

DISTRICT # All

VILLAGE OF LOMBARD
REQUEST FOR BOARD OF TRUSTEES ACTION
For Inclusion on Board Agenda

 X Resolution or Ordinance (Blue) _____ Waiver of First Requested

Recommendations of Boards, Commissions & Committees (Green)
Other Business (Pink)

TO: PRESIDENT AND BOARD OF TRUSTEES

FROM: Scott Niehaus, Village Manager

DATE: July 7, 2017 (COW) (B of T) **Date:** July 20, 2017

TITLE: Pavement Management -Pavement Inventory

SUBMITTED BY: David Gorman, P.E., Assistant Director of Public Works 

BACKGROUND/POLICY IMPLICATIONS:

The purpose of the contract is to perform a baseline inventory of all Village owned streets. This will include identifying and inventorying pavement distresses and loading data into the Village's Asset Management System. A report about the roadway network, related to traffic class, pavement type, condition will be submitted. Various budget and condition scenarios will be analyzed and included in the report.

FISCAL IMPACT/FUNDING SOURCE:

Total Contract Amount: \$57,700.00
Total CIP Budget Amount: N/A
NWS Project Number: RM PROG 28
Account: MFT 420.730.730.75420

Review (as necessary):

Village Attorney X _____	Date _____
Finance Director X _____	Date _____
Village Manager X _____	Date _____

NOTE: All materials must be submitted to and approved by the Village Manager's Office by 12:00 noon, Wednesday, prior to the Agenda Distribution.



To: Scott Niehaus, Village Manager
Through: Carl Goldsmith, Director of Public Works *NY*
From: David Gorman, P.E., Assistant Director of Public Works
Date: July 07, 2017
Subject: Pavement Management – Pavement Inventory

Attached please find a resolution, Motor Fuel Tax Resolution and Motor Fuel Authorization along with a contract with an attached scope of work. These documents relate to contractual services for performing a roadway condition assessment of Village streets and funding of that contact.

Background

The Department of Public Works implemented an Asset Management System in March of 2016. Asset Management is a function within the Department that spans all infrastructure asset managing divisions. Asset Management supplements Geographic Information System (GIS) beyond making maps and illustrations, it takes GIS to the next level by enabling users to not only visualize assets but to also be able to catalog and analyze those assets. The integration of spatial information into a record-based system enables staff to examine and establish performance measurement parameters, leading to an improved capital planning and budgeting process.

One critical asset for the Village is its roadways. Currently the Engineering Division utilizes software that is over twenty years old to catalog and assess pavements. The software serves as a guide to Capital Planning and Budgeting, but cannot be readily integrated into the new Asset Management software (Cartegraph).

Decision

The Engineering Division has over the past years wished to have professional pavement engineers and formally trained pavement raters evaluate the Village's pavement network. By having this service, a reliable and accurate baseline condition for all pavements can be established. Many firms provide such services, however in discussions with other Municipal professionals, data integration into software outside of the vendors own, is sometimes difficult, time consuming and in the worst case ineffective. Cartegraph recently established an asset data collection group to assist its customers with the data gathering and input process. Village staff met with a Cartegraph representative and found their qualifications and data collection methods acceptable. Another proposal was sought out from an additional firm to verify that the fees were inline with market values. Cartegraph's fee was within a few hundred dollars of the other quote. However, as stated above, using another vendor introduces the variable of data transfer and potential quality assurance/quality control issues.

Motor Fuel Tax monies will be utilized for these professional services. The scope and fee were negotiated with Cartegraph and agreed to by both parties for a not-to-exceed fee of \$57,700.00

Please present this agreement and resolution to the President and Board of Trustees for their review at their regular meeting of July 20, 2017. If approved, please return four original signed copies to Public Works-Engineering for further processing.

**RESOLUTION
R 42-17**

**A RESOLUTION AUTHORIZING SIGNATURE OF
PRESIDENT AND CLERK ON AN AGREEMENT**

WHEREAS, the Corporate Authorities of the Village of Lombard have received an Agreement between the Village of Lombard, and Cartegraph Systems Inc. regarding Pavement Inventory and Evaluation Services as attached hereto and marked Exhibit "A", and

WHEREAS, the Corporate Authorities deem it to be in the best interest of the Village of Lombard to approve such agreement.

NOW, THEREFORE, BE IT RESOLVED BY THE PRESIDENT AND BOARD OF TRUSTEES OF THE VILLAGE OF LOMBARD, DU PAGE COUNTY, ILLINOIS as follows:

SECTION 1: That the Village President be and hereby is authorized to sign on behalf of the Village of Lombard said agreement as attached hereto.

SECTION 2: That the Village Clerk be and hereby is authorized to attest said agreement as attached hereto.

Adopted this 20th day of July, 2017.

Ayes: _____

Nays: _____

Absent: _____

Approved this 20th day of July, 2017.

