

**Minnehaha Creek Watershed District *REQUEST FOR BOARD ACTION***

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**MEETING DATE:** November 20, 2014

**TITLE:** Authorization to contract with Wenck Associates, Inc. for Consulting Services for the Ecosystem Evaluation Program for January 1, 2015 – June 30, 2016

**RESOLUTION NUMBER:** 14-096

**PREPARED BY:** Yvette Christianson, Water Quality Manager  
Kelly Dooley, Water Quality Manager

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**TELEPHONE:** 952-641-4514  
952-641-4515

**REVIEWED BY:**  Administrator    Counsel    Program Mgr. (Name): Craig Dawson  
 Board Committee    Engineer    Other

**WORKSHOP ACTION:**

|  |  |
|--|--|
| <input checked="" type="checkbox"/> Advance to Board mtg. Consent Agenda.          | <input type="checkbox"/> Advance to Board meeting for discussion |
| <input type="checkbox"/> Refer to a future workshop (date): _____<br>(date): _____ | <input type="checkbox"/> Refer to taskforce or committee         |
| <input type="checkbox"/> Return to staff for additional work.                      | <input type="checkbox"/> No further action requested.            |
| <input type="checkbox"/> Other (specify):  |  |

**PURPOSE or ACTION REQUESTED:**

Approval to contract with Wenck Associates for consulting services for the development of the Ecosystem Evaluation Program for January 1, 2015 - June 30, 2016.

**PROJECT/PROGRAM LOCATION:**

District Wide

**PROJECT TIMELINE:** See attached Proposal for Services for January 1, 2015-June 30, 2016

**PROJECT/PROGRAM COST:**

Fund name and number: Hydrodata Program (2201)

Current 2015 budget: \$199,965.90

Expenditures to date: \$0

Requested amount of funding: \$176,000 (2015) and \$54,000 (2016)

Is a budget amendment requested? No

Is additional staff requested? No

## **PAST BOARD ACTIONS:**

### Planning and Policy Committee:

- November 7, 2013: The Committee asked staff to return with a budget that outlines the effort and estimated costs associated with rewriting report cards.
- January 16, 2014: The Committee approved to forward onto the Operations and Programs Committee the concept of the scientifically defensible watershed wide ecosystem evaluation/grading tool. They asked for staff to provide a clear and simple framework of the concept as how the tool will enhance the work done by the Planning and Communication Departments and a more detailed timeline/budget.

### Operations and Programs Committee:

- February 6, 2014: The Committee approved to forward the Ecosystem Evaluation (formerly SHARe) Program to the Board of Managers Meeting on February 27, 2014, for discussion and action. The Committee directed staff and a representative from Wenck Associates to present a further refined timeline/budget with detailed description of tasks, and address the need of additional staffing to assist the performing of current staff's critical monitoring duties.

### Board Meeting:

- February 27, 2014: Resolution # 14-xxx
  - Board Directed Amendments to the Proposed Resolution – Authorization to Continue Developing the Ecosystem Evaluation Program for 2014, Develop the Workplan for 2015, and Hire a Full Time Temporary Staff for One Year
- March 27, 2014: Resolution # 14-017
  - Authorization to Continue Developing the Ecosystem Evaluation Program for 2014, Develop the Workplan for 2015, and Hire a Full Time Temporary Staff for One Year
- April 24, 2014: Resolution # 14-028
  - Authorization to Contract with Wenck Associates, Inc. for Consulting Services for the Ecosystem Evaluation Program for 2014

## **SUMMARY:**

The Ecosystem Evaluation Program's process began with the language, "Developing a Water Quality Index that includes such factors as water chemistry, clarity, ecological value, human use, and aesthetics" which was stated in the Minnehaha Creek Watershed District (MCWD) Comprehensive Water Resources Management Plan in 2007. In 2011, Joe Bischoff, Wenck Associates, presented to the Board of Managers an ecosystem based approach for watershed management. Around the same time, Hydrodata staff, directed by the Hydrodata Committee, performed a Gap Analysis to identify monitoring needs that were not currently being addressed. Staff recognized the Water Quality Index as one of these gaps. After extensive research for a

model of a watershed grading tool already in use, Hydrodata staff found that Humber River Watershed in Toronto, Ontario, was the only one in North America. The Watershed District invited a representative from the Humber River Watershed to provide an overview of their watershed report. The previous years' work has resulted in the planning and development of the Ecosystem Evaluation Program (Attachment 1).

