

## **Agenda Report**

**Subject: Stormwater Update – February 21, 2012**

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

Date: February 15, 2012

Willow Road Stormwater Tunnel Project: Coastal Engineering Contract. A key component of the Willow Road Stormwater Tunnel is the design of the outlet structure to Lake Michigan. This structure must be designed with multiple factors in mind. It must reduce outlet velocity to safe levels; it must control erosion and prevent pollution; it must not contribute to beach degradation; it must withstand wave and ice action; it must not interfere with navigation or other uses of the Lake; and it must be aesthetically acceptable. Given that this is a significant challenge, in the unique setting of a coastal environment, staff is seeking a sub-consultant from the specialized discipline of coastal engineering to provide conceptual designs and cost estimates for this structure.

Two firms have submitted fee proposals on the project. A third firm, Montgomery Watson Harza (MWH), declined to submit a proposal for consideration. Shabica and Associates is a local firm (Northfield, IL) that specializes in shore protection projects. They have done many of the beachfront projects for local residents, and have worked with the Village and the Park District in the past. Shabica and Associates have proposed a fee of \$5,000 for “review of plans by others and coastal design options and/or outfall options for an approximately 8’ stormwater outfall into Lake Michigan. Includes necessary meetings with the Village, engineers, neighbors, community representatives and/or regulators.”

Baird and Associates is a large international firm – with offices in Chicago – that boasts a wide array of significant coastal projects. They have proposed a more robust scope of work in keeping with a true conceptual design study, but at a commensurate fee of \$24,550. I think it would be in the Village’s interest to proceed with Baird on our team as we continue to develop the tunnel project. I believe this fee is reasonable for the scope involved and considering the importance of this particular aspect of the project, having a deeply experienced “heavy-hitter” evaluating and designing a significant piece of the project will pay rich dividends down the road. A copy of the fee proposal is attached. The fee for this work falls within staff’s purchasing authority, however given the importance of the project I wanted to obtain Council concurrence on proceeding.

Willow Road Feasibility Study. As the feasibility study on the Willow Road tunnel project continues, one of the concepts encouraged by the Illinois EPA and the Metropolitan Water Reclamation District is the idea of conveying flows from smaller storms, and the “first flush” flows from larger storms, west to the Skokie River through the existing outfall and pump station. This would significantly address water quality issues for the discharge to the Lake from the western watershed, and would also contribute to maintaining low-flow volumes in the North Branch watershed. As currently

conceived, the project does not include such plans, and additional engineering work is required to evaluate and conceptually design a diversion structure to accomplish this. Staff has authorized expenditure of up to \$13,200 with Christopher Burke Engineering to prepare preliminary designs for this structure, to work with Baird and Associates to complete the conceptual design for the outfall structure, and to prepare a final feasibility report for the Council. A copy of the proposal for this work is attached.

**Recommendation:**

Informational Report.

# Baird

oceans

*engineering*

lakes

*design*

rivers

*science*

watersheds

*construction*

## **Willow Road Stormwater Relief Tunnel Outfall Conceptual Design Study**

**January 24, 2012**

**P11962.100**





January 24, 2012

Village of Winnetka  
Attn: Mr. Steven Saunders, P.E.  
Director of Public Works  
1390 Willow Road  
Winnetka, IL 60093

Baird & Associates  
2981 Yarmouth Greenway Drive  
Madison, Wisconsin 53711 USA  
T. 608 273 0592  
F. 608 273 2010

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Re: Willow Road Stormwater Relief Tunnel – Outfall Feasibility Study

Dear Mr. Saunders:

Thank you for the meeting on January 16, 2012 to discuss the Stormwater Relief project. We look forward to the opportunity to work with you and Christopher Burke Engineering Ltd. (CBBEL) on the conceptual design and implementation of this important project. We have prepared a proposal for the outfall conceptual design study, as detailed below.

### **Project Understanding**

Based upon our discussions, we understand that the Village of Winnetka (Owner) is planning a stormwater relief project that involves the construction of an eight foot diameter storm sewer underneath Willow Road from Glendale Avenue to Lake Michigan. A project feasibility study is scheduled to be completed by May, 2012. Permitting, final design and construction phases are not part of this scope of work.

CBBEL is the lead engineering consultant for this project. Preliminary meetings with the regulatory agencies (Metropolitan Water Reclamation District, Illinois EPA, Illinois DNR, and US Army Corps of Engineers) did not identify any major concerns with the new stormwater outfall into Lake Michigan currently proposed at the eastern end of Willow Road; however, it is unknown if any technical studies or a monitoring program will have to be performed as part of the permitting process (anticipated to start in 2013).

Baird's primary contribution to the project will be a conceptual design study, to develop conceptual design options for the proposed outfall.

### **Scope of Services**

We suggest proceeding with a conceptual design phase to determine the overall framework and site concepts prior to proceeding with detailed site investigations, engineering, and design (to be provided under a separate proposal, at a future time). The following scope of services is for conceptual design phase activities only. If required during the permitting process, supporting technical studies such as water quality computer modeling, sediment transport, etc. can be provided in a separate proposal.



## **Site Visit**

We will conduct a site visit to review existing site conditions, perform limited field measurements, and collect detailed photographs of the Willow Road eastern end and the existing two outfalls located north and south of Willow Road, respectively. We will discuss site opportunities, preliminary alternatives, and verify project budget and schedule shortly after the proposal acceptance.

We also plan to collect site information for the existing coastal structures in the immediate vicinity of the eastern end of Willow Road. We will review any available survey (topographic and bathymetric) and geotechnical information in the project area along with drawings, if available, for the existing two outfalls. A topographic and bathymetric survey is not part of this scope of work.

We assume that any available survey data can be submitted to Baird in electronic format, and that flow data for the design storm is available.

## **Preliminary Coastal Analysis**

Baird will perform a preliminary coastal analysis to determine site-specific environmental factors that influence the outfall design concepts and costs of proposed improvements. This analysis will include a preliminary evaluation of wind, wave, water level, and sediment transport conditions at the site.

Reference design criteria and conditions for the proposed outfall in the nearshore area will be summarized from our in-house database.

## **Conceptual Design Alternatives**

Concurrent with the preliminary coastal analysis, Baird will develop up to three preliminary conceptual design alternatives. The alternatives will be presented in simple plan view graphics in adequate detail to convey the design concept. Each concept will be accompanied by a written discussion, advantages/disadvantages, and comparative statements of probable construction costs.

We suggest a meeting with the regulatory agencies to discuss the conceptual design alternatives and determine the preliminary concept feasibility; we will then summarize the input received and further screen the alternatives accordingly. This information will be transmitted to the Owner in advance of a project meeting. Following a short review period, Baird will attend the meeting and present the concepts in detail. The intent will be to select a concept or combination of desired attributes to allow for the preparation of a single consensus alternative.

Based upon the direction received at the project meeting, Baird will prepare a single conceptual plan, cross-sections, provide a written discussion of the concept, and revise the itemized statement of probable construction cost. Simple engineering calculations will be performed for the selected plan. The plan will be presented to the Owner for comment. Minor revisions will be incorporated based upon the meeting and a letter report, conceptual drawings, and statement of probable construction costs will be provided.

# Baird

## **Qualifications and Experience**

Baird has extensive qualifications and experience with providing the professional services described above with a special emphasis on the Great Lakes and this particular location of Lake Michigan. Please visit our website at [www.baird.com](http://www.baird.com) for a detailed description of our qualifications, experience, and similar projects.

Our Project Team will primarily consist of the following staff:

Lars T. Barber, RLA - Principal-in-Charge and Senior Client Service Manager

Dan Veriotti, PE - Project Manager and Project Coastal Engineer

Ben Yahr, RLA - Project Designer/Landscape Architect and Drawing Preparation

Please see attached resumes for detailed information regarding our Project Team.

## **Draft Schedule**

The following schedule is for discussion purposes and is dependent upon the award of a contract for the work (assumed February 2012), and timely reviews and responses.

<b><u>Task</u></b>	<b><u>Estimated Completion</u></b>
1. Site Visit	February 2012
2. Preliminary Coastal Analysis	February 2012
3. Conceptual Alternatives	March through April 2012

## **Cost of Professional Services**

We propose to provide the professional services outlined above for a fixed fee of \$24,550. These fees include all labor and expenses associated with the completion of the work. If any other additional services are requested, they will be invoiced in accordance with the attached 2012 standard fee schedule. We will not proceed with any additional services without the prior written consent of the Owner.

Monthly invoices will be issued based upon percent complete with payment due within 30 days.

If this scope of services, cost, and schedule are agreeable to you, we require that a standard form of agreement be executed between the Owner and Baird. We believe we can complete the services described within the schedule proposed above, subject to receipt of the signed contract for the work (assumed by February 24, 2012).

# Baird

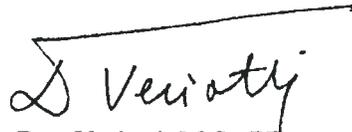
Following your review and consideration of this proposal, please do not hesitate to contact us should you have any questions or require any clarifications. We look forward to working with you on this exciting project.

