AGREEMENT #17021 FOR ENGINEERING SERVICES

This AGREEMENT is entered into by and between Lake County (County) and RJN Group, Inc., 200 W. Front St., Wheaton, IL 60187 (hereafter "Engineer").

RECITALS

WHEREAS, Lake County is seeking an Engineer to provide Engineering services for

PW#2016.101 2017 Infiltration and Inflow Reduction Program as described in Attachment A; and

WHEREAS, the Engineer is a professional provider of Engineering services; and

NOW, THEREFORE, Lake County and the Engineer AGREE AS FOLLOWS:

SECTION 1. AGREEMENT DOCUMENTS
This AGREEMENT constitutes the entire agreement between the County and the Engineer.

SECTION 2. SCOPE OF SERVICES
The Engineer shall provide engineering services described in Attachment A.

SECTION 3. DURATION
The work shall be completed within 430 days after execution of this Agreement.

SECTION 4. INDEMNIFICATION
The Engineer agrees to indemnify, save harmless and defend the County, their agents, servants, and employees, and each of them against and hold it and them harmless from any and all. lawsuits, claims, demands, liabilities, losses and expenses, including court costs and attorney's fees, for or on account of any injury to any person, or any death at any time resulting from such injury, or any damage to property, which may arise or which may be alleged to have arisen out of Engineer's negligent acts in connection with the services covered by this Agreement. The foregoing indemnity shall apply except if such injury, death or damage is caused directly by the willful and wanton conduct of the County, their agents, servants, or employees or any other person indemnified hereunder.

SECTION 5. INSURANCE
The Engineer must obtain, for the Contract term and any extension of it, insurance issued by a company or companies qualified to do business in the State of Illinois and provide the County with evidence of insurance. Insurance in the following types and amounts is necessary:

- **Worker's Compensation Insurance** covering all liability of the Engineer arising under the Worker's Compensation Act and Worker's Occupational Disease Act at statutory limits.
- **Professional Liability** to include, but not be limited to, coverage for Errors and Omissions to respond to claims for loss there from.
    - **General Aggregate Limit $3,000,000**
    - **Each Occurrence Limit $1,000,000**
- **Automobile Liability:**
    - **Bodily Injury, Property Damage (Each Occurrence Limit) $1,000,000**

Engineer agrees that with respect to the above required Automobile Liability insurance, Lake County shall:

- Be named as additional insured by endorsement to the extent of the negligence of the Engineer;
- Be provided with thirty (30) days notice, in writing, of cancellation of material change;
- Be provided with Certificates of Insurance evidencing the above required insurance, prior to commencement of this Contract and thereafter with certificates evidencing renewals or replacements of said policies of insurance at least fifteen (15) days prior to the expiration of cancellation of any such policies. Forward Notices and Certificates of Insurance to: Lake County Central Services, 18 N. County St, Waukegan, IL 60085-4350.

SECTION 6. AGREEMENT PRICE
Lake County will pay to the Engineer the amount not to exceed $ 190,753.

SECTION 7. INVOICES & PAYMENT
Invoices may be submitted for work performed on a monthly basis based upon the percent of work completed in the amount not-to-exceed in Section 6. Submit invoice(s) detailing the services provided. Payments shall be made in accordance with the Local Government Prompt Payment Act.

Engineer will address Invoices to:

Lake County Public Works
650 West Winchester Road
Libertyville, IL 60048-1391
Attn: Russ Rietveld

County will make Payments to:

RJN Group, Inc.
200 W. Front Street
Wheaton, Illinois 60187

SECTION 8. STATEMENT OF OWNERSHIP

The drawings, specifications and other documents prepared by the Engineer for this Project are the property of the County, and Engineer may not use the drawings and specifications for any purpose not relating to the Project without the County's consent, except for the Engineer's services related to this Project. All such documents shall be the property of the County who may use them without Engineer's permission for any current or future Lake County project; provided, however, any use except for the specific purpose intended by this Agreement will be at the County's sole risk and without liability or legal exposure to the Engineer.

The Engineer shall retain its copyright and ownership rights in its design, drawing details, specifications, data bases, computer software, and other proprietary property. Intellectual property developed, utilized, or modified in the performance of the services shall remain the property of the Engineer.

