Agenda Item Executive Summary

Title: Stormwater Monthly Summary Report

Presenter: Steven M. Saunders, Director of Public Works/Village Engineer

Agenda Date: 08/18/2015

Consent: ☐ YES ☑ NO

☐ Ordinance
☐ Resolution
☐ Bid Authorization/Award
☐ Policy Direction
☑ Informational Only

Item History:

Monthly Report

Executive Summary:

The Village Council has placed a standing item in its regular meeting agenda for updates on the Village's progress towards providing relief from stormwater and sewer flooding. This monthly report brings together status, cost, and schedule information, for each separate stormwater project, in one place. The report consists of three documents, explained below:

Summary Agenda Report
This report provides a brief outline and summary of each major stormwater project currently being undertaken by the Village.

Program Budget (Attachment #1)
This report provides financial information for the stormwater and sanitary sewer improvement programs.

Program Organization Chart (Attachment #2)
This document presents a one-page "snapshot" view of the status of each project, and how each project fits into the overall stormwater and sanitary sewer management program.

Proposed Sampling Program (Attachment #3)

Recommendation:

1. Informational Report
2. Consider authorizing staff to expend up to $100,000 with MWH to complete additional stormwater monitoring work as described in Attachment #3.

Attachments:

Project Summary Report
1. Program Budget
2. Program Organization Chart
3. Proposed Sampling Program

Agenda Report

Subject: **Stormwater Update – August 2015**

Prepared By: Steven M. Saunders, Director of Public Works/Village Engineer

Date: August 11, 2015

Active Projects

NW Winnetka (Greenwood/Forest Glen)

Activity Summary The construction contract was awarded to A Lamp, in the amount of $6,117,230, on November 6, 2014. Storm sewer construction started in March, and A Lamp has completed storm sewer construction on Tower Road and is proceeding with storm sewer construction on Grove Street, Edgewood Lane, and Greenwood Avenue. Tower Road will be opened completely to traffic by August 14. The Village Council has also awarded a construction contract to Kovilic Construction Company for $342,800 for restoration and erosion control on the east side of the Forest Preserve pond south of Tower Road. This work was required by the Forest Preserve as a condition of receiving approval to improve the stormwater discharge to their pond and construction is underway.

Budget Summary The total net cost estimate for the project, including engineering and pond restoration, is now $4,822,640. The Village has expended $320,137 on design and construction engineering, and $3,008,694 on construction to date. The Metropolitan Water Reclamation District (MWRD) is funding $2,000,000 of this project.

6-Month Look Ahead The project team will:

1. Complete the project

Willow Road Stormwater Tunnel and Area Drainage Improvements (STADI)

Activity Summary In June, 2014, the Council authorized MWH to proceed with preliminary engineering to complete 30% drawings, perform additional water-quality sampling and analysis, complete preliminary design for the outlet structure at Lake Michigan, and develop an updated, more detailed cost estimate. MWH was also authorized to develop a stormwater quality management and treatment plan, and to prepare draft permit applications for the required joint permit for the project. MWH presented Project Review Point #2 on April 28, 2015. The project was further discussed on May 12, 2015. In light of significant increases in the estimated project cost, from $34.4 million to $58.5 million, the Village Council awarded a $122,004 contract to V3 Companies to complete an independent cost evaluation and a value engineering review of the project. The cost review work is underway and will be reported back to the Council at the September 1 Council meeting.

Pursuant to Council direction, staff has also published a Request for Proposals (RFP) for engineering services to re-visit the feasibility and cost estimates of the previously reviewed and dismissed separate, non-STADI options, which have not been updated since 2011. The RFP also includes a re-evaluation the Village's western drainage basins for creative, cost-effective non-STADI improvements for storms ranging from the 10-year to the 100-year event, taking into account the Village's flood-control goals and objectives. The RFP desires a holistic approach to this project, to include consideration of grey and green infrastructure approaches, conveyance, detention, retention, infiltration, property buyout or individual protection retrofit programs, and a host of other traditional and emerging stormwater management technologies. Proposals were received from 14 firms on August 7, 2015. Review is underway and a recommendation will be presented to the Village Council in September.

At the July 21, 2015 meeting the Village Council discussed a potential sampling plan for 2015, to gather additional stormwater quality data. Sampling was performed in Fall of 2014 and Spring of 2015, in response to indications from the Illinois EPA about the type of stormwater quality information they would be expecting in any future permit submittals for the project. The water quality information that has been obtained to date includes sampling for all of the requested parameters, at select locations in the STADI project area. The sampling that was performed in Fall of 2014 includes a time characterization to identify variances in constituent concentrations from the beginning to the end of the storm, and is consistent with the comments provided from the Illinois EPA on the type of sampling data they expected to see.

This sampling effort required an expenditure of about $125,000 to accomplish. No follow-up sampling was budgeted for 2015. Staff has worked with MWH to obtain pricing for installation of sampling equipment (owned by the Village), rental and installation of the necessary rain gauges and flow meters required to trigger the automated samplers, labor for sample collection, and anticipated laboratory costs for analyzing the samples, for an approximate period of 12 weeks and uses the identical monitoring points as the 2014 program. An allowance is included for collecting grab samples at an additional point, the Cherry Street outlet.

After some investigation, MWH does <u>not</u> recommend that analysis of rainfall for low level mercury be included in the program. Given the sensitivity of this analysis, specialized equipment and sampling protocols are needed to achieve a reasonable level of confidence in the data. As a substitute, MWH has identified a source of ongoing analysis of rainfall in our region for mercury levels. The National Atmospheric Deposition Program has Mercury Deposition Sampling Sites at Lake Geneva, Milwaukee, and Gary. This data set includes hundreds of observations from 1997 through 2015 that are from a program specifically established to gather data on mercury in rainfall in our region. We can still consider collection and analysis of several rainfall samples, but MWH recommends that limiting the parameters for which the rainfall samples are analyzed to a few general parameters that are less sensitive to sampling techniques/protocols.