Sincerely,  
Baird & Associates



Lars T. Barber, RLA  
Principal

P11962.100



Dan Veriotti, M.S., PE  
Project Manager, Associate

**APPENDIX A  
RESUMES**

## Lars T. Barber, RLA

### Principal

W.F. Baird & Associates

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#### Profile

Mr. Barber has worked on a variety of projects over the past 34 years involving numerous aspects of waterfront planning and design. His key skills include site analysis, master planning, feasibility studies, cost estimates, design, and construction administration. Mr. Barber has participated in and directed public participation workshops dedicated to waterfront planning and design and has extensive experience in working with agencies to obtain regulatory approval.

Locations where Mr. Barber's skills have been applied include the Great Lakes, Caribbean, Mississippi, Ohio and Missouri Rivers, and inland lakes and reservoirs throughout the Midwestern United States.

In addition, Mr. Barber is the Principal-in-Charge of the Madison office responsible for day-to-day operations and directs all business development activities.

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#### Education

B.Sc., Landscape Architecture, University of Wisconsin - Madison, 1977

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#### Professional Affiliations

Registered Landscape Architect, State of Illinois  
Registered Landscape Architect, State of Minnesota  
Registered Landscape Architect, State of Wisconsin  
Member - American Society of Landscape Architects

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#### Experience

##### Gateway Harbor

###### *Chicago, Illinois*

Program Manager for a world-class, 250-slip marina located in Chicago Harbor, adjacent to Navy Pier. Coastal engineering services included the review of extensive coastal reports, numerical modeling studies, participation in a physical model study, constructability issues and cost estimates. Dockage design included the review of alternative dockage layouts, detailed plans, sections, details, specifications and costs. Estimated project costs exceed \$16M.

##### 31<sup>st</sup> Street Harbor

###### *Chicago, Illinois*

Program Manager for all coastal engineering activities and dockage design for a 950-slip marina located on Lake Michigan in South Chicago. Coastal activities included the review of extensive coastal reports, numerical modeling studies, participation in a physical model study, constructability issues and cost estimates. Dockage design included the review of alternative dockage layouts, detailed plans, sections, details, specifications and costs. Estimated project costs exceed \$100m. In addition, served as Project Manager for providing full-time specialty construction services during the installation of the rubblemound breakwater. The breakwater is one of the largest on the Great Lakes extending over 3000 lf and containing over 500,000 tons of stone. Estimated project cost exceeds \$30 million.

##### Diversey to Fullerton Avenues

###### *Chicago, Illinois*

Project designer and quality control manager for approximately 2,000 lf of shore protection on Chicago's north side and several acres of park improvements. Proposed improvements consist of a 60-ft-wide concrete terraced revetment that is accessible to the public, a new bike path and landscape berm to control flooding. A significant effort was undertaken to protect mature trees and maintain bicycle and pedestrian circulation during the construction process. The project cost was \$14M.

## **Northerly Island**

### ***Chicago, Illinois***

Project Designer responsible for the conceptual design of over 1 mile of Lake Michigan shoreline. Proposed improvements included: enhancement of an existing perched swimming beach, design of additional sand and cobble beaches, pedestrian overlook plazas, steel sheet /concrete shore protection systems and offshore islands. A wide variety of concepts were developed with costs ranging between \$50M and \$90M.

## **2016 Olympic Games**

### ***Chicago, Illinois***

Project Manager for the preparation of a feasibility study to incorporate modifications to the existing government breakwaters in Monroe Harbor to accommodate the rowing venue for the 2016 Olympic Games. Coastal, structural and geotechnical engineering services were provided including comprehensive wind, wave and water levels analyses followed with extensive numerical modeling and design of proposed alternatives. Estimated costs of modifications are approximately \$80M. Additional conceptual designs and cost estimating services were provided for the sailing, kayaking and triathlon venues.

## **Pier Head Super Yacht Harbor**

### ***Bridgetown, Barbados***

Project Manager responsible for the final design and preparation of construction documents for a new super yacht harbor that will accommodate over 70 super yachts ranging in size from 80-200+ feet in length. A full range of design services from market analysis, to program development, through implementation will be provided. The facility will include unparalleled services and amenities found anywhere in the Caribbean. The main breakwater will be approximately 55 ft wide and 1500 ft long and will be extensively developed as an urban park. Estimated project costs exceed \$50m.

## **Midwest Generation**

### ***Waukegan, Illinois***

Client Service Manager for the site investigations, permitting and preliminary engineering for the creation of a four acre land extension in Lake Michigan to accommodate pollution control equipment for the Midwest Generation power company. Tasks included the evaluation of regional sediment transport analysis and the impacts of the proposed land extension on plant hydraulics. Participation in the regulatory process included the coordination and preliminary design of mitigation opportunities that recommends near shore islands to create habitat for the Common Tern.

## **Cat Island Habitat Restoration**

### ***Green Bay, Wisconsin***

Project Designer and Manager for the development of a master plan to restore a historical island chain located in Green Bay. Islands were re-created utilizing clean excavated material from navigation channel maintenance. Shore protection was designed to provide aquatic and terrestrial habitat. The island chain provides wave protection for a regional wetland and wildlife area. The islands accommodate approximately two million cu yd of dredge material at an estimated cost of approximately \$17 million and create over 140 acres of islands.

## **Forest Park Recreational Development**

### ***Lake Forest, Illinois***

Project Architect for small harbor of refuge. Harbor included breakwaters, shore protection, a floating dockage system, two-lane launch ramp and two jib cranes to launch and retrieve sailboats. Responsibilities included the development of preliminary/final design and development of construction documents.

## **Dan Veriotti, P.E.**

### ***Coastal Engineer / Project Manager***

**W.F. Baird & Associates**

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#### **Profile**

Mr. Veriotti has worked on various planning and design projects over the past 13 years. His expertise includes design and development for waterfront projects, coastal/civil engineering, hydrology/hydraulics, computer and physical modeling for coastal dynamics, surface water, pollutant transport, and water mixing processes. Primary project management responsibilities include waterfront design and development for marinas, harbors, shoreline protection structures, and water resources, as well as technical studies, structural analysis, and construction administration.

Mr. Veriotti worked on waterfront projects throughout the Great Lakes, the Mississippi River, various inland lakes as well as Singapore, Shanghai, and Malaysia.

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#### **Education**

M. Sc., Coastal Engineering, University of Michigan

M. Sc., Civil Engineering/Water Resources, University of Michigan

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#### **Professional**

##### **Affiliations**

Registered Professional Engineer, State of Illinois  
Registered Professional Engineer, State of Wisconsin  
Registered Professional Engineer, State of Michigan  
Registered Professional Engineer, State of Ohio  
Registered Professional Engineer, State of Pennsylvania  
Registered Professional Engineer, State of Indiana  
Member of National and Michigan Society of Professional Engineers  
Member of American Society of Civil Engineers  
Member of ASBPA (American Shore and Beach Preserve Association)  
Member of SAME (Society of American Military Engineers)

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#### **Experience**

##### **Toledo Harbor Islands Restoration**

###### ***Toledo, Ohio***

Project lead designer and costal engineer for the preliminary design and feasibility study of three habitat islands located in Maumee Bay, western Lake Erie Basin. The islands are designed to accommodate over 20M CY of maintenance dredged material removed from the federal navigation channel. The islands provide terrestrial and aquatic habitat opportunities. Services included coastal analysis, breakwater/revetment design, island location and layout, geotechnical analysis, constructability and cost estimating.

##### **Cleveland Harbor RSM Section 204**

###### ***Cleveland, Ohio***

Project Manager for technical analysis and conceptual plan development to beneficially use dredged material from the federal Cleveland harbor navigational areas for ecosystem restoration opportunities. Services provided included technical analysis (water levels, wave climate, coastal engineering calculations for structure design), area location and layouts, geotechnical analysis, constructability and cost estimating.

##### **Shoreline Restoration Alternatives**

###### ***Indiana Dunes National Lakeshore, IN***

Project Manager for technical analysis and plan development to restore 20 miles of shoreline between Michigan City and Gary, IN. Services provided included technical analysis (water levels, wave climate, and sediment transport) along with development of shoreline restoration options (beach nourishment, sediment by-pass plants, and shoreline erosion structures) with construction cost estimates.

## **Thermal Plume Analysis**

### ***Chesterton, IN***

Project Manager for computer modeling studies of the Bailly-NIPSCO water discharge temperature distribution. Services provided included 2-and 3-Dimensional modeling analysis of the thermal plume, shoreline morphological analysis, conceptual design and cost estimates for outfall channel alternate options, and feasibility of re-locating the Lake Michigan plant water intake in deep water.

## **Water Intake Feasibility Study**

### ***Chesterton, IN***

Project Manager for technical studies and porous dike intake conceptual design of the Bailly-NIPSCO water intake. Services provided included 2- Dimensional modeling analysis of the sediment transport and wave climate, shoreline morphological analysis, conceptual design and cost estimates for porous dike intake options

## **Marina Master Plan**

### ***Port Clinton, OH***

Project Manager for the proposed Port Clinton transient marina (125 slips). Services provided included preliminary feasibility, Coastal conditions, conceptual design and cost estimates for marina harbor alternate options.