SECTION 9. TERMINATION

The County reserves the right to terminate this Agreement, or any part of this Agreement, upon thirty(30) days written notice. In case of such termination, the Engineer shall be entitled to receive payment from the County for work completed to date in accordance with terms and conditions of this Agreement. In the event that this Agreement is terminated due to Engineer's default, the County shall be entitled to contract for consulting services elsewhere and charge the Engineer with any or all losses incurred, including attorney's fees and expenses.

SECTION 10. JURISDICTION, VENUE, CHOICE OF LAW

This Agreement shall be governed by and construed according to the laws of the State of Illinois. Jurisdiction and venue shall be exclusively found in the 19th Judicial Circuit Court, State of Illinois.

SECTION 11. INDEPENDENT CONTRACTOR

The Engineer is an independent contractor and no employee or agent of the Engineer shall be deemed for any reason to be an employee or agent of the County.

SECTION 12. WARRANTS

The Engineer represents and warrants to the County that none of the work included in this contract will in any way infringe upon the property rights of others. The Engineer shall defend all suits or claims for Engineer's infringement of any patent, copyright or trademark rights and shall hold the County harmless from loss on account thereof.

SECTION 13. ASSIGNMENT

Neither the Engineer nor the County shall assign any duties of performance under this Agreement without the express prior written consent of the other.

SECTION 14. MODIFICATION
This Agreement may be amended or supplemented only by an instrument in writing executed by the party against whom enforcement is sought.

SECTION 15. DISPUTE RESOLUTION
All issues, claims, or disputes arising out of this Agreement shall be resolved in accordance with the Appeals and Remedies Provisions in Article 9 of the Lake County Purchasing Ordinance.

SECTION 16. NO IMPLIED WAIVERS
The failure of either party at any time to require performance by the other party of any provision of this Agreement shall not affect in any way the full right to require such performance at any time thereafter. Nor shall the waiver by either party of a breach of any provision of this Agreement be taken or held to be a waiver of the provision itself.

SECTION 17. SEVERABILITY
If any part of this Agreement shall be held to be invalid for any reason, the remainder of this Agreement shall be valid to the fullest extent permitted by law.

SECTION 18. CHANGE IN STATUS
The Engineer shall notify the County promptly of any change in its status resulting from any of the following: (a) vendor is acquired by another party; (b) vendor becomes insolvent; (c) vendor, voluntary or by operation law, becomes subject to the provisions of any chapter of the Bankruptcy Act; (d) vendor ceases to conduct its operations in normal course of business. The County shall have the option to terminate this Agreement with the Engineer immediately on written notice based on any such change in status.

SECTION 19. DELIVERABLES
The Engineer shall provide deliverables as identified in Attachment A.

IN WITNESS HEREOF, the undersigned have caused this Agreement to be executed in their respective names on the dates hereinafter enumerated.

Lake County:

_____
RuthAnne Hall
Purchasing Agent
Lake County Purchasing Division

Date:_____

RJN Group, Inc.:

Michael N. Young

Michael N. Young, P.E.
Principal

Date: 12/21/16

December 21, 2016

Mr. Russell Rietveld, P.E.
Senior Civil Engineer
Lake County Department of Public Works
650 West Winchester Road
Libertyville, Illinois 60048

SUBJECT: PROPOSAL FOR 2017 FLOW MONITORING AND SSES SERVICES
NORTHWEST LAKE FPA FLOW MONITORING
SOUTHEAST LAKE FPA SMOKE TESTING

Dear Mr. Rietveld:

RJN Group, Inc. (RJN) has been providing flow monitoring services for the Lake County Department of Public Works (County) in different parts of the County since November 2012. The County intends to continue with flow monitoring in select locations with a primary focus in the Northwest Lake FPA. RJN also provided smoke testing services in the Southeast Lake FPA in 2013 and will provide similar services in adjacent areas.

