Agenda Item Executive Summary

Title: Illinois Department of Commerce and Economic Opportunity IKE Disaster Recovery Grant: Contract Award

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

Agenda Date: 03/20/2014

Consent: ☐ YES ☑ NO

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

Item History:

April 3, 2012 Regular Council Meeting
February 5, 2013 Regular Council Meeting

Executive Summary:

In January 2012 the Illinois Department of Commerce and Economic Opportunity (DCEO) announced the Community Development Block Grant (CDBG) IKE Disaster Recovery Program, a planning (not construction) grant program broadly intended to provide for planning on a local or regional basis in order to guide long term recovery and redevelopment from the flooding experienced in 2008 from the remnants of Hurricane Ike. Eligible projects included: (1) developing new recovery plans, (2) augmenting or updating existing plans, or (3) developing "actualization" or "execution" plans to help implement plans that have been recently established but have not yet had an impact on the landscape. The Village was initially contacted by the Center for Neighborhood Technology (CNT) to discuss CNT's vision of using this planning grant to further stormwater and flood mitigation planning in the North Branch watershed. CNT had also been in discussions with a number of other municipalities to gauge their interest in a large scale partnership to apply for planning grant funding. Ultimately, the Villages of Winnetka, Glenview, and Niles, and the City of Chicago, agreed to partner with CNT on the grant application. CNT was to be the primary grant manager and was to coordinate and deliver the project. The Village of Winnetka was designated as the lead agency for grant purposes. On March 30, 2012, the Village and CNT submitted an application for a grant in the amount of $750,000, along with an additional $70,000 from State Farm Insurance and private foundations.

It soon became apparent that under the grant rules CNT was not going to be able to perform paid work on the grant as grant managers or administrators unless they competitively bid on the project through the Federal procurement rules. This left the Village of Winnetka's staff in the position of grant manager and administrator, which was not anticipated at the time of application. The State of Illinois made the official announcement awarding a $500,000 grant on February 14, 2013. Village staff worked with our designated grant management staff from DCEO and in June, 2013 an RFP was issued with a scope of work, based on the original grant parameters. When proposals were received and evaluated it became apparent that a number of conditions had changed since the original grant application was submitted. With assistance from DCEO, Winnetka staff developed a revised grant scope to reflect these realities. Based on the revised scope, DCEO reduced the grant award to $200,000. This project will result in flood hazard mitigation plan supplements, adoptable by each municipality, that build from a process of research, analysis, and public participation, and provide clear recommendations for action. The project deliverables will serve as a public process and solution template that can be repeated and implemented on a neighborhood-by-neighborhood basis, throughout each of the Villages, as a part of each Village's stormwater and flood mitigation plans, and in conjunction with the Cook County All Hazards Mitigation Plan currently under development.

Request for Proposal documents were published in December, 2013 and proposal responses were received in January 2014, from Christopher B. Burke Engineering and Baxter & Woodman. The proposals were reviewed by staff from the Villages of Niles, Glenview, and Winnetka, and by stormwater program manager Jim Johnson of AT Group. Based on these reviews, an interview was scheduled with the higher ranked firm, Baxter & Woodman. The proposed project budget is $199,795, with no local match required other than staff time and effort. The project schedule calls for completion of an initial project by June 30, 2014, with final completion by October 2014.

The proposed project will provide multiple benefits to each community. First, each Village will benefit from a defined process of a local drainage study, stakeholder involvement, and proposed solutions to neighborhood level flooding problems that can be repeated and implemented on a neighborhood by neighborhood basis. Second, this program will produce a process that can be implemented on a shorter-term timeframe, while each community is working on implementation of larger scale, longer term stormwater improvements. Finally, by approaching neighborhood flooding issues with a "green-first" approach, each community will have a process for implementing neighborhood-level green infrastructure improvements that can serve to protect water quality, reduce runoff peaks, and reduce "nuisance" flooding associated with lower-volume storms.

Recommendation / Suggested Action:

Consider awarding a contract to Baxter & Woodman Consulting Engineers, of Crystal Lake, IL, for an amount not to exceed $199,795, for completion of Flood Hazard Mitigation Planning for the Villages of Winnetka, Glenview, and Niles.

Attachments:

Agenda Report

1) Original Grant Scope of Work
2) Request for Proposals
3) Baxter & Woodman Proposal
4) Christopher B. Burke Proposal
5) Project work plan and budget

Agenda Report

Subject: **Illinois Department of Commerce and Economic Opportunity IKE Disaster Recovery Grant: Contract Award**

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

Date: March 12, 2014

In January 2012 the Illinois Department of Commerce and Economic Opportunity (DCEO) announced the Community Development Block Grant (CDBG) IKE Disaster Recovery Program, a planning (not construction) grant program broadly intended to provide for planning on a local or regional basis in order to guide long term recovery and redevelopment from the flooding experienced in 2008 from the remnants of Hurricane Ike. Eligible projects included: (1) developing new recovery plans (e.g., in areas where none exists or where existing plans are outdated, etc), (2) augmenting or updating existing plans, or (3) developing "actualization" or "execution" plans to help implement plans that have been recently established but have not yet had an impact on the landscape.

The Village was initially contacted by the Center for Neighborhood Technology (CNT) to discuss CNT's vision of using this planning grant to further stormwater and flood mitigation planning in the North Branch watershed. CNT had also been in discussions with a number of other municipalities to gauge their interest in a large scale partnership to apply for planning grant funding. Ultimately, the Villages of Winnetka, Glenview, and Niles, and the City of Chicago, agreed to partner with CNT on the grant application. CNT was to be the primary grant manager and was to coordinate and deliver the project. The Village of Winnetka was designated as the lead agency for grant purposes. On March 30, 2012, the Village and CNT submitted an application for a grant in the amount of $750,000, along with an additional $70,000 from State Farm Insurance and private foundations, for the following work descriptions:

> *The planning process aims to:*
> *• Enable collective planning and action across multiple communities within a watershed;*
> *• Use an innovative and rigorous public engagement process to gather data on community needs, and help the public play an active role in solutions. We expect large-scale property retrofitting to play a significant role in any implementation strategies;*
> *• Focus on best management practices (such as green infrastructure) that can be implemented swiftly, at relatively low cost, and that offer a broad set of sustainable planning benefits, including natural resource protection, improved public health and housing, and community revitalization;*
> *• Identify public investment efficiency savings, and leveraging of alternative funding sources, by establishing a common implementation framework; and*

• Create an implementation plan and framework that includes and extends beyond the six Communities involved in this project, and that leverages existing resources from State Farm Insurance, private foundations, and individual property owners.

A detailed project description from the grant application is shown as **Attachment #1**.

In August 2012, the Village was notified that the grant application was successful, but the award letter directed the Village not to publicize the grant receipt until such time as the State has had the opportunity to publicly announce the award list.

In the following months as the DCEO developed the program, CNT was informed that the amount of grant funding available would not support the full $750,000 that was requested. The awarded amount was reduced to $500,000 in November 2012.

It soon became apparent that under the grant rules CNT was not going to be able to perform paid work on the grant as grant managers or administrators unless they competitively bid on the project through the Federal procurement rules. Despite several discussions between CNT and DCEO, and between the Village and DCEO, it was not possible to identify a way for CNT to serve as the grant manager. This left the Village of Winnetka's staff in the position of grant manager and administrator, which was not anticipated at the time of application.

The grant program came with a number of federal requirements and after a lengthy period to understand what was required, the Village adopted the following policies on February 5, 2013, to comply with grant requirements:

- **Resolution R-2-2013 Prohibiting Discrimination Based on Disability and Establishing a Grievance Procedure under the Rehabilitation Act of 1973**
- **Resolution R-3-2013 Establishing a Procurement Policy Pertaining to the Use of Federal Community Development Block Grant Funds**
- **Resolution R-4-2013 Adopting a Policy Protecting Individuals Engaged in Nonviolent Civil Rights Demonstrations**
- **Resolution R-5-2013 Establishing a Policy for Citizen Participation Pertaining to the Illinois "Ike" Disaster Recovery Program**

The State of Illinois made the official announcement awarding the grant on February 14, 2013, at which time we received our welcome package.

Village staff worked with our designated grant management staff from DCEO and in June 2013 an RFP was issued with a scope of work, based on the original grant parameters.

When proposals were received and evaluated it became apparent that a number of conditions had changed since the original grant application was submitted:

1. 15 months had passed since the original grant application in March 2012, and each of the communities had significantly advanced their stormwater initiatives in

that time, so that the original stormwater planning activities in the grant became duplicative of other ongoing stormwater efforts in Winnetka, Glenview, and Niles;
2. After lengthy discussions with the City of Chicago it became apparent that they could not be a party to the grant contract due to their own procurement process which entailed a lengthy legal review and RFP process, in excess of 12 months. The City agreed to allow study to occur in its neighborhoods, but was not prepared to participate significantly in the process;
3. Staff turnover at Niles and Glenview required additional educational effort in those communities to restart their participation in the program;
4. Cook County engaged in its own All Hazards Mitigation Planning process, reducing the regional utility of the planning grant to the communities.

As a result, the original grant scope was no longer relevant and appropriate, and the proposals were rejected.

With assistance from DCEO, Winnetka staff developed a revised grant scope to reflect these realities. Based on the revised scope, DCEO reduced the grant award to $200,000. A summary of the revised project scope is as follows:

This project will result in flood hazard mitigation plan supplements, adoptable by each municipality, that build from a process of research, analysis, and public participation, and provide clear recommendations for action. The project deliverables will serve as a public process and solution template that can be repeated and implemented on a neighborhood-by-neighborhood basis, throughout each of the Villages, as a part of each Village's stormwater and flood mitigation plans, and in conjunction with the Cook County All Hazards Mitigation Plan currently under development.

1) *A documented, scalable, and repeatable, neighborhood-based public participation process that:*
   a) *Identifies residents, property owners, and other stakeholders in the neighborhood;*
   b) *Effectively engages stakeholders in identifying neighborhood flooding problems and issues;*
   c) *Leads to development of a vision, goals, and objectives to guide solutions;*
   d) *Identifies and communicates flood mitigation actions, plans and activities that can be implemented at a neighborhood level;*
   e) *Includes at least two public participation meetings for each neighborhood – one during the existing condition assessment and one to present the proposed implementation plan.*
2) *A documented, repeatable, and scalable assessment of existing conditions that identifies key flooding issues to be addressed in the neighborhood plan, including:*
   a) *Existing land use, coverage, topography, and utility information*
   b) *Sub-watersheds*
   c) *Low-lying and depressional storage areas*
   d) *Wetlands/riparian areas/environmentally sensitive areas*

e) Overland flow paths
f) Existing flooding problem areas and causes
g) Structure low-entry elevations
h) Hydraulic/hydrologic modeling using modeling methods suitable to the size and scale of the watershed.

3) A documented, repeatable, and scalable flood hazard mitigation and neighborhood retrofit implementation plan for two neighborhoods each – in the Villages of Winnetka, Glenview, and Niles – that includes clear, specific, and implementable recommendations for action, supported with high-quality maps and graphics. The plan shall include:
a) Identification of the design storm;
b) Identifying appropriate sustainable development stormwater controls, including:
i) Runoff reduction/infiltration practices
ii) Capture/reuse practices
iii) Land-use modification opportunities
iv) Water quality improvement opportunities
c) Identifying strategies for property protection activities
d) Identifying opportunities for public education on stormwater management, water quality, and property protection activities
e) Identifying anticipated beneficial results of implementing identified activities
f) Cost estimates
g) Funding strategies
h) Implementation steps and timelines

4) *A repeatable and scalable method and program to measure the beneficial results of implementing identified activities*

Request for Proposal documents were published in December 2013 and proposal responses were received in January 2014, from Christopher B. Burke Engineering and Baxter & Woodman. The proposals were reviewed by staff from the Villages of Niles, Glenview, and Winnetka, and by stormwater program manager Jim Johnson of AT Group. Proposal responses are shown in **Attachment #2** and **Attachment #3**.

Based on these reviews, an interview was scheduled with the higher ranked firm, Baxter & Woodman. At this time, the work plan and scope were refined, and the final work plan and project budget are shown in **Attachment #4**. The proposed project budget is $199,795, with no local match required other than staff time and effort.

The project schedule calls for completion of an initial project by June 30, 2014, with final completion by October 2014.

The proposed project will provide multiple benefits to each community. First, each Village will benefit from a defined process of a local drainage study, stakeholder involvement, and proposed solutions to neighborhood level flooding problems that can be repeated and implemented on a neighborhood by neighborhood basis. A documented and repeatable process will provide local staffs with a tool to address common flooding problems and reduce property damages and increase property values at the neighborhood

level. Second, this program will produce a process that can be implemented on a shorter-term timeframe, while each community is working on implementation of larger scale, longer term stormwater improvements. Finally, by approaching neighborhood flooding issues with a "green-first" approach, each community will have a process for implementing neighborhood-level green infrastructure improvements that can serve to protect water quality, reduce runoff peaks, and reduce "nuisance" flooding associated with lower-volume storms.

Recommendation:

Consider awarding a contract to Baxter & Woodman Consulting Engineers, of Crystal Lake, IL, for an amount not to exceed $199,795, for completion of Flood Hazard Mitigation Planning for the Villages of Winnetka, Glenview, and Niles.

Attachments:

1. Original Grant Scope of Work
2. Request for Proposals
3. Baxter & Woodman Proposal
4. Christopher B. Burke Proposal
5. Project work plan and budget

PROJECT DESIGN

Objectives and Scope

The planning process aims to:

- Enable collective planning and action across multiple communities within a watershed;
- Use an innovative and rigorous public engagement process to gather data on community needs, and help the public play an active role in solutions. We expect large-scale property retrofitting to play a significant role in any implementation strategies;
- Focus on best management practices (such as green infrastructure) that can be implemented swiftly, at relatively low cost, and that offer a broad set of sustainable planning benefits, including natural resource protection, improved public health and housing, and community revitalization;
- Identify public investment efficiency savings, and leveraging of alternative funding sources, by establishing a common implementation framework; and
- Create an implementation plan and framework that includes and extends beyond the six communities involved in this project, and that leverages existing resources from State Farm Insurance, private foundations, and individual property owners.

Roles

Decision-maker	Steven M. Saunders, Director of Public Works/Village Engineer, Village of Winnetka
Participating municipalities	• Village of Niles • Village of Glenview • City of Chicago
Delivery partners	• Center for Neighborhood Technology • University of Illinois at Chicago • A number of specialized tasks will be sub-contracted in discussion with the steering group including: data analysis, community visioning workshops and charrettes, the interactive social media application, and targeted flood and lateral assessments
North Branch forum partners	An informal North Branch forum, made up of municipalities and partners interested in furthering implementation within the sewer-shed
External Advisory Group and Agency Liaison	MWRD, Water Environment Federation, Chicago Metropolitan Agency for Planning, American Rivers, National Resources Defense Council, Hey and Associates, EPA, FEMA, and HUD
Funders	State Farm Insurance, Grand Victoria Foundation, The Joyce Foundation (pending), Prince Charitable Trusts, and individual property owners

Development and Adoption

Process: Start date: July 2012. Completion date: June 2014

Project stage	Activities	Lead	Budget IKE	Budget match	Completion date
Project management	Establish North Branch forum made up of communities (beyond the six directly involved in this project) and stakeholders within the drainage basin, with the aim of spear-heading wider implementation. Establish the terms of reference for the steering group. Brief the External Advisory and Agency Liaison Group and agree on the terms of reference for their engagement.	CNT & steering group	0	$10,000	August 2012
Public outreach	Develop promotional literature including web resources, Power Point presentations, brochures, and display materials aimed at the public and local stakeholders. Develop an interactive social media application to encourage people to share their flooding stories, both written and using photos and videos. Meet with local partners to get their support. Host a launch event for the public, community representatives, and regional and national leaders. Outreach to local media.	CNT & sub-contractors	$70,000	$10,000	April 2013
Community needs assessments	Undertake neighborhood audits and GIS mapping, do targeted property assessments including house-to-house surveys (gathering economic and social impact data) and property audits such as flood and sewer lateral assessments. Carry out between four and six community visioning workshops in the communities for citizens to discuss their concerns and vision, and future flood protection strategies. Carry out analysis of the emerging data. Engage directly with 1,000 residents, property owners, and occupants.	CNT/UIC & sub-contractors	$350,000	$50,000	April 2013
Scenario planning and option development	Develop options based on scales of implementation, and severe weather event scenarios, including quantification of direct benefits such as flood alleviation, volume water captured, etc. Focus on strategies that: meet community needs, can be implemented swiftly at relatively low cost, allow for public involvement, and meet a broad set of sustainable planning benefits. The most beneficial options will be visualized and presented back to the public and stakeholders during the community charrettes.	CNT/UIC (sub-contractor may be required)	$80,000	0	July 2013

Quantification of the sustainable planning benefits	Evaluate the added economic benefits associated with the range of options across the six communities. These are likely to include improved air and water quality, reduced greenhouse gas emissions, improved public health, energy savings and increased property values.	CNT	$30,000	0	July 2013
Community and stakeholder engagement	Run a series of community charrettes so that planners, property and business owners and occupants, and other interested persons in the communities can work together to discuss the emerging data and information, and consider the options, and provide their feedback.	CNT & sub-contractors	$60,000	0	January 2014
Development of policy and implementation framework	Run a series of technical assistance workshops for members of the North Branch forum to inform and guide implementation. For example, the communities may elect to work collectively to review the barriers and opportunities posed by local codes and ordinances, develop design guidance, and identify strategies for planning delivery and evaluation metrics. Based on the emerging consensus and analysis, develop plans and implementation framework for communities within the drainage basin.	CNT & sub-contractors	$80,000	0	March 2014
Public information and adoption	Translate the preferred options into appropriate documents including chapters/supplements to comprehensive plans. These will be presented back to the communities, and then to the relevant city/village councils for review and adoption. The drainage basin plan will be developed with the North Branch forum. Use outreach, events, media, web resources etc to encourage public engagement in any discussions in relation to the plans.	CNT & Steering group members	$40,000	0	June 2014
Program evaluation and education model	Evaluate of the program against the performance measures set. Submit reports to funders and partners. Develop Power Point presentations and prepare articles and publications to disseminate the lessons learned from the project to a wider regional and national audience. Incorporate data findings into relevant analytical tools.	CNT & Steering group members	$40,000	0	June 2014
Next steps — implementation and delivery	Engage with the steering group and North Branch forum members to agree upon a collaborative implementation.	CNT & Steering group members	-	0	June 2014

Outputs Supporting Regional Planning Efforts

Single jurisdictional plans	Update of three single jurisdictional plans, for the Villages of Winnetka, Glenview, and Niles. These will be as individual supplements or chapters to existing local comprehensive plans for formal adoption by each of the local government entities.
City of Chicago plans	It will inform the development of a Chicago Citywide All-Hazards Recovery Plan, and existing flood alleviation and climate change adaptation strategies for the City of Chicago. Lessons learned will impact how the City reaches out to communities about basement flooding and stormwater management, and could potentially inform stormwater master planning.
Drainage basin plan	At the start of the project we will establish an informal North Branch forum made up of municipalities and stakeholders with an interest in developing and supporting the implementation of a drainage basin plan. We will leverage some of the work done to date by MWRD, with the aim that the outputs of this project will be incorporated or appended to MWRD's detailed watershed plan.
Implementation framework	We propose to go beyond plans. Working with the North Branch forum, we will develop an implementation framework to support actual delivery.
Advancing regional and national efforts	The involvement of national and regional partners—such as USEPA, HUD, FEMA, American Rivers, the Water Environment Federation, NRDC, and CMAP—will help promote the broad principles established through this program, such as the use of sustainable planning priorities in disaster recovery. This will encourage adoption by municipalities and partners elsewhere.

ATTACHMENT #2

REQUEST FOR PROPOSALS:
VILLAGES OF WINNETKA, GLENVIEW, AND NILES
FLOOD HAZARD MITIGATION PLANNING

The Villages of Winnetka, Niles, and Glenview desire to develop supplements to three single jurisdictional flood hazard mitigation plans for the Villages of Winnetka, Glenview, and Niles. In addition to the community planning process, implementation recommendations will be developed for the wider drainage basin based on project findings with a focus on those needs and issues of the population groups most significantly impacted by the 2008 floods associated with Hurricane Ike.

Proposals will be accepted until 4:00 PM, January 8, 2014. Proposals received after that date and time will not be considered. The Proposals will be reviewed by a Village evaluation team.

All Proposals should be sealed and identified on the outside as:

PLANNING PROGRAM RFP RESPONSE

All proposals will be scored and ranked with the highest rated firm being awarded the contract. If necessary firms selected as finalists may expect to be interviewed during business hours the week of January 13, 2014. Five hard copies and one electronic copy of the proposal and the required supplemental information should be provided.

PURPOSE

The communities are located in Cook County on land tributary to the Metropolitan Water Reclamation District (MWRD) North Side Water Reclamation Plant and the North Branch of the Chicago River. All were within disaster areas, as designated by the Federal Government during the flooding disasters of 2008, and residents and business continue to suffer routine property flooding. The communities send part or all of their stormwater to the North Branch of the Chicago River. Communities face significant costs in stormwater management. They require large capital infrastructure plans. Other economic impacts of flooding have historically included waste haulage and tipping costs, a decline in neighborhood property values, increases in insurance riders and claims, loss of insurance coverage, and the temporary closure of businesses and public buildings.

With heavy precipitation forecast to increase as a result of climate change, the current situation is expected to get worse. A number of plans already exist or are being undertaken to alleviate the problems that the communities face. These include individual plans and a broader North Branch stormwater watershed plan being undertaken by MWRD. This process will leverage the work undertaken for these individual plans and engage the public in solutions for which they can play an active role so that efforts can be scaled up among neighboring communities for a multiplicative benefit. The targeted neighborhoods will be identified in an addendum.

SCOPE AND OBJECTIVES

The Villages have allocated $200,000.00 from the Illinois Disaster Recovery Program (IDRP), administered by the Department of Commerce and Economic Opportunity (DCEO) funding to develop and upgrade these plans.

This multi-jurisdictional planning process starts with this broad scope and aims to:

- Enable the collective planning and action across multiple communities within a sewer-shed
- Use innovative and rigorous public engagement process to gather data on community needs, and help the public play an active role in solutions. We expect large-scale property retrofitting to play a significant role in any implementation strategies.
- Focus on best management practices (such as green infrastructure) that can be implemented swiftly, at relatively low cost, and that offer a broad set of sustainable planning benefits, including natural resource protection, improved public health and housing, and community revitalization
- Identify public investment efficiency savings, and leverage of alternative funding sources, by establishing a common implementation framework
- Create an implementation framework that includes and extends beyond the communities involved in this project, and that leverages existing resources from State Farm, foundations, and individual property owners.

To achieve the project deliverables it is anticipated that grant funding will accomplish the following tasks:

1. Overall plan development process
    a. Facilitate the development of the updated plans. The project will create a coherent set of Flood Hazard Mitigation and retrofitting recommendations for the future of the Villages of Winnetka, Glenview and Niles.
    b. Considering the Villages' larger geographic location in Cook County and in the Chicago metropolitan region in the development of its plans, the project can serve as a template to be modified and adopted by other communities and agencies to assist those communities in reaching local and regional flood mitigation goals.

2. Public participation and community visioning
    a. The project will consist of a participatory input process within the Villages. This may include, but is not limited to, stakeholder meetings, public meetings, open houses, project website, surveys and social media outlets. The project may develop literature, social media applications, and meetings with local partners, launch events and community charrettes and encourage feedback from key demographics, such as the aging population, business owners, youth groups in various communities, and others.
    b. The project will include at least twelve public participation meetings (four in each municipality) during the planning process, engaging residents, property owners and occupants.
    c. The project will include a survey or similar instrument to obtain public opinion on neighborhood needs and priorities. The exact nature of the survey should be

determined by the consultant in line with local demographics and past public participation experiences.

3. Assessment and analysis of current conditions
    a. Identify and analyze current issues and opportunities in the neighborhoods. Topics to be covered may include, but are not limited to, the following: historical information; geography and regional context; land use; natural resources; public and community facilities; public safety and emergency/medical services; historic preservation; cultural and recreational resources; and community character.
    b. Provide an existing conditions assessment to hazard mitigation issues. The assessment of existing conditions should include a summary of the impacts of Hurricane Ike and the damage caused by the related floods. Analyze the impact of the 2008 and subsequent floods, paying special attention to the areas and groups that were most adversely affected and the unmet needs that were created by the flooding, either directly or indirectly.
    c. Summarize past and ongoing plans. These plans are not the first time that planning work has been done in this area, so the consultant should research past plans that have been developed by or affect the Villages, including plans produced by the County, multijurisdictional groups, nonprofit organizations, state agencies, and prior plans developed by the Villages themselves.

4. Plan development
    a. Include a broad and comprehensive range of topics in the plans. The plans should, at a minimum, consider Flood Hazard Mitigation approaches in the context of each of the following subject areas:
        i. *Hazard mitigation*, including a variety of actions to support the Villages' long-term recovery from flooding related to Hurricane Ike and to avoid future flooding issues. Identify recommendations to address the identified needs created by the disaster.
        ii. *Land use*, including amount, type, intensity, and density of different land uses, and making recommendations for zoning and other regulatory changes.
        iii. *Environmental preservation*, including open space, habitat restoration, and similar issues.
        iv. *Other infrastructure*, including sewer, water, and storm water systems. The relationship of these systems to hazard mitigation should be clearly described.
        v. *"Green" or sustainable stormwater infrastructure* and the relationship of these approaches to flood hazard mitigation.
        vi. Other topics may be relevant for detailed treatment in the comprehensive plan, as identified through the existing conditions analysis and public engagement process. The consultant may identify some topical areas that require further study to support the development of detailed recommendations.
    b. Develop policy recommendations for each topic included in the neighborhood plans, building from the vision, goals, and objectives identified during the public participation process.
    c. Support the text with maps that clearly communicate current conditions and recommendations.

d. Develop a realistic implementation plan. Identify strategies, methods or techniques that may be used to implement the plans, including land use and development regulations, policy development, disaster mitigation, and integrating into a capital improvements plan. Identify specific implementation responsibilities through detailed action plans and timelines.
e. Identify and establish various projects and approaches that can be implemented on a neighborhood-wide basis, including projects that private properties could complete, to reduce flooding.
f. Develop a range of communications and engagement materials (videos, interactive social media, brochures, and photo case studies) that will be used to promote and disseminate the educational module.

5. Plan adoption
   a. Prior to their adoption, assist in presentation of the draft plans at public meetings in each municipality/neighborhood, and prepare easily understandable summaries of the plans' recommendations for public distribution.
   b. Present draft and final plan to each Village/City for adoption.

6. Plan Implementation
   a. Development of a realistic implementation plan.
   b. Identification of strategies, methods or techniques that may be used to implement the jurisdictional plans, including land use and development regulations, policy development, disaster mitigation, zoning or subdivision regulations, and integrating into a capital improvements plan. Therefore, the Plan(s) will be a set of official Village policies and benchmarks that manage and establish a vision of the Villages for the future.
   c. The Villages must be involved throughout the entire process in order to be successful in the implementation stage.

DELIVERABLES

This project will result in flood hazard mitigation plan supplements, adoptable by each municipality, that build from a process of research, analysis, and public participation, and provide clear recommendations for action. The following specific deliverables will serve as a public process and solution template that can be repeated and implemented on a neighborhood-by-neighborhood basis, throughout each of the Villages, as a part of each Village's stormwater and flood mitigation plans, and in conjunction with the Cook County All Hazards Mitigation Plan currently under development:

1) A documented, scalable, and repeatable, neighborhood-based public participation process that:
   a) Identifies residents, property owners, and other stakeholders in the neighborhood;
   b) Effectively engages stakeholders in identifying neighborhood flooding problems and issues;
   c) Leads to development of a vision, goals, and objectives to guide solutions;
   d) Identifies and communicates flood mitigation actions, plans and activities that can be implemented at a neighborhood level;

e) Includes at least two public participation meetings for each neighborhood – one during the existing condition assessment and one to present the proposed implementation plan.

2) A documented, repeatable, and scalable assessment of existing conditions that identifies key flooding issues to be addressed in the neighborhood plan, including:
   a) Existing land use, coverage, topography, and utility information
   b) Sub-watersheds
   c) Low-lying and depressional storage areas
   d) Wetlands/riparian areas/environmentally sensitive areas
   e) Overland flow paths
   f) Existing flooding problem areas and causes
   g) Structure low-entry elevations
   h) Hydraulic/hydrologic modeling using modeling methods suitable to the size and scale of the watershed.
3) A documented, repeatable, and scalable flood hazard mitigation and neighborhood retrofit implementation plan for two neighborhoods each – in the Villages of Winnetka, Glenview, and Niles – that includes clear, specific, and implementable recommendations for action, supported with high-quality maps and graphics. The plan shall include:
   a) Identification of the design storm;
   b) Identifying appropriate sustainable development stormwater controls, including:
      i) Runoff reduction/infiltration practices
      ii) Capture/reuse practices
      iii) Land-use modification opportunities
      iv) Water quality improvement opportunities
   c) Identifying strategies for property protection activities
   d) Identifying opportunities for public education on stormwater management, water quality, and property protection activities
   e) Identifying anticipated beneficial results of implementing identified activities
   f) Cost estimates
   g) Funding strategies
   h) Implementation steps and timelines
4) A repeatable and scalable method and program to measure the beneficial results of implementing identified activities

ROLES

Decision-maker: Steven M. Saunders, Director of Public Works/Village Engineer, Village of Winnetka
Steering group: Municipal staff from the participating communities

Note: The detailed scope of services will be negotiated at the time of contract development.

PROPOSALS

The following information should be included under the title "Planning Program RFP Response":

1. Name of proposer
2. Proposer address

3. Proposer telephone number
4. Proposer Federal Tax Identification Number
5. Name, title address, telephone number, fax number, and e-mail address of contact person authorized to contractually obligate the Proposer on behalf of the proposer

Contents of Proposal

Proposers should letter and number responses exactly as the questions are presented herein. Interested proposers are invited to submit proposals that contain the following information:

1. Introduction (transmittal letter)
2. Background and Experience
3. Personnel/Professional Qualifications
4. Approach
5. Project Schedule
6. Proposed Compensation

1. **Introduction (transmittal letter)**
   By signing the letter and/or offer, the Proposer certifies that the signatory is authorized to bind the Proposer. The proposal should include:

   a. A brief statement of the proposer's understanding of the scope of the work to be performed;
   b. A confirmation that the proposer meets the appropriate state licensing requirements to practice in the State of Illinois, if applicable;
   c. A confirmation that the proposer has not had a record of substandard work within the last five years;
   d. A confirmation that the proposer has not engaged in any unethical practices within the last five years;
   e. A confirmation that, if awarded the contract, the proposer acknowledges its complete responsibility for the entire contract, including payment of any and all charges resulting from the contract;
   f. Any other information that the proposer feels appropriate;
   g. The signature of an individual who is authorized to make offers of this nature in the name of the proposer submitting the proposal.

2. **Background and Experience**
   Proposers should:

   a. Describe proposer's firm by providing its full legal name, date of establishment, type of entity and business expertise, short history, current ownership structure and any recent or materially significant proposed change in ownership.
   b. Describe any prior engagements in chic Proposer's firm assisted a governmental entity with any other projects relating to planning. Proposer should include all examples of work on similar projects as described in the Scope of Services. Proposer should provide the names, phone numbers, and

e-mails of contact persons in the organizations for whom any projects referenced in this section were conducted. Proposer should include written references (letters or forms are acceptable) from previous clients attesting to the quality of work proposer cites in this section.

c. Describe any issue the characteristics of which would be uniquely relevant in evaluating the experience of proposer's firm to handle the proposed project.
d. Provide current information on professional errors and omissions coverage carried by proposer's firm, including amount of coverage.
e. Describe any relevant specialized knowledge in planning.

3. Personnel/Professional Qualifications

Proposers should:

a. Identify staff members who would be assigned to act for proposer's firm in key management and field positions providing the services described in Scope of Services, and the functions to be performed by each.
b. Include resumes or curriculum vitae of each such staff member designated above, including name, position, telephone number, fax number, e-mail address, education, and years and type of experience. Describe for each such person, the relevant planning projects on which they have worked; provide "relevant planning" names, telephone numbers, and e-mail addresses of contact persons with the firms or organization with whom these staff members worked on similar or related type planning projects.

4. Approach

Proposers should:

a. Clearly described the unique approach, methodologies, knowledge and capability to be employed in the performance of the Scope of Services.
b. Present innovative concepts, approaches, and methodologies, if any, not discussed in the Scope of Work for consideration.

5. Project Schedule

The proposal should include a general schedule and estimated completion date with the understanding that the client is interested in moving forward as quickly as possible with the plan. The Village estimates that this project will take approximately 12 months to complete once the final consultant is approved.

6. Proposed Compensation

The selected Consultant will be compensated on a unit-price basis for each deliverable of definable work product delivered and on an hourly fee basis for additional services rendered.

a. Provide the firm's general fee structure for providing identified services. Where applicable, provide unit prices for deliverable items described in the Scope of Services. Any final price per task will be subject to a cost reasonableness determination and final negation.

b. For tasks that lack a definable work product, provide full-loaded hourly rates for responsible personnel. The estimate of costs and person hours per work item must be an exhibit in the consultant proposal and must be represented as a "Cost not to exceed".
c. Provide other pricing information, if applicable.
d. The Village is not liable for any cost incurred by any proposers prior to the execution of an agreement or contract created as a result of this RFP. The City shall not be liable for any costs incurred by the selected consultant that are not specified in the contract.

SELECTION CRITERIA

The Village of Winnetka is acting as the lead agency for the consultant selection. The municipalities reserve the right to accept or reject any or all proposals. All proposals become the property of the municipalities. The City shall evaluate each potential contractor on the basis of the written material submitted and according to the following factors:

1. Experience of the firm with this particular type of project as described in the SCOPE – **20 points**.
2. Experience of the firm with hazard mitigation and disaster recovery projects – **20 points**.
3. Clarity and quality of the project approach and production of deliverables – **20 points**.
4. Experience of the firm with other type Community Development Block Grant (CDBG) or Community Development Assistance Program (CDAP) projects – **10 points**.
5. Current capacity to accomplish the work in the required time – **20 points**.
6. Cost Reasonableness of the proposal – **20 points**.

In the event of a tie, oral interviews may be held with those firms. As a result of the interviews, the Village will determine which firm will be selected to enter into contract negations. Unsuccessful firms will be notified as soon as possible.

CONTRACT DEVELOPMENT

Contract discussion and negotiation will follow award selection. Respondents must be amenable to inclusion, in a contract, of any information provided whether herein or in response to this RFP, or developed subsequently during the selection process.

The agreement will be based on a lump sum, fixed price, or cost reimbursement ("not to exceed") basis, with payments terms to be negotiated with the selected respondent. Reimbursement for services will be contingent on the Village receiving grant funding from DCEO.

The contract shall include at a minimum federal language regarding professional contracts (Appendix A).

The contract shall not be considered executed unless signed by the authorizing representative of the Village. The contract may be extended beyond the original term by agreement of both parties.

COMPLIANCE WITH LAWS

The selected firm agrees to be bound by all applicable Federal, State and Local Laws, regulations and directives as they pertain to the performance of the contract.

QUESTIONS

Questions concerning this proposal should be addressed in writing to Steve Saunders at the address below. Proposals are due by 4:00 PM, January 8, 2014. Proposals should be delivered to:

Steven M Saunders
Director of Public Works/Village Engineer
Village of Winnetka
510 Green Bay Road
Winnetka, Illinois 60093

APPENDIX A

FEDERAL LANGUAGE FOR
CONTRACT FOR PROFESSIONAL SERVICES

TERMS AND CONDITIONS

1. Termination of Contract for Cause

If through any cause, the Consultant shall fail to fulfill in timely and proper manner his obligations under this Contract, or if the Consultant shall violate any of the covenant, agreements or stipulations of this Contract, the City shall thereupon have the right to terminate this contract by giving written notice to the Consultant of such termination and specifying the effective date thereof, at least five days before the effective date of such termination. In such event, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs and reports prepared by the Consultant under this Contract shall, at the option of the City, become its property and the Consultant shall be entitled to receive just and equitable compensation for any work satisfactorily completed hereunder.

Notwithstanding the above, the Consultant shall not be relieved of liability to the City for damages sustained by the City by virtue of any breach of the Contract by the Consultant, and the City may withhold any payments to the Consultant for the purpose of set-off until such time as the exact amount of damages due the City from the Consultant is determined.

2. Termination for Convenience of the City

The City may terminate this Contract at any time by giving at least ten (10) days notice in writing to the Consultant. If the Contract is terminated by the City as provided herein, the Consultant will be paid for the time provided and expenses incurred up to the termination date. If this Contract is terminated due to the fault of the Consultant, Paragraph 1 hereof relative to termination shall apply.

3. Changes

The City may, from time to time, request changes in the scope of services of the Consultant to be performed hereunder. Such changes, including any increase or decrease in the amount of the Consultant's compensation, which are mutually agreed upon by and between the City and the Consultant, shall be incorporated in written amendments to this Contract.

4. Personnel

A. The Consultant represents that he has, or will secure at his own expense, all personnel required in performing the services under this Contract. Such personnel shall not be employees of or have any contractual relationship with the City.

B. All of the services required hereunder will be performed by the Consultant or under his supervision and all personnel engaged in the work shall be fully qualified and shall be authorized or permitted under State and local law to perform such services.

C. None of the work or services covered by this Contract shall be subcontracted without the prior approval of the City. Any work or services subcontracted hereunder shall be specified by written contract or agreement and shall be subject to each provision of this Contract.

5. Assignability

The Consultant shall not assign any interest on this Contract, and shall not transfer any interest in the same (whether by assignment or novation), without the prior written consent of the City thereto: provided, however, that claims for money by the Consultant from the City under this Contract may be assigned to a bank, trust company, or other financial institution without such approval. Written notice of any such assignment or transfer shall be furnished promptly to the City.

6. Reports and Information

The Consultant, at such times and in such forms as the City may require, shall furnish the City such periodic reports as it may request pertaining to the work or services undertaken pursuant to this Contract, the costs and obligations incurred or to be incurred in connection therewith, and any other matters covered by this Contract.

7. Findings Confidential

All of the reports, information, data, etc., prepared or assembled by the Consultant under this Contract are confidential and the Consultant agrees that they shall not be made available to any individual or organization without the prior written approval of the City.

8. Copyrights and Patents

Any copyrightable work resulting from this Agreement is available to the author for such, but the City and the Illinois Department of Commerce and Economic Opportunity (DCEO) reserve the option for unlimited use and license to such work. Any discovery or invention shall be reported promptly to the City and DCEO for the determination as to whether patent protection should be sought and how the rights of any patent shall be disposed of and administered in order to protect the public interest.

9. Compliance with Local Laws

The Consultant shall comply with applicable laws, ordinances and codes of the State of Illinois and local governments.

10. Access to Records

The Consultant shall maintain accounts and project records, including personnel, property and financial records, adequate to identify and account for all costs pertaining to the Contract and such other records as may be deemed necessary by the City to assure proper accounting for all project funds, both CDBG and non-CDBG shares. These records will be made available to the City, DCEO, the U.S. Department of Housing and Urban Development, the U. S. Department of Labor, and the Comptroller General of the United States, or any of their duly authorized representatives. These parties shall have access to any books, documents, papers and records of the Consultant, which are directly pertinent to the project for the purpose of making audit, examination, excerpts and transcriptions. All records shall be maintained for five years after project closeout.

11. Title VI, Civil Rights Act of 1964

Under Title VI of the Civil Rights Act of 1964, no person shall, on the grounds of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

12. Section 109 of the Housing and Community Development Act of 1974

No person in the United States shall on the ground of race, color, national origin or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this title.

13. Age Discrimination

The Contractor shall comply with the Age Discrimination Act of 1975, which prohibits discrimination on the basis of age. No person shall be excluded from participation in, denied program benefits of, or subject to discrimination on the basis of age under any program or activity funded in whole or in part with Federal funds.

14. Section 504

The Contractor shall comply with Section 504 of the Rehabilitation Act of 1973, which extends the prohibitions against discrimination to individuals with disabilities.

15. Public Law 101-336, Americans with Disabilities Act of 1990

No qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any such entity.

16. Conflict of Interest Clauses

Interest of Members of a City

No member of the governing body of the City and no other officer, employee, or agent of the City who exercises any functions or responsibilities in connection with the planning and carrying out of the program, shall have any personal financial interest, direct or indirect, in this Contract; and the Consultant shall take appropriate steps to assure compliance.

Interests of Other Local Public Officials

No member of the governing body of the locality and no other public official of such locality, who exercises any functions or responsibilities in connection with the planning and carrying out of the

program, shall have any personal financial interest, direct or indirect, in this Contract; and the Consultant shall take appropriate steps to assure compliance.

Interest of Consultant and Employees

The Consultant covenants that he presently has no interest and shall not acquire interest, direct or indirect, in the study area or any parcels therein or any other interest which would conflict in any manner or degree with the performance of his services hereunder. The Consultant further covenants that in the performance of this Contract no person shall be employed having any such interest.

17. "Section 3" Compliance

A. The work to be performed under this Contract is on a project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701 u. Section 3 requires that to the greatest extent feasible opportunities for training and employment be given lower income residents of the project area and contracts for work and purchase of services and supplies in connection with the project be awarded to business concerns which are located in, or owned in substantial part by persons residing in the area of the project.

B. The parties to this Contract will comply with the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary of Housing and Urban Development set forth in 24 CFR Part 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of this Contract. The parties to this Contract certify and agree that they are under no contractual or other disability that would prevent them from complying with these requirements.

C. The Consultant will send to each labor organization or representative of workers with which he has a collective bargaining agreement or other contract or understanding, if any, a notice advising the said labor organization or workers' representative of his commitments under this Section 3 clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment training.

D. The Consultant will include this Section 3 clause in every subcontract for work in connection with the project and will, at the direction of the applicant for or recipient of Federal financial assistance, take appropriate action pursuant to the subcontract upon a

finding that the subcontractor is in violation of regulations issued by the Secretary of Housing and Urban Development, 24 CFR Part 135. The Consultant will not subcontract with any subcontractor where it has notice or knowledge that the latter has been found in violation of regulations under 24 CFR Part 135 and will not let any subcontract unless the subcontractor has first provided it with a preliminary statement of ability to comply with the requirements of these regulations.

E. Compliance with the provisions of Section 3, the regulations set forth in 24 CFR Part 135, and all applicable rules and orders of the Department issued hereunder prior to the execution of the contract, shall be a condition of the Federal financial assistance provided to the project, binding upon the applicant or recipient for such assistance, its successors and assigns. Failure to fulfill these requirements shall subject the applicant or recipient, its contractors and subcontractors, its successors and assigns to those sanctions specified by the grant or loan agreement or contract through which Federal assistance is provided, and to such sanctions as are specified by 24 CFR Part 135.

18. Equal Opportunity Clause (Contracts above $10,000)

During the performance of this Contract, the Consultant agrees as follows:

A. The Consultant will not discriminate against any employee or applicant for employment because of race, creed, sex, color or national origin. The Consultant will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, sex, color or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection of training, including apprenticeship. The Consultant agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the City setting forth the provisions of this non-discrimination clause.

B. The Consultant will, in all solicitation or advertisements for employees placed by or on behalf of the Consultant, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex or national origin.

C. The Consultant will cause the foregoing provisions to be inserted in all subcontracts for any work covered by this Contract so that such provisions will be binding upon each subcontractor, provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.

D. The Consultant will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations and relevant orders of the Secretary of Labor.

E. The Consultant will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the City's Department of Housing and Community Development and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.

F. In the event of the Consultant's noncompliance with the non-compliance clause of this Contract or with any of such rules, regulations or orders, this Contract may be canceled, terminated or suspended in whole or in part and the Consultant may be declared ineligible for further government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or as otherwise provided by law.

G. The Consultant will include the provisions of paragraphs (A) through (G) in every subcontract or purchase order unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Consultant will take such action with respect to any subcontract or purchase order as the City's Department of Housing and Community Development may direct as a means of enforcing such provisions including sanctions for noncompliance: provided, however, that in the event the Consultant becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the City's Department of Housing and Community Development, the Consultant may request the United States to enter such litigation to protect the interests of the United States.

ATTACHMENT #3

Planning Program RFP Response

Villages of Winnetka, Glenview, and Niles

Flood Hazard Mitigation Planning

Proposer: Baxter & Woodman, Inc.

Address: 8430 W Bryn Mawr, Suite 400
Chicago, IL 60631

Phone Number: 815.459.1260

Federal Tax ID Number: 36-2845242

Primary Contact: John Mick II, PE
Winnetka Client Manager
8430 W Bryn Mawr, Suite 400
Chicago, IL 60631
Phone: 312.505.1149
Fax: 815.455.0450
Email: jmick@baxterwoodman.com

Submitted by: Baxter & Woodman, Inc.,
Teska Associates, Inc., and
Empirical Hydrology

January 8, 2014

BAXTER & WOODMAN
Consulting Engineers
8430 W Bryn Mawr, Suite 400, Chicago, Illinois 60631 • 815.459.1260 • baxterwoodman.com

January 8, 2014

Mr. Steven M. Saunders
Director of Public Works/Village Engineer
Village of Winnetka
510 Green Bay Road
Winnetka, Illinois 60093

Subject: ***Villages of Winnetka, Glenview, and Niles Flood Hazard Mitigation Planning***
Baxter & Woodman, Inc. Planning Program RFP Response

Dear Mr. Saunders:

Baxter & Woodman, Inc. is excited about this opportunity to work with Winnetka, Glenview and Niles for stormwater management through comprehensive planning services. The three communities' needs will be met by our uniquely qualified team including Teska Associates, Inc., and Empirical Hydrology.

This cover letter echoes your RFP to reply to each specific point requested:

a. Our team is well acquainted with the involved municipalities and we've developed an efficient and scaleable scope of work to meet the goals of the involved communities, and the stakeholders, and to use throughout the watershed by others. This project demands a multi-faceted plan to mitigate flood hazards primarily through private property protection, but also through neighborhood infrastructure improvements and changes in municipal regulations and policies. It must be immediately implementable in six specific neighborhoods and scalable for repeated future implementation throughout the watershed. Our familiarity with existing conditions in the involved municipalities and the watershed allows us to be more efficient evaluating potential mitigation strategies. This is especially important with the ongoing demand for municipal staff time. We've developed a four phase Action Plan focused on your goals:

I. Phase I of the project will involve the Project Team meeting with representatives of Winnetka, Glenview, and Niles collectively to discuss the areas and groups most affected by the 2008 floods associated with Hurricane Ike. We'll review previous and ongoing planning initiatives relevant to the proposed Flood Hazard Mitigation Plan supplements, as well as data available for the six neighborhoods.

Based on the input of the involved municipalities, the Project Team will develop strategic tools to be used in the Community Planning Phase of the project. These are likely to include:

- a survey to gather information about the existing conditions in the neighborhoods,
- print and web materials explaining what type of information will be useful and why it is being collected, and
- mapping that will be used to help collect the information.

While each involved municipality may have its own preferences, the Project Team's emphasis will be on developing common tactics so the same tools can be used to gather the existing conditions information in each of the six neighborhoods. This will allow consistency and the tools can be used again for similar planning efforts throughout the watershed.

II. Phase II (Community Planning) of the project will call for the Project Team to host a series of six (6) open houses to gather information about the needs and priorities of each neighborhood. The first open house is proposed to be held in each involved municipality to gather information about the existing conditions in both neighborhoods. A second open house would be held in each municipality to present preliminary recommendations regarding potential mitigation strategies for each neighborhood. At the end of the Community Planning Phase, the Project Team will meet again with representatives of the involved municipalities collectively to discuss the public input gathered regarding the proposed mitigation strategies and create a framework for implementing proposed mitigation strategies.

III. Based on the collaborated input from the Winnetka, Glenview, and Niles communities from Phase II,Phase III of the project involves developing supplements to three (3) single jurisdictional Flood Hazard Mitigation Plans. The Project Team will meet with staff from each involved municipality individually to review a draft of the Flood Hazard Mitigation Plan supplement and a brochure for public distribution with an easily understandable summary of the supplement's recommendations. A draft and final Flood Hazard Mitigation Plan supplement will be presented at public meetings in Winnetka, Glenview, and Niles for a total of six (6) public meetings (one in each community to present the plan findings to the public and the other to present the final plan for adoption by the community). The Project Team will meet with staff from each involved municipality individually after the stakeholder presentation of the draft supplement to discuss necessary revisions before finalizing the supplement.

