION

The Pavement Management and ROW Asset Inventory Project consists of three elements: 1) collect pavement condition and ROW asset data, 2) process the data to include specific asset information (attributes) and 3) incorporate the new databases into the City's asset management systems. Transmap Corporation, which is the City's preferred contractor, is a provider of professional and technical transportation infrastructure management services. Transmap specializes in the mobile data collection, data processing, analysis and inventory of roadway assets such as pavement condition, sidewalks, ADA Ramps, traffic signs and signals, pavement markings, etc.

Pavement Condition Assessment

Transmap uses a high definition mobile mapping system to capture photogrammetric images of the pavement every 300 feet. The mobile mapping system collects data at normal driving speeds so special traffic control devices are not required during data collection. After the data collection process is completed, Transmap will assess the pavement condition of all roadways using the digital image database developed from field data. Pavement technicians rate both the type of distress (alligator cracking, edge cracking, potholes, etc.), as well as the severity of each distress, following the guidelines established by the ASTM (American Society for Testing and Materials) D6433 standards (road and parking lot pavement condition index). Transmap uses a profile meter to collect rutting and ride data. The profiler meets all ASTM E950 standards. The International Roughness Index (IRI) will also be collected for the left wheel track, the right wheel track, and the average of the two wheel tracks. The pavement condition data is analyzed to produce a pavement condition index rating. The index system ranges from zero (worst condition) to 100 (best condition). Table 1 shows the how the rating system is applied.

Table 1. Pavement Condition Index and associated maintenance activity.

	PCI M&R Category	Work Type	Description	Added Life & Benefit
Preservation Treatments	Rejuvenation 86-100	Crack seal, reclaimer	Good	3-5 years
	Global 71-85	Micro-surfacing, slurry seal	Satisfactory	5-7 years
	Critical 51-70	Crack seal, thin overlay	Fair	8 years
Paving and Reconstruction	Conventional 31-50	Mill, overlay	Poor	10+ years PCI reset
	Reconstruction 0-30	Reconstruction/FDR	Very Poor	20+ years PCI reset

Transmap will work with the City's IT Department to incorporate all pavement condition and rating data into the City's asset management and GIS systems.

ROW Asset Inventory

At the same time that the pavement condition assessment is conducted, Transmap will also collect ROW asset data. ROW assets include traffic signs, traffic signals and poles, sidewalks, curbs, ADA ramps, manholes, parking meters, hydrants, vaults, survey monuments, catch basins, light poles, drop inlets, pavement markings, culverts, ditches, and street trees. Transmap will use their mobile mapping system to capture 360 degree photogrammetric images and use them to identify and map ROW assets. In addition, they will develop detailed records for each asset consistent with the City's asset management system. All the assets will be geo-referenced and ready for use in the City's GIS.

RESOURCE/FINANCIAL IMPACT

EXPENDITURES

Pavement Management & Asset Inventory (Transmap)	\$127,003.68
BST Project (Doolittle Construction and staff costs)	\$706,005.17
Hot Mix Asphalt and Crack Filling Contract ¹	\$566,991.15
Adjusted Road Surface Maintenance Contingency ² \$100,000.00	
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Total Project Cost	\$1,500,000.00

REVENUE

Roads Capital Fund (Road Surface Maintenance)	\$1,500,000.00
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Total Revenue	\$1,500,000.00
 Program Balance	 (Revenue - Expenditures)
	\$0

RECOMMENDATION

Staff recommends the City Council move to authorize the City Manager to execute a professional services contract with Transmap Corporation for \$127,003.68 for services needed to complete a Citywide pavement condition assessment and to collect and incorporate ROW asset data into the Cityworks System.

¹ The balance of Program funding to be used with this project after BST and PMS contracts; to be bid this summer and constructed this fall.

² The Road Surface Maintenance Program contingency provides funding for unknowns in any of the individual projects included in the Program and represents approximately 10% of the total program budget. Individual Project contingencies are allocated from this item while keeping \$100,000 available for expected extra work in the Hot Mix Asphalt and Pavement Management System contracts.