## **Lakefront Park**

### ***Portage, IN***

Lead coastal engineer for final design, permitting, and construction administration of multi-use park (\$10M) located at the confluence of Burns Waterway and Lake Michigan. This project involved rehabilitation of the existing federal breakwater west arm and the coastal bluffs, a new riverwalk fixed structures (approximately 2,000 feet long), a fishing pier, a new building and various recreational paths and beach access.

## **Rock Run Rookery**

### ***Joliet, IL***

Project Manager for a multi-disciplinary team for a water resources-focused Preserve Park at the confluence of Rock Run and Des Plaines River. The project (\$2M) included final design, permitting and construction administration for a trail system, boat launch, fishing piers, shelters, roadway improvements, and fixed boardwalk structures.

## **Northerly Island Master Plan**

### ***Chicago, IL***

Coastal engineer for conceptual design and master planning of the island, including coastal protection structures, proposed Olympics concepts for whitewater course, and cost estimating for various selected island options (\$100M to \$200M). Analysis of wind wave climate and selection of design criteria.

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## **Technical Papers**

“Shoreline Rehabilitation in Highland Park, Illinois”, American Shore and Beach Preservation Association Conference, Chicago, IL October 15-17, 2008.

“Making Waves”, Waterfront Review, Issue 3, September 2007 Waterfront Expo UK.

“Planning and Design Guidelines for Small Craft Harbors”, ASCE Manuals and Reports on Engineering Practice No. 50, Co-Author Chapter 4: Land-Based Support Facilities.  
Peer Review: Chapter 2: Entrance, Breakwater, and Basin Design.

“Regional Sediment Budget and Shoreline Restoration Alternatives”, Coastal Zone 2011 Conference, Chicago IL July 17-21, 2011.

“Great Lakes Near-Shore Habitat Improvement Opportunities”(with Lars Barber, Baird), Coastal Zone 2011 Conference, Chicago IL July 17-21, 2011.

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#### Profile

Mr. Yahr has over 6 years of experience in landscape architecture and coastal engineering related projects. Mr. Yahr specializes in spatial design, layout, master planning, and sustainability and has experience in all aspects of site development, landscape architecture, construction services, stormwater management, field services, volumetric and cost calculations, and preparation of design and construction documents.

Mr. Yahr is a key member of conceptual and design development teams, coordinates field services, assists in the production of civil and coastal engineering design documents and is well versed in CAD, GIS and 3D visualization software. Specialties include public access, marina design, ecosystem restoration, photo simulation, design analysis using 3D graphics, and photorealistic rendering of design alternatives. Mr. Yahr routinely collaborates with coastal and structural engineers, hydrologists, and computer modelers and has been involved in a range of multi-disciplinary projects from initial site visits to construction. Recent experience includes project sites throughout the Great Lakes Region, the Caribbean, and Madagascar.

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#### Education

B.Sc. Landscape Architecture, University of Wisconsin – Madison, 2005  
Certificate - Environmental Studies, University of Wisconsin – Madison, 2005

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#### Professional Affiliations

Registered Landscape Architect- State of Wisconsin  
Member – American Society of Landscape Architects

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#### Experience

##### **Hastings Park- Rockley Beach and Boardwalk**

###### *Barbados*

Project landscape architect and onsite construction representative for Public Park providing access to approximately 2km of newly restored beach systems and a continuous seaside boardwalk. Beach and boardwalk are accessible to the public and include significant site amenities, shore protection, and landscaping. Local residents and tourists utilize the public park for art fairs, concerts, and public events. Project tasks include site analysis, survey, on-site conceptual design, photo simulation, public participation, design development, cost estimates, visualization, final design and construction services.

##### **Public Access Trail**

###### *Port Washington, Wisconsin*

Project landscape architect and designer for conceptual public access trail leading out of downtown Port Washington. Project features bike and pedestrian trails and bridges, parking area, beach enhancement, shore protection, an ADA accessible fishing pier, prairie restoration, wetland creation and enhancement, and a canoe/kayak launch.

##### **Marion Mill Pond Ecosystem Restoration**

###### *Marion, Michigan*

Conceptual designer for dam removal and restoration options for a river channel and 26 acre impoundment in central Michigan. The restored channel will provide coldwater habitat continuity for trout along the 33 mile Middle Branch River. Tasks included analyzing existing conditions, comparing reference reaches, establishing natural channel design characteristics, researching and specifying natural grade control and habitat structures, analyzing construction phasing options, and specifying preliminary planting plans and lists.

##### **Port Vincent Waterfront**

###### *Port Washington, Wisconsin*

Designer for over 7,000 LF of Lake Michigan waterfront. Proposed improvements include stabilization of 100-ft high bluffs, creation of 15 acres of environmental corridor and over 10 acres of accessible public beachfront. The \$60m+ project also includes a hotel resort and conference

center, a PGA championship golf course, and residential development including condominiums, estate and single-family lots. Project tasks include site analysis, on-site conceptual design, design development, grading plans, cost estimates, visualization of design alternatives, final design, project team liaison, and regulatory permit research, implementation, and development.

## **Desmond Landing**

### ***Port Huron, Michigan***

Responsible for the design and production of the drawings for the design and development of over one mile of urban waterfront along the St. Clair River. Project includes extensive public access opportunities, a specialty boat basin for display vessels, fixed and floating dockage systems, amphitheater, island development, fishing access, steel bulkhead walls, boardwalk, diver access, cobble beaches, wetland areas, and habitat creation. Technical issues include wave protection and water quality.

## **North Coast Transient Harbor**

### ***Cleveland, Ohio***

Designer and project team member for a 53 slip transient boat marina submitted for Federal Boating Infrastructure Tier II Grant. The proposed marina adjacent to the Rock and Roll Hall of Fame in downtown Cleveland will include dockage for boats up to 80 feet in length, ADA accessible dockage, and elements of "Green" marina design. Project tasks included marina layout, existing market conditions studies, economic justifications, determination of anticipated slip mix, cost estimating, and preparation of Grant application reports and materials. The project was subsequently selected to receive BIG Tier II funding.

## **Pierhead Super Yacht Harbor**

### ***Bridgetown, Barbados***

Designer for mega yacht marina and hotel development in Barbados. Project features the creation of an 80-slip marina accommodating yachts over 70 meters long, public walkway, beach enhancement, hotel, and multi-use commercial and residential development in conjunction with urban revitalization projects. Project tasks included spatial design, marina design, drawing production, and design visualization.

## **Transient Marina**

### ***Duluth, Minnesota***

Designer for 50% complete layout for Federal Grant consideration of 50 slip transient marina within a proposed 12 acre mixed use waterfront development within a Historic/Brownfield on the Duluth/Superior Harbor adjacent to Lake Superior. Proposed marina utilized an existing historic harbor slip as well as an excavated basin, and is to be protected by a system of three breakwaters. Future multiuse development will provide conductivity and boater access to a vibrant urban waterfront system including retail, museums, an aquarium, dining, hotel/convention facilities, sports arenas, regional trails, and park space.

## **Gary Urban Waterfront Revitalization**

### ***Buffington, Indiana***

Design team member responsible for the master plan development of an urban waterfront complex. Master plan includes a 400-slip full service municipal marina, mooring accommodations for a large entertainment barge, public boat launch facility and dockage for transient craft and display vessels.

## **2016 Olympic Games**

### ***Chicago, Illinois***

Project team member for the preparation of a feasibility study to incorporate modifications to the existing government breakwaters in Monroe Harbor to accommodate the rowing, sailing, kayaking, and triathlon venue for the 2016 Olympic Games. Coastal, structural and geotechnical engineering services were provided including comprehensive wind, wave and water levels analyses followed with extensive numerical modeling and design of proposed alternatives.

**APPENDIX B  
STANDARD FEE SCHEDULE**

## 2012 Standard Fee Schedule

W.F. Baird & Associates Ltd.

Madison, Wisconsin

Baird & Associates

2981 Yarmouth Greenway Drive

Madison, Wisconsin 53711 USA

T. 608 273 0592

F. 608 273 2010

# Baird

The fee for our services will be based on the charges listed below. All fee quotations are estimates, and actual fees are based on actual time and expenses incurred by W.F. Baird & Associates Ltd. (Baird) unless otherwise stated in the proposal. All rates are listed in US dollars.

### Personnel

Staff Category	Hourly Rate
Senior Consultant	\$239.00
Principal	\$186.00
Senior Professional II	\$166.00
Senior Professional I	\$147.00
Staff Professional III	\$134.00
Staff Professional II	\$118.00
Staff Professional I	\$103.00
Senior Technician	\$94.00
Technical Staff	\$84.00
Support	\$72.00

Expert witness services including: trial, mediation and arbitration preparation, depositions, court appearances and attendance at related proceedings, will be charged at 2.0 times the above rates.

### Expenses

Direct expenses incurred on the client's behalf are charged at our cost plus 10%. Such items include, but are not limited to, equipment rental, subsistence, printing and reproduction, transportation and travel charges and any special equipment or fees unique to the project. Professional sub-consultant fees are charged at our cost plus 10%. Automobile mileage will be charged at \$0.51/mile.

Communication fee for miscellaneous expenses such as photocopying, long distance telephone, cell phone, facsimile, computer, CADD, and normal postage will be invoiced at 6% of total invoiced Baird labor. This replaces detailed invoicing of these items.