IV. The Final Phase of the project involves the Project Team developing a template for other municipalities in the watershed to repeat this planning process. The template will include a narrative of the project, the tools developed to engage the public in this project, as well as the supplements adopted by Winnetka, Glenview, and Niles. The elements of this template will be provided in a digital format suitable for future modification and adoption by other communities in the watershed to assist in reaching local and regional flood mitigation goals.

b. Baxter & Woodman, Inc. confirms that all team firms are licensed to practice in the state of Illinois.

c. Baxter & Woodman, Inc. confirms that we have not had a record of substandard work within the last five years.

d. Baxter & Woodman, Inc. has not engaged in unethical practices within the past five years.

e. Baxter & Woodman confirms that if awarded the contract we will accept complete responsibility for the contract and our services.

f. Winnetka, Glenview, and Niles Flood Hazard Mitigation Planning will be efficient, focused, and timely because select staff have been involved in each of the communities, as well as in over 150 others in the region and across the US, working daily on stormwater planning, comprehensive planning, funding, design, plan implementation, construction, operations and maintenance, and training and research.

With this background, and a well thought out scope of work reflecting your desired scope and objectives, your project team is uniquely qualified to successfully update the three single jurisdictional flood mitigation plans and provide recommendations for applying these concepts as "actionable strategies" throughout the watershed. The work will be conducted within the guidelines of the granting organizations – the Department of Commerce and Economic Opportunity (DCEO), in collaboration with a Community Development Block Grant from the Hurricane "IKE" program.

Our team brings a unique approach that utilizes the strengths of each member to deliver a planning process that not only meets your identified goals and deliverables, but also:

→ Engages residents to help define the unique local problems of each community and to become a part of neighborhood-wide solutions; and

→ Proposes clear next-steps to coordinate public and private investments to retrofit each community against future flood hazards.

A project of this importance and magnitude, and with an aggressive schedule, requires a consultant team who is adept at navigating the IKE/CDBG process and will act as an advocate for the communities throughout the project. The Baxter & Woodman team offers the ideal combination of skills, resources, and staff availability to successfully assist Winnetka, Glenview and Niles with this project. Our team has the proven track record of innovation and the creativity to identify, recommend and set a path to implement stormwater management approaches through a comprehensive plan update process.

g. This Proposal has been developed collaboratively by our project team and the firms involved. Mark Phipps, PE, CFPM, as the Project Manager, developed the Scope of Work and the Proposed Compensation. John Mick II, PE as Winnetka Client Manager, is authorized to present this material and our offer of professional services. We, and our team, look forward to working with you and your team!

If you have any questions about or need additional information regarding our proposal, please contact us.

Sincerely,

BAXTER & WOODMAN, INC.
CONSULTING ENGINEERS

John P. Mick II PE

John Mick II, PE
Winnetka Client Manager

Mark G. Phipps, PE, CFM, CPESC
Project Manager

JPM:jmp

CONTENTS

Baxter & Woodman continues to be ranked on the Engineering News-Record's Top 500 Design Firms list. We are also recognized by Public Works Magazine as one of the Top 50 leading firms in public works projects in the nation.





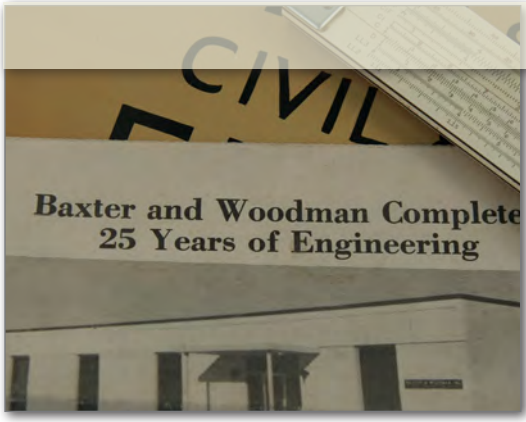
2. BACKGROUND & EXPERIENCE

a. PROPOSER OVERVIEW

Baxter & Woodman, Inc. Consulting Engineers, founded in 1946, is a forward-thinking civil engineering firm dedicated to combine the best practices with emergining technologies by providing sustainable, innovative solutions. Our firm is based on our key strengths:

Dedicated to the Municipal Sector

Baxter & Woodman has specialized in municipal engineering for 65 years, and over 95% of our business is from various forms of government - municipalities, counties, and state agencies. With this municipal sector focus, we have developed the staff, resources and training to provide the full range of engineering services required by today's municipalities and public agencies.



Upholding Our Founders' Goals

Baxter & Woodman was founded by two World War II veterans, Richard Baxter and Lorrin Woodman. Their goal was to provide engineering services to municipalities, county governments, and sanitary districts. As a result of hard work, commitment, and ever expanding engineering capabilities, Baxter & Woodman has grown to a full service firm serving communities throughout Northeast Illinois and Southeast Wisconsin.

Employee Owned & Operated

You receive a team invested in your project's success. Baxter & Woodman is a privately held, employee-owned corporation. The company's success and integrity are determined by our employee shareholders. This corporate structure benefits our clientele because the project team assigned to each client has a direct vested interest in the success of each project. The corporation currently has 93 employee shareholders, who comprise approximately 50% of the company's work force. All shareholders are active full-time employees.

Multiple Locations to Better Serve You

Today, firm principles and culture remain the same - provide outstanding service to municipalities in support of safe and healthy environments for their residents.

We have 175+ employees, all of whom serve municipal/government clients from our nine regional office locations:

Chicago, IL

Mokena, IL

Crystal Lake, IL

Grayslake, IL

DeKalb, IL

Burlington, WI

Madison, WI

b. SIMILAR PROJECT EXPERIENCE

Baxter & Woodman, along with Teska Associates, Inc., and Empirical Hydrology have performed numerous planning projects for local communities, counties, and neighborhoods across Illinois. Each firm has an elevated level of expertise performing services comparable to your planning project objectives.

Detailed project descriptions accompanied by client contact information for the listed projects immediately follows this page.

BAXTER & WOODMAN, INC.

Stormwater Master Plan

Village of Winnetka, Illinois

The flood damage resulting from severe storm events in September, 2008 and July, 2011 devastated the citizens of Winnetka. The Village responded by initiating Flood Risk Reduction Assessments to determine what improvements could be made to mitigate flood damage from future storm events in the areas proven to be the most susceptible to flooding. ***In 2012, the Village hired Baxter & Woodman to develop a Stormwater Master Plan, which includes development of an implementation strategy for each component of the plan.*** As a first step in the development of the Stormwater Master Plan, Baxter & Woodman conducted a Flood Risk Reduction Assessment of the areas within the Village that had yet to be assessed (the six "Additional Study Areas").

HIGHLIGHTS

Services: Master Planning, Public Communication, XP SWMM Modeling

Team: Mark Phipps and Steve Amann

Contact: Steve Saunders, Director of Public Works Engineering
847.716.3533 x125
ssaunders@winnetka.org

Other aspects of the Stormwater Master Plan are ongoing. Implementation of this project includes presentation of the final Stormwater Master Plan to the Village Council. Baxter & Woodman developed and manages a project website for the Village.

We designed and still manage the Village of Winnetka's Stormwater Master Plan Website, which can be viewed at http://winnetkastormwaterplan.com/ or by capturing the QR Code on your QR Reader from your smartphone.

Local Drainage Inspection Program

Village of Glenview, IL

Numerous properties within Glenview have experienced flooding during large storms in recent years. ***Often there are things that individual property owners can do to reduce the risk of flooding and alleviate drainage problems.*** We have helped the Village implement a cost share program with Glenview residents.

Individual owners initiate an onsite inspection either by completing an on-line survey request – using a custom survey developed by Baxter & Woodman – or calling the Village. Data is gathered for the specific property including aerial photographs, storm and sanitary atlas information, floodplain maps and contour data and then a property inspection is scheduled at the convenience of the owner.

HIGHLIGHTS

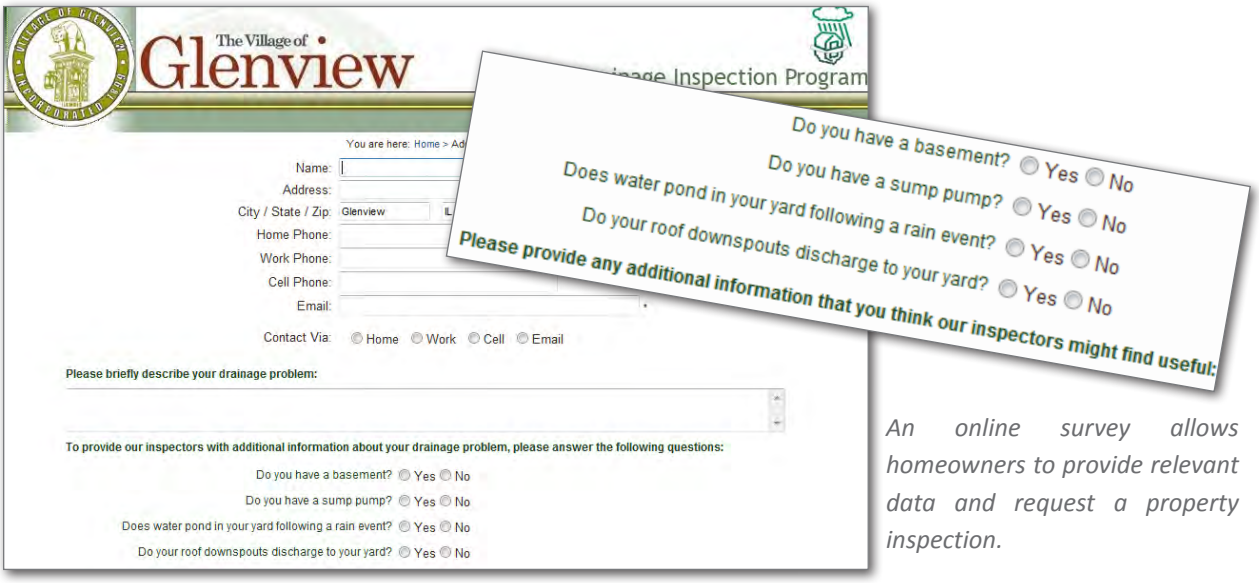
Services: Public Property Protection, and Public Communication

Team: Mark Phipps, and Steve Amann

Contact: Joe Kenney, Director of Capital Projects
847.904.4410
joek@glenview.il.us

Inspections are performed by a licensed professional engineer who is also certified in floodplain management. ***The engineers review the lot with the owner and identify steps that the property owner can take to alleviate drainage problems.*** Recommendations have included installing overhead sanitary sewers in basements, provide storm drain extensions, diverting downspouts away from the foundation, regrading to redirect surface runoff and even construction of private rain gardens.

A summary report with written recommendations and cost estimates is provided to the homeowner. The report includes a list of licensed contractors as well so the homeowner can follow-up with the recommendations.



An online survey allows homeowners to provide relevant data and request a property inspection.

East Side Stormwater, Sanitary Sewer, and Groundwater Study and Ongoing Implementation

Village of Lakewood, IL

Baxter & Woodman completed the East Side Stormwater, Sanitary Sewer and Groundwater Study in early 2008 in response to the damage that resulted from the rain storms of August 2007. Information was collected through a resident survey followed by a field investigation to verify the findings of the survey. This information was supplemented with contour and geological maps, historic hydrologic information, utility atlas maps, plans from previous Village improvements, and Baxter & Woodman's local knowledge of the area.

The Study included recommendations for short-term and long-term actions by both property owners and the Village. One recommendation of the Study was to review and revise development standards to protect stormwater storage on private property. Prior to revising the development standards, a resident Stormwater Task Force was formed to provide guidance and to ensure public support moving forward.

This direction allowed the Village to adopt the Best Management Practices (BMP) Ordinance for the East Side in 2012. Baxter & Woodman drafted the Ordinance and the documents for a pre-submittal packet to streamline the permitting and design process. The pre-submittal packet includes: a Frequently Asked Questions sheet, BMP profile sheets, a hierarchy for selecting BMPs, and templates for the required BMP maintenance agreements.

Two of the recommended actions for property owners were:

1. Protect basement level sewer services with overhead sewers or check valves; and
2. Construct rain gardens to help control runoff.

HIGHLIGHTS

Services: BMP Ordinance Adoption and Enforcement, Resident Drainage Consultations

Team: Mark Phipps has been assisting the Village since 2012

Contact: Catherine Peterson, Village Manager
815.459.3025
cpeterson@village.lakewood.il.us

Rain Gardens

A rain garden is a small, landscaped depressional area that is designed to replace turf grass with wildflowers and native grasses. Rain gardens soak up rainwater and capture stormwater runoff from nearby roofs, driveways, and streets. Permeable soils and deep-rooted native plants help retain stormwater runoff and allow it percolate into the ground. The soils within a rain garden act as a natural filter, removing harmful chemicals and pollutants from stormwater runoff before it reaches groundwater aquifers, streams and storm sewer systems, which helps protect the overall health of local lakes, streams and wetlands.

providing "pretreatment" for downstream stormwater management practices. They are best used to manage runoff from small drainage areas of up to about one acre in size, so they are particularly well suited for use on single family house sites.

Within the R-2 district, rain gardens will typically be designed as shallow depressions in order to reduce the chance of high groundwater affecting the rain garden. Several rain gardens have been successfully constructed within the R-2 district. Village hall can provide additional information on existing rain gardens and these existing gardens can be used as reference for new designs.

Rain gardens can be incorporated with other best management practices, including rain barrels, downspout and sump pump disconnection, native vegetation and soil amendments.

Rain garden locations should consider the impact on existing vegetation and trees. For instance, even minor grading under an established oak tree may have negative impacts on the tree. The location should also consider proximity to foundations. Every rain garden should have an identified overflow path. Overflow from a rain garden should be directed away from structures and not create or worsen drainage problems.

In considering a rain garden, the applicant should schedule a site visit with the Village engineer to discuss the location and other requirements.

Residential Rain Garden
(Source: Low Impact Development Center)

Rain Garden at Barrington Area Library
(Source: Flint Creek Watershed Partnership)

Typical Applications:
Rain gardens can be used to manage stormwater runoff at or near the source, reducing stormwater runoff rates, volumes and pollutant loads and

Operation & Maintenance:
- Maintain (i.e., mow, prune, trim, weed) vegetation on a regular basis to maintain appearance and function
- Water and weed vegetation regularly to help establish the vegetation
- Remove sediment and debris as needed

BMP Profile Sheet for Rain Gardens

In 2013, Baxter & Woodman staff met with residents of twelve East Side properties to discuss a variety of private property protection measures, including overhead sewers, check valves, and rain gardens.

Stain on the wall demonstrates water levels in the home during flooding.

Photo from 2013 Residential Drainage Consultation.

Capital Improvement Plan & Open House

Village of Kenilworth, IL

Baxter & Woodman helped the Village adopt a 10-Year Capital Improvement Plan in 2012 and one of the key components of that Plan is separation of the combined sewer system on the east side of the Village, which will alleviate a significant flooding problem. To complete this project, the Village needs a new storm sewer outfall to Lake Michigan.

HIGHLIGHTS

Services: CIP Planning, Public Engagement, Hydraulic Modeling, and Multiple Agency Coordination

Team: Mark Phipps has been assisting the Village since 2011

Contact: Patrick Brennan, Village Manager
847.251.1666
pbrennan@villageofkenilworth.org

Improving the quality of stormwater runoff is critical to the success of the project, both in terms of permitting the planned improvements and preserving the long-term health of Kenilworth Beach. With that in mind, Baxter & Woodman has incorporated extensive water quality improvements into the design of the sewer separation project. These improvements include permeable pavement and rain gardens.

In December 2013, Baxter & Woodman hosted an open house for the residents of Kenilworth to ask questions about and provide feedback on the planned capital improvements. After a brief presentation to all attendees by the Village Manager, attendees visited various stations to see and vote for infrastructure alternatives. ***The stations, which were manned by Baxter & Woodman project staff, allowed for one-on-one input and inquiry based on each stakeholder's address and interests.***

The former Village Administrator (Brad Burke) of Kenilworth describes Mark as:

"...the most valuable member of the project team, particularly when it came to communicating with the Village Board and the public."

Plan Review Services

Village of Glenview, IL

Since 2011, Baxter & Woodman has provided development review and inspection services for the Village of Glenview, beginning with smaller private building projects. Single-family homes, additions, private utility permits, overhead sewer conversions and local drainage improvements have been added to our scope as Village Staff continues to be occupied with other matters.

In 2012, we began reviewing larger projects, including commercial, institutional and multi-family residential developments. Almost all of these projects involve the re-use of previously-developed sites.

HIGHLIGHTS

Services: Development Plan Review

Team: Steve Amann

Contact: Shane Schneider, PE
Engineering Services Manager
847.904.4410
shanes@glenview.il.us

As part of these reviews, improvements to address existing needs are mandated and suggested. Water main looping, sewer repair/lining, traffic and lighting enhancements, and site-generated stormwater management are all reviewed, and included in the project scope, sometimes with Village participation. Many of these projects involve multiple submittals to address Village issues, and to expedite permit applications to outside agencies. Regardless of the size or cost of the project, we provide consistently thorough reviews, and maintain cordial relationships with Village Staff, developers and design consultants.

Coordinating with Village staff, developers, and designers is essential for a successful development.

TESKA ASSOCIATES, INC.

SUSTAINABLE DECATUR

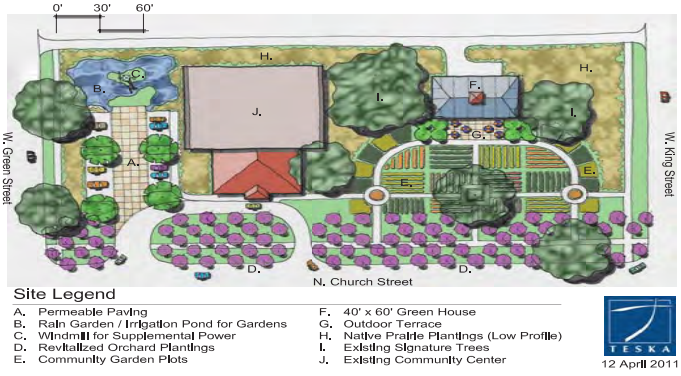
SENSIBLE RESPONSIBLE MARKETABLE

SUSTAINABLITY PLAN

DECATUR SUSTAINABLITY PLAN + OKO IMPLEMENTATION

Decatur has long valued its natural, agricultural and historic heritage. From Lake Decatur to the revitalization of downtown and historic neighborhoods there is a proud tradition of stewardship in Decatur. The City of Decatur took an innovative step by using a portion of the Energy Efficiency Community Development Block Program (EECBG) to take a strategic view of the opportunities to explore energy efficiency from a whole-systems approach. Teska and Center for Neighborhood Technology (CNT) facilitated an inclusive process to develop a set of interrelated strategies from a public education effort to promoting infill development to energy audits and promotion of alternative transportation. A signature recommendation of the plan is to foster a market for the use of perennial grasses as a source of alternative energy, building on the local agribusiness industry sector which includes ADM and Tate and Lyle that have long brought jobs, innovative technology, and new markets to Decatur.

One of the key recommendations of the Plan was to choose an established Decatur neighborhood to conduct an urban demonstration project to apply various sustainability techniques. Teska worked with the Old Kings Orchard neighborhood to implement the strategies of the Plan into their built-up urban neighborhood. Applied strategies in the OKO neighborhood will show cumulative improvements over time including capital cost reductions, property value increases, energy savings per household, reductions in flooding incidents, water quality improvements, recycling rate improvements, and waste reduction.



Creating sustainable site plans for key neighborhood anchors like the OKO Community Center serve as a reminder of the neighborhood's potential and encourage stimulus of future community investment.

DECATUR, IL

Ensuring an adequate water supply, including reducing sedimentation flow into Lake Decatur through the use of Best Management Practices, is critical to a Sustainable Decatur.

Local production of food, expanding the farmers market, and reclaiming urban land for community gardening are all tools to revitalize neighborhoods and connect residents back to the land and healthy foods.

Teska Associates, Inc.
www.TeskaAssociates.com

CONTACT
Vasudha Pinnamaraju, AICP, Environmental Planner, City of Decatur
#1 Gary K Anderson Plz, Decatur, IL 62526 • 217.424.2778 • vpinnamaraju@decaturil.gov

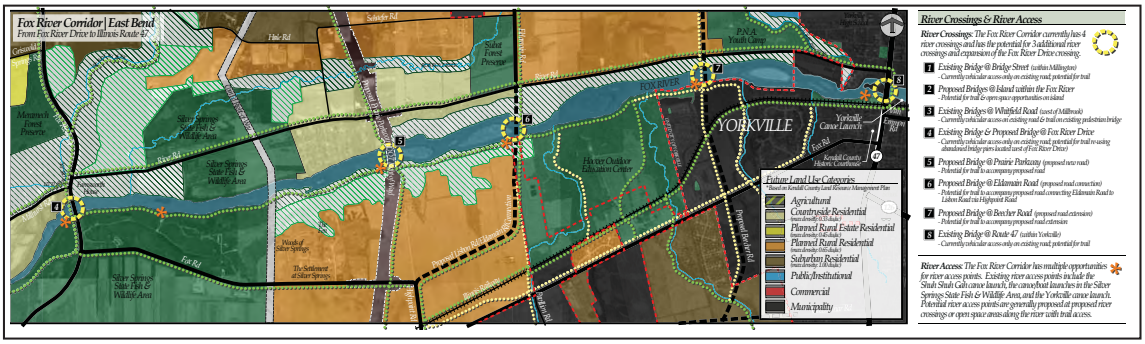
FOX RIVER CORRIDOR PLAN
KENDALL COUNTY, IL

FOX RIVER CORRIDOR PLAN

The Fox River is one of the greatest natural assets in northeastern Illinois, providing recreational opportunities and creating a vital environmental corridor for human activity and wildlife preservation. To maintain the river's natural qualities and properly plan for corridor enhancements, Teska Associates, Inc worked with Kendall County and its associated townships and communities to prepare the Fox River Corridor Plan. In particular, the plan provides a focused study and set of guidelines for a segment of the Fox River Corridor located west of Route 47 and extending west to the Kendall/LaSalle County line.

A review of existing conditions and meetings with various stakeholders laid the foundation for the Fox River Corridor Plan, which outlines a series of planning and design recommendations and an implementation plan designed to prompt proactive achievement of the recommendations. Recommendations ranged from planning for a variety of river corridor users and amenities to maintenance and corridor development protection. Since the Fox River flows through the communities of Yorkville, Millbrook, and Millington, plan recommendations, particularly the location of multi-use trails, were made consistent with the plans of these communities.

The Fox River Corridor Plan encourages conservation design to protect sensitive environmental features and integrate certain features into site design, where appropriate.



Fox River Corridor Master Plan Map

Teska Associates, Inc.
www.TeskaAssociates.com

CONTACT
Larry Nelson, AD Hoc Committee Chair, Kendall County (past) Planning Commission, Kendall County (past)
815.552.1000 • larryn@nelsonmultimedia.net

SUSTAINABLE DECATUR

SENSIBLE RESPONSIBLE MARKETABLE

OKO SUSTAINABLE NEIGHBORHOOD PLAN

DECATUR, IL

What does sustainability mean, and how do we apply it in a diverse community? These are two of the important questions that Teska Associates assisted the City of Decatur, and its residents and business leaders answer in the recently adopted Sustainable Decatur Plan. Decatur found that planning for sustainability afforded the opportunity to set a standard that increases economic opportunities, reduces household expenses, and takes a long-term look to make sure they have the resources to sustain their needs for generations to come.

One of the key implementation recommendations of the Sustainable Decatur Plan was to choose an established Decatur neighborhood to conduct an urban demonstration project to exhibit the various sustainability techniques presented. Teska assisted the Old King's Orchard neighborhood in creating the OKO Sustainable Neighborhood Plan that implemented the recommendations of the Sustainable Decatur Plan with a focus on infill development and mixed use; naturalized stormwater management; residential energy efficiency and retrofit; recycling and compost pilot; and community gardens. Targeted strategies in the OKO neighborhood will show cumulative changes in capital cost reductions, property value increases, energy savings per household, reductions in flooding incidents, water quality improvements, recycling rate improvements, and community waste reduction.

The Sustainable Neighborhood Planning process included a mix of community stakeholders, city staff, and neighborhood residents.

Creating sustainable site plans for key neighborhood anchors like the OKO Community Center (left) and a neighborhood activity site (right) serve as a reminder of the neighborhood's potential and encourage stimulus of future community investment.

Teska Associates, Inc.
www.TeskaAssociates.com

CONTACT
Vasudha Pinnamaraju, AICP, Environmental Planner, City of Decatur
#1 Gary K Anderson Plz, Decatur, IL 62526 • 217.424.2778 • vpinnamaraju@decaturil.gov

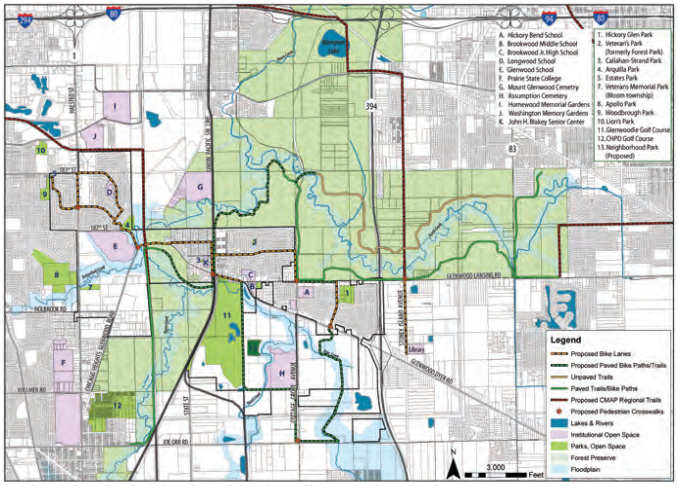
VILLAGE OF GLENWOOD COMPREHENSIVE PLAN

Glenwood, IL

VILLAGE OF GLENWOOD COMPREHENSIVE PLAN

The Village of Glenwood is a community that has seen many changes in demographics and land use in the last twenty years. As a mature suburban community located among Forest Preserves, planning for the future development was key to ensure that it achieves the its vision of increasing employment opportunities while enriching the quality of life and maintaining its picturesque hometown charm.

To this end, Teska helped facilitate and prepare a new version of the Comprehensive Plan that reflects current trends, concerns and a vision for the future development of the Village. The residents, elected and appointed officials, and business owners of the Village of Glenwood were engaged in the planning process through broad community input via neighborhood workshops, surveys, interviews and a public open house during the different stages of the process. As a result of this broad public engagement, Teska was able to identify key issues and respond to the concerns of the community throught the plan. It included recommendations for improvements at the neighborhood level, economic development strategies, implementation strategies and urban design guidelines to help shape the future development in the Village.



Parks and trails plan developed for the Village of Glenwood

The logo designed for the Village of Glenwood uses a hickory leaf graphic which recalls the original Village name of Hickory Bend and celebrates the Village's location among Forest Preserves and mature stands of trees

Wayfinding Signage Gateway Signage

Teska Associates, Inc.
www.TeskaAssociates.com

CONTACT
Donna Gayden, Village Administrator
One Asselborn Way, Glenwood, IL 60425 • 708.757.2311 • dgayden@villageofglenwood.com

EMPIRICAL HYDROLOGY

Multi Hazard Mitigation Planning

Williamson County, IL

Since 2008, Pinter and colleagues at SIU have been working with the Polis Center at Indiana University-Purdue University at Indianapolis to help counties and other jurisdictions across Illinois develop Multi-Hazard Mitigation Plans (MHMPs). Polis led planning efforts in the initial 17 Illinois counties, and since ~2010 SIU has led activities in the subsequent 25+ Illinois counties. For these and related efforts, the SIU group won the 2012 Mitigation Award from the Illinois Association of Floodplain and Stormwater Managers.

Williamson County was one of the first plans completed by the SIU group and its partners. Plan preparation was expedited because one community was designing a new high school and planned to pursue mitigation funding to incorporate disaster-resistant elements in school construction. The SIU-Polis team assembled a local planning team representing all jurisdictions and a broad spectrum of stakeholders from across the county, and scheduled an expedited calendar of planning events. All plans developed by the SIU group are based on rigorous and quantitative risk assessments, including GIS analyses, Hazus-MH loss assessments (typically structure-by-structure "Level 2" assessments), and often customized hydraulic modeling of flood hazard. Engagement with the local planning team is through a systematic process that updates and verifies all relevant geospatial data, presents historical hazards and current risk, quantitative risk assessment, and develops and prioritizes a range of mitigation solutions.

For Williamson County, all efforts were completed and a plan submitted to IEMA within 6 months. The plan was subsequently approved by IEMA and FEMA, adopted by the county. As planned, Williamson County then immediately submitted its disaster-resistant schools application, and ~$500,000 was awarded the following year.

CONTACT
Kelly Huddleston, Coordinator, Williamson County Emergency Management Agency
618.998.2123 • kelly@wcema.com

FEMA Hazard Mitigation Grant Program Application for Olive Branch

Alexander County, IL

Prof. Pinter and his group completed the 2011-12 Hazard Mitigation Grant Program (HMGP) application for property acquisitions and buyouts in Olive Branch, Illinois on behalf of Alexander County, IL.

Flooding in 2011 caused widespread damage along the Mississippi River and across the U.S. One of the first communities to be struck, and among the most severely flooded, was Olive Branch in southernmost Illinois. Olive Branch is a village of over 800 people on the Mississippi floodplain, just upstream of the Mississippi-Ohio River confluence. With river levels approaching their crest, the levee protecting Olive Branch broke on May 2, sending up to 6 feet of water into 200+ structures in the town and surrounding area.

Following the 2011 flood, Olive Branch and Alexander Co. partnered with Prof. Pinter and colleagues at Southern Illinois University to chart a path to recovery. Preliminary funding was secured from a variety of sources, including the Walton Family Foundation. Planning for mitigation activities laid the groundwork for large-scale risk reduction on the Mississippi River floodplain in Alexander County. Planning activities led by SIU included a disaster networking tour, during which Olive Branch residents, leaders, press, and others toured several communities in various stages of disaster recovery, including Joplin, MO, Greensburg, KS, and Valmeyer, IL, and a design and planning charette. In partnership with American Institute of Architects (AIA), the SIU group a three-day community design charette in Olive Branch, in which teams of planners, architects, and residents developed designs for a post-mitigation, flood resistant community.

During this same period, Pinter and colleagues were working with Alexander County and Olive Branch leaders to prepare a FEMA HMGP application. All owners of flood-prone properties in unincorporated Alexander County were invited to apply for funds for either acquisition or elevation of flood-prone properties. At a 6/21/11 meeting, the County Board authorized SIU to prepare its HMGP application and represent it in relocation planning efforts. Letters were sent to property owners, and several public meetings were held. At the time of application, nearly 200 property owners (~90%) signed up for the mitigation application. An Olive Branch Planning Team was constituted and, over time, assumed the leadership role as mitigation progressed forward.

A HMGP award of $12 million to Olive Branch was announced in April of 2013

CONTACT

Sidney Miller, President,
Olive Branch Area Community Development Corp.
407.295.6568 • sjmiller1160@gmail.com

Jeff Denny, Alexander County Engineer
618.776.5242 • alexcohwy@wildblue.net

c. RELEVANT CHARACTERISTICS OF THE TEAM

Our team for Winnetka, Glenview, and Niles has several characteristics that set it apart and make us uniquely qualified to meet your needs and complete the work producing "Actionable Strategies":

Experience with Your Community and Project Area

Baxter & Woodman is completing Winnetka's Stormwater Master Plan and serves Glenview as their engineering consultant. We are already familiar with Winnetka's and Glenview's stormwater systems and drainage areas.

Your services will be performed by staff who work with the three communities regularly – which means less project start-up time due to the in-depth knowledge of our staff, familiarity with elected officials, knowledge of community features, skill in communications protocols, excellent project management practices and knowledge of the stormwater systems and issues involved.

Our familiarity with the existing conditions in each involved municipality, the watersheds and surrounding area will allow us to more efficiently evaluate the systems.

Experience with Staff, Processes and Preferences

The communities will receive the same level of service and responsive project support provided on other successful projects, such as:

Winnetka	Glenview	Niles
• Stormwater Master Plan	• Local Drainage Inspection Program	• SCADA System and Electrical Upgrades
• SSES and Pilot Rehabilitation Program	• Consolidated Contractural Services	• Assessment of Water System
• Sanitary Sewer Flow Monitoring	• Colfax Avenue Sewer Study	• SCADA System 2012 Improvements

Your communities recognize Baxter & Woodman's commitment to helping our municipal clients make the most effective allocation of time and financial resources. Our knowledge of your existing processes and preferences will help us guide you confidently through the CDBG/IKE process. We will know when to alert you to critical decisions or component details that require your input.

This will result in a balanced, cost effective approach that puts your objectives at the forefront and fits within your budget.

Capacity to Perform Work

Consulting services for the Flood Hazard Mitigation Planning will be provided in a timely and cost effective manner. The depth and diversity of the Baxter & Woodman staff and our partner firms allows us the flexibility to be available when you need us. All team members have a solid understanding of the services required and are committed to providing the time necessary to successfully complete the assignments.

Baxter & Woodman completes approximately 2,000 projects per year firm-wide. At this time we are servicing over 1,150 active projects from the preliminary planning through substantial completion phases, with fees ranging from less than $1,000 upwards into the millions.

We understand the importance of being responsive to your needs, and we always carefully monitor the existing and projected workloads of our employees for potential impact on an awarded project. Based on Baxter & Woodman's staff of 178 employees, our firm's maximum capacity of billable time is estimated to be approximately 300,000 hours per year. Due to changes in the economy and other uncontrollable factors, our existing workload is at 78% capacity. In addition, we strengthened our work force in 2012-2013 with 18 new hires to meet the growing demands of strategic market sectors. With our 3 team members we have the support of an additional 45 professional staff. There is significant capacity to meet the staffing and schedule needs of your project.

Project Team Qualifications and Skills

					Skills									
					Years of Experience	Municipal Planning	Public Response Survey	Website Design	GIS Mapping	Public Education Materials	Public Open Houses	Computer Modeling	Municipal Regulations	Public Presentations
Name	Firm	Education	Registration	Project Role										
Mark Phipps	Baxter & Woodman	BS Civil Engineering	PE, CFM, CPESC	Project Manager	16	♦				♦	♦	♦	♦	♦
Stephen Amann	Baxter & Woodman	BS Civil Engineering	PE, CFM	Assistant Project Manager	29	♦				♦	♦	♦	♦	♦
Michael Blue	Teska Associates	BA Urban Planning MS Urban Planning	FAICP	Principal Consultant	25	♦	♦	♦		♦	♦		♦	♦
Malika Hainer	Teska Associates	B.Arch Architecture M.Arch Architecture MS Urban Planning	LEED AP ND	Associate Planner	3	♦	♦		♦	♦	♦		♦	♦
Erin Cigliano	Teska Associates	BA Urban Planning	AICP	New Media Specialist	9		♦	♦		♦				
Nicholas Pinter	Emipircal Hydrology	PhD Geology	RPG	Senior Hazard Mitigation Planner	16	♦				♦	♦	♦		♦
Amanda Damptz	Emipircal Hydrology	MS Geology		Associate Hazard Mitigation Planner	2				♦		♦	♦		♦
Tim Hopper	Baxter & Woodman	BS Geography		GIS Specialist	6				♦					
Matt Moffitt	Baxter & Woodman	BS Civil and Environmental Engineering BS Physics	PE, CFM, CPESC	Stormwater Engineer	7	♦				♦	♦	♦		
Emily Grimm	Baxter & Woodman	MS Civil Engineering	EIT	Stormwater Engineer	1					♦		♦		
John Mick II	Baxter & Woodman	BS Civil Engineering	PE	Project Advisor	38	♦	♦			♦	♦		♦	♦
Nick Patera	Teska Associates	BLA Landscape Architecture	PLA	Project Advisor	34					♦				♦

d. PROFESSIONAL ERRORS AND OMISSIONS COVERAGE

ACORD

OP ID: CD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 05/31/2013

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER M.G. Welbel & Associates, Inc. Michael Welbel 650 Dundee Rd., Suite 170 Northbrook, IL 60062 Michael G. Welbel Phone: 847-412-1414 Fax: 847-412-1013	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS: PRODUCER CUSTOMER ID #: BAXTE-1
INSURED Baxter & Woodman, Inc. 8678 Ridgefield Road Crystal Lake, IL 60012	INSURER(S) AFFORDING COVERAGE / NAIC # INSURER A : Lloyds of London INSURER B : Travelers Indemnity Company — 25658 INSURER C : Travelers Prop Cas Co of Ameri — 25674 INSURER D : Travelers Indmty Co of America — 25666 INSURER E : INSURER F :

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
B	GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR X PRIMARY & ------- X SUBJECT TO ------ GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT LOC			630-3008M415 NON CONTRIBUTORY WRITTEN CONTRACT	05/01/2013	05/01/2014	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 300,000 $ 10,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
C	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS			810-3008M415 810-3008M415 810-3008M415	05/01/2013 05/01/2013 05/01/2013	05/01/2014 05/01/2014 05/01/2014	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
C	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DEDUCTIBLE RETENTION $			CUP-3008M415	05/01/2013	05/01/2014	EACH OCCURRENCE AGGREGATE	$ 5,000,000 $ 5,000,000
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		UB-3008M415	05/01/2013	05/01/2014	X WC STATU-TORY LIMITS OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000
A	Professional Liab.			P020241200	05/15/2013	05/15/2014	Per Claim Aggregate	5,000,000 5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, If more space is required)
Re: all operations of the named insured, subject to policy terms and conditions.

CERTIFICATE HOLDER

BAXTE01

Baxter & Woodman Inc.
8678 Ridgefield Rd.
Crystal Lake, IL 60012

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Michael G. Welbel

ACORD 25 (2009/09) The ACORD name and logo are registered marks of ACORD

e. SPECIALIZED KNOWLEDGE IN PLANNING

GRANT FUNDING ASSISTANCE

Baxter & Woodman has been very successful in helping our clients secure grant funding for stormwater management projects from a variety of sources. We will use our expertise in securing funding to identify projects that would be potential candidates for future grant applications as recommended projects are being prioritized.

The chart below lists recent water resources grants we helped our clients secure.

Village/City	Grant	Project	Awarded	Year
Glenview	FEMA Hazard Mitigation Grant Program	Dewes Henley Harlem Drainage Improvements	Pending: $2,784,000	2014
Kenilworth	MWRD Stormwater Management Phase II	Green Infrastructure Project	$993,505	2013
Skokie	IEPA Illinois Green Infrastructure Grant	Green Alley Program	$567,000	2013
Oak Park	IEPA Illinois Green Infrastructure Grant	Green Alley Program	$763,327	2013
LaGrange	IEPA Illinois Green Infrastructure Grant	Parking Lot 13 Green Infrastructure Retrofit	$489,000	2012
Wood Dale	FEMA Hazard Mitigation Grant Program	Property Acquisitions	$1,934,3555	2013
Grundy County	IDCEO IKE Disaster Recovery Grant	Stormwater Study and Comprehensive Plan Update	$250,000	2012
Highwood	IDCEO IKE Disaster Recovery Grant	Western Avenue Pumping Station	$577,000	2011
Oak Forest	IDCEO IKE Disaster Recovery Grant	Waverly Culvert Design	$593,000	2011

COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG)

Baxter & Woodman has been designing and building federally funded infrastructure projects for 65 years. In that time many communities have relied on our expert assistance to plan, budget, and apply for funding through the CDBG Program. We have assisted with projects utilizing CDBG funds for a variety of improvements including stormwater, wastewater, water, transportation, structure demolition, and more.

Winnetka will benefit from our experience on 100+ projects utilizing CDBG funds in the last 15 years. Our experience includes planning system-wide improvements such as multi-year utility installations, using budget figures and sound engineering practices, through design, bidding, and construction, following the requirements of the CDBG program. We have also completed grant applications and preliminary documentation such as low-to-moderate income surveys. We

understand the advantages, requirements and limitation of CDBG funding, and have ensured that all applicable items have been funded to the fullest extent possible.

IKE DISASTER RECOVERY CDBG PROGRAM

Many municipalities were adversely affected by the storms of 2008. IKE grant programs were established through the CDBG to provide relief for these communities. Funding was made available through state application processes to assist in the planning and design of needed infrastructure improvements through individual Illinois counties. In order to be eligible for consideration through the IKE program, improvement projects must demonstrate that needed improvements were directly related to the 2008 flooding. Applications for infrastructure improvements were submitted January 31, 2011 and project funds were awarded May of 2011. The most recent IKE program supports planning efforts. The Villages of Winnetka, Glenview, and Niles are fortunate to receive funds.

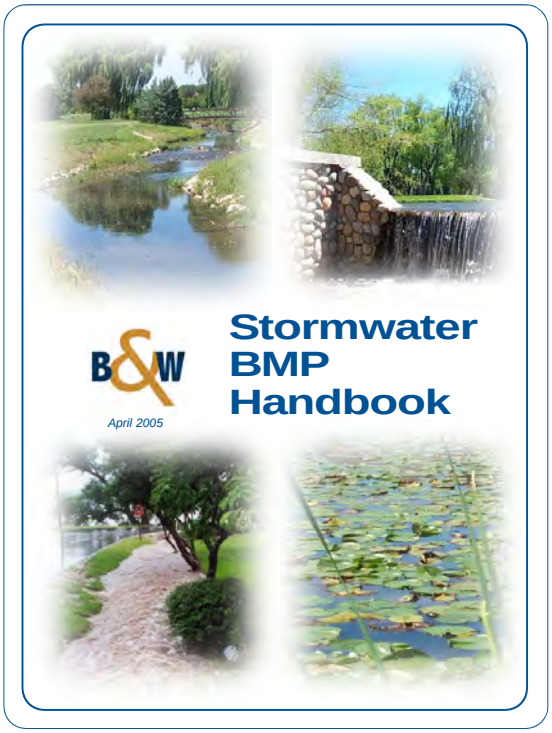
IKE DISASTER RECOVERY FUNDING ASSISTANCE

We have assisted Oak Forest's Waverly Culvert Construction Project, and Highwood's Western Avenue Pumping Station Design and Construction Project receive funding.

BEST MANAGEMENT PRACTICES (BMP) TOOLBOX

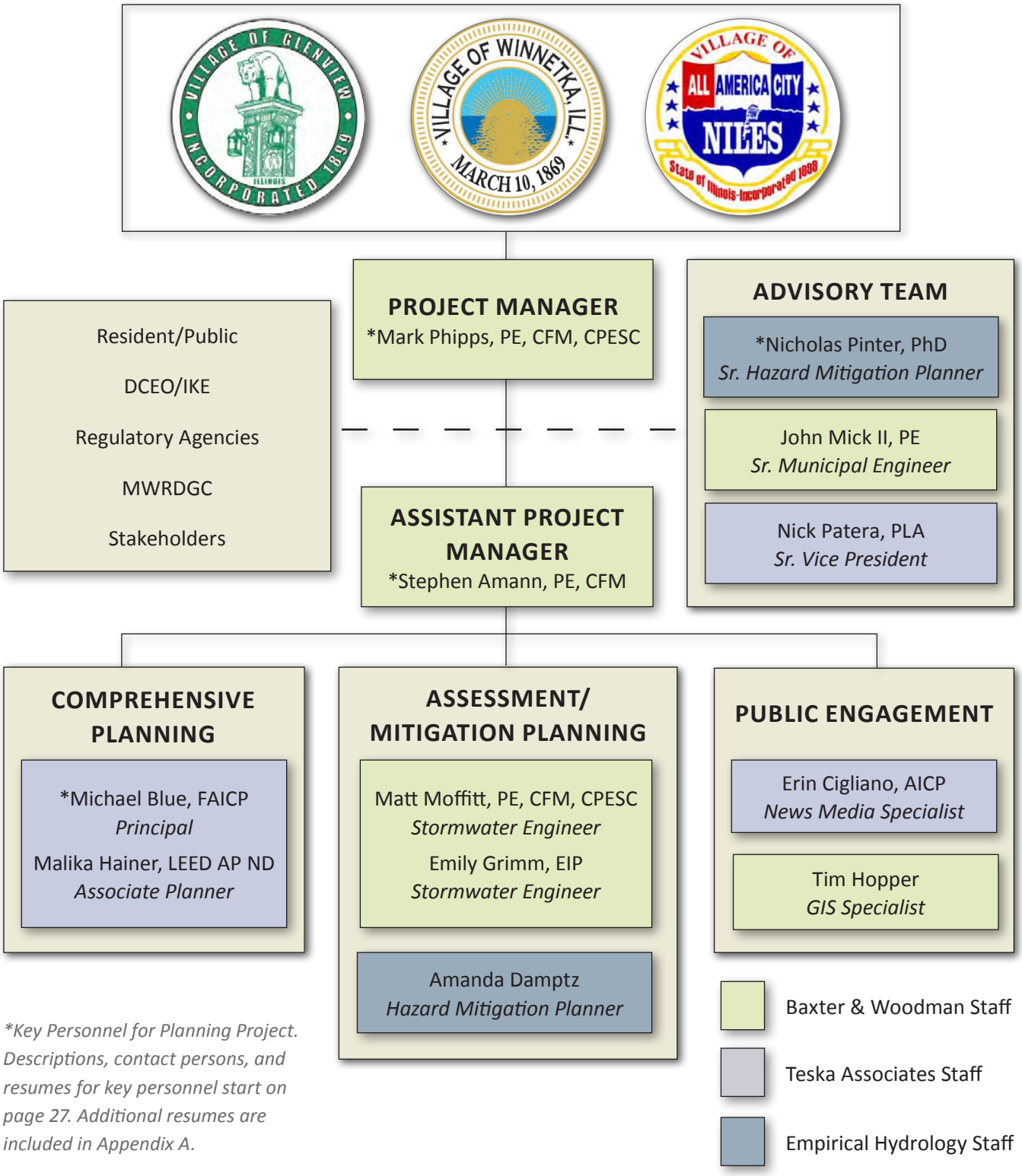
The BMP Toolbox is a handbook of introductory information on structural and non-structural best stormwater management practices that was developed by our in-house experts. The primary purpose of the BMP Toolbox is to assist communities in developing and implementing sensible growth strategies that will allow continued growth and development while limiting the impacts upon our environment. Much of the information presented in the handbook can also be used to assist communities in meeting specific environmental regulations.

An example of a BMP Handbook created by Baxter & Woodman is shown to the right.



3. PERSONNEL/PROFESSIONAL QUALIFICATIONS

a. PROJECT TEAM



**Key Personnel for Planning Project. Descriptions, contact persons, and resumes for key personnel start on page 27. Additional resumes are included in Appendix A.*

The Baxter & Woodman team has been chosen to satisfy your project's very specific criteria. Baxter & Woodman will be supported by the complementary skills of Teska Associates, Inc., and Empirical Hydrology to provide you with the level of service and responsive support you expect on this project.

TESKA ASSOCIATES, INC.

Teska Associates, Inc., founded in 1975, is a planning and landscape design firm with seventeen professional staff based in Evanston and Plainfield, Illinois. The firm specializes in planning, development economics, community engagement, landscape architecture, and site design. The firm has completed dozens of comprehensive plans, corridor and sub-corridor plans, special area, neighborhood and downtown plans, and transit-oriented/ urban redevelopment projects – all of which have incorporated cutting edge designs, new media, outreach tools, and visualization to enhance the clarity and usability of the plans.

The firm believes strongly in community participation and stakeholder processes that help build community consensus. An integral part of this process is utilizing a variety of design techniques and interactive mediums to communicate goals surrounding the built environment, development scenarios and alternatives, as well as to support creative brainstorming and discussion. Teska's visualization processes breathe life into projects by creating a visual sense of place that residents can see and relate to. Beginning with idea conception, these processes transition from ensuring community input, developing strategies, and implementing projects.

COLLABORATION AT ITS BEST

In 2010, Baxter & Woodman helped the Village of Plainfield secure U.S. Department of Housing and Urban Development funding through the Chicago Metropolitan Agency for Planning's Local Technical Assistance program to update the Village's transportation plan. The Village selected the team of Baxter & Woodman and Teska to expand upon the transportation planning work from the Village's Comprehensive Plan. An extensive community outreach program was created and tailored specifically to help the Village get valuable feedback from stakeholders. A project website was created, articles were written for local papers and project information was posted in the Village's E-News updates, Twitter account, and Village Voice newsletter. The combined expertise of both firms helped the Village create a working transportation plan which accurately reflected the community's current needs and future goals, which was adopted by the Village Board in June 2013.

EMPIRICAL HYDROLOGY

Empirical Hydrology is led by Professor Nicholas Pinter, who is an international authority in earth-surface processes, including flooding, river systems, hydrology, and natural hazards. Professor Pinter has worked for over 20 years in hazards-related research and applications, is author or chief editor of several books, and has received awards from the European Union (Marie Curie Fellowship), MacArthur Foundation, Fulbright Commission, Alexander von Humboldt Foundation, and others.