**Keith Giagnorio
Village President**

ATTEST:

**Sharon Kuderna
Village Clerk**

Municipality Lombard	 Illinois Department of Transportation Preliminary Engineering Services Agreement For Motor Fuel Tax Funds	C O N S U L T A N T	Name Cartegraph Systems, Inc.
Township Milton & York			Address 3600 Diaitial Drive
County DuPage			City Dubuque
Section 17-00159-00-EG			State Iowa

THIS AGREEMENT is made and entered into this 20th day of July, 2017 between the above Local Agency (LA) and Consultant (ENGINEER) and covers certain professional engineering services in connection with the improvement of the above SECTION. Motor Fuel Tax Funds, allotted to the LA by the State of Illinois under the general supervision of the State Department of Transportation, hereinafter called the "DEPARTMENT", will be used entirely or in part to finance ENGINEERING services as described under AGREEMENT PROVISIONS.

Section Description

Name Entire Village roadway network

Route _____ Length 148.65 Mi. 784898.00 FT (Structure No. _____)

Termini Entire Village roadway network - refer to attached map

Description:
Performing a pavement network inventory. See attached proposal.

Agreement Provisions

The Engineer Agrees,

1. To perform or be responsible for the performance of the following engineering services for the LA, in connection with the proposed improvements herein before described, and checked below:
 - a. Make such detailed surveys as are necessary for the preparation of detailed roadway plans
 - b. Make stream and flood plain hydraulic surveys and gather high water data, and flood histories for the preparation of detailed bridge plans.
 - c. Make or cause to be made such soil surveys or subsurface investigations including borings and soil profiles and analyses thereof as may be required to furnish sufficient data for the design of the proposed improvement. Such investigations are to be made in accordance with the current requirements of the DEPARTMENT.
 - d. Make or cause to be made such traffic studies and counts and special intersection studies as may be required to furnish sufficient data for the design of the proposed improvement.
 - e. Prepare Army Corps of Engineers Permit, Department of Natural Resources-Office of Water Resources Permit, Bridge waterway sketch, and/or Channel Change sketch, Utility plan and locations, and Railroad Crossing work agreements.
 - f. Prepare Preliminary Bridge design and Hydraulic Report, (including economic analysis of bridge or culvert types) and high water effects on roadway overflows and bridge approaches.
 - g. Make complete general and detailed plans, special provisions, proposals and estimates of cost and furnish the LA with five (5) copies of the plans, special provisions, proposals and estimates. Additional copies of any or all documents, if required, shall be furnished to the LA by the ENGINEER at his actual cost for reproduction.
 - h. Furnish the LA with survey and drafts in quadruplicate of all necessary right-of-way dedications, construction easement and borrow pit and channel change agreements including prints of the corresponding plats and staking as required.

Note: Four copies to be submitted to the Regional Engineer

- i. Assist the LA in the tabulation and interpretation of the contractors' proposals
 - j. Prepare the necessary environmental documents in accordance with the procedures adopted by the DEPARTMENT's Bureau of Local Roads & Streets.
 - k. Prepare the Project Development Report when required by the DEPARTMENT.
- (2) That all reports, plans, plats and special provisions to be furnished by the ENGINEER pursuant to the AGREEMENT, will be in accordance with current standard specifications and policies of the DEPARTMENT. It is being understood that all such reports, plans, plats and drafts shall, before being finally accepted, be subject to approval by the LA and the DEPARTMENT.
- (3) To attend conferences at any reasonable time when requested to do so by representatives of the LA or the Department.
- (4) In the event plans or surveys are found to be in error during construction of the SECTION and revisions of the plans or survey corrections are necessary, the ENGINEER agrees that he will perform such work without expense to the LA, even though final payment has been received by him. He shall give immediate attention to these changes so there will be a minimum delay to the Contractor.
- (5) That basic survey notes and sketches, charts, computations and other data prepared or obtained by the Engineer pursuant to this AGREEMENT will be made available, upon request, to the LA or the DEPARTMENT without cost and without restriction or limitations as to their use.
- (6) That all plans and other documents furnished by the ENGINEER pursuant to this AGREEMENT will be endorsed by him and will show his professional seal where such is required by law.

The LA Agrees,

1. To pay the ENGINEER as compensation for all services performed as stipulated in paragraphs 1a, 1g, 1i, 2, 3, 5 and 6 in accordance with one of the following methods indicated by a check mark:
- a. A sum of money equal to _____ percent of the awarded contract cost of the proposed improvement as approved by the DEPARTMENT.
 - b. A sum of money equal to the percent of the awarded contract cost for the proposed improvement as approved by the DEPARTMENT based on the following schedule:

Schedule for Percentages Based on Awarded Contract Cost

Awarded Cost	Percentage Fees	
Under \$50,000	_____	(see note)
	_____	%
	_____	%
	_____	%
	_____	%
	_____	%

Note: Not necessarily a percentage. Could use per diem, cost-plus or lump sum.

2. To pay for services stipulated in paragraphs 1b, 1c, 1d, 1e, 1f, 1h, 1j & 1k of the ENGINEER AGREES at actual cost of performing such work plus _____ percent to cover profit, overhead and readiness to serve - "actual cost" being defined as material cost plus payrolls, insurance, social security and retirement deductions. Traveling and other out-of-pocket expenses will be reimbursed to the ENGINEER at his actual cost. Subject to the approval of the LA, the ENGINEER may sublet all or part of the services provided under the paragraph 1b, 1c, 1d, 1e, 1f, 1h, 1j & 1k. If the ENGINEER sublets all or part of this work, the LA will pay the cost to the ENGINEER plus a five (5) percent service charge.