The anticipated cost is approximately $99,228. The proposed monitoring program is summarized in **Attachment #3**.

Budget Summary The Village Council has authorized $2,145,218 for engineering on this project, and the Village has expended $877,929 to date. The total estimated project cost is now $58,473,467. The Village has also authorized an additional $122,004 for the cost estimate review and value engineering services.

6-Month Look Ahead The project team will:

1. Complete the cost estimate review
2. Complete the value engineering process
3. Award a contract to develop non-tunnel alternatives
4. Submit permit applications
5. Meet with regulatory agencies
6. Report back to the Village Council

Sanitary Sewer Evaluation

Activity Summary The Village has awarded contracts for sewer lining and manhole lining to address sanitary sewer deficiencies identified during the evaluation. Construction is underway.

Budget Summary The Village has expended $428,276.

6-Month Look Ahead The project team will:

1. Complete lining and manhole repair improvements
2. Complete design of remaining public system improvements

Public Outreach

Activity Summary Staff continues to provide E-Winnetka and website updates on the multiple projects in the stormwater management program.

Budget Summary There is no separate budget associated with this activity.

6-Month Look Ahead The project team will continue to update the website. Additional outreach and engagement activities are associated with the Northwest Winnetka and Willow Road projects as these projects progress. The Village Council will be discussing potential additional outreach and engagement activities this summer.

Ravine/Sheridan Road Improvements

Activity Summary IDOT is planning pavement and drainage improvements for the area. The project has been bid, and a contract award is pending. Construction is expected in late 2015.

Budget Summary This project is funded in its entirety by IDOT.

6-Month Look Ahead The project team will:

1. Monitor IDOT activities
2. Update the Council as needed

Ash Street Pump Station

Activity Summary Construction has been completed except for restoration and punch list items, and the station is operational.

Budget Summary This project is budgeted within the Stormwater Fund Capital Budget at $260,000.

6-Month Look Ahead The project team will:

1. Complete restoration and punch list items and close the contract.

Completed Projects

Stormwater Master Plan (SMP)
The Council adopted the plan at its April 17, 2014 meeting. The Village expended $100,932 on this project.

Spruce Outlet (Lloyd)
The project is complete and operational and the Village expended $296,299.

Spruce Outlet (Tower)
The project is complete and operational. The Village expended $1,269,716.

Winnetka Avenue Pump Station
Construction of the Pump Station is complete and the station is operational and the Village expended $1,071,706.

Stormwater Utility Implementation
The utility was implemented effective July 1 and the project team is responding to resident inquiries as needed. MFSG's contract for staffing the customer support line

ended, and Public Works staff has taken the lead in phone and email communications. The Village has expended $179,516.

A summary budget document showing planned and actual expenditures, and an organization showing all of the planned, ongoing, and completed projects, are attached.

Recommendation:

1. Informational report.
2. Consider authorizing staff to expend up to $100,000 with MWH to complete additional stormwater monitoring work as described in **Attachment #3**.

Attachments:

1. Program Budget
2. Program Organization Chart
3. Proposed water quality monitoring program

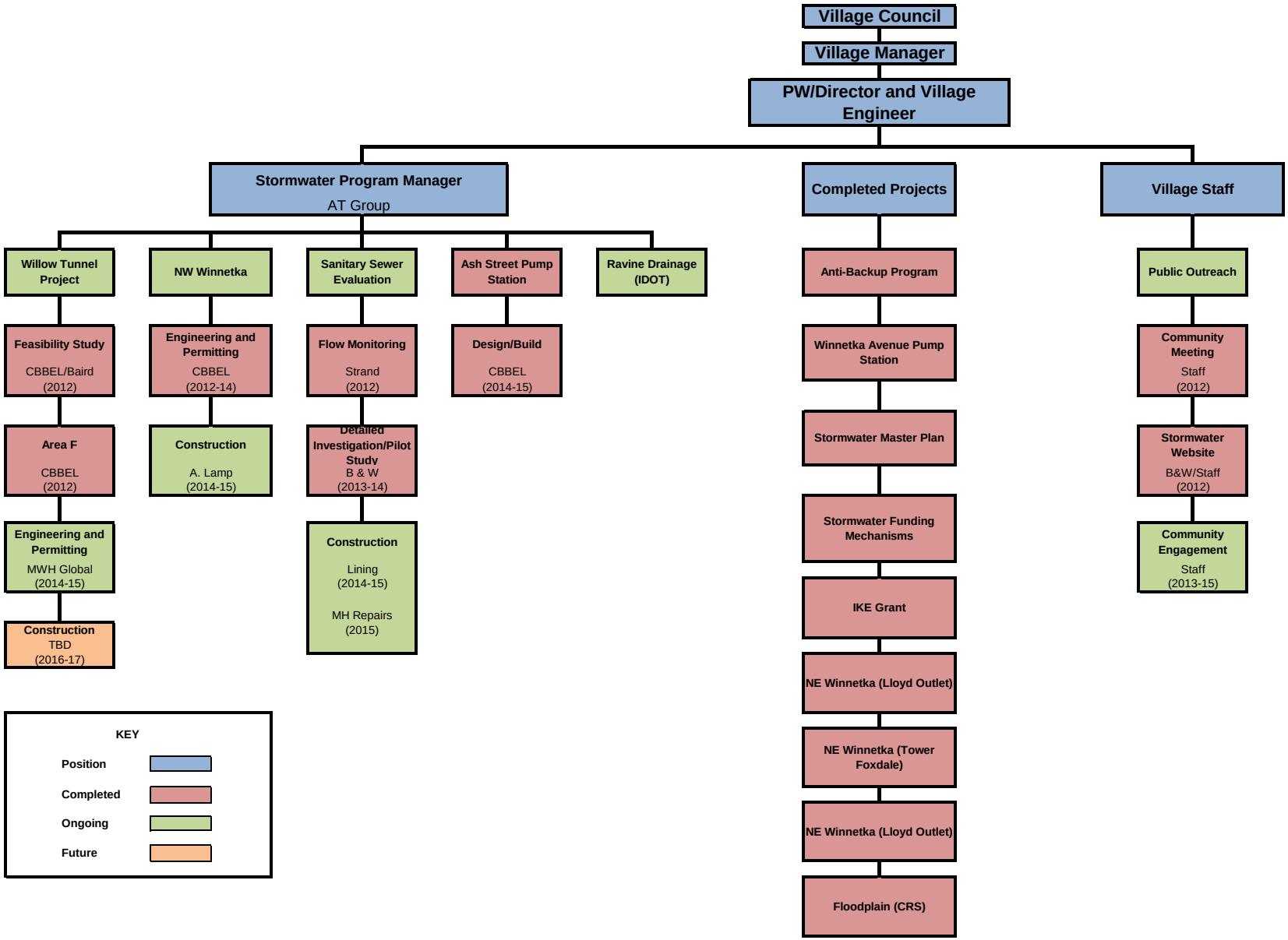
ATTACHMENT #1
PROGRAM BUDGET

Village of Winnetka
Stormwater Management Program Budget

Project	Initial Estimated Project Costs (2011)	Estimated Program Costs August 2013	Current Estimated Project Costs	Council Authorized	Spent	Comments
Stormwater Fund 58.75.640.601						
Winnetka Ave. pump station	**$ 750,000**	**$ 1,002,300**	**$ 1,071,706**	**$ 1,073,581**	**$ 1,071,706**	**Complete. Initial cost estimate $750k from 2009 study.**
Design Engineering				*$ 29,300*	*$ 29,300*	
Construction				*$ 1,019,781*	*$ 1,019,781*	
Construction Observation/Engineering				*$ 24,500*	*$ 22,625*	
Tower Road/Foxdale	**$ 1,394,244**	**$ 1,162,853**	**$ 1,269,716**	**$ 1,269,716**	**$ 1,269,716**	**Complete**
Design Engineering				*$ 111,429*	*$ 111,429*	
Construction				*$ 1,158,287*	*$ 1,158,287*	
Construction Observation/Engineering				*$ -*	*$ -*	*Performed In-house*
Lloyd Park/Spruce Street	**$ 475,510**	**$ 398,786**	**$ 296,299**	**$ 296,299**	**$ 296,299**	**Complete**
Design Engineering				*$ 37,143*	*$ 37,143*	
Construction				*$ 259,156*	*$ 259,156*	
Construction Observation/Engineering				*$ -*	*$ -*	*Performed In-house*
Stormwater rate study	**$ 50,000**	**$ 161,866**	**$ 179,516**	**$ 179,516**	**$ 179,516**	**Complete - includes customer support services**
Utility Feasibility Study			*$ 77,500*	*$ 77,500*	*$ 77,500*	
Utility Implementation Assistance			*$ 102,016*	*$ 102,016*	*$ 102,016*	
Stormwater master plan	**$ 50,000**	**$ 101,220**	**$ 100,932**	**$ 100,932**	**$ 100,932**	**Complete**
NW Winnetka Greenwood/Forest Glen	**$ 2,880,887**	**$ 4,266,924**	**$ 4,822,640**	**$ 4,822,640**	**$ 3,328,831**	**Added Forest Glen area, FPD pond restoration, and complete roadway reconstruction to project.**
Design Engineering			*$ 226,874*	*$ 226,874*	*$ 226,874*	*Complete*
Sewer Construction			*$ 6,117,230*	*$ 6,117,230*	*$ 3,008,694*	*Payments to date*
Pond Engineering			*$ 19,686*	*$ 19,686*	*$ 19,686*	*Additional design required for FPD pond work*
Pond Construction			*$ 342,800*	*$ 342,800*	*$ -*	*Contract awarded May 19*
Construction Observation/Engineering			*$ 116,050*	*$ 116,050*	*$ 73,577*	*Payments to date*
MWRD Phase II Stormwater Funding			*$ (2,000,000)*	*$ (2,000,000)*	*$ -*	*Reimbursement from MWRD*
Ash Street Pump Station	**$ -**	**$ -**	**$ 267,676**	**$ 267,226**	**$ 33,995**	
Design Engineering			$ 7,676	$ 7,676	$ 7,676	*Complete*
Construction			$ 260,000	$ 259,550	$ 26,319	*Payments to date*
Construction Observation/Engineering			$ -	$ -	$ -	*Performed In-house*
Willow Rd STADI	**$ 32,498,697**	**$ 34,369,048**	**$ 58,473,467**	**$ 2,182,968**	**$ 915,634**	**April 2015 MWH cost estimate for project**
Feasibility Study			*$ 37,750*	*$ 37,750*	*$ 37,705*	*Complete*
Permitting and Design			*$ 2,829,245*	*$ 2,145,218*	*$ 877,929*	*MWH Global $2,094,318; purchase of sampling equipment $50,900*
Construction			*$ 52,426,000*	*$ -*	*$ -*	
Construction Observation/Engineering			*$ 2,359,104*	*$ -*	*$ -*	
Materials Testing			*$ 35,000*	*$ -*	*$ -*	
Project Management			*$ 786,368*	*$ -*	*$ -*	
STADI Cost Evaluation and Value Engineering	**$ -**	**$ -**	**$ 122,004**	**$ 122,004**	**$ 33,708**	**Contract awarded June 2, 2015**
Total Stormwater Program Costs	***$ 38,099,338***	***$ 41,462,997***	***$ 66,214,276***	***$ 9,925,652***	***$ 7,196,342***	
Sanitary Sewer Fund 54.70.640.201						
Sanitary Sewer Studies/Engineering	$ 150,000	$ 150,000	$ 187,247	$ 187,247	$ 184,008	Complete. Includes initial system evaluation, smoke amd dyed-water testing, and engineering
System I & I repairs	$ 1,000,000	$ 1,000,000	$ 960,000	$ 443,135	$ 244,268	Council awarded manhole and sewer lining contracts in 2014, construction underway
Total Sanitary Sewer Costs	***$ 1,150,000***	***$ 1,150,000***	***$ 1,147,247***	***$ 630,382***	***$ 428,276***	