His research focuses on changes in river systems, in particular human and natural alterations that make flooding more severe than it would otherwise be. Looking at the Mississippi, Missouri, Rhine, Danube, and other rivers in the U.S. and worldwide, this work has quantified the impacts of levee expansion, navigational engineering, changes in basin land use, and other factors.

b. KEY PERSONNEL

Mark Phipps, PE, CFM, CPESC

Project Manager, Baxter & Woodman

Mark manages Baxter & Woodman's Water Resources Department and serves as a Project Manager for various water resource projects, including storm sewer and detention design, drainage studies, hydraulic reports, erosion and sediment control, and rehabilitation/replacement of municipal infrastructure. In addition, he assists our municipal clients with plan reviews and NPDES Phase II compliance.

Mark has completed many successful planning projects for multiple villages, cities, and counties. Contact persons whom Mark has worked with on similar projects:

Patrick Brennan
Village Manager
Village of Kenilworth
847.251.1666
pbrennan@villageofkenilworth.org

Dennis Sandquist
Director of Planning & Development
McHenry County
815.334.4221
dsandquist@co.mchenry.il.us

Robert Ells
Engineering Superivsor
City of Lake Forest
847.234.2600
ellsr@cityoflakeforest.com

Stephen Amann, PE, CFM

Assistant Project Manager, Baxter & Woodman

Steve leads our team in the planning, design, permitting and construction documentation of stormwater facilities for urban and rural environments. Steve has earned the designation of Certified Floodplain Manager and promotes effective and innovative approaches to address floodplain and stormwater management systems for municipalities. His design experience includes storm sewers, swales, detention ponds, compensatory storage, bridges and culverts. He is active in the development and subsequent updates of stormwater management ordinances and floodplain modifications. Steve promotes the incorporation of stormwater Best Management Practices into development ordinances and through the review of private site improvements on behalf of governmental entities. His experience also includes hydrologic and hydraulic modeling and FEMA Letters of Map Change. As a member of the Metropolitan Water Reclamation District of Greater Chicago's Technical Advisory Committee on the proposed County-wide Watershed Management Ordinance, Steve has represented municipal interests in the preparation of this ordinance.

Steve is well versed in planning project for local communities to help reduce flooding issues. Contact persons from each municipality are:

Troy Ishler
City Administrator
City of Oak Forest
708.687.4050
tishler@oak-forest.org

Bob Barber
Village Administrator
Village of Beecher
708.946.2261
bobadm@villageofbeecher.org

Shane Schneider, PE
Engineering Services Manager
Village of Glenview
847.904.4410
shanes@glenview.il.us

Michael Blue, FAICP

Principal/Senior Planner, Teska Associates, Inc.

Michael completed his Masters in Urban Planning from the University of Illinois at Urbana-Champaign. He recently joined Teska Associates with 10+ years of consulting experience focused on serving communities in comprehensive plans, public participation, and development economics. As the Director of Community Development in Highland Park, Michael's role in overseeing development and policy related programs was directly related to development, housing, historic preservation, cultural arts, and natural environment while serving 9 City Commissions. Michael is an active participant in local/national leadership of the American Planning Association and currently the Planning Officials Development Officer for the IL-APA.

Michael has completed many similar projects including comprehensive plans for local communities. Contact persons from relevant planning projects include:

Michael D'Onofrio	Patrick Brennan	Peter Krumins
Community Development Director	Village Manager	Development Coordinator
Village of Winnetka	Village of Kenilworth	Village of Winfield
847.716.3526	847.853.8416	630.933.7117
mdonofrio@winnetka.org	pbrennan@villageofkenilworth.org	pkrumins@villageofwinfield.com

Nicholas Pinter, PhD

Senior Advisor, Empirical Hydrology

Nicholas is a leader of numerous large research and public sector projects, including over 40 Multi Hazard Mitigations Plans. He contributes over 20 years of experience in hazard related research and applications, and has authored several books and papers in the field of Hazard Mitigation. Nicholas received his PhD in Geology from the University of California, Santa Barbara, and is the Director of the National Science Foundation funded program in Watershet Science and Policy.

Nicholas has successfully assisted multiple hazard mitigation planning projects. Contact persons from relevant planning projects include:

Kelly Huddleston	Ron Davis	Jeff Denny
Coordinator	State Mitigation Officer	Alexander County Engineer
Williamson County Emergency Management Agency	IL Emergency Management Agency	Alexander County
618.998.2123	217.524.1003	618.776.5242
kelly@wcema.com	ron.davis@illinois.gov	alexcohwy@wildblue.net

BAXTER & WOODMAN Consulting Engineers

Mark G. Phipps, PE, CFM, CPESC

Project Manager

Phone: 815.459.1260
Fax: 815.455.0450
mphipps@baxterwoodman.com

Education

B.S., Civil Engineering Purdue University, 1998

Joined Firm in 2004
Rejoined Firm in 2010

Years of Experience: 16

Registrations

Licensed Professional Engineer: Illinois, Wisconsin, Indiana

Certified Floodplain Manager

Certified Professional in Erosion and Sediment Control

Enforcement Officer, Lake County Stormwater Management Commission

Qualified Engineer Review Specialist, Kane County Stormwater Management Commission

Associations

Technical Advisory Committee Member, McHenry County Stormwater Management Committee
Lake County Stormwater Committee

Member, Illinois Association for Floodplain and Stormwater Management

Member, The Association of State Floodplain Managers
Member, American Public Works Association

Mark manages Baxter & Woodman's Water Resources Department and serves as a Project Manager for various water resource projects, including storm sewer and detention design, drainage studies, hydraulic reports, erosion and sediment control, and rehabilitation/replacement of municipal infrastructure. In addition, he assists our municipal clients with plan reviews and NPDES Phase II compliance.

Representative Projects

Winnetka, Illinois
Stormwater Master Plan
Project Manager for the preparation of the Village's Stormwater Master Plan, which is a comprehensive, multi-faceted plan to manage stormwater runoff quantity and quality, as well as sanitary sewer discharges. The Stormwater Master Plan establishes a vision for the Village's stormwater program with actionable goals and objectives that serve as a roadmap to realizing that vision. The Plan includes chapters on: Capital Improvements, Floodplain Management, Water Quality, Stormwater Best Management Practices, Development Policies and Regulations, Operations and Maintenance, and Sanitary Sewer Infiltration and Inflow. A Financial Plan and an Implementation Plan are also included.

Glenview, Illinois
Local Drainage Inspection Program
Performs on-site investigations related to drainage problems on private property. Identifies the causes of the drainage problems and recommends drainage improvements that a property owner can make on private property. Site reports include cost estimates for potential improvements along with a list of recommended contractors.

Lakewood, Illinois
Implementation of the East Side Stormwater, Sanitary Sewer and Groundwater Study
Assist the Village with the adoption and ongoing enforcement of the Best Management Practices Ordinance, which requires appropriate stormwater best management practices for projects that create more than 500 square feet of new impervious area. Also, consult with residents regarding drainage improvements they can make on private propert.

Kenilworth, Illinois
Stormwater Planning/Capital Improvements Plan
Analyzed the Village's existing combined sewer system using XP-SWMM and calibrated the model to replicate flooding conditions observed by Village staff. Potential improvements were then analyzed to determine the improvements that would best meet the Village's objectives. The modeled alternatives ranged from sewer separation combined with stormwater detention, to a cost-sharing program for replacing impervious driveways with permeable pavement. Responsible for the project schedule, supervision of the hydraulic modeling, and recommendations for future capital improvements.

Wood Dale, Illinois
Liaison to the Stormwater Management Committee
Attend the regular meetings of the City's Stormwater Management Committee representing City staff. Responsibilities include: investigation of drainage issues, reporting findings to the Committee, and preparation of meeting agendas and minutes.

Papers/Presentations

Lakewood's BMP Ordinance
IAFSM Annual Conference
(March 2013) and
Beyond the Basics
(March 2013)

McHenry County's Streamlined Permitting Process
IAFSM Annual Conference
(March 2012)

A "Do-It-Yourself" Guide to Implementing an Efficient NPDES Phase II Program
Hosted by Baxter & Woodman
(February 2011)

Soil Erosion and Sediment Control
Workshop Hosted by
McHenry County College
(August 2010)

Soil Erosion and Sediment Control
Contractor Seminar
Hosted by
MCSWCD and IECA
(November 2008)

NPDES Phase II Workshop
Lake County Stormwater Management Commission/APWA Chicago Metro Chapter
(May, 2007)

Lake Forest, Illinois
Stormwater Drainage Study
Project Manager for a new comprehensive Stormwater Drainage Study, which includes a Citywide storm sewer system analysis using XP-SWMM and concept plans complete with cost estimates for alternative improvements in priority problem areas. The scope of services also includes a ravine analysis and a roadside ditch analysis with recommendations for drainage improvements in areas not served by storm sewers.

Wood Dale, Illinois
Citywide Drainage and Flood Improvements Study Supervised the development of hydraulic models of the existing drainage system and potential drainage improvements for each study area using XP-SWMM. Also responsible for ranking the potential drainage improvements according to the cost per property benefitting from the project, presenting preliminary recommendations to City officials, and making final recommendations for the City's five-year Capital Improvements Plan. The recommended improvements ranged in (estimated) cost from $160,000-$2.2M and included increased storm sewer capacity, expanded stormwater detention basins, and high capacity inlets.

Lockport, Illinois
Master Stormwater Conveyance Plan
Supervised the development of a hydraulic model of the existing drainage system for the City's North Downtown Area using XP-SWMM. This effort included calibrating the model to replicate existing conditions based on drainage complaints received by the City and discussions with City staff regarding their observations.

Various Municipalities, Illinois – Funding Assistance for Stormwater Projects
Prepared or supervised the preparation of successful grant applications from a variety of sources.

- FEMA Hazard Mitigation Grant funding for the Dewes-Henley-Harlem Drainage Improvements ($2,784,000 award announcement expected in Spring 2014)
- MWRD Stormwater Management Phase 2 funding for the Village of Kenilworth's Green Infrastructure Improvements ($993,505 in 2013)
- IEPA Illinois Green Infrastructure Grant funding for the Village of Skokie's Green Alley Program ($567,000 in 2013)
- IEPA Illinois Green Infrastructure Grant funding for the Village of Oak Park's Green Alley Program ($763,327 in 2013)
- IEPA Illinois Green Infrastructure Grant funding for the Village of LaGrange's Parking Lot 13 Green Infrastructure Retrofit Project ($489,000 in 2012)
- DCEO IKE Disaster Recovery Grant funding for Grundy County's Stormwater Study and Comprehensive Plan Update ($250,000 in 2012)
- DCEO IK Disaster Recovery Grant funding for Highwood's Western Avenue Pumping Station ($577,000 in 2011)

DeKalb, Illinois
League of Women Voters Park Drainage Improvements
Designed a storm sewer system to remedy the flooding of several homes along Cotton Avenue. The proposed improvements included approximately 750 feet of 15-18 inch storm sewer and a bioswale approximately 150 feet long. Responsible for the design of the proposed storm sewer system.

BAXTER & WOODMAN Consulting Engineers

Stephen R. Amann, PE, CFM

Assistant Project Manager

Phone: 815.459.1260
Fax: 815.455.0450
samann@baxterwoodman.com

Education

BS, Civil Engineering, University of Illinois Urbana-Champaign, 1985

Joined Firm in 1997

Years of Experience: 28

Registrations

Licensed Professional Engineer: Illinois

Certified Floodplain Manager: Illinois

Associations

American Society of Civil Engineers

Illinois Association for Floodplain and Stormwater Management

Lower DuPage River Watershed Coalition

Papers/Presentations

Groundwater Flooding in Residential Subdivision, IAFSM Annual Conference, Illinois, 2010

The Highlands Ravine Stablizations, IAFSM Annual Conference, Illinois, 2012

Ten Years After TB 10-01 IAFSM Annual Conference, Illinois, 2013

Steve leads our team in the planning, design, permitting and construction documentation of stormwater facilities for urban and rural environments. Steve has earned the designation of Certified Floodplain Manager and promotes effective and innovative approaches to address floodplain and stormwater management systems for municipalities. His design experience includes storm sewers, swales, detention ponds, compensatory storage, bridges and culverts. He is active in the development and subsequent updates of stormwater management ordinances and floodplain modifications. Steve promotes the incorporation of stormwater Best Management Practices into development ordinances and through the review of private site improvements on behalf of governmental entities. His experience also includes hydrologic and hydraulic modeling and FEMA Letters of Map Change. As a member of the Metropolitan Water Reclamation District of Greater Chicago's Technical Advisory Committee on the proposed County-wide Watershed Management Ordinance, Steve has represented municipal interests in the preparation of this ordinance.

Representative Projects

DEVELOPMENT ASSISTANCE
Glenview
Coordinate review of single- and multi-family, utility, institutional and commercial projects, from initial due diligence meetings with developers, through Plan Commission and Village Board reviews, to detailed plans, calculations and specifications and final permits; coordinate work by multiple reviewers and with multiple Village Departments and outside agencies.

Beecher, Country Club Hills, Olympia Fields, Park Forest, Illinois
Review development plans for residential, institutional commercial and residential sites, including coordination with various municipal departments, adjoining municipalities and outside permitting and funding agencies. Update municipal codes to reflect new requirements, including Will County Stormwater Management Ordinance.

Grundy County
Responsible for engineering plan review of all developments since 2007, including a 132-turbine wind farm; coordinating with other County Departments.

Plainfield, Illinois
Review of development work in the Village beginning in 2002, from concept plan review to final construction document approval; coordination with other Village Departments, and outside permitting and funding agencies.
Prepared menu of Best Management Practices for site plan design requirements

Shorewood, Illinois
Responsible for the review of all development work from 1998 through 2006, from concept plan review to final construction document approval; coordination with other Village Departments, and outside permitting agencies.

Committees (ad-hoc)

Will County Stormwater

Management Ordinance

Technical Advisory Committee

MWRDGC's Watershed Management Ordinance Technical Advisory Committee

STORMWATER FACILITY ANALYSIS AND DESIGN
Grundy County, Illinois
Project engineer for drainage analysis involving property owner disputes, uncertain drainage divides, and required County improvements.

Lockport, Illinois
Project manager for area-wide stormwater conveyance plan, including XP-SWMM modeling, GIS mapping, and development of preliminary plans and estimates.

Project manager for study analyzing and recommedning remediation of standing water in the dry detention basin in the Victoria Crossings East subdivision.

New Lenox, Illinois
Project manager for hydraulic analysis of complex storm drain system impacting poorly-drained subdivision.

Oak Forest, Illinois
Project engineer for design of wet-bottom detention pond rehabilitation using aquatic and mesic vegetation.

Analysis of existing detention pond to determine capacity for additional runoff; design of pond improvements to expand capacity.

Plainfield, Illinois
Project manager for groundwater investigation in two subdivisions, including field surveys, drain tile repairs, groundwater modeling and feasibility analysis of proposed improvements.

FLOODPLAIN/FLOODWAY PERMIT & DESIGN
Bremen Township, Illinois
Project manager for culvert replacement project, including hydraulic modeling, wetlands and floodplain modifications, and permitting. Project was funded with Community Development Block Grants, a State grant, and local funds.

Oak Forest, Illinois
Project manager for two replacement box culverts, including flood damage assessments, design, permitting, bidding and construction, one of which was funded with an IKE Disaster Recovery grant.

FLOODPLAIN MANAGEMENT
Beecher, Country Club Hills, Oak Forest, Olympia Fields, Plainfield, Illinois
Assist municipalities with the Federal Emergency Management Agency's Community Rating System, Community Assistance Visits, review of proposed Flood Insurance Rate Maps, and floodplain development and regulation issues.

NPDES II PROGRAMS
Beecher, Country Club Hills, Hazel Crest, Olympia Fields, Illinois
Coordinate NPDES Phase II program creation, implementation, and reporting.

Beecher, Berkeley, Country Club Hills, Olympia Fields, Illinois
Prepared Notices Of Intent to comply with upcoming 2014 NPDES II General Permit ILR40 for Municipal Separate Storm Sewer Systems

RESUME OF
MICHAEL BLUE, FAICP
Principal

EXPERIENCE

Since joining Teska in 2013, Michael Blue has brought the experience of a 25+ year career in the public and private sectors to new and established clients of the firm. This work ranges from updating zoning regulations and organizational strategic planning to neighborhood planning and staff training.

Prior to joining Teska Associates, Michael Blue was the Director of Community Development in Highland Park, IL for 11 years. There he managed a department of 30 staff and focused on long range planning, review and approval of proposed development projects, permit approval, and support of City Council and Commission activities. The Department served nine City Commissions addressing: development, housing, historic preservation, cultural arts, and natural environment.

Previously Michael worked as Deputy Community Development Director in the Village of Mount Prospect, IL for five years, managing staff in day to day operations related to planning, building permits and code enforcement.

Michael started his career as a planning consultant working in the areas of long range land use and policy planning, development land use and economic impacts, and public participation.

Michael has been actively involved in the local and national leadership of the American Planning Association and is currently the Planning Officials Development Officer for the IL - APA. In 2008 Michael was selected to the College of Fellows of the American Institute of Certified Planners. He regularly speaks to groups at local, state, and national conferences on a range of planning topics; and has been asked to guest lecture at University Planning Programs.

PROFESSIONAL AFFILIATIONS

- College of Fellows of the American Institute of Certified Planners (FAICP)
- American Planning Association (APA)
- Lambda Alpha Economics Society
- Planning Officials Development Officer for the Illinois Chapter of the APA. In that role he was one of the leaders in developing a curriculum for training Plan Commissioners throughout the State; a program for which he and others received the organization's 2013 Distinguished Service Award.

MICHAEL BLUE, FAICP
Principal

EDUCATION

B.A.	Urban Planning University of Illinois (Urbana)
M.U.P.	Urban Planning University of Illinois (Urbana)

CONTACT

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Evanston, IL 60201
(847) 869-2015 ext 200
mblue@TeskaAssociates.com

Visit us at www.TeskaAssociates.com
Find us on Facebook

Nicholas Pinter

Dept. of Geology
Southern Illinois University
Carbondale, IL 62901-4324
(618) 453-7375
npinter@geo.siu.edu;

205 Archelle Drive
Carbondale, IL 62901
(618) 549-0915
www.geology.siu.edu/people/pinter/index.html

EDUCATION

1988 - 1993 PhD., Geology, University of California, Santa Barbara
1986 - 1988 M.S., Geology, Penn State University, Univ. Park, PA
1982 - 1986 B.A., Geology and Archaeology, Cornell University, Ithaca, NY

AREAS OF EXPERTISE

- Natural hazards, hazard mitigation, and disaster policy
- Geomorphology: the geology of the earth-surface
- Rivers, flooding, and floodplain management

PROFESSIONAL POSITIONS

1996 - Full Professor (since 7/05), Southern Illinois University
Author: Prentice Hall and John Wiley & Sons
1995 -1996 Postdoctoral Researcher, Yale University

RECENT HONORS/AWARDS

• 2012: Illinois Mitigation Award: Illinois Association of Floodplain and Stormwater Managers
• 2010: Marie Curie Fellowship (IIF), European Commission
• 2010: Fulbright Fellowship (declined; see above)
• 2009: Leo Kaplan Research Award, Sigma Xi, SIU Chapter
• 2008: SIU College of Science, Outstanding Researcher award
• 2007: Alexander von Humboldt Foundation, Germany Research Renewal Fellowship
• 2005, 2006: SIU nominee, Jefferson Fellows Program; National Academy of Sciences
• 2003 Friedrich Wilhelm Bessel Prize; Alexander von Humboldt Foundation
• 2002 John D. and Catherine T. MacArthur Foundation, Research and Writing Award
• 2000 Fulbright Foundation Fellowship
• 1999 Charles A. Lindbergh Foundation Prize

BOOKS, WORKSHOPS, EDITED VOLUMES, and OTHER PROF. ACTIVITIES

Invited Written Testimony: Statement submitted for hearings entitled "A Review of the 2011 Floods and the Condition of the Nation's Flood Control Systems," before the Senate Environment and Public Works Committee, United States Senate, Washington DC, October 18, 2011.

Panelist, U.S. National Academy of Science: Committee on Missouri River Recovery and Associated Sediment Management Issues, 2008-2010.

Associate Editor: Environmental & Engineering Geoscience, Association of Environmental & Engineering Geologists, Denver, CO.

Convener, American Association for the Advancement of Science Workshop: Managing rivers and floodplains for the new millennium. AAAS national meeting, 2006.

External Reviewer, National Research Council, The National Academies: Review of the U.S. Army Corps of Engineers Restructured Upper Mississippi River-Illinois Waterway Navigation Study.

Member, Advisory Board: The Nature Conservancy Great Rivers Center (Upper Mississippi, Parana-Paraguay, and Upper Yangtze River systems).

Lead Editor: Pinter, N., G. Grenerczy, J. Weber, S. Stein, and D. Medak, 2006. The Adria Microplate: GPS Geodesy, Tectonics, and Hazards. Spring Verlag.

Associate Editor: Geomorphology, Elsevier Science, 2004-2008

Instructor, European Union Advanced School on Tectonics: 3D Monitoring of Active Tectonic Structures, International Centre for Theoretical Physics, Trieste, April 18-22, 2005.

Convener, NATO Advanced Research Workshop: The Adria microplate: GPS geodesy, tectonics, and hazards. Veszprém, Hungary; April, 2004.

Convener, Pardee Keynote Symposium: Pinter, N., and J.F. Mount, 2002, Flood hazard on dynamic rivers: Human modification, climate change, and the challenge of non-stationary hydrology. Geological Society of America national meeting, 2002.

Author: Keller, E.A. and N. Pinter, 2002. Active Tectonics: Earthquakes and Landscape. Prentice-Hall.

and others

FUNDED PROJECTS

Active: NSF Infrastructure Management for Extreme Events: Community resilience through pro-active mitigation in the rural Midwest.

Active: NSF IGERT: Multidisciplinary, team-based training watershed science and policy. (Lead PI: Pinter; $3.2 million) **+ International Supplement**

Active: FEMA: Illinois multi-hazard mitigation initiative (Lead PI: Pinter; with Indiana University-Purdue University at Indianapolis). + **Supplemental Awards**: >35 awarded + ~5 pending.

Active: IEMA: Illinois statewide flood-hazard assessment (J. Remo, lead PI).

Walton Family Foundation: Olive Branch, IL Relocation Initiative: Community Disaster-Recovery Networking

NSF RAPID: A massive floodplain reconnects: physical and biotic responses of the Birds Point levee breach in the Mississippi River (J. Garvey, lead PI).

NSF Sedimentology and Paleobiology program: Testing hypotheses of latest Pleistocene paleo-environmental collapse, Northern Channel Islands, California (Lead PI: Pinter; collaborative project with Northern Arizona University; Univ. of Oregon)

Emergency Management Institute curricula: HAZUS-MH for earthquakes.

U.S. Steel: Levee-breach modeling, Metro East Drainage and Levee District area.

European Commission, Marie Curie IIF Program: Early anthropogenic signatures on landscapes: geomorphic, paleobotanical, and other paleo-environmental fingerprints.

NSF, Geography and Regional Science: A multivariate geospatial model of levee impacts on flood heights, Lower Mississippi River + **International Supplement** awarded

National Geographic Society: Testing a hypothesis of latest Pleistocene paleo-environmental collapse, Northern Channel Islands, California.

USGS Upper Midwest Environmental Sciences Center: Development of a virtual hydrologic and geospatial data repository for the Mississippi River System

NSF, Office of International Science and Engineering: U.S.-Chile: Morphotectonic evolution of the U.S.-Chile: Mejillones Peninsula, northern Chile using precise GPS measurement of uplifted coastal terraces

NSF Hydrologic Sciences Program: Multivariate geospatial analysis of engineering and flood response, Mississippi River System, USA.

NSF, International Science and Engineering: US-Chile cooperative research on the Cenozoic paleoceanographic and paleoclimatic evolution of northern and central Chile. (Ishman and Pinter)

NATO Science Program: The Adria microplate: GPS geodesy, tectonics, and hazards.

John D. and Catherine T. MacArthur Foundation: Exporting Natural Disasters: Flooding and Flood Control on Transboundary Rivers

NATO: The Adria Microplate: Postdoctoral Fellowship for Dr. G. Grenerczy.

USGS National Cooperative Geologic Mapping Program (6/03-5/04). Plio-Pleistocene Deposits of the White/Inyo Mountains Range Front, Inyo and Mono Counties, CA

Alexander von Humboldt Foundation: Human forcing of hydrologic change and magnification of flood hazard on German Rivers

NASA (9/01-8/02)). Assessing mass wasting and landslide susceptibility using GIS and remotely sensed imagery, Santa Cruz Island, California. (ESS Fellowship for E. Molander)

Association of State Floodplain Managers (9/01-8/02). Rapid revision of flood-hazard mapping. (Fellowship for R. Heine)

and others

PUBLICATIONS

Books: National Research Council, 2010. Missouri River Planning: Recognizing and Incorporating Sediment Management. National Academy Press: Washington, DC.

Pinter, N., G. Grenerczy, J. Weber, S. Stein, and D. Medak (eds.), 2006. The Adria Microplate: GPS Geodesy, Tectonics, and Hazards. Springer Verlag.

Keller, E.A. and N. Pinter, 2002. Active Tectonics: Earthquakes and Landscape, 2nd Edition. Prentice-Hall: Upper Saddle River, NJ.

Keller, E.A. and N. Pinter, 1996. Active Tectonics: Earthquakes and Landscape. Prentice-Hall: Upper Saddle River, NJ.

Pinter, N, 1996. Exercises in Active Tectonics: An Introduction to Earthquakes and Tectonic Geomorphology. Prentice Hall.

Pinter, N., and S. Pinter, 1995. Study Guide for Environmental Science. John Wiley & Sons: New York.

Papers: Huthoff, F., J.W.F. Remo, and N. Pinter, in review. Hydrodynamic Levee-Breach and Inundation Modeling, Middle Mississippi River, USA.

Remo, J.W.F., and N. Pinter, submitted. Hazus-MH earthquake-loss modeling in the central USA. Natural Hazards.

Huthoff, F., N. Pinter, and J.W.F. Remo, in press. Theoretical analysis of stage magnification caused by wing dikes, Middle Mississippi River, USA. Journal of Hydraulic Engineering, in press.

Dierauer, J., N. Pinter, J.W.F. Remo, 2012. Evaluation of Levee Setbacks for Flood-Loss Reduction, Middle Mississippi River, USA. Journal of Hydrology, 450: 1-8.

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and others

4. APPROACH

a. UNIQUE APPROACH

Communities within the watershed of the North Branch of the Chicago River have been devastated by numerous flood events within the past several years. Severe storm events are becoming more common and the Villages of Winnetka, Glenview and Niles are taking steps to prevent recurring flood damages in their neighborhoods and throughout the watershed.

This project demands a multi-faceted plan to mitigate flood hazards primarily through private property protection, but also through neighborhood infrastructure improvements and changes in municipal regulations and policies. Such measures must be immediately implementable in six specific neighborhoods and scalable for repeated future implementation throughout the watershed.

The Baxter & Woodman team has a proven track record as well as expertise and innovative tools for addressing the challenges of flood mitigation planning for the Villages of Winnetka, Glenview and Niles:

- Strong project management and a team of experts in: hazard mitigation planning, public engagement, municipal plans and regulations, and green infrastructure
- Innovative approaches to increase public participation
- Practical strategies for mitigating flood hazards
- Experience working collaboratively with each of the three Village's staff, the public, and Village officials

Critical Success Factors

→ Develop a Practical Plan

Baxter & Woodman has over 65 years of experience helping municipalities plan improvements to infrastructure and regulations. ***Our focus is on practical solutions that avoid unnecessary complexity and cost.***

We enjoy working with friends who happen to be clients. We've served several communities for over 40 years in a relationship-based environment, which we believe speaks to the quality of the relationships and our engineering. We appreciate long term involvement in many communities on stormwater plans and improvements that have allowed us and our municipal clients to see the implementation of many stormwater projects from the plans we prepared.

PROVEN PLANNING EXPERTISE

In 2008, Baxter & Woodman prepared the East Side Stormwater, Sanitary Sewer and Groundwater Study for the Village of Lakewood. The results of this study included recommendations for short-term and long-term actions by both private property owners and the Village. Since that time, Baxter & Woodman has steadily helped the Village and its residents implement the recommended actions through site specific consultations with individual property owners and the adoption and enforcement of a new ordinance for stormwater best management practices on private property.

Baxter & Woodman first completed a comprehensive Stormwater Drainage Study for the City of Lake Forest in 1999 and the City hired Baxter & Woodman to update the study in 2001. After a decade of implementing the solutions recommended in our study, the City wanted to continue improving drainage, but recognized the need for a new comprehensive Stormwater Drainage Study with an updated list of priority improvements. Baxter & Woodman began working on this latest study in the spring of 2013. Recommended improvements were presented to the City Council in November, in time for the City to plan drainage improvements for their 2014 budget.

→ *Work Collaboratively*

Municipal planning is successful when it is collaborative. Your Project Team has been assembled based on the specific skills and services required for this project. Our team of engineers, planners, scientists, and outreach specialists has a wealth of experience in a wide range of flood mitigation strategies.

- Consulting with private property owners regarding localized drainage problems (sanitary sewer back-ups, foundation seepage, yard flooding, etc.)
- Conducting public input and information campaigns
- Writing Multi-Hazard Mitigation Plans

Our team brings the best of our individual members to this project to work collaboratively with Village staff and officials from three municipalities, and their specific public, to develop Flood Hazard Mitigation Plans that meet each community's needs, yet reflect consistency and repeatability.

Your Project Manager, Mark Phipps, has extensive experience building consensus among technical experts and presenting technical information to elected officials and the public. Furthermore, your Project Team has used a range of innovative tools to increase public participation.

INNOVATIVE RESOURCES

Teska has used a mapping tool called "Community Remarks" © which allows residents to identify issues and opportunities by linking comments to specific places on a website map, using icons and adding their comments and photos. They also used a tool for crowd sourcing called "Mind Mixer" ©. Using this tool, residents ask questions, vote on priorities, and dialog online using a highly interactive and fun interface customized for mobile phones, tablets, or computers.

The Southern Illinois University members of the team (Empirical Hydrology) has developed curricula for Middle School science classes that have been valuable for promoting public engagement as well as promoting mitigation awareness in the broader community.

→ *Work Efficiently*

The required scope of services, paired with the stated schedule and budget, make it essential to be efficient through each phase of the project. Baxter & Woodman is completing Winnetka's Stormwater Master Plan and serves as Glenview's engineering consultant. Teska is working with Glenview on a video to help residents navigate the Village's design review process. The staff that is working on these projects will be developing the proposed Flood Hazard Mitigation Plan supplements, which means less project start-up time due to the in-depth knowledge of our team, familiarity with staff and elected officials, knowledge of community features, skill in communication, excellent project management and knowledge of the stormwater systems and issues involved.

Our familiarity with the existing conditions in the involved municipalities and throughout the watershed will allow us to be more efficient in our evaluation of potential mitigation strategies. This is especially important with the ongoing demand for municipal staff time. ***Your Project Team must make the most of the limited time Village staff can devote to this project.***

b. INNOVATIVE CONCEPTS & METHODOLOGIES

This unique project requires a combination of innovative ideas, imaginative outreach programs, and a combination of traditional and non-traditional solutions. Our team proposes the following specific items of work to update flood hazard mitigation plans within the framework of comprehensive plan chapters for Winnetka, Glenview and Niles. Our innovative approaches are incorporated in our phased project plan. Fees for these tasks are itemized under *Proposed Compensation*.

PROJECT PLAN

PHASE I - INITIATION

In the first phase of the project, the Project Team will meet with representatives of Winnetka, Glenview, and Niles collectively to discuss the areas and groups most affected by the 2008 floods associated with Hurricane Ike. We will also review the previous and ongoing planning initiatives relevant to the proposed Flood Hazard Mitigation Plan supplements, as well as the data available for the six neighborhoods, such as:

- GIS data (aerial photography, parcels, municipal infrastructure, topography, etc.),
- Historic information,
- Geography and regional context,
- Land uses,
- Natural resources,
- Public and Community facilities,
- Public safety and emergency/medical services,
- Historic preservation,
- Cultural and recreational resources, and
- Community character

In addition, the Project Team will bring examples and suggestions regarding the tools that can be used to engage the public in the project.

Based on the input of the involved municipalities, the Project Team will develop the tools that will be used in the Community Planning phase of the project. These are likely to include: a survey to gather information about the existing conditions in the neighborhoods, paper and web materials explaining what type of information will be useful and why it is being collected, and mapping that will be used to help collect the information. While each involved municipality may have its own preferences, the Project Team's emphasis will be on developing common tactics so the same tools can be used to gather the existing conditions information in each of the six neighborhoods. This will allow consistency and the tools can be used again for similar planning efforts throughout the watershed.

After developing the tools to engage the public in the project, the Project Team will meet again with representatives of Winnetka, Glenview, and Niles collectively to review and discuss the tools before beginning the Community Planning phase of the project.

PHASE II - COMMUNITY PLANNING

In the second phase of the project, the Project Team will host a series of six (6) open houses to gather information about the needs and priorities of each neighborhood. We propose one open house in each involved municipality to gather information about the existing conditions in both neighborhoods. If the Villages prefer to do so, the open houses will have staggered start times for the two neighborhoods This might mean that the Glenview open house would occur from 5 – 9 p m and include Neighborhood One from 5 – 7 and Neighborhood Two from 7 – 9. We would certainly accommodate a stakeholders input if they were not able to attend their neighborhood's time slot.

A second open house would be held in each municipality to recommend potential mitigation strategies for both neighborhoods.

After the first round of open houses, the Project Team will meet with representatives of Winnetka, Glenview, and Niles collectively to discuss the input gathered at the first round of open houses and potential mitigation strategies for each neighborhood. Based on the input of the involved municipalities, the Project Team will develop the tools that will be used in the second round of open houses. These are likely to include: a survey to gather data on acceptable alternatives for private property protection (including green infrastructure) and graphics that will be used to help illustrate the alternatives. The Project Team will look to develop themes for the proposed strategies that can be repeated for similar planning efforts throughout the watershed. This proposal includes a maximum of three (3) themes, which might be comprised of: strategies for single-family residential neighborhoods, strategies for multi-family residential neighborhoods, and strategies for commercial or mixed-use areas. There may be other themes that the communities wish to reflect, and we would appreciate that input during scoping and contract negotiation.

COMMUNITY OUTREACH

In December 2013, Baxter & Woodman hosted an open house for the residents of Kenilworth to ask questions about and provide feedback on an upcoming Capital Improvement Program. After a brief presentation to all attendees by the Village Manager, attendees visited various stations to see and vote for options ranging from permeable pavement and rain gardens to street lights. The brief presentation allowed all attendees to gain general information and sent one consistent message to all. The stations, manned by Baxter & Woodman project staff, allowed for one-on-one input and inquiry based on each stakeholders address and interests.

Throughout this phase of the project, the Project Team will host a single website to engage the public that is unable to attend the open houses. The website will be equipped with surveys for each neighborhood that can be submitted online and all the other tools that are developed for this phase of the project (mapping, graphics, etc.).

The Community Planning process will be designed to encourage feedback from key demographics. The interactive and hands-on open houses will be central to this process, but will be supported by the website. Each element will give local property owners and residents the chance to better

understand and map their flood risks in the context of their community. They will have the chance to consider a mix of swift preventative strategies (repair of private property laterals, disconnecting downspouts, etc.) and their relative assets (cost, impact, etc.). Finally, they will be provided with the opportunity to comment on a range of scenarios and strategies that can be adopted at a neighborhood scale. Public facing visuals will be provided.

At the conclusion of the Community Planning phase, the Project Team will meet again with representatives of the involved municipalities collectively to discuss the public input gathered regarding the proposed mitigation strategies. At this meeting, we will also discuss a framework for implementing the proposed mitigation strategies.

DISASTER MITIGATION EXPERTISE

Since 2008, the Southern Illinois University members of the team (Empirical Hydrology) has led planning efforts for more than 40 Illinois counties developing Multi-Hazard Mitigation Plans (MHMPs). These plans prioritize and guide disaster mitigation efforts to reduce exposure to future disasters and help reduce the spiraling burden of disaster relief. All plans completed to date have been approved by FEMA and subsequently adopted by the sponsoring county and its participating jurisdictions (adoption is ongoing for the more recent plans). This ongoing expertise will help the team and municipalities recognize best practices in development, revision and implementation of Plan supplements.

PHASE III - COMMUNITY IMPLEMENTATION

Based on the input of representatives of Winnetka, Glenview, and Niles at the conclusion of the second phase, the Project Team will develop supplements to three (3) single jurisdictional Flood Hazard Mitigation Plans. Each supplement will include these elements for two neighborhoods:

- An existing conditions assessment of hazard mitigation issues;
- A summary of past and ongoing plans;
- A vision, goals, and objectives for a multi-faceted plan considering hazard mitigation, land use, environmental preservation, traditional infrastructure, and green infrastructure;
- A realistic implementation plan with specific recommendations to guide the municipality through each step of implementation;
- Approaches that can be implemented by a neighborhood or an individual property owner;
- Mapping that clearly communicates existing conditions and recommendations;
- A description of the anticipated cost and beneficial results of implementation;
- Identification of available sources of funding for implementation;
- Identification of efficiencies that can be gained by integrating the recommendations into a municipal capital improvement program or by public investment in private property protection;
- Identification of municipal policies and regulations (zoning and subdivision codes) that could be amended to ease implementation;
- Identification of public education opportunities; and
- Specific time lines for implementation and responsible parties.

In order to estimate the beneficial results of implementation, we propose to update the Metropolitan Water Reclamation District of Greater Chicago's (MWRD's) hydraulic modeling for the North Branch of the Chicago River watershed. We assume this modeling will be provided by the MWRD and that structure low-opening elevations in the six (6) neighborhoods will be estimated from available topographic mapping (not field surveyed). We have a range of metrics about beneficial results from a number of municipal and county projects which will also help us efficiently indicate what each strategy would do for the property and flooding.

The Project Team will meet with staff from each involved municipality individually to review a draft of the Flood Hazard Mitigation Plan supplement and a brochure for public distribution with an easily understandable summary of the supplement's recommendations. A draft and final Flood Hazard Mitigation Plan supplement will be presented at public meetings in Winnetka, Glenview, and Niles for a total of six (6) public meetings (one in each community to present the plan findings to the public and the other to present the final plan for adoption by the community). The Project Team will meet with staff from each involved municipality individually after presentation of the draft supplement to discuss necessary revisions before finalizing the supplement.

PHASE IV - WATERSHED IMPLEMENTATION

The final phase of the project involves the Project Team developing a template for other municipalities in the watershed to repeat this planning process. The template will include a narrative of the project, the tools developed to engage the public in this project, as well as the supplements adopted by Winnetka, Glenview, and Niles. A draft of the template will be prepared for review by each involved municipality and then the Project Team will meet with the involved municipalities collectively prior to finalizing the template. The elements of this template will be provided in a digital format suitable for future modification and adoption by other communities in the watershed to assist in reaching local and regional flood mitigation goals.

Additional Services

While not included in the proposed scope of services, the following additional services can be added to the proposed scope of services for a negotiated fee: "Community Remarks" ©, "Mind Mixer" ©, informational videos, stakeholder meetings, social media applications, meetings with local partners, launch events, school curricula, and/or community charrettes.

5. PROJECT SCHEDULE

Phase I - Initiation	
Milestone/Activity	Date(s)
Notice To Proceed	February 3, 2014
Kick-Off Meeting With Village Staffs	February 12, 2014
Review Plans & Data; Develop Public Engagement Tools & Website	February 17 - March 14, 2014
Review Public Engagement Tools With Village Staffs	March 24, 2014
Phase II - Community Planning	
Milestone/Activity	Date(s)
Website Goes Live	April 7, 2014
Prepare For First Round Of Open Houses	April 7 - April 18, 2014
First Round Of Open Houses In Glenview, Niles And Winnetka	April 21 - May 9, 2014
Discuss Input & Potential Mitigation Strategies With Village Staffs	May 21, 2014
Develop Second Round Public Engagement Tools & Mitigation Strategy Themes	May 27 - July 3, 2014
Second Round Of Open Houses In Glenview, Niles And Winnetka	July 14 - August 1, 2014
Review Public Input & Mitigation Implementation With Village Staffs	August 13, 2014
Phase III - Community Implementation	
Milestone/Activity	Date(s)
Update MWRD's Hydraulic Model Of Chicago River North Branch	August 18 - September 12, 2014
Develop Draft Supplements To Flood Hazard Mitigation Plans And Public Brochure	August 18 - September 12, 2014
Meetings With Separate Village Staffs	September 15 - September 26, 2014
Present Draft Supplements To Flood Hazard Mitigation Plans At Public Meetings	September 29 - October 24, 2014
Review Mitigation Plan Supplements With Separate Village Staffs	October 24 - November 7, 2014
Finalize Supplements To Flood Hazard Mitigation Plans And Public Brochure	November 10 - November 21, 2014
Present Final Supplements To Flood Hazard Mitigation Plans At Public Meetings	November 24 - December 19, 2014
Phase IV - Watershed Implementation	
Milestone/Activity	Date(s)
Develop Draft Planning Template For Other Municipalities In Watershed	November 10 - December 12, 2014
Review Draft Planning Template With Village Staffs	January 7, 2015
Finalize Planning Template	January 23, 2015

6. PROPOSED COMPENSATION

a. FEE STRUCTURE

Baxter & Woodman will be compensated on a unit-price basis for the following deliverables and on an hourly fee basis for additional services requested. Hourly rate sheets for 2014 below.

1. Assessment of Existing Conditions - $28,580
2. Neighborhood-Based Public Participation Process - $38,050
3. Flood Hazard Mitigation and Neighborhood Retrofit Implementation Plans - $108,385
4. Measurement of Implementation Results - $24,930

To total fee for all four (4) deliverables will be $199,945.

b. HOURLY RATES

BAXTER & WOODMAN, INC.
2014 HOURLY BILLING RATES AND EXPENSE ITEMS

EMPLOYEE CLASSIFICATION	HOURLY BILLING RATES
Principal	$150 to $230
Senior Engineer III to IV	$140 to $190
Senior Engineer I to II	$120 to $145
Engineer III to IV	$105 to $140
Engineer II	$100 to $110
Engineer I	$80 to $90
Engineering Technician III to V	$110 to $160
Engineering Technician I to II	$50 to $120
CAD / GIS / Survey Technician III to IV	$105 to $150
CAD / GIS / Survey Technician I to II	$85 to $100
Clerical II	$90 to $130
Clerical I	$70 to $100
Support Manager	$150 to $165

Hourly rates for Resident Project Representatives do not include any overtime. In the event that contractor works more than eight (8) hours on any weekday or work any time on Saturdays, or holidays, during which time Resident Project Representatives are required to be present, hourly rates are increased by one-and-a-half times for more than eight (8) hours on any weekday and all time on Saturdays, and are increased by two (2) times on Sundays and holidays.
General and employee overhead is 176% of employee compensation.
Personal-owned vehicle Mileage Charges will be reimbursed at the rate set by the U.S. Internal Review Service.

Company-owned/leased vehicle usage will be reimbursed at a rate of $65.00 per diem or $32.50 per half diem.
Global Positioning System Survey Equipment Usage is $60/hour.
Savannah Rain Logger usage is $10/day.
Traffic Counters $50/day.
Sub-consultants costs will be reimbursed at their invoice costs plus 15%.

TESKA ASSOCIATES, INC.

HOURLY RATES

Principal Consultants: $130-$185 per hour
Senior Associates: $115 per hour
Associates: $90-$95 per hour.

Empirical Hydrology Consulting

Prof. Nicholas Pinter
205 Archelle Drive
Carbondale, IL 62901
618-549-0915
npinter@empiricalhydrology.com

Rates

Current as of Feb. 16, 2013

Pinter (consulting) $200/hour
(depositions & court time) $450/hour

Dr. Jonathan Remo (consulting) $220/hour
(depositions & court time) $300/hour

Post-doctoral (PhD) associate. $160/hour
(depositions & court time) $250/hour

Other professional associates: to be negotiated as needed

Doctoral student assistant. $100/hour

MS-level student assistant. $50/hour

Above includes all travel time, portal to portal

Rental vehicles, hotel, etc. will be booked at lowest available rates for the dates of travel. Airline travel will be book as lowest available economy non-restricted (change without penalty) or equivalently priced business class fare.

Non-rental automobile travel: $0.60/mile

Additional expenses reimbursable at actual cost.

Retainer negotiated at start of contract is non-refundable, but is applicable to project balance.

All fees and expenses above the amount of the retainer are payable monthly, with the final balance due within 30 days of submission of a complete final report that meets the terms of the contract.

c. OTHER PRICING INFORMATION

The unit-prices for each deliverable are based on estimated costs and person hours per work item as shown in the table below.

Staff	Phipps	Amann	Grimm	Moffitt	Hopper	Blue	Hainer	Cigliano	Patera	Pinter	Damptz		
Hourly Rate =	$ 140	$ 180	$ 80	$ 115	$ 85	$ 150	$ 90	$ 95	$ 165	$ 200	$ 100	Exp	Total
Assessment of Existing Conditions													**$ 28,580**
Project Management and Administration	2	6				1							$ 1,510
Project Team Meetings	3	6				3				3			$ 2,550
Village Staff Meetings (2)	7	15				10	10			5		280	$ 7,360
Review Existing Data	3	14	56			6	36			6			$ 12,760
GIS Base Map		2	3		40					2			$ 4,400
Neighborhood-Based Public Participation Process													**$ 38,050**
Project Management and Administration	2	6				1							$ 1,510
Project Team Meetings	5	10				5				5		280	$ 4,530
Village Staff Meetings (2)	1	12	5			10	15			5			$ 6,550
Create Website	1	2				4		30		2			$ 4,350
Existing Conditions Survey	1	2				10	30			2			$ 5,100
Exhibits	1	1	3		20					2			$ 2,660
Open Houses (3)	3	3	21			21	63				15	390	$ 13,350
Flood Hazard Mitigation and Neighborhood Retrofit Implementation Plans													**$ 108,385**
Project Management and Administration	4	12				1							$ 2,870
Project Team Meetings	9	18				9				9			$ 7,650
Village Staff Meetings (6)	21	45				21	27			15		840	$ 20,460
Update Website (2)	1	2						12		1			$ 1,840
Potential Strategies Surveys (3)	1	2	4			6	18			3			$ 3,940
Potential Strategies Graphics	1	2	4			3	30			3			$ 4,570
Zoning Regulations						9	36					50	$ 4,640
Neighborhood Implementation Plans (3)	38	52	144			21	36		9	6	9		$ 36,175
Brochures (3)	1	2				3	3	18		2		50	$ 3,380
Open Houses (3)	3	27	21			21	63				15	390	$ 17,670
Public Meetings (6)	15					15						840	$ 5,190
Measurement of Implemenation Results													**$ 24,930**
Project Management and Administration	2	6				1							$ 1,510
Project Team Meetings	1	2				1				1			$ 850
Village Staff Meetings (1)	3	8				5	5			3		140	$ 3,800
Hydraulic Modeling	4		30	6									$ 3,650
Watershed Implementation Plan	6	20	60			9	27			6	9		$ 15,120
Total =	139	277	351	6	60	196	399	60	9	81	48		**$ 199,945**

d. TERMS & CONDITIONS

We acknowledge the Village is not liable for any cost incurred by any proposers prior to the execution of an agreement or contract created as a result of the RFP. The City shall not be liable for any costs incurred by the selected consultant that are not specified in the contract.

APPENDIX A: ADDITIONAL RESUMES

BAXTER & WOODMAN Consulting Engineers

John P. Mick II, PE, F-NSPE, F-ITE

QA/QC Reviewer

Phone: 815.459.1260
Fax: 815.455.0450
jmick@baxterwoodman.com

Education

B.S., Civil Engineering Indiana Institute of Technology

Joined Firm in 2008

Years of Experience: 38

Registrations

Licensed Professional Engineer: Illinois

Associations

Institute of Transportation Engineers

Illinois Society of Professional Engineers

National Society of Professional Engineers

American Public Works Association

American Consulting Engineers Council

Illinois Municipal League

John has over 30 years of experience with management, study, design and construction of infrastructure improvements emphasizing planning and design. He has led Program Management efforts on local and regional projects valued at over $1 billion. He is skilled in cost analyses/estimating, pursuit/management of funding sources, and CIP development. He served Franklin Park as Municipal Engineer for seven years, and assisted with the development of the Village's first Capital Improvement Program.

