REQUEST FOR BOARD ACTION

AGENDA ITEMS: 3.12

Engineering & Public Works Department

SUBJECT: Preliminary Engineering and Design Services for the Neighborhood Storage Improvement Project

MEETING DATE: July 24, 2018

FROM: Brigitte Berger-Raish, P.E. Director of Engineering and Public Works
Dan Manis, P.E., Village Engineer

BUDGET IMPACT: Contract Amount……..... $1,102,582
Over/(Under) Budget.....($1,102,582)

Recommended Motion

Move to approve a contract with Christopher B. Burke Engineering Ltd, Rosemont, IL, in the amount not-to-exceed $1,102,582 for preliminary engineering and design services associated with the Neighborhood Storage Improvement Project (NSIP).

Background

In 2013, the consulting firm of Christopher B. Burke Engineering Ltd. (CBBEL) was engaged to perform a study of the separate storm sewer system after several large rain events resulted in widespread overland flooding. CBBEL presented a series of alternatives that would achieve the Village's goal of flood protection during a 10-year storm event. The results of the study and alternatives to address the problem were reviewed by a second engineering firm, Stantec in 2017. On April 17, 2018, after a comprehensive review of alternatives and extensive public engagement, the Village Board voted to move forward with the NSIP.

The NSIP project consists of constructing three underground detention structures and associated relief sewers to improve the effectiveness of the existing storm sewer system. The project is estimated to reduce structure flooding for 71% of the homes inundated by flooding in a ten-year storm event. The concept plan shows underground detention structures at Centennial Park or Community Playfield (Phase 1), Hibbard Park (Phase 2) and Thornwood Park (Phase 3). Phase 1 also includes approximately 5,500 feet of new relief storm sewer (referred to as Phase 1A) in critical areas of the system that are not served by detention storage.

This contract includes preliminary engineering (30% design) for all three storage facilities as well as design and bidding services for the first phase of the project.

Specifically, the preliminary engineering for Phases 1, 1A (relief sewers), 2 and 3 includes the following items:

a. Reaffirm the benefits of the NSIP through design level system modeling.
b. Perform an engineering and cost/benefit review of the Phase 1 storage sites to determine which location (Centennial Park or Community Playfield) is most feasible and desirable. Document results in a memorandum to be reviewed at a meeting of the Village Board.
c. Coordinate with the Village's GIS Consortium representative to obtain all available aerial mapping and utility data for the NSIP sites and the surrounding areas.
d. Conduct a detailed topographical survey (including above and underground utilities, structures, ground contours, critical ground spot elevations and trees) necessary to support constructible plan sets for all three phases of work.
e. Collect and analyze soil borings for preparation of the required LPC 662 Clean Construction Debris Disposal forms and for evaluation of NSIP soil conditions.
f. Develop proposed sewer alignments.
g. Analyze the three underground storage options and associated piping to determine optimal flood relief benefits. Document results in a memorandum to be reviewed at a meeting of the Village Board.
h. Develop a green infrastructure plan. The plan should focus on green infrastructure opportunities that could be incorporated into each phase of the NSIP. The green infrastructure options, costs and associated benefits shall be documented and reviewed at a meeting of the Village Board.
i. Provide an updated estimate of cost for all three NSIP phases.
j. Identify in a memorandum funding opportunities for the NSIP.

The design and bidding services for Phases 1 and 1A includes the following scope of work:

a. Prepare construction documents consisting of drawings, details, and technical specifications. The set of drawings will contain a General Notes sheet that will list the required material specifications, plan view sheets, section cuts, restoration detail sheets, and detailed construction staging as required. The technical specifications will provide detailed information on each of the work items and materials to be used in the NSIP, including park restoration and amenities approved during preliminary engineering.
b. The Village's front-end documents shall be inserted into the NSIP specifications.
c. Prepare a set of General Conditions that includes site-specific instructions for each phase and special requirements with respect to minimizing disruption to the area residents, School District #39, Park District operations and adjacent properties.
d. Prepare a bid form for unit prices to be used for fairly pricing additional/deduct work and alternative pricing forms, if needed.
e. Prepare a list of engineer's estimate of probable construction costs, prior to bidding of each phase.
f. Present the NSIP results at a Village Board meeting and at a separate neighborhood meeting. Conduct a formal presentation of the findings and recommendations and design, along with the construction costs and

implementation schedule. Numerous visual aids may be needed for possible group discussions.

g. Provide an operation and maintenance plan for the storm water facilities per MWRD requirements.
h. Submit and receive approval for all required permits for IEPA, MWRDGC, IDOT and Cook County and the Village of Wilmette.
i. Provide a list of qualified contractors to bid on the improvements.
j. Facilitate the pre-bid meeting, NSIP site tours, and bid opening.
k. Prepare and submit addenda as needed.
l. Respond to bid questions during the bidding period.
m. Evaluate bids received. Prepare and submit a memorandum to the Village on its review, analysis, conclusions, and recommendation associated with the bids received. The memorandum shall also describe, explain, and summarize any variances between the Engineer's estimate and apparent low bidder's bid breakdown. Check references submitted.

Discussion

The Village issued a Request for Proposals and received responses from seven firms, several of which teamed together because of the size of the project. After careful review of the proposals, staff shortlisted and interviewed three firms. The ranking and summary of fees is as follows:

Ranking	Firm	Fee
1	CBBEL, Baxter and Woodman	$1,102,582
2	Chastain and Engineering Resources	$ 709,327[1]
3	Stantec and RJN	$1,995,556[1]

[1] Amended after discussion of scope during the interview.

The team of Christopher B. Burke Engineering, Ltd. (CBBEL) and Baxter and Woodman was selected based on their relevant experience, knowledge of the system, comprehensive scope of work and competitive fee. Their team has decades of experience working on flood relief projects for Elmhurst, Elmwood Park, Bartlett, Northbrook and Glenview, among many others. Darren Olson, from CBBEL, was the project manager during the initial hydraulic study of the system and will be assigned the project manager role for this phase of work. Mr. Olson will share this responsibility with Matt Moffitt of Baxter and Woodman, who served on the team that completed the final engineering design for a 23.7 acre-foot underground storage facility in Northbrook.

As its original developer, CBBEL has tremendous knowledge of Wilmette's storm sewer model and provided an option in their proposal to expand flood relief to underserved neighborhoods. This will be reviewed in detail during the preliminary engineering phase. In addition, both CBBEL and Baxter and Woodman have worked on road and utility projects in Wilmette, so they are knowledgeable about our engineering standards and specifications. They recognize that a key to the project's success is the ability to work with the Park District and School District to design projects that are beneficial to all parties. Given the importance of this task, CBBEL has chosen Dr. Chris Burke to manage the public coordination.

The team of Chastain and Engineering Resources provided a competitive fee, but their relevant experience focused on watershed planning and analysis and storm sewer projects, rather than

designing underground detention structures. For this reason, staff believes the team of CBBEL and Baxter and Woodman is the better choice to perform this work.

Budget Impact

There are no funds in the FY 2018 Budget for the NSIP engineering. . The expense will initially be paid from the Sewer Fund reserve and reimbursed through a future bond issuance.

Documents Attached

1. Proposal from CBBEL for the West Neighborhood Storage Project

June 25, 2018

REQUEST FOR PROPOSAL NO. 18137

WEST SIDE NEIGHBORHOOD STORAGE PROJECT

THE VILLAGE OF Wilmette EST. 1872

PHASE 1

PHASE 2

PHASE 3

SUBMITTED TO:
CLIFF RUEMMLER
PURCHASING MANAGER
VILLAGE OF WILMETTE
1200 WILMETTE AVE
WILMETTE, IL 60091

SUBMITTED BY:
MICHAEL KERR, PE
CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 WEST HIGGINS ROAD | SUITE 600
ROSEMONT, IL 60018
mkerr@cbbel.com

CHRISTOPHER B. BURKE ENGINEERING, LTD.

BAXTER & WOODMAN Consulting Engineers

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 West Higgins Road Suite 600 Rosemont, Illinois 60018 TEL (847) 823-0500 FAX (847) 823-0520

June 21, 2018

Cliff Ruemmler, Purchasing Manager
Village of Wilmette
1200 Wilmette Avenue
Wilmette, IL 60091

Subject: **Request for Qualifications No. 18137**

Dear Mr. Ruemmler:

Christopher B. Burke Engineering, Ltd. (CBBEL) is pleased to submit five copies and one electronic copy of our qualifications to provide Engineering Services for the West Side Neighborhood Storage Project. The material presented is in accordance with the information requested in your RFQ. We acknowledge receipt of Addendum #1 dated May 29, 2018 and Addendum #2 dated June 7, 2018.

CBBEL and Baxter and Woodman (B&W) are teaming to present the Village of Wilmette (Village) with a group of highly experienced, well regarded and committed individuals who have a proven track record in accomplishing the requested services. We are very excited about the opportunity to finish the work that CBBEL started with the Village about five years ago. As demonstrated in the following pages, we have the unique experience of having developed the background knowledge and have shown the commitment and desire to work with the Village to complete this important project. Our engineers have been in the Village during many significant rain events over the past 5 years to witness the flooding, talk to the residents and follow-up with Village staff on what was experienced.

CBBEL is a full-service company that comprehensively meets the needs of our many clients. Our staff of 207 and expansive list of specializations—civil, municipal, transportation, water resources, mechanical, electrical, structural, construction, traffic, surveying, environmental engineering and environmental resource services—provide professionalism and expertise that promote success.

B&W has been providing engineering and consulting services to municipal, county, and state government agencies since 1946. With Illinois offices in Chicago, Mokena, Crystal Lake and DeKalb, their team of 220+ professionals offer expert services that stretch well beyond typical engineering consulting. B&W is committed to BUILDING COMMUNITY

VALUE with each and every project: Water, Wastewater, Transportation, Stormwater, General Municipal, GIS, Technology, Survey and more.

CBBEL and B&W have successfully worked together on civil projects over the last several years. We are excited to bring the vast experience of B&W with their recently completed large underground storage project in Northbrook that not only solves flooding problems but harvests rainwater for the Village of Northbrook to use for watering around town. CBBEL will lead the stormwater modeling efforts while B&W will complete the necessary survey needs and 30% design plans. The final design plans will be split between the two firms. CBBEL will oversee the Resident Engineering portion of the project utilizing staff from both companies.

Our team understands that timely, on budget services are essential for successful completion. Our staff's experience and proven track record on similar projects will and have provided the Village a quality project experience.

The contact person for this proposal is Michael Kerr, PE who will act as the Principal in Charge. We look forward to continuing our working relationship with the Village and the Engineering and Public Work staff members.

If you have any questions or need any additional information, please do not hesitate to contact me.

Sincerely,

Christopher B. Burke, PhD, PE, D.WRE, Dist.M.ASCE
President

TABLE OF CONTENTS

TAB 1 INSTRUCTIONS PAGE
SUMMARY PROPOSAL FEE SHEET
DETAILED PROPOSAL FEES

TAB 2 QUALIFICATIONS AND EXPERIENCE
- A SIMILAR PROJECTS
- B UNIQUE PROJECT CHALLENGES
- C PROJECT ORGANIZATIONAL CHART
- D KEY STAFF

TAB 3 PROJECT APPROACH
- A UNDERSTANDING OF ASSIGNMENT
- B KEYS TO THE PROJECT
- C SCOPE OF SERVICES
- D SCHEDULE

TAB 4 REFERENCE SHEET

TAB 5 CURRENT VILLAGE OF WILMETTE CONTRACTS SHEET
PROPOSAL EXCEPTIONS SHEET

TAB 6 ENGINEER ACKNOWLEDGMENT (SIGNED)

TAB 7 CERTIFICATION OF COMPLIANCE (SIGNED)

TAB 8 IRS FORM W-9

INSTRUCTIONS TO ENGINEERS ON COMPLETING FORMS
West Side Neighborhood Storage Project
Engineering Services

ENGINEER INFORMATION

Company Name:	Christopher B. Burke Engineering, Ltd.
Address:	9575 W. Higgins Road, Suite 600
City, State, Zip	Rosemont, IL 60018
Contact Name:	Michael Kerr
Phone / Email:	847-823-0500/mkerr@cbbel.com

The following Proposal Forms must be filled out completely, executed by an authorized agent, notarized and sealed, if applicable, and included in the Proposal.

PROPOSAL SUBMISSION FORMS, in this order

X	This Instructions Page
X	Summary Proposal Fee Sheet
X	Detailed Proposal Fees
X	Qualifications and Experience
X	Reference Sheet
X	Current Village of Wilmette Contracts Sheet
X	Proposal Exceptions Sheet
X	Engineer Acknowledgement (signed)
X	Certification of Compliance (signed)
X	IRS Form W-9

SUCCESSFUL ENGINEER ONLY

The **successful** Engineer will be required to execute the Contract included in Appendix One to this RFP. This document **SHOULD NOT** be completed at the time of proposal submission.

SUMMARY PROPOSAL FEE SHEET
West Side Neighborhood Storage Project
Engineering Services

Required Work

Provide a not-to-exceed cost with this RFP.

	Preliminary Engineering 30% Plans	Design & Bidding 100% Plans	Total Fees
Phase 1 - Centennial Park or Community Playfields Phase 1A - Relief Sewers	$ 291,161.67	$ 379,712.38	$ 670,874.05
WPD & District 39[(1)]	60,000	0	60,000
Subtotal Phase 1 and 1A	351,161.67	379,712.38	730,874.05
Phase 2 - Hibbard Park	143,883.39	180,937.69	324,821.08
Phase 3 - Thornwood Park	167,824.22	326,853.03	494,677.25
Total Fees	$662,869.28	$ 887,503.10	$1,550,372.38

[(1)]Fees for meetings, preliminary design work and significant coordination with the Wilmette Park District and the Wilmette Public School District #39 if the Community Playfields are selected for Phase 1.

Total Fees In Words:

One million five hundred fifty thousand three hundred seventy two dollars and 38 cents.

Optional Work

Phase 1 and 1A - Construction Engineering Fees $ 859,259.04

Total Optional Fees In Words:

Eight hundred fifty nine thousand two hundred fifty nine dollars and 04 cents.

Cost Estimate of Consultant Services
(Direct Labor Multiple)

Firm	Christopher B. Burke Engineering, Ltd.	Date	06/21/18
Route	PHASE 1 - Preliminary Engineering		
Section		Overhead Rate	**129.74%**
County			
Job No.		Complexity Factor	**0**
PTB & Item			

ITEM	MANHOURS (A)	PAYROLL (B)	(2.60+R) TIMES PAYROLL (C)	DIRECT COSTS (D)	SERVICES BY OTHERS (E)	DBE TOTAL (C+D+E)	TOTAL (C+D+E)	% OF GRAND TOTAL
1a Re-affirmation of Neighborhood Storage	20	1,090.96	2,836.50				2,836.50	1.81%
1b Benefit/Cost Analysis for Community Park and Centennial Park Comparison	190	10,204.10	26,530.66				26,530.66	16.91%
1c,d GIS Coordination and Topographic Survey	4	190.40	495.04		16,705.73		17,200.77	10.96%
1e Geotechnical Soil Borings and CCDD Analysis	12	772.08	2,007.41		12,100.00		14,107.41	8.99%
1f 30% plans for Stom Sewer Alginment & Underground Stormwater Storage	12	772.08	2,007.41		63,353.27		65,360.68	41.65%
1g Underground Stormwater Optimization	90	4,811.40	12,509.64				12,509.64	7.97%
1h Green Infrastructure Plan	15	810.00	2,106.00		6,187.66		8,293.66	5.29%
1i Engineer's Estimate of Probable Cost	6	386.04	1,003.70		6,234.55		7,238.25	4.61%
1j Analysis of Funding Opportunities	20	1,090.96	2,836.50				2,836.50	1.81%
TOTALS	369	20,128.02	52,332.85	0.00	104,581.21	0.00	156,914.06	100.00%

Average Hourly Project Rates

Route PHASE 1 - Preliminary Engineering
Section
County **Consultant** **Christopher B. Burke Engineering, Ltd.** **Date** 06/21/18
Job No.
PTB/Item **Sheet** 1 **OF** 1

Payroll Classification	Avg Hourly Rates	Total Project Rates			1a Re-affirmation of Neighborh			1b Benefit/Cost Analysis for Co			1c,d GIS Coordination and Top			1e Geotechnical Soil Borings a			1f 30% plans for Stom Sewer Al		
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	$75.00	0																	
ENGINEER VI	$72.25	0																	
ENGINEER V	$64.34	88	23.85%	15.34	4	20.00%	12.87	40	21.05%	13.55				12	100.00%	64.34	12	100.00%	64.34
ENGINEER IV	$52.10	232	62.87%	32.76	16	80.00%	41.68	120	63.16%	32.91									
ENGINEER III	$45.95	30	8.13%	3.74				30	15.79%	7.26									
GIS SPECIALIST III	$47.60	4	1.08%	0.52							4	100.00%	47.60						
LANDSCAPE ARCHITECT	$54.00	15	4.07%	2.20															
TOTALS		369	100%	$54.55	20	100%	$54.55	190	100%	$53.71	4	100%	$47.60	12	100%	$64.34	12	100%	$64.34

Average Hourly Project Rates

Route PHASE 1 - Preliminary Engineering
Section
County **Consultant** **Christopher B. Burke Engineering, Ltd.** **Date** 06/21/18
Job No.
PTB/Item **Sheet** 2 **OF** 1

Payroll Classification	Avg Hourly Rates	1g Underground Stormwater Op			1h Green Infrastructure Plan			1i Engineer's Estimate of Proba			1j Analysis of Funding Opportu								
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	$75.00																		
ENGINEER VI	$72.25																		
ENGINEER V	$64.34	10	11.11%	7.15				6	100.00%	64.34	4	20.00%	12.87						
ENGINEER IV	$52.10	80	88.89%	46.31							16	80.00%	41.68						
LANDSCAPE ARCHITECT	$54.00				15	100.00%	54.00												
TOTALS		90	100%	$53.46	15	100%	$54.00	6	100%	$64.34	20	100%	$54.55	0	0%	$0.00	0	0%	$0.00

Cost Estimate of Consultant Services
(Direct Labor Multiple)

Firm	Christopher B. Burke Engineering, Ltd.	Date	06/21/18
Route	PHASE 1A - Preliminary Engineering		
Section		Overhead Rate	**129.74%**
County			
Job No.		Complexity Factor	**0**
PTB & Item			

ITEM	MANHOURS (A)	PAYROLL (B)	(2.60+R) TIMES PAYROLL (C)	DIRECT COSTS (D)	SERVICES BY OTHERS (E)	DBE TOTAL (C+D+E)	TOTAL (C+D+E)	% OF GRAND TOTAL
A Re-affirmation of Neighborhood Storage	20	1,090.96	2,836.50				2,836.50	2.11%
B Benefit/Cost Analysis for Community Playfield and Centennial Park Comparison	1	64.34	167.28				167.28	0.12%
C, D GIS Coordination and Topographic Survey	4	190.40	495.04		17,626.60		18,121.64	13.50%
E Geotechnical Soil Boings and CCDD Anaylis	12	772.08	2,007.41		10,700.00		12,707.41	9.47%
F 30% Plans for Storm Sewer Alignment and Underground Stormwater Storage	12	772.08	2,007.41		67,196.61		69,204.02	51.55%
G Underground Storage Optimization	90	4,811.40	12,509.64				12,509.64	9.32%
H Green Infrastructure Plan	15	810.00	2,106.00		6,520.37		8,626.37	6.43%
I Engineer's Estimate of Probable Cost	6	386.04	1,003.70		6,234.55		7,238.25	5.39%
J Analysis of Funding Opportunities	20	1,090.96	2,836.50				2,836.50	2.11%
TOTALS	180	9,988.26	25,969.48	0.00	108,278.13	0.00	134,247.61	100.00%

Average Hourly Project Rates

Route PHASE 1A - Preliminary Engineering
Section
County **Consultant** **Christopher B. Burke Engineering, Ltd.** **Date** 06/21/18
Job No.
PTB/Item **Sheet** 1 **OF** 1

Payroll Classification	Avg Hourly Rates	Total Project Rates			A Re-affirmation of Neighborhc			B Benefit/Cost Analysis for Co			C, D GIS Coordination and Top			E Geotechnical Soil Boings an			F 30% Plans for Storm Sewer A		
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	$75.00	0																	
ENGINEER VI	$72.25	0																	
ENGINEER V	$64.34	49	27.22%	17.51	4	20.00%	12.87	1	100.00%	64.34				12	100.00%	64.34	12	100.00%	64.34
ENGINEER IV	$52.10	112	62.22%	32.42	16	80.00%	41.68												
GIS SPECIALIST III	$47.60	4	2.22%	1.06							4	100.00%	47.60						
LANDSCAPE ARCHITECT	$54.00	15	8.33%	4.50															
TOTALS		180	100%	$55.49	20	100%	$54.55	1	100%	$64.34	4	100%	$47.60	12	100%	$64.34	12	100%	$64.34

Average Hourly Project Rates

Route PHASE 1A - Preliminary Engineering
Section
County **Consultant** **Christopher B. Burke Engineering, Ltd.** **Date** 06/21/18
Job No.
PTB/Item **Sheet** 2 **OF** 1

Payroll Classification	Avg Hourly Rates	G Underground Storage Optimi			H Green Infrastructure Plan			I Engineer's Estimate of Probab			J Analysis of Funding Opportur								
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	$75.00																		
ENGINEER VI	$72.25																		
ENGINEER V	$64.34	10	11.11%	7.15				6	100.00%	64.34	4	20.00%	12.87						
ENGINEER IV	$52.10	80	88.89%	46.31							16	80.00%	41.68						
LANDSCAPE ARCHITECT	$54.00				15	100.00%	54.00												
TOTALS		90	100%	$53.46	15	100%	$54.00	6	100%	$64.34	20	100%	$54.55	0	0%	$0.00	0	0%	$0.00

Cost Estimate of Consultant Services
(Direct Labor Multiple)

Firm	Christopher B. Burke Engineering, Ltd.	Date	06/21/18
Route	PHASE 2 - Preliminary Engineering		
Section		Overhead Rate	**129.74%**
County			
Job No.		Complexity Factor	**0**
PTB & Item			

ITEM	MANHOURS (A)	PAYROLL (B)	(2.60+R) TIMES PAYROLL (C)	DIRECT COSTS (D)	SERVICES BY OTHERS (E)	DBE TOTAL (C+D+E)	TOTAL (C+D+E)	% OF GRAND TOTAL
1A Re-affirmation of Neighborhood Storage	20	1,090.96	2,836.50				2,836.50	1.97%
1B XP-SWMM Model and Benefit/Cost Analysis for Community Park and Centennial Park Comparison	1	64.34	167.28				167.28	0.12%
1C,D GIS Coordination and Topographic Surdy	4	190.40	495.04		19,398.40		19,893.44	13.83%
1E Geotechnical Soil Borings and CCDD Analyis	12	772.08	2,007.41		11,600.00		13,607.41	9.46%
1F 30% Plans for Storm Sewer Alignment and Underground Stormwater Storage	16	1,029.44	2,676.54		72,324.19		75,000.73	52.13%
1G Underground Storage Optimization	90	4,811.40	12,509.64				12,509.64	8.69%
1H Green Infrastructure Plan	16	874.34	2,273.28		7,185.79		9,459.07	6.57%
1I Engineer's Estimate of Probable Cost	8	514.72	1,338.27		6,234.55		7,572.82	5.26%
IJ Analysis of Funding Opportunities	20	1,090.96	2,836.50				2,836.50	1.97%
TOTALS	187	10,438.64	27,140.46	0.00	116,742.93	0.00	143,883.39	100.00%

Average Hourly Project Rates

Route PHASE 2 - Preliminary Engineering
Section
County **Consultant** **Christopher B. Burke Engineering, Ltd.** **Date** 06/21/18
Job No.
PTB/Item **Sheet** 1 **OF** 1

Payroll Classification	Avg Hourly Rates	Total Project Rates			1A Re-affirmation of Neighborh			1B XP-SWMM Model and Benef			1C,D GIS Coordination and Top			1E Geotechnical Soil Borings a			1F 30% Plans for Storm Sewer A		
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	$75.00	0																	
ENGINEER VI	$72.25	0																	
ENGINEER V	$64.34	56	29.95%	19.27	4	20.00%	12.87	1	100.00%	64.34				12	100.00%	64.34	16	100.00%	64.34
ENGINEER IV	$52.10	112	59.89%	31.20	16	80.00%	41.68												
GIS SPECIALIST III	$47.60	4	2.14%	1.02							4	100.00%	47.60						
LANDSCAPE ARCHITECT	$54.00	15	8.02%	4.33															
TOTALS		187	100%	$55.82	20	100%	$54.55	1	100%	$64.34	4	100%	$47.60	12	100%	$64.34	16	100%	$64.34

Average Hourly Project Rates

Route PHASE 2 - Preliminary Engineering
Section
County **Consultant** **Christopher B. Burke Engineering, Ltd.** **Date** 06/21/18
Job No.
PTB/Item **Sheet** 2 **OF** 1

Payroll Classification	Avg Hourly Rates	1G Underground Storage Optim			1H Green Infrastructure Plan			1I Engineer's Estimate of Proba			IJ Analysis of Funding Opportu								
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	$75.00																		
ENGINEER VI	$72.25																		
ENGINEER V	$64.34	10	11.11%	7.15	1	6.25%	4.02	8	100.00%	64.34	4	20.00%	12.87						
ENGINEER IV	$52.10	80	88.89%	46.31							16	80.00%	41.68						
LANDSCAPE ARCHITECT	$54.00				15	93.75%	50.63												
TOTALS		90	100%	$53.46	16	100%	$54.65	8	100%	$64.34	20	100%	$54.55	0	0%	$0.00	0	0%	$0.00