ATTACHMENT #2
PROGRAM ORGANIZATION CHART

Village of Winnetka
Stormwater Management Program
Organizational Chart



08/13/2015

ATTACHMENT #3
PROPOSED WATER QUALITY MONITORING

Attachment C

CHANGE ORDER 3
WILLOW ROAD STORMWATER TUNNEL AND AREA DRAINAGE IMPROVEMENTS
WATER QUALITY MONITORING - 2015

Contract No. 2014-00000059
Change Order No. 03
Effective Date _____

In accordance with Article 7 of the Consulting Services Agreement (Lump Sum) dated January 21, 2014 ("Agreement") between the Village of Winnetka, Illinois ("CLIENT") and MWH AMERICAS, INC. ("CONSULTANT"), this Change Order modifies the Agreement as follows:

1. **Change in Services**:
CONSULTANT shall adapt the 2014 sampling plan prepared for the CLIENT and reviewed with IEPA to gather flow and water quality data at four locations in the Village of Winnetka's separate storm sewer system during the late summer/fall of 2015. Results from the water quality monitoring program will be used to supplement data gathered in 2014 for the development of the water quality management plan for the Willow Road Stormwater Tunnel and Area Drainage Improvements (STADI) Project. Specific tasks to be performed by the CONSULTANT are described below:

Program Coordination. CONSULTANT will adapt the Water Quality Monitoring Plan developed for the 2014 sampling program for use in the collection of supplemental data during the second half of 2015. CONSULTANT will assist the CLIENT in procuring temporary flow monitoring services at one or two locations as required to support the water quality sampling program. CONSULTANT will prepare a scope of services for the flow monitoring, obtain pricing for this work, and transmit the vendor proposal to the Village. The Village will issue a purchase order directly to the selected vendor for the procurement of the flow monitoring services.

CONSULTANT will coordinate with CLIENT to access the Village-owned sampling equipment and coordinate activities related to installation and maintenance of the equipment during the sampling period.

Sampling/Monitoring Support Services. CONSULTANT will provide up to 12 weeks of field support services during the installation and removal of the sampling and flow monitoring equipment and collection of water quality samples and flow metering data. CONSULTANT shall be responsible for observation of equipment installation by the flow monitoring vendor, operation of the automated samplers during the monitoring period, collection of samples from the sampling devices, and preparation and transmittal of samples to the laboratory. CONSULTANT shall establish and transmit to the laboratory an appropriate chain of custody form for samples.

The goal of the program is to obtain 3-4 sets of samples for wet weather events (greater than 0.25 inches of total rainfall) during the late summer/fall of 2015. Samples will be taken from the four locations used for the 2014 sampling program. To the degree practical, grab samples will also be collected from a manhole just upstream of the Cherry Street outfall in conjunction with the collection of other samples. Depending upon weather conditions, CONSULTANT will also collect one set of snow melt samples from the four locations during the sampling period. Dry weather samples will not be collected as part of this program.

CONSULTANT will make up to 8 site visits (one for equipment installation, one for equipment removal, six for biweekly maintenance of equipment) during the twelve week monitoring period to attempt to obtain the desired samples. CONSULTANT will not be responsible for additional site visits or extension of the field program if weather conditions do not provide the desired number/type of rainfall events.

During each site visit, CONSULTANT will visit each monitoring location, collect the required samples in accordance with the water quality monitoring plan, and reset the sampling device for a subsequent event. CONSULTANT will document conditions at the site in brief field notes, prepare samples as required for the selected analyses, and transmit the samples to the laboratories with the appropriate chain of custody documentation.

CONSULTANT will contract with qualified laboratories to perform analyses of the collected samples and provide written results. Details of the water quality tests to be performed will be documented in the Water Quality Sampling Plan. A tentative list of the analyses to be performed is provided in the attached Table 2. An allowance of $20,000 is made for analytical testing and reporting. Billings to the client will be based on the actual costs of the laboratory analysis (up to the maximum of $20,000) plus a 10% mark-up for administration of the testing contracts by CONSULTANT.

Upon completion of the monitoring program, CONSULTANT will observe the removal of the sampling and flow monitoring equipment by the flow monitoring vendor, and confirm that CLIENT purchased equipment is returned to the CLIENT.