Representative Projects

Kenilworth, IL
Capital Improvement Program
Project Manager for the development of the Village's first Capital Improvement Program (CIP) for a ten-year period (2012 – 2021). Work included project planning and budget development for over 100 infrastructure projects; and coordination with numerous Village staff and departments, elected officials, and other government agencies. Key tasks included a street assessment; water, sanitary and stormwater systems review; reviews of several reports and Master Plans prepared by other consultants; and research of funding sources and grant programs. The total CIP investment exceeds $40 million. The deliverable included project scopes, budgets, timing, and forecast funding sources.

Lynwood, IL
Federal TIGER Grant
Project Manager for the $20 million project which focused on Stimulus (ARRA) funding for infrastructure related to economic development in the Village of Lynwood.

City of Chicago, IL
Department of Water Management
Project Director for Baxter & Woodman assisting with the teaming and QA/QC of task order driven 5-year contract for sewer design and inspection services.

Skokie, IL
I-94 at Old Orchard Road, CMAQ Grant
Project Manager who obtained funding via agency coordination and application for CMAQ Grant for the $10 million Old Orchard Road interchange with the Eden's Expressway.

Franklin Park, IL
Municipal Engineer
$60 million. Included project planning and budget development for Village's infrastructure, coordination with other Village staff and elected officials, and other government agencies. He was responsible for development of their first Capital Improvement Program – including project scopes, budgets, timing and forecast funding sources. Coordination with developers and reviewed proposed development for impact on the Village's infrastructure. Conducted grantsmanship for State/Federal funding.

Bellwood, IL
Village Engineering
$20 million. Provided engineering services including general engineering for the water, sewer, and street system. Services were provided on a Task Order basis. Included CIP input – including project scopes, budgets, timing and grantsmanship.

BAXTER & WOODMAN Consulting Engineers

Matt J. Moffitt, P.E., CFM, CPESC

Water Resources Engineer

Phone: 815.459.1260
Fax: 815.455.0450
mmoffitt@baxterwoodman.com

Education

Water Resources Graduate Certificate
University of Illinois, 2012
B.S., Civil and Environmental Engineering
University of Illinois, 2006
B.S. Physics
Western Illinois University, 2006

Joined Firm in 2013

Years of Experience: 7

Registrations

Licensed Professional Engineer: Illinois

Certifications

Certified Floodplain Manager

Certified Professional in Erosion and Sediment Control

Associations

ASCE: EWRI, Central Section - East Branch, (Secretary 2012/President 2013)

ISPE: Champaign County, Young Engineer of the Year 2011

IAFSM
Conference and Legislative Committee Member

ACEC: IDNR Committee Member

Boneyard Creek Community Day: Board of Directors

Matt recently joined Baxter & Woodman as member of our Water Resources team. He brings with him well rounded project experience in planning, analysis, modeling, design, bidding, and construction of open and closed drainage systems, detention/retention systems, roadways, utilities, and other civil sites. Matt values the importance of project communication and works with clients, residents, agencies, and other stakeholders from initiation through final presentation and delivery.

Representative Projects

Village of Glenview, Illinois
Dewes Henley Harlem Drainage Improvements
Water resources project manager overseeing the design of a new storm sewer system with in-line detention. This project was made largely made possible by an almost $1M grant from IEMA/FEMA for flood reduction based on proven cost/benefit analysis. In addition to storm sewer the project also replaces sanitary sewer, water main, and full pavement reconstruction.

Village of Glenview, Illinois
Glenayre Park Improvements
Water resources project manager overseeing the design of storm relief sewer system with the addition of a new detention basin. Roadway project with conversion from rural cross section to urban cross section with addition of curb and gutter and storm sewer. Challenges faced included a moderately sloped neighborhood culminating in a flat floodplain with a shallow undersized pipe as an outlet.

City of Lake Forest, Illinois
Stormwater Drainage Study
Project engineer assisting in the XPSWMM modeling and assessment of one major watershed. The City had contracted with another consultant to design a project within the boundaries of one of the City's watersheds under review by Baxter & Woodman, Inc., therefore collaboration with the other consultant was necessary to ensure our models and designs complemented each other and offered the City the greatest benefit.

Village of Kenilworth, Illinois
Cumberland Avenue
Water resources project manager overseeing the design of storm relief sewer system with the addition of green infrastructure implementations. Along with the roadway design (permeable pavers) and rain gardens, this project is the first of several that Baxter & Woodman is contracted to complete. The ultimate goal is to design a new storm water system that will meet the requirements to allow a new outfall to Lake Michigan, thus disconnecting the stormwater runoff from the MWRD network.

City of Morrison, Illinois
Waste Water Treatment Plant
Project Engineer responsible for determining floodplain requirements for a new waste water treatment plant. The IDNR has determined that the current FIS is not accurate and is requiring new H&H studies performed to determine the BFE. This new elevation will determine the waste water treatment plant's site layout, any required compensatory storage, and location and type of stormwater facilities.

Papers/Presentations

Coupling New Technology with Existing Methods: A Unified Stream Assessment Example (March 2013)

Representative project while working with others.

University of Illinois, Urbana, Illinois
Ikenberry Commons Stormwater Master Plan Review and Updates
Project engineer for review and updates to Ikenberry Commons XPSWMM model and master plan. Project included updating model based on changes in overall plan and constructed items, recommending storm sewer relief line and a 10+ acre underground storage facility.

City of Bloomington, Illinois
Sanitary Sewer and Storm Sewer Master Plan
Project engineer with support staff; duties include data collection, problem area delineation, GIS integration, modeling in XPSWMM of 400+ acre combined sewer network with phased proposed sewer separation and regional detention, modeling in XPSWMM of sanitary force main and pump stations, stream inventory, *project prioritization and long-term CIP*, and write technical memorandums. Also, led by-weekly Lean Project Delivery meeting with project team and client, meet with city staff for project progress, coordination, and presentation meetings. The project involved extensive sanitary sewer analysis and creation of a GIS based municipal inventory system. Compilation of technical memos forms a master plan to facilitate the long-term goals of the city's storm water and sanitary sewer infrastructure management.

University of Illinois, Urbana, Illinois
Mathews Street I Main Quad Stormwater Master Plan
Project engineer for a stormwater master plan in the central campus area of the University of Illinois. Responsibilities included modeling of the existing system using XP- SWMM to identify deficiencies, 2D modeling, development of solutions, coordination, and report. In addition to recommending hydraulic improvements, stormwater infiltration and impervious area disconnection options were analyzed to quantify the percent reduction in stormwater runoff volume resulting from these site enhancements.

City of Bloomington, Illinois
Lafayette/Maple St. Reconstruction and Drainage Channel Improvements
Project engineer with support staff for the design of roadway and drainage improvements, including the conversion of an eroded drainage channel into a dual system, with a low flow pipe and overflow channel for flood conveyance. Duties included drainage study analysis, drainage design, pavement and geometric design, utility and property owner coordination, and contract documents and special provisions.

Village of Cerro Gordo, Illinois
Southeast Drainage Improvements
Project engineer for design and construction plans for approximately 7,000 feet of 36 inch and twin 24 inch storm sewers to outlet stormwater to a drainage ditch.

Village of Downers Grove, Illinois
Multiple Localized Drainage Projects
(Completed as an employee of GC Engineering) Worked on multiple small scale and localized Drainage projects; including survey, assessment, recommendations and often design.

BAXTER & WOODMAN Consulting Engineers

Emily F. Grimm, E.I.T.

Civil Engineer, Hydraulics and Hydrology

Phone: 815.459.1260
Fax: 815.455.0450
egrimm@baxterwoodman.com

Education

M.S., Civil Engineering
Purdue University, 2013

B.S., Civil Engineering
Purdue University, 2011

Joined Firm in 2013

Years of Experience: 1

Emily earned both her Bachelor of Science and Master of Science degrees in Civil Engineering from Purdue University. Her coursework focused on environmental fluid mechanics and open channel hydraulics. Her master's thesis work centered on the hydrodynamics of river plumes in Lake Michigan. She is a member of the firm's Water Resources Group and assists senior engineers on a variety of stormwater related projects.

Representative Projects

Village of Kenilworth, Illinois – Stormwater Planning and Design of Drainage Improvements
Project Engineer assisting in the separation of the combined sewer in Kenilworth to a separate storm sewer. The project includes modeling the existing combined sewer and the proposed storm sewer for the Village of Kenilworth. The modeling also includes an analysis of Skokie Ditch and exploring the possibility of restoring Skokie Ditch's connection to Lake Michigan. The project is using both XP-SWMM and EPA SWMM software to incorporate BMPs such as permeable pavers and rain gardens into the proposed storm sewer model to determine both their hydraulic and water quality impacts.

City of Lake Forest, Illinois – Stormwater Drainage Study
Assisted in a new comprehensive Stormwater Drainage Study, which includes a Citywide storm sewer system analysis using XP-SWMM and concept plans complete with cost estimates for alternative improvements in priority problem areas. The scope of services also includes a roadside ditch analysis with recommendations for drainage improvements in areas not served by storm sewers.

Village of Glenview, Illinois – Dewes Henley Harlem Drainage Improvements
Project Engineer assisting with the detailed design of a 6.5 acre-foot detention basin and 4,650 feet of storm sewer ranging from 12-inches to 48-inches in diameter.

Will County – Spencer Rd. and Laraway Rd. Intersection Drainage Design
Used StormCAD and HY8 to analyze existing drainage conditions and design proposed storm sewers, ditches, and culverts for the expanded intersection.

City of Berkeley, Illinois – NPDES Phase II MS4 Permit
Assisted in setting up a 5-year Stormwater Management Plan for the City. Prepared and submitted a Notice Of Intent for the City of Berkeley for coverage under the MS4 permit.

City of Elgin, Illinois - NPDES Phase II Assistance
Project Engineer working with the City to provide comprehensive services to meet the requirements of the IEPA's General NPDES Permit No. ILR40 for Municipal Separate Storm Sewer Systems. Services provided included preparation of permit renewals and Annual Facility Inspection Reports, as well as outfall inspections and water quality monitoring.

City of Elmhurst – Water and Sewer Rate Study
Assisted in the analysis of baseline conditions for the water and sewer utility in the City of Elmhurst. This included analysis of capital costs, projected revenues and expenses, and future water rates.

BAXTER & WOODMAN Consulting Engineers

R. Timothy Hopper

GIS Specialist

Phone: 815.459.1260
Fax: 815.455.0450
thopper@baxterwoodman.com

Education

B.S, Geography
Eastern Illinois University, 2008

Joined Firm in 2012

Years of Experience: 6

Certifications

Esri Certified ArcGIS Desktop Professional
License EADP1000000193 – 5KP1FS1CK2R1K4V8

Tim joined Baxter & Woodman's GIS team after three years with Esri, the world's leading GIS software company. At Esri, he served as a Desktop Support Analyst and Development Technical Lead. His experience includes excellent customer service and training skills, proficiency in ArcGIS Desktop, ArcPad, and ArcGIS for Windows Mobile platforms. Tim was also a Technical Advisor for the following software technologies: Network Analyst, Schematics, Data Interoperability, Tracking Analyst, Business Analyst, Publisher, ArcReader, ArcLogistics, Parcel Editor, Geocoding, CAD, and StreetMap.

Representative Projects

Village of Bourbonnais, Illinois
Utility GIS/GPS
GIS specialist for processing of collected mapping-grade GPS locations and associated attribute information of the Village's storm sewer and sanitary sewer system features to expand the Village's existing GIS.

City of Crystal Lake, Illinois
Traffic Sign Inventory
GIS specialist assisting in the processing of a thorough traffic sign inventory, allowing them to comply with Retroreflectivity requirements and providing a valuable tool for asset management. Our staff is using state-of-the-art GPS units to collect the accurate location, detailed attributes and photo of each City owned sign. Additionally, these signs are being inspected for daytime and nighttime visibility conditions. Signs not passing inspection will be recommended for removal upon completion of the project. At the end of the project, the City will have a solid understanding of the existing conditions of their signs, a sign management tool for maintenance purpose, while being in compliance with the Manual of Uniform Traffic Control Devices (MUTCD) Retroreflectivity Standards.

Village of Glenview
GIS Web Application Development
Baxter & Woodman helped design deploy, and host and ESRI ArcGIS Server Web Application for internal use by Village staff and additional identified individuals for secure access to the GIS data.

Village of Rolling Meadows, Illinois
Water System GIS
GIS specialist for the creation, update, and management of a water distribution system utility network.

Village of Hazel Crest, Illinois
Water System Model and Analysis
GIS specialist for conversion and development of the water system GIS network and data import into WaterGEMS modeling software.

City of Wood Dale, Illinois
Citywide Drainage and Flood Improvements Study
GIS Specialist assisting with the development of hydraulic models of the existing drainage system and potential drainage improvements for each study area using XP-SWMM. The recommended improvements ranged in (estimated) cost from $160,000-$2.2M and included increased storm sewer capacity, expanded stormwater detention basins, and high capacity inlets.

City of Wood Dale, Illinois
Asset Management
GIS Specialist for creation and implementation of the asset management system as it pertains to the City's storm water collection system, sanitary sewer system, water distribution system, and transportation system.

Village of Winnetka, Illinois
Flood Risk Reduction Assessment for the Additional Study Areas
GIS Specialist assisting with the development of hydraulic models of the existing storm sewer system and potential drainage improvements for each study area using XP-SWMM.

City of Lockport, Illinois
North Downtown Stormwater Conveyance Plan
GIS Specialist assisting with the development of a hydraulic model of the existing drainage system for the City's North Downtown Area using XP-SWMM. This effort included calibrating the model to replicate existing conditions based on drainage complaints received by the City.

While working for ESRI:

Development Technical Lead – Desktop Extensions

- As the Desktop Extensions Development Technical lead I serve as the senior technical advisor for the following software technologies: Network Analyst, Schematics, Data Interoperability, Tracking Analyst, Business Analyst, Publisher, ArcReader, ArcLogistics, Parcel Editor, Geocoding, CAD, and StreetMap.
- Contribute and serve as a moderator for the ArcGIS user forums and the ArcGIS Ideas site.
- Attend and provide technical support at user conferences such as the Esri International User Conference, Developer Summit and the Petroleum GIS Conference.

Desktop Support Analyst Tier 2

- Conducted all initial technical phone interviews and a large number of on-site technical interviews for potential desktop support analysts. Trained and mentored new support analysts.
- Customer satisfaction rating of 4.74/5
- Offered brown-bag technical sessions to other support analysts on non-core products.
- Served as the senior ArcPad, ArcPad Server Extension and ArcGIS for Windows Mobile support analyst on the desktop team. Maintained expert knowledge of mobile GPS systems and workflows. Answer technical questions from Tier 1 and Tier 2 analysts related to ArcGIS Desktop, ArcPad, and ArcGIS for Windows Mobile platforms.

Contributed as the senior ArcPad support analyst in meetings with the ArcPad development team to provide feedback on software bugs and issues which were greatly impacting Esri customers. Relayed pertinent information to support analysts on the common issues with ArcPad software. Helped to prioritize the resolution of ArcPad bugs.

Nick Patera, PLA

SENIOR VICE PRESIDENT / PRINCIPAL

Nick Patera's professional career as a landscape architect and land planner covers over 30 years experience on projects across the country and overseas, specializing in land and site planning, urban design, streetscape, plaza design, park and recreation planning. His projects have received many awards, and acknowledgements. Mr. Patera's professional responsibilities range from concept planning through all phases of design through construction implementation, development approval and project implementation. His reputation for excellent client service is well established.

As Senior Vice President in charge of the firm's landscape architectural practice Mr. Patera is responsible for a wide range of diverse site planning and landscape design projects. A creative and innovative approach is stressed to distinguish each assignment.

Scope of experience ranges from land planning for a new planned community town of 35,000 residents to downtown and streetscape design, site planning and testimony for traditional neighborhood developments and a wide range of residential, commercial, resort and industrial land planning and landscape architectural designs.

EDUCATION

B.L.A. | Landscape Architecture
University of Illinois, Urbana-Champaign IL

Attended by Invitation:
The Center for Architecture & Urban Studies,
San Francisco CA

PROFESSIONAL REGISTRATION

State of Illinois, Registered Landscape Architect
License No. 157-000872

CONTACT

627 Grove Street
Evanston, IL 60201
(847) 869-2015 ext 321
npatera@TeskaAssociates.com

Visit us at www.TeskaAssociates.com
Find us on Facebook

Malika V. Hainer, LEED AP ND

ASSOCIATE PLANNER

Ms. Hainer has worked with Teska Associates, Inc. for close to two years. With a background in architecture, real estate development and international work experience in India (over two years), she brings a unique perspective to planning projects through her understanding of buildings and the built environment.

Prior to joining Teska, Malika worked with SEDAC (Smart Energy Design Assistance Center) and performed energy audits for buildings in the State of Illinois. This experience contributed to her understanding of energy consumption in buildings, methods of reducing this consumption and its relation to regional planning issues and policies. She also worked on building specific energy modeling while at Skidmore Owings and Merrill, LLP (SOM), New York.

As a LEEDTM Accredited Professional in Neighborhood Development, she has a strong foundation in sustainable design principles and its application towards neighborhood planning. She has successfully integrated sustainable principles like walkability and complete streets in projects she has worked on at Teska including the TOD Plan for Hanover Park, Area Plan for Schaumburg and Comprehensive Plan for Plainfield. Having worked on Tax Increment Financing Redevelopment Plans in Hanover Park and Westmont, as well as her prior real-estate experience she has working knowledge of market feasibility analysis and development capacity calculations to propose workable solutions for future development.

With respect to comprehensive planning, she has worked on the analysis, graphics and mapping needs for various plans in Glenwood, Plainfield, Hanover Park, Campton Hills, Dolton, Schaumburg and Fitchburg. She is currently working on the comprehensive plan and transportation plan update for Plainfield which includes transportation and bike-trail network mapping in GIS.
Ms. Hainer is proficient in a wide range of graphic presentation techniques, including advanced GIS applications, web design and three dimensional modeling.

EDUCATION

B.A. | Architecture
University of Pune, India

M.A. | Architecture
University of Illinois, Urbana-Champaign IL

M.U.P. | Urban & Regional Planning
University of Illinois, Urbana-Champaign IL

PROFESSIONAL AFFILIATIONS

American Planning Association (APA)

APA Illinois Chapter Secretary, current

LEED Accredited Professional in
Neighborhood Development

Women in Planning + Development

2011 winner of the Karl B Lohman Award
for Exceptional Professional Promise,
University of Illinois

CONTACT

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Evanston, IL 60201
(847) 869-2015 ext 210
mhainer@TeskaAssociates.com

Visit us at www.TeskaAssociates.com
Find us on Facebook

Erin Cigliano, AICP

NEW MEDIA SPECIALIST / ASSOCIATE PLANNER

Strategic planner and multidisciplinary designer with an eye for innovation and pixel perfection. Erin has worked at Teska Associates for the past 7 years creatively engaging communities using her experience in planning and interactive design. Serving as Teska's New Media Specialist, Ms. Cigliano's abilities span from graphic design and web development to marketing, online outreach, and in-person workshop facilitations. Using a variety of web-based tools and imaging software, she demonstrates how technology can promote projects and take them to the next level by engaging communities.

By merging the application of engagement mediums, Erin is able to effectively build project momentum and optimize outreach efforts. A self-taught web guru, she has designed dozens of project websites including those for the 2011 'Sustainable Decatur' and 'Downtown Lombard' APA Awarded plans.

Ms. Cigliano has facilitated dozens of neighborhood seminars and workshops, engaging communities and residents by using a variety of techniques. Her effective, hands-on planning experience includes working with the Local Initiatives Support Corporation (LISC), dedicated to helping residents transform their distressed neighborhoods choice and opportunity, and the Metropolitan Consortium of Community Developers (MCCD) in Minneapolis, MN, which encompasses 45 non-profit community development organizations.

Erin brings with her a background focused on community development, participatory planning and creative design, with a proficiency in Adobe Creative Suite, Dreamweaver, Wordpress, SketchUp, MailChimp, Survey Monkey and a combination of other tools and software.

EDUCATION

B.A. | Urban Planning
University of Illinois, Urbana-Champaign IL

PROFESSIONAL AFFILIATIONS

American Institute of Certified Planners (AICP)

American Planning Association (APA)

Two-time recipient of AICP
Outstanding Student Award

CONTACT

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Evanston, IL 60201
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ecigliano@TeskaAssociates.com

Visit us at www.TeskaAssociates.com
Find us on Facebook

Amanda Damptz

15 Mona Drive | Goreville, IL 62939 | 815.735.4250 | adamptz@gmail.com

EDUCATION

M.S. Earth and Environmental Sciences, University of Illinois at Chicago *December 2013*
Thesis: Testing models for the formation of the equatorial ridge on Saturn's moon Iapetus via crater counting

Geospatial Analysis and Visualization Certificate, University of Illinois at Chicago *May 2013*
Emphasis: ESRI ArcGIS and other data visualization software, including Adobe Creative Suite and Google Earth

B.S. Earth and Environmental Sciences, University of Illinois at Chicago May *2011*
Emphasis: Environmental Science

WORK EXPERIENCE

Staff Researcher and Project Manager *November 2013 - Present*
Southern Illinois University Carbondale – Carbondale, IL
Department of Geology, Natural Hazards Research and Mitigation Group

- GIS database development, management, and quantitative analyses utilized in Hazard Mitigation Planning
- Perform loss-estimation modeling using FEMA's HAZUS-MH software
- Prepare, write, and edit FEMA and IEMA eligible Multi-Hazard Mitigation Plans for six counties in Illinois
- Work closely with state and local governments to develop and administer project cost estimates, budgets, scopes of work, and implementation of schedules

Geographic Information Systems (GIS) Specialist *June 2013 - October 2013*
Federal Emergency Management Agency (FEMA) – Aurora, IL
FEMA-4116-DR-IL Joint Field Office

- Provided GIS support to four ongoing Presidential Disaster Declarations in FEMA Region V
- Utilized ESRI ArcGIS software to map, coordinate and evaluate geospatial products in accordance to FEMA standard operating procedures
- Successfully created GIS products involving sensitive information that adheres to requirements of the Privacy Act
- Completed analytical projects in and out of ArcGIS using both attribute data and spatial location data
- Worked with senior staff to determine the best methods of presenting spatial data using various GIS technologies in order to solve disaster related problems

Teaching Assistant *August 2010 - May 2013*
University of Illinois at Chicago – Chicago, IL
Courses: Global Environmental Change; Current Topics in Earth and Environmental Sciences; Structural Geology and Tectonics; Earth, Energy and the Environment; Physical Systems in Earth and Space Science; The Physical World

- Conducted laboratory sections and lead field trips with approximately 40 students
- Proctored exams and served as lecturer when requested
- Graded laboratory reports, exams and term papers within a short time frame

Space Grant Intern *Fall 2009, Summer 2010, Summer 2011*
NASA Goddard Space Flight Center – Greenbelt, MD

- Employed three remote sensing software packages (ENVI, IDL and ArcGIS) to extract data for several parameters for hundreds of large-scale landforms
- Interpreted terrain, satellite photography, and remote sensing datasets to create a comprehensive GIS dataset
- Identified fresh craters that were suitable for detailed morphometric analysis
- Quantitatively characterized landforms through measurements of size, sinuosity, and topographic profiles
- Developed and documented new procedures for determining crater thickness profiles in ArcGIS

Amanda Damptz

15 Mona Drive | Goreville, IL 62939 | 815.735.4250 | adamptz@gmail.com

WORK EXPERIENCE CONTINUED

Environmental Protection Specialist Intern *Summer 2009*

U.S. EPA Region V – Chicago, IL

- Off-site monitoring of hundreds of facilities subjected to RCRA Corrective Action due to prior soil or groundwater contamination from Underground Storage Tanks (UST) and Leaking Underground Storage Tanks (LUST)
- Determined if further investigation was needed regarding hazardous waste
- Updated files regarding each facilities current operation
- Compiled a list of facilities that were high priority and required on-site follow-up

PUBLICATIONS

Damptz, A. L. and A. J. Dombard, 2011, Time-Dependent Flexure of the Lithospheres on the Icy Satellites of Jupiter and Saturn, Icarus, 216, 1, 86-88.

CONFERENCE PRESENTATIONS

Damptz, A. L. and A. J. Dombard, 2013, Testing Models for the Formation of the Equatorial Ridge on Saturn's Moon Iapetus via Crater Counting, Lunar and Planetary Science Conference, abstract #3036.

Damptz, A. L., L. S. Glaze, and S. M. Baloga, 2010, A New Analysis of Rampart Crater Ejecta Thickness Profiles on Mars, Lunar and Planetary Science Conference, abstract #1241.

Damptz, A. L. and A. J. Dombard, 2009, Time-Dependent Flexure on the Icy Satellites of Jupiter and Saturn, Lunar and Planetary Science Conference, abstract #1316.

AWARDS

2012 - 2013	Illinois Space Grant Graduate Fellow *Graduate fellowship to support ten graduate students pursuing space-related science*
2009 - 2011	Illinois Space Grant Undergraduate Scholarship *Scholarship to support fifteen undergraduate students pursuing space-related science*
2010	Demar-Rodolfo Scholarship *Scholarship awarded to one outstanding undergraduate student in the Dept. of Earth and Environmental Sciences with research potential*
2010	WISE Travel Grant *Matching travel grant to assist UIC women studying STEM disciplines to travel to a professional conference*

SOFTWARE EXPERIENCE

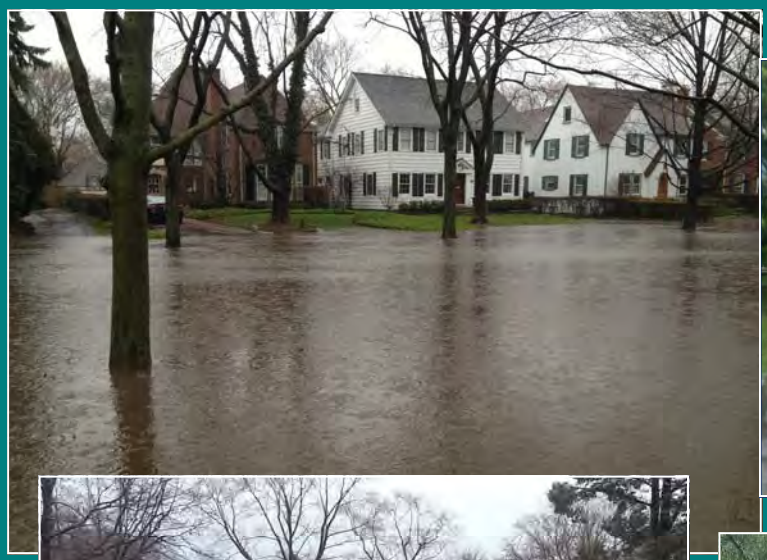
- ArcGIS 10.x: 3+ years experience, 3 semester-long courses completed
- Hazus-MH: attended hands-on workshop December 2013
- ERDAS IMAGINE 9.3: 1 semester-long course completed
- ENVI 4.6: 3 years experience
- IDL 7.0: 1 year experience
- ISIS 2, 3: 2+ years experience, attended hands-on workshop October 2011
- MSC.Marc Finite Element Package: 1 semester-long course completed
- Adobe Creative Suite 5 and 6: 4+ years experience, 1 semester-long course completed
- Microsoft Office (including Word, Excel, PowerPoint, Visio and Access)
- Mac OS X

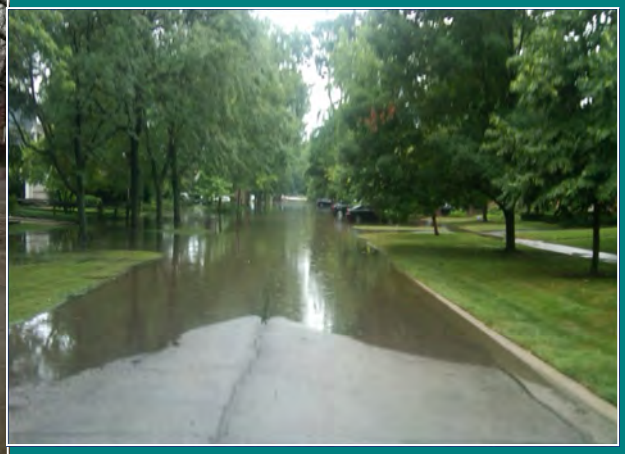
ATTACHMENT #4

Planning Program RFP Response

VILLAGES OF WINNETKA, GLENVIEW, AND NILES FLOOD HAZARD MITIGATION PLANNING

JANUARY 08, 2014





SUBMITTED BY:

CHRISTOPHER BURKE, PHD, PE, D.WRE, DIST.M.ASCE, PRESIDENT
CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. HIGGINS ROAD, SUITE 600, ROSEMONT, IL 60018
847.823.0500 TEL / 847.823.0520 FAX
TAX ID NO. 36-3468939
cburke@cbbel.com

TABLE OF CONTENTS

TAB 1

INTRODUCTION

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

January 7, 2014

Village of Winnetka
510 Green Bay Road
Winnetka, IL 60093

Attention: Mr. Steven M. Saunders
Director of Public Works/Village Engineer

Subject: Planning Program RFP Response
Villages of Winnetka, Glenview, and Niles

Dear Mr. Saunders:

Christopher B. Burke Engineering, Ltd. (CBBEL) is pleased to submit our proposal to assist the Villages of Winnetka, Glenview, and Niles to develop supplements to three separate jurisdictional flood hazard mitigation plans within each community in compliance with the Illinois Disaster Recovery Program (IDRP). We have organized our submittal to match the requirements outlined in your Request for Proposals.

CBBEL understands that Winnetka, Glenview, and Niles are all located in Cook County and tributary to the Metropolitan Water Reclamation District (MWRD) North Side Water Reclamation Plant and the North Branch of the Chicago River. In 2008, the proposed study area was deemed a disaster area and as a result of several inclement storm events since then continues to experience wide spread flooding causing significant economic losses. We further understand the communities are in need of developing supplements to their flood mitigation plan to assist in alleviating future flooding situations. CBBEL is highly experienced and equipped with many engineering disciplines to review the Village's existing flood mitigation plan, identification of areas of the plan that need updating, supplemental surveying, hydrologic and hydraulic modeling, assessment and analysis of existing conditions, evaluation of the Village's infrastructure, development of plan, development of plan implementation and public presentations. As shown in Tab 3, we have proposed an experienced project team that successfully developed recent stormwater management plans for other Northeastern Illinois communities. This proposal demonstrates our extensive and specialized experience that has made us a leader in these types of assignments.

We have designated Darren Olson, PE, D.WRE, CFM, CPESC as the Project Manager and contact for any questions regarding this proposal. Darren has been project manager for many stormwater management plan type projects including those in Cook County. CBBEL staff are very familiar with the latest version of the MWRD Ordinance having assisted in its preparation and currently preparing the Technical Guidance Manual for the WMO. If awarded this contract, we acknowledge our complete responsibility for the entire contract.

CBBEL certifies that we meet the appropriate state licensing requirements to practice in the State of Illinois #184.001175; has not had a record of substandard work by obtaining a certificate in Good Standing from the Secretary of State dated April 19, 2010; and has never engaged in any unethical practices. Our Federal Tax Identification Number is 36-3468939.

Per the RFP, please find enclosed the following support documentation:

Tab 2 - Background and Experience
Tab 3 – Personnel/Professional Qualifications
Tab 4 – Approach
Tab 5 – Project Schedule
Tab 6 – Project Compensation

We appreciate the opportunity to be considered for this exciting regional flood hazard mitigation study.
Sincerely,

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

TAB 2

BACKGROUND AND EXPERIENCE

BACKGROUND AND EXPERIENCE

FIRM HEADQUARTERS

Christopher B. Burke Engineering, Ltd. (CBBEL)
9575 West Higgins Road, Suite 600
Rosemont, Illinois 60018
847.823.0500

Date of Establishment: October 6, 1986
Type of Entity and Business Expertise: Corporation; PE/SE/LS Design Firm
Current Ownership: Confidential, please refer to sealed envelope
Licensed Professional or Structural Engineers/Surveyors/Landscape Architect: 82
Total Staff: 176

CBBEL is unique among consulting engineering and surveying firms in that we are a full-service company that can comprehensively meet the needs of both private and public sector clients. Guided by founder and President Christopher B. Burke, our "family business" corporate philosophy allows for a level of personal service that provides peace of mind. Our Illinois based staff of 176 and expansive list of specializations—civil, municipal, transportation, water resource, mechanical, structural, construction, traffic, and environmental engineering and environmental resource services—provide professionalism and a depth of expertise that promote project success.

RESOURCES

Having received his doctoral degree in civil engineering from Purdue University, CBBEL President Christopher B. Burke embraces education and encourages continued learning among his employees. Our staff includes four PhDs, 77 licensed professional engineers, and a team of licensed professional land surveyors, a licensed structural engineer, a licensed landscape architect, 2 are LEED accredited professionals, 4 are professional traffic operations engineers (PTOE), and 4 have received the designation of Diplomate Water Resource Engineer (D.WRE). Twenty-five staff are certified floodplain managers (CFM) and 19 are certified professionals in erosion and sediment control (CPESC).

Through leadership positions and active membership in a variety of professional associations and University involvement, CBBEL is able to deliver cutting-edge technology and techniques as they emerge. The outcome is a context-sensitive approach that rejects out-dated cookie-cutter remedies and instead provides the best solution for your needs. Staff take part in national and local organizations including the American Society of Civil Engineers, the American Council of Engineering Companies, the American Public Works Association, the Illinois Association of Environmental Professionals, the Illinois Association for Floodplain and Stormwater Management, the Society of American Military Engineers, the American Academy of Water Resource Engineers, Chicago Wilderness Corporate Council, the Society of Ecological Restoration, Western Society of Engineers, the Society of Wetland Scientists, the Irish Engineers and Contractors, and the Illinois Road and Transportation Builders Association to name a few.

Given CBBEL's commitment to hiring exceptional personnel, prioritizing client relationships, and valuing education, it's not surprising that we have received numerous prestigious awards from the American

BACKGROUND AND EXPERIENCE

Council of Engineering Companies of Illinois, the American Public Works Association, the Illinois Section of the American Society of Civil Engineers, the Illinois Chapter of the American Planning Association, the Illinois Department of Transportation, and the Illinois Tollway. We were honored with the 2003 Employer of the Year Award from the Women in Transportation Seminar and the Private Sector Employee Recognition Award from the ASCE Illinois Section in 1997, 2003, and 2009. In 2012, we received a Governor's Sustainability award.

The Burke Group of Companies which includes CBBEL is currently nationally ranked #176 as Engineering News Record's **Top 500** Design Firms.

Our resources are geographically distributed to create a network of effective and convenient service. Rosemont, Illinois, is home to our main office and other Illinois locations include New Lenox, Morris and Peoria.

SERVICES

Since its founding in 1986 the size of our company and the complexity of our projects have grown. Today we provide not only design services, but also planning, preliminary engineering, permitting, and construction observation. We have successfully completed the design, permitting and construction of numerous major transportation and local municipal roadway projects, multi-use paths, bridges, flood control reservoirs, pump stations, embankments, water mains and water systems, storm sewers, and large open channels.

Storm Sewer Rehabilitation, Village of Flossmoor

Our expertise in municipal engineering is all-inclusive—CBBEL provides continuous project coordination from inception through construction and final acceptance. We have a reputation for excellence in the planning, design, and construction of capital improvement projects including flood control, drainage improvements and storm sewers, water distribution and service systems, sanitary sewerage systems, pump stations, roadway reconstruction and rehabilitation, and traffic signal and intersection design.

We have served as lead engineer on a variety of major municipal and county undertakings, including roadway design and flood control projects. As a full-service firm we conduct water resource related studies, perform GIS services, environmental resource assessments, mitigation planning and permitting, and a myriad of traditional civil engineering functions.

Whether you require consulting for an individual project or the full service resources from one of our departments, you can rely on Christopher B. Burke Engineering, Ltd. to take the time to thoroughly understand your needs and partner with you to create innovative, cost-effective solutions. Diversification

and flexibility are the keys to our successful, long-term relationships with a wide variety of clients, including municipalities, counties, townships, sanitary districts and drainage districts throughout the Chicagoland area. We have unique knowledge and experience with various funding programs available to our County and Municipal clients from the grant writing stage to the design procedures required, as well as record keeping and funding reporting, giving our clients an added service not easily found in the engineering industry.

EXPERIENCE

We have been the lead on numerous Federally funded projects and are very familiar with the Federal guideline requirements. CBBEL has **extensive experience with CDBG Federal funding**, policies and procedures and has frequently coordinated projects for local agencies through IDOT's Bureau of Local Roads and Streets. Most of these projects include the evaluation and design of the underground utilities within the right-of-way (sanitary, storm, and water). Using visual inspection, televised video tape, and information provided by the municipality, CBBEL incorporates the rehabilitation or replacement of utility systems into the roadway plans. In addition to traditional removal and replacements, CBBEL is familiar with the latest trenchless technologies (cured-in-place pipe, linings, short linings, in-line replacements, pipe bursting, etc.). We are prequalified by IDOT in all roadway related categories.

We have a thorough understanding of the requirements and funding criteria as we complete numerous projects on an annual basis using CDBG funding including annual street programs, sanitary sewer, and lift station projects for the Villages of Chicago Ridge, Elmwood Park, Forest Park, Glendale Heights, Justice, Lombard, Westchester, Wilmette, and the Cities of Northlake and Rolling Meadows.

Recently we have completed two projects that received **IKE Disaster Recovery Funding**: Sewer Rehabilitation project for the Village of Forest Park and Flood Storage Facility project for the Village of Harwood Heights. Both projects were completed on-time and within budget.

Please note that CBBEL has been successful in receiving various types of grants for various projects for the 20 different municipalities for whom CBBEL is Village/City Engineer. Other funding grants we have been successful in obtaining for clients besides CDBG include STP (Surface Transportation Program), ITEP (Illinois Transportation Enhancement Program), Operation GreenLight, Enhancement, DCCA, IEPA, IDNR park grants and bicycle grants, CMAQ (Congestion Mitigation and Air Quality), and SRTS (Safe Routes to School Program).

BACKGROUND AND EXPERIENCE

Below are just a few examples of Federal projects CBBEL has successfully completed:

Water Main & Sanitary Sewer Improvements
Village of Westchester

Sanitary Sewer Repairs
Village of Glendale Heights

Water Main and Sewer Improvements
City of Northlake

- IKE Disaster Recovery Projects
  - Sewer Rehabilitation Project, Village of Forest Park
  - Flood Storage Facility Project, Village of Harwood Heights
- Community Development Block Grant Program (CDBG)
  - 500 Block Thomas-Hannah Alley, Village of Forest Park
  - 400 Block Thomas-Hannah Alley, Village of Forest Park
  - 400 Block Desplaines-Ferdinand Alley, Village of Forest Park
  - 400 Block Beloit-Thomas Alley, Village of Forest Park
  - 500 Block Beloit-Thomas Alley, Village of Forest Park
  - Octavia and Oconto Improvements, Village of Harwood Heights
  - North Broadway Improvements, Village of Lombard
  - King Arthur Sanitary Sewer, Phases 1-9, City of Northlake
- Congestion Mitigation and Air Quality (CMAQ)
  - Barker Avenue Bicycle Path, City of Rolling Meadows
  - Kirchoff Road Bicycle Path, City of Rolling Meadows
  - Plum Grove Road/Salt Creek Bicycle Path, City of Rolling Meadows
  - Rohlwing Road Bicycle Path, City of Rolling Meadows
- Energy Efficiency & Conservation Block Grant Program (EECBG)
  - 500 Block Ferdinand-Beloit Alley, Village of Forest Park
- Surface Transportation Program (STP)
  - Rohlwing Road Reconstruction, City of Rolling Meadows
  - Northwest Avenue Reconstruction, City of Northlake
- American Recovery & Reinvestment Act (ARRA)
  - Bunker Hill Drive, Village of Algonquin
  - Huntington Drive North, Village of Algonquin
  - Huntley 2009 LAPP Program-Huntley Dundee Road, Village of Huntley
  - Kreutzer Road, Village of Huntley
  - Deerfield Road Bike Path, Lake County DOT
  - Whitehall Avenue Bridge Rehabilitation, City of Northlake
  - 2010 Water Main Improvements, Village of Riverside
- Illinois Environmental Agency (IEPA) 319
  - Salt Creek Streambank Stabilization, City of Rolling Meadows
  - Buffalo Creek Streambank Stabilization, Village of Wheeling
  - Armitage Creek Streambank Stabilization, Village of Glendale Heights
- Highway Bridge Replacement and Rehabilitation Program (HBRRP)
  - Carriageway Drive Bridge, City of Rolling Meadows
  - IL 53 East/West Frontage Road Bridges, City of Rolling Meadows
  - Edgewood Drive Bridges and Culverts, Village of Algonquin

Our licensed engineers have specialized knowledge and experience with various funding programs available to our municipal clients from the grant writing stage to the design procedures required, as well as record keeping and funding reporting, thereby giving our clients an added service not easily found in the engineering industry. Team members are well versed with various funding types, particularly CDBG, and the documentation required to close-out projects in a timely manner. We have a broad, diverse staff with a number of unique capabilities and can meet the vast majority of your engineering and environmental needs in-house.

BACKGROUND AND EXPERIENCE

IKE DISASTER RECOVERY STORMWATER MANAGEMENT PLANNING

CBBEL is currently working with the Village of Harwood Heights in the development of a Stormwater Management Plan that is in compliance with IKE Disaster Recovery Community Development Block Grant (CDBG) requirements.

- **Village-Wide Stormwater Management Plan – Village of Harwood Heights**

The Village, which is located in northern Cook County, is served by both combined sewers and storm sewers. Since the Village is not located adjacent to a watercourse, the flow is discharged into neighboring communities' sewer systems. The Village has three main floodprone areas that have endured extensive flooding when the existing sewer systems reach capacity resulting in street and home flooding. Recent intense storm events in 2008, 2010, 2011 and 2013 have caused flooding in these three floodprone areas. A flooding questionnaire was provided to the residents located within the three floodprone areas. The residents completed flooding questionnaires by provided information related to the previous flooding experiences including type of flooding, flooding depth and cause of flooding. The existing combined and storm sewer system within in the study area was surveyed to obtain diameters and rim/invert elevations. Using the survey information, a XP-SWMM unsteady hydrologic and hydraulic model was prepared and calibrated highwater marks were obtained from recent intense storm events. The modeling will be used as a tool to assist in the determination of the flooding causes. Alternative flood reduction improvements will be developed and then evaluated using the models to determine their effectiveness in reducing the risk of future flooding. The use of sustainable components will be used in the alternative flood mitigation improvements. Based on this evaluation, a recommended flood reduction improvement plan will be prepared along with an implementation plan, plan costs and permitting requirements. Two public meetings are scheduled. The first meeting will be to collect additional information from the residents on their flooding experiences and the second meeting will be to present the stormwater management plan.

STORMWATER PLANNING

- **Comprehensive Flood Plan – Village of Villa Park**

The Village, which is located in DuPage County, is served by both combined sewers and storm sewers. The Village is located within the Salt Creek watershed. The Village has hired CBBEL to evaluate nine (9) floodprone areas that have been flooded several times during the last five (5) years, including September 2008, July 2010 and April 2013. Most of these areas are located within the headwaters, but some are also impacted by Salt Creek overbank flooding. CBBEL is performing an intensive review of available information including previous studies, previous field survey, as-built drawings, sewer atlases and the Village's GIS database. Based on this review, supplemental field survey requirements will be determined. Baseline condition XP-SWMM unsteady hydrologic and hydraulic models for the various study areas will be prepared using the available data and supplemental field survey. The models will be calibrated to the April 18, 2013 storm event using available high water marks. The September 2008 and July 2010 storm events will be simulated to verify the model performance. The calibrated/verified models will be used as a tool to assist in the determination of the flooding causes. Based on the understanding of the flooding causes, alternative flood reduction improvements will be developed and then evaluated using the models to determine their effectiveness in reducing the risk of future flooding. The use of sustainable

components will be used in the alternative flood mitigation improvements. Based on this evaluation, a recommended flood reduction improvement plan and report will be prepared along with an implementation plan, plan costs and permitting requirements. The recommended plan will be presented to the public during a Village Board meeting.

- **Northside Flood Risk Reduction Plan – Village of River Forest**

The Village is located in Cook County, adjacent to the Des Plaines River. The northern 260 acres of the Village is served by a combined sewer system that conveys sanitary and storm sewers northward to a Metropolitan Water Reclamation District (MWRD) interceptor sewer located along North Avenue. The study area is bounded by North Avenue on the north, Thatcher Avenue on the west, Division Street on the south and Harlem Avenue on the east. This interceptor sewer flows westward to Thatcher Avenue where the flow can go southward into another MWRD interceptor sewer during normal flows or to the MWRD TARP drop shaft and tunnel during storm flows or the Des Plaines River during conditions where TARP cannot accept flows. The existing combined sewers vary in diameter from 12-inch to 15-inch. Because of the small combined sewer diameters, intense rainfall results in street flooding and basement flooding. Using a XP-SWMM unsteady hydrologic and hydraulic model, CBBEL evaluated the existing drainage system including the combined sewers, interceptor sewers and TARP components. The July 2011 storm event which caused flooding within the study area was simulated by the models. It was determined that to reduce the flood risk to the headwater areas, the existing combined sewer system needed to have larger diameter pipes. Two options were available, install a new combined sewer system or install a new separate storm sewer system and maintain the existing combined sewer system for sanitary flow.

4 – 72" Culverts under UP Railroad

A detailed analysis of the outlet conditions for both options was explored. The new larger diameter pipe combined sewer system would convey flow to the MWRD TARP Drop Shaft. The MWRD TARP system is designed to include a tunnel component and a terminal reservoir component. Currently, only the tunnel component is operational. Because of the limited capacity of the tunnel which serves all the combined sewer Cook County communities along the Des Plaines River, the tunnel is often closed early in a storm, resulting in combined sewer overflows to the Des Plaines River. The terminal reservoir is scheduled to be operational before the year 2029. Prior to the year 2029, a larger combined sewer system would have a limited flood reduction benefit. It was determined that separate storm sewer system that discharges directly to the Des Plaines River would provide the desired reduction benefits without being hampered by a closed TARP.

BACKGROUND AND EXPERIENCE

The Village incurs flooding from short duration and intense storm events. These types of storm events will discharge into the Des Plaines River prior to the flood wave, thereby allowing the full capacity of the new storm sewer system to be utilized. The models used to size a new separate storm sewer system reduces the risk of significant street flooding depths throughout the study area. Since stormwater is being removed from the existing combined sewer system, the risk of basement flooding from surcharging sewers would be reduced. The recommended plan consists of new storm sewers ranging in diameters of 30-inches to 96-inches. An implementation plan was developed to facilitate construction based on anticipated funding levels. The recommended plan was divided into two phases. Phase 1 includes the main drain and new storm sewers for the southern portion of the study area which is furthest from the current outlet of North Avenue. Phase 2 includes new storm sewers for the northern portion of the study area. The recommended plan would reduce the frequency and magnitude of combined sewer overflow to the Des Plaines River providing a significant water quality benefit. The estimated cost of the recommended plan is $17 to 18 million. CBBEL is preparing engineering plans and bid documents for the recommended plan.

MUNICIPAL STORM WATER AND UTILITY DESIGN

CBBEL has a staff of civil engineers and water resources engineers with experience in municipal engineering, stormwater management analysis and design, flood control, roadway design, utility design, and construction supervision. **We have served as lead engineer on several major utility projects and flood storage facility projects.** Since the firm's inception in 1986, the Chicagoland area has experienced many significant storm events that have caused flooding of residential and commercial buildings. From the first one in August of 1987 through the most recent flood event in July 2011, CBBEL has been working with municipalities evaluating & solving flooding problems and has provided design engineering, water resources and permitting, and construction management services for a variety of stormwater management projects.

- **Kress Creek Culverts and Reservoir**

CBBEL was retained by the DuPage County Stormwater Division to permit, design, and prepare engineering plans for the replacement of a series of restrictive culverts along the mainstream of Kress Creek as part of an overall Watershed Improvement Plan to reduce flood damages. The seven major culverts on Kress Creek in the City of West Chicago were located under roadways, bike paths, and railroads. The culverts under the main Union Pacific tracks were constructed using tunnel boring machines. Due to various site restrictions, the new culverts ranged in size and type from four 72" diameter steel pipes under the railroad to four 3'x10' box culverts under the bike path and major ComEd duct banks. Coordination and permits were required with DuPage County (EDP and DOT), US Army Corps, FAA, West Chicago, Union Pacific Railroad, and IEPA. The upsizing of these culverts located in West Chicago convey additional stormwater to a regional flood control reservoir located downstream. The Kress Creek Reservoir contains 200 acre-feet of storage that mitigates the increases in flows due to the removal of the upstream restrictive culverts. The excavated material from the reservoir was placed within the DuPage County Technology Park, which greatly reduced the cost of the project. The reservoir was also oversized to provide detention storage for a portion of the Technology Park. The lowered Kress Creek flood profile also benefitted the DuPage Airport Authority by greatly reducing the amount of land flooded

due to the restrictive culvert.