Rates for hydraulic laboratory, field equipment, specialized numerical models and associated computer time are available on request depending on facilities and equipment used. Deposits for hydraulic basin rental are applied to total rental costs, but are not refundable.

### Invoices

Progress invoices shall be issued monthly and shall be paid within thirty days of date of invoice. Balances remaining unpaid at due date are subject to a monthly finance charge of 1.0% (which is an annual rate of 12% per year) until paid. Baird reserves the right to stop work on any project that has past due invoices until all outstanding balances are paid.

Advance payment is required on all non-public work.

Effective 01/01/12 to 12/31/12

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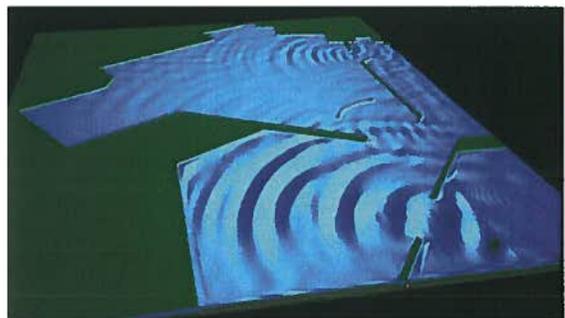
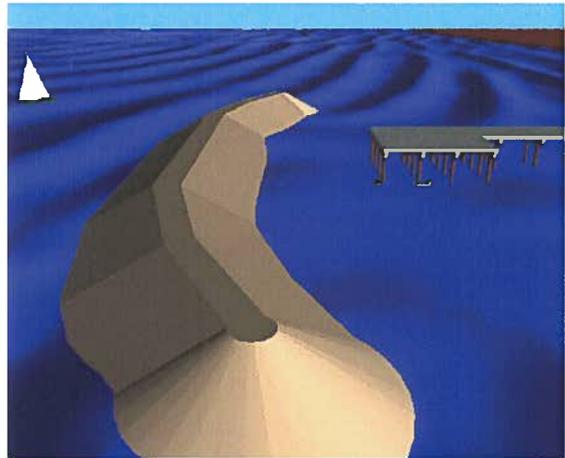
## NUMERICAL MODELING - WIND & WAVES

The evaluation of wind and wave climates is an essential first step in most coastal engineering projects. Wind and waves are basic physical forces that shape our shorelines and often govern the design of coastal structures. Establishing a reliable estimate of the severity and frequency of occurrence of the wave climate at a project site is a critical aspect of most waterfront projects.

To avoid the limitations and high costs associated with the collection of field data, an engineer may use computer models designed to reproduce the wind and wave generation processes at a specific location. Wave dynamics are complex and highly variable, and Baird employs a suite of sophisticated modeling tools to address the range of problems that may be encountered. These models have been thoroughly tested against both field and laboratory data, and the accuracy and reliability of the models have been demonstrated on hundreds of projects world-wide.

### Services

- *Wind and wave climate statistical analyses;*
- *Wind-wave forecasts/hindcasts;*
- *Wave propagation and transformation;*
- *Harbor oscillation;*
- *Ship wave generation;*
- *Wave interaction with structures;*
- *Wind and wave forces;*
- *Risk assessment; and*
- *Wave runoff and overtopping.*



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## DESIGN - COASTAL STRUCTURES

Coastal structures protect vital, land-based infrastructure, provide sheltered water for ports and marinas, and also stabilize shorelines in order to reduce the risk of erosion and flooding.

During the planning stage, coastal structures need to be sited considering functional requirements as well as potential impacts on the surrounding area. In the design phase, the main issue is optimization of the desired cross-section and addressing site-specific technical challenges in the most cost effective way. For construction, emphasis is placed on methodology, workmanship, progress, and contract administration.

Baird fully understands the entire process required for successful implementation of projects that involve coastal structures. We have substantial experience with all types of coastal structures, including breakwaters, jetties, groins, revetments, reefs, islands, beaches, and erosion protection.

### Services

- *Conceptual, preliminary, and final design*
- *Site surveys and investigations*
- *Waves, currents, water levels, and ice analyses*
- *Physical model tests*
- *Estimating and feasibility determination*
- *Regulatory coordination and public participation*
- *Production of bid documents: drawings, specifications, bid forms, and agreements*
- *Quarry quality assurance program*
- *On-site construction observation and contract administration*
- *Post-construction: recommendations related to maintenance and monitoring of structure*



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construction

## DESIGN - WATERFRONTS

The design of a waterfront is an opportunity to create a long-term benefit for the community by improving access to the water. These projects often act as a cornerstone for cities and towns that want to enhance their reputation as a tourist destination and improve their waterfront for local public benefit. Each one is unique and often showcases local heritage, history, and spirit of the community.

Waterfront design is also a demanding undertaking, requiring identification of funding sources, facilitating the regulatory and public processes, and having a sound understanding of all relevant technical issues.

Baird understands these complexities. We have undertaken many projects involving public access, private developments, and communities that want to reclaim or sustain a connection to their waterfront. Baird creates design solutions that improve the quality of life by addressing the complex interaction between technical issues, public processes, and project goals.

### Services

- *Conceptual planning and feasibility analyses*
- *Fieldwork: site surveys and investigations*
- *Design: preliminary and final design*
- *Analysis: numerical and physical modeling*
- *Collaboration: regulatory coordination and public participation*
- *Bid documents: drawings, specifications, bid forms, and agreements*
- *On-site construction observation and contract administration*
- *Post-construction: recommendations related to maintenance and monitoring of project elements*



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## BEACHES

Beaches not only provide unique recreational opportunities, but also may provide protection for the shoreline, and important habitat for many mammals, birds and marine species. Baird understands beaches. The company has studied and walked on many miles of beaches around the world and has designed many stable beach systems. Baird understands the physics of beach dynamics and simulates these processes with state-of-the-art models. We also understand the importance of beaches to communities and we address planning issues related to setbacks, access and users. We have developed coastal zone management plans that recognize the importance of beaches to regional development.

We provide in-depth beach assessments including: identifying processes of erosion and accretion, designing stable beaches and developing plans for beach restoration and long-term maintenance. Our solutions recognize recreational and economic potential and the need for habitat preservation. As well, they consider the dramatic changes to beaches that may occur in response to storms.

Baird-designed beaches have withstood major storms and have been credited with reducing coastal property damage by millions of dollars. Our professionals have been acknowledged by international review panels for excellence and innovation in beach design.



### Services

- *Planning: coastal zone management plans, optimization of beach layout and adjacent lands, economic analysis, value engineering.*
- *Physical modeling: three-dimensional simulation of beaches in hydraulics laboratories.*
- *Numerical modeling: short and long-term simulations of beach changes using process-based models including the assessment of the influence of coastal structures.*
- *Permitting-liaising with regulatory agencies, technical support before and during review process.*
- *Sand transport and beach profiles: calculation of longshore sand transport, rates of sand transport, sand budgets, sand bypassing, cross-shore transport and beach profile development.*
- *Beach materials: assessment of sand characteristics, location of borrow deposits, specifications, coordination or recovery and analysis of samples.*
- *Environmental impact assessments for both the borrow site and beach nourishment operation.*
- *Bid documents-production of drawings, specifications, bid forms, conditions of contract, and managing bid process.*
- *Construction-on-site observation, volumetric surveys, progress monitoring, payment approval, claims assessment, liaising with contractor.*
- *Post-construction monitoring performance of constructed beach facility.*



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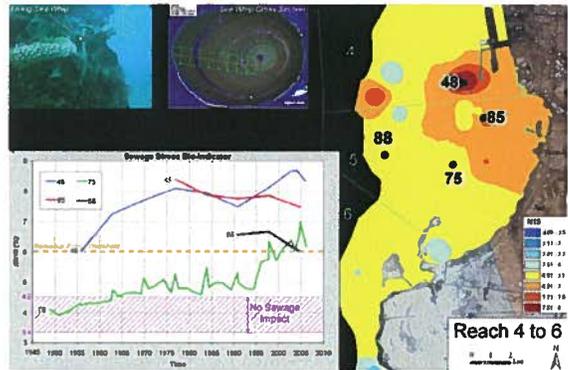
## BIO-INDICATORS OF ECOSYSTEM HEALTH

An understanding of the impact of point and non-point discharge to receiving waters is important for the management of water quality. Living organisms, from algae to freshwater clams to coral, provide a record of water quality both for existing conditions and historically over decades to centuries.

Through stable isotope analysis it is possible to quantify the impact of human sewage and how this varies in time and space emanating from a point source. Metals analysis can be completed to provide an indication of how the exposure to contaminants changes in space and time.

Freshwater clams and marine corals feature annual (and higher resolution) banding that can provide many decades of data on these types of parameters on an annual basis. Algal samples have the advantage of providing an inexpensive method of completing wide spatial assessments of water quality conditions. The bio-indicator measure of water quality provides a time-averaged evaluation of water quality over days or weeks (for algae) or a year (for bands in coral on clams). This is a significant advantage over synoptic point measurements of water quality that only give a brief snapshot in time of potentially highly variable conditions.