The selected flow monitoring locations are listed below with the Northwest Lake FPA meters shown on the attached exhibit:

NW Lake FPA:

- LCNW-3 (Meter to remain in service)
- LCRG-02 (Rain Gauge to remain in service)
- LS-1 – Petite Lake Lift Station (Meter to remain in service)
- LS-2 – Rollins Rd Lift Station (Meter to remain in service)
- LS-3 – East Main Lift Station (Meter to remain in service)
- LS-4 – Midland Lift Station (Meter to remain in service)
- NW03-01 – 27" Lake County interceptor, just south of the intersection of West Sunset Lane and Fox Lake Road.
- NW03-02 – 12" Lake County collector, west of the intersection of West Lehmann Boulevard and Fox Lake Road.
- NW03-03 – 12" Lake County collector, south of the intersection of North Hillside Drive and North Lakeshore Drive.
- NW03-04 – 10" Lake County collector, east of the intersection of West Lincoln Drive and Fox Lake Road.
- NW03-05 – 48" Lake County interceptor, at the intersection of West Orchard Avenue and Fox Lake Road.

- NW03-06 – 48" Lake County interceptor, at the intersection of North Maple Avenue and West Grand Avenue.
- NW03-07 – 10" Lake County collector, at the intersection of West Boesch Place and Channel Drive.
- LCRG-05 – New rain gauge to be installed at the Petite Lake Lift Station.

SE Lake FPA:

- LSSE-01 – Route 22 Lift Station - New Telog Unit to be installed at Route 22 Lift Station to monitor new flow meters (to be installed by County staff) on both force mains
- LCRG-01 (Rain Gauge to be reinstalled when LSSE-01 is installed)

NEC Lake FPA:

- LCNEC-LS1 – (Meter to remain in service)
- LCRG-03 (Rain Gauge to remain in service)

RJN will provide full services for these meters and rain gauges through December 10, 2017. The services for all of the meters and rain gauges under this proposal will begin on February 10, 2017, except for the meter and rain gauge in the Southeast Lake FPA, which is anticipated to begin on June 10, 2017. Weather permitting, all of the meters and rain gauges will be installed prior to these dates.

The services to be provided by RJN staff are summarized below.

EQUIPMENT

The flow meters supplied by RJN that are owned by the County are ADS FlowShark Triton flow meters that include an in-flow sensor that measures continuous wave peak velocity, uplooking ultrasonic depth, and pressure depth. It also includes an ultrasonic level sensor for flow depth calculations, a wireless modem and an antenna package (with SIM card) for wireless transmission of data. All of these components may need to be replaced at any time. Since the probes are located in the sewers, they are typically the most likely to need replacement. The meter also includes batteries and desiccant that need to be replaced on a regular basis.

As part of this proposal, RJN will continue with responsibility for acquiring the needed items for the meters to remain in service. The County is currently storing the unused meters and RJN will utilize equipment from the County stock. At the time of installation, RJN will notify the County if

any equipment is not in proper working order and will utilize replacement parts from the County stock. After the meters are installed and in proper operation, RJN will take over responsibility for acquiring the needed items for these meters as well. RJN will also cover the wireless charges for each site. RJN will procure any new 3G modems required for the 2017 work.

METER MAINTENANCE

The meter equipment requires regular maintenance. This includes standard maintenance and corrective maintenance. The corrective maintenance is directed by the data analyst that identifies a maintenance need based on the data from the meter. This could be an immediate need where there is a risk of losing data or it could be a "next visit" need such as batteries starting to run low.

The standard maintenance is expected to be quarterly visits to each site to check operation and complete a calibration. The calibration includes manual depth and velocity readings taken by the field staff to confirm that the meter is reading to manufacturer's operating standards. As part of this proposal, RJN will take full responsibility for all needed maintenance and calibrations.

DATA HANDLING

RJN utilizes a host software support application program for remote wireless flow meter and rain gauge data collection. On a weekly basis, all data recorded and stored in the meter is collected by the host system. The system utilizes a client/server architecture to store all project flow and rainfall data. On a weekly basis, flow meter measurements are posted to the web site for viewing by authorized parties.

Web module software allows any networked computer (with the appropriate access rights) access to the data stored using a common web browser (e.g. Microsoft Internet Explorer). The web module enables the users to view the data and download the data in Microsoft Excel format. The RJN data group reviews the flow monitoring and rainfall data at least once per week. The analysis of the data includes the identification of data gaps, hydraulic anomalies and monitor performance issues. Any equipment service needs will be immediately conveyed to the RJN field service crews. The data is processed and edited in accordance with the field confirmations to produce final data sets for each site. The final data is posted when completed.

