MAYOR & COUNCIL COMMUNICATION

DATE: **October 4, 2016**
REGULAR
ITEM # **24**

AGENDA ITEM: Street Inventory and Condition Assessments – Authorize Contract for Street Condition Rating and Inventory

SUBMITTED BY: Jack Griffin, City Engineer

THROUGH: Kristina Handt, City Administrator

REVIEWED BY: Rob Weldon, Public Works Director
Cathy Bendel, Finance Director

SUGGESTED ORDER OF BUSINESS:

- Introduction of Item.....City Engineer
- Report/Presentation..... .....City Engineer
- Questions from Council to Staff ..... Mayor Facilitates
- Public Input, if Appropriate.....Mayor Facilitates
- Call for Motion ..... Mayor & City Council
- Discussion ..... Mayor & City Council
- Action on Motion ..... Mayor Facilitates

POLICY RECOMMENDER: Engineering/Public Works.

FISCAL IMPACT: $21,195 in Street Maintenance expense in the General Fund. The street maintenance expenses are currently projected to be $10k over budget in 2016. This is a non-budgeted expense and if approved this would need to be funded from excess reserves in the General Fund.

SUMMARY AND ACTION REQUESTED: The City Council is respectfully requested to consider approving a Street Inventory and Pavement Condition Rating Proposal with GoodPointe Technology for the local street network in Lake Elmo.

LEGISLATIVE HISTORY/BACKGROUND INFORMATION: The City last completed a pavement rating survey in 2005 with a partial update in 2010. The city street inventory data has been compiled over the years through various sources and methods making the information inconsistent in its accuracy. At this time the street condition rating data and inventory is aged and unreliable and needs to be updated to provide staff the information needed to objectively and strategically program ongoing street maintenance and reconstruction projects.

The key to strategic maintenance planning is in knowing the current condition of the various elements of the street network and understanding how it is changing with time and in response to our ongoing maintenance, repair, and rehabilitation efforts. To better ensure that the City is investing its maintenance and reconstruction dollars more strategically for extending the serviceable life of these streets, staff is recommending that the pavement condition survey and inventory update be completed to provide a reliable street inventory and renew the city's rating data. The citywide pavement condition assessment and digital image collection will be completed using a data collection van with 6-camera configuration. Data is captured for pavement distress rating, roadway pavement width, curb and gutter or shoulder/width inventory, and digital images of the street and boulevard. The data will be provided electronically with geo-referencing to allow all information to be uploaded for use in the City's Beehive Asset Management System. Completing this rating/inventory all at one time will provide the city with a current and accurate street inventory and condition assessment that will be accessible to Public Works and Engineering for ongoing updates.

RECOMMENDATION: Staff is recommending that the City Council approve a Street Inventory and Pavement Condition Rating Proposal with GoodPointe Technology for the local street network in Lake Elmo. The recommended motion for the action is as follows:

"Move to approve the Street Inventory and Condition Rating Proposal with GoodPointe Technology in an amount not to exceed $21,195."

ATTACHMENT(S):

1. Street Inventory and Condition Rating Proposal from GoodPointe Technology.

GOODPOINTE TECHNOLOGY

ICON
Get to the pointe
Infrastructure Management Solutions

August 25, 2016

Ryan W. Stempski, P.E.
Assistant City Engineer
City of Lake Elmo
3800 Laverne Avenue North
Lake Elmo, MN 55042

RE: City of Lake Elmo Citywide Pavement Condition Assessment

Dear Ryan:

We are pleased to present the following cost proposal to provide data collection services to establish the pavement management system for the City of Lake Elmo.

We understand that this project is very important to the City; the quality of your decisions to allocate resources and maintain the short- and long-term health of your pavement network depends on the integrity of the technical models and the quality of the process used to develop and deliver the results of this project.

To ensure that this critically important project is executed successfully, we have assembled a team of internationally recognized infrastructure management experts, engineering professionals, and field technicians to accomplish the required scope of work. Over the past thirty years we have successfully implemented data collection plans worldwide for clients just like the City of Lake Elmo.

We appreciate the opportunity to continue our work with you on this project, and we look forward to providing high-quality pavement data collection and professional engineering consulting services to the City.

I am authorized to make representations and commitments on behalf of GoodPointe Technology.