These methods are well-proven and relatively inexpensive. Baird has successfully applied these techniques to evaluate impacts of outfalls and non-point source loading in several freshwater and marine environments around the world. In many cases the coral and freshwater clams may provide the only source of historic baseline data.



Freshwater Clam



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## BREAKWATERS

Breakwaters create the sheltered water for the protection of port facilities, vessel staging areas or marinas. Baird's extensive and unique capabilities in planning, design and construction of breakwaters leads the profession by combining the latest advances in technology and research with in-depth practical experience established on numerous projects of all sizes.

Baird engineers are considered to be pioneers in the development of the current generation of breakwaters in service around the world. Our investigations, commencing in the initial stages of project development, result in truly innovative designs which consistently meet client objectives and substantially reduce construction costs. The underlying theme in working with Baird is commitment to quality and service in every phase of the project.

### Services

- *Planning: optimization of layout and value engineering.*
- *Modeling: physical simulation of structural stability and wave overtopping/transmission, assessment of level of sheltering and prediction of downtime, determining degree of wave disturbance.*
- *Permitting: liaising with regulatory agencies, technical support before and during review process.*
- *Design: preliminary and final design, including production of drawings, specifications and bid documents and managing bid process.*
- *Material Assessment: material needs assessment, review of rock quality, quarry inspection, locating rock sources, specifications, coordination of testing, and analysis of results.*
- *Construction: construction observation, contract administration, volumetric surveys, progress monitoring, payment approval, claims assessment, liaising with contractor.*
- *Post-construction: monitoring performance of constructed facility.*



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## COASTAL & SHORELINE PROCESSES

A detailed understanding of coastal and shoreline processes is required to support the successful planning and design of beaches, coastal structures and waterfront developments. Baird has extensive experience and utilizes state-of-the-art technology to investigate and define coastal and shoreline processes.

Baird implements solutions for coastal projects throughout the world based on in-depth analyses of waves, currents and sediment transport. We continually strive to maintain a leadership role in this field through participation in research, conferences and professional associations. Therefore, Baird is always prepared to provide the level of service and the technology that each project requires.

### Services

- *Wind and wave climatology;*
- *Tide and water level analyses;*
- *Current and circulation studies;*
- *Bluff and cliff erosion;*
- *Sediment transport, morphodynamic analyses of erosion and sedimentation;*
- *River hydraulics and sedimentation;*
- *Numerical modeling: wave hindcasting, shallow water wave transformations, statistical analyses, fluvial and coastal processes, circulation and pollutant modeling, custom model development and application;*
- *Physical modeling: simulation and interpretation;*
- *Evaluation of hurricane and cyclone impacts and restoration; and*
- *Field studies: hydrographic surveys; wind wave and current measurements; sediment sampling and analysis.*



# Baird

## PROFILE



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Baird provides professional engineering and technical services related to the design of coastal structures and facilities that interact with the world's oceans, lakes and rivers. The company provides scientific analyses of coastal processes including studies of waves, water levels, currents and sediment transport. Baird is recognized for the successful completion of innovative and practical projects throughout North and South America, the Caribbean, the Middle East, Africa and Southeast Asia.

The company consists of a unique association of scientists, engineers, geomorphologists and planners committed to excellence in analysis, design, engineering and construction. Our senior professional staff is internationally recognized for technical solutions founded on science, practicality and economics. This is the basis of our success.

Baird is supported by a network of strategic alliances with professionals in related consulting, academic and scientific communities. These alliances are available to provide qualified expertise to unique projects. Baird is very experienced in the assembly and management of multi-disciplined project teams.

Baird recognizes that while technical expertise is the foundation of excellence, client relationships and effective management systems make successful projects. We strive to provide outstanding service and urge you to contact our past clients to discuss our performance.

Baird is committed to our mission of providing a high degree of technical expertise, technology and service to our clients. Our staff is dedicated to provide this service to you with energy and enthusiasm. We look forward to the opportunity to assist you with the development of your project.

### Principal Services

- Coastal, Riverine & Ocean Engineering
- Numerical & Physical Modeling
- Design of Breakwaters, Jetties & Groins
- Beach Nourishment
- Sediment Transport & Shoreline Evolution
- Waterfront Planning & Design
- Marinas & Harbors
- Hydrographic Surveying & Field Investigations
- Environmental Analyses
- Construction Observation & Administration
- Geographic Information Systems (GIS)
- Monitoring of Coastal Structures
- Coastal Zone Management

### Offices to Serve You

1145 Hunt Club Road, Suite 500  
Ottawa, ON, K1V 0Y3, Canada  
T. +1 613 731 8900  
F. +1 613 731 9778

1267 Cornwall Road, Suite 100  
Oakville, ON, L6J 7T5, Canada  
T. +1 905 845 5385  
F. +1 905 845 0698

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Madison, WI, 53711, USA  
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F. +971 2 447 2255

P.O. Box 614, P.C. 116  
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Perth WA 6000 Australia  
T. +61 8 9288 0630  
F. +61 8 9481 3177

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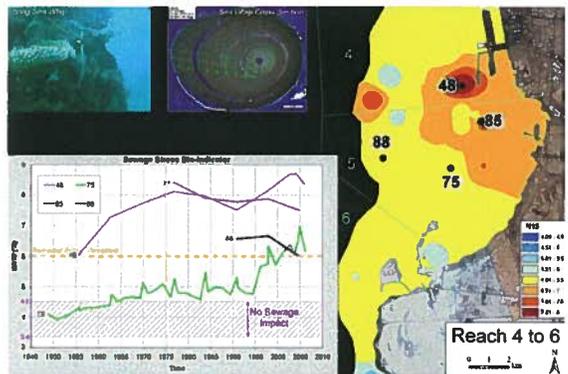
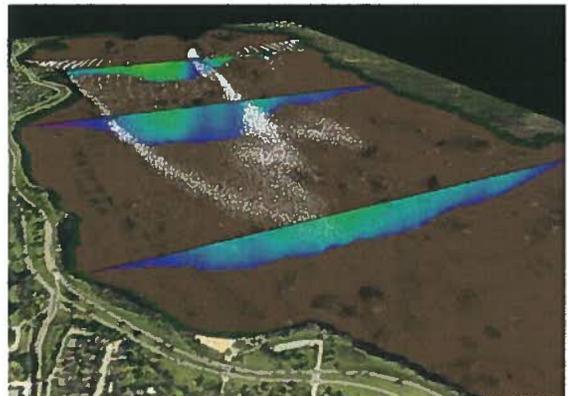
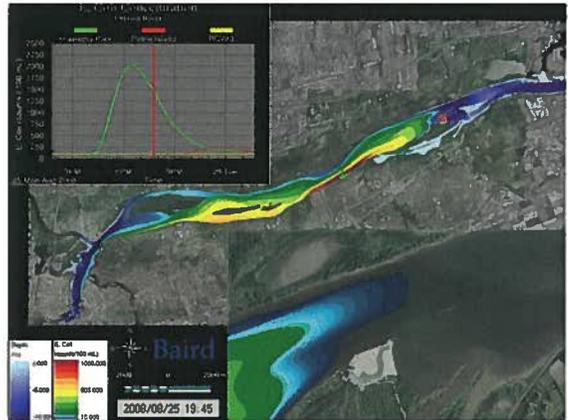
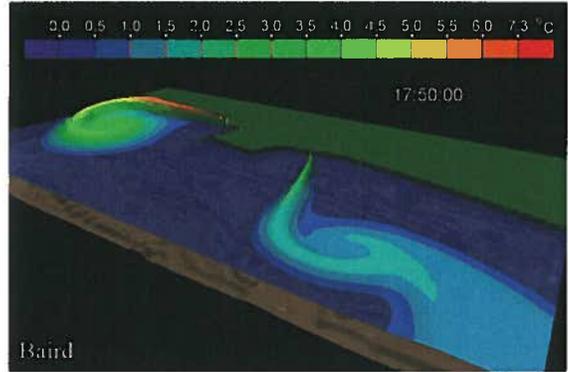
watersheds

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Surface waters are a key source of potable and industrial water supply. These same water bodies are also used to assimilate contaminant loadings discharged from various sources; including, municipal or industrial wastewater, stormwater, combined sewer overflows, cooling water, or brine effluents from desalination plants. The analysis and design of intake and outfall structures generally reflects the complexity of the local hydraulic environment as well as the desired performance of the system. The design of the intake or outfall structure requires a thorough understanding of pipe hydraulics, local hydrodynamic conditions, near-field mixing processes as well as advection/dispersion mechanisms in the far-field. Baird has extensive experience worldwide in understanding these processes and provides the professional engineering and technical services required to support the analysis and design of intake and outfall structures.