Cost Estimate of Consultant Services
(Direct Labor Multiple)

Firm	Christopher B. Burke Engineering, Ltd.	Date	06/21/18
Route	PHASE 3 - Preliminary Engineering		
Section		Overhead Rate	**129.74%**
County			
Job No.		Complexity Factor	**0**
PTB & Item			

ITEM	MANHOURS (A)	PAYROLL (B)	(2.60+R) TIMES PAYROLL (C)	DIRECT COSTS (D)	SERVICES BY OTHERS (E)	DBE TOTAL (C+D+E)	TOTAL (C+D+E)	% OF GRAND TOTAL
1A Re-affirmation of Neighborhood Storage	20	1,090.96	2,836.50				2,836.50	1.69%
1B Benefit/Cost Analysis for Community Park and Centennial Park Comparison	1	64.34	167.28				167.28	0.10%
1C, D GIS Coordination and Topographic Survey	4	190.40	495.04		23,739.95		24,234.99	14.44%
1E Geotechnical Soil Borings and CCDD Analysis	12	772.08	2,007.41		15,500.00		17,507.41	10.43%
1F 30% Plans for Storm Sewer Alignment and Underground Stormwater Storage	12	772.08	2,007.41		87,931.06		89,938.47	53.59%
1G Underground Storage Optimization	90	4,811.40	12,509.64				12,509.64	7.45%
1H Green Infrastructure Plan	15	810.00	2,106.00		8,783.75		10,889.75	6.49%
1I Engineer's Estimate of Probable Cost	4	257.36	669.14		6,234.55		6,903.69	4.11%
1J Analysis of Funding Opportunities	20	1,090.96	2,836.50				2,836.50	1.69%
TOTALS	178	9,859.58	25,634.91	0.00	142,189.31	0.00	167,824.22	100.00%

Average Hourly Project Rates

Route PHASE 3 - Preliminary Engineering
Section
County **Consultant** **Christopher B. Burke Engineering, Ltd.** **Date** 06/21/18
Job No.
PTB/Item **Sheet** 1 **OF** 1

Payroll Classification	Avg Hourly Rates	Total Project Rates			1A Re-affirmation of Neighborh			1B Benefit/Cost Analysis for C			1C, D GIS Coordination and To			1E Geotechnical Soil Borings a			1F 30% Plans for Storm Sewer A		
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	$75.00	0																	
ENGINEER VI	$72.25	0																	
ENGINEER V	$64.34	47	26.40%	16.99	4	20.00%	12.87	1	100.00%	64.34				12	100.00%	64.34	12	100.00%	64.34
ENGINEER IV	$52.10	112	62.92%	32.78	16	80.00%	41.68												
GIS SPECIALIST III	$47.60	4	2.25%	1.07							4	100.00%	47.60						
LANDSCAPE ARCHITECT	$54.00	15	8.43%	4.55															
TOTALS		178	100%	$55.39	20	100%	$54.55	1	100%	$64.34	4	100%	$47.60	12	100%	$64.34	12	100%	$64.34

Average Hourly Project Rates

Route PHASE 3 - Preliminary Engineering
Section
County **Consultant** **Christopher B. Burke Engineering, Ltd.** **Date** 06/21/18
Job No.
PTB/Item **Sheet** 2 **OF** 1

Payroll Classification	Avg Hourly Rates	1G Underground Storage Optim			1H Green Infrastructure Plan			1I Engineer's Estimate of Proba			1J Analysis of Funding Opportu								
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	$75.00																		
ENGINEER VI	$72.25																		
ENGINEER V	$64.34	10	11.11%	7.15				4	100.00%	64.34	4	20.00%	12.87						
ENGINEER IV	$52.10	80	88.89%	46.31							16	80.00%	41.68						
LANDSCAPE ARCHITECT	$54.00				15	100.00%	54.00												
TOTALS		90	100%	$53.46	15	100%	$54.00	4	100%	$64.34	20	100%	$54.55	0	0%	$0.00	0	0%	$0.00

Cost Estimate of Consultant Services
(Direct Labor Multiple)

Firm	Christopher B. Burke Engineering, Ltd.	Date	06/21/18
Route	PHASE 1-DESIGN AND BIDDING		
Section		Overhead Rate	**129.74%**
County			
Job No.		Complexity Factor	**0**
PTB & Item			

ITEM	MANHOURS (A)	PAYROLL (B)	(2.60+R) TIMES PAYROLL (C)	DIRECT COSTS (D)	SERVICES BY OTHERS (E)	DBE TOTAL (C+D+E)	TOTAL (C+D+E)	% OF GRAND TOTAL
Task 2a & b - Construction Documents	1	72.25	187.85		120,519.00		120,706.85	64.82%
Task 2c - General Conditions/Staging	1	72.25	187.85		6,654.20		6,842.05	3.67%
Task 2d - Bid Proposal/Alternates	1	72.25	187.85		5,007.24		5,195.09	2.79%
Task 2e - Engineer's Opinion of Probable Cost	1	72.25	187.85		6,573.22		6,761.07	3.63%
Task 2f - Board Meeting/Neighborhood Meeting	1	72.25	187.85		9,359.39		9,547.24	5.13%
Task 2g - Operation and Maintenance Plan	1	72.25	187.85		1,924.89		2,112.74	1.13%
Task 2h - Permitting and Utility Coordination	1	72.25	187.85		19,383.65		19,571.50	10.51%
Task 2i to m - Bidding Assitance	1	72.25	187.85		2,388.12		2,575.97	1.38%
Management,Administration and QA/QC	1	72.25	187.85		12,719.14		12,906.99	6.93%
TOTALS	9	650.25	1,690.65	0.00	184,528.85	0.00	186,219.50	100.00%

DBE 0.00%

Baxter and Woodman	$180,529.85
Cardno	$4,000.00

Cost Estimate of Consultant Services

(Direct Labor Multiple)

Firm	Christopher B. Burke Engineering, Ltd.	Date	06/21/18
Route	PHASE 1A-DESIGN AND BIDDING		
Section		Overhead Rate	**129.74%**
County			
Job No.		Complexity Factor	**0**
PTB & Item			

DBE DROP BOX	ITEM	MANHOURS (A)	PAYROLL (B)	(2.60+R) TIMES PAYROLL (C)	DIRECT COSTS (D)	SERVICES BY OTHERS (E)	DBE TOTAL (C+D+E)	TOTAL (C+D+E)	% OF GRAND TOTAL
	Task 2a & b - Construction Documents	896	42,029.76	109,277.38	2,000.00			111,277.38	57.51%
	Task 2c - General Conditions/Staging	40	2,570.16	6,682.42				6,682.42	3.45%
	Task 2d - Bid Proposal/Alternates	68	3,932.04	10,223.30				10,223.30	5.28%
	Task 2e - Engineer's Opinion of Probable Cost	62	2,976.70	7,739.42				7,739.42	4.00%
	Task 2f - Board Meeting/Neighborhood Meeting	48	3,148.16	8,185.22	3,000.00			11,185.22	5.78%
	Task 2g - Operation and Maintenance Plan	16	942.06	2,449.36				2,449.36	1.27%
	Task 2h - Permitting and Utility Coordination	160	8,769.04	22,799.50		4,000.00		26,799.50	13.85%
	Task 2i to m - Bidding Assitance	22	1,226.44	3,188.74				3,188.74	1.65%
	Management,Administration and QA/QC	76	5,364.44	13,947.54				13,947.54	7.21%
	TOTALS	1388	70,958.80	184,492.88	5,000.00	4,000.00	0.00	193,492.88	100.00%

DBE 0.00%

Cardno $4,000.00

Average Hourly Project Rates

Route PHASE 1A-DESIGN AND BIDDING
Section
County **Consultant** **Christopher B. Burke Engineering, Ltd.** **Date** 06/21/18
Job No.
PTB/Item **Sheet** 1 **OF** 1

Payroll Classification	Avg Hourly Rates	Total Project Rates			Task 2a & b - Construction Doc			Task 2c - General Conditions/S			Task 2d - Bid Proposal/Alternat			Task 2e - Engineer's Opinion o			Task 2f - Board Meeting/Neighb		
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	$75.00	0																	
ENGINEER VI	$72.25	156	11.24%	8.12	40	4.46%	3.23	8	20.00%	14.45	4	5.88%	4.25	6	9.68%	6.99	16	33.33%	24.08
ENGINEER V	$64.34	194	13.98%	8.99	66	7.37%	4.74	16	40.00%	25.74	32	47.06%	30.28	16	25.81%	16.60	16	33.33%	21.45
ENGINEER IV	$52.10	0																	
ENGINEER III	$45.95	304	21.90%	10.06	220	24.55%	11.28				24	35.29%	16.22	16	25.81%	11.86			
ENGINEER I/II	$32.44	112	8.07%	2.62	88	9.82%	3.19							24	38.71%	12.56			
SURVEY V	$72.00	0																	
SURVEY IV	$63.50	0																	
SURVEY III	$58.00	60	4.32%	2.51															
SURVEY II*	$42.00	0																	
SURVEY I*	$33.50	0																	
ENGINEERING TECHNICIAN	$63.33	0																	
ENGINEERING TECHNICIAN	$46.75	0																	
ENGINEERING TECHNICIAN	$48.25	0																	
ENGINEERING TECHNICIAN	$34.63	0																	
CAD MANAGER	$60.17	60	4.32%	2.60	20	2.23%	1.34	16	40.00%	24.07	8	11.76%	7.08				16	33.33%	20.06
ASST. CAD MANAGER	$51.33	0																	
CAD II *	$44.50	294	21.18%	9.43	294	32.81%	14.60												
GIS SPECIALIST III	$47.60	16	1.15%	0.55	16	1.79%	0.85												
GIS SPECIALIST I/II*	$30.25	0																	
LANDSCAPE ARCHITECT	$54.00	80	5.76%	3.11	80	8.93%	4.82												
ENVIRONMENTAL RESOUR	$66.75	0																	
ENVIRONMENTAL RESOUR	$51.44	56	4.03%	2.08	40	4.46%	2.30												
ENVIRONMENTAL RESOUR	$40.18	24	1.73%	0.69															
ENVIRONMENTAL RESOUR	$31.13	0																	
ENVIRONMENTAL RESOUR	$38.50	0																	
ADMINISTRATIVE*	$34.98	0																	
ENGINEERING INTERN	$15.75	32	2.31%	0.36	32	3.57%	0.56												
		0																	
		0																	
TOTALS		1388	100%	$51.12	896	100%	$46.91	40	100%	$64.25	68	100%	$57.82	62	100%	$48.01	48	100%	$65.59

Average Hourly Project Rates

Route PHASE 1A-DESIGN AND BIDDING
Section
County **Consultant** **Christopher B. Burke Engineering, Ltd.** **Date** 06/21/18
Job No.
PTB/Item **Sheet** 2 **OF** 1

Payroll Classification	Avg Hourly Rates	Task 2g - Operation and Mainte			Task 2h - Permitting and Utility			Task 2i to m - Bidding Assitanc			Management,Administration an								
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	$75.00																		
ENGINEER VI	$72.25	2	12.50%	9.03	16	10.00%	7.23	4	18.18%	13.14	60	78.95%	57.04						
ENGINEER V	$64.34	6	37.50%	24.13	20	12.50%	8.04	6	27.27%	17.55	16	21.05%	13.55						
ENGINEER IV	$52.10																		
ENGINEER III	$45.95				32	20.00%	9.19	12	54.55%	25.06									
ENGINEER I/II	$32.44																		
SURVEY V	$72.00																		
SURVEY IV	$63.50																		
SURVEY III	$58.00				60	37.50%	21.75												
SURVEY II*	$42.00																		
SURVEY I*	$33.50																		
ENGINEERING TECHNICIAN	$63.33																		
ENGINEERING TECHNICIAN	$46.75																		
ENGINEERING TECHNICIAN	$48.25																		
ENGINEERING TECHNICIAN	$34.63																		
CAD MANAGER	$60.17																		
ASST. CAD MANAGER	$51.33																		
CAD II *	$44.50																		
GIS SPECIALIST III	$47.60																		
GIS SPECIALIST I/II*	$30.25																		
LANDSCAPE ARCHITECT	$54.00																		
ENVIRONMENTAL RESOUR(	$66.75																		
ENVIRONMENTAL RESOUR(	$51.44	8	50.00%	25.72	8	5.00%	2.57												
ENVIRONMENTAL RESOUR(	$40.18				24	15.00%	6.03												
ENVIRONMENTAL RESOUR(	$31.13																		
ENVIRONMENTAL RESOUR(	$38.50																		
ADMINISTRATIVE*	$34.98																		
ENGINEERING INTERN	$15.75																		
TOTALS		16	100%	$58.88	160	100%	$54.81	22	100%	$55.75	76	100%	$70.58	0	0%	$0.00	0	0%	$0.00

Cost Estimate of Consultant Services
(Direct Labor Multiple)

Firm	Christopher B. Burke Engineering, Ltd.	Date	06/21/18
Route	PHASE 2-DESIGN AND BIDDING		
Section		Overhead Rate	**129.74%**
County			
Job No.		Complexity Factor	**0**
PTB & Item			

DBE DROP BOX	ITEM	MANHOURS (A)	PAYROLL (B)	(2.60+R) TIMES PAYROLL (C)	DIRECT COSTS (D)	SERVICES BY OTHERS (E)	DBE TOTAL (C+D+E)	TOTAL (C+D+E)	% OF GRAND TOTAL
	Task 2a & b - Construction Documents	1	72.25	187.85		114,845.92		115,033.77	63.58%
	Task 2c - General Conditions/Staging	1	72.25	187.85		6,654.20		6,842.05	3.78%
	Task 2d - Bid Proposal/Alternates	1	72.25	187.85		5,933.70		6,121.55	3.38%
	Task 2e - Engineer's Opinion of Probable Cost	1	72.25	187.85		6,573.22		6,761.07	3.74%
	Task 2f - Board Meeting/Neighborhood Meeting	1	72.25	187.85		9,359.39		9,547.24	5.28%
	Task 2g - Operation and Maintenance Plan	1	72.25	187.85		1,924.89		2,112.74	1.17%
	Task 2h - Permitting and Utility Coordination	1	72.25	187.85		18,848.46		19,036.31	10.52%
	Task 2i to m - Bidding Assitance	1	72.25	187.85		2,388.12		2,575.97	1.42%
	Management,Administration and QA/QC	1	72.25	187.85		12,719.14		12,906.99	7.13%
	TOTALS	9	650.25	1,690.65	0.00	179,247.04	0.00	180,937.69	100.00%

DBE 0.00%

Baxter and Woodman	$175,247.04
Cardno	$4,000.00

Cost Estimate of Consultant Services
(Direct Labor Multiple)

Firm	Christopher B. Burke Engineering, Ltd.	Date	06/21/18
Route	PHASE 3-DESIGN AND BIDDING		
Section		Overhead Rate	**129.74%**
County			
Job No.		Complexity Factor	**0**
PTB & Item			

DBE DROP BOX	ITEM	MANHOURS (A)	PAYROLL (B)	(2.60+R) TIMES PAYROLL (C)	DIRECT COSTS (D)	SERVICES BY OTHERS (E)	DBE TOTAL (C+D+E)	TOTAL (C+D+E)	% OF GRAND TOTAL
	Task 2a & b - Construction Documents	1808	82,913.00	215,573.80	2,500.00			218,073.80	66.72%
	Task 2c - General Conditions/Staging	96	6,233.04	16,205.90				16,205.90	4.96%
	Task 2d - Bid Proposal/Alternates	40	2,163.88	5,626.09				5,626.09	1.72%
	Task 2e - Engineer's Opinion of Probable Cost	92	4,296.84	11,171.78				11,171.78	3.42%
	Task 2f - Board Meeting/Neighborhood Meeting	60	3,935.20	10,231.52	3,500.00			13,731.52	4.20%
	Task 2g - Operation and Maintenance Plan	24	1,421.00	3,694.60				3,694.60	1.13%
	Task 2h - Permitting and Utility Coordination	200	11,013.92	28,636.19		6,000.00		34,636.19	10.60%
	Task 2i to m - Bidding Assitance	32	1,796.28	4,670.33				4,670.33	1.43%
	Management,Administration and QA/QC	104	7,324.16	19,042.82				19,042.82	5.83%
	TOTALS	2456	121,097.32	314,853.03	6,000.00	6,000.00	0.00	326,853.03	100.00%

DBE 0.00%

Cardno $6,000.00

Average Hourly Project Rates

Route PHASE 3-DESIGN AND BIDDING
Section
County **Consultant** **Christopher B. Burke Engineering, Ltd.** **Date** 06/21/18
Job No.
PTB/Item **Sheet** 1 **OF** 1

Payroll Classification	Avg Hourly Rates	Total Project Rates			Task 2a & b - Construction Doc			Task 2c - General Conditions/S			Task 2d - Bid Proposal/Alternat			Task 2e - Engineer's Opinion o			Task 2f - Board Meeting/Neighb		
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	$75.00	0																	
ENGINEER VI	$72.25	252	10.26%	7.41	80	4.42%	3.20	24	25.00%	18.06	4	10.00%	7.23	12	13.04%	9.42	20	33.33%	24.08
ENGINEER V	$64.34	264	10.75%	6.92	100	5.53%	3.56	40	41.67%	26.81	12	30.00%	19.30	16	17.39%	11.19	20	33.33%	21.45
ENGINEER IV	$52.10	0																	
ENGINEER III	$45.95	504	20.52%	9.43	400	22.12%	10.17				24	60.00%	27.57	24	26.09%	11.99			
ENGINEER I/II	$32.44	340	13.84%	4.49	300	16.59%	5.38							40	43.48%	14.10			
SURVEY V	$72.00	0																	
SURVEY IV	$63.50	0																	
SURVEY III	$58.00	60	2.44%	1.42															
SURVEY II*	$42.00	0																	
SURVEY I*	$33.50	0																	
ENGINEERING TECHNICIAN	$63.33	0																	
ENGINEERING TECHNICIAN	$46.75	0																	
ENGINEERING TECHNICIAN	$48.25	0																	
ENGINEERING TECHNICIAN	$34.63	0																	
CAD MANAGER	$60.17	92	3.75%	2.25	40	2.21%	1.33	32	33.33%	20.06							20	33.33%	20.06
ASST. CAD MANAGER	$51.33	0																	
CAD II *	$44.50	528	21.50%	9.57	528	29.20%	13.00												
GIS SPECIALIST III	$47.60	40	1.63%	0.78	40	2.21%	1.05												
GIS SPECIALIST I/II*	$30.25	0																	
LANDSCAPE ARCHITECT	$54.00	180	7.33%	3.96	180	9.96%	5.38												
ENVIRONMENTAL RESOUR	$66.75	0																	
ENVIRONMENTAL RESOUR	$51.44	104	4.23%	2.18	80	4.42%	2.28												
ENVIRONMENTAL RESOUR	$40.18	32	1.30%	0.52															
ENVIRONMENTAL RESOUR	$31.13	0																	
ENVIRONMENTAL RESOUR	$38.50	0																	
ADMINISTRATIVE*	$34.98	0																	
ENGINEERING INTERN	$15.75	60	2.44%	0.38	60	3.32%	0.52												
		0																	
		0																	
TOTALS		2456	100%	$49.31	1808	100%	$45.86	96	100%	$64.93	40	100%	$54.10	92	100%	$46.70	60	100%	$65.59

Average Hourly Project Rates

Route PHASE 3-DESIGN AND BIDDING
Section
County **Consultant** **Christopher B. Burke Engineering, Ltd.** **Date** 06/21/18
Job No.
PTB/Item **Sheet** 2 **OF** 1

Payroll Classification	Avg Hourly Rates	Task 2g - Operation and Mainte			Task 2h - Permitting and Utility			Task 2i to m - Bidding Assitanc			Management,Administration an								
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	$75.00																		
ENGINEER VI	$72.25	4	16.67%	12.04	24	12.00%	8.67	4	12.50%	9.03	80	76.92%	55.58						
ENGINEER V	$64.34	8	33.33%	21.45	32	16.00%	10.29	12	37.50%	24.13	24	23.08%	14.85						
ENGINEER IV	$52.10																		
ENGINEER III	$45.95				40	20.00%	9.19	16	50.00%	22.98									
ENGINEER I/II	$32.44																		
SURVEY V	$72.00																		
SURVEY IV	$63.50																		
SURVEY III	$58.00				60	30.00%	17.40												
SURVEY II*	$42.00																		
SURVEY I*	$33.50																		
ENGINEERING TECHNICIAN	$63.33																		
ENGINEERING TECHNICIAN	$46.75																		
ENGINEERING TECHNICIAN	$48.25																		
ENGINEERING TECHNICIAN	$34.63																		
CAD MANAGER	$60.17																		
ASST. CAD MANAGER	$51.33																		
CAD II *	$44.50																		
GIS SPECIALIST III	$47.60																		
GIS SPECIALIST I/II*	$30.25																		
LANDSCAPE ARCHITECT	$54.00																		
ENVIRONMENTAL RESOUR(	$66.75																		
ENVIRONMENTAL RESOUR(	$51.44	12	50.00%	25.72	12	6.00%	3.09												
ENVIRONMENTAL RESOUR(	$40.18				32	16.00%	6.43												
ENVIRONMENTAL RESOUR(	$31.13																		
ENVIRONMENTAL RESOUR(	$38.50																		
ADMINISTRATIVE*	$34.98																		
ENGINEERING INTERN	$15.75																		
TOTALS		24	100%	$59.21	200	100%	$55.07	32	100%	$56.13	104	100%	$70.42	0	0%	$0.00	0	0%	$0.00

Village of Wilmette - West Side Neighborhood Storage Project Engineering Services - RFP #18137

B&W Detailed CECS

ELEMENT OF WORK	Principal/Sr. Eng IV $167.66	Sr. Eng II/III $133.80	Sr. Eng I $115.81	Eng III $99.46	Eng I/II $82.96	Eng Tech III $100.80	Eng Tech II $91.06	Clerical $81.20	Direct Expenses	Sub Consult	Sub Total Hours	Sub-total Fee
Preliminary Engineering 30% Plans - Phase 1												
a. Re-affirmation of Neighborhood Storage												
b. XP-SWMM Model and Benefit/Cost Analysis for Community Park and Centennial Park Comparison												
g. XP-SWMM Model Analysis for Underground Storage Optimization												
c. and d. GIS Coordination and Topographic Survey	2	19	5	0	14	86	34	0	323	0	160	16,705.73
e. Geotechnical Soil Borings and CCDD Analysis												
f. 30% Plans for Storm Sewer Alignment and Underground Stormwater Storage	28	120	160	0	210	64	0	0	200	0	582	63,353.27
h. Green Infrastructure Plan	3	16	0	34	0	0	0	2	0	0	55	6,187.66
i. Engineer's Estimate of Probable Cost	5	5	5	0	50	0	0	0	0	0	65	6,234.55
j. Analysis of Funding Opportunities												
SUB-TOTAL Hours	38	160	170	34	274	150	34	2			**862**	
SUB-TOTAL Fee	$6,371	$21,408	$19,687	$3,382	$22,732	$15,120	$3,096	$162	$523	$0		**$92,481**
Preliminary Engineering 30% Plans - Phase 1A												
a. Re-affirmation of Neighborhood Storage												
b. XP-SWMM Model and Benefit/Cost Analysis for Community Park and Centennial Park Comparison												
g. XP-SWMM Model Analysis for Underground Storage Optimization												
c. and d. GIS Coordination and Topographic Survey	2	20	5	0	15	91	36	0	341	0	169	17,626.60
e. Geotechnical Soil Borings and CCDD Analysis												
f. 30% Plans for Storm Sewer Alignment and Underground Stormwater Storage	72	44	196	0	230	72	0	0	200	0	614	67,196.61
h. Green Infrastructure Plan	3	17	0	36	0	0	0	2	0	0	58	6,520.37
i. Engineer's Estimate of Probable Cost	5	5	5	0	50	0	0	0	0	0	65	6,234.55
j. Analysis of Funding Opportunities												
SUB-TOTAL Hours	82	86	206	36	295	163	36	2			**906**	
SUB-TOTAL Fee	$13,748	$11,507	$23,856	$3,580	$24,474	$16,430	$3,278	$162	$541	$0		**$97,578**
Preliminary Engineering 30% Plans - Phase 2												
a. Re-affirmation of Neighborhood Storage												
b. XP-SWMM Model and Benefit/Cost Analysis for Community Park and Centennial Park Comparison												
g. XP-SWMM Model Analysis for Underground Storage Optimization												
c. and d. GIS Coordination and Topographic Survey	2	22	6	0	16	100	40	0	375	0	186	19,398.40
e. Geotechnical Soil Borings and CCDD Analysis												
f. 30% Plans for Storm Sewer Alignment and Underground Stormwater Storage	30	124	180	0	270	72	0	0	200	0	676	72,324.19
h. Green Infrastructure Plan	3	19	0	40	0	0	0	2	0	0	64	7,185.79
i. Engineer's Estimate of Probable Cost	5	5	5	0	50	0	0	0	0	0	65	6,234.55
j. Analysis of Funding Opportunities												
SUB-TOTAL Hours	40	170	191	40	336	172	40	2			**991**	
SUB-TOTAL Fee	$6,707	$22,746	$22,119	$3,978	$27,876	$17,338	$3,642	$162	$575	$0		**$105,143**
Preliminary Engineering 30% Plans - Phase 3												
a. Re-affirmation of Neighborhood Storage												
b. XP-SWMM Model and Benefit/Cost Analysis for Community Park and Centennial Park Comparison												
g. XP-SWMM Model Analysis for Underground Storage Optimization												
c. and d. GIS Coordination and Topographic Survey	2	27	7	0	20	123	49	0	462	0	228	23,739.95
e. Geotechnical Soil Borings and CCDD Analysis												
f. 30% Plans for Storm Sewer Alignment and Underground Stormwater Storage	38	92	236	60	290	116	0	0	200	0	832	87,931.06
h. Green Infrastructure Plan	4	23	0	49	0	0	0	2	0	0	78	8,783.75
i. Engineer's Estimate of Probable Cost	5	5	5	0	50	0	0	0	0	0	65	6,234.55
j. Analysis of Funding Opportunities												
SUB-TOTAL Hours	49	147	248	109	360	239	49	2			**1203**	
SUB-TOTAL Fee	$8,216	$19,668	$28,720	$10,841	$29,867	$24,091	$4,462	$162	$662	$0		**$126,689**
Design & Bidding 100% Plans - Phase 1 ONLY												
a. and b. Construction Documents		100	700	100		160					1060	120,519.00
c. General Conditions/Staging		20		40							60	6,654.20
d. Bid Proposal/Alternates	12	12	12								36	5,007.24
e. Engineer's Opinions of Probable Cost	2	12	40								54	6,573.22
f. Board Meeting/Neighborhood Meeting	8	40	20						350		68	9,359.39
g. Operation and Maintenance Plan		4	12								16	1,924.89
h. Permitting		16	80	40							136	15,383.65
i., j., k., l., and m. Bidding Assistance		4	16								20	2,388.12
Management, Administration, and QA/QC	20	70									90	12,719.14
SUB-TOTAL Hours	42	278	880	180	0	160	0	0			**1540**	
SUB-TOTAL Fee	$7,042	$37,196	$101,911	$17,902	$0	$16,128	$0	$0	$350	$0		**$180,529**
Design & Bidding 100% Plans - Phase 2												
a. and b. Construction Documents		80	700	80		150					1010	114,845.92
c. General Conditions/Staging		20		40							60	6,654.20
d. Bid Proposal/Alternates	12	12	20								44	5,933.70
e. Engineer's Opinions of Probable Cost	2	12	40								54	6,573.22
f. Board Meeting/Neighborhood Meeting	8	40	20						350		68	9,359.39
g. Operation and Maintenance Plan		4	12								16	1,924.89
h. Permitting		12	80	40							132	14,848.46
i., j., k., l., and m. Bidding Assistance		4	16								20	2,388.12
Management, Administration, and QA/QC	20	70									90	12,719.14
SUB-TOTAL Hours	42	254	888	160	0	150	0	0			**1494**	
SUB-TOTAL Fee	$7,042	$33,985	$102,838	$15,913	$0	$15,120	$0	$0	$350	$0		**$175,247**
Construction Engineering - Phase 1 & 1A												
a. Pre-Construction Services			40								40	4,632.32
c. Submittal Review			40								40	4,632.32
d. and e. RFI Response			80								80	9,264.64
b., h., and i. Construction Observation			1600						10900		1600	196,192.80
f., and j. Construction Documentation			320								320	37,058.56
g. and k. Project Closeout			160								160	18,529.28
m. Record Drawings			80								80	9,264.64
b. Material Testing (QA)			0								0	0.00
SUB-TOTAL Hours	0	0	2320	0	0	0	0	0			**2320**	
SUB-TOTAL Fee	$0	$0	$268,675	$0	$0	$0	$0	$0	$10,900	$0		**$279,575**
TOTAL											**8410**	**1,057,242.05**