Data Analysis and Reporting. CONSULTANT will compile results from the flow monitoring vendor and the laboratories and prepare a technical memorandum documenting the results of the 2015 water quality monitoring program. CONSULTANT will submit an electronic copy of a draft memorandum to the CLIENT for review. Upon receipt of comments, MWH will prepare a final version of the memorandum and transmit three (3) printed copies and one electronic copy to the CLIENT. One hard copy and one electronic copy of the laboratory results and flow monitoring data summaries will be provided as an appendix to the memorandum.

2. **Change in time of Performance** (attach schedule if appropriate):

Services related to the 2015 water quality monitoring program will be completed between August 3, 2015 and December 31, 2015.

3. **Change in CONSULTANT's Compensation**:

The lump sum contract amount contained in the agreement is hereby increased from $2,094,318 to **$2,164,818**. Payment to the CONSULTANT shall be made based on the lump sum amounts for Phase 1, Phase 2, and 2015 Water Quality Sampling services. Monthly Progress Payments shall be based on the following revised Schedule of values for tasks and subtasks. Billings for laboratory services will be based on the actual amount of the laboratory allowance used for analytical testing. This table shall supersede previous Schedule of Values contained in the Agreement or prior Amendments.

All other terms and conditions remain unchanged.

CLIENT	**CONSULTANT**
_____	_____
Signature	Signature
_____	_____
Name (Printed or Typed)	Name (Printed or Typed)
_____	_____
Date	Date

Revised Schedule of Values – Change Order 3
Willow Road Stormwater Tunnel and Area Drainage Improvements
July 31, 2015

Phase 1/Task/Subtask Description	Current Task Value	Adjusted Task Value	Status
Phase 1 – Preliminary Design and Permitting			
Tasks 1.1 through 1.3	$815,098	$815,098	Authorized and Complete
Task 1.4 – Construction Management Selection Process	$54,220	$54,220	Not Authorized
Phase 1 Total	**$869,318**	**$869,318**	

Phase 2/Task/Subtask Description	Current Task Value	Adjusted Task Value	Status
Phase 2 – Engineering			
Task 2.1 – Phase 2 Engineering	$1,107,133		
Permitting Activities (June – Dec 2015)		$63,690	Authorized
Add'l Modeling/Process Development		$25,325	Not Authorized
Remaining Phase 2 Engineering		$1,018,118	Not Authorized
Task 2.2 – Phase 2 Project Management	$73,992		
Phase 2 Project Management (June – Dec 2015)		$21,865	Authorized
Remaining Phase 2 Project Management		$52,127	Not Authorized
Task 2.3 – Phase 2 Outreach	$43,875	$43,875	Not Authorized
Phase 2 Total	**$1,225,000**	**$1,225,000**	

2015 Water Quality Sampling	Current Task Value	Adjusted Task Value	Status
2015 Water Quality Sampling			
Coordination/Sampling/Analysis/Reporting	$0	$48,500	Change Order 3
Laboratory Analysis	$0	$22,000	Change Order 3
2015 Water Quality Sampling Total	**$0**	**$70,500**	

Total Contract Amount	Current Value	Adjusted Value	
Total Contract Amount	**$2,094,318**	**$2,164,818**	

Table 2 –List of Water Quality Parameters to be Analyzed: 2015 Water Quality Sampling

STORET Code	Description	Category	MRL per IEPA*	Method	Lab MRL	Sample Type
00061	Flow, Stream, Instantaneous	PHY	-	NA	NA	*In situ*
00154	Sulfate (as S) Whole Water	ION	-	SM 4500 SO4-E	5.0 mg/L	ISCO
00310	BOD, 5-day, 20 deg (Biochemical Oxygen Demand)	PHY	-	SM 5210-B	2.0 mg/L	ISCO
00400	pH (standard units)	PHY	-	multimeter	-	*In situ*
00556	Oil & Grease (Freon Extr.-Grav Meth Tot, Rec)	PHY	5.0 mg/L	EPA 1664-B	5.0 mg/L	Grab
00610	Nitrogen, Ammonia, Total (as N)	NUT	-	SM 4500-NH3-G	0.2 mg/L	ISCO
00620	Nitrate Nitrogen Total (as N)	NUT	-	SM 4500 NO3-F	0.1 mg/L	ISCO
00665	Phosphorus, Total (as P)	ION	-	SM 4500 P E	0.05 mg/L	ISCO
00718	Cyanide, Weak Acid Dissociable	ION	0.005 mg/L	SM 4500 CN I	0.005 mg/L	Grab
00722	Cyanide, Free (Amenable to Chlorination)	ION	0.005 mg/L	SM 4500 CN-G	0.005 mg/L	Grab
00900	Hardness, Total (as CaCO3)	ION	-	SM 2340-B	1.32 mg/L	ISCO
00940	Chloride, Total in Water	ION	-	SM 4500 CL-E	2.0 mg/L	ISCO
00951	Fluoride, Total (as F)	ION	0.1 mg/L	SM 4500 F C	0.1 mg/L	ISCO
01002	Arsenic, Total (as As)	MET	0.05 mg/L	SM 200.8	0.001 mg/L	ISCO
01007	Barium, Total (as Ba)	MET	0.5 mg/L	SM 200.8	0.0025 mg/L	ISCO
01027	Cadmium, Total (as Cd)	MET	0.001 mg/L	SM 200.8	0.0005 mg/L	ISCO
01032	Chromium, Hexavalent (as Cr)(grab)	MET	0.01 mg/L	SM 3500 Cr-B	0.01 mg/L	Grab
01034	Chromium, Total (as Cr)	MET	0.05 mg/L	SM 200.8	0.005 mg/L	ISCO
01042	Copper, Total (as Cu)	MET	0.005 mg/L	SM 200.8	0.002 mg/L	ISCO
01045	Iron, Total (as Fe)	MET	0.5 mg/L	SM 200.8	0.1 mg/L	ISCO
01046	Iron, Dissolved (as Fe)	MET	0.5 mg/L	SM 200.8	0.1 mg/L	ISCO
01051	Lead, Total (as Pb)	MET	0.05 mg/L	SM 200.8	0.0005 mg/L	ISCO
01055	Manganese, Total (as Mn)	MET	0.5 mg/L	SM 200.8	0.0025 mg/L	ISCO
01067	Nickel, Total (as Ni)	MET	0.005 mg/L	SM 200.8	0.002 mg/L	ISCO
01077	Silver, Total (as Ag)	MET	0.003 mg/L	SM 200.8	0.0005 mg/L	ISCO
01092	Zinc, Total (as Zn)	MET	0.025 mg/L	SM 200.8	0.020 mg/L	ISCO
01147	Selenium, Total (as Se)	MET	0.005 mg/L	SM 200.8	0.0025 mg/L	ISCO
31625	Fecal Coliform, MF, M-FC, 0.7 µm	BAC	-	Colilert-18	1 MPN/100mL	Grab
32730	Phenolics, Total Recoverable (grab)	VOC	0.005 mg/L	EPA 420.4	0.005 mg/L	Grab
71900	Mercury, Total (as Hg) (using USEPA Method 1631 or equivalent) (grab)	MET	1.0 ng/L	EPA 1631E	0.5 ng/L	Grab
85801	TSS, Total Suspended Solids in Water	OTH	-	SM 2540-D	5.0 mg/L	ISCO
99906	Escherichia Coliform (E. Coli)	BAC	-	Colilert-18	1 MPN/100mL	Grab
00089	Chemical Oxygen Demand	OTH	-	SM 5220C	10.0 mg/L	ISCO
00094	Specific Conductance	PHY	-	multimeter	TBD	*In situ*
00010	Temperature	PHY	-	multimeter	-	*In situ*
70301	Total Dissolved Solids	OTH	-	SM 2540C	10.0 mg/L	ISCO
~~**NA**~~	~~Polycyclic Aromatic Hydrocarbons (PAHs)~~	~~VOC~~	~~-~~	~~SM 8270D~~	~~16 compounds~~	~~ISCO~~