The Ecosystem Evaluation Program's purpose is to develop a watershed ecosystem management evaluation tool to assess watershed conditions on a graded scale, identify target areas that need improvement or protection, and develop management strategies to protect and improve water resources. The objective of the program is to develop a scientifically defensible watershed wide ecosystem evaluation/grading tool for metrics in the following features: Deep and Shallow Lakes, Streams, Wetlands, Terrestrial Habitat, Groundwater, and Precipitation and Hydrology. The scoring of the metrics will be developed using literature research and stressor responses and using indexes that are already available (i.e., macroinvertebrate and fish Index for Biological Integrity (IBI)).

The results from the scored metrics will lead to increased collaboration among departments in the following ways: developing management and protection strategies, feasibility studies, rule revisions, and plan development; communicating to the public and other stakeholders the watershed's key resources and ecosystem complexity; and implementation of new monitoring plans to fill in the data gaps. All of which can be used in the development of the 2017 MCWD Comprehensive Water Resources Management Plan.

### **Proposal to Continue and Complete Development of Ecosystem Evaluation Program:**

Staff has been working closely with Joe Bischoff, Wenck Associates, Inc. in the process of preparation and presentation of the Ecosystem Evaluation Program to the Board, since January 2013. Mr. Bischoff and his colleagues have assisted staff with the original scope of work, estimated timeline and budget, and initial development of the program in 2014.

The estimated proposal for services by Wenck Associates for the completion of the grading process for Lakes, Streams, and Wetlands related to the Ecosystem Evaluation Program (2015 is \$176,000 and January – June 30, 2016 is \$54,000) is included in Attachment 1.

Wenck Associates is uniquely qualified due to its intimate knowledge of the watershed. Wenck provides a unique mix of limnologists, ecologists, wetland ecologists, fisheries biologists, landscape designers and engineers with an extensive background in watershed management to develop the ecosystem watershed evaluation. Wenck's familiarity with the District and the development of the EEP should result in overall cost efficiencies with its continued involvement with the project.

### **Recommendation:**

Staff is requesting authorization from the Board of Managers to approve contracting with Wenck Associates, Inc. for continuation of consulting services for the development of the Ecosystem Evaluation Program. The total cost for Wenck's services for the Ecosystem Evaluation Program for 2015 and January-June 2016 will be \$230,000.

## RESOLUTION

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**RESOLUTION NUMBER: 14-096**

**TITLE: Authorization to contract with Wenck Associates, Inc. for Consulting Services for the Ecosystem Evaluation Program for January 1, 2015 – June 30, 2016**