IN-HOUSE DIRECT COSTS (INCLUDED IN TOTAL COST):

Survey Van	$	1,500.00
Mileage	$	12,400.00
	$	13,900.00

SERVICES BY OTHERS (INCLUDED IN TOTAL COST):

Geotechnical Engineering and S.U.E Locates are NOT included in B&W fee

Rates Above use IDOT Approve Mutliplier = 2.8

Printed 6/20/2018 7:00 PM

Illinois Department of Transportation

Cost Estimate
Consultant Se
(Direct Labor Multiple

Firm	Christopher B. Burke Engineering, Ltd.	Date	06/20/18
Route	Construction Engineering		
Section		Overhead Rate	**129.74%**
County			
Job No.		Complexity Factor	**0**
PTB & Item			

DBE DROP BOX	ITEM	MANHOURS (A)	PAYROLL (B)	(2.60+R) TIMES PAYROLL (C)	DIRECT COSTS (D)	SERVICES BY OTHERS (E)	DBE TOTAL (C+D+E)	TOTAL (C+D+E)	% OF GRAND TOTAL
	Task a. Pre-Construction Services	120	6,444.80	16,756.48	0.00	4,632.32		21,388.80	2.49%
	Task c. Submittal Review	120	6,444.80	16,756.48	0.00	4,632.32		21,388.80	2.49%
	Task d. and e. Request for Info. (RFI) Respor	80	5,147.20	13,382.72	0.00	9,264.64		22,647.36	2.64%
	Task b. and h. Construction Observation	2560	134,086.40	348,624.64	0.00	196,192.80		544,817.44	63.41%
	Task f., i., and j. Construction Documentation	640	30,969.60	80,520.96	0.00	37,058.56		117,579.52	13.68%
	Task g., k., and l. Project Closeout	320	15,484.80	40,260.48	0.00	18,529.28		58,789.76	6.84%
	Task m. Record Drawings	80	5,147.20	13,382.72	0.00	9,264.64		22,647.36	2.64%
	Task n. Material Testing (QA)	0	0.00	0.00	0.00	50,000.00		50,000.00	5.82%
	TOTALS	3920	203,724.80	529,684.48	0.00	329,574.56	0.00	859,259.04	100.00%

DBE 0.00%

Illinois Department of Transportation

Average Hourly Project Rates

Route Construction Engineering
Section
County
Job No.
PTB/Item

Consultant Christopher B. Burke Engineering, Ltd.

Date 06/20/18

Sheet 1 **OF** 1

Payroll Classification	Avg Hourly Rates	Total Project Rates			Task a. Pre-Construction Servi			Task c. Submittal Review			Task d. and e. Request for Info			Task b. and h. Construction Ob			Task f., i., and j. Construction D		
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	$75.00	0																	
ENGINEER VI	$72.25	0																	
ENGINEER V	$64.34	2400	61.22%	39.39	80	66.67%	42.89	80	66.67%	42.89	80	100.00%	64.34	1600	62.50%	40.21	320	50.00%	32.17
ENGINEER IV	$52.10	0																	
ENGINEER III	$45.95	0																	
ENGINEER I/II	$32.44	1520	38.78%	12.58	40	33.33%	10.81	40	33.33%	10.81	0			960	37.50%	12.17	320	50.00%	16.22
SURVEY V	$72.00	0																	
SURVEY IV	$63.50	0																	
SURVEY III	$58.00	0																	
SURVEY II*	$42.00	0																	
SURVEY I*	$33.50	0																	
ENGINEERING TECHNICIAN	$63.33	0																	
ENGINEERING TECHNICIAN	$46.75	0																	
ENGINEERING TECHNICIAN	$48.25	0																	
ENGINEERING TECHNICIAN	$34.63	0																	
CAD MANAGER	$60.17	0																	
ASST. CAD MANAGER	$51.33	0																	
CAD II *	$44.50	0																	
GIS SPECIALIST III	$47.60	0																	
GIS SPECIALIST I/II*	$30.25	0																	
LANDSCAPE ARCHITECT	$54.00	0																	
ENVIRONMENTAL RESOUR	$66.75	0																	
ENVIRONMENTAL RESOUR	$51.44	0																	
ENVIRONMENTAL RESOUR	$40.18	0																	
ENVIRONMENTAL RESOUR	$31.13	0																	
ENVIRONMENTAL RESOUR	$38.50	0																	
ADMINISTRATIVE*	$34.98	0																	
ENGINEERING INTERN	$15.75	0																	
		0																	
		0																	
TOTALS		3920	100%	$51.97	120	100%	$53.71	120	100%	$53.71	80	100%	$64.34	2560	100%	$52.38	640	100%	$48.39

Illinois Department of Transportation

Average Hourly Project Rates

Route Construction Engineering
Section
County
Job No.
PTB/Item

Consultant Christopher B. Burke Engineering, Ltd.

Date 06/20/18

Sheet 2 **OF** 1

Payroll Classification	Avg Hourly Rates	Task g., k., and l. Project Closed			Task m. Record Drawings			Task n. Material Testing (QA)												
		Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg	Hours	% Part.	Wgtd Avg
PRINCIPAL	$75.00																		
ENGINEER VI	$72.25																		
ENGINEER V	$64.34	160	50.00%	32.17	80	100.00%	64.34												
ENGINEER IV	$52.10																		
ENGINEER III	$45.95																		
ENGINEER I/II	$32.44	160	50.00%	16.22	0														
SURVEY V	$72.00																		
SURVEY IV	$63.50																		
SURVEY III	$58.00																		
SURVEY II*	$42.00																		
SURVEY I*	$33.50																		
ENGINEERING TECHNICIAN	$63.33																		
ENGINEERING TECHNICIAN	$46.75																		
ENGINEERING TECHNICIAN	$48.25																		
ENGINEERING TECHNICIAN	$34.63																		
CAD MANAGER	$60.17																		
ASST. CAD MANAGER	$51.33																		
CAD II *	$44.50																		
GIS SPECIALIST III	$47.60																		
GIS SPECIALIST I/II*	$30.25																		
LANDSCAPE ARCHITECT	$54.00																		
ENVIRONMENTAL RESOUR	$66.75																		
ENVIRONMENTAL RESOUR	$51.44																		
ENVIRONMENTAL RESOUR	$40.18																		
ENVIRONMENTAL RESOUR	$31.13																		
ENVIRONMENTAL RESOUR	$38.50																		
ADMINISTRATIVE*	$34.98																		
ENGINEERING INTERN	$15.75																		
TOTALS		320	100%	$48.39	80	100%	$64.34	0	0%	$0.00	0	0%	$0.00	0	0%	$0.00	0	0%	$0.00

FEMA – BARTLETT FLOOD CONTROL PROJECT | BARTLETT, ILLINOIS

Award Winning

PROJECT TYPE

- Water Resources Engineering
- Environmental Resources
- Public Outreach/ Public Meeting
- Hydrologic and Hydraulic Modeling
- Permit Applications

2008 – 2016

PROJECT TEAM
Darren Olson, PE
Project Manager

Jedd Anderson, PWS
Project Manager – Environmental

Lee Fell, PE
Civil Design Project Manager

David Vogel, PE
Project Engineer

CLIENT
Village of Bartlett

CONSTRUCTION COST
$4.9 million

FEE
$287 thousand

FUNDING SOURCE
Local/Federal

The Village recently experienced two severe flooding events in 2008 and 2010. Both storm events caused widespread flooding in homes, streets and backyards.

The Village of Bartlett experienced significant flooding during the September 2008 Flood Event. The Village estimated that over 300 homes received damage from the nearly 9 inches of rainfall that occurred from September 12th-14th. A detailed flood survey was sent to over 500 residents and the results were input into a GIS database that facilitated the development of the flood study areas. Meetings were held with the residents early on in the study process to present the initial findings and gather input from the residents. Hydrologic and hydraulic models were developed of the existing drainage system within the flood study areas and proposed drainage improvements were summarized in the flood study.

The study identified several long-term drainage improvements including new relief sewers and flood storage areas. Detailed XP-SWMM modeling was performed to finalize the design of improvements. Several relief storm sewer lines were proposed along with 100 acre-feet of new flood storage volume designed to lower peak flood elevations in adjacent residential areas.

On behalf of the Village of Bartlett, CBBEL prepared and submitted an application to the Federal Emergency Management Agency (FEMA) for a Hazard Mitigation Grant Program (HMGP) grant to provide 75% of estimated funding for final design, permitting, and construction of Phase 2 concept level drainage improvements presented in the 2009 CBBEL Village of Bartlett Flood Study. CBBEL prepared a detailed Benefit-Cost Analysis (BCA) showing that the proposed project is cost effective. Close coordination with FEMA, the Village, and homeowners led to the award of $3.8 million in FEMA HMGP funding in August 2013.

CBBEL was awarded the design contract by the Village in 2014 and prepared final design plans and permit submittals for the proposed drainage improvements. Permits were obtained from the USACE, MWRDGC, IDNR and the Village. Construction began in late 2014 and was completed in 2016.

SERVICES INCLUDED:

- GIS database development for flood study areas
- XP-SWMM Hydrologic and hydraulic modeling
- FEMA HMGP Grant Application
- Benefit-Cost Analysis
- IEMA Grant Reporting
- Final Design of Improvements
- Design Plans and Construction Bidding Documents
- Permitting
- Bidding Services
- Public Presentations and Resident Meetings

WALNUT/MYRTLE/EVERGREEN STORMWATER IMPROVEMENT | ELMHURST, ILLINOIS

PROJECT TYPE

- Phase II Engineering
- Topographic Survey
- Hydrologic and Hydraulic Modeling
- Storm Sewer Improvements
- Permitting

2015 - 2016

PROJECT TEAM

Jason Souden, PE
Project Manager - Design

Lee Fell, PE
Design Engineer - Design

Luke Sherry, PE
Water Resources Engineer

CLIENT
City of Elmhurst

CONSTRUCTION COST
$4.7 million

FEE
$250.6 thousand

FUNDING SOURCE
Local

The Walnut/Myrtle/Evergreen Stormwater Improvement Project was designed to reduce frequent, severe residential flooding by constructing a relief sewer to handle overflows from the existing storm sewer system, and drain them into the Elmhurst Quarry Flood Control Facility.

APWA Award Winning

The Walnut/Evergreen/Myrtle Stormwater Improvement Project was constructed in 2016 and consists of the installation of approximately 4,000 LF of storm sewer ranging in size from 60 to 72" in diameter. Additionally, approximately 800 LF of new water main and 1,200 LF of new sanitary sewer were also constructed.

The proposed project provides a 100-year level of flood protection for 52 homes located in the northwest section of the City. These homes experienced overland flooding during the severe storm events of June 2010, July 2010 and April 2013. The pipe serves as a relief sewer that handles overflow from the existing storm sewer and conveys it to the Elmhurst Quarry, which is owned and operated by DuPage County as a flood control reservoir on Salt Creek.

CBBEL provided a full range of engineering services for this project, including topographic survey, hydrologic and hydraulic modeling, preliminary engineering, final engineering and bid assistance. This project also involved extensive coordination with the DuPage County Department of Stormwater Management and also included permitting through that agency.

DESIGN SERVICES INCLUDED:

- Topographic Survey
- Geotechnical Investigation/CCDD Analysis
- XP-SWMM Hydrologic and Hydraulic Model Analysis
- Utility Coordination
- Permitting (DuPage County)
- Plans Specifications and Estimates
- Bid Documents
- Bidding Assistance

FLOOD MITIGATION PROJECT | ELMWOOD PARK, ILLINOIS

PROJECT TYPE

- Phase II Engineering
- Phase III Engineering
- Storm Sewer Improvements
- Water Main Improvements

2012 - 2015

PROJECT TEAM
Michael Kerr, PE
Principal In Charge

Stephen Sugg, PE, PTOE
Project Manager

Donald Dressel, PE
Water Resources Engineer

John Murphy, PE
Project Surveyor

Orion Galey, PE
Resident Engineer

CLIENT
Village of Elmwood Park

CONSTRUCTION COST
$35 million

FEE
$710 thousand

FUNDING SOURCE
MWRDGC/IDOT/IEPA
Low Interest Loans/Local

Under the Village's Flood Mitigation Plan prepared by CBBEL, new storm sewers were installed at selected locations within the Village of Elmwood Park.

APWA National Award Winning

The project included the installation of approximately 40,000' of new storm sewer which varied in size from 12" diameter to 3' by 12' box culverts . The project also included the replacement of 20,000' of water main. The storm sewers collect storm water and convey it to a newly constructed 14 acre-foot detention reservoir in the Oak Park Country Club. A 30" storm sewer conveys low flows to an existing Des Plaines River tributary. Storm flows in excess of the 30" storm sewer capacity are pumped to an outlet structure at the Des Plaines River. The capacity of the 4 pumps within the pump station is 150 cfs. Flows are dissipated within the outlet structure and released to the river at a velocity of 3' per second. The project also involved the construction of a floodwall along the west side of Thatcher Avenue that will prevent Des Plaines River overbanking from reaching several residences in the Village, thereby removing them from the flood plain.

The project involved coordination with Metra and IDOT to jack 3 - 48" pipes under the Metra West line and an 84" diameter sewer under Grand Avenue. Coordination and permitting from several agencies including the USACE, MWRD, Soil and Water Conservation District, and Forest Preserve District of Cook County was also required.

SERVICES INCLUDED:

CBBEL completed the drainage calculations and hydraulic modeling and prepared plans, specifications and estimates, coordinated with permitting agencies and provided construction inspection services.

VILLAGE OF NORTHBROOK, IL
WESCOTT PARK UNDERGROUND STORAGE FACILITY

In August of 2014, Baxter & Woodman completed a detailed study of the conceptual Wescott Park detention project included in the Village's Master Stormwater Management Plan. The goal of that study was to confirm the detention volume required to meet the project's intended benefits while also refining the conceptual design. Following the study phase, Baxter & Woodman provided final engineering design, highlighted by a 23.7 ac-ft StormTrap underground stormwater storage facility, approximately 1,100 feet of proposed mainline storm sewer ranging from 42" to 54" in diameter, roadway reconstruction along the proposed sewer route, and restoration and improvement of Wescott Park.

The proposed location for the underground storage facility impacted both School District and Park District property. The Village established an Intergovernmental Agreement (IGA) with the two Districts to establish the construction limits, the construction schedule, responsibilities, and requirements for restoration of the park following construction. Baxter & Woodman carefully designed the storage vault to meet the requirements of the IGA and to preserve playability of the park's south ball field during construction, as required by the Park District.

During final design, Baxter & Woodman helped the Village secure $475,000 in green infrastructure funding from MWRDGC to cover the incremental cost of adding a rainwater harvesting system to the project. The harvesting system added approximately 0.54 ac-ft of stormwater storage volume below the gravity outlet of the storage vault that can be stored for irrigation of the restored north ballfield and other uses. System controls automatically drain down this stored water in advance of large storms, maximizing the available stormwater detention volume.

Baxter & Woodman also provided construction phase services for the project, helping to keep construction of the project on time and under budget. Public outreach and communication were priorities. The project team led a public informational meeting at Village Hall prior to construction, maintained a project website, and coordinated with the School District to establish a schedule for construction traffic that did not impact school pickup and drop-off times.

HIGHLIGHTS:

2017 ACEC IL Special Achievement Award Winner!

The Wescott Park StormTrap facility provides the largest volume of stormwater storage of all StormTrap systems currently in existence.

COMPLETED: *2016*

PROJECT MANAGER:
- *Paul Siegfried, PE, CFM, CPESC*

PROJECT ENGINEERS:
- *Steve Verseman, PE*
- *Matt Moffitt, PE, CFM, CPESC*
- *Emily Grimm, PE, CFM*
- *Joel Krause, PE, CFM*

REFERENCE:
Kelly Hamill, Director of Public Works
847-664-4110
kelly.hamill@northbrook.il.us

Construction of the project was completed in the fall of 2016. The Wescott Park storage facility is the largest StormTrap system by volume currently in existence. The project has been recognized with a 2017 ACEC Illinois Special Achievement Award, the 2017 ASCE Illinois Section Outstanding Civil Engineering Achievement Award for projects under $10 million, and a Chicago River Blue Green Ribbon Award. Additionally, Storm Water Solutions selected the project as one of the top ten stormwater and erosion control projects of 2017.

BAXTER & WOODMAN Consulting Engineers

VILLAGE OF GLENVIEW, IL
LYONS SCHOOL DETENTION IMPROVEMENTS

The Village of Glenview's Bonnie Glen Estates neighborhood has a long history of street and private property flooding, including 6 major flood events in the past 10 years. The area was identified in the Village's Flood Risk Reduction Program. The Village contracted a study in the summer of 2015, which recommended 4 ac-ft of storage be created. The Village contracted Baxter & Woodman in the summer of 2016 to finalize the recommendation and to provide design and construction engineering for the flood mitigation. The process began by refining the existing XPSWMM model to exact design recommendations and hydraulics. The next step involved coordination between the Village project team and School District 34 towards a permanent stormwater easement. This resulted in the District 34 allowing the underground detention facility to be constructed on school property in exchange for the Village agreeing to redesign and expand the existing parking lot to include both a dedicated bus lane and a dedicated parent drop-off/pick up lane as part of the necessary reconstruction.

One of the largest challenges for this project was merging the school's preferences for the expanded parking lot, the needs of the proposed regional detention facility, and the MWRD and Village permitting requirements. The resulting improvements included a 4 ac-ft StormTrap regional detention vault, an additional 0.41 ac-ft local permitted detention vault that was compartmentalized and hydraulically separated from the larger vault, and 1,357 cubic feet of native planted bio-retention storage. The local detention was permitted as an amended legacy permit since the project required relocating the existing detention basin. The project was bid in early 2017 and came in at $3,155,00, just 3% under the Engineer's Estimate of Probable Construction Costs. Construction began in Spring 2017 and was completed in August 2017 before the new school year began; Baxter & Woodman also served as the Resident Engineer during construction of the project.

HIGHLIGHTS:

COMPLETED: *2017*

PROJECT MANAGER:
- *Matt Moffitt, PE, CFM, CPESC*

PROJECT ENGINEERS:
- *Emily Grimm, PE, CFM*
- *Joel Krause, PE, CFM*
- *Paul Siegfried, PE, CFM, CPESC*
- *Corey Van Dyk, EIT, CFM*

REFERENCE:
James Tigue, Development Department
Civil Engineer
847-904-4334

BAXTER & WOODMAN Consulting Engineers

CBBEL UNIQUE PROJECT CHALLENGES

THE BARTLETT FEMA FLOOD CONTROL PROJECT had unique challenges that dealt with the project funding as well as construction staging for removal of the soil for the flood control basins. The funding was primarily through a FEMA Hazard Mitigation Grant Program (HMGP) grant that CBBEL successfully obtained for the Village. This grant had several federal requirements that had to be met. The first was that all of the property on which the flood storage was to be placed had to be in the Village of Bartlett, however the main flood storage parcel was owned by and located in the Village of Streamwood. Several public meetings had to be held to de-annex the property from Streamwood and annex it into Bartlett and an Intergovernmental Agreement (IGA) was developed between the municipalities for this process. Additionally, the project had to meet a Benefit/Cost ratio of 1.0 through the FEMA Benefit Cost Analysis (BCA) Toolkit. CBBEL lead grant process and facilitated public hearings and meetings with Village staff and Village Boards to successfully meet all the grant requirements prior to design and construction. During detailed design, a construction phasing plan had to be developed to efficiently excavate and haul off over 1000,000 cubic yards of material through a wetland and then a residential neighborhood. The excavation also was done in the immediate vicinity of 3 high pressure gas pipelines and a large diameter storm sewer had to be directionally bored under the pipelines. During the design process, CBBEL developed a multi-stage construction access plan by coordinating with the Village, access matting specialists, geotechnical engineers and the gas pipeline company. This coordination resulted in an efficient, safe and successful project.

While important public improvement projects like the **ELMHURST WALNUT/MYRTLE/EVERGREEN STORMWATER IMPROVEMENT PROJECT** can cause significant disruption to the residents and businesses, they are the long-term beneficiaries of the improvements. The residential portion of this project, however, was completed in about two months, with approximately 3,400 linear feet of 60- to 72-inch diameter relief sewer installed and streets restored. The use of trenchless technology was utilized to install utilities, which minimized excavation and preserved the many mature trees found in parkways throughout the project area. Additionally, school buses were kept on their routes and schedules, garbage service was uninterrupted and the public and private utilities were left undisturbed.

Strong and active community outreach was essential for the project that not only dug up residential streets, but also blasted a local quarry. Before the project began, Elmhurst and CBBEL held meetings and discussions with residents to discuss the project benefits and schedule. While the project was ongoing, the City provided weekly electronic updates and installed informational signs throughout the project area. Keeping the community well informed and updated was a critical piece in the success of the project.

The **ELMWOOD PARK FLOOD MITIGATION PROJECT** included the need to convey stormwater, through an 84-inch storm sewer, from the north side of the Village to a newly constructed 14.6 acre-foot detention basin on the south side of the Village. The detention basin is located within the privately owned Oak Park Country Club (OPCC). A Metra rail line that carries a high volume of passenger and freight trains bisects Elmwood Park. The initial challenge was to jack the proposed 84-inch storm sewer below the tracks. CBBEL's utility investigation revealed a direct conflict with an underground 128 kV ComEd transmission line (and separate cooling line) that could not be relocated. The solution was to jack three 48-inch steel pipes, side by side, below the tracks. The jacking operation required significant coordination with Metra and ComEd.

The next challenge was the development of an alignment for the more than ½ mile of 84-inch storm sewer that was to be constructed through the OPCC. CBBEL developed an alignment that required the closure of three golf holes, but did not conflict with any greens or tee boxes. A condition within the required easement between the Village and OPCC stipulated that work could not infringe upon the golf course playing areas prior to July 29, 2013 and must be completed by October 1, 2013. This condition was in place to minimize the length of time that the three holes were out of play and also to allow enough time for the golf course to complete all necessary restoration in order for those holes to be playable at the start of 2014, the centennial anniversary of the OPCC. Contract incentives were given to the contractor to boost daily production and the course was turned back over to the OPCC, ahead of schedule, on September 6, 2014.