- **Village of Lombard**

Over the past several years, CBBEL has been working with the Village of Lombard to model, design and construct their sewer separation program. The Village is in a combined sewer system and is separating the system in phases. CBBEL has been involved in hydraulic modeling to determine storm sewer sizes with alternative routing and staging strategies. We have completed a sewer separation analysis for a ±1900 acre watershed in the Village. CBBEL also designed and prepared construction documents for North Broadway Sewer in the Village which was the first phase of the Village's sewer separation initiative. This project involved constructing the downstream end of the Village's sewer separation improvement; including a 108" storm sewer and large underground vault for a future 400 cfs pump station. The street was also reconstructed and a separate sanitary sewer was constructed.

- **City of Elgin**

CBBEL was hired to model, design and construct the separation of the sewer system to reduce or eliminate CSO events, reduce pavement flooding and reduce sewer backups into homes. The Lord Street Basin is one of 12 combined sewer basins within the City. The Lord Street Basin consists of approximately 500 acres currently served by a combined sewer system which crosses the Fox River via an 18" sewer and has a 48" CSO into the Fox River. Due to IEPA regulations and flooding and sewer backups in the area, the City has planned to separate the sewer system.

Lord Street Sewer Separation – City of Elgin

The first phase of the Lord Street Sewer Separation project includes the construction of the downstream portion of a new storm sewer network of the Lord Street Basin, which consists of the construction of reinforced concrete storm sewer pipe ranging in size from 12-inches to 96-inches in diameter. Approximately 200 feet of 96" storm sewer pipe was tunneled through the Union Pacific Railroad right-of-way to avoid impacts to existing UPRR and Metra rail lines, as well as the US-20 bridge over the Fox River. This phase of the project also included the construction of a new 96"-diameter stormwater outlet to the Fox River. The first phase cost approximately $4.8 million. CBBEL is in the process of designing the second phase of the Lord Street Basin separation.

- **Village of Elmwood Park**

On June 19, 2009, a high intensity storm event resulted in street and home flooding throughout the Village including areas that did not previously report a flooding problem. The Village hired CBBEL to update the 1997 Flood Mitigation Study. The updated study evaluated the causes of the 2009 storm event reported flooding and investigated various potential alternatives to reduce the frequency and magnitude of future flooding. The updated study confirmed the reasons that portions of Village are at risk of flooding from combined sewer backup first stated in the 1997 study. Studied alternatives included

excavated stormwater basins, relief sewers to the MWRD Tunnel and Reservoir Plan (TARP), floodwall and underground storage facilities. Screening criteria based Technical, Economic, Environmental and Social impacts were applied to develop an alternative project ranking. The updated study concluded that underground storage facilities were reaffirmed as the best solution to the Village's combined sewer backup flooding problems. A flood mitigation plan was developed for the identified flood problem areas throughout the Village.

CONSTRUCTION MANAGEMENT AND INSPECTION

Our Resident Engineering services include construction staking, construction inspection, preparation of record drawings, and preparation of pay estimates, change orders, and other project related documentation. Our Resident Engineering experience includes various types of construction projects including, but not limited to, storm water improvements, sewer/water main installation, roadway rehabilitation, traffic signal modernizations, lighting, and private development inspections. The key personnel designated in this proposal possess the skills and expertise to successfully complete the anticipated project. Our Construction Engineering Department is prequalified by IDOT for construction inspection and survey and is comprised of civil engineers, construction managers, and technicians. Our staff is well versed in the construction of civil engineering projects and most of our staff are certified by IDOT in one or several of the following areas:

- IDOT Documentation
- ICORS Training
- RE Materials Management
- PCC Level I and/or Level II
- Bituminous Concrete Level I and/or Level II

These courses allow our RE's to understand IDOT's guidelines and procedures, which is the industry standard for construction projects, for material inspection and documentation which allows us to finalize and complete projects in a timely manner.

REFERENCES

We have included this list of clients currently being served by CBBEL for which we have provided various consulting engineering services including stormwater management. We encourage you to contact them.

Paul Kuester, Director of Public Works Village of Bartlett 630.837.0811 pkuester@vbartlett.org	***Mayor Jeffrey Sherwin*** City of Northlake 708.343.8700 northlakemayor@comcast.net
Brigitte Mayerhofer, Director of Engineering Village of Wilmette 847.853.7627 mayerhoferb@wilmette.com	***Wayne Zingsheim, Director of Public Works*** City of Park Ridge 847.318.5247 wzingshe@parkridge.us

OFFICE OF THE MAYOR
VILLAGE OF HARWOOD HEIGHTS

April 1, 2013

Christopher B. Burke Engineering, Ltd.
9575 W. Higgins Road, Suite 600
Rosemont, IL 60018

Subject: Reference Letter for Services Performed within the Village of Harwood Heights

To Whom It May Concern:

Please be advised that the Village of Harwood Heights has utilized the firm of Christopher B. Burke Engineering, Ltd. (CBBEL) for most of our municipal engineering services since 2008.

In that time, CBBEL has completed a multitude of projects ranging in varying degrees of difficulty, scope and specialization. On an annual basis, CBBEL assists us with implementing numerous Community Development Block Grant (CDBG) projects; services include assistance in Grant writing, design, bidding, and construction engineering.

In 2012, CBBEL worked on our Sewer Relief Project, which received IKE Disaster Recovery funding. The project was planned, designed, and constructed all within the proposed timeline.

The firms 'family business' motto and professional approach to all projects big and small has made working with CBBEL truly a pleasure.

If you require additional information, contact me directly at (708) 867-7200.

Respectfully,

Arlene Jezierny
Mayor

7300 WEST WILSON AVENUE HARWOOD HEIGHTS, ILLINOIS 60706
TEL (708) 867-7200
e-mail: jezierny@harwoodheights.org

VILLAGE OF
FOREST PARK
BIG CITY ACCESS
SMALL TOWN CHARM

Anthony T. Calderone
MAYOR

517 DESPLAINES AVENUE
FOREST PARK, ILLINOIS 60130
708-366-2323
FAX 708-771-0177
www.forestpark.net

Mark. S. Hosty
COMMISSIONER
ACCOUNTS & FINANCE

Rory E. Hoskins
COMMISSIONER
PUBLIC HEALTH & SAFETY

Tom Mannix
COMMISSIONER
STREETS & PUBLIC IMPROVEMENTS

Chris Harris
COMMISSIONER
PUBLIC PROPERTY

Timothy E. Gillian
VILLAGE ADMINISTRATOR

Vanessa Moritz
VILLAGE CLERK

March 29, 2013

Christopher B. Burke Engineering, Ltd.
9575 W. Higgins Road, Suite 600
Rosemont, IL 60018

Subject: Reference Letter for Services Performed within the Village of Forest Park

To Whom It May Concern:

Please be advised that the Village of Forest Park has utilized the firm of Christopher B. Burke Engineering, Ltd. (CBBEL) for our municipal engineering services since 2000.

In that time, CBBEL has completed a multitude of projects ranging in varying degrees of difficulty, scope and specialization. On an annual basis, CBBEL assists us with implementing our Community Development Block Grant (CDBG) project; services include assistance in Grant writing, design, bidding, and construction engineering.

In 2012, CBBEL worked on our Sewer Rehabilitation Project which received IKE Disaster Recovery funding. The project was planned, designed, and constructed all within the proposed timeline.

The firms 'family business' motto and professional approach to all projects big and small has made working with CBBEL truly a pleasure.

If you require additional information, contact me directly at (708) 615-6201.

Respectfully,

Tim Gillian
Village Administrator

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City of Rolling Meadows
"PROGRESS THRU PARTICIPATION"

Department of Public Works

3900 Berdnick Street • Rolling Meadows, Illinois 60008 • 847-963-0500 • Fax: 847-963-0555

June 13, 2011

Emily M. Portugal
Director of Municipal Client Relations
Leopardo Companies, Inc.
5200 Prairie Stone Parkway
Hoffman Estates, IL 60192

Re: Christopher B. Burke Engineering, Ltd.

Dear Ms. Portugal:

This letter is written to provide for a statement of performance and experience for Christopher B. Burke Engineering, Ltd. in providing municipal engineering services to the City of Rolling Meadows.

Christopher B. Burke Engineering, Ltd. has worked on behalf of the City of Rolling Meadows as its designated "City Engineer", from 1998, to present day. While not serving exclusively for all municipal engineering needs, CBBEL staff has provided for:

1. Continuous plan review of new developments and re-developments, representing the City interests.
2. Structural engineering, including bridge inspections (10 structures), bridge maintenance and rehabilitation projects, retaining wall design and inspection, and soil conditions.
3. Stormwater management, including several project designs and construction of projects ranging from $20,000 to $2,000,000, inclusive of streambank stabilization, storm sewers, and detention facilities.
4. Annual MFT street resurfacing programs, including design engineering, field survey, construction management and documentation.
5. All engineering for the 2006-07 City bond issue, covering $4,300,000 in street reconstruction and resurfacing (4 contractors).
6. Design-build for Meijer Drive, providing access to a "big box" department/grocery store, in a fast-track time frame, along with a $1,000,000 improvement to adjacent IDOT highways.
7. Acting as the City representative for an extensive list of municipal highway improvements involving IDOT, jurisdictional transfers, and federal funding, including Rohlwing Road, Plum Grove Road, Golf and New Wilke Roads.

8. Several bikepath projects that have been constructed including Kirchoff Road, Barker Lane, Salt Creek corridor, Rohlwing Road, and Plum Grove Road extensions.
9. Selective mechanical engineering in City building renovation projects.
10. Daily contacts and emergency contacts for homeowner inquiry, flood response, City Manager concept projects and project evaluations.

Christopher B. Burke Engineering, Ltd. provides the City of Rolling Meadows with timely engineering response and with professionalism in its project performance. They have been found to be highly competent and resourceful, and have enjoyed a good working relationship with the City during the thirteen (13) years of service to the City.

Sincerely,

Fred Vogt
Director of Public Works

Cc: Jason Souden

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 5/22/2013

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
Assurance Agency, Ltd. One Century Centre 1750 E. Golf Road Schaumburg, IL 60173	PHONE (A/C, No, Ext): (847) 797-5700	FAX (A/C, No): 847-440-9130
	E-MAIL ADDRESS:	

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
CHRIBBU-01 Christopher B. Burke Engineering, Ltd. 9575 W. Higgins Road Suite 600 Rosemont, IL 60018	INSURER A : Starr Surplus Lines Insurance Compa	
	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** 1610205951 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	GENERAL LIABILITY						EACH OCCURRENCE	$
	COMMERCIAL GENERAL LIABILITY						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
	CLAIMS-MADE OCCUR						MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
							GENERAL AGGREGATE	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						PRODUCTS - COMP/OP AGG	$
	POLICY PRO-JECT LOC							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	ANY AUTO						BODILY INJURY (Per person)	$
	ALL OWNED AUTOS / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS / NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$
	DED RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						WC STATU-TORY LIMITS / OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) N/A						E.L. EACH ACCIDENT	$
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$
A	Professional Liability			SLPRO262200	6/1/2013	6/1/2014	Each Occurrence General Aggregate	$2,000,000 $2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Sample

CERTIFICATE HOLDER

Sample

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Daniel A Hanson

TAB 3

PERSONNEL/PROFESSIONAL QUALIFICATIONS

PERSONNEL/PROFESSIONAL QUALIFICATIONS

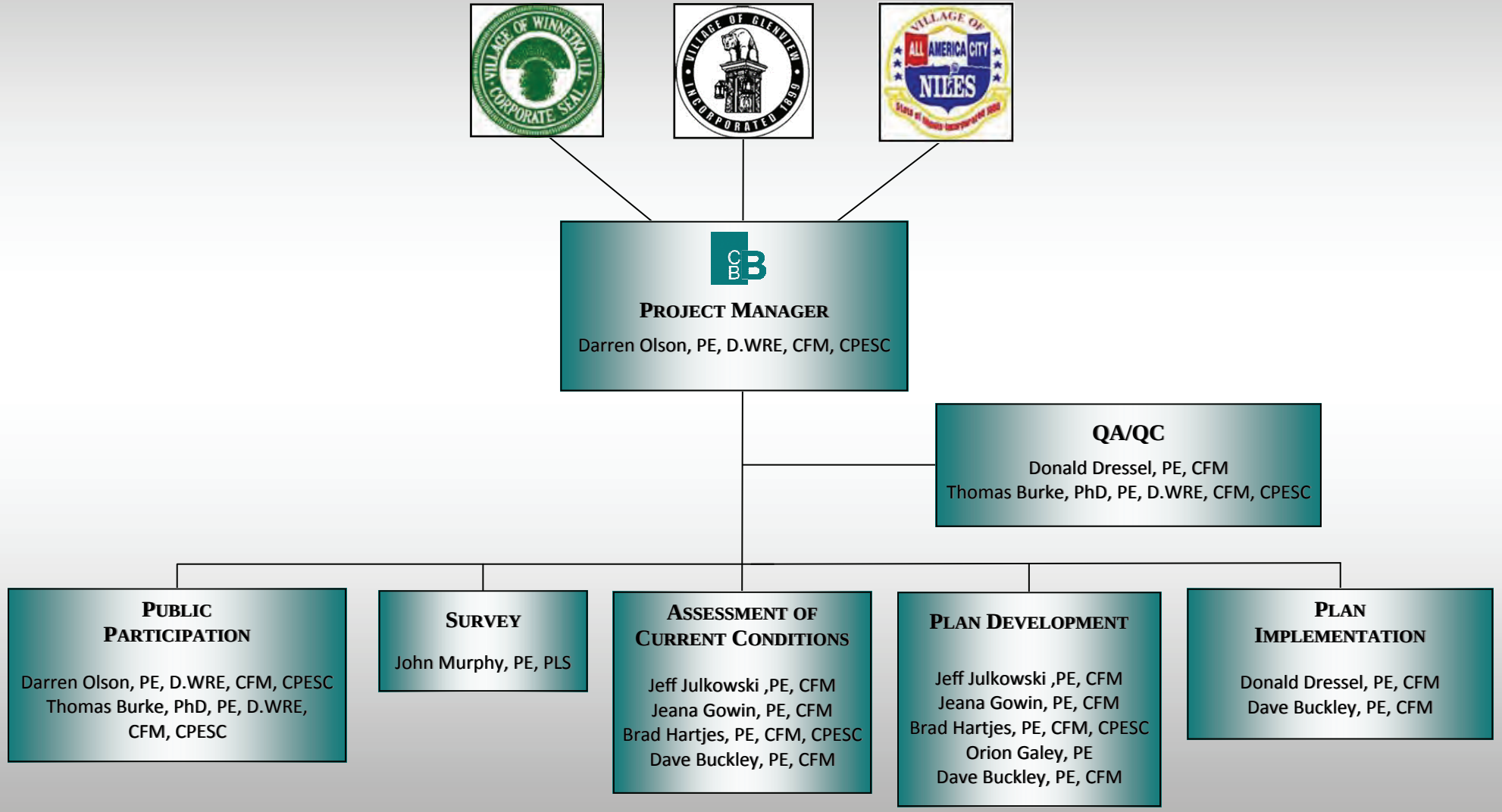
CBBEL has chosen a team of professionals with the capabilities and experience to successfully prepare a flood hazard mitigation plan for Winnetka, Glenview and Niles. A project team organizational chart has also been included illustrating the structure of the proposed team which will act as a unified team with the ability to give personal attention to the communities. They have previously worked well together on several similar projects and will be available to meet with Village staff on an immediate basis, if necessary, to quickly address issues that may arise through the course of the project. Their resumes have been included at the end of this tab.

Name/Registration	Yrs Exp/ Firm	Project Experience
Darren Olson, PE, D.WRE, CFM, CPESC Tel 847.823.0500 Fax 847.823.0520 dolson@cbbel.com	16/16	Mr. Olson is experienced in civil and water resources engineering. He is responsible for water resources engineering project design, and reviews, including land use characterization, watershed and floodplain/ floodway delineation, steady and unsteady river hydraulics analysis, stormwater management, feasibility studies, and development of countywide ordinances. Projects include developing hydrologic and hydraulic models, establishing floodplain and floodway limits, evaluating proposed modifications, stormwater management design for commercial, industrial, and residential development, obtaining permits through municipal, county, state and federal agencies and Letters of Map Change. He also oversees the stormwater reviews for several communities in the Chicagoland area. Mr. Olson will serve as project manager for this Flood Hazard Mitigation Project.
Donald Dressel, PE, CFM Tel 847.823.0500 Fax 847.823.0520 ddressel@cbbel.com	34/26	Mr. Dressel is experienced in water resources engineering and is responsible for the project management on many CBBEL water resources related projects. He provides supervision and QA/QC for activities performed in the water resources department including hydrologic and hydraulic studies, stormwater management studies, design of water resources systems, IDNR-OWR Floodway Construction and Dam Permit applications, FEMA Letter of Map Revisions, wetland hydrologic analysis, County Stormwater Management permit applications, Lake County Watershed Development permit applications, Will County Special Use Permit for Floodplain development, MWRDGC permit applications and development of construction plans and specifications. Mr. Dressel will be responsible for the QA/QC for the proposed Flood Mitigation Planning Process.
Thomas Burke, PhD, PE, D.WRE, CFM, CPESC Tel 847.823.0500 Fax 847.823.0520 tburke@cbbel.com	23/18	Mr. Burke will handle the Quality Assurance/Quality Control and Public Participation for this project. Dr. Burke is Vice President and Head of the Water Resources Department where he oversees a staff of 22 water resources engineers. He has many years of Project Management experience ranging in diversity from providing internal QA/QC support to managing a multifaceted design and construction project for a large municipality. His professional experience includes hydrologic and hydraulic analysis, feasibility studies, FEMA floodplain and floodway map revisions, stormwater master plans and watershed studies. Thomas has led numerous multi-disciplinary teams focused on stormwater, development and environmental projects and issues in Illinois and Indiana. He is currently working on stormwater projects in Park Ridge, Winnetka, Orland Park, Highland, Merrillville and Dyer that were a result of recent stormwater studies completed by CBBEL to relieve flooding.
Jeff Julkowski, PE, CFM Tel 847.823.0500 Fax 847.823.0520 jjulkowski@cbbel.com	14/14	Mr. Julkowski is experienced in water resources engineering. Jeff has developed watershed modeling for many of the CBBEL stormwater management studies including Park Ridge and Lombard. He will be responsible to develop the XP-SWMM unsteady flow model. He will also simulate proposed flood reduction alternatives using the model to determine alternative benefits.

PERSONNEL/PROFESSIONAL QUALIFICATIONS

Name/Registration	Yrs Exp/ Firm	Project Experience
Jeana Gowin, PE, CFM Tel 847.823.0500 Fax 847.823.0520 jgowin@cbbel.com	11/11	Ms. Gowin is experienced in water resources engineering. Jeana has developed watershed modeling for many of CBBEL's stormwater management plan studies including Elmwood Park and Lombard. She will assist Jeff Julkowski with the XP-SWMM modeling.
Brad Hartjes, PE, CFM, CPESC Tel 847.823.0500 Fax 847.823.0520 bhartjes@cbbel.com	20/7	Mr. Hartjes has extensive experience in water resources, specifically water resources planning. He was the project engineer for the Village of River Forest Flood Reduction Plan and currently the project engineer on the Village of Harwood Heights Stormwater Management Plan which will be completed at the end of January 2014. Brad will assist with Assessment of Existing Conditions, Development of Plan and Plan Implementation.
David Buckley, PE, CFM Tel 847.823.0500 Fax 847.823.0520 dbuckley@cbbel.com	12/12	Mr. Buckley is responsible for engineering studies including floodplain mapping, watershed studies, Federal Emergency Management Agency (FEMA) Letter of Map Changes (LOMRs), Hazard Mitigation Grant Program (HMGP) applications, damage analysis, steady and unsteady river hydraulic analyses, stormwater management studies, permit applications to Illinois Department of Natural Resources (IDNR-OWR) and Illinois Department of Transportation (IDOT), continuous hydrologic and water quality simulation, and engineering review. He has performed hydrologic and hydraulic modeling for various complex storm sewer systems and watersheds including Plum Creek/Hart Ditch, which was used for the design of two floodwalls straddling the Illinois/Indiana state line, and has led or been involved with all the stormwater modeling in Winnetka. He has been active in the design of Phase I and II for Winnetka as well as the engineering design of the Spruce area and northwest Winnetka improvements.
Orion Galey, PE Tel 847.823.0500 Fax 847.823.0520 ogaley@cbbel.com	10/10	Mr. Orion is experienced in construction and design engineering. He is responsible for performing resident engineering duties including assistance in bidding and contract execution procedures for award of contract, on-site construction observation, documentation of quantities, coordination and/or verification of materials testing and inspection, review contractor pay requests, preparation of record drawings, and finalization of contracts with different agencies (i.e. IDOT/Cook County/municipalities). His civil design experience includes roadway, streetscape and utility improvement design. Orion's duties also include permitting, preparation of plans and specifications, cost estimates, bidding assistance and general engineering services. For the Flood Hazard Mitigation project, he will be responsible for assisting in the development of feasible flood risk reduction alternatives and the preparation of cost estimates.
John Murphy, PE, PLS Tel 847.823.0500 Fax 847.823.0520 jmurphy@cbbel.com	28/15	Mr. Murphy is the Survey Department Head within the Civil Engineering Department. He currently manages all office personnel and three field crews. The Survey Department is responsible for the collection of all pertinent field and record data suitable for the completion of Phase I and Phase II surveys and for Phase III construction layout. Some clients include numerous municipalities, IDOT, Chicago Water Partners, LCDOT and Will County. The survey department provides layout for all of our Phase III contracts. In addition, the department is well versed in GPS.

FLOOD HAZARD MITIGATION PLANNING FOR VILLAGES OF WINNETKA, GLENVIEW, AND NILES



Darren Olson, PE, D.WRE, CFM, CPESC
Senior Project Manager

YEARS EXPERIENCE: 16
YEARS WITH CBBEL: 16

EDUCATION
Master of Business Administration, 2003
Kellogg School of Management
Northwestern University

Master of Science, 1998
Civil Engineering
University of Illinois at Urbana-Champaign

Bachelor of Science, 1997
Civil Engineering
University of Illinois at Urbana-Champaign

PROFESSIONAL REGISTRATION
Professional Engineer, IL, 062056302, 2003
Professional Engineer, IA, 17027, 2004

CERTIFICATIONS
Certified Floodplain Manager
IAFSM

Certified Professional in Erosion and Sediment Control (CPESC)

Diplomate Water Resources Engineer (D.WRE)
ASCE

PROFESSIONAL DEVELOPMENT
Course/Seminar Instructed:
XP-SWMM
HEC-HMS
Win TR-20
Win TR-55
HEC-RAS

Seminar/Training Attended:
Ethics in City Government, Ethics Training for CDA/OMP Contractors, Vendors & Employees

PUBLICATIONS
"Methodology, Data Collection, and Data Analysis for Determination of Water-Mixing Patterns Induced by Aerators and Mixers", USGS Water-Resources Investigations Report 00-4101. Gary P. Johnson, Nancy J. Hornewer, Dale M. Robertson, Darren T. Olson, and Josh Gioja. Urbana, IL. 2000.

"The Thermal Response of a Small Water Body to Bubble-Plume Destratification", Master's Thesis, University of Illinois. Darren T. Olson. Urbana, IL. 1997.

PROFESSIONAL AFFILIATIONS
American Society of Civil Engineers
Region 3 Governor, ASCE National;
Illinois Section Director, 2002-2004;
Communications Chair, 2004-2006;
Treasurer, 2007-2009;
President-Elect, 2010, President 2010-2011
Environmental Engineering and Water Resource (EE&WR) Technical Group:
Secretary, 1999; Treasurer, 2000, 2009;
Vice-Chair, 2001; Chair, 2002
Association of State Dam Safety Officials

Professional Engineer experienced in water resources. Responsible for engineering studies and proposals that include floodplain mapping, watershed studies, floodplain/floodway delineation studies and permitting, steady and unsteady river hydraulic analyses, stormwater management studies and permitting, flood control project feasibility, design studies, and engineering review. Previous experience at the USGS includes flow and sediment field measurements, and hydraulic data analysis.

Computer modeling skills include FEQ, HEC-RAS, HEC-HMS, HEC-1, HEC-2, WSP-2, XP-SWMM, and GIS applications.

FLOODPLAIN MAPPING

Eagle Creek and Round Lake Drain Floodplain Mapping, Lake County Stormwater Management Commission, Lake County: Project Manager responsible for management of hydrologic and hydraulic modeling and floodplain mapping, as well as client contact. This project included revised hydrologic and hydraulic modeling of the Eagle Creek and Round Lake Drain Watersheds (15 square miles) in Lake County, IL. The modeling was performed in the USACOE suite of HEC-HMS and unsteady HEC-RAS models. The model results were mapped using the GIS mapping applications.

Kress Creek Floodplain Mapping: Performed floodplain mapping for the 10 mi2 Kress Creek Watershed in DuPage County using the DuPage County Department of Development and Environmental Concerns (DEC) Cross Section Database Interface (XDI) software. XDI software was used to manipulate Full-Equations (FEQ) hydraulic model cross-sections to produce GIS coverages for Countywide floodplain mapping.

Sequoit Creek Floodplain Mapping Re-Study: Performed unsteady-state hydraulic modeling with HEC-RAS to update the hydrologic and hydraulic analyses of the Sequoit Creek Watershed. Developed the floodway for the watershed using HEC-RAS and created GIS themes for 2-year through 500-year floodplain and floodway of the watershed.

WATERSHED PLANNING STUDIES

Addison Creek Tributary Watershed Study, Bensenville: Prepared watershed study for 3 mi2 Addison Creek Tributaries Watershed in Bensenville to obtain funding for regional stormwater projects. Analysis included calibrating HEC-HMS hydrologic model, performing steady and unsteady hydraulic model analyses with HEC-RAS and computing cost benefit analyses. This project qualified for $400K in funding from DuPage County and was constructed in 2007.

Blackberry Creek Tributary D Watershed Study, Elburn: Prepared watershed study for 1.2 mi2 Blackberry Creek Tributary D Watershed for planning purposes for the Village of Elburn and Kane County Division of Transportation (KDOT). Analysis included calibrating HEC-1 hydrologic model to July 1996 historical storm event and developing HEC-RAS hydraulic model.

Lincoln Park Zoo, Chicago: Part of a consulting team renovating the South Pond area that will inspire lifelong environmental stewardship for Chicago area students, families, and community members. We worked on the design to enhance the pond by improving the water quality by replacing surrounding asphalt paths with native vegetated edges, introducing interactive elements along the pond, adding a boardwalk through the pond, restoring and protecting the island in the pond and improving the surrounding landscape.

The Morton Arboretum Stormwater Management Plan, Lisle: Developed a comprehensive stormwater and floodplain management plan for The Morton Arboretum based on a 20-year Master Development Plan for the 1.5 mi^2 property. The plan was approved by DuPage County and has been used as the foundation for four Stormwater Permit Applications.

ROADWAY HYDRAULIC STUDIES

Pine Dunes Wetland Mitigation Area, Illinois State Toll Highway Authority, Lake County, IL: Water Resources Engineer responsible for hydraulic and hydrologic analyses and permitting. Pine Dunes Wetland Mitigation Area includes approximately 220 acres of upland within the 315 acre parcel that are currently under agricultural production or are woodlands comprised of white oak, red oak and other hardwoods. The project involves wetland creation, wetland enhancement, stream restoration, forest enhancement and restoration, and restoration of upland areas to prairie/savanna. The mitigation potential includes about 32 acres of wetland enhancement, 58 acres of wetland restoration, and 20 acres of upland enhancement credit, 100 acres of woodland enhancement, 3,300 feet of stream restoration, for a total of about 85 acres of wetland/waters mitigation credit. In addition to wetland mitigation design and permitting services, CBBEL designed a 24 car parking lot, restroom, well, water fountain and nearly 3 miles of bike path, along with a 300' long bridge and 3 boardwalks.

Lt. Governor's Science Advisory Committee
The Science Advisory Committee is a group of experts that will assist Lieutenant Governor Sheila Simon in her efforts to protect Illinois' rivers from potential threats and reduce flood damages. The seven-member panel serves as the scientific arm of the Illinois, Mississippi, and Ohio/Wabash River Coordinating councils. The committee will work with Simon to advance scientific research and help determine what legislative policies should be implemented to protect Illinois waterways. The committee previously published research illustrating the importance of preventing Asian carp and other invasive species from moving between the Great Lakes and Illinois River.

AWARDS

American Society Civil Engineers (ASCE), 2004 Illinois Section Young Civil Engineer of the Year

Western Society of Engineers, 2006 Charles Ellet Award

Deerfield Road Bike Path Crossing of the Des Plaines River, Lake County: Completed HEC-RAS analysis of proposed multi-span bike path crossing of the Des Plaines River. Work included scour analysis, Waterway Information Table and compensatory storage analyses in accordance with IDOT and Lake County SMC requirements. The compensatory storage location was coordinated with Lake County Forest Preserve.

Midlothian and Peterson Intersection Improvements, Lake County: Performed hydrologic and hydraulic analysis of proposed intersection improvements. The analysis included floodplain studies, culvert crossing hydraulic analyses, compensatory storage calculations and detention storage calculations. The hydrologic and hydraulic analyses were coordinated with the Village of Grayslake and Lake County for incorporation into their plans for the Lake County Fairgrounds.

Delaney Road Widening and Reconstruction, Wadsworth: Completed the stormwater and floodplain permitting for the Delaney Road widening project that included site specific floodplain studies, hydraulic analysis of a major culvert crossing, preparation of Waterway Information Tables, scour analyses and coordination of detention storage and compensatory storage. The locations of compensatory storage and detention storage required easements from the Lake County Forest Preserve and acquisition of private property.

River Road Floodplain Encroachment Report, Des Plaines: Prepared floodplain encroachment evaluation for River Road Reconstruction in Des Plaines. Performed hydraulic modeling using Flood Insurance Study (FIS) HEC-2 hydraulic models of the Des Plaines River and Weller Creek to determine longitudinal floodway and floodplain encroachments of proposed roadway alignments.

Fox River Bridges/Stearns Road Corridor IDOT Hydraulic Reports, Kane County: Oversaw water resources studies for eight proposed bridges and culverts associated with the new, 5-mile Stearns Road corridor over the Fox River in Kane County. Studies included hydrologic and hydraulic analysis of 17 mi2 ecologically sensitive Brewster Creek Watershed, five IDOT hydraulic reports, three Kane County Division of Transportation hydraulic reports, stormwater detention analysis and permitting, compensatory storage analysis, and wetland hydrologic analysis.

Hawthorne Lane Reconstruction, West Chicago: Developed stormwater detention and compensatory storage plan for the proposed reconstruction of Hawthorne Lane in West Chicago. Using the DuPage County FEQ Watershed Model for Kress Creek, the project was shown to have a watershed benefit by incorporating the stormwater storage for the roadway reconstruction with drainage improvements in the DuPage County Watershed Plan. This project was permitted and constructed in 2006.

IDNR-OWR DAM SAFETY PERMITTING AND DESIGN

Bethany Road Flood Control Reservoir, Sycamore: Performed hydrologic and hydraulic analysis of flood control reservoir to assist City Engineer in revising design to meet IDNR-OWR Dam Safety permitting requirements. Modeling included HEC-1 dam breach analysis and HEC-RAS floodwave routing.

Hawthorne Parkway Reconstruction, Vernon Hills: Performed HEC-1 hydrologic and WSP-2 hydraulic model analysis of labyrinth spillway and culvert crossing of Seavey Ditch for Hawthorne Parkway Reconstruction to obtain IDNR-OWR Dam Safety Permit and Floodway Construction Permit.

Blackberry Creek Subdivision Regional Flood Control Reservoirs, Elburn: Developed stormwater management plan for Blackberry Creek Subdivision that called for two regional flood control reservoirs on Blackberry Creek Trib D to provide stormwater detention and compensatory storage to meet the Village of Elburn and Kane County Stormwater Management Ordinance requirements and IDNR-OWR Dam Safety and Floodway Construction Permit requirements.

YWCA Dam Removal on Brewster Creek, Kane County: Performed IDNR-OWR Dam Safety and Floodway Construction permitting for removal of the YWCA Dam on Brewster Creek. The permitting and design of this dam removal project incorporated the unique concept of notching the spillway weir to reduce the downstream transport of sediment while minimizing the costs to Kane County Department of Environment and YWCA.

FLOOD CONTROL PROJECT FEASIBILITY AND DESIGN ANALYSIS

Washington Park Floodwater Storage Facility, Village of Downers Grove, Downers Grove: Project Manager responsible for management of stormwater modeling and civil design of park reconstruction as well as coordination with the Village and Park District. This project included enhancement of Washington Park in Downers Grove to include 10 acre-ft of stormwater storage to provide flood relief to adjacent residents. In addition to the stormwater storage, the park was enhanced to include tiered retaining walls for seating, 2 soccer fields, a baseball field with

stadium seating, a reconstructed park plaza with fountain, underdrain system, irrigation system, ADA accessibility and other landscape features.

Village of Bartlett Flood Reduction Assessment, Village of Bartlett, Bartlett: Project Manager, responsibilities included managing stormwater studies, hydrologic modeling, public presentations and civil design of drainage improvement projects. This project included a Village-wide drainage study in response to the September 2008 flood event that devastated the Village. Five study areas were identified, and drainage improvement projects were designed in each area to reduce the risk of future flooding. The projects involved partnerships with DuPage County, Village of Streamwood, Commonwealth Edison and the Forest Preserve District of DuPage County.

Village of Buffalo Grove Stormwater Drainage Projects, Buffalo Grove: Project Manager, responsible for management of stormwater modeling and civil design of drainage improvement projects. This project included a Village-wide flood reduction assessment in response to the August 2007 storm event. Twelve study areas were identified in the initial flood reduction assessment. The concept-level analysis was developed into full design drawings and permitting of 12 drainage improvement projects throughout the Village. Coordination was required with the Park District, Cook County Highway Department, High School and local residents.

Skokie River Watershed Flood Storage Feasibility Study, East Skokie Drainage District, Lake County: Project Manager, responsibilities included managing hydrologic and hydraulic modeling, public presentations, client contact. This project involved a flood reduction feasibility study for the Skokie River Watershed in Lake County, IL. Approximately 45 flood reduction alternatives were analyzed using the regulatory hydrologic and hydraulic models. The alternatives included combinations of floodwater storage and conveyance improvements throughout the watershed. The results of the hydraulic analysis were provided to the IDNR-OWR for a benefit/cost analysis. The study results were summarized in a final report to stakeholders within the watershed.

Blackberry Creek Watershed Phase 2 Study, Kane County Department of Environment, Kane County: Project Manager, responsibilities included management of hydrologic and hydraulic modeling, economic analysis and client contact. The Blackberry Creek Watershed hydrologic and hydraulic models that were prepared by the U.S. Geological Survey were used to identify drainage improvement projects within the watershed. The projects included conveyance improvements and floodwater storage. A concept-level design and cost analysis was completed for each alternative. An economic analysis was also performed using the IDNR-OWR Damages software. A report summarizing the modeling results and economic analysis was prepared and utilized for requesting funds from FEMA for the recommended drainage improvement project.

Walnut Drive Culvert Reconstruction, City of Darien, Darien: Project Manager, responsibilities included management of hydrologic and hydraulic modeling, permitting and design. This project consisted of reconstruction of the Walnut Drive culvert crossing that had failed during the September 2008 storm event. Hydrologic and hydraulic modeling was completed to develop a design that mimicked the hydraulic properties of the original structure but was less prone to failure. Design drawing and permit submittals were prepared to demonstrate compliance with the DuPage County Ordinance and IDNR-OWR rules for floodway construction and dam safety. Within 1 year of the storm event, the construction was underway to replace the failed culverts.

Broadfield Subdivision Drainage Improvements, Lake County Surveyor's Office, Town of Merrillville, Lake County, IN: Project Manager responsibilities included management of hydrologic and hydraulic modeling, and civil design. In response to repetitive flooding in 2007 and 2008, CBBEL performed a flood study for the Broadfield Subdivision to determine drainage improvements that would reduce the risk of residential structure flooding within the subdivision. Storm sewer improvements were identified that would protect the structures from the 100-year flood event. Several presentations were made to the affected residents and the Town of Merrillville. Civil design drawing and permit submittals were prepared and the improvements were constructed by the end of 2008.

Oakwood Knolls Stormwater Management Study, Antioch: Performed detailed XP-SWMM hydrologic and hydraulic analyses of a 200-acre watershed in Antioch for the purpose of developing flood control alternatives to address three specific flooding problems. Cost estimates were prepared for each alternative, and recommended projects were presented to the Village's Engineering and Senior Services Committee.

Pottawattomi Park Stormwater Storage Facility, Tinley Park: Developed and calibrated an XP-SWMM hydrologic and hydraulic model for a 535-acre watershed that experienced severe flooding in the summer of 2001. The model was used to evaluate flood control alternatives and design a stormwater storage facility that was constructed in November 2002. In July of 2003, the stormwater storage facility functioned as designed during a nearly 100-year storm event in the Village; when the facility filled to capacity and no residential structures were flooded. This project won the American Society of Civil Engineers (ASCE) 2003 Project of the Year, under $5 million.

Chicago Underflow Plan (CUP) Reservoir Design Analysis, Riverside and Evanston: Developed and calibrated XP-SWMM hydrologic and hydraulic models for a 300-acre and 1800-acre watersheds in Riverside and Evanston, respectively. The models were calibrated to USGS continuous flow data and MWRD BOD data to determine BOD loadings to the TARP drop shafts to be used as for input into US Army Corps of Engineers CUP reservoir modeling.

Midway/Whitfield Stormwater Management Study, Northbrook: Performed detailed XP-SWMM hydrologic and hydraulic analyses of 90-acre watershed to develop cost/benefit analysis for various flood damage reduction alternatives within the Northbrook East Subdivisions. The economic analysis allowed the Village of Northbrook to incorporate the proposed alternatives into their village-wide Stormwater Management Plan.

Skokie Boulevard/Edens Ditch Stormwater Study, Northbrook: Developed an XP-SWMM hydrologic and hydraulic model of a 170-acre watershed in Northbrook that drained to a restrictive culvert under the Edens Expressway. The study evaluated the proposed Sunset Ridge Road improvements by the Cook County Highway Department (CCHD) and nine proposed drainage improvements within the watershed.

STORMWATER MANAGEMENT AND FLOODPLAIN PERMIT APPLICATIONS

Pingree Road Reconstruction, Crystal Lake: Completed stormwater and floodplain permitting. CBBEL developed federal Phase II construction bid documents for the reconstruction of Pingree Road and provided the following engineering services: Topographic Survey; Preliminary Site Assessment for Special Waste; Stormwater Management Report including Best Management Practices; Construction Plans, Specifications & Construction Cost Estimates. Utilized STP funding.

Madison Street Reconstruction, Willowbrook: Refined Flagg Creek FEQ Watershed Study hydraulic model to evaluate impacts of roadway reconstruction in support of DuPage County Stormwater Management Permit.

Samatas Pedestrian Bridge Crossing of Salt Creek, Oak Brook: Updated the Upper Salt Creek FEQ Watershed Study model to evaluate impacts of pedestrian bridge over Salt Creek in support of a DuPage County Stormwater Management Permit.

Naperville Park District Riverwalk Playground Reconstruction, Naperville: Reconstruction of a playground in the floodway of the West Branch of the DuPage River along the Riverwalk in Naperville. Steady-state and unsteady-state hydraulic modeling was required using HEC-RAS and FEQ hydraulic model software. This project required a variance from the DuPage County Stormwater Ordinance for appropriate uses of the floodway.

The Morton Arboretum Stormwater Management Permits, Lisle: Coordinated wetland, riparian, stormwater and floodplain submittals for DuPage County Stormwater Management Permits for projects within The Morton Arboretum. These projects included a bridge over the East Branch of the DuPage River, over 1 mile of new roadway, three Visitor Stations, streambank rehabilitation, two compensatory storage facilities, an 8-acre Children's Garden, four detention basins, a new Visitor Center, and Main Parking Lot. The permitting of the Main Parking Lot took advantage of permeable pavement technology, which reduced the stormwater storage required for the projects.

Butler National Golf Club Streambank Stabilization, Oak Brook: Obtained IDNR-OWR Floodway Construction Permit and DuPage County/Village of Oak Brook Stormwater Management Permit for 2,000 linear feet of streambank stabilization and riparian restoration within the Butler National Golf Club.

Butler National Golf Club Fairway and Bunker Reconstruction, Oak Brook: Floodway construction permitting and hydraulic modeling for the reconstruction of fairways and bunkers within the floodway of Salt Creek in Oak Brook. The project required a variance from the DuPage County Stormwater Ordinance for appropriate use in the floodway.

Pratt's Wayne Woods Wetland Restoration, DuPage County Forest Preserve: Secured DuPage County Stormwater and Floodplain Permit for 50-acre wetland restoration project within the Pratt's Wayne Woods Forest Preserve. The project design restored the hydrology to nearly 50 acres of critical wetland within the floodplain of Brewster Creek.

Stevens Woods Streambank Stabilization, Lake County Forest Preserve: Developed HEC-1 and HEC-RAS models of a 300-acre watershed in Lake County for the purpose of designing streambank stabilization measures for an eroding creek within the Steven Woods of the Lake County Forest Preserve District. The work was located in the floodplain and floodway of the Des Plaines River.

Wards Creek Streambank Stabilization, Darien: Used the DuPage County Wards Creek FEQ watershed model to secure a floodway construction permit and DuPage County Stormwater Management Permit for stabilization of 2,000 linear feet of streambank stabilization of Wards Creek within the Brookridge Subdivision. The design called for gabion walls to protect residential structures in danger of being undermined by bank failure.

Silver Lake Commonwealth Edison Substation, McHenry County: Preparation of plans and permit submittal to McHenry County Department of Planning and Development for a 6-acre ComEd substation in Unincorporated McHenry County.

STORMWATER ENGINEERING REVIEW

City of Crystal Lake Stormwater Management Review: Stormwater Review Consultant for the City of Crystal Lake. As the City's stormwater and floodplain consultant, reviewed development submittals for compliance with the Crystal Lake Stormwater Ordinance and the Crystal Lake Watershed Stormwater Design Manual. Also provided technical assistance to the City regarding stormwater issues such as flood studies, compliance with NFIP regulations and Ordinance updates.

Lake County Stormwater Management Commission: As a consultant to SMC, reviewed over 90 Watershed Development Permit applications and Base Flood Elevation (BFE) determinations for compliance with the Watershed Development Ordinance. Also performed technical review for the hydrologic and hydraulic analysis of 13 mi^2 of the Sequoit Creek Watershed.

Village of Hawthorn Woods: As the Village's watershed development enforcement officer, reviewed stormwater and floodplain management submittals of all projects with respect to the Village Ordinance and Lake County Watershed Development Ordinance. Also reviewed, designed and permitted all drainage projects within the Village, which included localized flooding complaints, storm sewer reconstruction, NPDES Phase II permitting, and non-point source pollution problems. Acted as liaison between the Village and Lake County with regards to all design, review and funding of stormwater and floodplain projects.

Village of Barrington: As the Village's watershed development co-enforcement officer, reviewed stormwater and floodplain management submittals for all projects with respect to the Village Ordinance and Lake County Watershed Development Ordinance.

WATER RESOURCES FIELD WORK

Stream Flow Measurements: Collected water resources field measurements that included flood-flow measurements during the July 1996 floods in Northeastern Illinois, sediment and flow measurements at remote USGS gaging stations, and acoustic flow measurements on the Illinois River, Chicago River and Chicago Sanitary and Ship Canal.

Donald Dressel, PE, CFM
Vice President

YEARS EXPERIENCE: 35
YEARS WITH CBBEL: 27

EDUCATION
Bachelor of Science, 1979
Civil Engineering
University of Illinois at Urbana-Champaign

PROFESSIONAL REGISTRATION
Professional Engineer, IL, 062041769, 1984

CERTIFICATIONS
Certified Floodplain Manager
IAFSM

Private Pilot – Airplane
Single Engine Land, Instrument Airplane

PROFESSIONAL DEVELOPMENT
Ethics in City Government, Ethics Training for CDA/OMP Contractors, Vendors & Employees

Hydrologic Engineering Center: Interior Drainage Course, Flood Control Channels, Unsteady Flow Course, Waterways Experiment Station

PROFESSIONAL AFFILIATIONS
American Council of Engineering Companies

American Society of Civil Engineers

Association of State Floodplain Managers

Illinois Association for Floodplain and Stormwater Management

Society of American Military Engineers

AWARDS
APWA Project of the Year, Environment under $2 million, Parkside Park, Village of Roselle, 2005

APWA Project of the Year, Environmental under $2 million, West Branch Salt Creek Tributary No. 4 Bank Stabilization, Village of Schaumburg, 1997

Chicagoland Underflow Plan (CUP) Incentive Award, US Army Corps of Engineers, 1984

Outstanding Planning Achievement Award (Group Award), US Army Corps of Engineers, 1986

Professional Engineer experienced in all aspects of water resources. Currently serving as Chairman of the Lake County Technical Advisory Committee (TAC). This committee reviews and makes recommendations on revisions to the Lake County Watershed Development Ordinance and Technical Reference Manual. Provides supervision and QA/QC for activities performed in the water resources department include hydrologic and hydraulic studies, stormwater management studies, design of water resources systems, IDNR-OWR Floodway Construction and Dam Permit applications, FEMA Letter of Map Revisions, wetland hydrologic analysis, County Stormwater Management permit applications, Lake County Watershed Development permit applications, Will County Special Use Permit for Floodplain development, MWRDGC permit applications and development of construction plans and specifications. Provides drainage review and performs drainage studies for over 50 governmental bodies throughout the six county area. Project Manager for golf course projects, including Master Plan assistance, engineering plans, drainage improvements and permitting.

WATERSHED AND STORMWATER MANAGEMENT STUDIES

April 18, 2013 Storm Event Evaluation, Clarendon Hills, DuPage County, IL: Project Manager responsible for preparation of this study. During April 17-18, 2013, the Village of Clarendon Hills received approximately 6-inches of rainfall in 18 hours. This resulted in street and yard inundation and home flooding throughout the Village. CBBEL staff participated in a public meeting explaining how the existing drainage system works and collecting information about the flooding that occurred during this storm event. A flooding questionnaire was distributed by Village to impacted residents. CBBEL surveyed high water marks throughout the Village and performed a preliminary investigation of the flood causes and potential flood reduction improvements. A summary report was presented to the Village in June 2013. The next step is to perform a detailed study of existing drainage system and potential flood reduction improvements to determine the benefits and costs.

Addison Creek Reservoir Preliminary Engineering, MWRDGC, Melrose Park, Cook County: Project Manager responsible for managing preparation of preliminary engineering plans for a 960 acre-foot off-line flood control reservoir along Addison Creek. Project components include a diversion structure, spillway, excavated reservoir and dewatering pump station. The project also includes channel improvements and existing pump station upgrades. Work tasks include soil borings, field survey, Phase 1 environmental study, wetland assessment, storm sewer modeling, hydraulic analysis of diversion structure and spillway, geotechnical analysis, structural engineering, hydrologic and hydraulic modeling, alternative analysis, and preliminary engineering drawings.

Lower Des Plaines River Detailed Watershed Plan, Cook County: Project Manager for this study which involves the development of a detailed watershed plan for the entire Des Plaines River watershed located within Cook County, including tributaries. The study is being performed under contract to MWRDGC. The study includes the collection of problem area information from various affected municipalities, development and/or updating of all hydrologic and hydraulic models, development and evaluation of flood reduction measures and preparation of the detailed watershed plan. Phase A which included data collection and problem area evaluation was completed in May 2008. The study will be completed in Phase B, which began in October 2008 and ended in February 2011 with the publishing of the Detailed Watershed Plan Report.

Farm View Pump Station and Storm Sewer, Homer Glen, Will County: A natural depression adjacent to the Farm View subdivision was filling within stormwater runoff resulting in inundation of the rear yards of adjacent homes. Historically, the depression would dewater through a clay field tile. The field tiled failed causing the depression to remain filled for extended periods of time. This situation has created an unacceptable condition fro the residents of the adjacent subdivision. The Village of Homer Glen contracted with CBBEL to develop a plan to improve the situation. The recommended plan included the installation of pump station and a new outlet storm sewer. The pump station will drain the depression into the new outlet storm sewer which conveys flows downstream into a watercourse. CBBEL prepared the engineering plans and specifications for the project. Construction of the project was completed in 2008.