SMOKE TESTING

In 2013, RJN performed smoke testing services for Lake County in the Southeast FPA. The basins smoke tested were basins LG-01, LG-02, and LC-04. County staff has request that RJN smoke test additional basins in the Long Grove area as shown on the attached exhibit.

Using the methods outlined below, RJN will use smoke testing to identify various defects in the collection system, as well as to find contributing sources of I/I. Commonly identified concerns include leaky manholes, cracked main lines and laterals, connected downspouts, directly connected storm sewers, connected foundation drains, area, patio, and driveway drains, and broken cleanouts. Additionally, indirect connections such as leaking storm sewers crossing sanitary sewers can also be identified.

In the smoke testing process, harmless smoke is blown into a sewer segment through manholes at both ends. Defects are identified by where smoke exits the ground or structure. Smoke testing is only as effective as the process used. The RJN process uses a 4-person crew and smoke tests only one segment at a time using two smoke blowers on consecutive manholes. A GPS location is acquired for each defect, and a photo is taken.

PROPOSED SCOPE OF SERVICES

Our proposed scope of services is as follows:

FLOW MONITORING

1. Investigate targeted sites for the new meters in the Northwest FPA. Determine the meter sites that are hydraulically suitable for flow monitoring. Prepare Investigation Site Reports for approval by the County.

2. Take inventory of what meters in storage are working and what meters need to be sent for repairs.

3. Procure one Telog R-3314 unit to monitor the lift station site.

4. Obtain flow meter equipment from the County. Prepare flow meters and rain gauges for installation. Install meters NW03-01 through NW03-07 and LSSE-01. Install rain gauges LCRG-01 and LCRG-05 at the locations previously utilized.

5. During installation, calibrate each flow meter by taking manual depth and velocity measurements and comparing with meter readings.

6. Provide standard traffic control measures (portable signs and cones) at each site in or near a roadway. If a higher level of traffic control is required, traffic control assistance will be provided by County staff.

7. Prepare the host system for handling all flow and rain gauge data and posting the data for viewing and access by County staff (and any municipalities approved by the County). Review the data at least twice per week during the "settling in" period, once per week, thereafter, and immediately report any equipment service needs to the field crews.

8. Calibrate each meter a second time within two weeks of installation. Utilize the calibrations to adjust the data and prepare final data sets.

9. Provide meter and rain gauge maintenance as necessary to keep meters and rain gauges in proper operation for the duration of the monitoring period. Calibrate each meter at least one additional time within the first three months of operation and at least quarterly thereafter.

10. Provide maintenance on the Telog units as necessary. Notify the County of any needed maintenance on the lift station meters.

11. Procure spare and replacement equipment, such as batteries, probes and desiccant, as needed to keep meters, Telog units and rain gauges within operating standards.

12. This proposal does not include removal or relocation of the flow meters after the flow monitoring period has ended.

13. Process the collected raw data. Analyze the processed data for wet- and dry-weather flow patterns. Create hydrographs and scattergraphs for each meter and determine if there have been any major variations from the previously collected data.

14. Prepare semiannual summaries of the data collected, including the following:
    - Short summary of the findings for each meter and any variation from previous findings with a more extensive summary for the new meters
    - Hydrographs and scattergraphs from each meter
    - Storm specific hydrographs and scattergraphs from each meter for any rain event greater than a 1-year recurrence for a 60-minute event

15. For the new meter locations, determine peaking factors of each basin. Perform an inflow analysis, a peak infiltration analysis and look for evidence of downstream control and surcharging. This information will be presented in a formal report.
    - Provide the following deliverables:
        i. Up to 5 color copies and PRF draft report;
        ii. Address county comments and submit up to 10 color copies of final report; and
        iii. Provide a digital copy of the fin report files, data, and photographs.

16. Provide project management services for the duration of the project. Attend up to two meetings with County staff.

SMOKE TESTING

1. Prepare a draft resident smoke testing notification letter for the County to send to the affected residents and business owners. The letters will include RJN contact information for use during the smoke testing.