BAXTER & WOODMAN UNIQUE PROJECT CHALLENGES

Baxter & Woodman encountered some unique challenges during completion of the **LYONS SCHOOL UNDERGROUND STORAGE FACILITY** including the Green Infrastructure design and an expedited construction schedule. The overall goal of the project was to provide stormwater detention and to mitigate regional flooding frequently experienced by the adjacent Bonnie Glen neighborhood. The design included the installation of check valves to ensure the existing storm sewer system was not over-burdened as the stormwater is released to the existing systems. The MWRD-required volume control was established with the construction of a bio-swale in a parking lot island. This bio-swale was purposefully placed directly above the aggregate backfill around the StormTrap vault. In doing so, while it was not calculated as part of the "permitted" volume, the direct hydraulic connection between the bioswales and aggregate backfill will provide a volume reduction well above and beyond the minimum required by the MWRD WMO permit. Once designed and permitted, the work on the school site could not begin prior to the last day of school and had to be 100% completed prior the first day of school in the fall. After coordination with the Village and School District, the bidding documents were set-up to with two options, an option to complete in one year and an option to complete in two years with the one-year option ultimately determined to be the preferred alternative based on confidence from the contractor to complete the project and the reduced cost. Several stakeholder meetings were held to determine schedule, expedite the shop drawing review phase, and coordinate to ensure work could begin on the school property as soon as school was released for the summer. The largest time saving design feature was installing the StormTrap with a precast floor instead of a cast-in-place floor. Another time saving feature was construction of the off-site storm sewer prior to school releasing. By installing the downstream off-site storm sewer first, any conflicts and changes in grade were identified and corrected to ensure the proper elevations were met at the StormTrap. Weekly meetings were conducted with Village staff, school district representatives, and Baxter & Woodman to review/forecast the schedule weeks in advance and resolve construction issues and utility conflicts immediately. Materials delivery dates were met and weather delays were overcome by expediting the schedule. The StormTrap was installed and operational, parking lot complete, and landscape restored prior to the start of the school year in the fall.

Some unique challenges during completion of the **WESCOTT PARK UNDERGROUND STORAGE FACILITY** included stakeholder coordination, unique design features, and expedited scheduling. The proposed location for the underground storage facility impacted both School District and Park District property. The Village established an Intergovernmental Agreement (IGA) with the Districts to establish the construction limits, schedule, responsibilities, and requirements for restoration of the park following construction. Baxter & Woodman carefully planned the layout of the storage vault and work area to preserve playability of the park's south ball field during construction, as required by the Park District. There was little-to no land available at the site to place excess soils, which needed to be excavated and hauled offsite. The team worked with the Park and School Districts to establish a suitable schedule for truck traffic, street cleaning to minimize impacts to parents and students during morning drop-offs and afternoon pick-ups, and even a truck washing station to remove soils and mud from trucks prior to leaving the site.

During the design phase, Baxter & Woodman worked with Wahaso Harvesting Solutions and MWRD to design and fund the custom rainwater harvesting system for the facility. Water used for spray irrigation must meet NSF 350 standards for water quality, as required by the Illinois Department of Public Health. To meet these requirements, the stored stormwater is filtered and sanitized before being pumped into the irrigation system. Baxter & Woodman incorporated pretreatment filtration design provided by a baffle box filter and UV sanitization system that required minimal contact time and is chemical- and odor-free. Another design challenge included the required installation of fences, dugouts, and a backstop above the StormTrap with minimal cover. The posts could not be set deep enough for a typical fence post installation, and after evaluating several options and coordinating with StormTrap's engineers, structurally designed spread footings were chosen to overcome this challenge.

Construction efforts had to be synchronized very closely, immediately beginning in the spring and executed swiftly to ensure the complete site, ball diamonds, sidewalks, trees, and grass could be restored in time for the first ball to be thrown the following spring. While working with the Village and Contractor, Baxter & Woodman took the lead to forecast weeks and months ahead to ensure all parties involved would be aware of upcoming activities and potential issues well before they could impact the schedule and costs. Weekly meetings were held to the project keep the team alert to any changing conditions, especially of resident/stakeholder concern, helping to keep construction of the project on time and under budget.

ORGANIZATIONAL CHART

WEST SIDE NEIGHBORHOOD STORAGE PROJECT ENGINEERING SERVICES

PRINCIPAL-IN-CHARGE
Michael Kerr, PE

PROJECT MANAGER
Darren Olson, PE

PROJECT MANAGER
Matthew Moffitt, PE

CIVIL DESIGN
Jason Souden, PE
Paul Siegfried, PE
Steven Verseman, PE
James Massarelli, PE
Mark Thomas, PE

WATER RESOURCES
Darren Olson, PE
David Buckley, PE

CONSTRUCTION
Kevin Wilson, PE
Kevin Lill, PE
Christopher Allen, PE

PARK DISTRICT/ AGENCY COORDINATION
Christopher Burke, PhD, PE
Thomas Burke, PhD, PE

GREEN INFRASTRUCTURE
Matthew Moffitt, PE

STRUCTURAL
Charles Brunner, PE, SE
Majid Mobasseri, PhD, PE, SE

SUBSURFACE UTILITY ENGINEERING
Cardno/TBE Group

GEOTECHNICAL
ECS Midwest, LLC

SURVEY
Anthony Bianchin, PE, PLS
John Murphy, PE, PLS

LANDSCAPE ARCHITECT
Douglas Gotham, LLA

■ CBBEL Employee ■ B&W Employee ■ Subconsultant

BAXTER & WOODMAN Consulting Engineers

CHRISTOPHER B. BURKE ENGINEERING, LTD.

CBBEL and B&W are multi-disciplined firms that are dedicated to providing our clients with the personal attention required for design and construction of projects of this scope. We are committed to providing the Village of Wilmette with a quality product, which meets the Village's schedule and budget constraints.

MICHAEL KERR, PE – PRINCIPAL IN CHARGE

Illinois Professional Engineer Registration 062.046642

Mr. Kerr is a Professional Engineer responsible for the majority of CBBEL's Rosemont operations. He oversees the Civil Design, Construction, Drainage, Environmental, Municipal, Phase I, Structural, and Survey Departments. His experience includes managing Phase I, Phase II, and Phase III Municipal projects with various government funding sources associated with many of the projects. He has frequently coordinated projects for Local Agencies through IDOT's Bureau of Local Roads and Streets.

DARREN OLSON, PE – PROJECT MANAGER

Illinois Professional Engineer Registration 062.056302

Mr. Olson is a Professional Engineer with 18 years of experience in water resources engineering. He is responsible for engineering studies and design that include complex roadway drainage projects, watershed studies, floodplain/floodway delineation studies and permitting, steady and unsteady urban hydraulic analyses, stormwater management studies and permitting, and flood control project feasibility, design, and funding. He is the Stormwater Consultant for several municipalities including Crystal Lake, Cary, Oak Brook, and Hawthorn Woods. Darren is recognized by ASCE as a Diplomate Water Resources Engineer (D.WRE) and holds many certifications including Certified Floodplain Manager (CFM), Certified Professional in Erosion and Sediment Control (CPESC), and Certified Professional in Storm Water Quality (CPSWQ). He is actively involved in ASCE as a Region 3 Governor and recently appointed to the Committee on Americas Infrastructure. He is also a recipient of the 2014 IAFSM Stormwater Management Award. Darren has intimate knowledge of this project as he was the Project Manager for the previous CBBEL Stormwater Study of this area.

MATTHEW MOFFITT, PE – PROJECT MANAGER (BAXTER & WOODMAN)

Illinois Professional Engineer Registration 062.063296

Mr. Moffitt is the Manager of B&W's Water Resources Department with 12 years of experience in planning, analysis, modeling, design, bidding, and construction of drainage solutions. An advocate for Best Management Practices, he has assisted Wilmette and many nearby communities such as Northbrook, LaGrange, Glenview, Kenilworth, and more, with open and closed drainage systems, detention/retention systems, roadways, utilities, and other civil sites. Matt values the importance of project communication and works with local officials, residents, agencies, and other stakeholders from initiation through final presentation and delivery. His active participation in organizations such as ASCE, EWRI and APWA helps our client communities stay at the forefront of available funding opportunities, changing regulations, and sustainable/green solutions that are both efficient and bring value to their communities. Matt is a Certified Floodplain Manager (CFM) and a Certified Professional in Erosion and Sediment Control (CPESC).

JASON SOUDEN, PE – CIVIL DESIGN

Illinois Professional Engineer Registration 062.050850

Mr. Souden is a Professional Engineer with over 27 years of municipal experience. He is Head of Civil Engineering Design Department which includes 16 civil engineers, 5 structural engineers, 5 CAD technicians, and 1 landscape architect. His experience covers a wide variety of civil and structural engineering project management and design. Civil engineering experience includes design of highways, local roads, bicycle/pedestrian facilities, parks, stormwater management facilities, streambank stabilization projects, and utility

projects. Notable projects include the Lord Street Sewer Separation System (APWA Award Winning Project) in Elgin, Parkside Park (APWA Award Winning Project) in Roselle, Pingree Road Reconstruction in Crystal Lake, and Big Timber Road (ASCE Award Winning Project) in Kane County to name a few.

KEVIN WILSON, PE – CONSTRUCTION

Illinois Professional Engineer Registration 062.059552

Mr. Wilson is a Professional Engineer with over 16 years experience in construction engineering. He is proficient in construction documentation for various types of funding including LAPP, ARA, MFT, ERP, IEPA loan funding, and CDBG grants. Notable recent projects include almost 2 miles of HMA resurfacing, HMA/PCC reconstruction, and new traffic signal installations on Chicago Avenue and Sheridan Road in Evanston; 2 miles of federally funded Twin Lakes Subdivision Sidewalk Improvements in Villa Park; 3 miles of PCC pavement reconstruction, lane additions, storm sewer, and traffic signals for IDOT District 3 on IL Route 47 in Yorkville; multiple City of Chicago ADA rehabilitation projects to replace over 50 deficient ADA ramp intersections. Kevin's Wilmette experience includes the 2016 Road Program (MFT), Relief Sewer Projects (24"- 48" diameter sewer) in 2004, 2005, 2006, 2007, and 2011, and various other HMA and Brick Pavement reconstruction projects.

CHRISTOPHER BURKE, PHD, PE – PUBLIC COORDINATION

Illinois Professional Engineer Registration 062.040284

Dr. Burke has served as the Technical Director of Christopher B. Burke Engineering, Ltd. (CBBEL) since founding the company in 1986. Through the years, Dr. Burke has authored numerous technical papers/articles and contributed chapters to engineering resource books. Each year Dr. Burke participates as a speaker in 2 or 3 water related seminars/conferences organized by ASCE, IAFSM, and other professional and municipal organizations. He also attends various municipal board meetings as necessary. For our APWA National Award Winning Elmwood Park Flood Mitigation Project, Dr. Burke attended numerous coordination meetings with several agencies including MWRD, Forest Preserve District of Cook County, IDOT and Metra. He also attended meetings and coordinated with the Oak Park Country Club, where a 14 acre-foot detention basin was constructed for the project. He also was heavily involved in the coordination efforts held with DuPage County Department of Stormwater Management for our APWA Award Winning Walnut/Myrtle/Evergreen Stormwater Improvement Project. This project was designed in 2015 to reduce frequent, severe residential flooding by constructing a relief sewer to handle overflows from the existing storm sewer system, and drain them into the Elmhurst Quarry Flood Control Facility. In addition, Chris is recognized by ASCE as a Diplomate Water Resources Engineer (D.WRE) and a Distinguished Member, American Society of Civil Engineers (Dist.M.ASCE), and is also a Certified Professional in Erosion and Sediment Control (CPESC).

STEVEN VERSEMAN, PE – CIVIL DESIGN (BAXTER & WOODMAN)

Illinois Professional Engineer Registration 062.039372

Mr. Verseman is a Senior Infrastructure Engineer with 40 years of experience in sanitary sewer, storm sewer and water main projects. He specializes in the design of sewage collection and water distribution systems, stormwater and sanitary sewage pumping stations, water booster stations, and large diameter storm sewer and sanitary interceptor sewer projects. Steve works closely and effectively with local officials, private companies, engineering and administrative staff, and the public. His recent experience with pump stations and large diameter sewer installation, separation, and rehabilitation include LaGrange, Glenview, Wheeling, and Joliet, to name a few.

BAXTER & WOODMAN Consulting Engineers

Charles A. Brunner, PE, SE

Structural Department Manager

Education

B.S., Civil Engineering
Purdue University, 1983

Joined Firm in 1987

Years of Experience: 32

Registrations

Licensed Structural Engineer: Illinois

Licensed Professional Engineer: Illinois

Licensed Professional Engineer: Wisconsin

IDOT Certifications

Illinois Department of Transportation
Program Manager National Bridge Inspection

Associations

American Concrete Institute

American Society of Civil Engineers

Chuck is called upon to review the structural design of all projects, including well houses, pumping stations, water storage facilities, water and wastewater treatment facilities, bridges, retaining walls, and drainage structures. He is also an IDOT-approved National Bridge Inspection Program Manager and routinely prepares IDOT Bridge Condition Reports for our municipal clients.
Chuck currently serves as Manager of our Structural Department.

Representative Projects

Water Supply and Treatment Experience

Barrington, Illinois
Station Street Reservoir and Pump Station Addition
Project Manager for design of pumping station building addition with chemical feed and emergency engine generator equipment and 600,000 gallon cast-in-place concrete water storage reservoir.

Carpentersville, Illinois
Western Utilities Extension
Project Manager for design of 1,500,000 gallon elevated water storage tank.

Carol Stream, Illinois
Kuhn Road Pumping Station and Reservoir
Structural Project Engineer for design of water pumping station building and 2,500,000 gallon water storage reservoir.

East Side Pumping Station and Reservoir
Structural Project Engineer for design of water pumping station building and Project Manager for design of 2,500,000 gallon water storage reservoir.

Deerfield, Illinois
Mitchell Park Pump Station and Reservoir
Structural Project Manager for design of water pump station building and 2,000,000 gallon cast-in-place concrete water storage reservoir.

Itasca, Illinois
DWC Pressure Adjusting and Pump Stations
Structural Project Engineer for design of water pressure adjusting station facility and water pump station building.

Libertyville, Illinois
CLCJAWA Reservoir and Pumping Station
Structural Project Engineer for design of water pressure adjusting station, water pump station and 1,500,000 gallon water storage reservoir.

Wastewater Treatment Improvements

Bloomingdale, Illinois
Wastewater Treatment Plant Improvements
Structural Project Engineer for design including dry weather and excess flow

influent pumping stations, excess flow clarifiers and sand filter building.

Downers Grove Sanitary District, Illinois
Wastewater Treatment Center Improvements
Structural Project Engineer for design including grit tanks, grit building addition, primary clarifier tanks, secondary clarifier tanks, digester tanks and digester control building. Project Manager for design of sand filter building and sludge storage area.

Elmhurst, Illinois
Wastewater Treatment Plant Improvements
Structural Project Engineer for design of raw sewage pumping station. Project Manager for design of sludge storage area.

Fox River Water Reclamation District, Illinois
West Wastewater Treatment Plant Improvements
Structural Project Manager for design including macerator station, chlorine junction chamber, screen/grit building, influent flume structure, primary clarifier flow division box, primary clarifiers, aeration tanks, blower building, ras/was pump station and tunnel, mixed liquor division box, secondary clarifiers, sludge pumping station, chlorine building, final effluent flow metering flume, non-potable water pumping station, plant drain system pump station and remodeling of existing facilities.

Transportation / Bridge Experience

Kane County, Illinois
Structural Project Manager for replacement of Corron Road Box Culvert over Bowes Creek; Plank Road Culvert over Burlington Creek; Bowes Road Culvert over Otter Creek and rehabilitation of Main Street Bridge over Big Rock Creek including complete superstructure replacement and upgrade to HS20 Truck loading.

Lake Forest, Illinois
Sheridan Road Headwall Replacement
Structural Project Manager for preparation of specifications, plans and contract documents for replacement of the Sheridan Road culvert headwall including temporary traffic control, removal of existing masonry headwalls, utility relocation, cast-in-place concrete headwalls with decorative stone facing, stream bank erosion protection, and site restoration.

Will County, Illinois
Structural Project Manager for replacement of the Veterans Parkway bridge over the Lily Cache Creek. Preparation of specifications, plans and contract proposal for removal of existing structure and replacement with precast concrete deck beam bridge, concrete abutments, filled metal shell piles, concrete parapet walls, steel bridge and bicycle railings approved by the Illinois Department of Transportation.

BAXTER & WOODMAN Consulting Engineers

Paul D. Siegfried, PE, CFM, CPESC

Senior Water Resources Engineer

Education

B.S., Civil Engineering
University of Illinois, 2006

Joined Firm in 2014

Years of Experience: 12

Certifications

Licensed Professional Engineer: Illinois, Florida

Certified Floodplain Manager

Certified Professional in Erosion and Sediment Control

Associations

Illinois Association for Floodplain and Stormwater Management

Central States Water Environment Association, Illinois Branch Stormwater Committee Co-Chair

Modeling Software Expertise

- XPSWMM
- EPA SWMM
- HEC-RAS
- HEC-HMS
- HEC-1
- HEC-2
- TR-20
- HY-8
- PondPack

Continuing Education

Illinois Association for Floodplain and Stormwater Management Annual Conference
2007, 2008, 2010-2012, 2014-2018

Paul has over 12 years of experience in the field of water resources engineering, focused on stormwater design and floodplain management. He works closely with municipalities to identify, plan, and implement stormwater improvement projects that will best serve their communities. Paul's experience includes flood mitigation projects, public and private developments, floodplain and floodway analyses and remapping, green infrastructure design, permitting, engineering review, and construction observation.

Representative Projects

STORMWATER AND ENGINEERING DESIGN

Northbrook, IL
Wescott Park Stormwater Storage Facility
Project Manager for design and bidding services for a 23.7-ac-ft underground stormwater storage facility in Wescott Park. The project includes three blocks of proposed 42-inch storm sewer and additional inlet capacity to convey flow to the storage vault, roadway reconstruction, restoration of the park, and installation of an irrigation system. Additionally, a rainwater harvesting system was added to the project which filters, treats, and supplies water to the irrigation system. The project received the ASCE-IL 2017 award for Outstanding Engineering Achievement Under $10 Million, an ACEC-IL 2017 Special Achievement Award, and a Chicago River Blue 2017 Green Ribbon Award.

LaGrange, IL
50th Street Relief Storm Sewer
Project Manager for design and bidding services for an approximately 4,400-foot relief storm sewer along 50th Street, extending from Spring Avenue to an outfall at the Hanson Quarry. Additionally, the project includes a lateral sewer extension that extends north to the 9th Avenue and 48th Street intersection. The purpose of the project is to reduce flooding through the South Basin region of La Grange, focused on the 50th Street and Spring Avenue and 9th Avenue and 48th Street intersections. A 2D XP-SWMM model was created to facilitate detailed design of proposed storm sewer and inlet configurations.

Arlington Heights, Illinois
Police Station Green Infrastructure Improvements
Provided design services and permitting for incorporation of an approximately 3,000 square foot rain garden into the Village's Police Station parking lot improvement project. The rain garden will provide flood protection, runoff volume reduction, and water quality benefits for an area that experiences flooding and combined sewer backups. Funding for the rain garden and installation of permeable pavers was obtained through MWRD's Green Infrastructure Program.

Skokie, Illinois
Devonshire Park Rain Garden
Provided QA/QC review for design of stormwater improvements located within Devonshire Park in the Village of Skokie. The project includes a proposed detention basin, rain garden, and storm sewer improvements to address flooding at the intersection of Greenwood Street and Kenneth Terrace. Funding for the rain garden was obtained through MWRD's Green Infrastructure Program.

IAFSM Funding Seminar, Cicero, Illinois
February 22, 2018

Storm Water Solutions Conference, Tinley Park, Illinois
November 8, 2017

APWA Wisconsin Chapter Fall Conference, Wausau, Wisconsin
November 2, 2017

Beyond the Basics Stormwater Management Conference, Woodridge, Illinois
September 14, 2016

Central States Water Environment Association Annual Meeting, Madison, Wisconsin
May 19, 2016

ACEC Illinois IDOT 1 Drainage Seminar, Lisle, Illinois
May 7, 2014

U.S. Army Corps of Chicago District 2014 River Restoration: Practices and Concepts Workshop, Chicago, Illinois
March 11, 2014

Using HEC-RAS to Compute Water Surface Profiles for Floodplains, Bridge and Culvert Hydraulics, Madison, Wisconsin
May 21-23, 2007

Storm Water Detention Basin Design, Madison, Wisconsin
October 11-12, 2006

Storm Sewer System Design, Madison, Wisconsin
October 9-10, 2006

Glenview, Illinois
Lyons Elementary School Stormwater Improvements
Assisted with MWRD permitting for drainage and detention improvements on the Lyons Elementary School property and surrounding residentional areas. Improvements included approximately 4.41 acre-feet of underground detention, installation of 30-inch diameter storm sewer to connect the detention to the existing storm sewer system at Raleigh Road, and parking lot redesign.

STUDY PHASE STORMWATER IMPROVEMENTS ANALYSES

Belvidere, IL
South Side Stormwater Study
Lead engineer for a study of drainage and infrastructure in the South Side of the City. The project included engagement with residents, SWMM modeling of the entire South Side of the city, and development of proposed drainage improvement alternatives to provide flood protection. Optimatics Optimizer software was utilized to maximize benefits of proposed alternatives while minimizing costs. Assisted in preparation of a summary report documenting the analyses performed, conclusions, and recommendations.

LaGrange, IL
South Basin Study
Oversaw and assisted with an XP-SWMM analysis of existing conditions drainage in the South Basin region of the Village of La Grange. Evaluated five proposed drainage alternatives, including a multiple configurations of a relief storm sewer and construction of a floodwall along the east side of the La Grange Country Club. Provided recommendations in a technical memorandum.

Western Springs, IL
Ridgewood Subdivision Infrastructure Study
Oversaw and assisted with an XP-SWMM analysis of existing conditions drainage and worked with Village staff to identify flooding problems within the subdivision. Evaluated several drainage improvement projects and provided recommendations as part of an overall study of infrastructure within the subdivision. Assisted with preparation of summary report and presented stormwater recommendations at a Village Board meeting.

Skokie, IL
Greenwood Street and Kenneth Terrace Drainage Improvements
Evaluated existing conditions drainage and severity of flooding at the Greenwood Street and Kenneth Terrace intersection by utilizing and enhancing a Village-wide XP-SWMM model prepared by others. Analyzed six drainage improvement alternatives including underground storage, a parkway rain garden, and parking lot detention. Provided recommendations to the Village in a technical memorandum.

Lincolnshire, IL
Queens Way Drainage Study
Project Manager for a study of the Queens Way drainage system and approximately 700 linear feet of the adjacent channel. The project included evaluation of existing conditions, proposed storm sewer system improvements, streambank stabilization alternatives, and options to reduce drainage structure blockages. Prepared a summary report documenting the analyses and recommendations.

It is our understanding that the Village of Wilmette (Village) would like to construct the West Side Neighborhood Storage Project. The West Side Neighborhood Storage Project consists of the following phases as outlined in the Request for Proposals.

PHASE 1 – CENTENNIAL PARK OR COMMUNITY PLAYFIELDS

PHASE 1A – RELIEF SEWERS

PHASE 2 – HIBBARD PARK

PHASE 3 – THORNWOOD PARK

CBBEL is very familiar with the proposed Neighborhood Storage Project as we worked with the Village to develop this concept as part of the 2015 Village of Wilmette Separate Storm Sewer Stormwater Management Plan. As part of this study, CBBEL worked with the Village staff to identify cost-effective projects to reduce flooding on the west side of the Village with the specific goal of reducing the 10-year hydraulic grade line below the street level. A detailed discussion of each follows:

PHASE 1

CENTENNIAL PARK/COMMUNITY PLAYFIELDS UNDERGROUND STORAGE

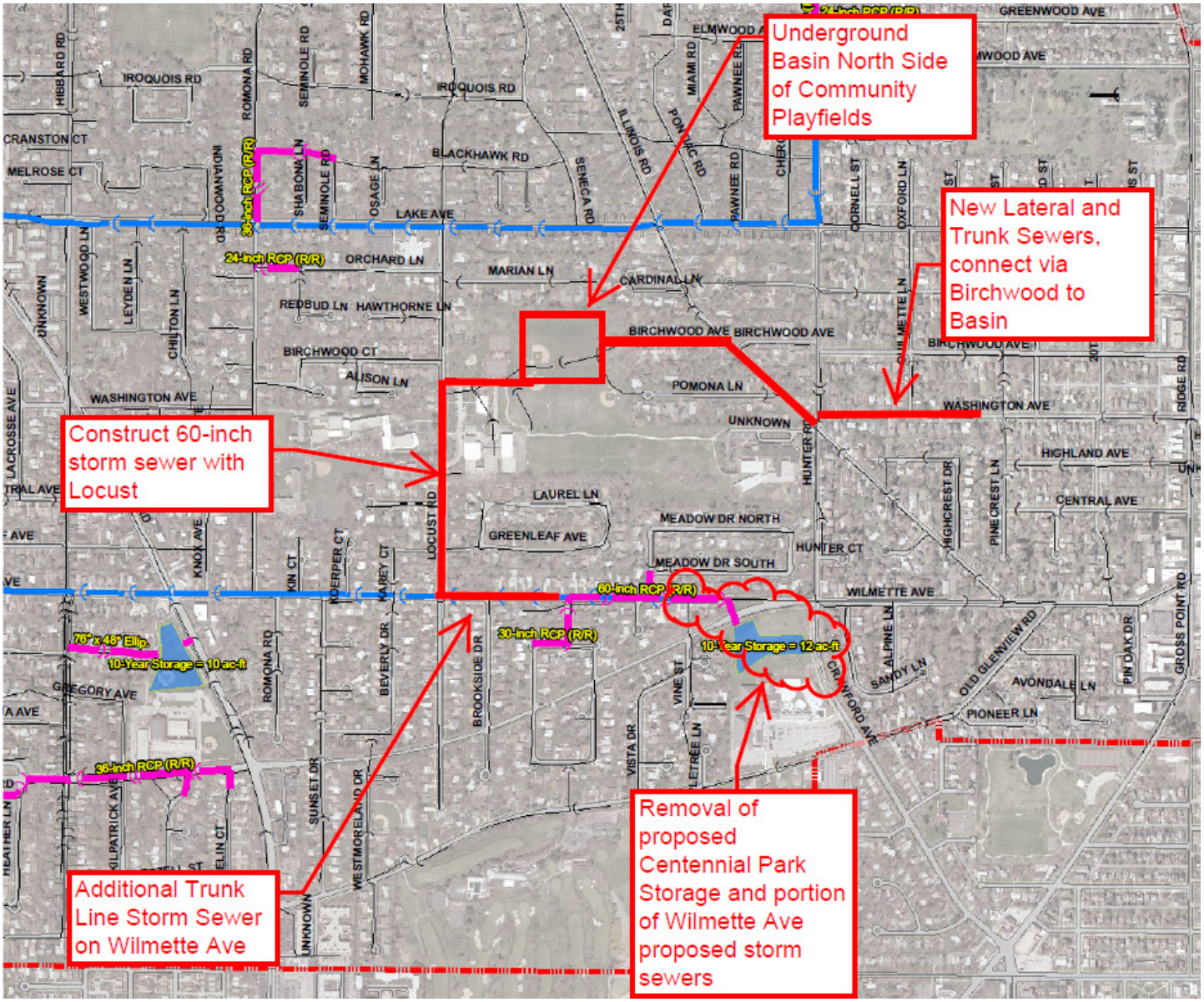
The Centennial Park underground stormwater storage facility was included to provide flood relief to the southeast portion of the separate storm sewer areas. The required preliminary design volume is 12 acre-feet. Areas served by this facility include Wilshire Drive, Meadow Lane and Greenleaf Avenue. These streets are severely impacted during storm events greater than a 2-year storm, as flood depths on the streets can reach 1.7 feet for the 10-year return interval storm event. This severe flooding was seen by CBBEL staff during our site visits on July 23, 2016 when the Village received approximately 5 inches of rain in 6 hours. During the 100-year event, flood depths can reach 2.5 feet in the streets and numerous homes are impacted.