Niagara Avenue Drainage Study, Schaumburg, Cook County: During the August 2007 storm event, the residential area located along Niagara Avenue was flooded. The area is drained by a roadside ditch that flows into a 1,800 LF 42-inch storm sewer. During the August 2007 storm event, the storm sewer reached capacity resulting in overland flow between homes and ditch overflowing into adjacent residential yards. The Village of Schaumburg hired CBBEL to evaluate the drainage problem and recommend flood reduction measures. CBBEL used XP-SWMM to analyze the existing conditions using the recorded August 2007 rainfall data. The calibrated XP-SWMM was then used to assess the benefits of alternative remedial measures. The recommended plan consists of the excavation of an existing park to provide stormwater storage and the installation of an additional outlet storm sewer to improvement conveyance capacity.

CITGO Refinery Parking Lot and Roadway Improvements, Romeoville, Will County: A temporary gravel parking lot and bus roadway was installed in 2006 within a Zone A floodplain. The parking lot is used by contractors working in the refinery during maintenance periods. CITGO decided that parking lot needed to be expanded and made permanent. In addition to the parking lot, the Village of Romeoville requested that CITGO install a new access road to the parking lot, improve 135th Street with turn lanes and install a traffic signal at the access road/135th Street intersection. The access road would also be used to service a future Metra Commuter Station parking lot. CITGO hired CBBEL to prepare a floodplain study for a tributary to the I & M Canal that flows east to west through the parking lot which is located south of 135th Street. A field survey was completed to obtain watercourse cross-sections and parameters of various existing culverts. A hydrologic model was developed for the watershed and 10- and 100-year peak flow rates were determined. A hydraulic model was developed to produce the 10- and 100-year flood profiles through the project site. Preliminary and final engineering plans were prepared for the various improvements and to submit permit applications to the Village. The project was constructed in 2008-2009.

Regional Stormwater Management Facility, Bolingbrook, Will County: Project Manager for the Phase II design of a regional stormwater management facility along Lily Cache Creek. Located in the western portion of the Village, the creek flows through a largely undeveloped area consisting of farmland. This area is scheduled for rapid development in the next few years. In order to provide an efficient stormwater management system, the Village of Bolingbrook decided it would be appropriate to have a regional stormwater management facility that would serve the future developments. Using the Lily Cache Creek hydrologic and hydraulic models developed by the Federal Emergency Management Agency (FEMA), CBBEL staff developed a preliminary plan for several stormwater management basins located along Lily Cache Creek that would provide detention and floodplain storage for the future development of the tributary properties. The construction of the basins would also produce a beneficial lowering of the Lily Cache Creek 100-year profile through the study area. CBBEL staff prepared various documents showing the cost of the project and distribution of the project benefits to each tributary property. On behalf of the Village of Bolingbrook, CBBEL prepared the Joint Permit Application and the FEMA Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) requests.

Stormwater Master Plan, Des Plaines, Cook County: Project Manager for the Stormwater Master Plan Study. CBBEL was hired by the City of Des Plaines to update their 1986 Stormwater Master Plan. To date the City has completed 9 of the 24 projects recommended in 1986. On October 13, 2001, an intense short duration storm (3.8" of rain fell in 3-4 hours) resulted in significant flooding throughout the City. The resultant runoff exceeded the capacity of many of the City's storm and combined sewers. Based on this recent flooding, the City identified 13 areas that the updated study would evaluate. A flood damage questionnaire was prepared and sent to study area homeowners. Additional information was gathered during eight ward meetings. A flood problem inventory identifying locations of flooding and describing the existing flooding problems broken down by Area/Neighborhood Problems and Local/Yard Drainage deficiencies were prepared. Hydrologic and hydraulic modeling was performed to evaluate the capacities of the combined storm sewer systems and existing/proposed detention storage facilities and overland flow routes. The October 13, 2001 storm event was simulated with the hydrologic and hydraulic models and used for the design event. The results were compared to observe high water elevations and flood information received from City staff, flood damage questionnaires and the neighborhood meetings. Various alternatives to mitigate the flooding were developed and evaluated. A final report was prepared summarizing the study and included a recommended plan, Opinions of Probable Costs and an implementation schedule.

Downtown Watershed Plan, Roselle, DuPage County: Project Manager for the development of the watershed plan for the proposed redevelopment of the downtown district. Redevelopment includes residential (condominiums), retail/office space and associated parking. Stormwater management is a required component; because of the limited space available in the downtown area, Roselle created a unique solution that also fulfilled another important community need. Parkside Park is a 5.5-acre recreational area under the jurisdiction of the Roselle Park District. The park site is located south of the downtown area within the same watershed. The park was in need of upgrading and the Park District did not have the necessary An intergovernmental agreement between the two allowed the Village to lower the Park's elevation to provide 6.5 acre-feet of stormwater management storage needed for the entire downtown redevelopment. In return the Village agreed to upgrade the existing baseball facilities and assist the Park District in the creation of a new skate park. CBBEL used the unsteady-state XP-SWMM model to analyze the 65-acre watershed for existing and proposed drainage conditions. The model was used to size the storm sewer needed to convey the 100-year discharge from the redeveloped area to Parkside Park. In order to create the required stormwater management storage, existing park elevations were lowered an average of 2-4 feet.

Park Avenue Detention Basin Improvement Project, Clarendon Hills: Project Manager on this improvement project consisting of the conversion of the existing dry detention basin located within the headwaters of Flagg Creek to a multi-use facility. The basin was re-graded to provide a sports field area that can be converted for use as either youth soccer or T-ball. Underdrains and a

special turf/sand surface were provided to allow drainage of the field area after a rainfall event or after it has been inundated with detention basin water. The deeper portion of the basin which was excavated was planted with native plants. This area will store the initial inflow into the basin. The native plantings will promote filtration of the stored stormwater. A new pump station was constructed that dewaters the basin to an existing storm sewer. CBBEL prepared concept, preliminary and final engineering plans. CBBEL's staff presented the plan to the Village Board, Park District Board and residents of the community. CBBEL prepared the stormwater management permit application along with the XP-SWMM hydrologic and hydraulic analysis. The project was successfully constructed in 2001, with CBBEL's staff providing construction observation services on behalf of the Village.

Northwest Drainage Study, Roselle: Project Manager for a Stormwater Management Study. Two to five times per year an existing detention basin becomes filled during a storm event. Once full stormwater overflows into surrounding residential areas and streets. CBBEL's staff prepared a detailed hydrologic model of the watershed. The model was used to define the existing detention basin High Water Level (HWL) for various storm events. Alternatives for increasing the available stormwater storage in the watershed were developed and evaluated with the hydrologic model. Opinions of Probable Cost were developed for each studied alternative. A report was prepared documenting the study.

Timbers Edge Subdivision Stormwater Management Study, Tinley Park: Project Manager for this Stormwater Management Study of flooding problems that have occurred in an existing residential subdivision. On July 21, 2001, 3.5 inches of rain fell in a one-hour period causing extensive basement, yard, and street flooding in the Timbers Edge Subdivision. Additional flooding occurred during a rainfall event on August 5, 2001 that produced 2.8 inches of rain in 45 minutes. CBBEL was retained by the Village to determine the cause(s) of flooding and to develop a recommended improvement plan. CBBEL's staff selected the dynamic XP-SWMM hydrologic and hydraulic model to simulate the subdivision's complex stormwater runoff routing which included both storm sewers and overland flow routes located between existing homes. The model was prepared using a combination of record plans and new field surveys. The model, which simulates the runoff from 535 acres, was calibrated to the surveyed high water marks associated with the July storm event. A public meeting was held with the affected residences to present the cause(s) of the flooding and to obtain input on possible flood mitigation measures. CBBEL developed various flood mitigation measures that were evaluated with the XP-SWMM model. Opinions of Probable Cost were developed for the recommended plan. A report was prepared documenting the study. CBBEL prepared the construction documents for the project which was constructed in 2003.

Orland Park Stormwater Management Study, Orland Park: Project Manager for the Stormwater Management Study of two areas in the Village of Orland Park. On July 17-18, 1996, more than 10 inches of rain fell over a 24-hour period causing extensive flood damage. CBBEL was retained by the Village to perform a Stormwater Management Study of the two areas. Homes and streets became inundated when two regional detention facilities were filled. CBBEL's staff developed detailed hydrologic and hydraulic models of the facilities and their tributary watershed. The models were calibrated using high water marks from the July storm event. The calibrated models assisted in the determination of the cause of the flooding. Various flood mitigation improvements were developed and evaluated; based on these results a recommended plan was prepared along with an Opinion of Probable Cost.

Schaumburg Convention Center Preliminary Evaluation: CBBEL was retained by the Village to complete a preliminary evaluation of existing constraints on a 46-acre site earmarked for a proposed Convention Center. CBBEL's staff evaluated wetland, floodplain, drainage, and future detention storage requirements. The site included a Zone A floodplain that CBBEL prepared hydrologic and hydraulic models to define the 100-year storm event flood elevation. Areas where compensatory storage excavation could be accommodated were outlined. Various ways of providing the required detention storage for the Convention Center were evaluated and presented to the Village. For each alternative, construction costs were developed. Areas required for implementation were determined along with the relevant pros and cons. CBBEL's wetland specialist determined that 11.77 acres of wetland were within the site. Based on the Supreme Court's SWANCC ruling, CBBEL requested that the US Army Corps of Engineers (COE) issue was a "non-jurisdictional" determination since the on-site wetlands were isolated. The COE agreed with CBBEL's request and issued the determination letter.

Willow-Higgins Creek Flood Control Project, Rosemont: Planned, designed and permitted the relocation and improvement of 3,100 LF of Willow-Higgins Creek channel. The channel of the creek was formed by 12 foot high precast concrete floodwalls. Also included in the project was a 4 celled 9' x 9' RCBC which allowed the construction of a parking lot for the Willow Creek Health Club. Permits and approvals were obtained from IDNR-OWR, COE and IEPA. In addition, a CLOMR and LOMR to relocate the floodplain were obtained from FEMA. Funding for this flood control project was provided by IDNR-OWR.

Rand Park Flood Control Project, Des Plaines: Under contract with IDNR-OWR, CBBEL prepared the design report, preliminary engineering, CLOMR request and the joint permit application to IDNR-OWR, COE and IEPA for this project. The project consisted of a dam/pump station and a concrete floodwall. The purpose of the project is to prevent Des Plaines River floodwaters from backing up Farmers Creek and inundating residential and business districts. The floodwall along the Des Plaines River is 2,100 feet in length; the pump station will have a capacity of 250 cfs and will have motor driven sluice gates. During high flood stages on the Des Plaines River, the gates will close, preventing Des Plaines River floodwaters from inundating Farmers Creek.

Flood Insurance Study, Hamilton County, IN: Developed hydraulic models for 13 watercourses in this county north of Indianapolis, Indiana. The total length of the watercourses modeled (34.7 mi2) were surveyed. The associated floodplains and floodways were delineated for future regulatory purposes.

Stormwater Master Plans, Portage, IN: The City of Portage has several major rivers that convey watershed runoff through its boundaries. The regulatory hydraulic models for Robbins Ditch and Willow Creek were updated with new field survey data. The results of the models were used to evaluate problem flooding areas and formulate projects to alleviate these problems. The Stormwater Master Plan for correcting the investigated stormwater problems was provided to the City as an outline for future funding needs.

Plum Grove Road Culvert Replacement, DuPage County: The FEQ unsteady flow model was utilized to size and permit a reinforced concrete box culvert replacement for two deteriorating corrugated metal pipes. The culvert had to be sized so that no adverse hydraulics occurred upstream and downstream of the project so it would be in compliance with the DuPage County Stormwater and Floodplain Ordinance.

Wood Dale – Itasca Flood Control Project, IDOT, Bureau of Highways: Planned, designed, and permitted 1,775 acre-feet of flood control storage for a 130-acre site. Prepared design drawings to meet the IDOT-Highway requirements for the Elgin-O'Hare expressway. Provided a detailed environmental and wetland assessment, and preparation of mitigation plans. Total construction cost estimated at $50 million.

Flood Insurance Study, Kane County: Extension of flood insurance study upstream on seven creeks in Unincorporated Kane County. Included coordinating channel survey work on over 45 miles of channel.

Flood Control Study, Oakbrook: Investigated flood control alternatives for the Oakbrook reach of Salt Creek. Evaluated proposed projects and coordinated the field survey for over 70 channel cross-sections.

Tri-State (I-294) Tollway Widening, Illinois State Toll Highway Authority (ISTHA): A drainage study was completed for 13 miles of tollway that was proposed for widening. The scope of services included hydrologic and hydraulic analyses of detention storage facilities, floodplain encroachment, wetland mitigation, and storm sewer extension and replacement.

Lake Michigan Diversion Accounting, US Corps of Engineers: An investigation of the flow parameters developed for the Lake Michigan diversion accounting using the HSPF model. Included updating and calibration of the model.

Canal/Tunnel Modeling, US Corps of Engineers: Developed unsteady flow computer models (UNET) for the Chicagoland canal system and the Tunnel and Reservoir Plan (TARP).

Kankakee River Sedimentation Study, IN: Investigated potential impacts to sedimentation from the proposed levee improvements in Indiana. The investigation was performed with the HEC-6 sedimentation computer model.

Upper Salt Creek Regulatory Floodplain Study, Illinois Department of Transportation (IDOT), Division of Water Resources: Phase I of this study consisted of data collection for 36 miles of channel, development of software, and compilation of FEQ inputs. Phase II of this study involved the preparation and calibration of detailed HEC-1 and HEC-2 hydrologic and hydraulic models. The calibrated/verified models were used to produce 10-, 50-, 100- and 500-year flood profiles. Revised floodplain/floodway boundaries were delineated and submitted to FEMA in support of a LOMR.

Lower Salt Creek Study, DuPage County Department of Environmental Concerns: Study of 50 square miles including the evaluation of regional flood control alternatives using the FEQ computer model. Included evaluation of several flood mitigation measures espoused by local communities. Also included evaluating the feasibility of using the Elmhurst Quarry for flood control purposes.

Flood Control Study, Bensenville: Study of five square miles including evaluation of mitigation measures to reduce overbank flooding damages from Willow and Addison Creeks. Proposed measures included upstream storage, channel improvements and culvert replacement.

Lily Cache Slough Watershed Study, AMLI Realty: Hydrologic and hydraulic model development to establish floodplain stormwater management and policy options for developing areas. The study was adopted by the Village of Romeoville and FEMA as the regulatory floodplain/floodway.

AIRPORT PROJECTS

O'Hare International Airport Modernization Plan, Chicago: Technical Project Manager for this large project. The City of Chicago has proposed an extensive modernization plan for O'Hare International Airport. This plan includes new runways, taxiways, roadways and buildings. Christopher B. Burke Engineering, Ltd. (CBBEL) is subconsultant to the City's Master Civil Engineer. CBBEL's role is to develop the stormwater management plan and prepare the requirements to implement the plan. In order to accommodate the proposed airport facilities, Willow-Higgins Creek and Bensenville Ditch are being relocated and portions enclosed through the airport. CBBEL performed the necessary hydrologic and hydraulic modeling, prepared the IDNR-OWR floodway construction permit application packages and prepared engineering plans for the Willow-Higgins Creek improvements. CBBEL performed the Bensenville Ditch hydrologic and hydraulic modeling and prepared the IDNR-OWR floodway construction permit application for the interim and completion phase channel relocation. CBBEL also performed the hydrologic modeling needed to determine the stormwater storage volume required to accommodate the proposed impervious surfaces. The XP-SWMM model was used to size the proposed trunk storm sewers needed to convey the future runoff volume to the proposed management basin. The north, south and central stormwater management basins were sized along with the storm sewer network. A location drainage study was performed for the Irving Park relocation. Willow Creek was relocated in 2006 and the new 9R/27L Runway opened in 2008. The completion phase Bensenville Ditch relocation was completed in 2012.

Access Road, DuPage County Airport, West Chicago: A portion of the existing perimeter road located south of the Runway 02R/20L threshold needed to be realigned slightly in a southwest direction to achieve compliance with FAA regulations. The relocation required placement of a minor amount of fill placed in the Kress Creek Tributary 4B floodplain. CBBEL prepared the floodplain fill calculations based on the provided improvement engineering plans. Compensatory storage was provided in the Kress Creek Regional Flood Control Facility located downstream. CBBEL prepared the Stormwater Management Permit application package that was submitted to DuPage County for their review and concurrence. DuPage County certification was received and the City of West Chicago issued the Stormwater Management Permit in August 2012. The project was constructed in the Fall of 2012.

Dam Inspection, DuPage County Airport, West Chicago, IL: As part of the overall drainage network there are two small size Class III low hazard dams. These dams located along a Kress Creek tributary have an earthen embankment with a concrete pipe spillway. The structures were permitted by the Illinois Department of Natural Resources – Office of Natural Resources (IDNR-OWR) in 1999. The dams require a formal inspection every five years, an annual Owner's Maintenance Statement and an annual Owner's Operation and Maintenance Plan Statement. CBBEL completed the formal dam inspection during September 2011. The IDNR-OWR dam inspection forms were compiled and provided to the DuPage County Airport Authority for submitted to IDNR-OWR.

GOLF COURSE PROJECTS

Course #1 Renovation, Medinah Country Club, Medinah: Project Manager for this project which involve the renovation of Course #1. MCC hired the golf course architect, Tom Doak to prepare a renovation plan for Course # 1. Meacham Creek flows north to south through Course #1. CBBEL's role was to analyze the existing drainage for both Course #1 and Course #2 which is located adjacent to Course #1. Based on this analysis, CBBEL developed a comprehensive drainage improvement plan that worked with the proposed golf course renovation. This drainage plan included new dry storage basins with new drainage pipes. These drainage improvements allow stormwater to be kept away from the playable areas of the golf course. CBBEL prepare the engineering plans reflecting the proposed grading and drainage improvements. Two other improvement features also required CBBEL design. The Meacham Creek shoreline was eroded in many locations. A streambank stabilization plan was developed that consisted of a river boulder toe, flatter bank slopes and vegetation. The last improvement was a new weir/bridge across Meacham Creek by the new 17th hole location. The purpose of the weir is to create a level pool upstream of the structure. The steel bridge was a prefabricated single span 12 foot wide by 80 foot long structure placed on top of the concrete weir/abutment foundation. CBBEL also prepared a detailed SWPPP for the project. CBBEL prepare permit applications to DuPage County for a stormwater management permit, a U.S. Army Corps of Engineers (COE) for a section 404 permit, the Illinois Department of Natural Resources – Office of Water Resources (IDNR-OWR) for a dam safety permit and to the Illinois Environmental

Protection Agency (IEPA) for a NDPES Construction permit. All permits/approvals were received and construction began October 1, 2012.

Drainage Improvements, Glen View Club, Golf: Project Manager. The 18-hole private Glen View Club has extensive overbank flooding from The North Branch Chicago River. The overbank results in course damage and loss of revenue. CBBEL prepared a comprehensive study to develop and evaluate short and long term drainage improvements. The short term project was three large wet wells located in low areas of the course. The superintendent can place portable gas powered pumps on the wet wells and pump trapped water back to the river. This projected was completed in Spring 2011. The long term project consists of the construction of berms to prevent floodwaters from inundating playing areas.

Meacham Creek Dam Replacement, Medinah Country Club, Medinah: Project Manager. The purpose of the dam is to create a pond in front of the Course # 1 18th hole green and to allow golf course access across the creek. In October 2009, water began seeping under the dam causing the pond to disappear and jeopardizing the dam and bridge structure. CBBEL performed a structural geotechnical evaluation of the dam. It was determined that dam needed to be replaced. CBBEL sized the new dam using the Meacham Creek FEQ model, prepared engineering plans and prepare permit applications. The new dam was constructed in Spring 2010.

Medinah Country Club, DuPage County: In anticipation of the 2010 Ryder Cup, Medinah Country Club (MCC) completed improvements to their club. One of the major revisions is the reworking of the 15th hole to allow the pro golfers to attempt to drive this par 4. The revisions to the 15th hole include a new green and bunkers, a new tee and two new ponds that are positioned precariously next to the green. The existing area of the 15th hole green and adjacent 16th hole tee has historically been a problem wet area. CBBEL analyzed the existing drainage of the 15th/16th holes area and developed a comprehensive drainage improvement plan that worked in harmony with the Rees Jones golf hole improvements. The original golf improvement plan included one pond; CBBEL expanded this concept by adding an additional pond that increases the famous Course #3 stormwater storage. In addition, the 16th hole tee area was elevated to allow play even during wet periods. CBBEL worked closely with the golf course architect in developing grading, drainage and soil erosion control plans for the proposed improvements. The engineering plans were used for bidding and permitting. A DuPage County Stormwater Permit was obtained on behalf of MCC. CBBEL also prepared the Stormwater Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI). The construction of the improvement was begun in August 2009 and completed in October 2009. Course #3 was reopened for play in June 2010.

Butterfield Country Club, DuPage County: Assisted the golf course architect (Steve Smyers Golf Course Architects) in developing a Master Plan for future golf course improvements. Ginger Creek flows through the golf course. A streambank stabilization and relocation plan for Ginger Creek was prepared. The proposed improvements are consistent with the DuPage County Ginger Creek Watershed Plan. FEQ unsteady flow model was used to evaluate the effectiveness of the proposed storage volume. On behalf of the Country Club, CBBEL applied for and obtain permits from DuPage County and the COE. The construction commenced in August 2008.

Twin Orchard Country Club, Lake County: Two tributaries to Indian Creek drain the County Club along with 180 acres of offsite drainage area. During significant rainfall events, playing portions of the two eighteen hole courses become inundated. The inundation results in loss of play and additional costs for cleanup. The Country Club hired CBBEL to prepare a Master Stormwater Plan. The Plan was coordinated with golf course architect David Esler who redesigned four holes. The Plan included the construction of 12 new stormwater management basins. The bottoms of the basins are planted with either blue grass or native vegetation. In addition, 7 existing ponds were expanded to provide additional stormwater storage. The new basins are designed to store runoff in locations where golf play would not be interrupted. In addition, old clay tiles that drain the fairways were replaced with new plastic pipes. CBBEL prepared engineering plans and obtained approvals and permits from the COE, LCSMC and LCPBD. Construction of the stormwater improvements began in September 2008 and finished in Spring 2009.

Olympia Fields Country Club: Butterfield Creek flows through the south golf course. Proposed golf course improvements within the regulatory floodway and floodplain required permits. The golf course improvements included new golf cart bridges, relocation of existing golf cart bridges and grading. A joint permit application for the proposed improvements was submitted to IDNR-OWR, COE and IEPA. The South golf course was reopened June 2008.

Gregg's Landing Development, Vernon Hills: Planned, designed and permitted the 31 basin stormwater management system, two culvert crossings, wetland mitigation plan, and compensatory storage area for this 950-acre development. The residential development has an 18-hole championship golf course (White Deer Run) that will also incorporate many of the detention basins.

TAM Golf Course Improvement Plans, Niles Park District, Niles: The Niles Park District nine hole golf course is located within the North Branch Chicago River floodplain. Construction plans and

specifications were prepared for a pump station and storm sewer, new parking lot, parking lot lighting, and excavation for a compensatory and detention storage facility. The project required permits from IDNR-OWR, COE, IEPA and MWRDGC.

Seven Bridges Golf Club, Woodridge, DuPage County: The East Branch DuPage River (EBDR), Prentiss Creek and Hobson Creek (Tributary No. 6) flow through the project site. The project consisted of an 18-hole Championship Golf Course, residential subdivision and commercial areas. Five on-line dams were constructed across relocated Prentiss Creek and the EBDR. Plans were prepared, a dam permit obtained from IDNR-OWR, and a stormwater management plan was developed for the entire development. The created on-line stormwater basins satisfy the project's detention and compensatory storage requirements. A CLOMR and LOMR were received from FEMA.

WETLAND HYDROLOGY STUDIES

- Baker Lake, Forest Preserve District of Cook County, Barrington
- Caputo's Fresh Market, Woodridge
- Farmview Subdivision, Will County Land Use Department, Will County
- Ferson Creek Wetland Bank, LAWR, Kane County
- Four Colonies Development, RDG, Crystal Lake
- Hanover Park Wetland Bank, Northern Builders, Hanover Park
- Heritage Woods Subdivision, Pasquinelli Development Group, West Chicago
- Internationale Centre, Catellus Development, Woodridge
- The Oaks Wetland Bank, LAWR, Joliet
- Windy Point, Fifield Development, Schaumburg
- Woodfield Preserve, Hines, Schaumburg
- Woodland Meadows Subdivision, RDG, Hebron

DAM PERMITS AND INSPECTIONS

- Two Meacham Creek Dams, Medinah Country Club, DuPage County
- Woods Creek Dam, Crystal Lake, McHenry County
- International Centre South Dam, Minooka, Grundy County
- Charrington Subdivision Dam, Frankfort, Will County
- College Trails Subdivision, Cambridge Homes, Grayslake
- Duck Pond, Wadsworth County, WI
- Fox Bend Dam, Kipling Developers, Shorewood
- Fox Bend Subdivision, Kipling Development, Shorewood
- Gregg's Landing Development, GAZ, Inc., Vernon Hills
- Lake Charles Dam, GAZ, Inc., Vernon Hills
- Prescott Mill, Pulte Homes, Oswego
- Seven Bridges Golf Course, Forest City – Harris Group, Woodridge

STORMWATER MANAGEMENT STUDIES

- Bannockburn Office Plaza, Bannockburn Legal Group, Bannockburn
- Bell Farm Drainage Study, Bill McEnery, Unincorporated Will County
- Berlowitz Ditch Watershed Study, Tippecanoe County, IN
- Byerly's Grocery Store, Ryan Construction, Highland Park
- Carlow North Industrial Park, Northern Builders, Bolingbrook
- Cherry Hills Business Park, Northern Builders, New Lenox, Will County
- Cloisters Subdivision, Orchard Colony Homes, Schaumburg
- College Trails Subdivision Stormwater Management Study, Cambridge Homes, Grayslake
- Countryside Subdivision Drainage Study, Arlington Heights/Prospect Heights
- Cuba Township Drainage Studies, Cuba Township/LCSMC, Lake County
- Eastview Avenue Drainage Study, Village of Bensenville
- Elmwood Park Drainage Study, Village of Elmwood Park
- Fairfield Village Development, Fairfield Village LLC, Round Lake Park
- Fairway Club Townhomes, Fairway Club Development, Willow Springs
- Fordham Glen Apartments Stormwater Mgmt Study, Fordham Development, Glendale Heights
- Fortune Business Center, CRA, Elk Grove Village
- Four Colonies Subdivision, RDG, Crystal Lake
- Gregg's Landing Development, The Zale Group, Vernon Hills
- Heather Green Stormwater Basin, Roselle
- Hibernia Development, Red Seal Development, Highland Park
- High Hills Regional Detention Storage Facility, United Development, Algonquin
- Kraft Foods Stormwater Management Study, Glenview
- Lakewood Falls Subdivision, Lakewood Homes, Romeoville
- Lakewood Grove Subdivision, Lakewood Homes, Round Lake Beach, Lake County
- Laurette Court Watershed Study, Village of Schaumburg
- Lexington Nursing Home, W-T Engineering, Lake Zurich
- Lions Park, Village of Bensenville
- Lisle Police Facility, Village of Lisle

- O'Hare Airport Drainage Study, Chicago Transit Authority (CTA), Chicago
- Painters Lake Subdivision, Berke Homes, Highland Park
- Park 355, Woodridge
- Plainfield Golf Course Stormwater Management Study, Fry Developments, Plainfield
- Prairie Crossing, Grayslake
- Prospect Park Drainage Study, Village of Clarendon Hills
- Rat Creek Dam Breach Study, United Development, Algonquin
- Ridgewood Business Park, C.W. Greengard, Romeoville
- Riverwalk Development, Fox River Grove
- Royal Fox Drainage Study, St. Charles
- Runaway Bay, Palatine
- Sedgewood Cove, Red Seal, Lindenhurst
- Seven Bridges Development, Forest City-Harris Group, Woodridge
- Station Central Prairie Crossing, Prairie Holdings, Libertyville, Lake County
- Stormwater Management Data Study, City of Elkhart, IN
- Stormwater Master Plan, City of Portage, IN
- Twin Orchard Country Club, Long Grove
- Village Green of Lisle, Holtzman – Silverman, Lisle
- Village-Wide Stormwater Management Study, Bensenville
- Walnut Hills Unit 2, Town and Country Homes, St. Charles
- West Norman Drain, Village of Plainfield
- Weston Woods Subdivision, C & S Engineering, Tippecanoe County, IN
- Windy Point, Fifield Development, Schaumburg
- Woodfield Preserve, Hines, Schaumburg
- Woodland Hills Subdivision, Hoffman Group, Bartlett

IDNR-OWR FLOODWAY CONSTRUCTION PERMIT APPLICATIONS AND FEMA LETTER OF MAP REVISIONS

- 63rd Street Ditch, The James Company, Burr Ridge
- Addison Creek Tributary, Seton Engineering, Bensenville
- Addison Creek, Neptune Construction, Bensenville
- Addison Creek, Bensenville
- Aptakisic Creek, Marchris Engineering, Buffalo Grove
- Bensenville Ditch, Bensenville
- Bull Creek Tributary LOMR, McShane/TMA, Libertyville, Lake Co. (2008)
- Bull Run, Pearson Brown and Associates, Libertyville
- Cal-Sag Channel LOMR, Crestwood, Cook County
- Carillon North, Cambridge Homes, Grayslake
- Charrington Subdivision, Frankfort
- Chicago River LOMA, One River Place, Chicago, Cook Co. (2008)
- Chesapeake Farms CLOMR and LOMR, Pulte Homes, Grayslake
- College Trails LOMR, Cambridge Homes, Grayslake
- Cornish Park, Algonquin
- Country Club Tributary, Midlane Country Club, Waukegan
- Des Plaines River, Riverside Golf Course, North Riverside
- Des Plaines River LOMR-F, Science & Arts Academy, Des Plaines, Cook Co. (2007)
- Dyer Ditch LOMR, Lake County Surveyor's Office, Lake County, IN
- East Avenue Ditch, Novotny and Associates, Countryside
- East Nettles Creek LOMR, Percucca Family Farm, Morris, Grundy Co. (2008)
- Fairway Club Phases I and II LOMR, Montalbano Homes, Willow Springs
- Ferson Creek Culvert Crossing, Brian Coleman, Kane County
- Flint Creek, Cambridge Homes, Lake Zurich
- Fox Mill Subdivision/Mill Creek LOMR, B&B Enterprises, Kane County
- Fraction Run Creek, Ryland Group, Lockport, Will County
- Golf Cart Bridge, TAM Golf Course, Niles Park District, Niles
- Gregg's Landing Subdivision, Vernon Hills
- Glen Crest/Lake View Terrace :LOMA, Glen Ellyn, DuPage Co. (2008)
- Hickory Creek LOMR, Bianco, Frankfort
- Hickory Creek LOMR, Enricho's, Frankfort, Will Co. (2008)
- Hill Hills Farm Dam Improvement, Algonquin
- Indian Creek, Indian Creek Townhomes, Lincolnshire
- Jackson Creek, BNSF, Will County
- Jackson Creek, Deer Run International Park, CenterPoint Properties, Will County
- Kankakee River, McIntosh Trust, Grundy County
- Klein Creek Tributary, Klein Creek Golf Course, Winfield
- Klein Creek, Pasquinelli Builders, Carol Stream
- Klein Creek, Walsh, Higgins Company, Glendale Heights
- Lily Cache Slough LOMR, Cambridge Homes, Romeoville/Will County
- Lily Cache Creek Bridge Replacement, Bolingbrook, Will County
- Lily Cache Creek CLOMR, Bolingbrook, Will County,
- Lily Cache Creek LOMR, Bolingbrook, Will Co. (2006)
- Lily Cache Creek LOMR, Kirk Homes, Bolingbrook, Will Co. (2008)

- Lily Cache Creek LOMR-F, Pulte Homes, Bolingbrook, Will County
- Little Calumet River, Land of Lincoln Builders, South Holland
- Meacham Creek, Medinah CC, Medinah, DuPage Co.
- Market Place LOMR-F, Rosemont
- Maumee River, Turnbell Group, Allen County, IN
- Naperville Road Tributary, The Brickman Group, Bolingbrook
- North Shore Channel, Lincoln Village Shopping Center, Chicago
- Pedestrian Bridge, St. Charles Park District, St. Charles
- Pedestrian Bridges, Woodridge Park District, Woodridge
- Plum Creek, Eldridge Engineers, Will County
- Poplar Creek, Creekside Rushes Development, Hoffman Estates
- Poplar Creek, Hoffman Estates
- Rat Creek, Walter Styzinski, Algonquin
- Ridgemoor Park, Willowbrook
- Route 66 Race Track, Geotech, Inc., Joliet
- Salt Creek, Renaissance Development Group, Elmhurst
- Schererville Ditch LOMR, Lake County Surveyor's Office, Crown Point, IN
- Seven Bridges Golf Course Development LOMR, Forest City Harris Group, Woodridge
- Skokie River, Byerly's, Highland Park
- Spring Brook No. 2, Henderson and Bodwell, Naperville
- Squaw Creek, Pearson, Brown and Associates (Two Projects), Round Lake Park
- Stoney Creek, Stilup, Alsip
- Stoney Creek, Chicago Ridge
- Tributary B to Buffalo Creek
- Tributary No. 5 to the East Branch DuPage River, Cesario Builders, Lisle
- Tributary No. 5 to the East Branch DuPage River, DePaulo Builders, Lisle
- Underwriters Tributary, The Perlman Group, Northbrook
- Waubansee Creek Tributary, KRG Excavating, Oswego
- West Branch DuPage River, DePaulo Builders, Naperville
- West Branch DuPage River, MidAmerica Developments, Inc., Naperville
- West Branch of Salt Creek LOMR, Greco Construction, Schaumburg
- West Branch Salt Creek, Hoffman Homes, Schaumburg
- West Branch Salt Creek, Illinois Industrial Properties, Schaumburg
- West Branch Salt Creek, ISTHA
- West Norman Drain LOMR-F/LOMA, Pasquinelli Development Group, Inc., Plainfield, Will County
- Wilke Road Culvert Improvement, Arlington Heights
- Willow-Higgins Creek, Rosemont
- Zone A LOMR, Schaumburg, Cook County

STREAMBANK STABILIZATION

- Cherry Creek, Roselle
- Ginger Creek, Butterfield CC, DuPage Co. (2008)
- TAM Golf Course, Niles Park District, Niles
- Tributary No. 4 to the West Branch Salt Creek, Schaumburg
- Chick Evans Golf Course, Forest Preserve District of Cook County
- Lily Cache Creek, Bolingbrook
- North Branch Chicago River (2 reaches), Glenview Club, Golf (2011-2012)
- Meacham Creek, Medinah CC, Medinah (2012)

Thomas Burke, PhD, PE, D.WRE, CFM, CPESC
Vice President, Head, Water Resources Department

YEARS EXPERIENCE: 23
YEARS WITH CBBEL: 18

EDUCATION
Doctor of Philosophy, 1996
Civil Engineering
Purdue University

Master of Science, 1992
Civil Engineering
Purdue University

Bachelor of Science, 1991
Civil Engineering
Northwestern University

PROFESSIONAL REGISTRATION
Professional Engineer, IL, 062052048, 1998
Professional Engineer, IA, 17060, 2004
Professional Engineer, IN, 10708209, 2007

CERTIFICATIONS
Certified Floodplain Manager
IAFSM

Certified Professional in Erosion and Sediment Control (CPESC)

Diplomate Water Resources Engineer (D.WRE)

Kane County-Engineer Review Specialist

PROFESSIONAL DEVELOPMENT
SEMINARS TAUGHT
HEC-HMS. Instructor for National ASCE teaching the course throughout the United States, 2003-Present

Introduction to Hydrology and Hydraulics. Teach one to two times a semester to students at Purdue University enrolled in CE290, 2004-present.

Naturalizing Detention Basins Using BMP's. Presentation for the Conservation Foundation and DuPage County DEC at the Stormwater BMP's for Communities workshop, March 18, 2004.

Selected to attend a Legislative Fly-In Session sponsored by ASCE in Washington, DC, March 9 & 10, 2004, to train & meet with members of the Congress & Senate regarding legislation affecting Civil Engineering.

Stormwater Drainage Computer Workshops: TR-20, TR-55, HY-8 and Stormwater Drainage Disk; seven one-day courses taught in Columbus, Evansville, Muncie and South Bend, IN, August, 1996.

TR-55 Workshop, Purdue University - Calumet Campus, Sponsored by Lake County Surveyors and HERPICC, August 4, 1993.

WSPRO (HY-7) Workshop, Future Now - Computer Store, Sponsored by Indiana Association of County Engineers and HERPICC, June 18, 1993.

Professional Engineer experienced in civil and water resources engineering. Responsible for water resources engineering project, design, and reviews, including land use characterization, watershed and floodplain/floodway delineation, steady and unsteady river hydraulics analysis, stormwater management, feasibility studies, and development of countywide ordinances. Head of Water Resources Department, responsible for 24 water resources engineers performing technical analysis and design. Projects include developing hydrologic and hydraulic models, establishing floodplain and floodway limits, evaluating proposed modifications, stormwater management design for commercial, industrial, and residential development, obtaining permits through municipal, county, state and federal agencies and Letters of Map Change. Served as an expert witness for cases involving stormwater management in Illinois and Indiana. Stormwater consultant for the Lake County Surveyor's Office and Lake County Drainage Board in Indiana. Oversee the stormwater reviews for several communities in the Chicagoland area and northwest Indiana.

WATERSHED PLANNING STUDIES

Upper Salt Creek FEQ Study, DuPage County: Performed hydraulic analysis using FEQ unsteady-state model for a comparison study with HEC-2 steady-state model.

Flagg Creek Watershed Plan, DuPage County: Performed hydraulic analysis using FEQ unsteady-state model, economic analysis of damages from historical events and assisted in the preparation of a watershed plan.

Addison Creek Watershed Plan, DuPage County: Performed hydraulic analysis using HEC-2 steady state model, economic analysis of damages from design storm event and preparing a watershed plan which allows the Village of Bensenville to plan and obtain funding for regional stormwater projects.

Upper Des Plaines River Tributaries, DuPage County: Completed a Watershed Study for Willow-Higgins Creek and Bensenville Ditch as they relate to the City of Chicago O'Hare International Airport Modernization Program. The plan allows for the future development to meet the intent of the DuPage County Stormwater and Flood Plain Ordinance by reducing peak discharges leaving the airport property and identifies known flooding problems in the watershed.

Downers Grove Downtown Redevelopment Watershed Plan, DuPage County: Completed a special watershed study of St. Joseph's Creek to allow downtown Downers Grove to develop without having to provide detention on each site and meeting the intent of the Ordinance by improving the watershed. The plan also provides the supporting calculations and documentation for the fee-in-lieu of detention value.

SPECIAL STUDIES

Winnetka Flood Risk Reduction Study: Performed a flood risk reduction analysis based on the flooding from the September 2008 event. The purpose of the study was to evaluate the existing storm sewer systems for the 2-, 5-, and 10-year design events, establish causes for the flooding and provide improvement plans to reduce the risk of future flooding. There were five study areas identified within the Village through a series of public meetings and flood damage questionnaires. Causes of flooding were identified and conceptual improvement plans, along with estimated costs, were prepared. The study was then expanded to cover three additional areas and include evaluation of protection up to the 100-year design storm event following significant flooding in July 2010.

Elmhurst Comprehensive Flood Plan: Completed an overall study of 10 areas that significantly flooded during the July 2010 storm event. After analyzing the existing conditions, proposed solutions were provided to reduce the risk of future flooding. Hydrologic and hydraulic modeling were used in the evaluation of alternatives. Cost estimates were determined for each solution. We also reviewed the current stormwater practices and made recommended improvements. Several presentations were made to the City and many meetings with a citizen task force were held.

St. Margaret Mercy Healthcare Centers, Inc. (SMMHC), Dyer, IN: August 24th, 2007 Hart Ditch overtopped its banks, causing significant overbank flooding through the Town of Dyer, IN and substantial flood damage to SMMHC Dyer campus. CBBEL was retained to evaluate the cause of the flooding and prevent future flooding of the hospital. A flood protection barrier was proposed for the SMMHC campus for future flood protection. CBBEL developed a hydrologic model for the Plum Creek / Hart Ditch Watershed and calibrated to the August 2007 storm event using measured rainfall data; developed an unsteady HEC-RAS hydraulic model to determine benefits of flood storage on the SMMHC campus, a summary report and creation of temporary and permanent flood protection for the SMMHC campus. This information was used for further development of flood storage needed in the Plum Creek / Hart Ditch Watershed.

Stormwater Drainage Conference, Purdue University, West Lafayette, IN, March, 1992 to Present.

Teaching Assistant for seven different upper-level undergraduate and graduate courses at Purdue University, 1992 to 1996.

Assisted Christopher Burke in teaching graduate level course, CME 427-Engineering Hydrology, at University of Illinois at Chicago, Fall 2001 to Present.

Assisted Christopher Burke in teaching undergraduate level course, CME 215-Hydraulics and Hydrology, at University of Illinois at Chicago, Fall 2002 to Present.

PUBLICATIONS

Assigning Weights to Precipitation Stations, Water Resources Engineering, Volume 1, pages 810-814, 1995 by ASCE (TT Burke and AR Rao).

Manual for HERPICC Stormwater Drainage Disk, Highway Extension Research Projects for Indiana Counties and Cities, School of Civil Engineering, Purdue University, page 54, July 1995 (TT Burke, D Bhattacharya and AR Rao).

Short Time Increment Characteristics of Indiana Rainfall, 1995 Annual Meeting, March 24, 1995 by ASCE Central Branch (AR Rao, TT Burke and DJ Schuller).

Simulation in Hydraulics and Hydrology, Chapter 36, The Civil Engineering Handbook, pages 1139-1156, 2003 by CRC Press (AR Rao, CB Burke and TT Burke).

Spatial and Temporal Characteristics of Palmer's Drought Severity Index, ASCE North American Water and Environment Congress, June 1996 (TT Burke and AR Rao).

Stormwater Drainage Manual, Purdue Research Foundation, West Lafayette, IN, Revised February 2008 (CB Burke and TT Burke).

Syntheses Study on the Use of Concrete Recycled from Pavements and Building Rubble in the Indiana Highway System, Technical Report, FHWA/IN/JHRP-92/15, page 117, 1992 (TT Burke, MD Cohen, CF Scholar).

Urban Drainage, Chapter 31, The Civil Engineering Handbook, pages 1034-1049, 2003 by CRC Press (AR Rao, CB Burke and TT Burke).

PROFESSIONAL AFFILIATIONS

American Geophysical Union

American Society of Civil Engineers
Past–President of Illinois Section, Region 3 Governor, Environment and Water Resources Institute: Statistical Distribution in Hydrology Task Committee

Orland Park Flood Risk Reduction Assessment: As the result of significant flooding in the Village of Orland Park from a severe rainstorm on July 27, 2003, CBBEL performed a flood risk reduction analysis. The primary goal at the study was to determine the extent and cause of flood damage throughout the Village. There were 21 study areas identified within the Village and conceptual estimates of construction costs were prepared for possible solutions. A flood damage questionnaire was distributed throughout the Village and multiple neighborhood meetings were held.

Orland Park Stormwater Management Plan: Utilizing the analysis prepared in the Orland Park Flood Risk Reduction Assessment, CBBEL prepared a stormwater management plan for the Village which addressed implementing specific drainage improvements in 16 of the 21 study areas. The plan varied from construction of new storm sewers to increasing storage capacity to modifying overland flow routes.

Wood Dale – Itasca Spillway: Design and analysis of a spillway diverting large flows into a reservoir. Performed wave run-up calculations for permitting and hydraulic analysis using FEQ unsteady-state model to analyze the economic benefit of many scenarios. Project includes the optimization of four gate setting for diverting flow from Salt Creek into a large pump-evacuated reservoir. Used economic data to determine project benefits for State funding.

Lincoln Park Zoo, Chicago: Part of a consulting team renovating the South Pond area that will inspire lifelong environmental stewardship for Chicago area students, families, and community members. We worked on the design to enhance the pond by improving the water quality by replacing surrounding asphalt paths with native vegetated edges, introduce interactive elements along the pond, add a boardwalk through the pond, restore and protect the island in the pond and improve the surrounding landscape.

Morton Arboretum Main Parking Lot Design, Lisle: CBBEL worked with The Morton Arboretum to incorporate Best Management Practices (BMPs) into the design of their 6-acre Main Parking Lot. The Main Parking Lot is located in the floodplain of the East Branch of the DuPage River, and stormwater runoff from the parking lot will drain to Meadow Lake. The design of the Main Parking Lot includes the following BMPs: Wetland Sedimentation Basin, Porous Pavement, Depressed Medians, and Subsurface Stormwater Storage. Following the completion of the project a study comparing the results of runoff volume from the Main Parking Lot with the runoff volume from the staff parking lot (typical impervious coverage) was performed to demonstrate the reduction of runoff using BMPs.

ORDINANCE DEVELOPMENT

DuPage County Stormwater Ordinance (2012): Worked on complete overhaul of the County Stormwater Ordinance to reflect the current and future development conditions in DuPage County. The revised ordinance was developed with input from the Steering Committee made up of municipal engineers and County staff.

Kane County Stormwater Ordinance (2001): Worked for the Kane County Department of Environmental Management to produce an ordinance that reflects the Kane County Stormwater Master Plan and the appropriate stormwater criteria for the County. Assisted in the writing, research and presentations of the Ordinance.

Kane County Technical Manual (2001): Responsible for the development of a manual that is used as a supplement to the new Ordinance. The manual includes example calculations and standard forms that will be used in every stormwater submittal and example plans to assist the design engineer in preparing a submittal.

State of Indiana:
Town of Dyer Stormwater Management Ordinance (2012)
Town of Dyer Stormwater Quality Management Plan (2012)
Lake County, Indiana Stormwater Management and Clean Water Regulations Ordinance (2006)

ENGINEERING REVIEW

Village of Orland Park (2004-present): As a consultant to the Village Engineering and Public Works Departments, CBBEL is providing engineering project review services since 2004. The reviews range from single family lots to 70 lot residential developments. We have been involved with the conceptual meetings through final engineering review.

Lake County, IN (1996-present): Consultant to the Lake County Surveyor's Office, responsible for reviewing stormwater management of proposed projects with respect to the Lake County Drainage Ordinance. Attend monthly Drainage Board meeting to assist Lake County Surveyor with proposed projects and public comments.

Illinois Association for Floodplain and Stormwater Management
Certified Floodplain Manager

Illinois Society of Professional Engineers

International Water Resources Association

Irish Engineers and Contractors

Northbrook Hockey League
League President, 2012-current; Travel Director 2010-2012. Organized and directed a 79-team tournament over Thanksgiving, including 24 teams from out-of-state (2009-2012).

Northbrook Stormwater Commission
Serving on the Village Commission since 1998.

The Alliance for Character In Education Board of Directors
Served on the Board from 2003-2008 representing The Willows Academy and Northridge Preparatory School.

Northbrook Park District
Coach for Youth Soccer (2006) and Flag Football (2012)

AWARDS

Young Civil Engineer of the Year, American Society of Civil Engineers – Illinois Section, 2000

Edmund Friedman Young Engineer Award for Professional Achievement, American Society of Civil Engineers, 2001

Charles Ellet Award, Western Society of Engineers, 2001

Chi Epsilon Chapter Honor Member, Purdue University, 2001

Town of Dyer, IN (2008-present): Consultant to the Town's Storm Water Board working on various drainage problems. We have completed studies on over 10 different areas ranging from a subdivision problem to sizing a regional flood control facility. Designed Phase 2 of the Beren's-Monaldi flood control wall protecting hundreds of residents from overbank flooding. Initiated and coordinated the installation of a stream gage and rain gage in Plum Creek Watershed in conjunction with the United States Geological Survey. Developed an early warning system utilizing the gages and predicted rainfall to forecast flooding and provide the Town sufficient time to prepare and respond.

Village of Downers Grove (2001-2008): Responsible for reviewing the stormwater management of proposed projects with respect to the DuPage County Countywide Stormwater and Flood Plain Ordinance.

Village of Northbrook (2001-2003): As a consultant to the Village Engineer, review the stormwater management of selected projects with respect to the Village Ordinance. Make recommendations for stormwater improvements utilizing Best Management Practices.

Lake County Stormwater Management Commission (2001-2002): As a consultant to SMC, responsible for the coordination and review of stormwater management permit applications requiring base flood evaluation determinations, stormwater detention, roadway projects and wetland hydrology criteria. We reviewed over 30 permit submittals always meeting a two week turnaround requirement.