**Services**

- *Field Investigations*
- *Numerical Modeling*
- *Assimilative Capacity Studies*
- *Source Water Vulnerability Assessment*
- *Visualization Capabilities (2D and 3D)*
- *Physical Modeling*
- *Permitting and Environmental Assessment*
- *Intake and Outfall Design*
- *Construction Observation Services*
- *Monitoring and Evaluation*





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

February 15, 2012

Village of Winnetka  
1390 Willow Road  
Winnetka, IL 60093

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

Subject: Proposal for Professional Engineering Services  
for Assistance with Willow Road Tunnel Project Feasibility

Dear Mr. Saunders:

Christopher B. Burke Engineering, Ltd. (CBBEL) has prepared this proposal to assist the Village of Winnetka (Village) in determining the feasibility of constructing a large storm sewer under Willow Road that discharges to Lake Michigan. A portion of the sewer would be tunneled where excavation exceeds around 15 feet of excavation. The main storm sewer would have connections to the north and south for areas west of Green Bay Road and east of Hibbard Road. We have prepared a Scope of Services and Fee for this work.

### **SCOPE OF SERVICES**

**Task 1 – Water Quality Structures:** CBBEL will investigate the use of various water quality structures to treat stormwater runoff. We will identify any known limitation as it pertains to quantity of flow. We will also look at the possibilities for treating calcium.

**Task 2 – Convey First Flush to Skokie River:** CBBEL will investigate the possibility of conveying the first flush to the Skokie River for the area that is currently conveyed to the Skokie River. This could possibly be done by pumps or by diversion sewers.

**Task 3 – Work with Other Village Consultants:** CBBEL will assist in working with the Village's Coastal Engineering consultant and construction consultant by sharing information, reviewing information and answering questions.

**Task 4 – Report Assistance:** We will assist the Village in compiling a report summarizing the findings of the feasibility study by providing narrative and exhibits. We will provide a Concept Cost Estimate for the project.

Task 5 – Additional Meetings: CBBEL will be available as requested by the Village to meet with additional agencies, residents, staff or the Board to discuss our findings and prepare any necessary presentations.

**FEE**

Our fee for this project is summarized in the following table. We will not exceed this fee without prior written authorization from the Village.

<b><u>TASK</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>COST</u></b>
1	Water Quality Structures	\$2,000
2	Convey First Flush to Skokie River	\$4,900
3	Work with Other Village Consultants	\$1,500
4	Report Assistance	\$4,800
5	Additional Meetings	Time and Materials

We will bill you at the hourly rates specified on the attached Schedule of Charges and establish our contract in accordance with the attached General Terms and Conditions. The General Terms and Conditions are expressly incorporated into and are an integral part of this contract for professional services.

Please sign and return one copy of this agreement as an indication of acceptance and notice to proceed. Please feel free to contact us anytime.

Sincerely,

 for  
 Christopher B. Burke, PhD, PE, D.WRE, F.ASCE  
 President

Attachment: Standard Charges  
 General Terms and Conditions

THIS PROPOSAL, SCHEDULE OF CHARGES AND GENERAL TERMS & CONDITIONS ACCEPTED FOR THE VILLAGE OF WINNETKA:

BY: \_\_\_\_\_  
 TITLE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

**CHRISTOPHER B. BURKE ENGINEERING, LTD.**  
**STANDARD CHARGES FOR PROFESSIONAL SERVICES**  
**JANUARY, 2012**

<u>Personnel</u>	Charges*
	(\$/Hr)
Principal	240
Engineer VI	210
Engineer V	173
Engineer IV	138
Engineer III	125
Engineer I/II	102
Survey V	178
Survey IV	132
Survey III	127
Survey II	100
Survey I	78
Resource Planner V	112
Resource Planner IV	108
Resource Planner III	100
Resource Planner I/II	88
Engineering Technician V	150
Engineering Technician IV	132
Engineering Technician III	107
Engineering Technician I/II	97
CAD Manager	138
Assistant CAD Manager	126
CAD II	125
CAD I	98
GIS Specialist III	120
GIS Specialist I/II	67
Landscape Architect	138
Environmental Resource Specialist V	154
Environmental Resource Specialist IV	134
Environmental Resource Specialist III	114
Environmental Resource Specialist I/II	94
Environmental Resource Technician	90
Administrative	88
Engineering Intern	53
Survey Intern	53
Information Technician III	97
Information Technician I/II	62

Direct Costs

Outside Copies, Blueprints, Messenger, Delivery Services, Mileage      Cost + 12%

\*Charges include overhead and profit

***Please note: In recognition of the economic challenges facing our clients, we have not increased our schedule of charges since January 2009.***

CHRISTOPHER B. BURKE ENGINEERING, LTD.  
GENERAL TERMS AND CONDITIONS

1. Relationship Between Engineer and Client: Christopher B. Burke Engineering, Ltd. (Engineer) shall serve as Client's professional engineer consultant in those phases of the Project to which this Agreement applies. This relationship is that of a buyer and seller of professional services and as such the Engineer is an independent contractor in the performance of this Agreement and it is understood that the parties have not entered into any joint venture or partnership with the other. The Engineer shall not be considered to be the agent of the Client. Nothing contained in this Agreement shall create a contractual relationship with a cause of action in favor of a third party against either the Client or Engineer.

Furthermore, causes of action between the parties to this Agreement pertaining to acts of failures to act shall be deemed to have accrued and the applicable statute of limitations shall commence to run not later than the date of substantial completion.

2. Responsibility of the Engineer: Engineer will strive to perform services under this Agreement in accordance with generally accepted and currently recognized engineering practices and principles, and in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representation, express or implied, and no warranty or guarantee is included or intended in this Agreement, or in any report, opinion, document, or otherwise.

Notwithstanding anything to the contrary which may be contained in this Agreement or any other material incorporated herein by reference, or in any Agreement between the Client and any other party concerning the Project, the Engineer shall not have control or be in charge of and shall not be responsible for the means, methods, techniques, sequences or procedures of construction, or the safety, safety precautions or programs of the Client, the construction contractor, other contractors or subcontractors performing any of the work or providing any of the services on the Project. Nor shall the Engineer be responsible for the acts or omissions of the Client, or for the failure of the Client, any architect, engineer, consultant, contractor or subcontractor to carry out their respective responsibilities in accordance with the Project documents, this Agreement or any other agreement concerning the Project. Any provision which purports to amend this provision shall be without effect unless it contains a reference that the content of this condition is expressly amended for the purposes described in such amendment and is signed by the Engineer.

3. Changes: Client reserves the right by written change order or amendment to make changes in requirements, amount of work, or engineering time schedule adjustments, and Engineer and Client shall negotiate appropriate adjustments acceptable to both parties to accommodate any changes, if commercially possible.
4. Suspension of Services: Client may, at any time, by written order to Engineer (Suspension of Services Order) require Engineer to stop all, or any part, of the services required by this Agreement. Upon receipt of such an order, Engineer shall immediately comply with its terms and take all reasonable steps to minimize the costs associated with the services affected by such order. Client, however, shall pay all costs incurred by the suspension, including all costs necessary to maintain continuity and for the resumption

of the services upon expiration of the Suspension of Services Order. Engineer will not be obligated to provide the same personnel employed prior to suspension, when the services are resumed, in the event that the period of suspension is greater than thirty (30) days.

5. Termination: This Agreement may be terminated by either party upon thirty (30) days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party. This Agreement may be terminated by Client, under the same terms, whenever Client shall determine that termination is in its best interests. Cost of termination, including salaries, overhead and fee, incurred by Engineer either before or after the termination date shall be reimbursed by Client.
6. Documents Delivered to Client: Drawings, specifications, reports, and any other Project Documents prepared by Engineer in connection with any or all of the services furnished hereunder shall be delivered to the Client for the use of the Client. Engineer shall have the right to retain originals of all Project Documents and drawings for its files. Furthermore, it is understood and agreed that the Project Documents such as, but not limited to reports, calculations, drawings, and specifications prepared for the Project, whether in hard copy or machine readable form, are instruments of professional service intended for one-time use in the construction of this Project. These Project Documents are and shall remain the property of the Engineer. The Client may retain copies, including copies stored on magnetic tape or disk, for information and reference in connection with the occupancy and use of the Project.

When and if record drawings are to be provided by the Engineer, Client understands that information used in the preparation of record drawings is provided by others and Engineer is not responsible for accuracy, completeness, nor sufficiency of such information. Client also understands that the level of detail illustrated by record drawings will generally be the same as the level of detail illustrated by the design drawing used for project construction. If additional detail is requested by the Client to be included on the record drawings, then the Client understands and agrees that the Engineer will be due additional compensation for additional services.

It is also understood and agreed that because of the possibility that information and data delivered in machine readable form may be altered, whether inadvertently or otherwise, the Engineer reserves the right to retain the original tapes/disks and to remove from copies provided to the Client all identification reflecting the involvement of the Engineer in their preparation. The Engineer also reserves the right to retain hard copy originals of all Project Documentation delivered to the Client in machine readable form, which originals shall be referred to and shall govern in the event of any inconsistency between the two.

The Client understands that the automated conversion of information and data from the system and format used by the Engineer to an alternate system or format cannot be accomplished without the introduction of inexactitudes, anomalies, and errors. In the event Project Documentation provided to the Client in machine readable form is so converted, the Client agrees to assume all risks associated therewith and, to the fullest

extent permitted by law, to hold harmless and indemnify the Engineer from and against all claims, liabilities, losses, damages, and costs, including but not limited to attorney's fees, arising therefrom or in connection therewith.