The proposed plan requires a new 60-inch trunk line storm sewer on Wilmette Avenue and new 30-inch storm sewers on Wilshire Drive that would replace the existing storm sewers. The new storm sewer will more efficiently convey water from the surrounding areas into the west side storm sewer system. When this system begins to fill, a control structure within the proposed storm sewer system near Centennial Park will allow water to backflow into the underground stormwater storage system before flooding the streets. As currently modeled, this control structure would be a weir within a proposed manhole that would be placed at the inflow location to the underground storage facility. The underground storage basin would have a bottom at approximately 615 feet and the inside top of the basin would be 619 feet. This shallow depth is limited by the storm sewer system on Wilmette Avenue to allow for the basin to drain by gravity at the end of the storm event through a backflow device, as well as the low points on the flood prone streets. A pumped option, as well as an option that utilizes dynamic controls, will be analyzed during the preliminary engineering phases with optimization of the project benefits. The potential for green infrastructure will also be assessed during preliminary engineering.

CBBEL Photo on July 23, 2016 at Wilshire Drive

The configuration of this basin provides significant challenges as the ground elevation increases significantly going south within Centennial Park and the community has expressed a strong interest in keeping the existing rain garden intact and separated from the underground stormwater storage basin. The ground elevations are approximately 15 – 20 feet above the top of the underground basin, which were estimated during the conceptual design to require significant disturbance of the park areas and added soil handling expense to the project. The Village has recently expressed an interest in utilizing Community Playfield as an alternative site for the underground storage. We intend to rigorously investigate this concept as we see the following benefits that could be derived from it:

- Reduced earthwork costs and disruption for the underground storage basin construction as the ground within Community Playfield is approximately 10 feet lower than Centennial Park.
- The 60-inch storm sewer proposed on Locust Road as part of the 2019 reconstruction project could be utilized to convey water from Wilmette Avenue to the proposed stormwater storage basin to minimize cost and disruption.
- The north side of Community Playfield has sufficient space to accommodate a slightly larger underground stormwater basin that could provide for additional areas to be conveyed to the basin. With some additional storm sewers on Illinois Avenue, Birchwood Avenue and Washington Avenue, this area that was once unable to obtain a 10-year level of service could be served by this project. This could provide flood reduction benefits and likely a 10-year level of service for Illinois Avenue, Birchwood Avenue, Wilmette Lane and other areas on the east side of the separate storm sewer system.
- Additional minor storm sewer improvements within Community Playfield could also be completed to benefit the School District and Park District.



Potential Revision to West Side Storm Sewer Project with Community Playfield

- The north side of Community Playfield is the most distant location from the schools and would not require easements or access through private property. School safety and activity disruption would be minimized with this location.
- Looking further in the future, this could also reduce the cost of the large trunk sewers contemplated in Alternative 1 in the event the Village decided to implement that project in addition to the Neighborhood Flood Storage Project.

The 10-year flood level reduction in the vicinity of Centennial Park is significant. The 10-year hydraulic grade line at Wilshire Drive would be reduced by 2.7 feet. At Meadow Lane, it would be reduced by nearly 4 feet. In both cases, this is significantly below the street elevation.

PHASE 1A – RELIEF SEWERS

This component of the project consists of proposed storm sewers that would tie into the existing trunk line storm sewer system to take advantage of the reduced 10-year hydraulic grade line in the storm sewer system that results from the proposed neighborhood stormwater storage facilities. Areas served by this phase of the project includes Lavergne Avenue, Laporte Avenue, Lamon Avenue and Lacrosse Avenue, as well as Orchard Lane, Ramona Road and Blackhawk Road. These locations are on the west side of the separate storm sewer system and not immediately adjacent to open space areas that would allow for significant stormwater storage. However, the proposed stormwater storage areas reduce the 10-year hydraulic grade line in the existing trunk storm sewers sufficiently to create capacity to better drain other areas. For instance, the 10-year hydraulic grade line on the existing Lake Avenue trunk storm sewer at Lake Avenue and Ramona Road is decreased by 0.4 feet. Similarly, the 10-year hydraulic grade line on the existing Wilmette Avenue trunk storm sewer at Wilmette Avenue and Lavernge Avenue decreases by 1.3 feet.

We also understand that the project should seek to maximize the benefit to the areas served by Phase 1A in an attempt to get as close to a 10-year level of service as possible. This will include re-analysis of these areas to determine the optimal storm sewer sizes to achieve this goal. Additionally, the portions of Alternative 1, where applicable, will be incorporated into the plan. This includes the 108-inch diameter storm sewer on Washington Avenue between Lavernge Avenue and Lamon Avenue. This pipe will serve as additional conveyance and storage in the interim condition. Additional upsizing is also possible on Ramona Road north of Lake Street.

The proposed 10-year flood level reduction for Phase 1A is significant. The 10-year hydraulic grade line at Lacrosse Avenue would be reduced by 0.6 feet. At Ramona Road it would be decreased by 1.3 feet. In both cases, the hydraulic grade line is still above the road, but in these areas we will optimize the proposed benefits as part of the preliminary engineering analysis.

PHASE 2

The Hibbard Park stormwater storage facility was designed to provide flood relief for the southeast portion of the separate storm sewer area, including Hill Lane, Kilpatrick Avenue and Millbrook Lane. These streets are severely impacted during storm events greater than a 2-year storm, and flood depths on the streets can reach 1.5 feet for the 10-year return interval event. This severe flooding was seen by CBBEL staff during our site visits on July 23, 2016, when the Village received approximately 5 inches of rain in 6 hours. During the 100-year event, flood depths can reach 2.4 feet in the streets and numerous homes are impacted.

The proposed plan shows a new 36-inch diameter trunk line storm sewer on Glenview Road that would replace the existing sewer and tie into the trunk lines under Hibbard Road. When this system begins to fill up, a control structure within the proposed storm sewer system near Hibbard Park will allow water to backflow into the underground stormwater storage system before flooding the streets. As currently modeled, this control structure is a weir within a proposed manhole that would be placed at the inflow location to the underground storage facility. The preliminary required underground stormwater storage volume proposed is 10 acre-feet that would be provided on the north side of the park under the existing baseball field and potentially under the existing park lot, if necessary. The underground storage basin would have a bottom at approximately 614 feet and the inside top of the basin would be 619 feet. This shallow depth is limited by the storm sewer system on Wilmette Avenue to allow for the basin to drain by gravity, at the end of the storm

event, through a backflow device, as well as the low points on the flood prone streets. A pumped option, as well as an option that utilizes dynamic controls, will be analyzed during the preliminary engineering phases with optimization of the project benefits. The potential for green infrastructure will also be assessed during preliminary engineering.

The proposed 10-year flood level reduction in the vicinity of Hibbard Park is significant. The 10-year hydraulic grade line at Valley View Drive would be reduced by 0.8 feet. At Kilpatrick Avenue it would be decreased by approximately 1 foot. In both cases, the hydraulic grade line is below the road elevation.

CBBEL Photo on July 23, 2016 at Kilpatrick Avenue

PHASE 3

THORNWOOD PARK

The Thornwood Park underground stormwater storage facility was designed to provide flood relief to the Kenilworth Gardens area. This area includes Beechwood Avenue, Kenilworth Avenue, Chestnut Avenue, Thornwood Avenue, Greenwood Avenue and Hunter Road. This area is the furthest distance hydraulically from the outlet of the separate storm sewer system, which is the stormwater pump station at Lake Avenue on the North Branch of the Chicago River. The Kenilworth Gardens area has experienced frequent flooding given its low elevation and long distance to the pump station. Several of the streets are severely impacted during storm events greater than a 2-year storm, and flood depths on the streets can reach 1.7 feet for the 10-year return interval event. This severe flooding was seen by CBBEL staff during our site visits on July 23, 2016, when the Village received approximately 5 inches of rain in 6 hours. During the 100-year event, flood depths can reach 3.0 feet in the streets and numerous homes are impacted.

CBBEL Photo on July 23, 2016 on Beechwood Avenue

The proposed plan shows a new 42-inch diameter storm sewer on Beechwood Avenue, 24-inch storm sewer on Greenwood Avenue and a 48-inch and 60-inch storm sewer on Hunter Road. These storm sewers would more efficiently convey excess runoff away from the Kenilworth Gardens area. When this storm sewer system becomes surcharged, it will back up into the proposed underground stormwater storage basin. As modeled, this control structure is a weir within a proposed manhole that would be placed at the inflow location to the underground storage facility. The preliminary underground stormwater storage volume proposed is 10 acre-feet that would be provided under the ballfields at the southwest corner of the park. The underground storage basin would have a bottom at approximately 619 feet and the inside top of the basin would be 622.5 feet. This shallow depth is limited by the storm sewer system on Hunter Road to allow for the basin to drain by gravity at the end of the storm event through a backflow device, as well as the low points on the flood prone streets. A pumped option as well as an option, that utilizes dynamic controls, will be analyzed during the preliminary engineering phases with optimization of the project benefits. The potential for green infrastructure will also be assessed during preliminary engineering.

The proposed 10-year flood level reduction in the vicinity of Thornwood Park is significant. The 10-year hydraulic grade line at Beechwood Avenue would be reduced by 1.8 feet. At Greenwood Avenue it would be decreased by 2.8 feet. In both cases, the hydraulic grade line is below the road elevation.

Based on our Understanding of the Assignment, we have identified the following keys to successful implementation of the project.

- **FAMILIARITY WITH VILLAGE OF WILMETTE SEPARATE STORM SEWER XP-SWMM MODEL**
- **OPTIMIZATION OF PROJECT COMPONENTS FOR MAXIMUM BENEFIT/COST**
- **UNDERGROUND STORAGE ASSESSMENT AND OPTIMIZATION**
- **COORDINATION WITH PARK DISTRICT AND SCHOOL DISTRICT**
- **TREE PROTECTION AND PRESERVATION**
- **CONSTRUCTION ENGINEERING AND COMMUNICATION**
- **PROJECT WEBSITE AND COMMUNICATION**
- **PROJECT PARTNERSHIPS FOR GRANTS AND LOW INTEREST LOANS**
- **UTILITY COORDINATION**
- **CONSTRUCTION MANAGEMENT SOFTWARE**

We feel that by identifying these keys at an early stage in the project, we can complete this project in accordance with the accelerated schedule that we have provided in our response to this RFP.

FAMILIARITY WITH VILLAGE OF WILMETTE SEPARATE STORM SEWER XP-SWMM MODEL

CBBEL developed the XP-SWMM hydrologic and hydraulic model of the entire west side separate storm sewer system. This model utilized survey grade GIS information that was collected as an initial phase of the project. The XP-SWMM model was calibrated to two storms that occurred during 2014 and also verified with the April 2013 and July 2016 storm events. This model and recommendations were also reviewed and verified by Stantec as part of their subsequent verification study. This model will be utilized to analyze the possible relocation of the Centennial Park underground stormwater storage to Community Playfield. It will also be the basis for optimizing the underground stormwater storage sizing and storm sewer configuration to provide the maximum flood reduction benefit to the separate storm sewer areas of the Village. We believe that our intimate familiarity with the model will allow us to complete this work more quickly and efficiently, which will allow for us to expedite these initial tasks. This will be critical in meeting the project schedule for construction in 2019.

In addition to our familiarity with the XP-SWMM model, no other consultant has witnessed as many recent storm events in the Village as CBBEL. During our hydrologic and hydraulic analysis of the west side separate storm sewer system, a Water Resources Engineer visited the study area during many of the major storm events, regardless if it was during the day, at night or on the weekend. We continued these site visits after our work was completed as an assistance to the Village and as a demonstration of our partnership with the Village. We have always considered this project as something that will happen over time and we continually monitored the existing storm sewer system and verified our analysis through the many site visiting during storm events.

OPTIMIZATION OF PROJECT COMPONENTS FOR MAXIMUM BENEFIT/COST

There are several project components such as Centennial Park vs. Community Playfield flood storage location and the scope/size of the storm sewer system that will be re-analyzed and optimized as part of the initial step of the project. We are in a unique position to perform additional optimization of the West Side Neighborhood Storage Project given our familiarity with the XP-SWMM model of this alternative developed by CBBEL. Some of the items that we plan to complete as part of this optimization are as follows:

- Refine the Benefit and Cost Analysis using the Village's updated GIS data. With digital planimetric data, it will be possible to more accurately quantify the number of structures impacted under existing conditions and how many are protected under proposed conditions. In the previous studies by CBBEL and Stantec, assumptions had to be made regarding the elevation of the residential structures on each lot. A more accurate measurement can be made with digital planimetric data, and the results can be entered into a Benefit/Cost software package such as IDNR-OWR's Damages program or the FEMA BCA Toolkit to compare different scenarios.
- Analyze relocation of the proposed Centennial Park flood storage facility to Community Playfields. As shown on previous exhibits, there is the potential for cost savings by utilizing the Locust Road reconstruction. Additional stormwater storage in Community Playfield and storm sewers east of the park can allow for project benefits to include the area in the vicinity of Illinois Avenue, Washington Avenue and Wilmette Avenue.

City of Elmhurst Park District Rendering.

- There is also potential for additional cost savings with slight variations to implement the full trunk line sewer to the Lake Avenue pump station (Alternative 1) in the future.

These items will require significant experience with the previously developed XP-SWMM model and benefit/cost analyses that is unique to our project team. Not only has the team developed the model that will be utilized for the hydrologic and hydraulic modeling, we have also completed numerous grant applications and studies using the State and Federal Benefit Cost software for grant applications and project funding. As previously mentioned, we also have a unique position of having witnessed and understand the flooding from site visits during storm events over the past five years.

UNDERGROUND STORAGE ASSESSMENT AND OPTIMIZATION

The underground vaults are possibly the most significant elements of the plan for the success of this project. The conceptual design of the stormwater storage basin included a gravity drained system that would accept water when the local storm sewer system becomes surcharged. While sedimentation is not anticipated to be a severe problem due to the system configuration with the underground storm stormwater basins utilized only when the storm sewer system is becomes surcharge, a sediment collection forebay could be incorporated into the design to allow for easy collection and cleaning of the system. The addition of a sump to the detention vault could also open up opportunities to improve stormwater quality and/or add stormwater harvesting for irrigation. Both the water quality improvements and the stormwater harvesting potential could open the door for additional funding sources.

Initial assessment will consider gravity flow outlet detention vault versus a pumped basin outfall. A pump station adds a significant upfront cost, as well as continued maintenance. However, there may be a breaking point where the reduced footprint and construction limits may offset the costs associated with the addition of adding a pump. Also, only the volume of the vault below the downstream storm sewer invert would need to be pumped out, the volume above could still be drained by gravity. Once the general stormwater detention vault configuration is determined, we will explore various construction materials and methods so that we can provide the Village the most cost-effective solution. Based on the team's experience with comparing StormTrap to other products (cast in place, CMP, HDPE, etc…) on several other projects, StormTrap has been the preferred product. We will perform a cost comparison for various underground detention options to confirm again, but expect that a prefabricated concrete vault (StormTrap or equivalent) would prevail. Our team has a very good working relationship with the vendor and would work with them from the start to optimize the volume cost per vault, develop preliminary design drawings, determine loading requirements/restrictions, determine scheduling critical paths, and develop performance specifications.

The design of the vaults must address an important long-range facet, which is maintenance. The vaults will be designed in such a way that the Public Works crews or a contractor can access them and effectively clean them and remove debris and sediment that will build up over time. The vaults will utilize gravity to capture sediment and debris at one end, where an access hatch will allow maintenance worker and their tools/equipment to access and remove the material. The bottom of the vaults will be finished (with stone or concrete floors) to allow for a spray down by workers and the ability to vacuum or bucket the debris out.

The potential for stormwater harvesting is a unique opportunity that is presented by the construction of an underground stormwater vault on a park property. Similar to Wescott Park in Northbrook, stormwater can be retained

in segmented section of the underground vault, treated, and used as irrigation for the play fields, and gardens. Not only is this an incredibly environmentally friendly and sustainable installation, it also creates a unique learning opportunity. Additionally, this type of project addition is generally very attractive to grant funding. Water used for spray irrigation must meet NSF 350 standards for water quality, as required by the Illinois Department of Public Health. To meet these requirements, the stored stormwater is filtered and sanitized before being pumped into the irrigation system. Pretreatment filtration is provided by a baffle box filter that removes debris, sediment, and hydrocarbons. The water then passes through a UV sanitization system, where UV bulbs kill bacteria and pathogens with radiation. Additional filtration prior to the UV treatment removes suspended solids that can reduce the effectiveness of the bulbs. This type of sanitization system requires minimal contact time, and has the advantage of being chemical- and odor-free. An automated controls system (developed by Baxter & Woodman) uses online weather forecast data to pump stored water to the downstream sewer in advance of large storms so the maximum stormwater storage volume is available when needed. A touchpad control screen is located on-site in a locked enclosure and can be used to perform system checks, adjust system settings, view alarms, and shut down or start up the system. A web interface is also available to monitor the system remotely.

The planning of the physical construction of an underground vault, especially one on school or park district property, must begin during the early stages of design and continue through construction. Coordination with the Village and property owners at the outset of the project is critical to establish project expectations. Additionally, public outreach is necessary to gain the support of impacted residents. Holding a public meeting is an effective way to share information about project and to answer questions that concerned residents may have.

Constructing an underground storage vault involves a significant amount of excavation, requiring a thorough understanding of the soils in the area, where the groundwater level is, and if contaminated soils are present. All of these site conditions can have a significant impact on the project price. Design of the vault itself should consider the desired utilization of existing facilities during construction. The proposed layout of the vault and its appurtenances may need to accommodate playgrounds or fields that will remain in use throughout excavation, installation, and restoration. Additionally, selection of the type of underground storage system utilized should consider the desired construction schedule in addition to spatial site constraints, storage efficiency, durability, and cost.

This construction process requires a massive amount of earth moving. The Contractor will need to haul thousands of truckloads of materials to and from the site, often adjacent to or through active school or park district facilities. The design team will define a feasible construction plan that includes site access, material staging, and construction traffic routes based on expectations established early on in the project. The logistics of moving this quantity of earth will continue to be critical throughout construction. Daily construction traffic schedules should consider periods of high activity, such as school pickup or drop-off times, and both street cleaning and a truck washing station are necessary to maintain local road cleanliness.

COORDINATION WITH PARK DISTRICT AND SCHOOL DISTRICT

The project is reliant on the use of the open spaces within the Park District property and potentially School District property for underground storage. This adds significant importance to the coordination with these entities. This will include providing plans, exhibits and model results to their staff as well as making presentations to their boards on the different aspects of the project. The preliminary design work of the underground stormwater storage basins will be coordinated with the effort to identify locations, construction access, tree removal, park amenities, construction timing and other details that will be critical in these discussions.

Our project team familiar with developing a strong working relationship with these project partners and providing the project facts and data to them in concise and easy to understand formats. In the past 10 years, we have worked with School Districts, Park Districts, Forest Preserve Districts and other project partners in the following municipalities to construct stormwater storage projects:

- Bartlett*
- Elmhurst*
- Merrillville, IN
- Elmwood Park*
- Northbrook*
- Plainfield
- Downers Grove*
- Orland Park
- Lombard
- Glenview
- Skokie

**Award winning projects through ASCE, APWA, and ACEC.*

In addition to these communities where projects have been constructed, we are also currently in the design stage for

similar projects in Belvidere, Park Ridge, Mount Prospect, Valparaiso, IN, and Highland, IN. Our success in implementing these projects results from our inclusive approach and clear presentations to staff and board meetings and developing exhibits to allow for clear visualization of the project components and we understand expectations/requests by districts. In past projects, we have developed all of the engineering documents to secure the necessary temporary and permanent construction easements on Park District or School District property. From the conceptual phase through the construction of the project, we attend board meetings and assist with public presentations to keep the residents and other stakeholders apprised of the project status. Given the importance of this item, it will be led by **DR. CHRISTOPHER B. BURKE, PE**.

In return for the use of their land, the School or Park District may want to take the opportunity to upgrade their facilities. Our landscape architect, **DOUGLAS GOTHAM, LLA** has worked with numerous Schools and Park Districts in the 5 county area and has completed designs of various park amenities including athletic fields, playgrounds, plazas, paths and landscaping.

TREE PROTECTION AND PRESERVATION

TREE CITY USA®

Wilmette is a Tree City USA community and its residents are considerate about the preservation of mature trees within the parkway. This project will impact trees, and design and construction efforts will be made to protect and preserve as much as possible. Preservation of trees remaining in place will require root pruning, trunk protection, and crown pruning where the construction activity is close to the trees. The Phase III staff will closely monitor where materials, equipment, and vehicles are placed and stored. The specifications and pre-construction meeting will need to set expectations for the protection of trees and enforcement of non-compliant actions by the Contractor. Consistent enforcement is essential to ensure the contractor knows the importance of this element of the project.

We will need to meet with the Village Forester to develop an approach related to these protections. As construction activities begin, the Phase III staff will complete a walkthrough with the Forester to clearly identify activities related to tree preservation and any removals that may be required.

CONSTRUCTION ENGINEERING AND COMMUNICATION

The magnitude of this project in the history of Wilmette is significant. All elements will impact residents, visitors and anyone near the construction activity. The invasive nature of large diameter storm sewers under streets, in parks, and adjacent to school property will require a thoughtful communication plan.

The following entities will need to receive accurate and timely information related to the project:

- Residents throughout the Village
- Residents in the direct vicinity of the proposed work and construction zones
- Elected officials
- Village staff
  - o Police and Fire (for emergency responses while construction is ongoing)
  - o Public works divisions for coordination of utilities (water, Sanitary and Storm Sewers, and Street Lighting)
  - o The Village Forester (to ensure tree issues are anticipated and addressed)
- Other Public entities such as the Park and School District and respective staff members
- Other utilities (Com Ed, NICOR, AT&T, Comcast, and any others)
- Bus companies for schools (including summer school)
- Post office
- Refuse and Recycling contractors

The team of CBBEL and B&W have recently completed projects that possess all of the elements of the Wilmette WSNSP project. In Elmhurst, CBBEL completed several large diameter storm sewer projects in residential neighborhoods in the past 2 years and also recently in neighboring Winnetka. In Northbrook, B&W completed underground storage vaults in large open areas.

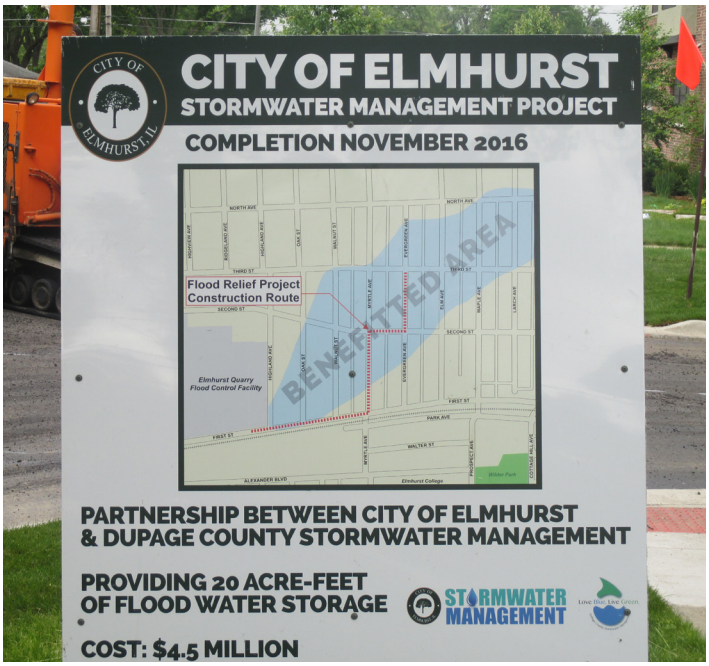
Communication with residents in the neighborhoods is critical to everyday life. Residents must have confidence that the people responsible for managing the construction are empathetic to their needs and concerns. We have assembled a construction engineering team that is very familiar with Wilmette residents and this type of work. Our proposed CBBEL Resident Engineer managed large diameter Relief Sewer projects in Wilmette in 2004, 2005, 2006, 2007, and 2011. The lead inspector from B&W recently completed improvements at the US41 and Hibbard Road intersection.