"Cost to Engineer" to be verified by furnishing the LA and the DEPARTMENT copies of invoices from the party doing the work. The classifications of the employees used in the work should be consistent with the employee classifications for the services performed. If the personnel of the firm, including the Principal Engineer, perform routine services that should normally be performed by lesser-salaried personnel, the wage rate billed for such services shall be commensurate with the work performed.

3. That payments due the ENGINEER for services rendered in accordance with this AGREEMENT will be made as soon as practicable after the services have been performed in accordance with the following schedule:
 - a. Upon completion of detailed plans, special provisions, proposals and estimate of cost - being the work required by paragraphs 1a through 1g under THE ENGINEER AGREES - to the satisfaction of the LA and their approval by the DEPARTMENT, 90 percent of the total fee due under this AGREEMENT based on the approved estimate of cost.
 - b. Upon award of the contract for the improvement by the LA and its approval by the DEPARTMENT, 100 percent of the total fee due under the AGREEMENT based on the awarded contract cost, less any amounts paid under "a" above.

By Mutual agreement, partial payments, not to exceed 90 percent of the amount earned, may be made from time to time as the work progresses.

4. That, should the improvement be abandoned at any time after the ENGINEER has performed any part of the services provided for in paragraphs 1a, through 1h and prior to the completion of such services, the LA shall reimburse the ENGINEER for his actual costs plus _____ percent incurred up to the time he is notified in writing of such abandonment -"actual cost" being defined as in paragraph 2 of THE LA AGREES.
5. That, should the LA require changes in any of the detailed plans, specifications or estimates except for those required pursuant to paragraph 4 of THE ENGINEER AGREES, after they have been approved by the DEPARTMENT, the LA will pay the ENGINEER for such changes on the basis of actual cost plus _____ percent to cover profit, overhead and readiness to serve -"actual cost" being defined as in paragraph 2 of THE LA AGREES. It is understood that "changes" as used in this paragraph shall in no way relieve the ENGINEER of his responsibility to prepare a complete and adequate set of plans and specifications.

It is Mutually Agreed,

1. That any difference between the ENGINEER and the LA concerning their interpretation of the provisions of this Agreement shall be referred to a committee of disinterested parties consisting of one member appointed by the ENGINEER, one member appointed by the LA and a third member appointed by the two other members for disposition and that the committee's decision shall be final.
2. This AGREEMENT may be terminated by the LA upon giving notice in writing to the ENGINEER at his last known post office address. Upon such termination, the ENGINEER shall cause to be delivered to the LA all surveys, permits, agreements, preliminary bridge design & hydraulic report, drawings, specifications, partial and completed estimates and data, if any from traffic studies and soil survey and subsurface investigations with the understanding that all such material becomes the property of the LA. The ENGINEER shall be paid for any services completed and any services partially completed in accordance with Section 4 of THE LA AGREES.
3. That if the contract for construction has not been awarded one year after the acceptance of the plans by the LA and their approval by the DEPARTMENT, the LA will pay the ENGINEER the balance of the engineering fee due to make 100 percent of the total fees due under this AGREEMENT, based on the estimate of cost as prepared by the ENGINEER and approved by the LA and the DEPARTMENT.
4. That the ENGINEER warrants that he/she has not employed or retained any company or person, other than a bona fide employee working solely for the ENGINEER, to solicit or secure this contract, and that he/she has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the ENGINEER, any fee, commission, percentage, brokerage fee, gifts or any other consideration, contingent upon or resulting from the award or making of this contract. For Breach or violation of this warranty the LA shall have the right to annul this contract without liability.

IN WITNESS WHEREOF, the parties have caused the AGREEMENT to be executed in quadruplicate counterparts, each of which shall be considered as an original by their duly authorized officers.

Executed by the LA:

Village of Lombard of the
(Municipality/Township/County)

ATTEST:

State of Illinois, acting by and through its

By _____

By _____

Clerk

Title _____

(Seal)

Executed by the ENGINEER:

Cartegraph Systems, Inc.



ATTEST:

By Mary Jo Smock

By [Signature] Tim McCool

Title JA Notary

Title Director of Sales

Approved

Date

Department of Transportation

Regional Engineer



Resolution for Improvement Under the Illinois Highway Code



Resolution Number	Resolution Type	Section Number
R42-17	Original	17-00159-00-EG

BE IT RESOLVED, by the President and Board of Trustees of the Village of Lombard Illinois that the following described street(s)/road(s)/structure be improved under the Illinois Highway Code. Work shall be done by Contract

For Roadway/Street improvements:

Name of Street(s)/Road(s)	Length (miles)	Route	From	To
+ Entire Village Roadway Network	148.65			

For Structures:

Name of Street(s)/Road(s)	Existing Structure No.	Route	Location	Feature Crossed
+				

BE IT FURTHER RESOLVED,

1. That the proposed improvement shall consist of

Performing a pavement network inventory including; Pavement Surface Distress Inspection, Pavement Roughness Inspection, Pavement Condition Data Load (into existing asset/pavement management system), Budget and Condition Scenario Analysis and a Pavement Management Program Report.