Sincerely,
GoodPointe Technology

Anthony J. Kadlec
President

Attachment: Cost Proposal

E. PROJECT APPROACH AND WORK PLAN

PROJECT INITIATION

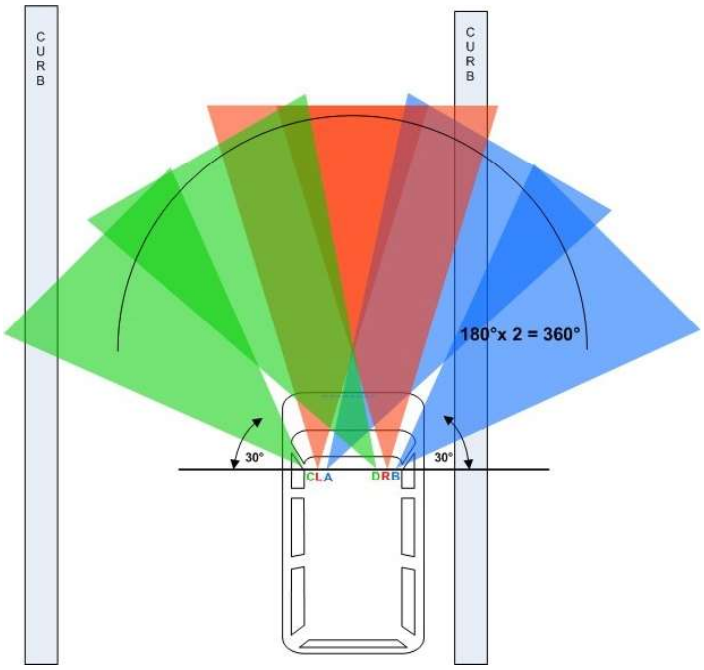
Once the notice of selection has been received, the first step in this project will be to have a project kickoff meeting with the City to establish and document the specific scope of work to be performed based on the project specifications and any options selected. In this meeting current pavement management operations will be reviewed to identify the data-related requirements for this project.

TASK 1. CITYWIDE PAVEMENT CONDTION ASSESSMENT & DIGITAL IMAGE COLLECTION

Our team will meet this project's critical inventory and condition survey requirements by providing ***sub-meter coordinate accuracy coupled with an asset feature extraction process that does not require follow-up field inspections***.

Our data collection van will utilize the following 6-camera configuration as pictured:

Stereo Pair	Purpose
A/B:	Forward/Right to capture pavement shoulder condition, curb/gutter, sidewalk and most traffic signs.
C/D:	Forward/Left to capture median signs and pavements to left field of view.
L/R:	Forward view, primarily for pavement surveys



DIGITAL IMAGE ACQUISITION

All designated roadway routes specified in this project would be driven by one or more specially equipped data collection vehicles such as the following pictured:

The actual data collection process makes use of the latest digital imaging and Global Positioning System (GPS)/Inertial Navigational System (INS) technology to capture accurate feature location coordinates and a digital record of each visible feature simultaneously.

All imagery is captured with multiple full-frame progressive scan digital color cameras that take high-resolution (1600 pixels x 1200 lines) jpeg images at pre-set intervals along the designated route, as shown at the left.

While not a moving video of the route, images are sequenced to simulate a full video log along each street.

Maximizing the Usefulness of the Geo-Referenced Images Collected in This Project
For this project we are providing an option to deliver the set of geo-referenced JPG images that we will be collecting and utilizing to produce the PCI survey results. The City would then be able to utilize these right of way images for any of its in-house GIS applications, to maximize the return on investment (ROI) realized by the City in this project.

QUALITY ASSURANCE PLAN

"You cannot inspect quality into a product (or service)--it is already there."

W. Edwards Demming, The Father of the American Quality Management.

As it relates to the City pavement condition data collection project, if we collect 70 miles of pavement condition data for Lake Elmo and then were to do, say a 3% quality control (QC) inspection (2 miles) and show you the results after the fact, this QC effort will effectively do nothing to improve the quality of the remaining 97% (or 68 miles) of survey data that we had already collected for the City. In other words, we cannot inspect quality into a product (or service) once it has already been created or delivered.

Therefore, it is the intent of our GoodPointe Quality Assurance (QA) procedures to ensure that each of our technicians is competently trained before starting the project and that we provide ongoing refresher training to our staff to ensure that we are consistent in our rating procedures (i.e. the assignment of distress types, severity levels, and quantities) for the local conditions for any custom survey procedures, etc. and that we keep our raters freshly rotated between their work in the field and in the office doing data entry.