We believe our team greatly understands the expectations of Wilmette residents because of interactions on these previous projects.

On other projects of this size, we have utilized neighborhood Open Houses or "Coffee with the contractor" to provide an overview for the residents before commencement of construction. A combination of email updates and door hangers distributed to the impacted residents has been the most effective manner to advise residents of upcoming work on the projects. If the Village desires to have us utilize other social media approaches, we can do that. A unified and consistent approach is the most effective mean of communication with those who are impacted.

The communication regarding construction of the underground vaults will require a slightly different approach because large areas will be impacted; not necessarily residential properties. B&W has used the Open House to display the elements of the project in a discussion with adjacent residents and the owner of the property (School or Park District). The need to reduce the impact to ongoing activities on these properties has to be minimized as much as possible, and understanding the magnitude of the disruption is critical.

If an approach is required beyond these initial concepts, both CBBEL and B&W have resources that can provide a higher level of communication. CBBEL has used METRO Strategies on retainer to develop public relations (PR) plans for larger projects; B&W has a PR specialist on staff that can be called upon to assist with little notice.



When construction began, the City of Elmhurst placed informational signs throughout the neighborhoods.

PROJECT PARTNERSHIPS FOR GRANTS AND LOW INTEREST LOANS

On a project of this magnitude, every potential funding source must be identified and developed to maximize the project value for each dollar spent. We understand that the Village is completing a study to assess alternative methods to fund the stormwater improvements. We will coordinate with the selected consultant on that study to identify how outside sources such as MWRD, Federal Emergency Management Agency (FEMA) grants and IEPA Clean Water State Revolving Funds (SRF) can be used to offset or match the Village's financial contribution.

Clean Water
State Revolving Fund

Our project team will bring the experience of working with MWRD on over 10 Green Infrastructure and Phase II partnership projects. Our knowledge and relationships will expedite design and permitting should the project be selected to partner with the district for funding support. The Benefit/Cost analysis completed as part of the project optimization will bolster support for funding of the project by MWRD if it is determined that is an option. We also have experience with the Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program (HMGP) having successfully applied for this grant on behalf of Aurora, Bartlett, Cary, Hinsdale and Glendale Heights. The Benefit/Cost analysis proposed by our project team would also be utilized as a required component of a potential future HMGP application for this project.

We also have extensive experience successfully navigating the IEPA revolving loan process on a variety of water and sewer projects across Chicagoland. At the request of the Village, we started preliminary conversations with the IEPA regarding eligibility of the project for the revolving loan, and our assessment of those conversations is that the stormwater storage and green infrastructure components could qualify for the IEPA program. On projects involving IEPA revolving loans, CBBEL serves as the liaison between the Village and IEPA, where we work closely with both agencies to implement the project as expeditiously as possible while adhering to the many loan requirements.

We prepare the following documents and work with IEPA to facilitate approvals of each, which is required before the loan is issued and construction can begin:

- Funding Nomination Form
- Project Plan Report

- Categorical Exclusion (CE) or Preliminary Environmental Impacts Determination (PEID), as determined by IEPA
- Loan Application and Financial Information
- Completion of all associated IEPA checklists and compilation of supporting documentation, including engineering certifications, federal reporting requirements, plans/ specifications certification and bid certification.

CBBEL also has experience implementing large, complex projects through the IEPA loan program that have required phased construction through multiple bid packages and therefore necessitated procurement of multiple loans with IEPA. This includes sewer separation projects in River Forest and Elmwood Park.

UTILITY COORDINATION

The size of the underground facilities and piping proposed in this project requires that existing utilities are located on the plans as closely as possible to their field locations. If conflicts exist, they need to be mitigated, preferably before construction commences, or the ability to make field adjustments if the locations are not known until the project begins. Previous large diameter relief sewer projects in Wilmette completed by CBBEL have required one or more gas service, water main and service, sanitary main and service adjustments or relocations. Our goal is to identify and solve these issues during the design phase to avoid additional costs and delays during construction.

Both CBBEL and B&W will utilize our contacts with the various utilities to get as much information as possible to design around utility conflicts. If this cannot be achieved utilize these relationships to arrange for the relocation in a timely manner.

Village utility location and coordination will be dependent upon the accuracy of Village atlases and GIS information. CBBEL and B&W will work closely with Wilmette PW staff to coordinate the design as well as field conflicts that will be unanticipated.

We have also retained **CARDNO/TBE** group to provide Subsurface Utility Engineering (S.U.E.) services if there are potential utility conflicts where the utility owner cannot provide accurate information. We have an allowance in this proposal for them to physically locate (pothole) and survey up to 9 utility locations. The exact vertical and horizontal locations of the utilities will help avoid costly, time consuming delays in the field.

PROJECT WEBSITE AND COMMUNICATION

CBBEL worked with our public relations firm (Serafin & Associates) to create the initial branding of the Stormwater Action Plan in 2013 that continues to be the identity of the flood reduction efforts on the west side of the Village. We have Serafin on retainer and will continue to use them for infographics and other useful public outreach materials such as a project website.

A project website that tracks the progress of the project will be critical in keeping the residents of the Village informed on the current project status. It is anticipated that the project will result in disruptions in the lives of Village residents, from closed streets to inaccessible portions of parks. If the residents are well informed, it will alleviate some of their frustration. Our team will work with the Village to develop and update a website that tracks the progress of the project from preliminary design through construction engineering. We will work with Village staff to establish roles and responsibilities.

CONSTRUCTION MANAGEMENT SOFTWARE

CBBEL is proposing to use Bentley ProjectWise construction management software to maintain project related documents through a cloud based system. This software allows multiple stakeholders (Village, CBBEL, B&W, Contractors and Subcontractors) to view documents and streamline communication through one system. CBBEL will grant access to all necessary parties involved in this project to view and respond to: RFI's, submittals, change orders, pay estimates, drawings, photos, and punch lists. ProjectWise helps us meet deadlines by identifying outstanding documents and who is accountable for a response. The software allows changes to be automatically integrated into one working set of plans, ensuring that staff is working on the most up to date design. Our past experience in Wilmette has shown that the format of memos, change orders, and pay estimates can differ depending on the person creating the document; this software will force CBBEL and B&W engineers to use the same format for each document used during Phase III. The license agreement allows CBBEL to have end users trained to use the software, therefore Bentley can provide support to the Village, B&W, and Contractors as needed to get started.

TASK 1 – PRELIMINARY ENGINEERING FOR PHASES 1, 1A, 2 AND 3

TASK 1A: RE-AFFIRMATION OF NEIGHBORHOOD STORAGE

THE project team will re-affirm the benefits of the project through the XP-SWMM model that we previously developed for the 2015 Stormwater Study. Because we developed the model originally and it was based on design level survey, we do not anticipate significant manhours for this task. If any updates were added or suggested by Stantec during their review of the model, we will investigate these and update the model as necessary. Under this task we will also develop a baseline conditions damage assessment using the Illinois Department of Natural Resources – Office of Water Resources (IDNR-OWR) Damages economic model or Federal Emergency Management Agency (FEMA) Benefit/Cost Toolkit. The baseline conditions assessment will determine the existing monetary damages from flooding in the separate storm sewer system.

TASK 1B: BENEFIT/COST ANALYSIS FOR COMMUNITY PLAYFIELD AND CENTENNIAL PARK COMPARISON

The XP-SWMM model will be utilized to analyze the potential to relocate the Centennial Park stormwater storage to Community Playfield. The model will be updated to include underground storage at Community Playfield and additional storm sewers (including the proposed Locust Road storm sewer) required to convey the water to the proposed basin and achieve the benefits outlined under Alternative 3 in the 2015 Stormwater Study. Additional analyses will be completed to route water from the areas east of Community Playfield into the proposed underground storage basin. These areas were not previously served under Alternative 3. The flood reduction benefits for stormwater storage at Centennial Park, Community Playfield and Community Playfield with additional storm sewers will be quantified and compared. The concept level cost estimate for Alternative 3 will be updated to include each of these alternatives.

A benefit/cost analysis using the IDNR-OWR or FEMA economic models will be prepared that will allow comparison of the Benefit/Cost ratio for each project. The results of this analysis will be summarized to Village staff and presented at a Village Board meeting for concurrence of the preferred storage location.

TASKS 1C AND 1D: GIS COORDINATION AND TOPOGRAPHIC SURVEY

As part of this task, the project team will perform topographic survey of the project area ROW to ROW for the following streets and areas:

LAVERGNE AVENUE AREA – Lavergne Avenue from Wilmette Avenue to Lacrosse Avenue; Washington Avenue form Lavergne Avenue to Lamon Avenue; Lamon Avenue from Washington Avenue to Lacrosse Avenue = 4,200 feet.

GLENVIEW ROAD AREA – Millbrook Lane from Lilac Lane to Frontage Road; Frontage Road from Millbrook Lane to Glenview Road; Glenview Road from Frontage Road to Thelin Court cul-de-sac north ROW; and Valley View Drive from Glenview Road to #243 Valleyview Drive = 3,100 feet.

RAMONA ROAD AREA – Ramona Road from Lake Avenue to Blackhawk Road; and Blackhawk Road from Ramona Road to Seminole Road = 1,500 feet.

HILLS AREA – Hibbard Park = +4-acre parcel

HUNTER AREA – Hunter Road from Iroquois Road to Beechwood Avenue; Greenwood Avenue from Hunter Road to 700' east of Hunter Road; Thornwood Avenue from Hunter Road to Thornwood Park; and 21st Street from Kenilworth Avenue to 100; north of Beechwood Avenue = 5,500 feet.

THORNWOOD PARK – Baseball field area south of existing tennis courts = +4-acre parcel.

WILMETTE AREA – Wilshire Drive West from 200' west of Wilshire Drive to Wilshire Drive; Wilshire Drive from Wilshire Drive west to Wilmette Avenue; Wilmette Avenue from Wilshire Drive to Glenview Road; and west Meadow Drive from Wilmette Avenue to south Meadow Drive = 2,300 feet.

CENTENNIAL PARK – from Wilmette Avenue/Glenview Road intersection to Centennial Park water detention/pond area = +5-acre parcel

The project team will perform the following survey tasks:

Horizontal Control: Utilizing state plane coordinates, the project team will tie into NGS Monumentation control utilizing state of the art GPS equipment. Horizontal Datum will correlate with established/existing NGS control monuments (NAD '83, Illinois East Zone 1201).

Vertical Control: The project team will establish elevations on new horizontal control points, these will be based on the NAVD '88 Datum.

Existing Right-of-Way: The project team will perform Research at the Cook County Recorder's Office, Field recon and survey to locate existing monumentation and Right-of-way evidence, and analyze Record and Field Data necessary to compute approximate right-of-way of the roadways within the project limits.

Topographic Survey: The project team will field locate all driveways, pavement markings, signs, manholes, utility vaults, drainage structures, utilities, culverts, etc. within the project limits. Establish all rim and invert elevations, utility sizes & type, depth subterranean structure, etc., at all points of access to below-grade utilities.

Cross Sections: The project team will survey cross sections within the project limits at 50' intervals, and at all other grade controlling features.

Utility Survey and Coordination and GIS Coordination: All existing storm and sanitary sewers will be surveyed to determine rim and invert elevations and pipe sizes. Above ground facilities of any additional underground utilities including water main, gas, electric, cable, etc. will also be located. In addition, the project team will coordinate with utility owners to retrieve atlas information. CBBEL developed the Village shapefiles for the separate storm sewer system as part of our 2015 study. We also have a large GIS database from the 2015 study that we will utilize for the project. We will also work with the Village to obtain the new GIS information such as planimetric data that will be utilized for the preliminary engineering analysis.

Tree Survey: The project team will locate all trees over 6 inches in diameter within the existing right-of-way in order to assess potential tree impacts, if any, associated with the project. Locate landscape planting beds, screenings, landscape islands or planters, and individual trees of 6" diameter or greater and indicate the type, deciduous or coniferous within the survey project area.

Office calculations and plotting of field and record data.

Drafting of an Existing Conditions Plan at a scale of 1"=20'.

TASK 1E: GEOTECHNICAL SOIL BORINGS AND CCDD ANALYSIS:

Our team will include ECS Midwest LLC who will perform a series of soil borings within the limits of the proposed storm sewer improvement project areas to depths ranging from approximately 15 to 40 feet below existing site grades, as described below. The borings will be extended to the proposed depths below the existing ground surface, unless auger refusal causes them to be terminated at a more shallow depth.

SITE	SECTION	NUMBER OF BORINGS	DEPTH	PAVEMENT CORING	# OF CCDD TESTS
Phase 1	Sewer Line	5	15 feet	Yes, 5 locations	3
	Detention System	4	40 feet	No	
Phase 1A	Sewer Line	10	15 feet	Yes, 10 locations	3
Phase 2	Sewer Line	7	15 feet	Yes, 7 locations	3
	Detention Systems	4	25 feet	No	
Phase 3	Sewer Line	11	15 feet	Yes, 11 locations	4
	Detention System	4	25 feet	No	

Upon completion of testing and engineering analysis, ECS will prepare a written engineering report that presents our findings and recommendations. The engineering report will include the following items:

a. Observations from our site reconnaissance including current site conditions, surface drainage features, and surface topographic conditions.

b. A review of the published geologic conditions and their relevance to your planned development.

c. A subsurface characterization and a description of the field exploration and laboratory tests performed. Ground water concerns relative to the planned construction, if any, will be summarized.

d. Final logs of the soil borings and records of the field exploration prepared in accordance with the standard practice for geotechnical engineering. A boring location plan will be included, and the results of the laboratory tests will be plotted on the final boring logs or included on a separate test report sheet.

e. Recommended allowable soil bearing pressure(s) and bearing elevations for the proposed sewer system and manhole structures and estimates of predicted foundation settlement (total and differential).

f. General recommendations for the design of underground detention systems.

g. Recommendations for earth retention systems for trenching construction including excavation recommendations, lateral earth pressure, below-grade drainage recommendations and below-grade wall backfill recommendations.

h. Evaluation of the on-site soil characteristics encountered in the soil borings. Specifically, we will discuss the suitability of the on-site materials for reuse as engineered fill to support grade slabs and pavements. We will also include compaction requirements and suitable material guidelines.

i. Recommendations for additional testing and/or consultation that might be required to complete the geotechnical assessment and related engineering for this project.

j. In an effort to determine what landfill (CCDD or non-CCDD) will be able to accept soils generated from future construction activities and to assist in determining approximate costs for future soil disposal activities, soil samples obtained during the geotechnical exploration exhibiting the greatest potential for possible impacts (visual, olfactory, PID readings, etc.) will be analyzed. Note that pre-sampling soils for compliance with the law will also assist in accommodating same day "dig and haul activities" and should reduce overall costs and the potential for delays associated with soil disposal activities.

TASK 1F: 30% PLANS FOR STORM SEWER AND UNDERGROUND STORMWATER STORAGE

Based on the XP-SWMM modeling, topographic survey and GIS information, we will prepare storm sewer alignments and preliminary underground storage plans for each of the four phases. This will include 1 kickoff meeting and four progress meetings. This task will include the following:

- Determine limits of trunk line construction.
- Confirm design criteria of roadway reconstruction vs. patch and resurface
- Design of proposed storm sewer horizontal and vertical alignment
- Approximate structure spacing
- Mainline utility conflict identification
- Underground stormwater storage configuration verification
- Identification for Green Infrastructure Opportunities.
- Preliminary plan sheets will include:
  - Cover Page
  - Typical Sections for Trench and Pavement
  - Utility Plan and Profile Sheets
    - Proposed Alignment
    - Invert Elevations
    - Pipe Diameter
    - Approximate Structure Locations and Sizes
    - Utility Conflict Identification
  - Site Plan for Preliminary Vault Configuration
  - Preliminary Vault Design/Details

The plans will be presented to the Village Staff during the progress meetings and cost estimates will be prepared and updated as part of Task i. The plans will also be independently reviewed by Construction Engineers from the project team for an initial constructability review and identification of construction obstacles. These will be presented and discussed with the Village during the preliminary engineering phase.

TASK 1G: UNDERGROUND STORAGE OPTIMIZATION

The XP-SWMM model and benefit cost analysis will be utilized to optimize the configuration of the underground storage basins and associated piping for the entire project. This will specifically investigate expansion of the storage basins and associated piping to provide a 10-year level of service to a greater portion of the separate storm sewer system. The results of this analysis will be summarized in a technical memorandum and presented to the Village Board along with ranking of the various alternatives based on the benefit/cost ratio. It is anticipated that this will be the basis for the Preliminary Design and Final Design for the project.

TASK 1H: GREEN INFRASTRUCTURE PLAN

The project team will meet with the Village's sustainability committee to determine their specific goals and intentions. We will develop a "Green Infrastructure Handbook" specifically geared toward the Village of Wilmette that discusses the various types of green infrastructure implementations, the situations in which each work well or not, the cost and benefit ranking for various implementations for given situations. The handbook would also designate which green infrastructure techniques are appropriate for municipal infrastructure, private residences, or both.

This handbook may be used by the sustainability committee regarding what all the options are and how they might apply to Wilmette; as well as facilitate discussion regarding how the committee would like the village to move forward with (or without) green infrastructure to develop a recommendation to the board.

It is anticipated that this process will result in direction from the sustainability committee and Village board to include green infrastructure in the West Side Neighborhood Storage Project, either on a smaller intermittent scale, or by a more systematic approach implementing green infrastructure throughout. The committee could also utilize the handbook and subsequent discussions to develop recommendations to the board for resolutions or ordinance updates that could either suggest or require green infrastructure to be implemented in future Village development (public or private).

The project team will develop a Village of Wilmette Green Infrastructure Handbook. The Handbook will discuss, in detail, each of the commonly utilized green infrastructure implementations, their specific benefits, their ideal applications, and their cost/benefit. It will Identify GI applications as primarily municipal, private, or both. It will include a matrix listing all GI applications and rate their cost, volume effectiveness, aesthetics, pollution control effectiveness, and other factors. Where applicable, architectural visuals of the higher-ranking GI implementations will be prepared for typical Wilmette Streets. We will make recommendations as to which and how GI should be included in this and other projects, and a list of pilot projects will be prepared with exhibits and an engineer's estimate of probable cost for each project.

TASK 1I: ENGINEER'S ESTIMATE OF PROBABLE COST

Based on the 30% design plans, an Engineer's Estimate of Probable Cost (EOPC) will be prepared for the project. The EOPC will assume a 20% contingency and will be based upon an average of recent unit prices from projects of similar scope and size.

TASK 1J: FUNDING OPPORTUNITIES

We have identified in the Keys to the Project the major funding opportunities that may be relevant to the project, including MWRD's Phase 2 program, FEMA's HMGP program, and IEPA's Clean Water State Revolving Funds. As the project design progresses toward completion, we will review these programs for suitability and likelihood of success. We will utilize our company resources to investigate other grant funding possibilities available for specific project components, such as green infrastructure. We will prepare a memorandum that describes the application and review process for each funding program and assesses how the project fits within the funding guidelines of each program. We will also identify the approximate level of effort and any specific information that would need to be developed to apply for any of the funding sources.

TASK 1K: PARK DISTRICT AND SCHOOL DISTRICT COORDINATION

CBBEL will prepare project documentation, exhibits, calculations and presentations to Park District and School District staff and their boards, as necessary. We anticipate the exhibits will include construction access, preliminary site amenities to replace existing facilities, green infrastructure and other park items that are typically included in the engineering design of park projects. We will prepare calculations to show the hydrologic and hydraulic function of the underground stormwater storage and park drainage features. We will present these findings to Park District and School District staff when requested. As necessary, we will prepare presentations and attend board meetings for these project partners to inform and secure a positive outcome.

TASK 2 - DESIGN AND BIDDING SERVICES FOR PHASES 1, 1A, 2 AND 3

We understand the improvements to include the construction of three 10-12 acre-feet storage basins within the following Park District locations:

Phase 1 – Centennial Park or the Community Playfields
Phase 2 – Hibbard Park and
Phase 3 – Thornwood Park.

Approximately 17,500 feet of new storm sewer will be constructed to convey the storm water to the 3 proposed basins. Phase 1A will include upsizing existing storm sewers to accommodate future implementation projects, but will not include new detention.

The following improvements are anticipated to be included in the four (4) proposed phases of the West Side Neighborhood Storage Project:

Phase 1 – Centennial Park or Community Play fields

- 12 acre-feet Storage Basin
- 2,300 feet of mainline sewer (30" to 60")
- Reconstruction of Wilmette Avenue within the limits of the 60" sewer construction
- Patching/resurfacing of all other streets
- Park Amenities/Green Infrastructure (TBD)

Phase 1A – Relief Sewers

- 5,200 feet of mainline sewer (24" to 108")
- Reconstruction of Washington Avenue
- Patching/resurfacing of all other streets
- Green Infrastructure (TBD)

Phase 2 – Hibbard Park

- 10 acre-feet Storage Basin
- 3,400 feet of mainline sewer (36" to 76" x 48" ellip.)
- Reconstruction of Hill Lane
- Patching/resurfacing of all other streets
- Park Amenities/Green Infrastructure (TBD)

Phase 3 – Thornwood Park

- 10 acre-feet Storage Basin
- 5,500 feet of mainline sewer (24" to 60")
- Reconstruction of Thornwood Avenue and Hunter Road (Thornwood Avenue to the south limit)
- Patching/resurfacing of all other streets
- 6,000 feet of 8" watermain replacement
- Park Amenities/Green Infrastructure (TBD)

TASKS 2A & 2B – CONSTRUCTION DOCUMENTS

Our team will prepare construction documents consisting of drawings, details, and technical specifications. The set of drawings will contain a General Notes sheet that will list the required material specifications, plan view sheets, section cuts, restoration detail sheets, and detailed construction staging as required. The technical specifications will provide detailed information on each of the work items and materials to be used in the WSNSP, including park restoration and amenities approved during preliminary engineering within reason.

We understand the Village's front-end documents shall be inserted into the WSNSP specifications.

We estimate the following drawings (listed below) will be prepared to complete the Construction Documents:

Plans will be submitted to the Village and other agencies to review at the Preliminary (65%), Pre-final (90%) and Final (100%) levels.

Design of common green infrastructure elements, to be determined in the Green Infrastructure Plan, will be included in the construction documents. Common green infrastructure items may include rain gardens, bio-swales, infiltration basins, permeable pavement sections, and/or similar items. Complete "green" streetscape design and/or rainwater harvesting systems (with filtration, pumping, and treatment per ILPH) are beyond this scope of services.

Park restoration and amenity improvements are anticipated to be common and reasonable items such as new play fields, fencing, sidewalks/bike paths, etc. Major improvement items, such as structural facilities, large retaining walls, are beyond this scope of services. For estimating purposes, we have assumed that the construction cost of the green infrastructure improvements and park amenities will be approximately $100,000 each for each phase. Except there will be no park amenities for Phase 1A.

TASK 2C – GENERAL CONDITIONS/STAGING

Our team will prepare a set of General Conditions that includes site-specific instructions for each phase and special requirements with respect to minimizing disruption to the area residents, School District #39, Park District operations and adjacent properties. It is expected that these will include interim completion dates and associated liquidated damages.

TASK 2D – BID PROPOSAL ALTERNATES

Our team will prepare a bid form for unit prices to be used for fairly pricing additional/deduct work and alternative pricing forms, if needed. Value engineering/cost saving alternatives will be

DESIGN AND BIDDING SERVICES	PHASE 1 2,300'	PHASE 1A 5,200'	PHASE 2 3,400'	PHASE 3 5,500'
SHEET	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS
COVER SHEET	1	1	1	1
GENERAL NOTES	1	1	1	1
SUMMARY OF QUANTITIES	1	1	1	1
TYPICAL SECTIONS	2	2	2	2
ALIGNMENT, TIES AND BENCHMARKS	2	2	2	2
CONSTRUCTION DETAILS	2	2	2	2
EXISTING CONDITIONS AND REMOVAL PLANS	4	5	4	6
STORM SEWER PLAN AND PROFILES	6	9	7	11
WATERMAIN PLAN AND PROFILES	0	0	0	12
ROADWAY RECONSTRUCTION PLAN AND PROFILES	2	2	1	4
CROSS SECTIONS	4	4	2	8
GRADING AND DETENTION VAULT PLANS	3	0	3	3
STAGING PLANS	3	3	3	3
PARK AMENITY PLANS	4	0	4	4
GREEN INFRASTRUCTURE PLANS	3	3	3	3
EROSION CONTROL AND LANDSCAPING PLANS	4	5	4	6
EROSION CONTROL AND LANDSCAPING DETAILS	2	2	2	2
TOTAL	**44**	**42**	**42**	**71**

investigated. These may include alternate storm sewer materials, different pavement rehabilitation or reconstruction sections, precast tees vs. traditional manhole structures and others.