- WHEREAS, A gap was identified in the 2007 Comprehensive Water Resources Management Plan to develop a water quality index; and
- WHEREAS, the objective of the program is to develop a scientifically defensible watershed wide ecosystem evaluation/grading tool in which the metrics will be developed using literature research and stressor responses and using indexes that are already available; and
- WHEREAS, the results from the application of the metrics will lead to increased collaboration among departments in the following ways: developing management and protection strategies; communicating to the public and other stakeholders; and implementing new monitoring plans to complete the data gaps; and
- WHEREAS, all of which can be used in the development of the 2017 MCWD Comprehensive Water Resources Management Plan; and
- WHEREAS, the District's current lake-grading system uses water-clarity parameters exclusively, which does not provide an overall assessment of water quality. The implementation of the Ecosystem Evaluation Program will include revision of the District lake-grading system to account for the many factors in addition to water clarity that affect water quality and health; and
- WHEREAS, The purpose of the Ecosystem Evaluation Program is to develop a watershed ecosystem management tool to assess watershed conditions on a graded scale, identify target areas, and develop management strategies to protect and improve water resources; and
- WHEREAS, January 16, 2014, the Planning and Policy Committee approved to forward onto the Operations and Programs Committee the concept of the scientifically defensible watershed wide ecosystem evaluation/grading tool; and
- WHEREAS, February 6, 2014, the Committee approved to forward the Ecosystem Evaluation Program to the Board of Managers Meeting on February 27, 2014, for discussion and action; and
- WHEREAS, March 27, 2014, the Board of Managers approved Resolution # 14-017 to Continue Developing the Ecosystem Evaluation Program for 2014, Develop the Workplan for 2015, and Hire a Full-Time Temporary Staff for One Year – Amendment Approval; and

WHEREAS, April 24, 2014, the Board of Managers approved Resolution # 14-028 to Authorization to Contract with Wenck Associates, Inc. for Consulting Services for the Ecosystem Evaluation Program for 2014; and

WHEREAS, Internal Governance Policy #6 provides for a competitive process when purchasing any professional service in excess of \$25,000, but staff recommends, and the Board finds, that it is appropriate to deviate from that policy in light of Wenck's unique knowledge of the hydrologic and hydraulic behavior of the Minnehaha Creek watershed and the organizational goals of the District, as well as its work to date in developing the concept of the ecosystem evaluation program, which together make Wenck uniquely qualified to develop a sound product cost-effectively; and

WHEREAS, Wenck provides a unique mix of limnologists, ecologists, wetland ecologists, fisheries biologists, landscape designers and engineers with an extensive background in watershed management to develop the ecosystem watershed evaluation; and

WHEREAS, The cost of consulting services for the Ecosystem Evaluation Program for 2015 (\$176,000) and January – June 2016 (\$54,000) by Wenck Associates is \$230,000; and

WHEREAS, In authorizing the present scope of work for Wenck, the Board recognizes that the Ecosystem Evaluation Program as a whole is a four-year project with an estimated total cost of \$650,000; and

WHEREAS, November 6, 2014, the Committees recommended that the proposed Resolution for the hiring of Wenck Associates be placed on the consent agenda for the November 20, 2014 Board Meeting; and

NOW, THEREFORE, BE IT RESOLVED, that the MCWD Board of Managers authorizes the District Administrator to execute a contract with Wenck Associates, Inc. for the development of the Ecosystem Evaluation Program for January 1, 2015-June 30, 2016 not to exceed \$230,000.

Resolution Number 14-096 was moved by Manager \_\_\_\_, seconded by Manager \_\_\_\_\_.  
Motion to adopt the resolution \_ ayes, \_ nays, \_ abstentions. Date: November 20, 2014

\_\_\_\_\_  
Secretary

Date:\_\_\_\_\_

**ATTACHMENT 1**



**Wenck Associates, Inc.**  
1800 Pioneer Creek Ctr.  
P.O. Box 249  
Maple Plain, MN 55359-0249

(763) 479-4200  
Fax (763) 479-4242  
E-mail: wenckmp@wenck.com

October 30, 2014

Ms. Kelly Dooley  
Ms. Yvette Christianson  
Minnehaha Creek Watershed District  
15320 Minnetonka Blvd.  
Minnetonka, MN 55345

Re: Proposal for Services  
Phase 2 E-Grade Ecosystem Evaluation Program

Dear Kelly and Yvette,

Thank you for the opportunity to provide this proposal to assist the Minnehaha Creek Watershed District (MCWD) with developing an ecosystem assessment for watersheds. Wenck's long term relationship with the District along with our intimate knowledge of the watershed and the District's structure uniquely qualifies us to develop an ecosystem evaluation for the Minnehaha Creek Watershed. Wenck provides a unique mix of limnologists, ecologists, wetland ecologists, fisheries biologists, landscape designers and engineers with an extensive background in watershed management to develop the ecosystem watershed evaluation.