This consistency training involves bringing multiple raters out into the field and doing a walk- through calibration survey, to ensure that our raters are consistently rating distresses-, severity levels, and quantities, within an accepted level of variation. We also encourage the "when in doubt, write it out" policy, which encourages our raters to take detailed notes and flag individual surveys for a closer re-inspection if they observe pavement distress formations that appear out of the normal.

Based on known dates of construction, we can establish an expectation of PCI results to target PCI survey results which are outside the normally expected variation of pavement performance for the indicated pavement's life-cycle.

For example, if we know a residential roadway pavement (asphalt surface type) was newly reconstructed two (2) years ago, we might expect the PCI to be in the 95 to 100 range. However, if the resulting survey PCI=70, then the section would be flagged for QC review to confirm the quality of the condition survey and/or to document any extenuating circumstances (e.g. accidental pavement damage due to heavy construction vehicles, etc.).

QUALITY CONTROL PROCEDURES

The resources that are required to provide our quality control services are already included in the quoted per mile rate of the pavement condition survey; For GoodPointe Technology projects that involve surface condition surveys, the Data Collection Lead (for this project, Jason Dickerson) is assigned the responsibility of providing field quality control services.

A Project Kickoff Meeting will be held prior to the start of data collection operations for the City to meet with lead GoodPointe staff to review the data collection and

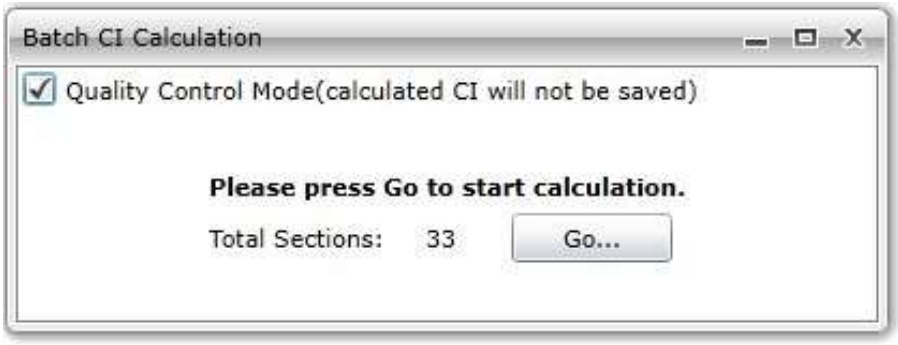
quality control procedures proposed for this project. During this field meeting, pavement distress types and severity levels will be reviewed with the City and the technical staff assigned to the project.

GoodPointe will randomly assign repeat surveys in the initial phase of the data extraction operations at the distress/severity level.

After the completion of the quality control review period, the GoodPointe project team will internally discuss the results of the repeat surveys. Based on the results of this quality control review, our project engineer will apply corrective action, which will include, but not be limited to, adjustment of the survey/sampling procedures, follow-up training for the distress type/severity levels involved, and, possible rotation/replacement of raters.