TASK 2E – ENGINEER'S OPINION OF PROBABLE COST

Our team will prepare a list of engineer's estimate of probable construction costs, prior to bidding of each phase.

TASK 2F – BOARD MEETINGS/ NEIGHBORHOOD MEETINGS

CBBEL will present the WSNSP results at a Village Board meeting and at a separate neighborhood meeting. Conduct a formal presentation of the findings and recommendations and design, along with the construction costs and implementation schedule. Numerous visual aids may be needed for possible group discussions.

TASK 2G – OPERATION AND MAINTENANCE PLANS

CBBEL will provide an operation and maintenance plan for the storm water facilities per MWRD requirements, manufacturer specifications and Public Works input.

TASK 2H – PERMITTING AND UTILITY COORDINATION

Our team will submit and receive approval for all required permits from IEPA, MWRDGC, IDOT and Cook County and the Village of Wilmette.

CBBEL will identify utilities that may have facilities within the project limits and send a Preliminary Utility Request to all known utility companies to obtain pertinent information. Based on the information received from the utility companies, CBBEL will include locations of all facilities on the plans, identify potential conflicts with the proposed project and design the proposed improvements to minimize utility conflicts. If limited information on existing utility locations is available, CBBEL will direct Cardo/TBE Group to physically locate and survey the horizon and vertical locations of the utility in question. We have an allowance for 2-3 potholes per phase (9 total).

TASK 2I THROUGH 2M – BIDDING ASSISTANCE

During the bidding phase our team will:

- Provide a list of qualified contractors to bid on the improvements.
- Facilitate the pre-bid meeting, WSNSP site tours, and bid opening.
- Prepare and submit addenda as needed.
- Respond to bid questions during the bidding period.
- Evaluate bids received. Prepare and submit a memorandum to the Village on its review, analysis, conclusions, and recommendation associated with the bids received. The memorandum shall also describe, explain, and summarize any variances between the Engineer's estimate and apparent low bidder's bid breakdown. Check references submitted.

TASK 3 - CONSTRUCTION ENGINEERING SERVICES FOR PHASES 1 AND 1A

TASK 3A – PRE-CONSTRUCTION SERVICES: CBBEL WILL PERFORM THE FOLLOWING TASKS PRIOR TO THE START OF CONSTRUCTION

- Coordinate, prepare for, and attend multiple preconstruction meetings anticipated for Phase III work on this project.
- Review the Contractor's schedule for compliance with the specifications.

TASK 3B – CONSTRUCTION OBSERVATION

CBBEL will provide one full-time resident engineer for the duration of construction for both Phase 1 and Phase 1A of the West Side Neighborhood Storage Project. Baxter & Woodman (B&W) will provide an inspector for the duration of Phase 1 work, and CBBEL will provide an inspector for the duration of Phase 1A work. Construction observation will include the following tasks:

- Observation and inspection for all phases of construction to verify quality of work and compliance of design. The Engineer will keep the Village informed of the progress of the work, guard the Village against defects and deficiencies in the work, advise the Village of all observed deficiencies of the work, and will disapprove or reject all work failing to conform to the Contract Documents.
- Coordinate construction work with residents and businesses. This will include, but not limited to, notification of construction starting, detours and/or closures, access limitations, and disruption of any water, sewer, or gas services. CBBEL shall be available throughout the construction project to address any questions or concerns area residents and/or businesses may have. Our policy is to respond to all questions or concerns within one business day. Extraordinary inquiries or requests will be coordinated with Village staff.
- Serve as the Village's liaison with the Contractor working principally through the Contractor's field superintendent.
- Be present whenever the Contractor is performing work on the project.
- Assist Contractors in dealing with any outside agencies.
- Inspect erosion and sediment control measures and notify Contractor of any deficiencies.
- Review construction notices created by Contractor and ensure they are being distributed.

- Attend all construction conferences. Arrange a schedule of progress meetings and other job conferences as required. Maintain and circulate copies of records of the meetings.
- Review the Contractor's schedule on a weekly basis. Compare actual progress to Contractor's approved schedule. If the project falls behind schedule, work with the Contractor to determine the appropriate course of action to get back on schedule.
- Except upon written instructions of the Village, the Resident Engineer or Inspector shall not authorize any deviation from the Contract Documents.
- Determine if the project has been completed in accordance with the Contract Documents and that the Contractor has fulfilled their obligations.

TASK 3C – SUBMITTAL REVIEW

CBBEL or our Subconsultant, B&W, will approve or reject as necessary, and document the construction contractor technical submittals, shop drawings, and work plans for compliance with the contract documents.

CBBEL proposes using ProjectWise software to coordinate submittals and drawings among the Contractor, Engineer, and Village.

TASK 3D – REQUEST FOR INFORMATION REVIEW

CBBEL or our Subconsultant, B&W, will review, document, recommend specific action, and respond to all requests for clarifications. Interpret the technical content of the drawings and specifications with respect to requests for clarification and deviation from them.

CBBEL proposes using ProjectWise software to coordinate RFI's among the Contractor, Engineer, and Village.

TASK 3E – CONTRACT MODIFICATIONS

CBBEL or our Subconsultant, B&W, will prepare drawings/ sketches, specifications, and cost estimates for contract modifications.

TASK 3F – CONTRACTOR CLAIMS

CBBEL will review and prepare documentation in response to construction contractor claims. Prepare cost estimates and assist in negotiations.

TASK 3G – SUBSTANTIAL COMPLETION FIELD INSPECTION

CBBEL or our Subconsultant, B&W, will perform substantial completion field inspections of work.

TASK 3H – SURVEY

CBBEL or our Subconsultant, B&W, will provide site survey work as needed for different phases of construction. This work does not include construction layout, which will be the contractor's responsibility.

TASK 3I – CONSTRUCTION DOCUMENTATION

Construction documentation will include the following tasks:

- Keep an inspector's daily report book in the Village's format, or other required format appropriate for the project, recording hours on the job site, weather conditions, general and specific observations, daily activities, quantities placed, inspections, decisions, and list of visiting officials, as outlined in IDOT's Construction Manual.
- Verify work performed and quantity of materials used in order to approve payouts. Prepare pay estimates. Review applications for payment with the Contractor for compliance with established submission procedure and forward them with recommendations to the Village. CBBEL proposes using ProjectWise software to document pay estimates.
- Maintain orderly files for correspondence, reports of job conferences, submittals, reproductions or original contract documents including all addenda, change orders and additional drawings issued subsequent to the award of the contract.
- Record the names, addresses and phone numbers of all Contractors, subcontractors and major material suppliers in the diary.
- Obtain and document all material inspection received from the Contractor as outlined in the Project Procedures Guide of IDOT's Construction Manual.

TASK 3J – CHANGE ORDERS

Process requested change orders. CBBEL proposes using ProjectWise software to document change orders.

TASK 3K – PUNCH LIST

Establish punch list and corrective work as necessary, and inspect the construction work as necessary. Verify that each correction has been made.

CBBEL proposes using ProjectWise software to coordinate all project punchlists.

TASK 3L – FINAL INSPECTION

Perform final inspection prior to final payout and deliver project to the Village's satisfaction.

TASK 3M – AS-BUILT DRAWINGS

CBBEL will perform the following tasks once construction is complete:

- Prepare as-built documents in the Village's preferred format.

TASK 3N – QA MATERIAL TESTING

A subconsultant to be determined will provide QA testing outlined in the IDOT Project Procedures Guide.

Proposed Project Schedule
Village of Wilmette
West Side Neighborhood Storage Project Engineering Services - RFP #18137

ACTIVITY	WEEK STARTING
Notice to Proceed with Engineering Services	
Project Kick-Off Meeting with Village staff	
Re-affirmation of Neighborhood Storage	
XP-SWMM Model and Benefit/Cost Analysis for Community Park and Centennial Park Comparison	
XP-SWMM Model Analysis for Underground Storage Optimization	
GIS Coordination and Topographic Survey	
Geotechnical Soil Borings and CCDD Analysis	
Phase 1 30% Plans for Storm Sewer Alignment and Underground Stormwater Storage	
Phase 1A 30% Plans for Storm Sewer Alignment	
Phase 2 30% Plans for Storm Sewer Alignment and Underground Stormwater Storage	
Phase 3 30% Plans for Storm Sewer Alignment and Underground Stormwater Storage	
Green Infrastructure Plan	
Engineer's Estimate of Probable Cost	
Analysis of Funding Opportunities	
Park and School District Coordination	
Phase 1 Final Design	
Phase 1A Final Design	
Phase 1 & 1A Bidding	
Construct Phase 1 Underground Stormwater Storage	
Construct Phase 1 and 1A Storm Sewers	
Phase 2 Final Design & Bidding	
Phase 3 Final Design & Bidding	

8/13/2018 8/20/2018 8/27/2018 9/3/2018 9/10/2018 9/17/2018 9/24/2018 10/1/2018 10/8/2018 10/15/2018 10/22/2018 10/29/2018 11/5/2018 11/12/2018 11/19/2018 11/26/2018 12/3/2018 12/10/2018 12/17/2018 12/24/2018 12/31/2018 1/7/2019 1/14/2019 1/21/2019 1/28/2019 2/4/2019 2/11/2019 2/18/2019 2/25/2019 3/4/2019 3/11/2019 3/18/2019 3/25/2019 4/1/2019 4/8/2019 4/15/2019 4/22/2019 4/29/2019 5/6/2019 5/13/2019 5/20/2019 5/27/2019 June 2019 July 2019 Aug 2019 Sept 2019 Oct 2019 Nov 2019 Dec 2019 Jan' 2020 Feb 2020 March 2020 April 2020 May 2020 June 2020 July 2020 Aug 2020 Sept 2020 Oct 2020

Starting construction in the spring of 2019 rather than the fall, potentially allows the entire program to be constructed a year ahead of schedule – pending funding and park/school district cooperation.

Schedule is contingent upon agency and Village review times.

LEGEND

- Project Meeting
- Tasks completed by CBBEL
- Tasks completed by Baxter & Woodman

REFERENCE SHEET
West Side Neighborhood Storage Project
Engineering Services

Each Engineer must supply at least three (3) names, addresses, telephone numbers and names of persons representing municipalities and/or commercial entities to contact as references for similar type projects completed in the past five (5) years.

Company Name..... : Village of Bartlett

Address ..... : 1150 Bittersweet Drive

City & State..... : Bartlett, Illinois 60103

Telephone Number..... : 630.837.0800

Person to Contact..... : Bob Allen, Village Engineer

E-Mail Address ..... : rallen@vbartlett.org

Company Name..... : City of Elmhurst

Address ..... : 209 North York Street

City & State..... : Elmhurst, IL 60126

Telephone Number..... : 630.530.3041

Person to Contact..... : Howard Killian, Director of Public Works

E-Mail Address ..... : howard.killian@elmhurst.org

Company Name..... : Village of Northbrook

Address ..... : 655 Huehl Road

City & State..... : Northbrook, IL 60062

Telephone Number..... : 847.272.4711

Person to Contact..... : Kelly Hamill, Director of Public Works

E-Mail Address ..... : kelly.hamill@northbrook.il.us

CURRENT VILLAGE OF WILMETTE CONTRACTS SHEET
West Side Neighborhood Storage Project
Engineering Services

Do you currently hold any Village contracts? [ ] NO [X] YES (list below)

Christopher B. Burke Engineering, Ltd.
Wilmette Permit Review Services
Wilmette Public Outreach and Grant Assistance
Locust Road (Lake to Wilmette) Phase II Services
Baxter & Woodman
Skokie/Hibbard Intersection Construction Services
Public Works Yard Improvements

PROPOSAL EXCEPTIONS SHEET
West Side Neighborhood Storage Project
Engineering Services

The Engineer affirms that the prices quoted herein include all equipment, materials, labor, services, personnel, tools, machinery, utilities, supplies, insurance, bonds, supervision, overhead expense, profits, appliances, transportation and delivery charges, temporary facilities, licenses, permits, facilities and incidentals reasonably inferred as necessary to complete the Work in a timely and workmanlike manner. Any and all exceptions to these specifications and the contract terms included herein MUST be clearly and completely indicated below. Attach additional pages if necessary.

EXCEPTIONS TAKEN: [X] NO [ ] YES (List below)

ENGINEER ACKNOWLEDGMENT AND SIGNATURE
West Side Neighborhood Storage Project
Engineering Services

BY SUBMITTING THIS PROPOSAL, ENGINEER AFFIRMS THAT IT:

1. Has carefully examined the RFP and all other documents referred to or mentioned therein, including Addenda Nos. 1, 2 (if none, write "NONE") and accepts the terms and conditions therein (except those noted on the Proposal Exception sheet); and, has considered and evaluated the factors which may affect cost, progress, performance and completion of the Work or any aspect of the means, methods, techniques, sequences and procedures to be employed and safety precautions incident thereto;

2. Is familiar with the federal, state and local laws, standards and regulations that may affect cost, progress, performance and completion of the Work;

3. Has studied all reports and drawings, if any, of the physical conditions in or relating to the Village locations; acknowledges that such reports and drawings, if any, are not Contract Documents and may not be complete for purposes of submitting this Proposal; and, acknowledges that the Village does not assume responsibility for the accuracy or completeness of the information and data; or, for Engineer's interpretation thereof and reliance thereon;

4. Is aware of the general nature of work, if any, to be performed by the Village, or others that may relate to Work for which this Proposal is submitted.

5. Is aware that all information received in response to this RFP, including copyrighted material, is deemed public information and will be made available for public viewing and copying shortly after the time for receipt of the RFP has passed - with the following four exceptions:

    a. Bona fide trade secrets meeting the requirements of the Uniform Trade Secrets, that have been properly marked, separated, and documented;

    b. Matters involving individual safety as determined by the State;

    c. Any company financial information requested by the State to determine vendor responsibility, unless prior written consent has been given by the Proposer; and

    d. Other constitutional protections.

6. Is aware that all drawings, specifications, reports, and any other project documents prepared by the Engineer in connection with any or all of the services furnished hereunder shall be delivered to the Village for the expressed use of the Village in both digital and hardcopy format. The Engineer does have the right to retain original documents, but shall cause to be delivered to the Village such quality of documents so as to assure total reproducibility of the documents delivered. In particular, the Village may request, at no additional cost, the delivery of additional sets of drawings or documents if the Engineer fails to deliver a fully reproducible document. It is understood that the documents produced by the Engineer for this project are intended to be publicly available and widely disseminated in both hardcopy and digital format.

Signed and sworn this 18th day of June, 2018, by a duly authorized agent of the ENGINEER.

By: _____
(Signature)

Michael Kerr
(Print Name)

Executive Vice President
(Title or Position)

Business address:

9575 W. Higgins Road, Suite 600, Rosemont, IL 60018

Business Phone #: 847-823-0500

E-Mail Address: mkerr@cbbel.com

Subscribed and sworn to before me
this 18th day of June, 2018

OFFICIAL SEAL
SHERRY SPORINA
NOTARY PUBLIC, STATE OF ILLINOIS
My Commission Expires Aug 13, 2019

CERTIFICATION OF COMPLIANCE

DESCRIPTION: West Side Neighborhood Storage Project Engineering Services

Christopher B. Burke Engineering, Ltd., having been duly sworn, depose and states as follows:

Having submitted an offer for the above goods and/or services, We hereby certify that: *(initial all that apply)*

PLEASE CHECK ALL APPLICABLE BOXES

[X] **BARRED FROM BIDDING:** We are not barred from bidding on these goods and/or services as a result of a violation of either 720 ILCS 5/33E or of any similar statute of another state or a federal statute containing the same or similar elements.

[X] **SEXUAL HARASSMENT:** We have a written sexual harassment policy in place in full compliance with 775 ILCS 5/2-105(A) (4).

[X] **PAYMENT OF TAXES:** We are not delinquent in the payment of any tax administered by the Illinois Department of Revenue; or if we are, it: (a) is contesting its liability for the tax or the amount of tax in accordance with procedures established by the Approved Revenue Act; or (b) has entered into an agreement with the Department of Revenue for payment of all taxes due and is currently in compliance with that agreement.

[X] **EQUAL PAY ACT:** Engineers, Contractors, and all subcontractors thereof, shall at all times comply with the provisions of the Illinois Equal Pay Act of 2003, 820 ILCS 112/1, *et seq.*

[X] **CONFINED SPACE ENTRY:** We will comply with all requirements of 29 CFR Part 1910 Permit Required for Confined Spaces for General Industry; including Section 1910.146(c) (9) "In addition to complying with the permit space requirements that apply to all employers, each Engineer who is retained to perform permit space entry operations shall: (a) obtain any available information regarding permit space hazards and entry operations from the host employer; (b) coordinate entry operations with the host employer, when both host employer personnel and Engineer personnel will be working in or near permit spaces, as required by paragraph (d)(11); and (c) inform the host employer of the permit space program that the Engineer will follow and of any hazards confronted or created in permit spaces, either through a debriefing or during the entry operation."

[X] **DRUG-FREE WORKPLACE:** We will comply with all requirements Pursuant to Chapter 30, Section 580/1 of the Illinois Compiled Statutes (30 ILCS 580/1) et. Seq. entitled "Drug Free Workplace Act"; we will provide a drug-free workplace by:

1) Publishing a statement:
   a) Notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance, including cannabis, is prohibited in the grantee's of Engineer's workplace.
   b) Specifying the actions that will be taken against employees for violations of such prohibition.
   c) Notifying the employee that, as a condition of employment on such contract or grant, the employee will:
      i) Abide by the terms of the statement; and

ii) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than 5 days after such conviction.

2) Establishing a drug free awareness program to inform employees about:
   a) the dangers of drug abuse in the workplace;
   b) the grantee's or Engineer's policy of maintaining drug free workplace;
   c) any available drug counseling, rehabilitation, and employee assistance program; and
   d) the penalties that may be imposed upon employees for drug violations.
3) Making it a requirement to give a copy of the statement required by subsection (a) to each employee engaged in the performance of the contract or grant and to post the statement in a prominent place in the workplace.
4) Notifying the contracting agency within 10 days after receiving notice under part (B) of paragraph (3) of subsection (a) from an employee or otherwise receiving actual notice of such conviction.
5) Imposing a sanction on, or requiring the satisfactory participation in a drug assistance or rehabilitation program by any employee who is so convicted, as required by Section 5 (30 ILCS 580/5) of the Act.
6) Assisting employees in selecting a course of action in the event drug counseling treatment and rehabilitation is required, and indicating that a trained referral team is in place.
7) Making a good faith effort to continue to maintain a drug free workplace through implementation of this Section.
8) Failure to abide by this certification shall subject the Engineer to the penalties provided in Section 6 (30 ILCS 580/6) of the Act.

[X] **NATIONAL SECURITY/USA PATRIOT ACT:** We represent and warrant that, pursuant to the requirements of the USA Patriot Act and applicable Presidential Executive Orders, neither we nor any of our principals, shareholders, members, partners, or affiliates, as applicable, as a person or entity are named as a Specially Designated National and Blocked Person (as defined in Presidential Executive Order 13224) and that we are not acting, directly or indirectly, for or on behalf of a Specially Designated National and Blocked Person. We further represent and warrant that we and our principals, shareholders, members, partners, or affiliates, as applicable, are not, directly or indirectly, engaged in, and are not facilitating, the transactions contemplated by this Agreement on behalf of any person or entity named as a Specially Designated National and Blocked Person.

We further represent and warrant we are not acting, directly or indirectly, for or on behalf of any person, group, entity, or nation named by the United States Treasury Department as a Specially Designated National and Blocked Person, or for or on behalf of any person, group, entity, or nation designated in Presidential Executive Order 13224 as a person who commits, threatens to commit, or supports terrorism; and that we are not engaged in this transaction directly or indirectly on behalf of or facilitating this transaction directly or indirectly on behalf of, any such person, group, entity, or nation.

We hereby agree to defend, indemnify, and hold harmless the Village of Wilmette, its Corporate Authorities, and all Village of Wilmette elected or appointed officials, officers, employees, agents, representative, engineers, and attorneys, from and against any and all claims, damages, losses, risks, liabilities, and expenses (including reasonable attorneys' fees and costs) arising from or related to any breach of the foregoing representation and warrant.

[X] **EQUAL EMPLOYMENT OPPORTUNITY:** In the event of the Engineer's non-compliance with the provisions of this Equal Employment Opportunity Clause, the Illinois Human Rights Act or the Rules and Regulations of the Illinois Department of Human Rights ("Department"), the Engineer may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations, and the contract may be cancelled or voided in whole or in part, and such other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation. During the performance of this contract, the Engineer agrees as follows:

1) That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, marital status, national origin or ancestry, citizenship status, age, physical or mental handicap unrelated to ability, military status, or an unfavorable discharge from military service; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.
2) That, if it hires additional employees in order to perform this contract or any portion thereof, it will determine the availability (in accordance with the Department's Rules) of minorities and women in the areas from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.
3) That, in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, sexual orientation, marital status, national origin or ancestry, citizenship status, age, physical or mental handicap unrelated to ability, military status, or an unfavorable discharge from military service.
4) That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the Engineer's obligations under the Illinois Human Rights Act and the Department's Rules. If any such labor organization or representative fails or refuses to cooperate with the Engineer in its efforts to comply with such Act and Rules, the Engineer will promptly so notify the Department and the contracting agency and will recruit employees from other sources when necessary to fulfill its obligations thereunder.
5) That it will submit reports as required by the Department's Rules, furnish all relevant information as may from time to time be requested by the Department or the contracting agency, and in all respects comply with the Illinois Human Rights Act and the Department's Rules.
6) That it will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and the Department for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and the Department's Rules.
7) That it will include verbatim or by reference the provisions of this clause in every subcontract it awards under which any portion of the contract obligations are undertaken or assumed, so that such provisions will be binding upon such subcontractor. In the same manner as with other provisions of this contract, the Engineer will be liable for compliance with applicable provisions of this clause by such subcontractors; and further it will promptly notify the contracting agency and the Department in the event any subcontractor fails or refuses to comply therewith. In addition, the Engineer will not utilize any subcontractor declared by the Illinois Human Rights Commission to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

[X] ILLINOIS PUBLIC WORKS EMPLOYMENT DISCRIMINATION ACT

10/1. Discrimination in employment prohibited: (a) No person shall be refused or denied employment in any capacity on the ground of unlawful discrimination, as that term is defined in the Illinois Human Rights Act, nor be subjected to unlawful discrimination in any manner, in connection with the contracting for or the performance of any work or service of any kind, by, for, on behalf of, or for the benefit of this State, or of any department, bureau, commission, board, or other political subdivision or agency thereof (b) The Illinois Human Rights Act applies to all contracts identified in subsection (a). 10/2. Deemed incorporated in contract: The provisions of this Act shall automatically enter into and become a part of each and every contract or other agreement hereafter entered into by, with, for, on behalf of, or for the benefit of this State, or of any department, bureau, commission, board, other political subdivision or agency, officer or agent thereof, providing for or relating to the performance of any of the said work or services or of any part thereof.

10/3. Includes independent contractors, etc.: The provisions of this Act also shall apply to all contracts entered into by or on behalf of all independent contractors, subcontractors, and any and all other persons, association or corporations, providing for or relating to the doing of any of the said work or the performance of any of the said services, or any part thereof.

10/4. Deduction from compensation: No Engineer, subcontractor, nor any person on his or her behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of work for the benefit of the State or for any department, bureau, commission, board, other political subdivision or agency, officer or agent thereof, on account of race, color, creed, sex, religion, physical or mental handicap unrelated to ability, or national origin; and there may be deducted from the amount payable to the Engineer by the State of Illinois or by any municipal corporation thereof, under this contract, a penalty of five dollars for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of this Act.

10/5. Recovery by injured person: Any person, agency, corporation or association who violates any of the provisions of this Act, or who aids, abets, incites or otherwise participates in the violation of any of the provisions, whether the violation or participation therein occurs through action in a private, public or in any official capacity, shall be guilty of a petty offense for each and every violation or participation therein with respect to each person aggrieved thereby, to be recovered by each such aggrieved person, or by any other person to whom such aggrieved person shall assign his cause of action, in the circuit court in the county in which the plaintiff or the defendant shall reside.

10/6. Violations; punishment: Any person who or any agency, corporation or association which shall violate any of the provisions of the foregoing sections, or who or which shall aid, abet, incite or otherwise participate in the violation of any of the said provisions, whether the said violation or participation therein shall occur through action in a private, in a public, or in any official capacity, shall also be deemed guilty of a petty offense for each and every said violation or participation or, in the case of non-corporate violators, or participators, of a Class B misdemeanor.

10/7. To be inscribed in contract: The provisions of this Act shall be printed or otherwise inscribed on the face of each contract to which it shall be applicable, but their absence therefrom shall in no wise prevent or affect the application of the said provisions to the said contract.

10/8. Partial invalidity; construction: The invalidity or unconstitutionality of any one or more provisions, parts, or sections of this Act shall not be held or construed to invalidate the whole or any other provision, part, or section thereof, it being intended that this Act shall be sustained and enforced to the fullest extent possible and that it shall be construed as liberally as possible to prevent refusals, denials, and discriminations of and with reference to the award of contracts and employment thereunder, on the ground of race, color, creed, sex, religion, physical or mental handicap unrelated to ability, or national origin.

PLEASE CHECK THE APPLICABLE BOX

[X] There are no conflicts of interest: and in the event that a conflict of interest is identified anytime during the duration of this award, or reasonable time thereafter, you, your firm or your firm's ownership, management or staff will immediately notify the Village of Wilmette in writing.