Village of Northlake: As a consultant to the Village Engineer, review the stormwater management of selected projects with respect to the Village Ordinance. Make recommendations for stormwater improvements utilizing Best Management Practices.

HYDROLOGIC AND HYDRAULIC STUDIES

Completed hundreds of hydrologic and hydraulic studies that range from permitting a mulch path with two pedestrian bridges, to preparing a Hydraulic Report for a bridge over the North Branch of the Chicago River, to preparing an XP-SWMM analysis of a several hundred acre area, to sizing multiple detention basins for a large development. Many of the hydrologic and hydraulic studies have led to flood reduction studies and implementation of construction projects.

LETTER OF MAP CHANGE STUDIES

Obtained many Letters of Map Change (LOMC) including Conditional Letter of Map Revision, Conditional Letter of Map Revision Based on Fill, Letter of Map Amendment, Letter of Map Revision and Letter of Map Revision Based on Fill. The LOMC have been obtained for various waterways in Northern Illinois and Northwest Indiana.

PERMITS OBTAINED

Applied for and received over 100 permits including IDNR-Floodway Construction, IDNR-Certification of Flows, and IDNR-Base Flood Elevations. Aside from IDNR and FEMA, agencies permits have been received from include: Indiana Department of Natural Resources-Division of Water, Metropolitan Water Reclamation District, Cook County Building and Zoning, DuPage County Stormwater Department, Lake County Stormwater Management Commission, Will County Land Use Department, Kane County Department of Environment, DuPage County Division of Transportation, Illinois Department of Transportation, City of Chicago Department of Water Management, McHenry County Water Resources, other counties and many municipalities.

Jeffrey Julkowski, PE, CFM
Senior Project Manager

YEARS EXPERIENCE: 15
YEARS WITH CBBEL: 15

EDUCATION
Bachelor of Science, 1998
Agricultural Engineering
University of Illinois at Urbana-Champaign

PROFESSIONAL REGISTRATION
Professional Engineer, IL, 062057976, 2004

CERTIFICATIONS
Certified Floodplain Manager
IAFSM

PROFESSIONAL DEVELOPMENT
FEQ Unsteady Flow Modeling Seminar

National Highway Institute- HEC-HMS Training Seminar

ASCE-Illinois Section EE&WR Technical Group–XP-SWMM2000 Training Course

Ethics in City Government, Ethics Training for CDA/OMP Contractors, Vendors & Employees

PROFESSIONAL AFFILIATIONS
Illinois Association for Floodplain and Stormwater Management

AWARDS
2003 Transportation Project of the Year, over $10 million, American Public Works Association (APWA), Butterfield Road (South), Lake County Division of Transportation

Professional Engineer experienced in water resources; responsible for engineering project management and analysis. Duties include performing the following hydrologic and hydraulic engineering tasks: land use characterization, watershed studies, floodplain/floodway delineation, detention and compensatory storage determination, steady state hydraulic analyses, and design of conveyance systems, and stormwater management permitting.

Computer modeling experience includes TR-20, HEC-HMS, HY8, HYDRAFLOW, HEC-2, HEC-RAS, WSP-2, and XP-SWMM.

Park Ridge Citywide Sewer Study: Lead engineer for project to develop InfoSWMM model of the entire City's sewer system. Project need resulted from repeated severe flooding events in recent years. Responsible for coordinating the development of InfoSWMM models for three major sewer systems in the City and development of 12 project areas to reduce the risk of flooding. Completed benefit/cost analysis. Prepared final report and gave presentation of results to City Council.

Park Ridge Sewer Improvement Program: Project Manager for follow-up to Citywide Sewer Study. Ongoing project to develop conceptual improvements into construction projects. Responsible for coordinating InfoSWMM modeling and development of final construction documents.

O'Hare Modernization Program – Master Drainage Plan, Chicago: Project included drainage master planning work for the O'Hare Modernization Program, which will expand and reconfigure the airfield at O'Hare International Airport. Responsibilities included determining the layout of numerous storm sewer systems to collect runoff potentially contaminated with aircraft deicing fluids. Sizing of these systems was done using XP-SWMM modeling software. Responsibilities also included the sizing of three large detention basins, coordination with numerous airfield design projects, and technical support for permitting through IDNR-OWR, DuPage County, IEPA, MWRDGC, and the FAA. Also oversaw preparation of permit submittal to IDNR-OWR for improvements within the Crystal Creek watershed.

Village of Lombard Combined Sewer Modeling: Project manager for an ongoing analysis of two areas of the Village's storm and combined sewer system encompassing approximately 1,900 acres. Runoff from these areas is conveyed to various sewer treatment facilities, until those systems reach capacity and overflow to the East Branch DuPage River. The project will determine the existing system capacities and frequencies of combined sewer overflow (CSO) events, with the goal of developing a sewer separation plan that will reduce the frequency of CSO's. The analysis uses the XP-SWMM hydraulic model, which will be calibrated to recorded rainfall and pipe flow data. After the model is calibrated, deficient areas will be identified and a sewer separation plan will be developed.

Homestead Gardens Detention Basin: XP-SWMM analysis of existing drainage system in Town of Highland, Indiana. Project involved developing XP-SWMM model of area that has experienced repeated flooding. Proposed alternative included construction of a flood control basin and relief storm sewers.

Will County Stormwater Technical Manual, Will County: After assisting Will County with the drafting of its countywide Stormwater Management Ordinance, CBBEL prepared a Technical Guidance Manual (TGM) to complement the Ordinance and to describe the technical basis for the requirements of the Ordinance. Responsibilities included drafting of text and examples, creation of figures, and integration of review comments from Stormwater Committee. The manual includes information in regards to: requirements For stormwater management, erosion and sediment control, protection of special management areas, Stormwater Management Permit submittal requirements, long-term maintenance, and enforcement and penalties.

USX-Southworks, Chicago: Developed a Stormwater Management Plan that uses the site's location and unique characteristics to complement the concept of sustainable development and reduces the impact to both the proposed on-site and existing off-site infrastructure. Stormwater Management Criteria were proposed for 6 zones. Each Zone is defined by a different set of criteria. Criteria are based on: desire to recharge groundwater and convey clean runoff to Lake Michigan, reducing stormwater flow to the City's sewer system and promoting Best Management Practices (BMP's) to reduce and treat runoff. BMP's were used to remove pollutant loading from stormwater runoff for water quality control and to reduce stormwater runoff and to lessen the impact to the existing and proposed infrastructure. Developed a conceptual grading plan and utility plans for watermain and sanitary sewer. Designed infiltration basins and vegetated swales/bioswales and used Ecoloc® permeable pavers.

Village of New Lenox – Stormwater Reviews: Responsible for stormwater management reviews for plan submittals to the Village of New Lenox. Each submittal is reviewed for conformance with both the Village's stormwater ordinance and the Will County Stormwater Management Ordinance.

IDOT LOCATION DRAINAGE STUDIES

Des Plaines River Road Reconstruction, Des Plaines: Project includes the reconstruction of 4.2 miles of roadway adjacent to the Des Plaines River. Responsibilities included researching and identifying the existing drainage systems throughout the project, analysis of the existing system capacities, design of a proposed mainline storm sewer system with several new outlets to the Des Plaines River, alternatives analysis of several floodplain/floodway compensatory storage scenarios, and preparation of the Location Drainage Study. This project included coordination with the City of Des Plaines, Illinois Department of Transportation (IDOT), Forest Preserve District of Cook County, and the Illinois State Toll Highway Authority (ISTHA).

Hankes Road Reconstruction, Sugar Grove: Construction of new exit/entrance ramp from Illinois Route 56 to Hankes Road in Sugar Grove. Responsibilities included WSP-2 hydraulic modeling for two new bridges on Blackberry Creek and Lake Run Tributary, determination of floodplain fill volumes, and development of compensatory storage alternatives. Prepared Hydraulic Reports for the proposed Blackberry Creek and Lake Run Tributary bridge structures.

Rohlwing Road Reconstruction, Rolling Meadows: Reconstruction and jurisdictional transfer of a ½-mile section of Rohlwing Road from Industrial Avenue to Northwest Highway. Project route experienced frequent flooding depths of 3-4' due to large developed watershed and undersized drainage systems. Responsibilities included watershed analysis, developing and evaluating flood reduction alternatives, and preparation of a Location Drainage Study.

Balmoral Avenue, Rosemont: Construction of new roadway and an exit/entrance from Mannheim Road to Balmoral Avenue. Future phases include additional access to Mannheim Road and new access from Balmoral Avenue into O'Hare International Airport. Performed drainage study to determine detention storage requirements and verify capacities of existing drainage systems. Prepared Location Drainage Study and permitting through IDOT.

STORMWATER AND FLOODPLAIN MANAGEMENT PERMIT APPLICATIONS

Tinley Park Retail Center, Tinley Park: Project included development of a retail center on a 109-acre parcel, of which approximately 92 acres was located within a Zone A 100-year floodplain. Responsibilities included designing detention storage basins to meet the requirements for both the Village of Tinley Park and the MWRDGC, design of several compensatory storage basins to mitigate for floodplain fill, a hydraulic analysis to define the limits of the Zone A floodplain, and the design of an inverted siphon system using XP-SWMM to allow runoff to cross below Union Drainage Ditch and access the site's detention basin.

Brach-Brodie Property, Naperville: Responsibilities included determination of detention storage requirements and preparation of permit submittal to the City of Naperville and DuPage County. Also completed a drainage study of Illinois Route 59 and offsite areas to design a bypass culvert through the development. Completed permitting through IDOT-Hydraulics. The project involved the development of a 100-acre plus parcel of land in southwest Naperville. The property, bordered on the north by 75th Avenue and on the west by IL Route 59, was converted from farmland into commercial space. The project included the construction of a 52 acre-ft stormwater management facility, a new wetland in an adjacent Forest Preserve parcel, a new ½ mile 4 lane roadway, new signalized intersections on IL Route 59 and 75th Avenue, new turn lanes in the existing medians of IL Route 59 and 75th Avenue, and roadway widening of IL Route 59 and 75th Avenue. The project also included the coordination of 80,000 plus cubic yards of imported structural fill and the construction of five building pads ranging in size from 10,000 square feet to 150,000 square feet.

Highlands of Lombard Retail Site, Lombard: Performed a stormwater detention analysis for two watersheds on the site, and a wetland hydrology analysis for existing and proposed conditions. Completed permit submittals through Village of Lombard and DuPage County. The 32 acre property was developed from open space into a commercial and residential development. CBBEL worked with the owner and development team to permit the stormwater management for the entire development. The site has over 30 feet of elevation change from north to south and is tributary to two different watersheds.

Butterfield Road Reconstruction (North and South), Libertyville: Stormwater management studies included detention storage for two watersheds and sizing of storm sewer systems. HEC-2 hydraulic modeling of Bull Creek to size proposed culvert replacement. Permitting through Lake County Stormwater Management Commission. The project consisted of the reconstruction of Butterfield Road from Bull Creek to IL Route 137, a distance of approximately two miles and from Huntington Road South to Bull Creek, a distance of over two miles. The existing two lane rural cross-section was reconstructed to provide five 12-foot lanes bound by B.6-24 curb and gutter. The reconstruction included the complete removal of the existing bituminous pavement and the replacement with full depth asphalt pavement, new curb and gutter, a new storm sewer system, detention facilities, and utility relocations.

Edgewater Subdivision by Pulte Homes, Elgin: Performed hydraulic modeling for the proposed realignment of Otter Creek from a channelized agricultural ditch to a natural meandering stream. Hydraulic modeling included one new culvert crossing, improvements to the existing crossing at Bowes Road, and relocation of the regulatory floodway. The modeling was used in support of permitting through IDNR-OWR. Designed several basins adjacent to Otter Creek to provide detention and floodplain storage. Completed stormwater permit submittals through the City of Elgin.

Metra National Street, Elgin: Project Engineer for the realignment and widening of the existing entrances to the station. The entrance/exit to the site consisted of narrow driveways on either side of the rail line. Both entrances/exits were too narrow to handle traffic during normal operations. The project widened both access points to provide channelized traffic flow and allow easier turning movements during normal and peak traffic flow. The widening required the design of a cast-in-place/soldier pile retaining wall to reduce impact to the adjacent Fox River. The design required that the plans be approved by the US Army Corps of Engineers and that they meet the DuPage County Stormwater Ordinance as well as the City of Elgin Flood Storage requirements.

Metra Laraway Road Station, New Lenox: Project Engineer for the construction of a transit-orientated development just east of the intersection of Cedar Road and Laraway Road in the Village of New Lenox. Designed a detention pond for the Phase I improvements. The project consisted of the installation of storm sewers, municipal water main, and municipal sanitary sewers. Analyzed existing and proposed conditions by using XP-SWMM, TR-20 and Hydra flow models, and then prepared a stormwater report for submittal to the Village of New Lenox.

The Reserve Subdivision by Pulte Homes, Elgin: Developed stormwater plans for a 44-acre subdivision adjacent to Otter Creek. Development included several large wetland areas, five detention basins, compensatory storage, and a new culvert crossing of an unnamed tributary to Otter Creek. Permitting was completed through the City of Elgin and IDNR-OWR.

FLOOD CONTROL

Palanois Park Flooding Study, Palatine: Project included hydrologic analysis of an existing subdivision to develop alternatives for drainage improvements. The existing storm sewer network and depressional storage in the subdivision was modeled using the XP-SWMM hydraulic model, and was calibrated to match reported flood elevations for known rainfall events. The study was coordinated with an analysis of the sanitary sewer system by SPACECO, Inc., and included several public meetings with the Village and area residents.

Rolling Meadows Stormwater Management Study: Project Engineer for a stormwater management study for the City of Rolling Meadows. During the summer and fall of 2001 the City experienced flooding during several intense rainfall events. The City identified 12 areas to be studied so that improvements could be made. Responsibilities included analysis of existing conditions for each of the areas, development of flood reduction alternatives, and analysis of each alternative with XP-SWMM to provide recommendations. The recommendations were summarized in a report and presented to City staff.

Jeana Gowin, PE, CFM
Water Resources Engineer

YEARS EXPERIENCE: 12
YEARS WITH CBBEL: 12

EDUCATION
Bachelor of Science, 2001
Agricultural Engineering
University of Illinois at Urbana-Champaign

PROFESSIONAL REGISTRATION
Professional Engineer, IL, 062061210, 2008

CERTIFICATIONS
Certified Floodplain Manager
IAFSM

PROFESSIONAL DEVELOPMENT
Ethics in City Government, Ethics Training for CDA/OMP Contractors, Vendors & Employees

Hancor Stormwater Management Presentation, 2005

IAFSM Conference, 2005

Writing Workshop, 2005

Urban Drainage Seminar, 2005

Best Management Practice Seminar, 2005

IDNR-OWR Permitting Seminar, 2005

DuPage County Flood Plain Mapping and Flood Plain Permit Submittal Seminar, 2005

FEQ Training Seminar, 2004

Polymers and Sediment Control, 2004

Sustainable Urban Drainage Systems Seminar, 2004

TR-20 Hydrologic Model Seminar, 2004

HEC-HMS Training Seminar, 2002

HEC-RAS Training Seminar, 2002

PROFESSIONAL AFFILIATIONS
American Society of Civil Engineers

Illinois Association for Floodplain and Stormwater Management

Water Resources Engineer responsible for water resources engineering project analysis and design. Duties include performing the following hydrologic and hydraulic engineering tasks: land use characterization, floodplain/floodway delineation, detention and compensatory storage determination, steady state and unsteady state hydraulic analyses, and design of conveyance systems. Has prepared, submitted, and obtained Illinois Department of Natural Resources (IDNR) floodway construction permits, dam safety permits, and Federal Emergency Management Agency (FEMA) Letter of Map Revisions (LOMR), LOMR-Fs, and Letter of Map Amendments (LOMA). Storm Sewerage Permits have been obtained from the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) and Stormwater Permits from the DuPage County Department of Economic and Development Planning (EDP). Has performed reviews for the communities of Addison, Carol Stream, Huntley, Inverness, Naperville, Orland Park, Prospect Heights, Rolling Meadows, Shorewood, and Wheeling.

Computer modeling skills include: HEC-1, HEC-HMS, and TR-20 hydrologic models; WSP-2, HEC-2, HEC-RAS steady state hydraulic models; Hydraflow and XP-SWMM storm sewer models; HY-8 culvert design; FEQ and HEC-RAS unsteady models; and HEC-GeoRAS and ArcMap.

Route 53 Pump Station and Terrace View Pond, Village of Lombard, DuPage County: Project Engineer responsible for the hydrologic and hydraulic analysis of the watershed. Used the XP-SWMM sewer model to identify existing sewer capacity and flood prone areas. Developed and evaluated alternatives to provide additional flood storage by improving the Terrace View Pond and provide storm sewer improvements to reduce flooding in the surrounding areas. The analysis was also used to determine a new pump rate for the upgraded Route 53 Pump Station.

Combined Sewer Modeling, Village of Elmwood Park, Cook County: Project Engineer responsible for the development of the XP-SWMM sewer model to evaluate the existing combined sewer. Proposed a flood reduction project to reduce flooding within the Westwood Subdivision. Includes the separation of 185 acres of Village area that is currently drained by combined sewers and will provide relief to MWRDGC North Avenue interceptor. New storm sewer system will discharge to Golf Course Tributary.

Combined Sewer Modeling, Village of Lombard, DuPage County: Project Engineer responsible for XP-SWMM hydraulic modeling preparation and calibration. Identified Combined Sewer Overflows (CSO) within the watershed and developed both an interim and a future sewer separation plan. Completed analysis of two areas of the Village's storm and combined sewer system encompassing approximately 2,600 acres. Runoff from these areas is conveyed to various sewer treatment facilities, until those systems reach capacity and overflow to the East Branch DuPage River. The purpose of the project was to determine the existing system capacities and frequencies of combined sewer overflow events, with the goal of developing a sewer separation plan that reduces the frequency of CSO's.

Irving Park Road Relocation Location Drainage Study, Village of Bensenville and City of Chicago: Project Engineer responsible for preparation of Location Drainage Study. Responsibilities included assembly of existing drainage plan outlining drainage boundaries and key drainage features, design of proposed storm sewer system, and assembly of proposed drainage plan.

Naperville Riverwalk, Signature Design Group, City of Naperville, DuPage County: Project Engineer responsible for development of existing and proposed conditions HEC-2 and FEQ hydraulic models, as well as preparation of a DuPage County Stormwater Permit Application. Project included the redevelopment of the Naperville Riverwalk between Jefferson and Main Streets in the City of Naperville. The Riverwalk is located in the regulatory floodway of the West Branch of the DuPage River.

Lower Des Plaines River Watershed Modeling, MWRDGC, Cook County: Project Engineer. Performed hydrologic and hydraulic analysis of Buffalo Creek watershed. Modeling results are being utilized to map new 100-year inundation areas and were used to propose alternatives to reduce flooding risks discovered through consultation with stakeholders and modeling results. Damage and cost estimates were used to yield benefits.

Elgin O'Hare West-Bypass, Illinois Department of Transportation, Cook and DuPage Counties: Project Engineer responsible for HEC-RAS hydraulic modeling of Willow Creek existing and proposed conditions through the study area. Also responsible for preparation of IDOT Hydraulic Report and IDNR-OWR Flow Certification for Willow Creek.

I-294 Industrial Park Drainage Investigation, IDOT, Village of Franklin Park, Cook County: Project Engineer responsible for preparation of XP-SWMM hydraulic analysis of existing conveyance system from County Line Road to Silver Creek. Analyzed and proposed several alternatives to provide a greater level of flood protection within the Industrial Park. Project required coordination with IDOT, Illinois Tollway, Village of Franklin Park and affected property owners.

Drumm Farm Property, Geotech, Inc., City of Joliet, Will County: Project Engineer. Performed a critical duration analysis using the TR-20 hydrologic model and used the HEC-RAS hydraulic model to determine the existing and proposed 10- and 100-year flood elevations. Designed several entities of the project including a dam, weir, culverts. Received approval and concurrence from the IDNR-OWR for the project which involves activity in the Zone A floodplain area. Obtained IDNR dam safety permit and floodway construction permit and a FEMA LOMR. The project consisted of single-family homes, open space and open water areas, and will provide on-line detention storage and compensatory storage for all work within the floodplain. A road crossing is proposed to cross the Unnamed Tributary to the DuPage River. A dam is located at the downstream property boundary.

Willow Creek Relocation, O'Hare Modernization Program, City of Chicago, Cook County: Project Engineer responsible for hydrologic and hydraulic modeling of various alternatives related to the relocation of Willow Creek within the North Airfield for the existing and proposed configuration of O'Hare International Airport. Included coordination with designers and hydraulic analysis of different phases of construction.

Apple Creek Estates, City of Woodstock, McHenry County: 550+/- acre development in Woodstock. Worked with the City of Woodstock, McHenry County, IDNR-OWR, and FEMA for permitting. Floodwater Construction Permit was received 04/05 for culvert replacement. The project consists of replacing the existing crossing located along Dean Street, and two existing crossings located along Lucas Road. The replacement of these culverts involve activity in Zone A floodplain areas. Culvert replacements are located along three watercourses: Apple Creek and two unnamed tributaries to Apple Creek. The project also included the development of a stormwater management plan including compensatory storage, detention storage and creek re-alignment, as requested by the City. Additionally, wetland hydrologic analyses were performed for each of the Isolated Wetlands of McHenry County (IWMC).

Saint John the Baptist Greek Orthodox Church, City of Des Plaines, Cook County: Submitted a request for a Floodway Construction permit to the IDNR-OWR for a proposed floodway boundary revision associated with Farmer's Creek. The concurrence was received on January 2, 2004 for this revision. The church is proposing two building additions, one located outside of the floodway and one located within the floodway. Received a LOMR for the relocation of the floodway based on the non-conveyance portion of the floodway. Phase 2 of the project, consisted of the computation of detention storage and compensatory storage based on requirements by the City of Des Plaines and the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC).

Coyote Run Golf Club, Village of Flossmoor, Cook County: Responsible for MWRDGC permitting which was received in 01/05 and for calculations, restrictor detail design, bypass flow exhibit and design outlet meeting MWRDGC requirements. In August 2003 CBBEL created a stormwater management plan and submitted it to the Village of Flossmoor then designed facilities using the Village's criteria and methodology using Illinois State Water Survey (ISWS) Bulletin 71 rainfall depths. CBBEL then revised the study using MWRDGC criteria and methodology using National Weather Service (NWS) Technical Paper No. 40 (TP-40) rainfall depths. Created a report including a section which describes how the project site meets or exceeds detention storage MWRDGC requirements. The project site consists of six stormwater management facilities, three of which are in series.

International Centre South, Village of Minooka, Grundy County: Performed a HEC-1 Dam Breach Analysis and received Dam Safety Permit from IDNR-OWR in Springfield for the construction of a building located within the northeastern portion of the property north of Minooka Road. CBBEL previously prepared the stormwater management plan for the 103.2 acre property which was approved by the Village of Minooka. The plan consists of a northwest basin and a south basin. With the change in land use characteristics associated with the development and the additional acquired area, additional detention storage will be required in the northwest basin. A TR-20 hydrologic model was developed to determine the amount of detention storage needed to for the increased amount of impervious area and less pervious area and for the additional 5.55 acres.

Neuberry Ridge, City of Lockport, Will County: Performed a TR-20 hydrologic analysis and a HEC-RAS hydraulic analysis. Performed detention storage calculations using the TR-20 hydrologic model to determine the required detention storage volume for the site. Received an IDNR-Floodway Construction Permit and approval from FEMA for a LOMA.

Willow Walk Expansion, City of Lockport, Will County: Performed TR-20 hydrologic and HEC-RAS hydraulic analyses of Fraction Run Creek through the Willow Walk Expansion Development located in the City of Lockport, Will County. Calculated the detention storage required based on the proposed land plan and assisted in the development in the detention storage and compensatory storage layout of the site due to existing site topography and site constraints.

Lago Vista Senior Living Development, City of Lockport, Will County: Performed hydrologic and hydraulic analyses of the two watersheds (four creeks) through the site. HEC-RAS and HEC-2 models of the creeks within the watersheds were developed to analyze the impact of the proposed 280-acre development. The hydraulic modeling included a split flow analysis. A dam breach analysis of the proposed on-line weir structure was performed and a floodway construction permit and dam safety permit were obtained from IDNR-OWR. An application for a FEMA Conditional Letter of Map Revision (CLOMR) was received in 08/04 and a LOMR has been received for Phases 1 and 2 of the project. The project included coordination with the City of Lockport and Will County.

Yorktown Woods, Village of Lombard, DuPage County: Project included an analysis of an existing storm sewer system and detention basin to develop alternatives for drainage improvements. The existing storm sewer network and detention storage basin in the subdivision were modeled using the Hydra hydraulic model to determine the flooding areas. Recommendations were made for proposed storm sewers and excavation of the existing detention basin to alleviate the flooding.

Wheeling Drainage Ditch/Buffalo Creek LOMR, Village of Wheeling, Cook County: The project includes the obtaining and enhancing the HEC-RAS model developed by IDNR-OWR Springfield for the entire Wheeling Drainage Ditch through the Village of Wheeling. Once this model was enhanced, it was sent to IDNR-OWR Bartlett for approval. A Floodway Conveyance Agreement, which involved coordination with the Village of Wheeling and IDNR-OWR, was prepared and obtained. A FEMA PMR was obtained.

Remington Grove, Village of Johnsburg, McHenry County: The project consists of a single-family home development with associated detention basins and compensatory storage. The FIS hydraulic model was obtained from FEMA and was updated and calibrated to match the FEMA flood profile. An existing farm crossing will be removed and a proposed culvert was sized for the proposed road crossing. Obtained a floodway construction permit and FEMA LOMR.

Huffman Street Flood Control Project, City of Naperville, DuPage County: The project includes the modification of the Country Commons Park Basin, which was expanded as part of the Huffman Street Flood Control Project – Phase 1. The existing basin was excavated to provide additional detention storage. French drains were installed in addition to a pump station and the western embankment of the basin is proposed to be reconstructed. The project involved preparing a grading plan, computing storage volumes, storm sewer sizing and obtaining a dam safety permit for the reconstruction of the existing embankment and a DuPage County Stormwater Permit.

Devon Avenue Road Improvements, Cook and DuPage Counties: The project included the determination of compensatory and detention storage requirements. Prepared and submitted a DuPage County Stormwater Permit Application. This project included coordination with the Cook County Highway Department.

Brad Hartjes, PE, CFM, CPESC
Project Manager

YEARS EXPERIENCE: 20
YEARS WITH CBBEL: 7

EDUCATION
Bachelor of Science, 1994
Civil Engineering
University of Wisconsin at Platteville

PROFESSIONAL REGISTRATION
Professional Engineer, IL, 06253274, 1999

CERTIFICATIONS
Certified Floodplain Manager
IAFSM

Certified Professional in Erosion and Sediment Control (CPESC)

PROFESSIONAL DEVELOPMENT
Ethics in City Government, Ethics Training for CDA/OMP Contractors, Vendors & Employees

Professional Engineer experienced working on water resources projects, land development projects, and municipal projects. Engineering experience includes comprehensive watershed studies, steady and unsteady hydraulic analysis, Federal Emergency Management Agency (FEMA) Letter of Map Revisions (LOMORs), Stormwater Management reviews for various municipalities and Counties, Project Engineer and Project Manager for residential, commercial and industrial land development projects; hydrologic and hydraulic engineering tasks for floodplain/floodway delineation, stormwater detention and compensatory storage determination, design of conveyance systems, and stormwater management permitting; site plan development including site plan and geometric design, grading and earthwork analysis, plan and profiles, utility layout and design, wetland coordination, and geotechnical coordination.

Computer software experience includes: XP-SWMM, TR-20, PONDPACK v10, AUTOCAD 2007, LAND DESKTOP 2007, HYDRAFLOW, HEC-1, HEC-2, HEC-RAS, HY-8, HEC-HMS and HEC GeoRAS

LAND DEVELOPMENT

Meridian Centre, Donald James Builders, Mokena: Project Manager responsible for stormwater management. Project was a 22.2 acre mixed-use development in Mokena. Project consisted of retail and commercial units with stormwater detention provided for developed property, as well as existing gas station adjacent to property.

Jackson Woods Subdivision: 55-acre forested subdivision in Grundy County. Responsibilities included HEC-RAS hydraulic modeling of the Mazon River through the project site to determine the Base Flood Elevation of a previously unstudied reach of the River. Floodplain compensatory storage mitigation was required due to fill within the floodplain to construct the roadway access into the subdivision; compensatory storage mitigation was designed to minimize the impact to trees. Responsibilities also included stormwater detention design for multiple ponds located throughout the site. The entire site is wooded and Grundy County required that impact to trees was minimized; therefore, the detention ponds were designed to minimize impacts to trees.

Lincolnway Creekside Crossing Subdivision, New Lenox: 7-acre commercial subdivision in New Lenox. Responsibilities included stormwater detention design for an underground facility, including a stormwater pumping station. An IDOT Drainage checklist was submitted for both the 7-acre subdivision and Anderson Road. Anderson Road is the roadway along the western side of the subdivision and is being widened from a 2 lane cross section with ditches to a 3 lane cross section with curb and gutter.

Seneca I-80 Railport: 1,600-acre industrial subdivision in Seneca. Responsibilities include hydrologic modeling for stormwater detention requirements for the entire property, hydrologic and hydraulic modeling of offsite tributary areas and culverts under Illinois Route 6 and Bluff Road to determine bypass flow through the site, and coordination with intermodal site engineer to make sure they don't impact culvert crossings under Illinois Route 6 and Bluff Road. Responsibilities also include hydrologic analysis for approximately 340 acres of wetland mitigation and preservation, and hydraulic modeling for relocation of Rat Run through the site.

Fox River Woods Subdivision – Ottawa, Illinois: 380-acre mixed use development adjacent to the Fox River in Ottawa. Responsibilities included land planning and geometric design, watermain sizing, sanitary sewer design, storm sewer design, stormwater management report for detention facilities, earthwork, cost estimates, wetland and historical preservation coordination, and preliminary plat. The property was adjacent to the Fox River, with multiple wooded ravines. Coordination with the City of Ottawa was necessary to determine the allowable stormwater management criteria used on the site. The release rate from the developed site was determined by considering the cumulative release from the individual subareas on the developed site rather than requiring the individual subareas to individually release at or below the minimum allowable release rate. This allowed for flexibility in the placement and sizing of detention ponds, and allowed for the City to minimize the impacts to the wooded ravines which were found adjacent to the Fox River.

Creeks Crossing Subdivision – Algonquin, Illinois: 30-acre residential subdivision in Algonquin. Responsibilities included land planning and geometric design, sanitary and watermain layout, storm sewer design, grading, roadway plan and profiles, stormwater management report for the detention facilities, earthwork analysis, and cost estimates. Permitting through the Village of Algonquin and Illinois Environmental Protection Agency (IEPA).

Sexton Logistics Center – Schiller Park, Illinois: 25-acre industrial subdivision in Schiller Park. Project consisted of a cross truck docking facility. Responsibilities included site plan layout, pavement design, Grading and earthwork analysis, cost estimates, stormwater management report for the detention facilities, and storm sewer design. The project was surrounded by Crystal Creek and Sister Stream, both containing zone AE floodplain. The Illinois Department of Natural Resources – Office of Water Resources (IDNR-OWR) had completed a Phase II Flood Control

Study of Crystal Creek and Sister Stream. Revised the HEC-1 and HEC-2 modeling provided by the IDNR-OWR in order to remove approximately 5 square blocks from the floodplain. The project included coordination with Illinois Department of Transportation (IDOT), Illinois State Toll Highway Authority (ISTHA), IDNR-OWR, and the Village of Schiller Park. Project was located on a landfill which added to the complexity of the design in order to keep minimum cover requirements over the landfill. Project contained multiple retaining walls and sound wall to minimize impacts to adjacent residents.

Portofino Subdivision – Bloomingdale, Illinois: 6-acre residential subdivision in Bloomingdale. Responsibilities included land planning and geometric design, sanitary and watermain layout, storm sewer design, cost estimates, roadway plan and profiles, grading and earthwork balance, and stormwater management report for detention facilities. Site was located adjacent to the East Branch of the DuPage River and coordination was necessary with DuPage County in order to maximize the buildable area of the site while still conforming to County Ordinance.

Lemont Business Park – Lemont, Illinois: 10-acre industrial subdivision in Lemont. Project included a sanitary sewer extension of approximately 3,000 feet. A lift station was designed on site in order to provide for the sanitary service of the proposed subdivision in addition to providing future service for approximately 50 to 100 acres. A force main was constructed along Main Street which required IDOT and Metropolitan Water Reclamation District approval. West Shore Pipeline has a gas line and easement through the site, which required coordination in order to provide proper horizontal and vertical clearance for the gas line, which provided fuel to O'Hare International Airport.

Village of Downers Grove Parking Structure – Downers Grove, Illinois: Project involved the design and construction of a multi-story parking structure in downtown Downers Grove. The stormwater detention was provided in a vault under the structure, and was designed to accommodate the future re-development of the adjacent downtown area. The outlet structure of the detention facility was designed to minimize future impacts as the tributary area was expanded. A simple replacement of a steel restrictor plate with a revised orifice is the only requirement to allow the detention facility to accommodate future re-development of the previously undetained downtown area.

HYDROLOGIC AND HYDRAULIC ANALYSIS

I-90 (Jane Addams), US Rt. 20 to Elgin Plaza, Concept Design, Illinois State Toll Highway Authority: Project Engineer responsible for hydrologic and hydraulic analysis of Eakin Creek Mainline, Eakin Creek Tributary B and Eakin Creek South. Project included the preparation of a Hydraulic Report of Eakin Creek waterways for reconstruction and widening of I-90. Included compensatory storage calculations for floodway fill and hydraulic analysis for three culvert replacements to receive an IDNR-OWR Floodway Construction Permit.

US 45 Bypass over Millburn Creek, Illinois Department of Transportation, Gurnee, Illinois: Project Engineer responsible for hydrologic and hydraulic analyses. Project includes the preparation of an IDOT Hydraulic Report for Millburn Creek and an Unnamed Tributary to Milburn Creek for the US 45 Bypass. The Bypass includes the construction of new culvert crossings of Millburn Creek and the Unnamed Tributary to Millburn Creek. Includes a Waterway Information Table, Hydraulic Report Data Sheets, Scour Analysis, and Hydrologic and Hydraulic analysis for two new creek crossings.

Lower Des Plaines River Detailed Watershed Plan, MWRD, Cook County: Project Engineer responsible for hydrologic and hydraulic analysis of Lower Salt Creek watershed. Provide hydrologic and hydraulic analysis of the Lower Des Plaines River watershed to determine inundation limits and flooding problem areas within watershed. Also includes identification of potential flood control projects and analysis of potential impacts these projects may have on the watershed.

Edgewater Drive, Village of Algonquin: Project Manager responsible for hydrologic and hydraulic analysis of Ratt Creek. Project included preparation of a Hydraulic Report of Ratt Creek and the un-named Ratt Creek Tributary for reconstruction and widening of Edgewood Drive. Includes Waterway Information Table, Preliminary Bridge Design and Hydraulic Report, and scour calculations for two creek crossings, including a bridge widening and culvert replacement.

Un-Named Tributary to Ratt Creek: Project includes a hydrologic and hydraulic analysis of an un-named tributary to Ratt Creek in Algonquin. The hydrologic analysis included 1.9 square miles with more than 20 existing detention facilities. The hydraulic analysis determined discharge rates, velocities, and water surface elevations in the un-named tributary. These discharge rates, velocities, and water surface elevations were provided to a sub consultant to design erosion control measures for the creek.

Review of Upper Salt Creek Watershed Analysis: Project included the review of a hydrologic analysis of the Upper Salt Creek performed by others as part of the Metropolitan Water

Reclamation District watershed study. Review included analysis of watershed delineation, hydrologic input parameters, HEC-HMS model, and comparison of model results versus gage data.

FLOOD CONTROL AND FLOOD IMPROVEMENT

Village of Palatine Flood Control Study: Hydrologic and hydraulic study of 2 square miles in Palatine to provide solutions to a serious flooding problem in the resident's houses. Study involved field investigation in order to determine the reason for flooding of the resident's houses. Hydrologic and hydraulic study of the exiting storm sewer and detention ponds to determine feasibility of increasing pipe size, providing additional storm sewer, expansion of existing detention facilities, or additional detention facilities.

Village of Wood Dale Regional Detention Facility: Project included hydrologic and hydraulic analysis of approximately 125 acres for a regional detention facility to be constructed as part of a residential subdivision. Multiple detention ponds throughout the subarea were tributary to the regional detention facility and these were modeled along with the proposed subdivision to determine the correct inflow into the facility using Pond Pack software. Downstream of the regional study was a confluence of multiple subareas, which discharged through an existing subdivision. The study which was provided to the Village analyzed the benefit at the confluence by determining the reduced flow which resulted from the regional detention facility. The study was included as part of the permitting for the Ethan Woods Residential Subdivision and included several public meetings with the City and area residents.

Village of Wheeling Flood Improvement Feasibility Study: Project included study of Heritage Park in Wheeling to determine the feasibility of providing offsite stormwater detention and floodplain storage for future Village Center development. Study included investigation of the MWRD permitting history to determine the amount of storage available in Heritage Park Lake. The Lake was built over 30 years ago and included many expansions to accommodate adjacent development.

CONSULTANT SERVICES

Will County Stormwater Management Planning Committee Consulting Services: Project Engineer responsible for coordinating with Planning Committee to complete contract tasks as they are requested by the Committee. Consultants for the Will County Stormwater Management Planning Committee responsible for completion of revisions to the Will County Technical Guidance Manual, preparation of a Countywide Stream Maintenance Manual, preparation of watershed plan, and research potential grants.

David Buckley, PE, CFM
Sr. Water Resources Engineer

YEARS EXPERIENCE: 12
YEARS WITH CBBEL: 12

EDUCATION
Master of Science, 2003
Environmental Engineering
University of Illinois at Chicago

Bachelor of Science, 2001
Civil Engineering
University of Illinois at Chicago

PROFESSIONAL REGISTRATION
Professional Engineer, IL, 062059898, 2007

CERTIFICATIONS
Certified Floodplain Manager
IAFSM

PROFESSIONAL DEVELOPMENT
Hydrologic Engineering Center–Water Surface Profile Computation using HEC-RAS

IAFSM–Floodplain Revision Workshop

ASCE–Illinois Section EE&WR Technical Group–HEC-HMS Training Course

ASCE–Illinois Section EE&WR Technical Group–XP-SWMM2000 Training Course

ASCE–Illinois Section EE&WR Technical Group–Advanced HEC-RAS Seminar

Ethics in City Government, Ethics Training for CDA/OMP Contractors, Vendors & Employees

PUBLICATIONS
"Polybrominated Diphenyl Ethers in the Sediments of the Great Lakes. 1. Lake Superior", Song, W.; Ford, J. C.; Li, A.; Mills, W. J.; Buckley, D. R.; Rockne, K. J.; *Environmental Science and Technology*; (Article); 2004; 38(12); 3286-3293.

"Soot Deposition in the Great Lakes: Implications for Semi-Volatile Hydrophobic Organic Pollutant Deposition", Buckley, D. R.; Rockne, K. J.; Li, A.; Mills, W.J.; *Environmental Science and Technology*; (Article); 2004; 38(6); 1732-1739.

"Polybrominated Diphenyl Ethers in the Sediments of the Great Lakes. 3. Lakes Ontario and Erie", Song, W.; Ford, J. C.; Li, A.; Sturchio, N. C.; Rockne, K. J.; Buckley, D. R.; Mills, W. J.; *Environmental Science and Technology*; (Article); 2005; 39(15); 5600-5605.

"Polybrominated Diphenyl Ethers in the Sediments of the Great Lakes. 2. Lakes Michigan and Huron", Song, W.; Li, A.; Ford, J. C.; Sturchio, N. C.; Rockne, K. J.; Buckley, D. R.; Mills, W. J.; *Environmental Science and Technology*; (Article); 2005; 39(10); 3474-3479.

Professional Water Resources Engineer responsible for engineering studies including floodplain mapping, watershed studies, Federal Emergency Management Agency (FEMA) Letter of Map Changes (LOMRs), Hazard Mitigation Grant Program (HMGP) applications, damage analysis, steady and unsteady river hydraulic analyses, stormwater management studies, permit applications to Illinois Department of Natural Resources (IDNR-OWR) and Illinois Department of Transportation (IDOT), continuous hydrologic and water quality simulation, and engineering review. Previous experience at the University of Illinois at Chicago includes contaminant atmospheric deposition to the Great Lakes, elemental analyses of sediment, and sediment data correlations.

Computer modeling skills include HSPF, TR-20, HEC-1, HEC-2, HEC-RAS, HEC-GEO RAS, GIS, XP-SWMM, Info SWMM, and Damages.

SEWER MODELING AND FLOOD REDUCTION STUDIES

Village of Winnetka Flood Reduction Assessment: Project Engineer responsibilities included development of stormwater studies, XP-SWMM modeling, public presentations and direction for civil design of drainage improvement projects. This project included a Village-wide drainage study in response to the September 2008 flood event that devastated the Village. Five study areas were identified, and drainage improvement projects were designed in each area to reduce the risk of future flooding. The projects involved partnerships with Cook County, Village of Northfield, and the Forest Preserve District of Cook County. Questionnaires were sent to area residents and used to help evaluate specific flooding concerns. The models and questionnaires were then used to design improvements to the stormwater conveyance and storage system to reduce the risk of future flooding. One of the larger projects included preliminary design of an 8-foot diameter tunnel outletting to Lake Michigan to provide flood relief.

Illinois Avenue Culvert Replacement, City of Aurora, Kane County, IL: Project Engineer responsible for completing a flood reduction feasibility study identifying the culvert replacement for the Kane County Department of Environmental Management. A benefit cost ratio was determined and used to remove 55 structures from the 100-year floodplain using federal funding from FEMA's Hazard Mitigation Grant Program (HMGP). A Letter of Map Revision was obtained to officially remove the structures from the Flood Insurance Rate Map as a result of this project.

Berens Monaldi Phase II Flood Control Wall, Town of Dyer, Lake County, IN: Project Engineer responsible for hydrologic and hydraulic unsteady and steady modeling, design of floodwall height and alignment, coordination with the town and residents. Preparation of permit applications from the Town of Dyer and LCSO. The Town of Dyer constructed a floodwall along the Illinois/Indiana state line to protect the Berens Monaldi Subdivision from future flooding from Plum Creek / Hart Ditch. The subdivision flooded as a result of the August 2007 storm event.

Berens Monaldi Pump Station, Town of Dyer, Lake County, IN: Developed XP-SWMM analysis that was used to design a pump station within the Berens Monaldi Subdivision. The pump station provides flood protection for the interior portions of the subdivision, which is protected by a floodwall. A benefit cost ratio was determined and used to obtain FEMA Pre-Disaster Mitigation (PDM) funding ($550,000) through the Indiana Department of Homeland Security for construction of the pump station.

Town of Merrillville Taft Street Flood Reduction, Merrillville, IN: Project engineer responsible for development of XP-SWMM analysis, calibration of model to September 2008 storm event, and direction for civil design and construction of drainage improvements. This project included obtaining grant funding in the amount of $750,000 from Indiana Department of Transportation to assist the Town of Merrillville in the construction process. The project reduced local flooding for both roadway overtopping and residential flooding in a historically flood prone area.

Tower Road Relief Storm Sewers, Village of Winnetka, IL: Project Engineer responsible for design of relief storm sewers along Tower Road in the eastern and western portions of the Village. The relief storm sewers outlet to Lake Michigan and the Cook County Forest Preserve and are designed to reduce structure flooding for the 100-year storm event.

Will County Flood Control Reservoir, Town of Dyer, Lake County Surveyor's Office, IN: Project Engineer responsible for hydrologic and hydraulic modeling that incorporates a concept level flood control reservoir, the design of multiple alternatives, and the quantification of downstream benefits resulting from those alternatives. As a result of the August 2007 and September 2008 storm events, the Town of Dyer and LCSO investigated regional flood control alternatives to prevent future flooding. A flood control reservoir located in upstream Will County Illinois could reduce flooding in downstream Dyer, Indiana.

"Polybrominated Diphenyl Ethers in the Sediments of the Great Lakes. 4. Influencing Factors, Trends, and Implications", Li, A.; Rockne, K. J.; Sturchio, N.; Song, W.; Ford, J. C.; Buckley, D. R.; Mills, W. J.; *Environmental Science and Technology*; (Article); 2006; 40(24); 7528-7534.

"Soot and Organic Carbon Flux to Great Lakes Sediment: Links to Atmospheric Transport of Toxic Pollutants", Buckley, D; (Master Thesis); 2003.

PROFESSIONAL AFFILIATIONS
American Society of Civil Engineers
Environmental Engineering and Water Resource (EE&WR) Technical Group

Illinois Association for Floodplain and Stormwater Management

City of Park Ridge Citywide Sewer Study: Project engineer responsible for creation of InfoSWMM model for one of the City's two major sewer systems and evaluation of various alternatives.

City of Elgin Lord Street Sewer Separation: Project engineer for sewer separation project, responsible for existing InfoSWMM model of combined sewer system.

DuPage National Technology Park: Performed hydrologic analyses for development of regional detention facilities. Developed detailed XP-SWMM hydrologic & hydraulic models for storm sewers designed to convey runoff from storm events greater than 10-year event. Extensive use with multiple conduit storm sewer systems and overland flow paths within open channels using XP-SWMM. Designed and permitted multiple regional detention facilities for the 600 acre Technology Park. The development consisted of multiple DuPage County Permits for a flood control reservoir and regional detention facility in coordination with an overall watershed plan.

WATERSHED PLANNING STUDIES

Watershed Assessment for Pratts Wayne Woods County Forest Preserve: Prepared a Hydrologic Simulation Program – FORTRAN (HSPF) model to simulate water quality throughout the watershed of the Pratt's Wayne Woods Forest Preserve. The model included large portions of the East and South Branches of Brewster Creek. The HSPF model was used to assess the existing water quality levels within the forest preserve and forecast the impacts of the changing watershed development over the next 20 years.

Upper Des Plaines River Tributaries Hydrologic and Hydraulic Model Conversion of Willow-Higgins Creek Watershed: The current effective TR-20 hydrologic model was converted to a HEC-1 hydrologic model and the effective WSP-2 hydraulic model was converted to a HEC-RAS hydraulic model. Both hydrologic and hydraulic models were converted for existing, baseline, and future conditions. The study was performed on behalf of the Cook County Highway Department (CCHD) to better asses possible flood areas resulting from future development in the watershed.

Blackberry Creek Phase 2 Watershed Study, Kane County Department Environmental Management: Performed hydrologic analysis of the Montgomery overflow to determine the flood reduction benefits from potential flood storage facilities associated with the Blackberry Creek Watershed Study Flood Mitigation Feasibility Analysis. Developed benefit/cost ratios for potential flood reduction projects based on assessed damages throughout the watershed.

Plum Creek / Hart Ditch Flood Investigation, Lake County Surveyors Office: Performed hydrologic and hydraulic analysis of Plum Creek/Hart Ditch to determine the cause of flooding associated with the August 2007 flooding in Lake County, Indiana. The study was used to develop flood mitigation possibilities for protection against flooding incurred by St Margaret Mercy Healthcare Center in Dyer Indiana.

Plum Creek/Hart Ditch Early Warning System and Flood Forecasting, Lake County Surveyors Office, Dyer, IN: Project Engineer responsible for the development of flood forecasting through correlations of observed USGS gage data throughout the Plum Creek / Hart Ditch Watershed. Observe and document gage readings from a system of 4 USGS gages. Responsible for hydrologic and hydraulic modeling to predict flood heights and coordination with the NWS and USGS. Utilizing measured precipitation data and National Weather Service (NWS) precipitation forecast data, a prediction of water surface elevation in downstream Dyer could be made using calibrated hydrologic and hydraulic models for the watershed. The information is used by downstream officials to activate an emergency management plan.

Hawthorne Lane Reconstruction, West Chicago: Project Engineer, developed stormwater detention and compensatory storage plan for the proposed reconstruction of Hawthorne Lane in West Chicago. The project was shown to have a watershed benefit by incorporating the stormwater storage for the roadway reconstruction with drainage improvements in the DuPage County Watershed Plan. This project was permitted and constructed in 2006.

IDNR-OWR DAM SAFETY PERMITTING AND DESIGN

Max McGraw wildlife Foundation, Kane County, IL: Project Engineer, performed hydrologic and hydraulic analysis for the construction of an emergency spillway to safely convey all flood flows up to the 0.3 PMF with 1.3 feet of freeboard below the lowest embankment elevation. Modeling included HEC-1 dam breach analysis. Emergency Authorization from IDNR-OWR to reconstruct the West Lake outlet pipe that failed and a sinkhole formed on the back side of the embankment.