2. Prepare smoke testing door hangers to be hung by RJN staff at each address less than one week prior to smoke testing.

3. Notify County staff and the fire and police departments of planned smoke testing activities, including daily updates.

4. Provide equipment, personnel, and smoke as necessary for smoke testing.

5. During smoke testing, erect smoke testing signs near the testing area and answer resident and County questions on-site as well as through phone calls.

6. Use handheld electronic data collection equipment for collecting smoke testing data.

7. Smoke test up to 67,000 linear feet of sanitary sewers.

8. GPS locate each identified defect and take a minimum of one digital photograph of each defect.

9. Provide data analysis as follows:
   - Compile field data and develop complete list of defects;
   - Assign an estimated flow to each defect; and
   - Determine an estimated rehabilitation method and estimate an associated cost for each defect.

10. Provide a letter report addressing the following:
    - Summary of work completed;
    - GIS map of identified defects;
    - List of defects prioritized by cost effectiveness for rehabilitation;
    - Recommendations for rehabilitation, including potential procurement methods and recommended contractors/vendors for various type of rehabilitation

11. Provide the following deliverables:
    - Up to 5 color copies and PDF of draft report;
    - Address County comments and submit up to 10 color copies of final report; and
    - Provide a digital copy of final report files, data, and photographs.

ITEMS TO BE PROVIDED BY THE COUNTY

1. Provide flow monitoring equipment for the new and reinstalled flow monitoring locations.

2. Provide traffic control assistance as needed.

3. Send smoke testing letters to impacted property owners.

SCHEDULE

The flow monitoring services for the meters to remain in service were extended into February under the existing agreement. The new agreement will begin in February 2016 when the existing agreement expires. Weather permitting, the new and reinstalled meters will be in service by February 10, 2017. It is anticipated that the monthly charges for these meters will begin at that time. The one exception is the new Route 22 Lift Station Telog (LSSE-01). County staff will install new meters on the two force mains at this station prior to RJN installing the telog unit. It is anticipated that this will be completed by June 10, 2017 along with reinstalling rain gauge LCRG-01.

The smoke testing will be completed when the weather is suitable for this type of work, which are dry condition usually found between July and October. The smoke testing will be completed by the end of October 2017.

FEE

The work will be invoiced on a unit price basis per the attached spreadsheet. The total not-to-exceed amount is $190,753.

Please feel free to contact me at (630) 682-4700 x314 if you would like to discuss this proposal further. We appreciate the opportunity to continue providing sanitary sewer services to the County.

Sincerely,

RJN Group, Inc.