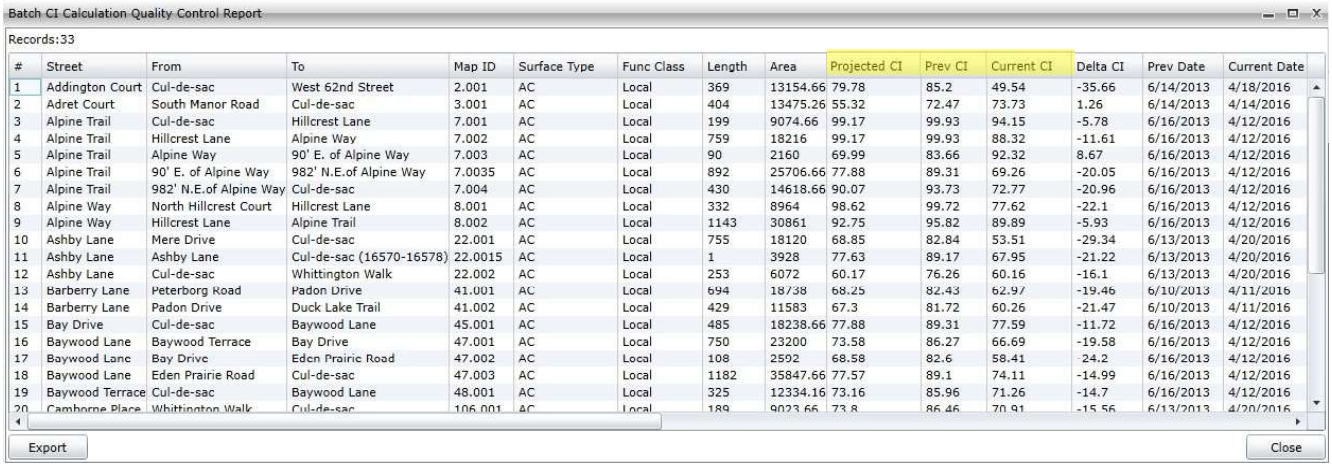
ICON QUALITY CONTROL REPORT

Over the past twenty-five years, we have developed and have continually refined our Infrastructure CONsultant (ICON) Pavement Management System (PMS) software in coordination with our active ICON user group. A prime example of this is our Quality Control *Batch CI Calculation* report, which enables us to automatically capture and present meaningful QA/QC information to help ensure that the collected system data provides a true representation of the actual pavement conditions in the field.



Once the condition data has been imported into the ICON program, clicking the 'Go' button generates a quality control report spreadsheet which compiles the essential inventory, condition, and latest paving project history information for each roadway section in the batch.

The condition data included in this report includes the: Current PCI (i.e. the PCI from the current survey); Previous PCI (i.e. the PCI from the most recent, previous survey), and Projected PCI (i.e. the expected PCI based on the pavement performance curve established within the ICON program.



Batch CI Calculation Quality Control Report

Records:33

#	Street	From	To	Map ID	Surface Type	Func Class	Length	Area	Projected CI	Prev CI	Current CI	Delta CI	Prev Date	Current Date
1	Addington Court	Cul-de-sac	West 62nd Street	2.001	AC	Local	369	13154.66	79.78	85.2	49.54	-35.66	6/14/2013	4/18/2016
2	Adret Court	South Manor Road	Cul-de-sac	3.001	AC	Local	404	13475.26	55.32	72.47	73.73	1.26	6/14/2013	4/14/2016
3	Alpine Trail	Cul-de-sac	Hillcrest Lane	7.001	AC	Local	199	9074.66	99.17	99.93	94.15	-5.78	6/16/2013	4/12/2016
4	Alpine Trail	Hillcrest Lane	Alpine Way	7.002	AC	Local	759	18216	99.17	99.93	88.32	-11.61	6/16/2013	4/12/2016
5	Alpine Trail	Alpine Way	90' E. of Alpine Way	7.003	AC	Local	90	2160	69.99	83.66	92.32	8.67	6/16/2013	4/12/2016
6	Alpine Trail	90' E. of Alpine Way	982' N.E.of Alpine Way	7.0035	AC	Local	892	25706.66	77.88	89.31	69.26	-20.05	6/16/2013	4/12/2016
7	Alpine Trail	982' N.E.of Alpine Way	Cul-de-sac	7.004	AC	Local	430	14618.66	90.07	93.73	72.77	-20.96	6/16/2013	4/12/2016
8	Alpine Way	North Hillcrest Court	Hillcrest Lane	8.001	AC	Local	332	8964	98.62	99.72	77.62	-22.1	6/16/2013	4/12/2016
9	Alpine Way	Hillcrest Lane	Alpine Trail	8.002	AC	Local	1143	30861	92.75	95.82	89.89	-5.93	6/16/2013	4/12/2016
10	Ashby Lane	Mere Drive	Cul-de-sac	22.001	AC	Local	755	18120	68.85	82.84	53.51	-29.34	6/13/2013	4/20/2016
11	Ashby Lane	Ashby Lane	Cul-de-sac (16570-16578)	22.0015	AC	Local	1	3928	77.63	89.17	67.95	-21.22	6/13/2013	4/20/2016
12	Ashby Lane	Cul-de-sac	Whittington Walk	22.002	AC	Local	253	6072	60.17	76.26	60.16	-16.1	6/13/2013	4/20/2016
13	Barberry Lane	Peterborg Road	Padon Drive	41.001	AC	Local	694	18738	68.25	82.43	62.97	-19.46	6/10/2013	4/11/2016
14	Barberry Lane	Padon Drive	Duck Lake Trail	41.002	AC	Local	429	11583	67.3	81.72	60.26	-21.47	6/10/2013	4/11/2016
15	Bay Drive	Cul-de-sac	Baywood Lane	45.001	AC	Local	485	18238.66	77.88	89.31	77.59	-11.72	6/16/2013	4/12/2016
16	Baywood Lane	Baywood Terrace	Bay Drive	47.001	AC	Local	750	23200	73.58	86.27	66.69	-19.58	6/16/2013	4/12/2016
17	Baywood Lane	Bay Drive	Eden Prairie Road	47.002	AC	Local	108	2592	68.58	82.6	58.41	-24.2	6/16/2013	4/12/2016
18	Baywood Lane	Eden Prairie Road	Cul-de-sac	47.003	AC	Local	1182	35847.66	77.57	89.1	74.11	-14.99	6/16/2013	4/12/2016
19	Baywood Terrace	Cul-de-sac	Baywood Lane	48.001	AC	Local	325	12334.16	73.16	85.96	71.26	-14.7	6/16/2013	4/12/2016
20	Camborne Place	Whittington Walk	Cul-de-sac	106.001	AC	Local	189	9023.66	73.8	86.46	70.91	-15.56	6/13/2013	4/20/2016