STORMWATER MANAGEMENT AND FLOODPLAIN PERMIT APPLICATIONS

Lake Bluff Commonwealth Edison Substation, ComEd: Project Engineer responsible for preparation of plans and permit submittal to Lake County Stormwater Management Commission for a 2-acre ComEd substation in Lake Bluff, Lake County, IL.

Saint Margaret Mercy Healthcare Center Floodwall, Dyer, Lake County, IN: Project Engineer responsible for hydrologic and hydraulic unsteady and steady modeling, design of floodwall height and alignment, coordination with the town and residents. Preparation of multi-jurisdictional permit applications from the Town of Dyer, LCSO, and Cook County. The Saint Margaret Mercy Healthcare Center constructed a floodwall straddling the Illinois / Indiana state line to protect from Plum Creek / Hart Ditch flooding after sustaining $33 Million in Damages from the August 2007 storm event. The project involved permitting from two states.

O'Hare Modernization Program (OMP), Chicago: Developed comprehensive XP-SWMM hydrologic and hydraulic models for the long-range redevelopment concept of the entire north and south airfields at O'Hare International Airport. Analysis included stormwater conveyance, storm sewer design, and detention storage requirements.

Laraway Road, Metra Station, New Lenox: Performed a stormwater management analysis for the construction of the Laraway Road Metra Station based on the Village of New Lenox Code of Ordinances. The proposed 15-acre development included parking facilities to be built over multiple phases and on-site detention basins.

Sedera Ridge, Beecher: Performed a hydrologic and hydraulic analysis of Trim Creek to determine Base Flood Elevation (BFE) for a proposed 300-acre development.

Main Street Village West, Phase III, Orland Park: Performed a stormwater management analysis and storm sewer design for the construction of Main Street Village West based on the Village of Orland Park Land Development Code. Modeling for the analysis included TR-20, Hydraflow, and XP-SWMM for design of equalized Detention Basins.

Meadow Wood, Pulte Homes, Lake Zurich: Performed a stormwater management analysis and storm sewer design for the construction of Meadow Wood Subdivision based on the Lake County WDO, and submitted to Lake County SMC. Modeling for the analysis included TR-20 used for a BFE determination.

Montgomery Business Park, CenterPoint Properties, Montgomery: Performed a stormwater management analysis for the construction of the 130-acre business park in Montgomery based on the Kane County Stormwater Ordinance. Modeling for the analysis included TR-20 and HEC-RAS modeling the Unnamed Tributary to the Fox River. The site included 7 detention basins and a compensatory storage area.

Crystal Creek Watershed Study, OMP, Chicago: Prepared a watershed study for 6.2 mi2 of the Crystal Creek Watershed for the O'Hare Modernization Program for the City of Chicago in support of an IDNR-OWR Floodway Construction Permit Application. Analysis included calibrating existing HEC-1 hydrologic model and developing a proposed condition HEC-1 model to illustrate effects from the OMP.

Silo Ridge and Spring Lake Business Centers, Mokena: Performed a comprehensive hydrologic and hydraulic analysis of the Unnamed Tributary to Union Drainage Ditch in support of an IDNR-OWR Floodway Construction Permit Application. Developed a stormwater management plan for the combined 160-acre commercial development. The proposed development consisted of six on-site detention basins located either in or adjacent to the floodplain.

Elgin Shores Forest Preserve, Elgin: Conducted a hydraulic analysis of a portion of the Fox River. Analysis included a stormwater management study for the 10-acre recreational site that included an on-line detention basin with compensatory storage in the basin. The project obtained a variance from specific requirements in the ordinance and required an IDNR-OWR Floodway Construction Permit Application.

Franklin Estates, Unincorporated Kane County: Prepared an extensive hydrologic and hydraulic analysis for 5.3 mi2 of the Eakin Creek Watershed in support of an IDNR-OWR Floodway Construction Permit Application.

Corporate Corridors North, TCB Development, Mokena: Conducted a hydrologic and hydraulic analysis of both the Northern Tributary to Union Drainage Ditch and the Unnamed Tributary to Union Drainage Ditch. Analysis included a stormwater management study for the 150-acre commercial site that included 3 on-site detention basins and a large compensatory storage area. Performed a Letter of Map Revision (LOMR) and annotated the regulatory Flood Insurance Rate Map (FIRM) for the site.

ENGINEERING REVIEW

Lake County Stormwater Management Commission (LCSMC): As a consultant to the LCSMC, reviewed Watershed Development Permit applications and BFE determinations for compliance with the Watershed Development Ordinance.

City of Rolling Meadows: As a consultant to the City Manager, reviewed stormwater management submittals of selected projects with respect to the Village Ordinance and Metropolitan Water Reclamation District of Greater Chicago (MWRDGC).

Village of Northbrook: As a consultant to the Village Manager, revised the Stormwater Management Ordinance, Zoning Code, and Public & Private Improvement Standards to be compliant with the 2006 Model Ordinance and the National Flood Insurance Program (NFIP).

City of Northlake: As a consultant to the City Manager, reviewed the 2007 Flood Insurance Study and Flood Insurance Rate Map for the City of Northlake to be compliant with the NFIP as part of the Map Modernization Program.

Village of Huntley: As a consultant to the Village Manager, reviewed stormwater management submittals of selected projects with respect to the Kane County Stormwater Management Ordinance.

Village of New Lenox: As a consultant to the Village Manager, reviewed stormwater management permit submittals for various developments with respect to the Will County Stormwater Management Ordinance.

Village of Algonquin: As a consultant to the Village Manager, responsible for reviewing stormwater management permits submittals for various commercial and residential developments with respect to the Kane County Stormwater Management Ordinance.

Town of Dyer: As a consultant to the zoning and redevelopment director, responsible for assisting in the comprehensive operations and optimization plan for stormwater management throughout the town. Tasks include identifying problem areas and development of solutions for stormwater related projects.

YEARS EXPERIENCE: 11
YEARS WITH CBBEL: 11

EDUCATION
Bachelor of Science, 2002
General Engineering
University of Illinois at Urbana-Champaign

PROFESSIONAL REGISTRATION
Professional Engineer, IL, 062060829, 2008

CERTIFICATIONS
Documentation of Contract Quantities
IDOT, 13-0148

ICORS Training Seminar
IDOT

Material Management of Job Sites
IDOT

PROFESSIONAL DEVELOPMENT
IDOT QC/QA Courses:

- Mixture Aggregate Technician Course
- Hot Mix Asphalt Level 1
- Portland Cement Concrete Level 1
- Portland Cement Concrete Level 2
- Troxler Nuclear Gauge Safety Training Class

Professional Civil Engineer experienced in construction and design engineering. Responsible for performing project management and resident engineering duties including assistance in bidding and contract execution procedures for award of contract, on-site construction observation, documentation of quantities, coordination and/or verification of materials testing and inspection, review contractor pay requests, preparation of record drawings, and finalization of contracts with different agencies (i.e. IDOT/Cook County/MWRD/municipalities). Civil design experience includes roadway, streetscape, green infrastructure, and utility improvement design. Duties include permitting, preparation of plans and specifications, cost estimates, bidding assistance and general engineering services. Also acts as main resource for all project questions from inception to completion, attending Village Board Meeting, Public Hearings and Town Hall Meetings. Provide guidance to Municipalities regarding State and Federal funding opportunities and strategic direction for yearly budgets and capital programs.

Grand and Harlem Streetscape, Elmwood Park: Project Manager for Design/Build streetscape project that included upgrading intersections to comply with current ADA standards, removal and replacement of sidewalk, installation of colored stamped concrete, new lighting, and installation of ornamental planters, trees and tree grates. Additionally, the project included reconstructing the northwest corner of Grand and Harlem to incorporate a custom illuminated Elmwood Park gateway sign with a three tiered fountain feature, a large ornamental planter with custom inlayed columns, and a raised limestone planter. The northwest corner of Harlem Avenue and Fullerton Avenue was also reconstructed to include an Elmwood Park medallion monument, ornamental planter, and a decorative pedestrian light pole. Duties included overseeing the preparation of engineering plans, specifications, cost estimate & permitting as well as construction observation, cost control, daily communication & scheduling with business owners, preparation of pay estimates and weekly written reports to the owner on the progress of work.

Green Pavement Projects, Riverside: Project Manager for the construction of the Burlington Street parking lot and a porous paver alley in the Village of Riverside. Duties included daily observation of construction and MOT, documentation in daily log and IDRs, provide IEPA with quarterly progress reports, inspect incorporated materials and coordinate materials testing, process RFIs and change orders, compile pay estimates, review and log certified payrolls, compile punchlist, post-construction documentation and close-out. The Village was able to fund these Green Pavement Projects through an Illinois Green Infrastructure Grant from the Illinois EPA. With this grant, the Village was not only able to fund the Burlington Street porous paver parking lot to meet the high demand for commuter and downtown shopping parking, but also the construction of a porous paver alley to replace a section in serious need of rehabilitation. These Green elements dramatically reduced the stormwater runoff for the facilities and complemented the Village's historic nature.

Green Pavement Projects, Elmwood Park: Project Manager for the construction of four porous paver alleys in the Village of Elmwood Park. Assisted the Village in obtaining funding for this Green Alley Project through an Illinois Green Infrastructure Grant from the Illinois EPA. Duties included daily observation of construction, documentation in daily log and IDRs, provide IEPA with quarterly progress reports, inspect incorporated materials and coordinate materials testing, process RFIs and change orders, compile pay estimates, review and log certified payrolls, compile punchlist, post-construction documentation and close-out.

2012 Paving Project, Oak Brook: Project Manager for the roadway rehabilitation within Saddle Brook subdivision which included resurfacing approximately 54,000 square yards of pavement, curb and gutter patching and various drainage improvements. The proposed improvements included drainage structure repairs, 20% partial curb and gutter repair, approximately 5% full-depth patching (8"), hot-mix asphalt surface removal 5", 3" hot-mix asphalt binder course and 2" hot-mix asphalt surface course. Also included was the reconstruction of the Village Hall parking lot and the Village Library parking lot. Duties included design, permitting, construction observation, coordination of material inspection, documentation of quantities and contract administration in accordance with IDOT's Construction Manual.

Belmont Avenue Streetscape Project, Elmwood Park: Project Manager for streetscape improvements along Belmont Avenue, a distance of approximately 1,000 feet in the Village of Elmwood Park. This project was partially funded by State Revolving Funds (SRF). The project included the installation of curb "bump outs" at intersections to serve as a traffic calming measure and to improve existing parking and provide designated areas for the parallel on-street parking spaces, drainage improvements, new CTA bus stop, trees, planters, trash receptacles, bicycle racks, decorative street lighting, new decorative sidewalks, colored stamped concrete, and other miscellaneous items. Duties for this federally funded project included documentation as outlined in IDOT's Construction Manual including the implementation of IDOT's computer based Illinois Construction Records System (ICORS).

2011 Miscellaneous Paving Project, Oak Brook: Project Manager for the Village of Oak Brook annual paving projects. This project was partially funded by State Revolving Funds (SRF) and Motor Fuel Tax (MFT). The project involved rehabilitating over two miles of both residential and

commercial streets. This included resurfacing Trinity Lakes subdivision and Commerce Drive as well as full-depth pavement patching along Kensington Dr. The project also included the reconstruction of the entrance of Trinity Lakes subdivision at 31st Street which integrated all new sewer improvements to alleviate previous drainage problems.

Leonora Lane Water Main Project: Project Manager and Resident Engineer for the installation of 1,000 ft of new 8" diameter ductile iron water main. The project included new water service lines, service boxes, fire hydrants, and valves were installed. Sanitary sewer point repairs, sidewalk removal and replacement, pavement patching and full-width resurfacing, and parkway restoration were also included in the project.

Fullerton Avenue Phase 1 & 2 Project, Elmwood Park: Project Manager of the civil design, preparation of contract documents and permits, and construction observation services for the Phase 1 & Phase 2 Fullerton Avenue (76th Avenue to Webster Street) Project. The project included the resurfacing of over 1 mile of roadway in Federal format. Responsible for the preparation of plans, specifications and estimates as well as contract administration, construction observation, coordination of material inspection and documentation in accordance with IDOT's procedures for Federal aid projects. Phase 1 was completed as a LAPP project while Phase 2 utilized funds from the American Recovery and Reinvestment Act (ARRA).

Water Main Improvement Projects (Various), Riverside: Project Manager of the civil design, preparation of contract documents and permits, and construction observation services for the replacement of 8,500 feet of 4" and 6" water main with new 8", 10" and 12" water main along with 335 new service connections at various locations throughout the Village. Responsibilities included preparation of plans and specifications, coordination with IEPA and BNSF Railroad for work within the right-of-way, bid advertisement and award recommendations. The scope of work also included assisting the Village in receiving a loan from the IEPA's Public Water Supply Loan Program (PWSLP) to replace the water main using American Recovery and Reinvestment Act (ARRA) funds. In order to obtain these funds, a pre-application and project plan for water projects was submitted to the IEPA along with environmental sign-offs, an approved construction permit, a certified debt ordinance and a dedicated source of revenue identified by the Village to repay a portion of the loan.

2005-2011 Street Rehabilitation (MFT), Elmwood Park: Project Manager of the civil design, preparation of contract documents, and construction observation services for the street resurfacing with curb and gutter repairs, sidewalk replacement, alley apron replacement, and combination sewer improvements along various streets totaling over 4 miles. Duties included design, permitting, construction observation, coordination of material inspection, documentation of quantities and contract administration in accordance with IDOT's Construction Manual.

North Avenue Streetscape, Elmwood Park: Design Engineer and Construction Manager for streetscape that included resurfacing and widening of parking lane, sidewalk removal and replacement using colored stamped concrete, decorative street lighting, and miscellaneous beautification. Duties included preparation of engineering plans, specifications, cost estimate and permitting as well as construction observation, cost control, daily communication and scheduling with business owners, preparation of pay estimates and weekly written reports to the owner on the progress of work.

Octavia and Oconto Improvements, Harwood Heights: Resident Engineer for the North Octavia Avenue and North Oconto Avenue roadway project. This work included resurfacing and widening with additional parking and drainage. Duties included construction observation, coordinating material testing, communication with adjacent businesses, documentation and preparation of weekly reports and pay estimates in accordance with MFT and CDGB requirements.

Lawrence Avenue Streetscape, Harwood Heights: Resident Engineer for Streetscape Project in the Village of Harwood Heights. The project consisted of 2,600 linear feet of water main, resurfacing and widening for additional parking spaces, storm sewer, drainage structures, combination curb & gutter, decorative street lighting, brick pavers, trees, landscaping and other miscellaneous decorative items. Another aspect of the project included redirecting all utilities from overhead lines to below the parkway. The contractor was responsible for the installation of all conduits to facilitate the new, underground lines for ComEd, AT&T, Sprint and Comcast. Duties for this federally funded project included documentation as outlined in IDOT's Construction Manual including the implementation of IDOT's computer based Illinois Construction Records System (ICORS). Coordination with the contractor, Village Board and Public Works, utility companies and adjacent businesses was imperative to the successful completion of the project.

Plamondon Pond Retention/Detention Storage Improvements, Addison: Resident Engineer for the improvements of the retention/detention pond in the Village of Addison. Improvements included the installation of 180' of 42"- and 265' of 6"-storm sewer, 3 manholes, a control structure, and an overflow structure. The project also included the overall regrading of the pond to ensure the storm water relief of multiple residential subdivisions. Duties included close coordination with the Village, contractor and residents, construction observation, documentation

of quantities, weekly reports, preparation of pay estimates and as-built drawing.

Main Street Triangle Retaining Walls, Orland Park: Inspection Engineer for the construction of three retaining walls to enclose the Main Street Triangle Pond in the Village of Orland Park. The walls were cast in place concrete cantilever type wall with a decorative form liner along the face of the wall. Due to poor underlying material, the walls were supported on steel H piles. The retaining wall height ranged from 9 ft. to 15 ft. and the total length was over 1,100 ft. Duties included shop drawing review, construction inspection, and material inspection review.

33rd Street Viaduct over I90/94, CDOT, Chicago: Part-time Resident Engineer for a bridge reconstruction project, which includes removal 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.

Kent Road Water Main and Sewer Replacement, Riverside: Resident Engineer for installation of approximately 2,900 linear feet of water main, 1,080 feet of sanitary sewer and over 50 water services and sanitary services. Duties included construction observation, documentation of quantities, weekly written progress reports to the owner, preparation of pay estimates and as-built drawing.

South Broadway Improvements (MFT), Lombard: Resident Engineer for the reconstruction of 0.5 miles of South Broadway Avenue from Grace Street to Chase Avenue. The reconstruction included new curb and gutter and a full-depth asphalt pavement. Improvements also incorporated 3,100 lineal-feet of 8" water main, 1,600 lineal-feet of sanitary sewers, as well as new sanitary and water main services for each residence. A new storm sewer system was installed to separate the storm and sanitary flows. The storm sewer system included a reinforced concrete drainage pipe from 12" to 60" in diameter and a cast-in-place junction box. A new decorative street lighting system was also installed the entire length of the project.

Illinois State Toll Highway Authority Contract No. RR-06-9955: This project involved placement of various pavement markings as a test strip on the Reagan Memorial Tollway (I-88) from M.P. 123.4 to 127.8. Duties included construction observation, weekly scheduling, lane closure submittals, weekly written reports to ISTHA and attendance in progress meetings.

Elmwood Park High School Field Renovation, Elmwood Park: Construction Manager for the renovation of Elmwood Park High School's football/soccer field. The project consisted of excavation of the existing field, installation of under-drainage system and fine grading, installation of synthetic turf and upgrades to adjacent track and field areas. Duties included construction observation, cost control, progress meeting coordination, preparation of pay estimates and weekly written reports to the owner on the progress of work.

Diversey Avenue and Sunset Drive Resurfacing (STP), Elmwood Park: Resident Engineer for the street resurfacing and widening with removal and replacement of the entire length of curb, sidewalk replacement and storm sewer improvements along Diversey Avenue and Sunset Drive from 80th Avenue to Harlem Avenue for 1.06 mile. Duties for this federally funded project included documentation as outlined in IDOT's construction manual and adhering to all IDOT quality control / quality assurance specifications for materials.

2004 and 2005 Box Culverts, Elmwood Park: Design Engineer and Resident Engineer for the creation of an underground vault that allows stormwater retention for rainfall events to reduce flooding on the streets. The projects involved the installation of 160 linear feet of a 10' X 4' precast concrete box culvert at two locations and 160 linear feet of 12' X 4' precast concrete box culvert at another location. Duties included preparation of engineering plans, specifications, cost estimate and permitting as well as construction observation, documentation of quantities, weekly written reports to the owner, preparation of pay estimates and record drawings

Traffic Signal Modernization, Roselle: Resident Engineer for the traffic signal modernization at the intersection of Roselle Road and Main Street. The improvements included the removal of existing pavement and construction of new P.C.C. medians, resurfacing, and new sidewalk curb and gutter. Duties included construction observation, documentation of quantities, and preparation of pay estimates.

Dover Circle Water Main Replacement, Lincolnshire: Construction Manager for the installation of 1570 linear feet of water main and street resurfacing. Duties included construction observation, cost control, record drawings and weekly written reports to the owner on the progress of work.

Lake Manor Pond Restoration, Addison: Part-time Resident Engineer for the restoration of Lake Manor Pond. The project consists of earth excavation, storm sewer, bridges, wetland planting, limestone path, and aerators. Duties included construction observation, coordination of material

inspection, and documentation of quantities. Other duties included shop drawing review, contract administration, and preparation of pay estimates.

John Murphy, PE, PLS
Vice President, Head, Survey Department

YEARS EXPERIENCE: 29
YEARS WITH CBBEL: 16

EDUCATION
Bachelor of Science, 1987
Civil Engineering
Wentworth Institute of Technology

PROFESSIONAL REGISTRATION
Professional Land Surveyor, IL, 035003421, 2001
Professional Land Surveyor, IN, 20400062, 2004
Professional Land Surveyor, MA, 40040, 1997
Professional Land Surveyor, WI, 2548-8, 2000
Professional Engineer, MA, 41050, 1999
Professional Engineer, IL, 062061506, 2009

PROFESSIONAL AFFILIATIONS
NSPS-ACSM Survey Technician Certification Program

Illinois Professional Land Surveyors Association

Indiana Society of Professional Land Surveyors

Wisconsin Society of Land Surveyors

Professional Engineer and Land Surveyor accountable for managing office and field survey personnel. Responsibilities include establishment and maintenance of survey procedures; budgets and contract preparation; logistical planning and research; and supervision of staff and calculations of survey data.

PROFESSIONAL LAND SURVEYING

ALTA/ACSM Land Title Surveys
The preparation of "ALTA/ACSM Land Title Survey" that meet the current accuracy standards jointly adopted by ALTA, ACSM and NSPS. For purposes of Title Insurance Companies to insure title to land without exceptions as to the many matters which might be evidenced by public records. Some projects include:

- Major General Emmett J. Bean Center (09-0332) – Lawrence, IN
- Prairie Holdings Corporation (03-637B) – Grayslake, IL
- Nisen & Elliot (02-221) – Lake Villa, IL

Plat of Annexation
The preparation of "Plat of Annexation" suitable for a municipality to annex land that is contiguous to their municipality. Some municipalities prepared for include:

- Crestwood
- Elk Grove Village
- Flossmoor
- Franklin Park
- Hawthorn Woods
- Roselle
- Woodridge

Tax Increment Financing (TIF) Districts
The preparation of a written legal description and at times a plat depicting an area of a municipality designated for Tax Increment Financing (TIF) District. Some municipalities prepared for include:

- Forest Park
- Franklin Park
- Glendale Heights
- Highwood
- Melrose Park
- Monee
- Posen
- Richton Park
- Rosemont

Plat of Vacation
The preparation of a "Plat of Vacation" suitable for a municipality to vacate pubic streets, alleys or easements. Some municipalities prepared for include:

- Chicago Ridge
- Grayslake
- Hawthorn Woods

LAND SURVEYING SERVICES

ISTHA Interstate 90, Elgin Tollbooth to IL Route 20: Survey Manager for design and roadway reconstruction of IL Route 90 from the Elgin Tollbooth to just west of IL Route 20. The existing roadway is to be widened both east and west bound directions. Surveying responsibilities included creation of a signed and sealed "Plat of Highway" for acquisition of right-of-way and easements along project corridor per ISTHA/IDOT Standards. Required document research for the reestablishment of right-of-way lines, parcel lines and section lines along the project, and coordination of field crews for field survey and recon to obtain existing field evidence of existing boundary lines and right-of-way; calculation and analysis of data to determine existing boundaries and right-of-ways; and coordination of drafting of the "Plat of Highway" along with the writing of legal descriptions for various easements to be acquired for project. Along with an Existing Conditions survey of the Project corridor, including stream surveys and cross sections every 100 feet.

ISTHA Interstate 294, Balmoral Off Ramp, Rosemont: Survey Manager for design and roadway construction of the Balmoral Off ramp from I-294 in Rosemont, Illinois. The new ramp is a North bound only exit ramp leading into Rosemont. Surveying responsibilities included creation of signed and sealed "Plats of Acquisitions" for acquisition of right-of-way and easements along project corridor per Cook County DOT Standards. Required document research for the reestablishment of right-of-way lines, parcel lines and section lines along the project, and coordination of field crews for field survey and recon to obtain existing field evidence of existing boundary lines and right-of-way; calculation and analysis of data to determine existing boundaries and right-of-ways; and coordination of drafting of the "Plat of Highway" along with

the writing of legal descriptions for various easements to be acquired for project. Also the field surveying of an Existing Conditions survey of the Project corridor.

Balmoral Road Extension, City of Chicago, O'Hare and Rosemont: Survey Manager for design of Balmoral Road overpass of Mannheim Road. Surveying responsibilities included creation of signed and sealed Plats for acquisition of right-of-way and easements along project corridor. Required document research for the reestablishment of right-of-way lines, parcel lines and section lines along the project, and coordination of field crews for field survey and recon to obtain existing field evidence of existing boundary lines and right-of-way; calculation and analysis of data to determine existing boundaries and right-of-ways; and coordination of drafting of the Plats along with the writing of legal descriptions for various easements to be acquired for project. Also the field surveying of an Existing Conditions survey of the Project corridor.

Peterson Road and IL Route 83, Lake County DOT: Survey Manager for design and roadway construction of Peterson Road. Surveying responsibilities included creation of signed and sealed "Plat of Highway" for acquisition of right-of-way and easements along project corridor per IDOT Standards. Required document research for the reestablishment of right-of-way lines, parcel lines and section lines along the project, and coordination of field crews for field survey and recon to obtain existing field evidence of existing boundary lines and right-of-way; calculation and analysis of data to determine existing boundaries and right-of-ways; and coordination of drafting of the "Plat of Highway" along with the writing of legal descriptions for various easements to be acquired for project. Also the field surveying of an Existing Conditions survey of the Project corridor.

IL Route 60 and Saunders Road, Lake Forest: Survey Manager for design and roadway reconstruction of IL Route 60 and Saunders Road. The existing diamond interchange operated poorly, so to address immediate congestion problems and safety, interim improvements to the interchange were planned including additional through lanes and turn lanes on Illinois Route 60, a new bridge over I-94, and ramp modifications. Surveying responsibilities included creation of a signed and sealed "Plat of Highway" for acquisition of right-of-way and easements along project corridor per IDOT Standards. Required document research for the reestablishment of right-of-way lines, parcel lines and section lines along the project, and coordination of field crews for field survey and recon to obtain existing field evidence of existing boundary lines and right-of-way; calculation and analysis of data to determine existing boundaries and right-of-ways; and coordination of drafting of the "Plat of Highway" along with the writing of legal descriptions for various easements to be acquired for project.

Willow Road, Northfield: Survey Manager for design and roadway reconstruction of two miles of roadway along Willow Road through the Village of Northfield to improve safety and mobility along the corridor without major impacts to the adjacent residential areas. The project included additional lanes with curb & gutter, traffic signal modernization, geometric improvements and new sidewalk along with drainage improvements, and removal and replacement of an existing bridge over the Chicago River. Surveying responsibilities included creation of a signed and sealed "Plat of Highway" for acquisition of right-of-way and easements along project corridor per IDOT Standards. Required document research for the reestablishment of right-of-way lines, parcel lines and section lines along the project, and coordination of field crews for field survey and recon to obtain existing field evidence of existing boundary lines and right-of-way; calculation and analysis of data to determine existing boundaries and right-of-ways; and coordination of drafting of the "Plat of Highway" along with the writing of legal descriptions for various easements to be acquired for project.

MWRD Property (163.0 AC), Palos Hills: Survey Manager for determination of the boundaries of the Metropolitan Water Reclamation District of Greater Chicago's parcels 6.01, 7.01 and 8.03, and preparation of written legal descriptions of the overall boundaries of the three parcels to be used for executing legal agreements. Provided a Boundary Survey for 163 acres of land lying adjacent to the Calumet-Sag Channel which involved extensive research at the Cook County Recorder's Office and other public agencies to obtain recorded and unrecorded documents of the subject site. Required coordination of field crews for field survey and recon to obtain existing field evidence on the subject site to aid in the determination of the existing boundaries utilizing GPS and conventional survey methods. Calculations along with analysis of research documents and collected field data to determine the existing boundaries of the subject property for the creation of an overall "Plat of Survey".

Stearns Road, Kane County/Elgin: Survey Manager for determination of the sectional boundaries for 6 miles of proposed route design of new divided highway and to initialize both horizontal and vertical primary control across the limits of the project for future use in the development of base maps. Responsibilities included extensive research at the County Recorder's Office and at various public agencies to obtain recorded and unrecorded documents to aid in reestablishment of original government survey of section lines. Coordinated and lead field crews on field survey and recon to obtain existing field evidence to reestablish section lines. Calculations along with analysis of researched documents and collected field data to determine location of section lines. Organized research for recorded and unrecorded documents, notes and plats dated from 1839 to 2003 to aid in re-establishment of government quarter and section corners, monumented and

recorded 52 corners. Also coordinated 2nd order vertical control survey with field crew, along with adjustment and closure report of survey and set 25 permanent vertical control stations. Also provided various Topographic Surveys throughout project corridor for design purposes.

DuPage Technology Park, NFP, West Chicago: Survey Manager for developmental and preservation of land purposes for an 800 acre site of a future Technology Park for the County of DuPage. Responsibilities included conducting research at the County Recorder's Office and at various public agencies to obtain recorded and unrecorded documents of multiple parcels acquired by the DuPage Airport Authority over the years to make up the subject site. Coordination of field crews on field survey and recon to obtain existing field evidence on subject site to aid in the determination of the existing boundaries. Calculations along with analysis of researched documents and collected field data to determine the existing boundaries of the subject site. Coordinate the drafting of the "Plat of Survey" for the subject site and prepare written legal descriptions for a three parcel breakdown of the subject site along with written legal descriptions of proposed easements. Final review and submittal of the signed and sealed "Plat of Survey".

TRANSPORTATION

I-80 Resurfacing (Harlem Avenue to I-294), IDOT Contract No. 60F61: Survey Manager overseeing drafting and quantity calculations for 6 miles of Interstate 80 between Harlem and I-294. The $16 million project included surveying tasks completed almost entirely at night. All documentation was prepared in accordance with ARRA requirements, the IDOT Construction Manual and the Project Procedures Guide.

IDOT Resurfacing Program 2009, PTB, Thomas Engineering: Survey Manager overseeing **d**rafting and quantity calculations for various roadways. Area calculations were prepared specific to each project's construction methodology. IDOT plans were used to establish a means in showing calculated areas for various removal and replacement items.

Butterfield Road South (98-188), Lake County DOT, Libertyville: Established horizontal and vertical control for Phase I roadway design. Also established existing right-of-way for purposes of land acquisition and the preparation of plats and legals for a plat of highways. Project length of approximately 2 miles.

Butterfield Road North (99-455), Lake County DOT, Libertyville: Established horizontal and vertical control for Phase I design. Also established existing right-of-way for purposes of land acquisition and the preparation of plats and legals for a plat of highways. Project length of approximately 1.5 miles.

135th Street (00-532), Will County Highway Department, Will County: Established horizontal and vertical control for Phase I roadway design. Also established existing right-of-way for purposes of land acquisition. Project length of approximately 2.5 miles.

Rohlwing Road (98-361BR19), IDOT, Rolling Meadows: Established horizontal and vertical control for Phase I roadway design. Also established existing right-of-way for purposes of land acquisitions and the preparation of a plat of highway suitable for submittal to IDOT. Project length of approximately 0.75 miles.

Golf Road (98-361BR23), Rolling Meadows: Established horizontal and vertical control for Phase I roadway design. Also established existing right-of-way for purposes of land acquisitions and the preparation of a plat of highway suitable for submittal to IDOT. Project length of approximately 0.75 miles.

Balmoral Avenue (95-520), Village of Rosemont/City of Chicago/Wisconsin Central: Established horizontal and vertical control, existing roadway, railroad and property boundaries for the evaluation of the construction of a bridge over the Wisconsin Central Railroad from the existing Balmoral Avenue to Mannheim Road. Also the preparation of plats and legals for land acquisitions necessary for construction. Including control and layout for the construction of the approved bridge.

INFRASTRUCTURE

Village of Clarendon Hills: Creation of a storm sewer atlas for the Village, including the determination of location, size and type of storm structures and underground pipe.

GIS, Rolling Meadows: Project Manager for updating and augmenting the City's existing GIS Base Map address and street databases. City's original data was five years old and work entailed the addition of recently added subdivisions and commercial property, along with adding and naming of all private streets within the City. Performed an overall QA/QC of the existing data to bring it up to date and match existing databases within Public Works, Police and Fire Departments, and Community Development. Also, for the Public Works Department: establish a City wide base map to be used by all levels of government including design of street and address maps; updating and design of digital storm, sanitary and water utility maps for use in the City's GIS; coordination of

workstation setup and installation with single license of ArcView and Arc Reader; and for the Police and Fire Departments: assisted in the design and creation of the City's 911 response street and address databases.

GIS, Glendale Heights: Project Manager for preparation of GIS Base Maps and Utility Atlases for the Village of Glendale Heights Department of Public Works. The Village wanted to set up Village-Wide Base Maps for use in coordination of operations involving underground utilities. Utilized the current Village atlases, although outdated, to expedite the start-up of this project. Created a base map in Phase I comprised of information obtained from the DuPage County GIS Department. Performed QA/QC to make the data consistent with the existing Village address and street maps. Also "rubber sheeted" the existing atlas information for all utilities onto the base sheets in data compatible with ESRI's ArcView 9.0 software so available as a hard copy or are viewable on computer by Village staff. In Phase II, created a pilot program for atlases for the water, sanitary and storm infrastructure. Utility atlases for two quarter sections were developed based on field observations with the use of GPS and conventional surveying methods. Standard GPS and handheld GPS methodologies were compared based on cost, accuracy, and Village utility. Both methods still required field crews to collect pipe sizes and inverts. Our field crews surveyed the locations of all storm, sanitary and water structures for two of the quarter sections. Separate atlases were completed for each utility. CBBEL assisted the Village in setting up computers for use with the software and GIS database.

GIS, Elmwood Park: Project Manager for preparation of GIS Base Maps and Utility Atlases for the Village of Elmwood Park. The Village wanted to set up Village-Wide Base Maps for use in coordination of operations involving underground utilities. Utilized the current Village atlases, although outdated, to expedite the start-up of this project. Created a base map in comprised of information obtained from the Cook County GIS Department. Performed QA/QC to make the data consistent with the existing Village address and street maps. CBBEL created atlases for the water, sanitary and storm infrastructure. Utility atlases were developed based on field observations with the use of GPS and conventional surveying methods. Our field crews surveyed the location of all storm, sanitary and water structures for the entire Village. Separate atlases were completed for each utility. CBBEL assisted the Village in setting up computers for use with the software and GIS database.

GIS, Huntley: Project Manager for preparation of GIS Base Maps and Utility Atlases for the Village of Huntley. The Village is in the process of setting up Village-Wide Base Maps for use in coordination of operations involving underground utilities. Utilized the current Village atlases, although outdated, to expedite the start-up of this project. Creating base maps comprised of information obtained from the McHenry and Kane County GIS Department. Performing QA/QC to make the data consistent with the existing Village address and street maps. CBBEL is creating atlases for the water, sanitary and storm infrastructure. Utility atlases for are being developed based on field observations with the use of GPS and conventional surveying methods. Our field crews are surveying the locations of all storm, sanitary and water structures for two of the quarter sections. Separate atlases are being completed for each utility. CBBEL is assisting the Village in setting up computers for use with the software and GIS database.

Chicago Water Partners, Chicago: Topographic survey and base drawing development for water main construction projects for approximately 150 streets from 2001 to present.

TAB 4

APPROACH

APPROACH

The first activity will be to collect and review all available information from the three communities relative to drainage including, sewer atlas, combined/storm sewer surveys, topography, previous studies, previous hydrologic/hydraulic modeling, rainfall data for September 2008 storm event, rainfall data for other recent flood inducing storm events and High Water Mark (HWM) data associated with September 2008 and other recent storm events and structure low-entry elevations. We have significant information and have witnessed firsthand flooding in Winnetka for the last 5 years. The only areas in the Village we did not study are included in the draft Stormwater Management Plan. We are aware of some flooding locations in Niles because of our work in neighboring Park Ridge.

If Village-wide flooding questionnaires have not been provided to residents since the September 2008 storm event, we would strongly recommend that a new flooding questionnaire be sent to residents. We find that these flooding questionnaires provide invaluable information of the types of flooding, the frequency of flooding and known flood depths. The flooding questionnaires were of a significant benefit when preparing the Winnetka flood study. Questionnaires a year after the last flooding are preferred to no questionnaire data. They can be destroyed after being used.

Based on a review of the collected data and the responses from the new flooding questionnaire, floodprone areas can be determined. Within these floodprone areas, we will determine what supplemental surveying is needed for the existing conditions hydrologic modeling.

Using the provided aerial topography, hydrologic model subwatersheds will be developed for the floodprone areas. The size of the subwatersheds will vary depending on the needed detail. Appropriate hydrologic parameters (Runoff Curve Number and Time of Concentration) will be developed for each subwatershed. The provided aerial topography will be used to identify existing depressional storage areas along with primary stormwater overland flow paths. Our wetland specialists will review available documents to determine where wetlands/riparian areas/environmentally sensitive areas might be located. These potential areas will be verified by a field visit.

Using all the information collected, an existing condition XP-SWMM model will be developed to simulate the existing drainage system within each floodprone area. If highwater marks are available for recent historic flooding events including the September 2008 event, the XP-SWMM existing condition model will be calibrated and/or verified using the available historic flood events. To evaluate the capacity of the existing sewer system, various design storm events will be simulated using the calibrated/verified XP-SWMM model. The results of these simulations will be reviewed to determine the causes of the reported flooding problems. We will identify the existing level of service for the drainage system and level of protection for residential/commercial structures within the floodprone areas of the Villages.

We will meet with Village staff discuss the findings of the existing conditions modeling and evaluation. At this meeting, we will discuss which six (6) neighborhoods (two (2) neighborhoods in each Village) are to be evaluated for potential flood hazard mitigation. At this meeting, the vision and goals of each Village will be discussed. A discussion on the desired level of protection will be discussed then assigned for each neighborhood. A discussion on feasibly Flood Hazard Mitigation alternatives including sustainable measures will be completed. Potential Flood Hazard Mitigation alternatives include storage (wetland basins, dry bottom basins, rain gardens, etc.), conveyance (relief storm sewers, improved overland flow paths, etc.), infiltration (permeable pavers, etc.), land use modifications, capture/reuse practices. Each of these potential alternatives will be assessed to determine the water quality benefits that would be receive from their adoption. An alternative could consist of several of these components depending on

the cause of the flooding. Based on the meeting results, potential Flood Hazard Mitigation alternatives for the 6 neighborhoods will be developed and their effectiveness evaluated using the existing condition modeling. Conceptual level cost estimates will be determined for the various alternatives along will a description of benefits. Potential funding sources will be investigated and a funding strategy developed. The alternative analysis will be presented to the Villages for review and comment. The analysis will be modified as required to address comments.

The next step will be the development of an implementation plan for the adopted Flood Hazard Mitigation Plan. This plan will incorporate revisions to existing land use or subdivision regulations and capital improvements phasing based available funding. The draft implementation plan will be provided to the Villages for review and comment. The implementation plan will be finalized based on Village feedback.

A major component throughout the entire Flood Hazard Mitigation plan process will be Public input and participation. It is our understanding that twelve (12) public participation meetings (four (4) per Village) will be held during the planning process. These meetings will be vital to achieve a Flood Hazard Mitigation plan that can be endorsed by residents and therefore can be successfully implemented in the future. The meetings should be a means of presenting interim study results and acquiring comments and insights from the residents.

The final product will be a detailed report with appropriate graphics.

TAB 5

PROJECT SCHEDULE

PROJECT SCHEDULE

We feel that with our team's knowledge of the project, previous experience in Winnetka and other surrounding communities, and understanding of the key challenges and concerns associated with this project, coupled with our team's proven track record, ***will enable us to complete this project within 12 months*** after authorization to proceed.

Our current work commitments will allow us to undertake this project on an immediate basis. The Project Team will make this project a priority with regards to staffing and scheduling and we are committed to complete this project in accordance with the project schedule outlined above. Our goal is to create a seamless environment between CBBEL and the Villages of Winnetka, Glenview and Niles as well as with the residents while delivering a quality, on-time project.

GENERAL TIMELINE

TASK	ESTIMATED TIME FRAME
Data collection and review	***1 month***
Flood Questionnaire	***1 month (parallel to Data collection and Review)***
Supplemental surveying	***2 months***
1st Series of Public Meeting	***completed after review of flood questionnaire results***
Assessment of Existing Conditions	***3 months***
2nd Series of Public Meetings	***completed after completion of Assessment of Existing Conditions***
Selection of Neighborhoods	***completed after 2nd Public Meeting***
Draft Plan Development	***4 months***
3rd Series of Public Meetings	***completed after development of draft plan***
Finalization of Plan	***1 month***
Draft Implementation Plan	***1 month (parallel to finalization of plan)***
Final Implementation Plan	***1 month***
4th Series of Public Meetings	***completed after final implementation plan development***

TAB 6

FEE SUMMARY

FEE SUMMARY

Villages of Winnetka, Glenview, and Niles
Flood Hazard Mitigation Planning
Detailed Cost Breakdown
8-Jan-14

TASK	Project Manager	QA/QC	Engineer IV	Engineer III	Environmental Resource Specialist III	Survey V	Survey III	Survey II	Survey I	CAD II	Administrative	BUDGET Hours	BUDGET Dollars
1 - Data Collection	2	2	8	80								92	$13,190.00
2 - Flood Questionairre	1	1	4	24							4	34	$4,743.00
3 - Supplemental Field Survey		1	1	16		24	80	80	80	40		322	$36,263.00
4 - Existing Conditions Assessment	16	8	8	200	40					80	8	360	$48,704.00
5 - Flood Hazard Mitigation Plan Development	16	8	16	220							8	268	$38,288.00
6 - Plan Implementation	4	2	8	80						40	16	150	$19,960.00
7 - Public Meetings	36	36	36	36							16	160	$26,408.00
Total Hours per Classification	75	58	81	656	40	24	80	80	80	160	52		
Average Hourly Rate	$173.00	$210.00	$173.00	$138.00	$114.00	$178.00	$127.00	$100.00	$78.00	$125.00	$88.00		
Total Cost Per Job Category	$12,975.00	$12,180.00	$14,013.00	$90,528.00	$4,560.00	$4,272.00	$10,160.00	$8,000.00	$6,240.00	$20,000.00	$4,576.00	1386	$187,556.00

Direct Costs	$2,500.00
Cost Not To Exceed	$190,056.00

ATTACHMENT #5

VILLAGES OF WINNETKA, GLENVIEW AND NILES, ILLINOIS
FLOOD HAZARD MITIGATION PLAN

SCOPE OF SERVICES

- PROJECT ADMINISTRATION. Plan, schedule, and control activities that must be performed to complete the Project. These activities include, but are not limited to, budget, schedule, scope and performance. This task involves the preparation of a detailed communication plan to be adhered to throughout the Project and submittal of weekly Project status reports to the Village.

- EXISTING DATA REVIEW. Review existing data provided by the Villages of Winnetka, Glenview and Niles including, but not limited to:
    - GIS data (aerial photography, parcels, municipal infrastructure, topography, etc.)
    - Previous and ongoing planning initiatives
    - Historic information
    - Geography and regional context
    - Land uses
    - Natural resources
    - Historic preservation
    - Cultural and recreational resources
    - Community character

- PROJECT MEETINGS. Attendance by the Project Team at up to ten (10) joint meetings with staff from the Villages of Winnetka, Glenview and Niles to discuss preliminary findings and recommendations as the Pilot Studies, Addenda, and Flood Hazard Mitigation Plan are being developed. This task includes the preparation of minutes for each Project meeting.

- PILOT STUDIES. Evaluate opportunities to implement various flood mitigation approaches at a total of four (4) specific locations in Winnetka, Glenview, and Niles. An initial Pilot Study will be conducted for one location in Winnetka. Then the Pilot Study will be repeated for one location in Glenview, one location in Niles, and another location in Winnetka. The four locations will be selected by the Villages and are expected to include one single family residential neighborhood, one multi-family development, one downtown retail development, and one large commercial development.

- PUBLIC SURVEYS. Develop two (2) surveys to be used in each Pilot Study. One survey will be used to gather input from the public regarding the recurrence and severity of the flood hazard and regarding property protection measures that have already been implemented. Another survey will be used to determine whether the recommended flood mitigation measures are acceptable to the public.

- PAPER AND WEB MATERIALS. Develop materials explaining to the public what type of information will be useful to the Project Team, maps to help collect the information, and graphics to illustrate alternative flood mitigation approaches.

- PROJECT WEBSITE. Develop a single Project website and maintain the website throughout the duration of the Project. The website will allow the public to submit surveys online and access Project work products. Links to the Project website will be provided on the websites for the Villages of Winnetka, Glenview, and Niles.

- OPEN HOUSES. Host up to two (2) interactive open houses for each Pilot Study, for a total of up to eight (8) open houses to engage the public in the development of the Pilot Studies. At the first open house, the Project Team will gather information from the public regarding the recurrence and severity of the flood hazard and property protection measures that have already been implemented. Recommended flood mitigation measures will be presented at the second open house.

- ADDENDA TO VILLAGE PLANS. Document the findings and recommendations of the Pilot Studies in a format that can be adopted by each Village as an addendum to a Stormwater Master Plan or Comprehensive Plan. The Addenda will include:

    - An existing conditions assessment of hazard mitigation issues;
    - A summary of past and ongoing plans;
    - A vision, goals, and objectives for a multi-faceted plan considering hazard mitigation, land use, environmental preservation, traditional infrastructure, and green infrastructure;
    - A realistic implementation plan with specific recommendations to guide the municipality through each step of implementation;
    - Approaches that can be implemented by a neighborhood or an individual property owner;
    - Mapping that clearly communicates existing conditions and recommendations;
    - A description of the anticipated cost and beneficial results of implementation;
    - Identification of available sources of funding for implementation;
    - Identification of efficiencies that can be gained by integrating the recommendations into a municipal capital improvement program or by public investment in private property protection;
    - Identification of municipal policies and regulations (zoning and subdivision codes) that could be amended to ease implementation;
    - Identification of public education opportunities; and
    - Specific timelines for implementation and responsible parties.

- VILLAGE COUNCIL AND VILLAGE BOARD MEETINGS. Presentation of the draft and final Addenda at public meetings in each Village for a total of six (6) presentations at public meetings.

- FLOOD HAZARD MITIGATION PLAN DOCUMENT. Develop a single document describing how the Pilot Studies can be repeated throughout the watershed. The document will include a catalog of flood mitigation approaches that can be implemented by a neighborhood or an individual property owner. Flood mitigation approaches will

include green infrastructure and more conventional flood protection measures. A profile sheet will describe the applicability, expected benefits and cost, and maintenance considerations for each mitigation approach. The documents will also include digital copies of customizable surveys, print materials, and slideshow presentations. Finally, the document will describe various funding options for implementing the flood mitigation approaches.

This Scope of Services does not include administration of the grant used to fund the Project. Village of Winnetka staff will be responsible for administration of the grant.

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Staff	Phipps	Amann	Grimm	Moffitt	Hopper	Blue	Hainer	Cigliano	Patera	Pinter	Damptz		
Hourly Rate =	$ 140	$ 180	$ 80	$ 115	$ 85	$ 150	$ 90	$ 95	$ 165	$ 200	$ 100	Exp	Total
Assessment of Existing Conditions													**$ 28,530**
Project Management and Administration	2	6				1							$ 1,510
Project Team Meetings	3	6				3							$ 1,950
Village Staff Meetings (1)	3	8				5	5					280	$ 3,340
Review Existing Data	7	21	56			11	76						$ 17,730
GIS Base Map		2	3		40								$ 4,000
Public Participation Process													**$ 37,970**
Project Management and Administration	2	6				1							$ 1,510
Project Team Meetings	5	10				5						280	$ 3,530
Village Staff Meetings (2)	1	12	5			10	15						$ 5,550
Create Website	1	2				4		30		1			$ 4,150
Existing Conditions Survey	1	2				10	51			3			$ 7,190
Exhibits	1	1	3		20					2			$ 2,660
Open Houses (4)	3	3	21			21	80					390	$ 13,380
Addenda to Village Plans													**$ 108,415**
Project Management and Administration	4	12				1							$ 2,870
Project Team Meetings	9	18				9							$ 5,850
Village Staff Meetings (6)	21	45				21	27					840	$ 17,460
Update Website (2)	1	2						12		1			$ 1,840
Potential Strategies Surveys (3)	1	2	4			6	18			1			$ 3,540
Potential Strategies Graphics	1	2	4			3	40			2			$ 5,270
Zoning Regulations						9	46					50	$ 5,540
Neighborhood Implementation Plans (3)	38	52	144			21	56		9	6			$ 37,075
Brochures (3)	1	2				3	3	18		2		50	$ 3,380
Open Houses (4)	3	27	21			21	110					390	$ 20,400
Public Meetings (6)	15					15						840	$ 5,190
Flood Hazard Mitigation Plan													**$ 24,880**
Project Management and Administration	2	6				1							$ 1,510
Project Team Meetings	1	2				1							$ 650
Village Staff Meetings (1)	3	8				5	5					140	$ 3,200
Watershed Implementation Plan	10	20	90			9	53			6			$ 19,520
Total =	139	277	351	0	60	196	585	60	9	24	0		**$ 199,795**