2. That there is hereby appropriated the sum of Fifty Seven Thousand Seven Hundred

Dollars (\$57,700.00) for the improvement of said section from the Local Public Agency's allotment of Motor Fuel Tax funds.

BE IT FURTHER RESOLVED, that the Clerk is hereby directed to transmit four (4) certified originals of this resolution to the district office of the Department of Transportation.

I, Sharon Kuderna Village Clerk in and for said Village of Lombard in the State aforesaid, and keeper of the records and files thereof, as provided by statute, do hereby certify the foregoing to be a true, perfect and complete original of a resolution adopted by

President and Board of Trustees of Lombard at a meeting held on July 20, 2017

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal this 20th day of July, 2017

(SEAL)

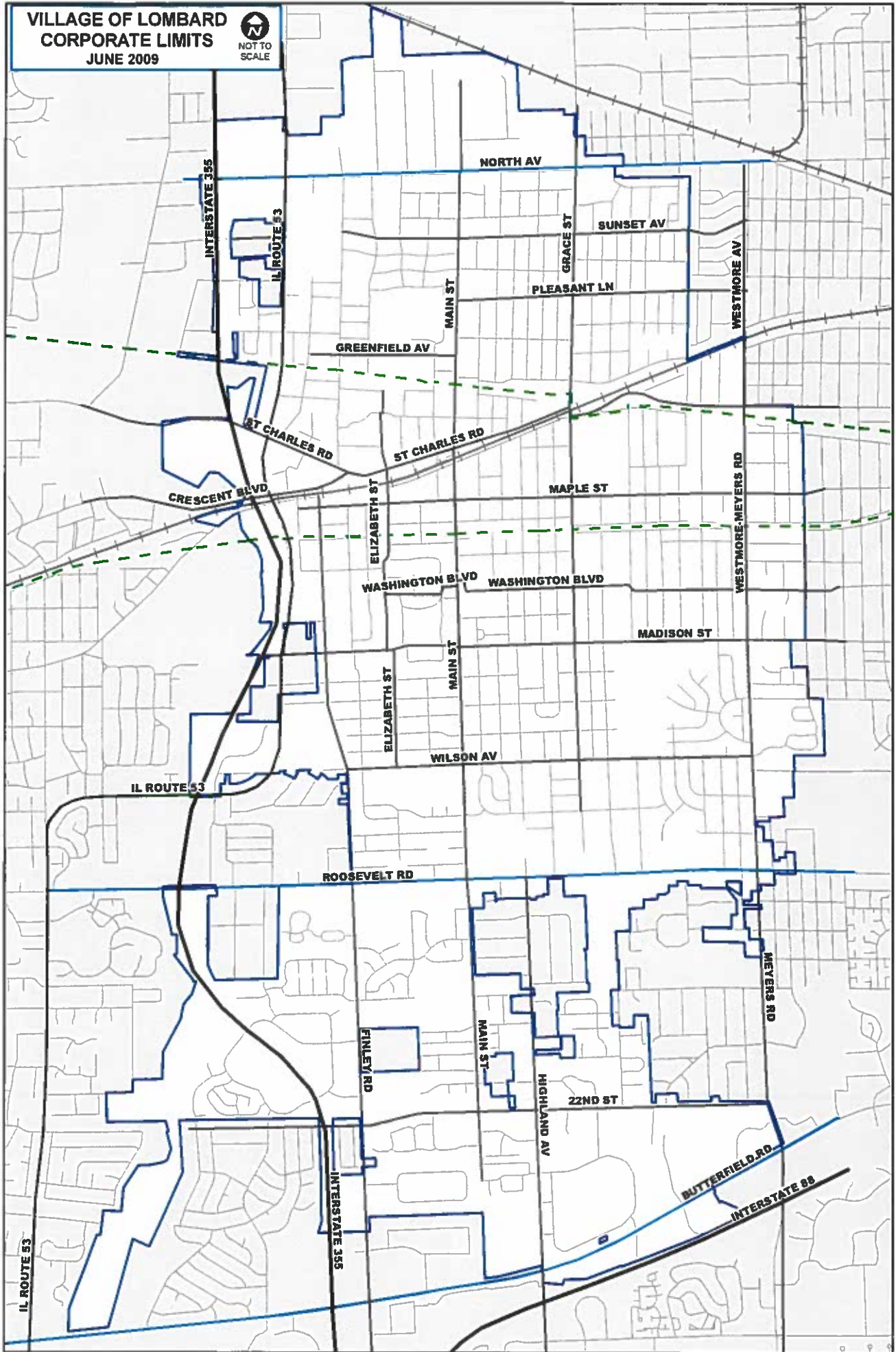
Clerk Signature

Approved

Regional Engineer
Department of Transportation

Date

VILLAGE OF LOMBARD
CORPORATE LIMITS
JUNE 2009



Purchase Agreement

Cartegraph is pleased to present this Purchase Agreement for the implementation of world class technology solutions. This Purchase Agreement is made and entered into between Village of Lombard (hereinafter referred to as "Customer" or "Licensee" and Cartegraph Systems, Inc. (hereinafter referred to as "Cartegraph"). This Purchase Agreement is intended to supplement, clarify, and amend the Master Agreement previously executed between Cartegraph and Customer. In the case that any terms or conditions provided in the Master agreement differ from, are provided in more detail by, or are made irrelevant by the terms and conditions provided in this Purchase Agreement, the terms in this Purchase Agreement shall control. For all terms and conditions not addressed by this Purchase Agreement, the Master Agreement, #MA142 dated October 21, 2015 shall control.