Export Close

In the event that there is significant amount of variation between the 'Today's Projected PCI' and the latest PCI, we can perform a follow-up check on the PCI survey and/or consider a recalibration of the pavement performance curve for the indicated combination (of surface type, functional class and structural strategy).

In the event that there is significant amount of variation between the 'Previous PCI' and the 'Current PCI' for the amount of time elapsed between the two surveys, then these results can be flagged for review with the City and/or further follow-up action.

PROPOSED PAVEMENT CONDITION SURVEY METHODLOGY

The digital image data will be used to facilitate a quantitative pavement condition survey, in which the various pavement distresses will be digitally measured from the data collected in the survey.

The required surface condition assessment for this project will be based upon the standard survey distress definition as specified in the methodology of ASTM 6433-11, by the American Society for Testing and Materials (ASTM). The assessment will provide a calculated Pavement Condition Index (PCI) for each pavement management sample and inventory section (e.g. per street block) evaluated in the survey.

For the bituminous pavements within the selected area of evaluation, the following pavement surface condition distresses and their related quantities will be recorded:

- **Alligator Cracking**
- **Bleeding**
- **Block Cracking**
- **Bumps and Sags**
- **Corrugation**
- **Depression**
- **Edge Cracking**
- **Joint Reflection Cracking**
- **Lane/Shoulder Drop Off**
- **Long. & Trans. Cracking**
- **Patching**
- **Polished Aggregate**
- **Potholes**
- **Railroad Crossing**
- **Rutting**
- **Shoving**
- **Slippage Cracking**
- **Swell**
- **Weathering/ Raveling**

Any Portland Cement Concrete (PCC) pavements located within the selected project area will have the following pavement surface condition distresses and their related quantities recorded:

- **Blow up/ Buckling**
- **Corner Break**
- **Divided Slab**
- **Durability Crack**
- **Faulting**
- **Joint Seal**
- **Lane/Shoulder Drop Off**
- **Linear Cracking**
- **Patching (Large)**
- **Patching (Small)**
- **Polished Aggregate**
- **Popouts**
- **Pumping**
- **Punchout**
- **Railroad Crossing**
- **Scaling**
- **Shrinkage**
- **Spalling Corner**
- **Spalling Joint**