The Client recognizes that changes or modifications to the Engineer's instruments of professional service introduced by anyone other than the Engineer may result in adverse consequences which the Engineer can neither predict nor control. Therefore, and in consideration of the Engineer's agreement to deliver its instruments of professional service in machine readable form, the Client agrees, to the fullest extent permitted by law, to hold harmless and indemnify the Engineer from and against all claims, liabilities, losses, damages, and costs, including but not limited to attorney's fees, arising out of or in any way connected with the modification, misinterpretation, misuse, or reuse by others of the machine readable information and data provided by the Engineer under this Agreement. The foregoing indemnification applies, without limitation, to any use of the Project Documentation on other projects, for additions to this Project, or for completion of this Project by others, excepting only such use as may be authorized, in writing, by the Engineer.

7. Reuse of Documents: All Project Documents including but not limited to reports, opinions of probable costs, drawings and specifications furnished by Engineer pursuant to this Agreement are intended for use on the Project only. They cannot be used by Client or others on extensions of the Project or any other project. Any reuse, without specific written verification or adaptation by Engineer, shall be at Client's sole risk, and Client shall indemnify and hold harmless Engineer from all claims, damages, losses, and expenses including attorney's fees arising out of or resulting therefrom.

The Engineer shall have the right to include representations of the design of the Project, including photographs of the exterior and interior, among the Engineer's promotional and professional materials. The Engineer's materials shall not include the Client's confidential and proprietary information if the Client has previously advised the Engineer in writing of the specific information considered by the Client to be confidential and proprietary.

8. Standard of Practice: The Engineer will strive to conduct services under this agreement in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as of the date of this Agreement.

9. Compliance With Laws: The Engineer will strive to exercise usual and customary professional care in his/her efforts to comply with those laws, codes, ordinance and regulations which are in effect as of the date of this Agreement.

With specific respect to prescribed requirements of the Americans with Disabilities Act of 1990 or certified state or local accessibility regulations (ADA), Client understands ADA is a civil rights legislation and that interpretation of ADA is a legal issue and not a design issue and, accordingly, retention of legal counsel (by Client) for purposes of interpretation is advisable. As such and with respect to ADA, Client agrees to waive any action against Engineer, and to indemnify and defend Engineer against any claim arising from Engineer's alleged failure to meet ADA requirements prescribed.

Further to the law and code compliance, the Client understands that the Engineer will strive to provide designs in accordance with the prevailing Standards of Practice as previously set forth, but that the Engineer does not warrant that any reviewing agency having jurisdiction will not for its own purposes comment, request changes and/or additions to such designs. In the event such design requests are made by a reviewing agency, but which do not exist in the form of a written regulation, ordinance or other similar document as published by the reviewing agency, then such design changes (at substantial variance from the intended design developed by the Engineer), if effected and incorporated into the project documents by the Engineer, shall be considered as Supplementary Task(s) to the Engineer's Scope of Service and compensated for accordingly.

10. Indemnification: Engineer shall indemnify and hold harmless Client up to the amount of this contract fee (for services) from loss or expense, including reasonable attorney's fees for claims for personal injury (including death) or property damage to the extent caused by the sole negligent act, error or omission of Engineer.

Client shall indemnify and hold harmless Engineer under this Agreement, from loss or expense, including reasonable attorney's fees, for claims for personal injuries (including death) or property damage arising out of the sole negligent act, error omission of Client.

In the event of joint or concurrent negligence of Engineer and Client, each shall bear that portion of the loss or expense that its share of the joint or concurrent negligence bears to the total negligence (including that of third parties), which caused the personal injury or property damage.

Engineer shall not be liable for special, incidental or consequential damages, including, but not limited to loss of profits, revenue, use of capital, claims of customers, cost of purchased or replacement power, or for any other loss of any nature, whether based on contract, tort, negligence, strict liability or otherwise, by reasons of the services rendered under this Agreement.

11. Opinions of Probable Cost: Since Engineer has no control over the cost of labor, materials or equipment, or over the Contractor(s) method of determining process, or over competitive bidding or market conditions, his/her opinions of probable Project Construction Cost provided for herein are to be made on the basis of his/her experience and qualifications and represent his/her judgement as a design professional familiar with the construction industry, but Engineer cannot and does not guarantee that proposal, bids or the Construction Cost will not vary from opinions of probable construction cost prepared by him/her. If prior to the Bidding or Negotiating Phase, Client wishes greater accuracy as to the Construction Cost, the Client shall employ an independent cost estimator Consultant for the purpose of obtaining a second construction cost opinion independent from Engineer.

12. Governing Law & Dispute Resolutions: This Agreement shall be governed by and construed in accordance with Articles previously set forth by (Item 9 of) this Agreement, together with the laws of the **State of Illinois**.

Any claim, dispute or other matter in question arising out of or related to this Agreement, which can not be mutually resolved by the parties of this Agreement, shall be subject to mediation as a condition precedent to arbitration (if arbitration is agreed upon by the parties of this Agreement) or the institution of legal or equitable proceedings by either party. If such matter relates to or is the subject of a lien arising out of the Engineer's services, the Engineer may proceed in accordance with applicable law to comply with the lien notice or filing deadlines prior to resolution of the matter by mediation or by arbitration.

The Client and Engineer shall endeavor to resolve claims, disputes and other matters in question between them by mediation which, unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Mediation Rules of the American Arbitration Association currently in effect. Requests for mediation shall be filed in writing with the other party to this Agreement and with the American Arbitration Association. The request may be made concurrently with the filing of a demand for arbitration but, in such event, mediation shall proceed in advance of arbitration or legal or equitable proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order.

The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

13. Successors and Assigns: The terms of this Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and assigns: provided, however, that neither party shall assign this Agreement in whole or in part without the prior written approval of the other.
14. Waiver of Contract Breach: The waiver of one party of any breach of this Agreement or the failure of one party to enforce at any time, or for any period of time, any of the provisions hereof, shall be limited to the particular instance, shall not operate or be deemed to waive any future breaches of this Agreement and shall not be construed to be a waiver of any provision, except for the particular instance.
15. Entire Understanding of Agreement: This Agreement represents and incorporates the entire understanding of the parties hereto, and each party acknowledges that there are no warranties, representations, covenants or understandings of any kind, matter or description whatsoever, made by either party to the other except as expressly set forth herein. Client and the Engineer hereby agree that any purchase orders, invoices, confirmations, acknowledgments or other similar documents executed or delivered with respect to the subject matter hereof that conflict with the terms of the Agreement shall be null, void and without effect to the extent they conflict with the terms of this Agreement.
16. Amendment: This Agreement shall not be subject to amendment unless another instrument is duly executed by duly authorized representatives of each of the parties and entitled "Amendment of Agreement".

17. Severability of Invalid Provisions: If any provision of the Agreement shall be held to contravene or to be invalid under the laws of any particular state, county or jurisdiction where used, such contravention shall not invalidate the entire Agreement, but it shall be construed as if not containing the particular provisions held to be invalid in the particular state, country or jurisdiction and the rights or obligations of the parties hereto shall be construed and enforced accordingly.
18. Force Majeure: Neither Client nor Engineer shall be liable for any fault or delay caused by any contingency beyond their control including but not limited to acts of God, wars, strikes, walkouts, fires, natural calamities, or demands or requirements of governmental agencies.
19. Subcontracts: Engineer may subcontract portions of the work, but each subcontractor must be approved by Client in writing.
20. Access and Permits: Client shall arrange for Engineer to enter upon public and private property and obtain all necessary approvals and permits required from all governmental authorities having jurisdiction over the Project. Client shall pay costs (including Engineer's employee salaries, overhead and fee) incident to any effort by Engineer toward assisting Client in such access, permits or approvals, if Engineer perform such services.
21. Designation of Authorized Representative: Each party (to this Agreement) shall designate one or more persons to act with authority in its behalf in respect to appropriate aspects of the Project. The persons designated shall review and respond promptly to all communications received from the other party.
22. Notices: Any notice or designation required to be given to either party hereto shall be in writing, and unless receipt of such notice is expressly required by the terms hereof shall be deemed to be effectively served when deposited in the mail with sufficient first class postage affixed, and addressed to the party to whom such notice is directed at such party's place of business or such other address as either party shall hereafter furnish to the other party by written notice as herein provided.
23. Limit of Liability: The Client and the Engineer have discussed the risks, rewards, and benefits of the project and the Engineer's total fee for services. In recognition of the relative risks and benefits of the Project to both the Client and the Engineer, the risks have been allocated such that the Client agrees that to the fullest extent permitted by law, the Engineer's total aggregate liability to the Client for any and all injuries, claims, costs, losses, expenses, damages of any nature whatsoever or claim expenses arising out of this Agreement from any cause or causes, including attorney's fees and costs, and expert witness fees and costs, shall not exceed the total Engineer's fee for professional engineering services rendered on this project as made part of this Agreement. Such causes included but are not limited to the Engineer's negligence, errors, omissions, strict liability or breach of contract. It is intended that this limitation apply to any and all liability or cause of action however alleged or arising, unless otherwise prohibited by law.

24. Client's Responsibilities: The Client agrees to provide full information regarding requirements for and about the Project, including a program which shall set forth the Client's objectives, schedule, constraints, criteria, special equipment, systems and site requirements.