Joe Bischoff (aquatic ecologist) will serve as project manager, supported by Jeff Strom (limnologist), Jeff Madejczyk (fisheries), Wes Boll (wetland ecologist), Diane Spector (streams), Joel Toso (hydrology), and Jordan Shuck (GIS). As with previous projects, this team is committed to direct communication and coordination with the MCWD project staff to ensure that the project outcome is the most effective use of resources towards achieving MCWDs goals.

## **Project Understanding**

It is our understanding that the Minnehaha Creek Watershed District would like to develop an ecosystem based watershed evaluation process to assess and grade watershed resources in the District. The purpose of this study is to identify data needs and develop a management evaluation tool to assess watershed condition, identify target areas that need improvement, and develop management strategies to protect and improve water resources. A scientifically defensible watershed wide ecosystem evaluation/grading tool for the following features should be developed to help communicate the watershed's condition to the public and stakeholders.

- Deep Lakes
- Shallow Lakes
- Streams
- Wetlands
- Terrestrial Habitat
- Groundwater
- Precipitation/Hydrology

The overall process will follow the 6 steps below:

1. Identify the key components that describe the health of the watershed feature (lake, stream, wetland, upland).
  - a. Identify the key ecosystem services you are trying to protect
2. Identify the metrics or indices required to evaluate health of each of the identified components
  - a. Collect and analyze data associated with each of these metrics
3. Develop scales for each of the metrics or indices using statistical analyses, reference sites, and literature values
  - a. Statistical analysis of the data
  - b. Literature review of index values at different scales (metro, ecoregion, state, region)
4. Develop grades for each of the resource features and watershed as a whole
  - a. Develop scales combining metrics
5. Develop lists of poor scoring metrics or data gaps
6. Develop programmatic approaches to addressing scored resources
  - a. Developing monitoring approach to fill data gaps (Hydrodata)
  - b. Develop management actions focused on improving resources and areas with low scoring metrics (Planning)
  - c. Develop outreach programs to communicate grades (Communications)
  - d. Develop protection strategies for resources and areas with high scoring metrics (Planning)



Phase two addresses tasks 4 through 6 along with summer data collection activities for lakes, streams and wetlands.

### **Scope of Work**

Following is a scope of work developed for Phase 2 of the Ecosystem Evaluation Program. Phase 1 addressed tasks one through three for lakes, streams and wetlands except for data collection activities. Phase 2 addresses summer data collection and completion of the grading system for lakes, streams and wetlands including publication of the final technical document.

#### **Task 1. Data collection for lakes, streams and wetlands in the test subwatersheds.**

The first task for Phase II is to fill data gaps associated with the metrics that were identified for lakes, streams and wetlands. Following is a description of the data collection activities identified for completion of the scoring system.

##### **Task 1a. Floristic Quality Assessments for wetlands.**

The best index identified for the evaluating the health of wetlands in the Minnehaha Creek watershed is the MPCA's Floristic Quality Assessments. To use this tool, new wetland data needs to be collected using the State defined methods. Based on the MCWD plan, there are over 1,100 wetlands in the test subwatershed which is too many to visit in one season. So, Wenck proposes using a probabilistic sampling scheme to acquire data for each wetland type sufficient to describe the distribution of scores in the watershed. Then, Wenck and MCWD staff will visit these sites to collect floristic quality information along with updating the FAW information. Wenck is assuming we will collect data at 100 sites with costs around \$350/site. Additional sites may be collected by MCWD staff as time allows.

Wenck will also develop a check list to update the MCWD FAW report. The checklist will be easy to collect visual assessment data for the wetland.