Customer Bill To: Village of Lombard 255 E. Wilson Avenue Lombard, IL 60148 630-620-5712	Customer Ship To: Same
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Investment Summary

Cartegraph's proposed fees for this project are included in the summary below.

Date: May 17, 2017

Purchase Agreement September 29, 2017
Expiration Date:

Purchase #PA549
Agreement
No.:

	Purchase Type	Qty.	Unit Price	Total Price
YEAR 1				
DATA SERVICES				
Data Services	Fixed Fee Service	1	\$57,700.00	\$57,700.00
TOTAL COST				\$57,700.00

NOTES: The pricing listed above does not include applicable sales tax.

Payment Terms and Conditions

In consideration for the Services and Products provided by **Cartegraph** to **Customer**, **Customer** agrees to pay **Cartegraph Software Costs and Professional Service Fees** in U.S. Dollars as described below:

1. **Delivery:** Software Products shall be licensed upon acceptance of this Purchase Agreement. If applicable, Services will be scheduled and delivered upon your acceptance of this Purchase Agreement, which will be considered as your notification to proceed.
2. **Services Scheduling:** Customer agrees to work with **Cartegraph** to schedule Services in a timely manner. All undelivered Services shall expire 365 days from the signing of this Purchase Agreement, unless a delay in the delivery of Data Services is caused by **Cartegraph**, in which case the expiration date for the delivery of Data Services shall be extended a number of days equal to the number of days the delivery of Data Services is delayed by **Cartegraph**. The Force Majeure provision of Addendum C shall also apply to this Purchase Agreement.
3. **Data Services Invoicing:** Invoicing for the Data Services fee shall occur upon the acceptance of this Purchase Agreement and shall be invoiced as follows:
 - a. **Installment 1 due upon commencement of pavement and/or street level mapping services**– 20% of pavement and/or street level mapping services, \$18,900.00.
 - b. **Installment 2 due upon field completion of pavement and/or street level mapping services** – 35% of pavement / street level mapping services, \$16,975.00.
 - c. **Installment 3 due upon completion of AQ/QC Process for Collected Data** – 35% of pavement / street level mapping services, \$16,975.00.
 - d. **Installment 4 due upon final delivery of data** – 10% pavement and/or street level mapping services, \$4,850.00.
4. **Expenses:** In providing the field services included in this Purchase Agreement, **Cartegraph** shall be reimbursed for any reasonable out-of-pocket costs, including, but not limited to, travel, lodging, meals, and cancellation fees. Out-of-pocket expenses are billed based on actual costs incurred and are due separately.
5. **Payment Terms:** Customer shall make all payments in accordance with the Illinois Local Government Prompt Payment Act.

BY EXECUTING THIS PURCHASE AGREEMENT, CUSTOMER ACKNOWLEDGES THAT IT HAS REVIEWED THE TERMS, CONDITIONS, FEES AND CHARGES PROVIDED HEREIN AND IN THE MASTER AGREEMENT, AS WELL AS ANY OTHER EXHIBITS TO THE MASTER AGREEMENT, AND CUSTOMER AGREES TO BE LEGALLY BOUND BY EACH SUCH AGREEMENT.

Cartegraph Systems, Inc.

By  _____
(Signature)

Tim McCool

(Type or print name)

Title Director of Sales

Date 7/5/17

Village of Lombard

By _____
(Signature)

(Type or print name)

Title _____

Date _____

Cartegraph Systems, Inc.
Addendum C - Data Services (Fee for Service)
Cartegraph Data Collection Services – Scope of Work

Description of Data Services

This Addendum C, executed as of May 16, 2017 (the "Effective Date"), and the Purchase Agreement (the "Purchase Agreement"), executed as of the same date hereof, are addendums to that certain Master Agreement #MA142 (the "Master Agreement") between Cartegraph Systems, Inc. ("Cartegraph") and the Village of Lombard ("Customer").

The data services (the "Data Services") listed in the *Investment Summary* of the Purchase Agreement are specific Cartegraph services which will be delivered to the Customer based on the descriptions below and on the terms and conditions and subject to the limitations set forth in this Addendum C, the Purchase Agreement and the Master Agreement. Cartegraph will coordinate with the Customer on service delivery expectations and timeframes.