The Client agrees to furnish and pay for all legal, accounting and insurance counseling services as may be necessary at any time for the Project, including auditing services which the Client may require to verify the Contractor's Application for Payment or to ascertain how or for what purpose the Contractor has used the money paid by or on behalf of the Client.

The Client agrees to require the Contractor, to the fullest extent permitted by law, to indemnify, hold harmless, and defend the Engineer, its consultants, and the employees and agents of any of them from and against any and all claims, suits, demands, liabilities, losses, damages, and costs ("Losses"), including but not limited to costs of defense, arising in whole or in part out of the negligence of the Contractor, its subcontractors, the officers, employees, agents, and subcontractors of any of them, or anyone for whose acts any of them may be liable, regardless of whether or not such Losses are caused in part by a party indemnified hereunder. Specifically excluded from the foregoing are Losses arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs, or specifications, and the giving of or failure to give directions by the Engineer, its consultants, and the agents and employees of any of them, provided such giving or failure to give is the primary cause of Loss. The Client also agrees to require the Contractor to provide to the Engineer the required certificate of insurance.

The Client further agrees to require the Contractor to name the Engineer, its agents and consultants on the Contractor's policy or policies of comprehensive or commercial general liability insurance. Such insurance shall include products and completed operations and contractual liability coverages, shall be primary and noncontributing with any insurance maintained by the Engineer or its agents and consultants, and shall provide that the Engineer be given thirty days, unqualified written notice prior to any cancellation thereof.

In the event the foregoing requirements, or any of them, are not established by the Client and met by the Contractor, the Client agrees to indemnify and hold harmless the Engineer, its employees, agents, and consultants from and against any and all Losses which would have been indemnified and insured against by the Contractor, but were not.

When Contract Documents prepared under the Scope of Services of this contract require insurance(s) to be provided, obtained and/or otherwise maintained by the Contractor, the Client agrees to be wholly responsible for setting forth any and all such insurance requirements. Furthermore, any document provided for Client review by the Engineer under this Contract related to such insurance(s) shall be considered as sample insurance requirements and not the recommendation of the Engineer. Client agrees to have their own risk management department review any and all insurance requirements for adequacy and to determine specific types of insurance(s) required for the project. Client further agrees that decisions concerning types and amounts of insurance are

specific to the project and shall be the product of the Client. As such, any and all insurance requirements made part of Contract Documents prepared by the Engineer are not to be considered the Engineer's recommendation, and the Client shall make the final decision regarding insurance requirements.

25. Information Provided by Others: The Engineer shall indicate to the Client the information needed for rendering of the services of this Agreement. The Client shall provide to the Engineer such information as is available to the Client and the Client's consultants and contractors, and the Engineer shall be entitled to rely upon the accuracy and completeness thereof. The Client recognizes that it is impossible for the Engineer to assure the accuracy, completeness and sufficiency of such information, either because it is impossible to verify, or because of errors or omissions which may have occurred in assembling the information the Client is providing. Accordingly, the Client agrees, to the fullest extent permitted by law, to indemnify and hold the Engineer and the Engineer's subconsultants harmless from any claim, liability or cost (including reasonable attorneys' fees and cost of defense) for injury or loss arising or allegedly arising from errors, omissions or inaccuracies in documents or other information provided by the Client to the Engineer.
26. Payment: Client shall be invoiced once each month for work performed during the preceding period. Client agrees to pay each invoice within thirty (30) days of its receipt. The client further agrees to pay interest on all amounts invoiced and not paid or objected to for valid cause within said thirty (30) day period at the rate of eighteen (18) percent per annum (or the maximum interest rate permitted under applicable law, whichever is the lesser) until paid. Client further agrees to pay Engineer's cost of collection of all amounts due and unpaid after sixty (60) days, including court costs and reasonable attorney's fees, as well as costs attributed to suspension of services accordingly and as follows:
- Collection Costs. In the event legal action is necessary to enforce the payment provisions of this Agreement, the Engineer shall be entitled to collect from the Client any judgement or settlement sums due, reasonable attorneys' fees, court costs and expenses incurred by the Engineer in connection therewith and, in addition, the reasonable value of the Engineer's time and expenses spent in connection with such collection action, computed at the Engineer's prevailing fee schedule and expense policies.
- Suspension of Services. If the Client fails to make payments when due or otherwise is in breach of this Agreement, the Engineer may suspend performance of services upon five (5) calendar days' notice to the Client. The Engineer shall have no liability whatsoever to the Client for any costs or damages as a result of such suspension caused by any breach of this Agreement by the Client. Client will reimburse Engineer for all associated costs as previously set forth in (Item 4 of) this Agreement.
27. When construction observation tasks are part of the service to be performed by the Engineer under this Agreement, the Client will include the following clause in the construction contract documents and Client agrees not to modify or delete it:

Kotecki Waiver. Contractor (and any subcontractor into whose subcontract this clause is incorporated) agrees to assume the entire liability for all personal injury claims suffered by its own employees, including without limitation claims under the **Illinois** Structural Work Act, asserted by persons allegedly injured on the Project; waives any limitation of liability defense based upon the Worker's Compensation Act, court interpretations of said Act or otherwise; and to the fullest extent permitted by law, agrees to indemnify and hold harmless and defend Owner and Engineer and their agents, employees and consultants (the "Indemnitees") from and against all such loss, expense, damage or injury, including reasonable attorneys' fees, that the Indemnitees may sustain as a result of such claims, except to the extent that **Illinois** law prohibits indemnity for the Indemnitees' own negligence. The Owner and Engineer are designated and recognized as explicit third party beneficiaries of the Kotecki Waiver within the general contract and all subcontracts entered into in furtherance of the general contract.

28. Job Site Safety/Supervision & Construction Observation: The Engineer shall neither have control over or charge of, nor be responsible for, the construction means, methods, techniques, sequences of procedures, or for safety precautions and programs in connection with the Work since they are solely the Contractor's rights and responsibilities. The Client agrees that the Contractor shall supervise and direct the work efficiently with his/her best skill and attention; and that the Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures of construction and safety at the job site. The Client agrees and warrants that this intent shall be carried out in the Client's contract with the Contractor. The Client further agrees that the Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work; and that the Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to all employees on the subject site and all other persons who may be affected thereby. The Engineer shall have no authority to stop the work of the Contractor or the work of any subcontractor on the project.

When construction observation services are included in the Scope of Services, the Engineer shall visit the site at intervals appropriate to the stage of the Contractor's operation, or as otherwise agreed to by the Client and the Engineer to: 1) become generally familiar with and to keep the Client informed about the progress and quality of the Work; 2) to strive to bring to the Client's attention defects and deficiencies in the Work and; 3) to determine in general if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Engineer shall not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. If the Client desires more extensive project observation, the Client shall request that such services be provided by the Engineer as Additional and Supplemental Construction Observation Services in accordance with the terms of this Agreement.

The Engineer shall not be responsible for any acts or omissions of the Contractor, subcontractor, any entity performing any portions of the Work, or any agents or employees of any of them. The Engineer does not guarantee the performance of the

Contractor and shall not be responsible for the Contractor's failure to perform its Work in accordance with the Contract Documents or any applicable laws, codes, rules or regulations.

When municipal review services are included in the Scope of Services, the Engineer (acting on behalf of the municipality), when acting in good faith in the discharge of its duties, shall not thereby render itself liable personally and is, to the maximum extent permitted by law, relieved from all liability for any damage that may accrue to persons or property by reason of any act or omission in the discharge of its duties. Any suit brought against the Engineer which involve the acts or omissions performed by it in the enforcement of any provisions of the Client's rules, regulation and/or ordinance shall be defended by the Client until final termination of the proceedings. The Engineer shall be entitled to all defenses and municipal immunities that are, or would be, available to the Client.

29. Insurance and Indemnification: The Engineer and the Client understand and agree that the Client will contractually require the Contractor to defend and indemnify the Engineer and/or any subconsultants from any claims arising from the Work. The Engineer and the Client further understand and agree that the Client will contractually require the Contractor to procure commercial general liability insurance naming the Engineer as an additional named insured with respect to the work. The Contractor shall provide to the Client certificates of insurance evidencing that the contractually required insurance coverage has been procured. However, the Contractor's failure to provide the Client with the requisite certificates of insurance shall not constitute a waiver of this provision by the Engineer.

The Client and Engineer waive all rights against each other and against the Contractor and consultants, agents and employees of each of them for damages to the extent covered by property insurance during construction. The Client and Engineer each shall require similar waivers from the Contractor, consultants, agents and persons or entities awarded separate contracts administered under the Client's own forces.

30. Hazardous Materials/Pollutants: Unless otherwise provided by this Agreement, the Engineer and Engineer's consultants shall have no responsibility for the discovery, presence, handling, removal or disposal of or exposure of persons to hazardous materials/pollutants in any form at the Project site, including but not limited to mold/mildew, asbestos, asbestos products, polychlorinated biphenyl (PCB) or other toxic/hazardous/pollutant type substances.

Furthermore, Client understands that the presence of mold/mildew and the like are results of prolonged or repeated exposure to moisture and the lack of corrective action. Client also understands that corrective action is a operation, maintenance and repair activity for which the Engineer is not responsible.

June 13, 2005

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