* personal communication with Bob Mosher of IEPA (March 2014)

WATER QUALITY MONITORING AMENDMENT (Change Order 3)
PRELIMINARY BUDGET
WILLOW ROAD STORMWATER TUNNEL AND AREA DRAINAGE IMPROVEMENTS

MWH Americas, Inc.
July 31, 2015

		2014 Water Quality Monitoring		2015 Water Quality Monitoring		
		Village Expenses	MWH Billings	Village Expenses	MWH Billings	Comments
Water Quality Sampling Equipment (purchase by Village)						
	Gasvoda - Equipment Purchase	$ 21,001		$ -		City owns samplers. Minor allowance for purchase of new tubing or other accessories that may be required.
	Allowance for Additional Items	$ 1,999		$ 1,000		
	MWH Mark-up on Subcontracts, Directs	$ -		$ -		
	Subtotal	$ 23,000		$ 1,000		
Flow Monitoring Lease/Equipment Installation (Village PO)						
	Gasvoda - Flow Monitoring Services	$ 29,900		$ 27,728		Waiting on quote. Expect cost for installation of samplers and rental of 1-2 meters to be between $10,000 and $20,000. Should have firm quote by Tuesday 8/4/15.
	Contingency for Additional Effort	$ 1,600		$ -		
	MWH Mark-up on Subcontracts, Directs	$ -		$ -		
	Subtotal	$ 31,500		$ 27,728		
Analytical Services						
	Laboratory Services - TestAmerica		$ 16,500		$ 20,000	Laboratories have agreed to hold to analysis costs from previous work. Budget includes analysis for samples from 3-4 events, first flush samples from two locations, grab samples from the Cherry St. outfall, and various blanks and duplicates.
	Laboratory Services - STAT		$ 1,600			
	Laboratory Services - Contingency		$ 1,900			
	MWH Mark-up on Subcontracts, Directs		$ 2,000		$ 2,000	
	Subtotal		$ 22,000		$ 22,000	
Consulting Services						
	Program Planning/Coordination		$ 9,850		$ 4,925	2014 Sampling Plan to be re-used with minor modifications. Dry weather sampling replaced with additional grabs at Cherry. Overall program period is extended from 8-12 weeks.
	Sampling/Monitoring Services		$ 26,450		$ 31,375	
	Data Analysis and Reporting		$ 12,200		$ 12,200	
	Subtotal		$ 48,500		$ 48,500	
Subtotals		$ 54,500	$ 70,500	$ 28,728	$ 70,500	
Total Sampling Program Costs		**$ 125,000**		**$ 99,228**		

2015 Water Quality Sampling Program - MWH Level of Effort and Labor Billings

Village of Winnetka, IL

	Company Officer	Lead	Senior	Professional	Admin	Labor Total	Directs (w/ markup)	Task Total
Billing Rate ($/hr)	$ 240	$ 175	$ 140	$ 120	$ 100			
Level of Effort								
Planning/Coordination	4	0	10	0	4	$ 2,760.00	$ 2,165.00	$ 4,925.00
Sampling/Monitoring	2	0	122	98	4	$ 29,720.00	$ 1,655.00	$ 31,375.00
Analysis/Reporting	6	4	36	38	4	$ 12,140.00	$ 60.00	$ 12,200.00
Total	12	4	168	136	12	$ 44,620.00	$ 3,880.00	$ 48,500.00

Note: Planning/Coordination Directs includes allowance for purchase of water quality multi-meter

WILLOW ROAD STORMWATER TUNNEL
AND AREA DRAINAGE IMPROVEMENTS (STADI)

SCOPE OF WORK FOR
FLOW MONITORING AND ASSISTANCE WITH AUTOMATIC WATER QUALITY SAMPLING

JULY 29, 2015

1. FLOW MONITORING AND ASSISTANCE WITH AUTOMATIC WATER QUALITY SAMPLING

1.1. Water Quality Sample Locations

Automatic water quality samplers will be installed at 4 locations in the Village of Winnetka, IL (Figure 1).