Cartegraph Data Collection Services – Scope of Work

Cartegraph Data Collection Services include the following:

Project Initiation, Planning, and Management

Project Orientation

The Cartegraph project manager will schedule a remote project orientation meeting with the customer project team. During this meeting the entire project team will review the proposed project work plan, including scope of work, budget, schedule, and deliverables. The meeting may include:

- Introduction of the project team and their respective responsibilities
- Review the scope of work
- Review the work plan and schedule including milestone dates for data review, delivery, and acceptance
- Review the proposed Quality Management Plan (QMP) and expectations
- Information Exchange – (gathering history, background, levels of service measures, decision making framework, and review/discuss all available information and data)
- Identification of the Customer's best practices on pavement/asset management. This component will provide an understanding of project success for both the Customer and Cartegraph team.
- Follow up documentation summarizing discussions and decisions. This shall include meeting minutes, final work plan deliverables, and mutually agreed upon adjustments to scope and delivery timelines.

Regular Progress Updates

Cartegraph will provide Customer with [monthly/bi-weekly] reports on the status of the project progress. The Status Reports may include the following:

- Weekly written digital report

- Major issues faced on field operation, such as accidents or incidents that occurred, health and safety issues, traffic management, and remedial measures taken to resolve these issues
- Quality control and assurance practices
- Results of data validation / control / acceptance measures undertaken

Network Definition and Mapping

Pavement Network Inventory - Build/Define Pavement Database

The first step in a pavement management process is definition of the pavement network. A pavement network is comprised of an inventory of the different physical characteristics of the roadway pavements being managed by the agency. This inventory may either be gathered by estimating the data or physically collecting the required information. The inventory may also be gathered from aerial imagery or publicly available data such as ESRI maps and Google maps. The exact type of inventory information required by an agency depends on what data will be used by the agency to support its management decisions.

The pavement network inventory includes streets within the jurisdiction of that agency that are broken into management sections, typically “block to block” or “intersection to intersection”, and will contain (but not limited to) the items listed in the table below. The “Responsible Party” field identifies the party responsible (Cartegraph or Customer) for providing and populating the information.

Name	Roadway Network Item Description	Responsible Party
Cartegraph ID	Cartegraph generated unique Roadway ID for each roadway section record. Note: Cartegraph will use existing Asset ID if Customer is currently using OMS for pavement management	Cartegraph
Street	Roadway section street name - Cartegraph generated from GIS roadway centerline provided	Cartegraph
Street Back	Cartegraph generated route back street name limit from GIS street centerline provided	Customer
Street Ahead	Cartegraph generated route ahead street name limit from GIS street centerline provided	Customer
Functional Classification	Roadway Traffic Functional Classification - customer desired input i.e. Arterial, Collector, Local.	Customer
Pavement Type	Pavement Surface Type - gathered from Cartegraph field data collection	Cartegraph
Section Length	Roadway Section Length will be gathered from Cartegraph field data collection and/or customer’s GIS street centerline file.	Cartegraph
Pavement Width	Customer required input. <i>Note: Cartegraph can collect or populate this item at an additional cost.</i>	Customer
Average Daily Traffic	Annual daily traffic - customer desired input – “if available”	Customer
Last Construction Date	Customer required input. <i>Note: Cartegraph can estimate the Last Construction Date based on the current condition at an additional cost.</i>	Customer
Owner Jurisdiction	Customer desired input “i.e. State, County, City, Private – if available”	Customer

Task Assumptions:

- a) Customer must provide GIS street centerline identifying the roadway network to be inventoried.

Pavement Condition Assessment

Pavement Surface Distress Inspection

Pavement inspectors will identify pavement distresses utilizing Cartegraph's pavement inspection guidelines based on the American Society for Testing and Materials ASTM D6433-11 *Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys*. This standard is established by the American Society for Testing and Materials and is the industry standard for reporting results of pavement condition assessment.

The evaluation of the pavement surface distress is always based on three components:

- **Type** refers to *'What kind?'* of distress or defect is present on the pavement surface.
- **Severity** is defined as *'How bad is the defect?'* in terms of the measurement or degree of wear associated with the condition.
- **Extent** refers to quantity/percentage or *'How much?'* of the pavement sample area is affected by a particular distress.

Pavement Roughness Inspection

Pavement smoothness is a key factor in determining roadway user satisfaction. To adequately represent drivers' opinions of roadway conditions, Cartegraph uses high-speed road profilers to measure roadway roughness or ride quality.

Cartegraph operates Class 1 (ASTM E950 compliant) ICC high-speed road profilers that calculate an International Roughness Index (IRI). Since its introduction in 1986, IRI has become the road roughness index most commonly used worldwide for evaluating and managing roadway networks and is required for data provided to the United States Department of Transportation's Federal Highway Administration (FHWA). The IRI data is converted to a ride condition index, RCI, so that each section will have a ride score ranging from 1-100. This RCI can then be combined with PCI to produce an overall condition index (OCI) for every roadway section.