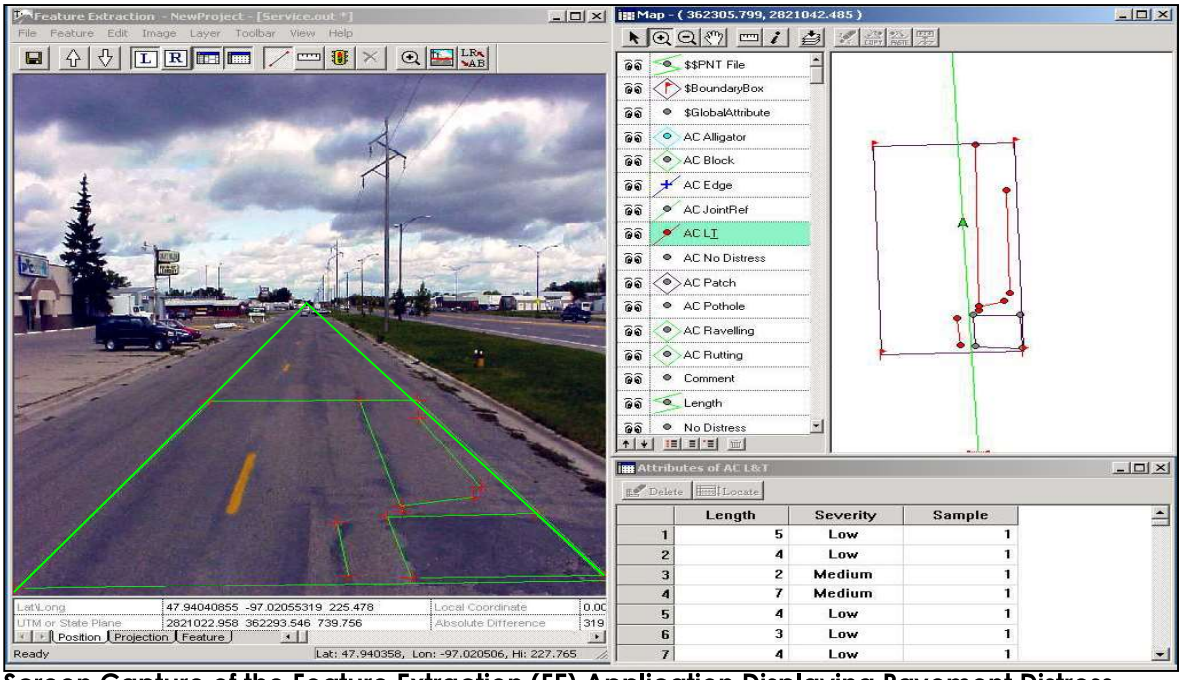
Using our proprietary feature extraction software, the measured distress data is then registered in an underlying relational database along with its corresponding GPS (xyz) coordinates. Utilizing the existing link between the City pavement management system and GIS, the resulting pavement condition data may then be linked and imported into the City's pavement management database for PCI calculation.

Traffic and Safety

Field data collection will be performed conforming to all traffic laws and will adhere to all traffic control and safety related procedures deemed necessary by the Client for the protection of the public personnel and our crew members. The GPSVision™ system is equipped with flashing amber lights that are readily visible from the front, sides and rear of the vehicle. The GPSVision™ van is able operate at traffic speeds and there is no unnecessary stopping or blocking of traffic during operation.

With the assistance of client-supplied data and GIS maps, we will develop an efficient general drive plan and schedule. Based on the general drive plan and the previous data collection status, the field data collection team will update the daily drive plan.

The data collection crew will operate the GPSVision™ van according to the daily drive and operational plan. The survey continues following the electronic map that shows previous day survey progress against the Client-supplied electronic maps. Blocked road sections, construction-zones, detours and other diversions from the correct travel lane are examples of events that can be marked and can be excluded from the calculations in the final deliverable tables.



Screen Capture of the Feature Extraction (FE) Application Displaying Pavement Distress

GoodPointe will import the pavement condition data that is collected in this project into a dedicated ICON Pavement Management System for the City which is hosted at our data center on our Amazon Web Services (AWS) Cloud Server.

The City's ICON program will be used to batch calculate the PCI for the distress data collected in this project.

Within the ICON system we can set up an SQL query/online data service to push ICON system data (e.g. the Today's Calculated PCI, latest structural- and/or non-structural paving project information, etc.) to other third-party systems (e.g. Beehive, ArcGIS Server) to consume the pavement management data.

Additionally, the City will be able to use the robust budget analysis scenario functionality of ICON to run multi-year scenarios and to track the recommended CIP/maintenance, repair, and rehabilitation plan in the City's Beehive Management System.

OTHER DATA TO BE EXTRACTED IN THIS PROJECT

In addition to collecting PCI data in this project, we will also extract the following from the collected set of ROW digital imagery data:

1. **Roadway Pavement Width** (e.g. pavement edge to pavement edge, measured to the nearest tenth of a foot, rounded to the nearest foot);
2. **Curb & Gutter Inventory** (e.g. yes/no/partial extent of the primary curb type present on the roadway section). The list of curb attributes to be extracted will be developed with, confirmed/finalized by the City.
3. **Shoulder Width** (e.g. if a shoulder is present, the material type (gravel, AC) and total width will be measured; if no shoulder is present, a rating of 'none' will be recorded).