Michael N. Young, P.E.
Principal

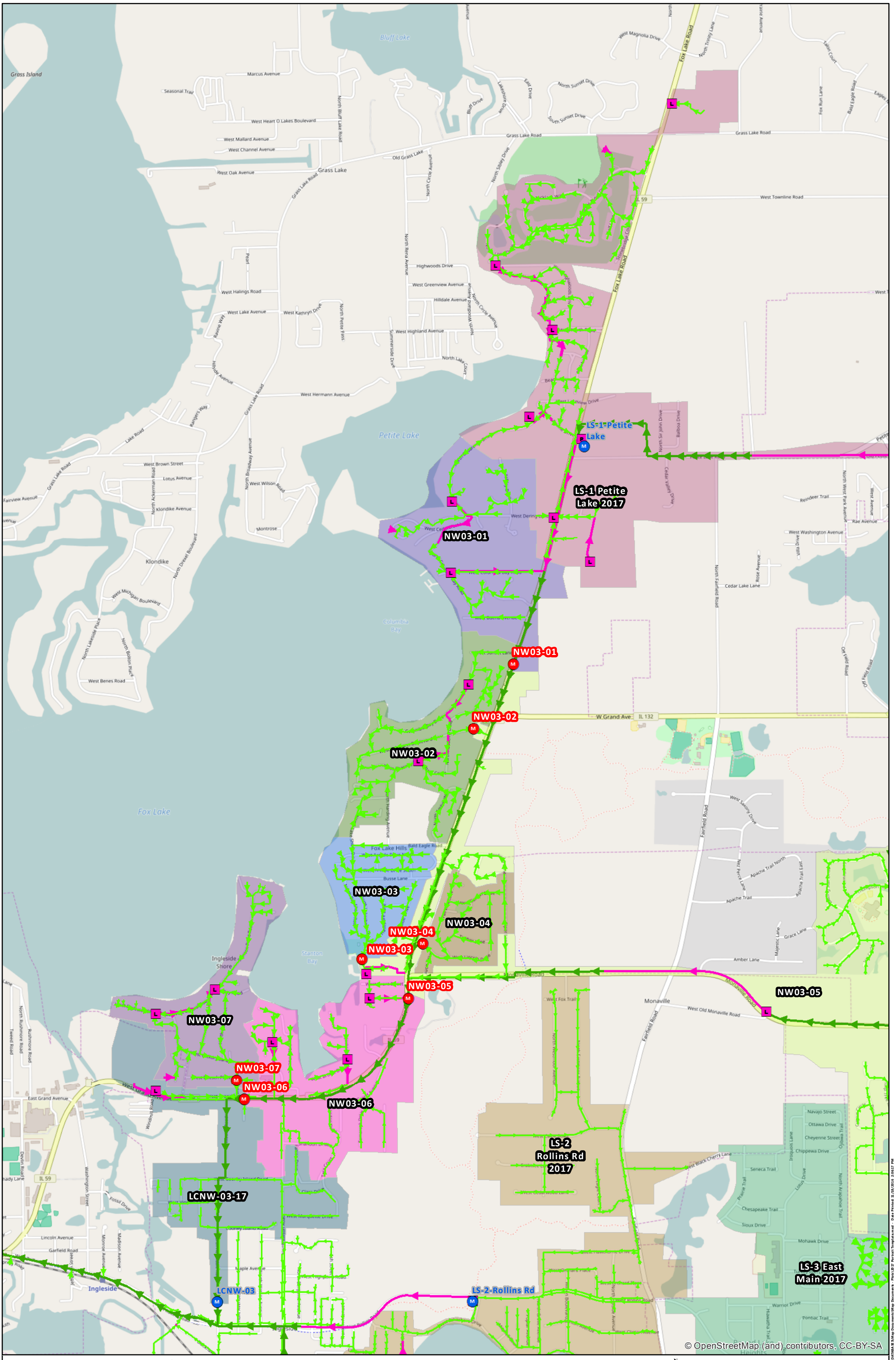
Thomas J Romza, P.E.
Project Engineer

Enclosures

LAKE COUNTY DEPARTMENT OF PUBLIC WORKS
2017 FLOW MONITORING AND SSES SERVICES

Summary of Engineering Services Fees

Task No.	Task Description	Units	Quantity	Unit Cost	Total Cost
1001	Flow Meter Site Investigations	ea	7	$800.00	$5,600
1002	Flow Meter Prep and Install	ea	7	$1,200.00	$8,400
1003	Flow Meter Cals, Maint, and DA (8, 10-Month Sites)	meter-mo	80	$1,100.00	$88,000
1004	Lift Station - Telog Unit Cal, Maint, and DA (5, 10-Month Sites)	meter-mo	50	$200.00	$10,000
1005	Lift Station Telog Unit - Purchase (Route 22)	ea	1	$4,200.00	$4,200
1006	Lift Station Telog Unit - Installation (Route 22)	ea	1	$2,000.00	$2,000
1007	Lift Station - Telog Unit Cal, Maint, and DA (1, 6-Month Site)	meter-mo	6	$200.00	$1,200
1008	Rain Gauge Prep and Install	ea	2	$250.00	$500
1009	Rain Gauge Cal, Maint, and DA (3, 10-Month Sites)	gauge-mo	30	$170.00	$5,100
1010	Rain Gauge Cal, Maint, and DA (1, 6-Month Sites)	gauge-mo	6	$170.00	$1,020
1011	LCNW-03 Flow Monitoring Report	lump sum	1	$5,000.00	$5,000
2001	Smoke Testing (66,370 Lineal Ft)	foot	66,370	$0.90	$59,733
				TOTAL	**$190,753**



rjngroup
The Choice for Collection System Solutions

Existing Meter Site (to remain)