Quality Management Plan

Cartegraph has implemented several tasks throughout the data collection and data processing phases to insure the Customer receives accurate data. The following is a list of tasks that make up Cartegraph's Quality Management Plan:

- Mandatory annual pavement rater course and examination on the pavement rating process per the ASTM D6433-11 standard
- Thorough review of the street network shapefile prior to data collection to identify and address any mapping issues that may lead to data collection errors
- Daily equipment calibration
- Daily intra-rater checks during pavement inspection (no less than two pavement inspectors are deployed on every collection project)
- Inter-rater checks on 10 percent of the segments to insure collected data meets acceptance criteria
- Thorough pavement distress data review after data processing

Pavement Management Program Optimization & Deployment

Pavement Condition Data Load

All collected pavement distress data will be loaded into the Customer's database by the Cartegraph team. The pavement distress data will then be used to calculate the pavement condition index (PCI). Upon receiving the program data from Cartegraph, the customer must review and accept all condition data supplied within 60 calendar days, provided no discrepancy or issue is found with the delivered data. Unless the Customer notifies Cartegraph in writing of a discrepancy or issue with the delivered pavement distress data within 60-day period, the Customer will be deemed to have accepted the delivered pavement distress data.

Review gaps in Cartegraph OMS Pavement data

In order to take full advantage of the pavement management system's functionality, and in order for customer staff to have confidence in the system-generated results and recommendations, it is imperative that the program contains the most complete, accurate, and up-to-date network data available.

Cartegraph will conduct a full review of the data available within the pavement management system and provide recommendations for necessary changes.

Cartegraph's review may include the following:

- Basic inventory information, (i.e. Functional Classification, Length, Width, Area, Surface Type, etc.)
- Prediction Groups and Minimum Condition Groups
- Historical condition information, if any
- Status of survey history, if any
- Construction and maintenance history, if any
- Review of maintenance and rehabilitation treatments, unit costs, and protocols

Budget and Condition Scenario Analysis

Multiple funding and target condition scenarios may be analyzed to answer "what-if" questions an agency may have. To determine how much funding is needed, the agency's pavement management system priority programming tools will be utilized to generate alternative plans for various budget stream scenarios. Our team will perform up to five (5) scenario runs based on input from the Customer. Typical funding scenarios may include:

- Existing (current) funding levels
- Do Nothing (No Funding)
- Unlimited funds
- Funding levels required to maintain/ increase/ decrease the OCI/PCI over time
- Funding levels to decrease or eliminate backlog over time

Pavement Management Program Report

Cartegraph's project team will provide a pavement management technical report that shall include:

- **Network Summary Statistics** ~ Summary of roadway network by functional class and pavement type.
- **Condition (Present Status)** ~ listing of every roadway section, latest performance (OCI/PCI), & inspection date.
- **Budget and Condition Scenarios**

Council Board / Agency Presentation

Our team will assist the agency in providing oral presentation of findings and recommendations to the Council, Agency Manager, and/or specific employee groups. The presentation will describe the tasks and deliverables of this project and illustrate the long-term effects that the proposed budget would have on agency streets along with additional funding that may be required for future planning.

Task Assumptions

- a) Presentation includes a PowerPoint presentation and the presentation and associated meeting takes no more than 3 hours.

Overall Scope Assumptions

- Includes one time mobilization to Lombard, IL
- Up to 148 centerline miles of pavement condition data capture on publically accessible and maintained roadways.
- If pavement width is not available, a default value will be determined during the needs assessment

Customer Responsibility

For the duration of the project, the customer will be responsible for the following:

- Appoint a project manager/coordinator to be responsible for all aspects of the project.
- Review scope of work
- Ensure all scheduled meetings are attended by invited staff.
- Approve Project Status Reports
- Authorize project work
- Accept agreed upon deliverables defined in the scope of work
- Consult and partner with the Cartegraph Project Manager on a continuing basis
- Provide leadership on all issues related to the customer, such as policy, organization, staff, technical architecture, data, and current systems.
- Monitor progress of the project, including the review of Cartegraph regular status reports and managing internal resources.

Exclusions

The following service items are not included in the scope of this project:

- Any service items discussed during demonstrations, conference calls, or other events are not included in the scope of this project unless specifically listed herein.

Modifications to the contract shall comply with all Federal, State, and local regulations.

Customer Responsibilities

Customer accepts responsibility for all aspects of project planning, management, and execution not specifically identified as the responsibility of Cartegraph in this Addendum C, the Master Agreement or the Purchase Agreement. Ongoing management of the day-to-day allocation of Customer resources and management of Customer project tasks is the responsibility of Customer. Customer will provide overall guidance and direction for the project and will direct the project accordingly. Further, and with regard to the Cartegraph obligations listed in this Addendum C, Customer understands that it is vital to the success of the project that Customer provides assistance in the following matters:

1. For those services listed under Data Services, Cartegraph personnel will conduct information gathering and evaluation sessions with various Customer users and management. While Cartegraph respects the time and workload of Customer staff, dedicated time on the part of the appropriate Customer resources is necessary to complete these exercises.
2. The Data Installation process requires the assistance of Customer personnel and suitable access to hardware and systems (e.g., security clearance). Customer is required to supervise the Data Installation process while systems are accessible to Cartegraph. All hardware and software, including the Customer's workstation platform and database, is expected to be available, installed, and operating as specified in Cartegraph's System Requirements documentation such that the Data Installation process and the delivery and execution of Cartegraph Data Services will not be impeded. Cartegraph shall not be liable to Customer for any damage sustained to the Customer Database or any data contained therein or any hardware or software of Customer utilized by Cartegraph in connection with the Data Installation, unless intentionally damaged by Cartegraph or caused by negligent or willful and wanton acts of Cartegraph.
3. Customer understands that the successful performance of Data Services depends upon Customer fulfilling its responsibilities, including that Customer will provide all personnel required to achieve a successful implementation.
4. Customer shall install and network its own hardware and communications and ensure these tasks will not affect the timing or delivery of Cartegraph services.
5. Customer will provide Internet access and IT staff support as required. For those services that are web-based, Cartegraph utilizes WebEx Meeting (or similar) technology.
6. Customer agrees to work with Cartegraph to schedule services in a timely manner. All undelivered Data Services shall expire 365 days from execution of this Addendum C, unless a delay in the delivery of Data Services is caused by Cartegraph, in which case the expiration date for the delivery of Data Services shall be extended by a number of days equal to the number of days the delivery of Data Services is delayed by Cartegraph. Upon expiration of services, the project may be cancelled at Cartegraph's discretion.
7. Except for the submission of payment when due, neither Party shall be liable for any failure or delay of performance to the extent that such failure or delay is caused by reason of acts of God, wars, revolution, civil commotion, acts of public enemy, embargo, restraint or hindrance by any governmental or regulatory authority including, without limitation, unfavorable actions or failures to act of or by such authorities, labor difficulties, including without limitation, strikes, slowdowns, picketing or boycotts (involving third parties unrelated to the Party invoking the terms of this Section), or any other circumstances beyond the reasonable control and not involving any fault or negligence of the Delayed Party (each a "Force Majeure Event"). If any such Force Majeure Event occurs, the Party delayed or unable to perform ("Delayed Party"), upon giving prompt notice to the other Party, shall be excused from such performance or non-performance, as the case may be, under this Purchase Agreement on a day-to-day basis during the continuance of such Force Majeure Event (and the other Party shall likewise be excused from performance of its obligations on a day-to-day basis during the same period); provided, however, that the Party so affected shall use commercially reasonable efforts to avoid or remove such Force Majeure Event, and both Parties shall proceed as quickly as possible under the circumstances with the performance of their obligations under this agreement whenever such causes are removed or cease.

Limitation of Liability

Customer acknowledges and agrees that Customer's use or nonuse and any reliance upon the data provided as part of the Data Services is at Customer's own risk, and that no representations or warranties are provided by Cartegraph with respect to the Data Services except as expressly set forth herein and in the Master Agreement. Each party agrees to be responsible for its own liability incurred as a result of its participation in this Agreement.

Appropriations

It is expressly acknowledged that the Customer is a non-home rule municipality operating under limitations imposed by Illinois law." Then, the Village can be referred to as the "Customer" throughout the rest of the provision for the purpose of consistency.. Notwithstanding any other provision of this Agreement, with respect to any financial obligation of the City which may arise under this Agreement in any fiscal year after the year of execution, in the event the budget or other means of appropriation for any such year fails to provide funds in sufficient amounts to discharge such obligation ("**Funding Failure**"), (i) the City shall notify the Company immediately upon discovery of such Funding Failure, (ii) the City shall have the option to terminate this Agreement at such time as the then-existing and available appropriations are depleted; provided that the City shall have satisfied all outstanding payment obligations owed to the Company prior to such termination, and (iii) except as set forth in section (ii) above, neither such Funding Failure nor termination shall constitute a default or breach of this Agreement, including any sub-agreement, attachment, schedule, or exhibit thereto, by the City. As used herein, the term "appropriation" shall mean and include the due adoption of an appropriation ordinance and budget and the approval of a Budget Detail Report (Resource Allocations) which contains an allocation of sufficient funds for the performance of fiscal obligations arising under this Agreement. The funds appropriated for this Agreement are equal to or exceed the Agreement amount for the year in which this Agreement was awarded.

Term

The term of this Addendum C shall commence as of the Effective Date and shall continue for a period of one (1) year (the "**Term**"), unless terminated earlier as provided for in the Purchase Agreement, Master Agreement or this Addendum C..

Not-to-Exceed Proposal

Cartegraph will not exceed the total included in the Purchase Agreement without written approval from Customer. In the event it becomes apparent to Cartegraph that additional service efforts will be needed due to any changes in the scope of this Addendum C or the Purchase Agreement, Cartegraph will notify Customer prior to exceeding the approved efforts and obtain written approval if additional Software or Data Services are required.

[Signatures appear on following page]

BY EXECUTING THIS ADDENDUM C, CUSTOMER ACKNOWLEDGES THAT IT HAS REVIEWED THE TERMS, CONDITIONS, FEES AND CHARGES PROVIDED HEREIN AND IN THE MASTER AGREEMENT AND THE PURCHASE AGREEMENT AS WELL AS ANY OTHER EXHIBITS AND ADDENDUMS TO THE MASTER AGREEMENT, AND CUSTOMER AGREES TO BE LEGALLY BOUND BY EACH SUCH AGREEMENT.

Cartegraph Systems, Inc.

By 
(Signature)

Tim McCool
(Type or print name)

Title Director of Sales

Date 7/5/17

Village of Lombard

By _____
(Signature)

(Type or print name)

Title _____

Date _____