- Elder Lane Park
- Hibbard Road Box Culvert
- Birch Street Box Culvert
- Provident Avenue and Willow Road

1.1.1. Elder Lane Park - Outfall to Lake Michigan

Sampling Location	Manhole in Elder Park (see photo below)
Depth to Storm Sewer Invert (feet)	~15
Storm Sewer Diameter (inches)	24
Sampler Type	ISCO 6712
Flow Monitoring Equipment	Area Velocity with mounting band
Trigger for WQ Sampling	Flow Meter
Equipment Security	Isco Pro-Hanger
Strainer Type	Low-flow stainless steel

1.1.2. Hibbard Road Box Culvert - Outfall to Skokie River

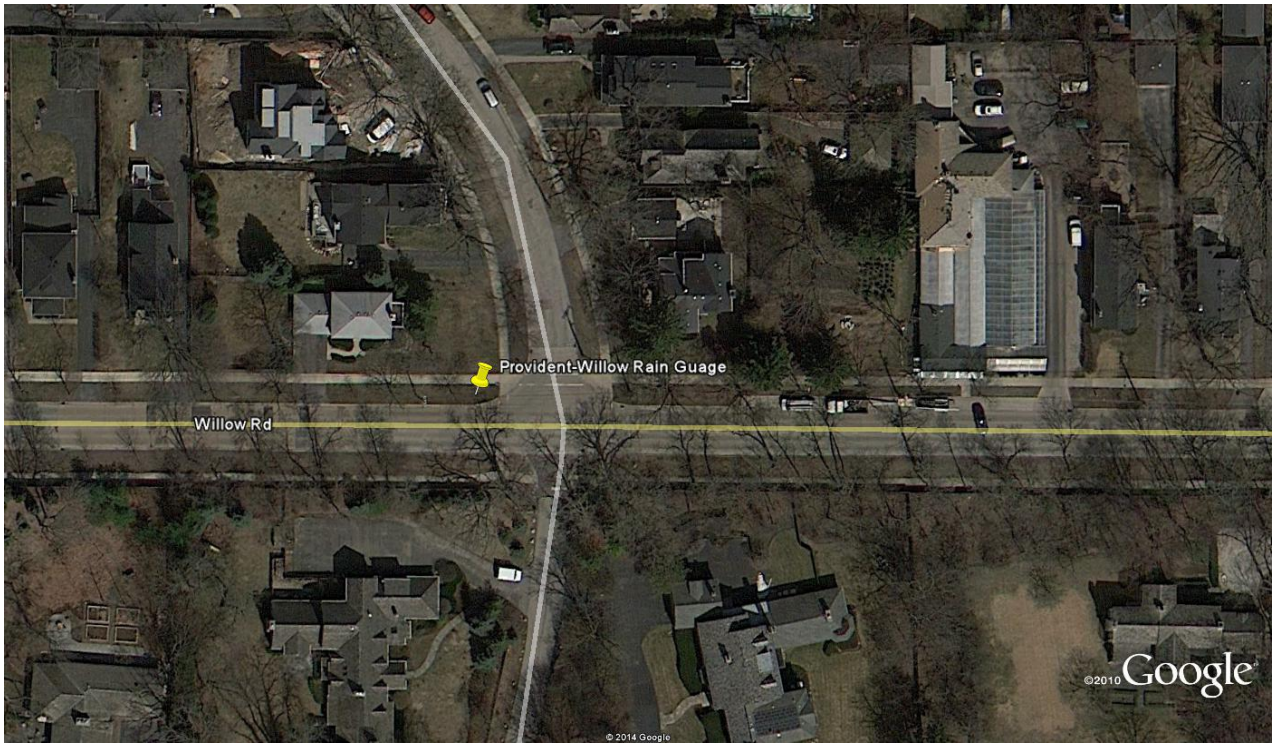
Sampling Location	Box culvert at open channel west of Hibbard Road (see photo below)
Depth to Storm Sewer Invert (feet)	NA
Storm Sewer Diameter (inches)	96 x 72
Sampler Type	ISCO 6712
Flow Monitoring Equipment	None (Option = Ultrasonic + Laser)
Trigger for WQ Sampling	Rain gauge
Equipment Security	Locking harness
Strainer Type	Standard weighted polypropylene

1.1.3. Birch Street Box Culvert

Sampling Location	Box culvert at Birch Street, one block north of Winnetka Ave. (see photo below)
Depth to Storm Sewer Invert (feet)	NA
Storm Sewer Diameter (inches)	36 x 48
Sampler Type	ISCO GLS
Flow Monitoring Equipment	None
Trigger for WQ Sampling	Rain gauge
Equipment Security	Locking harness
Strainer Type	Low-flow stainless steel
Weir	Custom made straight plywood weir (max. height 6" above existing silt invert)

1.1.4. Provident Avenue and Willow Road

Sampling Location	Northwest corner of Provident Avenue and Willow Road (see photo below)
Depth to Storm Sewer Invert (feet)	~10
Storm Sewer Diameter (inches)	48
Sampler Type	ISCO GLS
Flow Monitoring Equipment	None
Trigger for WQ Sampling	Rain gauge
Equipment Security	Isco Pro-Hanger
Strainer Type	Standard weighted polypropylene



1.2. Sampling Schedule

- Summer/Fall 2015 (mid-August to mid-November) – The goal is to capture data for 3 significant rainfall events with automated samplers within a 3 month period.