[ ] There is an affiliation or business relationship between you, your management or staff, your firm, or your firm's ownership, and an employee, officer, or elected official of the Village of Wilmette who makes recommendations to the Village of Wilmette with respect to expenditures of money, employment, and elected or appointed postiions. Provide any and all affiliations or business relationships that might cause a conflict of interest or any potential conflict of interest. Include the name of each Village of Wilmette affiliate with whom you, your firm, or your form's ownership, management or staff, has an affiliation or a business relationship.

PLEASE CHECK THE APPLICABLE BOX

[X] We have a good safety record with OSHA.

[ ] We have had an OSHA violation within the past 5 years. (Attach explanation)

SIGNATURE OF PARTY AUTHORIZED TO EXECUTE THIS AGREEMENT

By: _____
(Signature)

By: Michael Kerr
(Print Name)

d/b/a Christopher B. Burke Engineering, Ltd.

Business address: 9575 W. Higgins Road, Suite 600
Rosemont, IL 60018

Business Phone #: 847-823-0500

Cell Phone #: 847-878-4967

E-Mail Address: mkerr@cbbel.com

Form **W-9**
(Rev. November 2017)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ **Go to *www.irs.gov/FormW9* for instructions and the latest information.**

Give Form to the requester. Do not send to the IRS.

Print or type. See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.
Christopher B. Burke Engineering, Ltd

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☒ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.
9575 W. Higgins Road, Suitre 600

Requester's name and address (optional)

6 City, state, and ZIP code
Rosemont, IL 60018

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN,* later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–			–				

or

Employer identification number

3	6	–	3	4	6	8	9	3	9

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here | **Signature of U.S. person** ▶ [signature] | **Date** ▶ 3/13/18

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9.*

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

MAJID MOBASSERI, PHD, PE, SE

Head, Structural Engineering Department

Head of Structural Engineering responsible for the study, design, and generation of construction contract documents for structural systems employed in buildings, industrial facilities and bridges serving highway traffic. Experience includes planning and concept design, bridge type/size/location studies, structural inspections, structural ratings, rehabilitation and renovation studies, final designs and the production of plans, specifications and estimates, and construction inspection. IDOT Approved Bridge Program Manager for 11 municipalities.

Balmoral Avenue Underpass, IDOT: Structural Project Manager responsible for the preparation of design plans for construction of a new underpass on new alignment. The underpass will carry traffic from SB Mannheim Rd (US 45) to Balmoral Ave. The project required extensive coordination with FAA as the underpass is located within the flight pattern of two runways that serve O'Hare Airport. Structural improvements included the construction of two new steel plate girder bridges (117' - single span) to carry Mannheim Rd over the underpass, approximately 300' of cantilevered soldier pile retaining walls, approx. 300' of tied back soldier pile retaining walls and approx. 375' of cantilevered concrete retaining walls. The retaining walls varied in height, with a maximum retained height of approx. 20'. The construction cost for this project was $13.5 million.

Balmoral Avenue over I-294, Rosemont: Structural Project Manager. Project consisted of Phase II engineering and development of contract documents for construction of a NB exit ramp from I-294 to Balmoral Ave, reconstruction of the SB entrance ramp and widening of the Balmoral Bridge over I-294. The existing structure wass a two span bridge with 102' and 119' spans. The superstructure consisted of 82'-0" deck supported on eleven 63" Bulb T-Beams. The proposed deck is 94'-7" providing five 12'-0" traffic lanes, 16'-0" median and 6'-7" sidewalk. The existing deck was partially removed and widened with three new beams. The substructure members were widened in kind and new retaining walls were constructed in front of the existing ones. This project is part of a larger series of improvements to Balmoral Ave to improve regional access to the Rosemont Convention Center area and O'Hare International Airport. Phase I investigated an ultimate extension of Balmoral Ave west to Bessie Coleman Drive on airport grounds, as well as the impact of future improvements by the Tollway at the major divergence of I-294 and I-190/I-90.

IL Route 53 West and East Frontage Roads, Rolling Meadows: Project Manager responsible for overseeing the design, developing construction plans, coordination with project architect, and QA/QC. The project consisted of the replacement of the existing bridge decks and complete substructure repairs as needed on IL Route 53 West and East Frontage Roads. CBBEL performed in depth field inspection and prepared BCRs for both structures. The BCRs revealed that the existing beams were in good condition and only deck slabs should be replaced. Also the NW wingwall of the abutment failed and was replaced. CBBEL completed the final plans and construction documents. Upon completion of the project the bridges were jurisdictionally transferred from IDOT to the City.

Huffman Street, Naperville: Structural Project Manager. Responsibilities included designing several large cast-in-place control structures and concrete end sections to connect approx. 1400 LF of dual precast box culverts. Plans, specifications, cost estimates and shop drawing review were included.

Naperville Riverwalk Renovation: Structural Project Manager. Project involved the design of several hundred feet of tiered retaining walls along the West Branch of the DuPage River in downtown Naperville. The existing walls were removed and replaced with cast in place concrete walls with an architectural facade to resemble natural stone. The improvements also included the design of stairs, an ADA compliant ramp, and a circular overlook area at the end of the newly designed park area.

Lincoln Park Zoo, Chicago: Structural Project Manager. The project scope included preparing design plans and specifications for the foundation of the proposed Educational Pavilion, Ticket Kiosk and bathroom. These foundations were built on grade. CBBEL provided design plans and specifications for the on grade boardwalk.

Washington Park, Downers Grove: Structural Project Manager. Project included several long walls to function and provide seating in the fields, stairways, floodwall, and foundation for other structures. The walls had a special form liner, selected by the Park District, to have esthetically pleasing look. Project required extensive coordination and special details because of its complicated geometry. CBBEL prepared plans, specifications, and cost estimate.

YEARS EXPERIENCE: 34
YEARS WITH CBBEL: 12

EDUCATION

Doctor of Philosophy, 1986
Structural Engineering
University of Texas at Austin

Master of Science, 1981
Structural Engineering
Washington State University

Bachelor of Science, 1978
Structural Engineering
Arya-Mehr Univ., Tehran, Iran

PROFESSIONAL REGISTRATION

Structural Engineer, IL, 081.005058, 1993
Structural Engineer, MA, 35841, 1990
Professional Engineer, IL, 062.047793, 1992
Professional Engineer, IN, PE10101277, 2001

CERTIFICATIONS

IDOT Approved Bridge Program Manager, ID: 00302; National Bridge Inspection Standards (NBIS) Qualified

PROFESSIONAL AFFILIATIONS

American Concrete Institute

American Railway Engineering and Maintenance-of-Way Association (AREMA)

American Society of Civil Engineers

Earthquake Engineers Research Institute

Mainline Roadway Widening & Reconstruction of Northbound Tri-State Tollway: Project Manager responsible for overseeing the design, developing construction plans, coordination with Lorig Construction, and QA/QC. CBBEL was responsible for developing design plans and specifications of retaining walls. Tollway was adding a lane of traffic and a shoulder to northbound of I-294 from north of Touhy Ave up to Dempster St and there was not enough ROW to support the roadway embankment widening. Therefore the only option to support the new roadway lane and shoulder was retaining walls. The scope included developing design plans and details for 5 different retaining walls with moment slab and parapet or coping along the project limits.

33rd Street Viaduct over I-90/94, Chicago: Structural Project Manager. Completed shop drawing review for the removal and replacement of the existing seven-span bridge with five continuous steel spans and two simply supported concrete T beams and replacement with galvanized composite steel beams, substructure repairs, full replacement of two piers caps and partial replacement of four others, building new approach slabs, milling and resurfacing of the approach roadway, traffic signal modernization, and deck and underpass lighting.

Donald E. Stephens Convention Center East Parking Garage, Rosemont: Structural Project Manager. Performed inspections and prepared repair plans with specifications for a four story single helix, two way precast parking garage. Inspections included chain dragging the garage decks and hammer sounding accessible areas of the precast triple tee beams, ledger beams and columns to document areas of deteriorated. Repair plans included installation of a waterproof membrane system, joint repairs and replacement of several precast tee beams with cast in place concrete supported by steel beams.

Aloft Hotel Pedestrian Walkway, Rosemont: Structural Project Manager. Prepared structural plans and specifications for the 170′ long elevated pedestrian walkway over Purdue Drive in Rosemont's Entertainment District. The glass enclosed steel truss walkway connects the 2nd floor of Aloft Hotel to the south stairway of the Williams Street parking garage. The structural design was coordinated with the architectural features of the hotel and garage.

BRIDGES

Timber Edge Drive Bridge over Salt Creek, Oakbrook Terrace: Structural Engineer responsible for overseeing structural design. The proposed bridge is a 156′ long, three span continuous composite wide flange stringer superstructure supported on solid web piers and integral abutments. The overall deck width is 35′-2″, which provides two 12′ lanes, two 4′ shoulders and two F-shaped concrete parapets. Responsibilities include design of the bridge superstructure and substructure, preparation of cost estimates, special provisions and structural steel shop drawing review.

Pedestrian Bridges: Project Manager responsible for overseeing the design, developing construction plans, QA/QC, and coordination with civil engineer. CBBEL has designed several pedestrian bridges for different municipalities, park districts, golf courses, and counties. The span length of the bridges range from 40′ to 120′ and their width varies from 10′ to 16′. The pedestrian bridges are typically designed for 85 psf live load plus a maintenance vehicle of 12,000 lb, but some agencies require bridges to be designed for a heavier vehicle of 20,000 lb.

Parapet Mounted Noise Abatement Walls along I-294: Project Manager responsible for overseeing the design, developing construction plans, coordination with Lorig Construction, and QA/QC. A section of I-294 NB at the ramp to W Dempster St required noise abatement walls. The roadway shoulder at this section consisted of moment slab with type F parapet, supported by modular block walls. The timber noise abatement walls had to be supported by the parapet. The wall is approx. 350′ long, 18′ high and designed for a minimum 35psf wind load. The 3″ timber panel panels, between the columns, are supported by steel WF columns. CBBEL designed all the panels, columns, and the connection of steel columns to concrete parapets. CBBEL provided design plans, specifications, and structural calculations.

Main Street Triangle, Orland Park: Project Manager responsible for overseeing the design, developing construction plans, coordination with LR Development Co, and QA/QC. CBBEL prepared all the design plans, specifications, and estimates. LR Development was considering building a large commercial and residential development at NW corner of 143rd St and LaGrange Rd. The site required a large detention pond at the northern part of development bound between the Southwest RR and LaGrange Rd. The pond had to be enclosed by tall retaining walls. The proposed retaining wall on the west side was retaining the railroad embankment, on the south the proposed structures, and on the east side along the LaGrange Rd acting as a class 3 dam. The exposed height of the walls varied from 7′-14′. Soil investigation indicated that underlying soil consisted of very poor organic material. After considering different retaining wall options, a typical cantilever retaining wall supported by two rows of battered piles was the most feasible option for the west and south walls. The east wall along the LaGrange Rd was solider pile wall with cast in place concrete facing. The project architect required special formliner patterns on each walls and on both faces of the east wall. Special precast water fountains were attached to the top of west wall.

Stone Bridge Retaining Walls, Lake Bluff: Project Manager responsible for overseeing the design, developing construction plans, coordination with project architect, and QA/QC. New England Builder was developing a site for new housing community. There were several ponds along the proposed roadways retaining walls required to support roadway embankments. Each retaining wall was approx. 55-65′ and the height of walls varied from approx. 8′ to 18′. There are 3′-1″ parapets mounted at the top of the walls and an over look area cantilevered out in the middle of walls. The face of the walls had natural stone veneer supported by the walls and special formliner to give impression of a tunnel. The walls had to be water tight to reduce any possible water loss of the pond. Geotechnical investigation revealed that the underlying soil was very poor material. Shear keys were designed to provide minimum required sliding safety factors. CBBEL provided design plans, specification for the project.

REQUEST FOR BOARD ACTION

AGENDA ITEM: 3.13

Engineering & Public Works Department

SUBJECT: Stormwater Funding Feasibility Study

MEETING DATE: July 24, 2018

FROM: Michael Braiman, Assistant Village Manager
Brigitte Berger-Raish, Director of Engineering and Public Works

BUDGET IMPACT:

Budget	$0
Contract Cost	$72,093
Over/(Under) Budget	$72,093

Recommended Motion

Move to approve a contract in the amount of $72,093 with Raftelis for a stormwater funding feasibility study.

Background

On April 17, 2018, the Village Board voted to proceed with a stormwater improvement project to provide meaningful flood relief for residents who live west of Ridge Road. The project, known as Neighborhood Storage Improvements, is estimated to cost $48 – $55 million (2017 dollars). Given the cost of the project, the Village intends to issue 30-year general obligation debt to fund the improvements. During the course of the Village Board's evaluation of the stormwater project alternatives, Village Staff presented three debt repayment options at a November 27, 2017 Committee of the Whole meeting:

- Sewer fee (historically utilized to fund sewer improvements)
- Stormwater utility fee (new fee based on impervious surface coverage)
- Property taxes (not recommended due to likely adverse impact on the Village's bond rating per Moody's)

In May 2018, Staff issued a Request for Proposals (RFP) for a study that identifies stable and sustainable funding methods for the Neighborhood Storage Improvements. The objectives of the study are as follows:

1. Identify, compare and contrast the potential funding methods for the Village's project; including, but not limited to, changes to the existing sewer rate system, and the creation of a storm water utility.

2. Identify and summarize the policies to be considered, the impact on the Village's residential, commercial, and non-profit/government bases and potential issues with the implementation of those policies for each of the recommended funding methods.

3. Compile study results and present the study report and recommendations to the Village Board.

Discussion

The Village received three responses to the stormwater funding RFP from the following firms:

Firm	Cost Proposal
Horner Shifrin	$38,150
Stantec	$67,039
Raftelis (revised)	$72,093

Staff from the Village Manager's Office, Finance Department, and Engineering & Public Works Department interviewed all three firms and recommends award of the contract to Raftelis.

The Raftelis project team clearly demonstrated the strongest depth and breadth of experience in both identifying the pros and cons of storm water funding alternatives based on a municipalities long term objectives; and the work necessary to successfully implement and maintain the selected storm water funding method long term.

Raftelis has provided financial, rate, management and operational assistance for water, sewer and stormwater utilities to local municipalities in over 40 states and the District of Columbia. More specifically, Raftelis has implemented storm water utilities in Bloomington, Champaign, Rock Island, Urbana, and Peoria, Illinois; and in 29 other states including California, Colorado, Florida, Georgia, Massachusetts, North Carolina, Pennsylvania, South Carolina, Tennessee and Texas.

Raftelis's experience is expected to streamline the Board's funding method decision process and jump start the implementation of the selected storm water funding method.

The proposal from Raftelis includes the following scope of work, with additional detail available in Attachment #1:

- Project kickoff and funding alternatives development
- Develop customer base and rates for funding alternatives
- Evaluate feasibility of flood protection rate
- Funding alternatives revenue analysis
- Potential credit/incentive mechanisms
- Policies for funding alternatives
- Billing and data maintenance, including ongoing people, process and technology costs
- Implementation options
- Final report and decision support

The proposal from Raftelis includes attendance at two public meetings of the Village Board or Committee of the Board.

Schedule / Next Steps

All three of the consultants indicated that the study will take approximately six months to complete.

Should the Village Board determine that a stormwater utility fee is the appropriate funding mechanism to repay the debt associated with the Neighborhood Storage Improvements, a second implementation contract with a consultant will be required to assist the Village with implementation of the stormwater utility fee. The implementation contract would include, but is not limited to, the following work:

- Complete the population of the impervious database layer in the GIS system utilized for billing
- Finalize the fee structure and credit/incentive mechanisms (if any)
- Identify the necessary staff and technology and develop the day-to-day procedures required to operate the utility
- Develop the community education materials
- Assist with staff training
- Provide short-term customer service assistance

Budget Impact

There are no funds in the FY 2018 Budget for the stormwater funding feasibility study. The expense will be paid from the Sewer Fund reserve.

Documents Attached

1. Proposed Project Approach from Raftelis

Task 1

PROJECT KICKOFF AND FUNDING ALTERNATIVES DEVELOPMENT

To kick off the project, Raftelis and our local partners Crawford, Murphy & Tilly (CMT) will meet with the Village Project Manager and Village staff. The Raftelis project team will work with the Village to review the scope of work and verify the tasks to be accomplished by Village staff resources and will discuss the project schedule together in detail. Following the discussions, Raftelis will provide a revised work plan and schedule for the project with agreed-upon division of labor between the Village and our team.

During the kick off meeting, the consultant team will also present the Village with two storm water funding alternatives to evaluate, in addition to the "no change" option. The new options for consideration will be a; or a fee, such as an impervious area-based fee. The Raftelis team will present the pros and cons for each alternative, and will discuss each option with the Village with the goal of determining details about the alternatives to study.

To develop the customer base and rates for each alternative, the Raftelis team will collect data from the Village relating to the stormwater program operation and finances, regulatory details, funding, budget, tax assessor data, sewer utility billing data, and water consumption data as needed at the project kick off meeting. Our team will prepare a data request and work with Public Works, GIS, and utility billing staff to collect all relevant data.

Task 2

DEVELOP CUSTOMER BASE AND RATES FOR FUNDING ALTERNATIVE

Using the data collected, the Raftelis team will develop an estimated customer base for the fee alternative and estimate rates for that rate structure. Based on the existing sewer rate method, Raftelis will use the sewer billing data and water consumption data to determine the current customer base.

For the stormwater fee alternatives, we will review the Village's digital geographic data to estimate the billing unit and rate base. In this task, the Raftelis team will accurately measure a statistically significant (at the 95% confidence level for an ERU within +/- 5% of computed) sample of single-family residential parcels to determine the 'typical' residential impervious area unit, or equivalent residential unit (ERU) through statistical analysis. Raftelis will estimate the number of billable units for the stormwater rate base under the chosen rate structure.

Under this task, the Raftelis team will also develop a financial model to load and compare the units and rates under alternatives. The open-source financial model will be built in Microsoft Excel, and we will deliver the model for the Village's use. We will use this financial model as the starting point to evaluate the rate structure against the costs developed in Task 8 so that we can recommend the optimal funding method and model approximate cash flow and rates.

Task 3

EVALUATE FEASIBILITY OF FLOOD PROTECTION RATE

The Raftelis team will review the Neighborhood Storage Improvements map from Stantec's study of potential options for alleviating flooding in West Wilmette and consider the neighborhoods and/or properties that would benefit from future improvements and how the Village could potentially differentiate rates based on the distinction, including whether a customer is in a combined or separated sewer area.

We will draw on industry best practices and peer utility data to assess the feasibility of making this distinction and recommend whether the Village should make such distinctions for each funding alternative taking into account fairness and equitability, defensibility, and ease of administration.

Task 4

FUNDING ALTERNATIVES REVENUE ANALYSIS

Using the customer base and rates from Task 2, the Raftelis team will estimate charges under each funding alternative for two to three sample residential areas and two to three sample non-residential (e.g., commercial, tax-exempt, and governmental) areas in the Village that are representative of properties in the Village. The Raftelis team will work with Village staff to determine which areas should be analyzed, and will document and provide maps for each area that can be used to compare the revenue and customer bases for the funding alternatives.

Task 5

POTENTIAL
CREDIT MECHANISMS

Under this task, the team will evaluate potential credit mechanisms to incentivize and reward property owners that take actions that reduce their demand for service from the Village. We will suggest a set of recommended credits that consider the Village's goals for flood protection and green infrastructure.

Another consideration is to incentivize property owners with grants to construct best management practices such as rain gardens, for example. The team will review incentives for reduced peak flow, extended volume control, and other private investments for reducing demand on the stormwater system and we will estimate their revenue impact and advise how these actions align with cost drivers and regulations.

Task 6

POLICIES FOR FUNDING ALTERNATIVES

Under this task, the Raftelis team will determine whether there are critical barriers to overcome in implementing a stormwater fee, focusing on legal, institutional, organizational, political, and technical requirements for each funding method.

We will work with you and your staff to nail down the policy choices that need to be made as part of establishing differing funding methods. We will work through a list of issues, hear your feedback, recommend a course of action, and document the final decisions you make with our help. This body of policy will be integrated into the final project deliverables. We will cover policies relating to program service delivery and governance, billing and collections, customer service, billing data maintenance and appeals, and rate structure details like credits, offsets, caps, exemptions and incentives. Our team will also review your current sewer and stormwater ordinances and suggest revisions as necessary to implement the proposed funding method, incentives and credits.

Task 7

BILLING AND DATA MAINTENANCE

Should the Village decide to implement an impervious area-based stormwater fee, data maintenance will be required to administer the fee.

The Raftelis team will evaluate the existing sewer and tax billing systems' respective abilities to accommodate the addition of a new non-metered service charge. After the initial bill file is incorporated into the billing system of choice, different types of changes to the underlying source data will necessitate ongoing changes to the stormwater fee information stored. These changes could be driven by impervious area updates, new sewer accounts, parcel boundary changes, property transfers, construction or demolition, or other activities. Our team will work with the Village to preliminarily identify and enumerate processes by which changes in underlying data (such as a new parcel layer) or external data sources (such as building permits) trigger updates to the stormwater bill file, and how those updates might be applied to the billing database. We will estimate the staff effort associated with these updates, outlining scope, time requirement, and cost of data maintenance and database management.

Building on Task 5, the Raftelis team will also evaluate the potential credit mechanisms' impact on administrative costs. Administering credit programs requires staff time receiving and documenting credit requests, inspecting BMPs, communicating with customers, addressing additional disputes related to credit calculation, in addition to the normal duties of providing a reliable storm drainage system.

Task 8

IMPLEMENTATION OPTIONS

Concurrent with the billing and data maintenance evaluation in Task 7, the Raftelis team will assess implementation costs for each funding method. We will evaluate the ease and cost of administration for implementing each funding alternative, and take into account customer service approaches that will lead to positive customer experiences.

As part of implementation planning, CMT will also review the Village's current stormwater management costs and the anticipated Neighborhood Storage Improvements costs, and will assess the life cycle replacement and maintenance costs of Wilmette's storm drainage infrastructure system. Using industry data and community records, these costs can be predicted with relative accuracy. This information provide a complete accounting of Wilmette's actual cost of service for the storm drainage system. While reviewing program costs, CMT will also work with Village staff to determine the desired level of stormwater service and overall goals for the 10-year planning period.

The Raftelis team will develop a high level public involvement and outreach program strategy that lays out program elements, a basic schedule, and helps to identify key stakeholders and messages. Building on the Village's current efforts to gather residents' feedback, a robust and well-designed public involvement and education program will inform and engage stakeholders on the value of ensuring adequate funding for improvements to prevent flooding and pollution. A critical element of the public outreach effort is to provide timely and consistent information to the Village leadership.

Following the cost assessment, the Raftelis team will make recommendations on the funding method that meets the Village's stormwater management needs and goals, and will suggest the implementation options most accessible to the Village for the recommended funding method.

Task 9

REPORTING AND DECISION SUPPORT

The Raftelis team will develop a funding feasibility report that incorporates the findings from the above tasks. The report will include the following:

- A summary of the Village's stormwater program and funding needs over the 10-year study period
- An accounting of source data obtained or developed in the course of estimating the rate base for a potential stormwater fee
- High-level recommendations on how properties that have mitigated their demand on the City's stormwater program, including through green infrastructure and best management practices, may be given credits, discounts, or grants
- Policy memos on legal, financial, and administrative policies for the recommended funding method, including a draft proposed ordinance
- A high-level plan for how the billing data will be integrated with the billing system of choice and maintained after the initial load, and how data will be maintained;
- A high-level plan on how outreach and communications might best be handled should the Village choose to implement a stormwater fee
- An implementation plan and estimated costs for implementation, along with recommendations to support staff and elected officials in making storm water improvement funding decisions

Village staff will be given the opportunity to review and comment on a draft report before it is finalized. We will support Village staff in presenting to the Village Board of Trustees on whether to proceed with stormwater utility implementation or the recommended funding method, including attendance of Keith Readling at this meeting.

Wilmette Stormwater Funding Study

Proposed Hours & Fees

Task	Task Descriptions	No of Meetings	Hours Requirements									Total Fees & Expenses
			Raftelis Financial Consultants, Inc.				Crawford, Murphy & Tilly					
			KR	TB	JW	RG	EH	MZ	JS	DN	Total	
	HOURLY RATES		$325	$255	$200	$110	$205	$175	$210	$125		
1	Project Kickoff and Funding Alternatives Development	2	4	4	4		8				20	$6,424
2	Develop Customer Base and Rates for Funding Alternatives		4	1	4	60					69	$9,645
3	Evaluate Feasibility of Flood Protection Rates		4				2	8			14	$3,150
4	Funding Alternatives Revenue Analysis		4	4	8	12					28	$5,520
5	Potential Credit Mechanisms	1	4	1	4		6	6			21	$5,497
6	Policies for Funding Alternatives		4	4	8		8		8		32	$7,400
7	Billing and Data Maintenance		4	2	12			4		4	26	$5,590
8	Implementation and Program Options	1	8	8	12		12		6	4	50	$12,312
9	Reporting and Decision Support	2	12	12	12		10	8	4	8	66	$16,554
	TOTAL ESTIMATED MEETINGS / HOURS	6	48	36	64	72	46	26	18	16	326	
	PROFESSIONAL FEES		$15,600	$9,180	$12,800	$7,920	$9,430	$4,550	$3,780	$2,000	$65,260	
											Total Labor Fees	$65,260
											Total Expenses	$6,833
											TOTAL FEES & EXPENSES	$72,093

KR = Keith Readling - Project Director
TB = Tom Beckley - Project Manager
HL = Henrietta Locklear | CM = Chris McPhee
JW = Jill Wu | RG = Rob Garrett
Admin = Administrative Staff
EH = Eric Hansen
MZ = Matthew Zick | TS = Timothy Sumner
JS = Jeremiah Shirk |DN = Doug Noel