Our high resolution images enable zooming to a feature for a closer look, to extract information

TASK 2. ICON SOFTWARE LICENSE

Introduction

The InfrastructureCONsultant (ICON) Infrastructure Management System is a browser-based, relational database management system (RDBMS) that you can customize to manage and track the economic condition of your physical infrastructure, including: pavements, pavement markings, signs, signals, intersection data, storm sewers, sanitary sewers, water main system, park assets, service requests/work orders, mobile (AVL) assets, and any other miscellaneous infrastructure assets located in your right of way.

For this project we are proposing the implementation of the following module:

- Pavement Management Module

Software Licensing

The ICON Client Access License (CAL) allows for the authorized number of concurrent users to simultaneously access the ICON software.

Based upon the requirements specified for this project, a five (5) CAL license is recommended, to simultaneously enable five (5) concurrent users to be logged into and working in a given module of the ICON system on a per module basis. For example, twenty (20) user accounts could be setup in the system, but with a concurrent user license of five (5) users, only five (5) of the twenty (20) users will be able to log into and use a given ICON software module, simultaneously. Additional CALs may be purchased in five (5) CAL license packages on a per module basis, as the City's needs dictate in the future.

TASK 3. ICON STANDARD SUPPORT AGREEMENT

To promote the long-term effectiveness of your ICON infrastructure management system, GoodPointe Technology has established an annual maintenance agreement for the ICON software. The value of this support plan is unmatched by any of our competitors and has been developed to answer any questions or solve any errors you may encounter related to the operation of the ICON software.

With the purchase of the maintenance agreement, the City will receive:

- Unlimited technical support for one named user per module;
- Annual software maintenance and support via telephone or on-site visits, if necessary, between the hours of 9:00 am to 5:00 pm, (CST) Monday through Friday;
- Updates/enhancements to the ICON software during the term of the agreement;
- On-line support via email (support@goodpointe.com) , the GoodPointe Technology website (www.goodpointe.com), or the GoodPointe Technology FTP site (ftp://www.goodpointe.com); and,
- Training on infrastructure management system-related topics and system enhancements up to twice a year at our User Group meeting workshops held at our headquarters in St. Paul, Minnesota.

Response Plan
The general process for the support plan covered under the maintenance agreement is to respond to and resolve all questions or concerns immediately. In the rare instance when a staff member is not available, a response will be given within 24 hours. Usually these calls can be resolved either over the telephone or through e-mail.

In the rare instance when your support issues cannot be resolved over the telephone or through e-mail, GoodPointe Technology will arrange to make an onsite visit to your agency to correct the problem, at no cost to the City if it is a residual error (bug) in the ICON program. If the error is due to reasons beyond GoodPointe's control (e.g. user-introduced error or network administration error), then GoodPointe will work with the City to determine a mutually agreeable remedy and estimated cost to provide the solution.

The agreement also offers modem support, provided your agency has compatible communication software (e.g. VPN). This method of support allows both your agency and our staff more direct contact, quicker response time, and greater flexibility.

Authorized Period of Coverage
The maintenance agreement will span the calendar year and will require renewal on an annual basis, with the corresponding agreement letter to be sent to the City in early November of each year.

Authorizing Additional Users For ICON Software Support
Under this agreement, the City is to identify one primary user of the software, per module, to serve as the administrative contact to distribute technical information back to other users of the ICON program at the City. Additional ICON users may be authorized to receive ICON software support from GoodPointe Technology, on a per-user/per support year basis, under the terms specified in this agreement.

NOTE: The first year maintenance fee is to be prorated based upon the date of installation/activation of the City's ICON system.

The Digital Democracy of the ICON User Group

How it Works

As an authorized user of the ICON program, the County would become a member in the ICON User Group network, with 100 votes per ICON module purchased.

During the year, GoodPointe will collect user suggested ideas to enhance existing system features and/or to develop new system features. On a semi-annual basis these enhancements are reviewed and authorized by an authorized user vote at our ICON™ User Group Meetings or by online communications (usually email).

Development projects are prioritized for future development covered under the maintenance plan of the ICON™ program. These meetings are held at conference locations in the Minneapolis/St. Paul metropolitan areas and at rotating ICON™ user facilities.

Benefits

These meetings address our users' ever-evolving system needs and keeps us focused on providing an ICON™ system that is relevant and maintainable to our clients. It also promotes an energetic user community that is more willing to share their great ideas for improving the system for the benefit of the larger ICON™ user group community.

We challenge any of our competitors to come up with a better development model.