2017 Proposed Sites

N
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Lake County
2017 Proposed Meter Locations
November 2016

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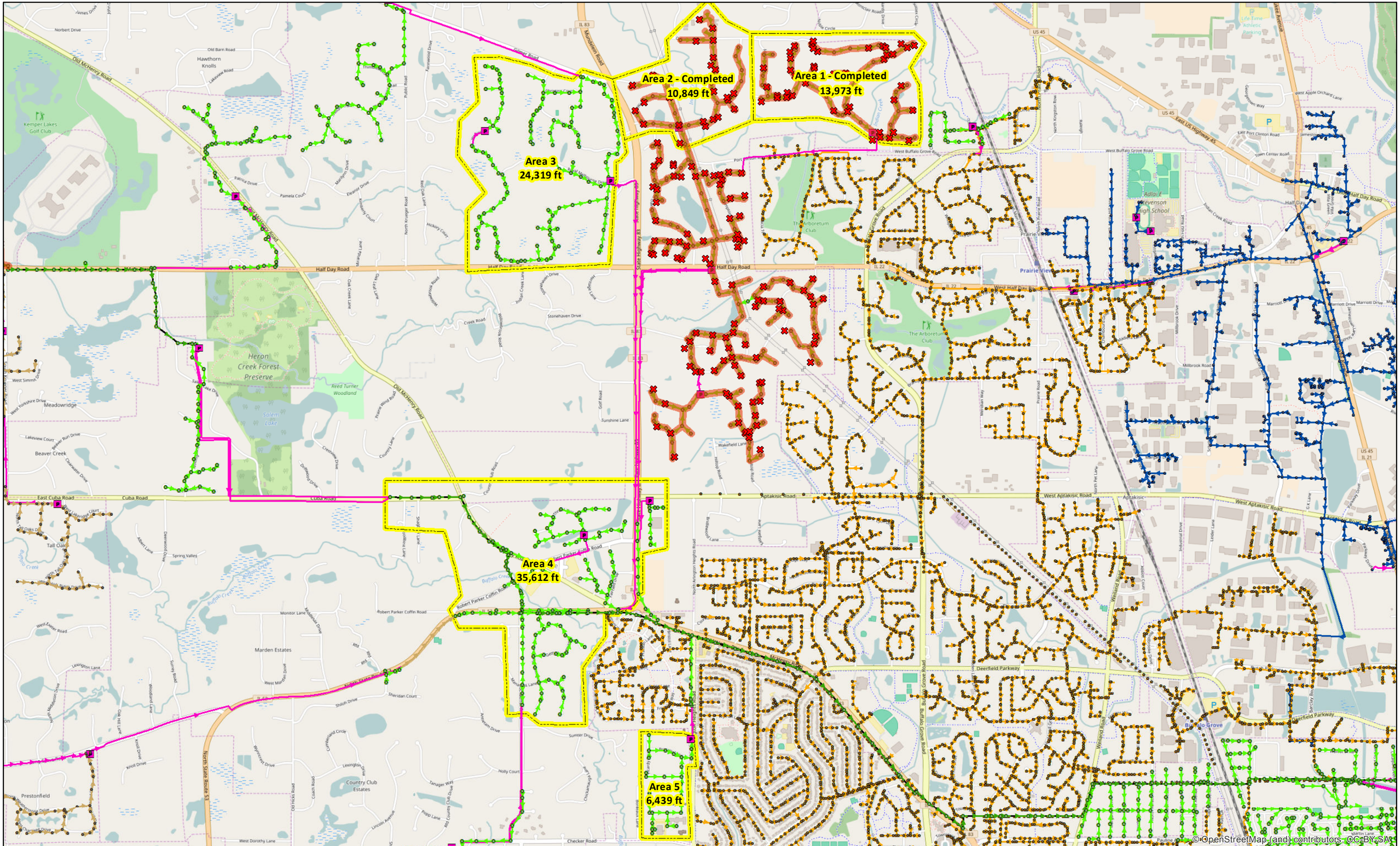

rjn group
The Choice for Collection System Solutions

Lake County, IL
Project Proposal
Proposed Project Areas
November 2016

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