1.3. WQ Equipment Setup and Flow Monitoring Scope of Work

The subcontractor shall perform the following tasks for MWH:

1.3.1. Installation and Setup

- Elder Lane Park Flow Meter. Subcontractor shall install flow meter, data logger, battery, and appurtenant equipment to monitor flows at the Elder Lane Park sampling location shown in Figure 1. The subcontractor shall provide a mounting band, clamps, and/or other appurtenant equipment required for the installation and operation of the flow meter.
- Install Water Quality Samplers. Subcontractor shall install the automatic water quality sampling equipment, including automatic sampler, suction tubing, mounting equipment, batteries, and appurtenant equipment at each of the 4 sites. Tubing and strainer shall be securely fastened to remain in place during full sewer flows.
- Birch Street Weir. Subcontractor shall fabricate and install a straight-top plywood weir at the Birch Street box culvert sampling location. The top of the weir shall not exceed 6 inches above the existing silt level in the box culvert.
- Install Rain Gauges. Subcontractor shall install 3 rain gauges (Hibbard, Birch, and Provident/Willow), connected to automatic samplers to trigger sampling events (using actuators boxes for the GLS model samplers). At the Elder Lane Park stie, the automatic sampler shall be triggered by the flow meter.
- Initial Set Up of Water Quality Samplers. Subcontractor shall perform initial set-up of all water quality automatic sampling equipment. MWH personnel will join subcontractor in the field for one day to review the automatic water quality sampling equipment set-up and operation protocols. Flow meter sampling interval shall be 1 minute.

1.3.2. Bi-Weekly Monitoring and Maintenance

- Subcontractor shall make trips every 2 weeks to each of the flow monitoring locations to upload flow meter data and reset equipment. Raw data from the flow meters and from the rain guage at Hibbard Road shall be emailed to MWH in spreadsheet or comma delimited format within 48 hours of data upload.
- While uploading data, Subcontractor shall inspect and maintain flow meter equipment. The subcontractor shall verify connections, debris and siltation at strainer, mounting status, battery charge, data logger function, and other tasks to confirm flow meter system functionality.

1.3.3. Equipment Removal

- At the end of the sampling program, when requested by MWH, subcontractor shall remove all equipment and shall deliver equipment owned by the Village of Winnetka to the Department of Public Works.

1.3.4. Equipment Rental

- Costs for renting flow meters with appurtenant flow equipment shall be listed separately.

1.3.5. Fiberglass Enclosure

- Costs for purchasing fiberglass enclosures for the automatic water quality samplers shall be listed separately, and shall include assembly, delivery, taxes, and all associated charges.

1.3.6. Rent Software

- Rent software and cables to MWH so that MWH can:
    a. Reset the flow meter trigger at Elder Lane Park and
    b. Upload Hibbar Road Box Culvert rainfall data from 6712 Automatic Water Quality Sampler.

1.3.7. OPTIONAL ITEMS

- If selected, the Subcontractor shall install and maintain a flow meter at the Hibbard Road Box Culvert site.
    a. Install and setup an Ultrasonic and Laser Flow Meter System.
    b. Perform bi-weekly monitoring and maintenance on the Hibbard flow meter.
    c. Rent the Ultrasonic and Laser Flow Meter equipment.
- If selected, the Subcontractor shall rent fiberglass enclosures in lieu of purchasing enclosures.

1.4. Provided by Others

- The Village will install 3 posts for the rain gauges.
- The Village will provide chains and locks to secure automatic samplers with locking harnesses to nearby trees or structures.
- The Village will maintain the automatic water quality samplers during the study (e.g., by supplying fresh batteries, collecting samples, switching out bottles).
- The Village will have the automatic sampling equipment used last year available at the Village of Winnetka Department of Public Works garage for pickup prior to installation.

2. COST PROPOSAL

ID	Task	Unit	Quantity	Equipment No.	Unit Cost	Total Cost
1	Installation and Setup 1 area velocity flow meter, 4 automatic water quality samplers, 3 rain gauges, and appurtenant equipment	LS	1		$6,400	$6,400
2	Bi-Weekly Monitoring and Maintenance	Month	3		$3,120	$9,360
3	Equipment Removal	LS	1		$2,200	$2,200
4	Equipment Rental – Area Velocity Flow Meter	Month	3	Model 2150	$1,400	$4,200
5	Fiberglass Enclosure (Purchase)	EA	2	Storm Box	$2,100	$4,200
6	Rent Software	Month	3	Flowlink	$456	$1,368
					TOTAL	$27,728

	OPTIONAL Task	Unit	Quantity	Equipment No.	Unit Cost	Total Cost
A	Fiberglass Enclosure (Rentals) 1 for Birch and 1 for Elder	Month	6	Storm Box "L"	$500	$3,000
B	Ultrasonic and Laser Flow Meter at Hibbard Road Box Culvert					
B1	Equipment Rental	Month	3	Model 2160	$1,800	$5,400
B2	Install and Setup	LS	1		$520	$520
B3	Biweekly Monitoring and Maintenance	Month	3		$260	$780

Hourly labor rate for additional effort beyond scope of work $__130/hr/man + travel time and mileage