TASK 4. ICON PREMIUM CONSULTING PACKAGE

GoodPointe has developed a premium support agreement for the ICON program to help our clients to generate results with the program. Here are some value-added analysis ideas that could be performed under the ICON Premium Consulting Package Option:

- Assist the City with the establishment of the City asset inventory (e.g. attributing the inventory (from/to) termini for the City roadway network). NOTE: currently the source data for this project does not include the from/to descriptions for each roadway segment.
- Transfer and/or update the pre-existing geocode link/asset data from the City's legacy and/or third-party database system(s).
- Provide onsite or online ICON system training for City staff designated to work with the system.
- Data entry of maintenance projects performed in recent years, registering the improved condition into the ICON database.
- Receive and enter the City's Proposed Capital Improvement Projects (CIP List) and proposed project costs into the Predetermined Plan of ICON.
- Update the ICON program to reflect the City's current asset management policies, paving strategies, application parameters, unit costs, etc.
- Review/Update the pavement performance curves to be loaded in ICON based on actual City pavement performance data.
- Use the ICON Budget Analysis Module to run multiple, multi-year projections (1 to 75 years into the future) to document the projected average network condition and deferred maintenance backlog results, based on the data supplied in above items.
- Document the Trends in Pavement Condition, queried out of the historical database tables of ICON.
- Include the scenario results run in an executive summary report.
- Generate GIS mapping data and/or PowerPoint presentation materials for elected officials.

Note:

The above items are offered as a preliminary suggestion of work objectives for the City under this project. GoodPointe will work with the City to define/refine the set of deliverables under this task. GoodPointe will provide an ongoing report of the consulting effort provided under this task throughout the duration of the project. Out of pocket expenses (e.g. billable project mileage ($0.75/mile) will be billed separately.

F. PROJECT SCHEDULE

- **Field Data Collection (Mid-October 2016)**
- **PCI Data Extraction/Delivery (November 2016 – December 2016)**
- **Establishment of ICON Pavement Management System Platform (January 2017)**

The above is offered as a preliminary schedule suggestion for the City's consideration and can be adjusted to better meet the City's schedule requirements.

G. COST PROPOSAL

A fee schedule has been included on the following page of this proposal.

Fee Schedule

September 1, 2016

Asset Management Consultation Services for Lake Elmo, Minnesota

Exhibit A.1

Task Description	Units	Quantity	Rate	Optional	Estimated Cost
1. Citywide Pavement Condition Assessment & Digital Image Collection					
ASTM Pavement Condition Index (PCI) Survey	Centerline Miles	70	$250		$17,500
ICON Implementation Network Survey Discount	Discount	1	-$3,500		-$3,500
Extract street width and curb type/presence	Centerline Miles	70	$10		$700
Digital Image Option: Delivery of geo-referenced JPG images hotlinked to ArcGIS shapefile	Centerline Miles	70	$25	$1,750	
				$ 1,750	**$14,700**
2. ICON Software License					
ICON Pavement Management (Pavement) Module	5 CAL License	1	$2,995		$2,995
Subtotal:				**$ -**	**2,995**
3. ICON Standard Support Agreement					
ICON Pavement Management (Pavement) Module	Support Year	1	$1,750		$1,750
Cost to Authorize Additional Users to Recive Technical Support (per user/per module/per year)	User	1	$250		
Subtotal:				**$ -**	**$1,750**
4. ICON Premium Consulting Agreement					
Options:					
Provide value-added consulting services on an hourly, cost-plus basis	Per Hour	TBD	$125		
Ten (10) Hour Agreement to cover value-added services (training, etc.)	10 Hour Package	10	$99	$990	
Twenty (20) Hour Agreement to cover value-added services (training, etc.)	20 Hour Package	20	$86	$1,720	
Forty (40) Hour Agreement to cover value-added services (training, etc.)	40 Hour Package	40	$68	$2,720	
Eighty (80) Hour Agreement to cover value-added services (training, etc.)	80 Hour Package	80	$49	$3,920	
Subtotal:					**$0**
Option 1. PCI Survey (no ICON software):					**$18,200**
Option 2. PCI Survey and ICON Software-Year 1 (2016 Cost):					**$17,695**
Option 2. ICON Standard Support-Year 2 (2017 Cost):					**$1,750**
Option 2. Total Cost (2016 and 2017):					**$19,445**
Option to include delivery of geo-referenced digital images:					**$1,750**