Additional data such as soil chemistry, water quality, and algal growth may be needed to further analyze the wetlands' conditions for other ecosystem functions such as biogeochemical controls. However, the budget is not available at this time.

##### **Task 1b. Stream habitat assessments.**

There is a fairly robust amount of information for stream macroinvertebrates in the watersheds, however stream geomorphology and habitat data for the streams has not been collected in a consistent manner. Wenck proposes collecting the habitat data for the sites using MPCA's Minnesota Stream Habitat Assessment protocol consistent with the State's application of their fish and macroinvertebrate IBIs. Wenck is planning on visiting 25 sites at around \$350/site.

### Task 1c. Near shore seining, trap/gill net sampling and zooplankton collection.

The Minnesota DNR is currently developing fish and vegetation IBI's for lakes which are directly applicable for the Ecosystem Evaluation Program. However, near-shore seining is required for development of the fish IBIs which is not a routine monitoring activity for the DNR. So, this data set needs to be developed for the watershed. Wenck is proposing to conduct near-shore seining and electrofishing for up to 15 lakes (around \$2,500 per lake for a total of \$37,500). Some of the trap and gill net survey data are out of date. However, the budget is currently not sufficient to address these at this time. So, the current approach is to use the most current data sets available.

Zooplankton will be collected by MCWD staff at 14 shallow lakes once during the summer. Lab costs are approximately \$4,000.

### **Task 2. Data analysis and develop grade break points for lakes, streams and wetlands.**

Once all of the field data are compiled, Wenck will use the appropriate indices to develop scores for the watershed features and develop grading break points based on reference conditions. These grading systems will be reviewed by the TAC and will consider scales such as regional, state-wide, and possibly larger.

### **Task 3. Test scoring system for lakes streams and wetlands.**

Testing the scoring system requires comparing the outcomes developed in task 2 versus what is already known about the conditions in the watershed feature. Wenck will review the scores in the context of literature values and MCWD diagnostic studies to evaluate the effectiveness of the scoring system.

### **Task 4. Meetings.**

Task 4 covers the time to prepare for and present at a technical and stakeholder meeting covering the results of the above mentioned tasks as well as MCWD staff and Board meetings as necessary.

### **Task 5. Finalize grading process and publish technical paper.**

The final step in the process is to develop final documentation of the scoring system including methodology, data gaps, results of the scoring system, strengths and weaknesses, and summary of results and recommendations. Four reports will be generated, one each for wetlands, streams, deep lakes, and shallow lakes.

**Budget**

The following table outlines the budget for each of the tasks. Each of the tasks will be completed on a time and materials basis. Note that a few of the tasks spill over into 2016 for a completion date. These tasks were separated for budgetary purposes. However, this Phase II work plan takes the grading development for lakes, wetlands, and streams to completion.

Table 1. Estimated budget for completing the EEP assessment for lakes, streams and wetlands.

| Task         |   | 2015         |          | 2016         |          | 2015             | 2016             |
|--------------|---|--------------|----------|--------------|----------|------------------|------------------|
|              |   | Direct Costs | Labor    | Direct Costs | Labor    | Total            | Total            |
| 1            | Field data collection for lakes, streams and wetlands |              |          |              |          |                  |                  |
| 1a           | Floristic Quality Assessments for wetlands            | \$500        | \$36,000 | \$0          | \$0      | \$36,500         | \$0              |
| 1b           | Stream habitat assessment                             | \$500        | \$7,500  | \$0          | \$0      | \$8,000          | \$0              |
| 1c           | Shallow Lake zooplankton and near shore seining       | \$4,000      | \$37,500 | \$0          | \$0      | \$41,500         | \$0              |
| 2            | Meetings  | \$0          | \$6,000  | \$0          | \$6,000  | \$6,000          | \$6,000          |
| 3            | Develop grade break points                            | \$0          | \$36,000 | \$0          | \$0      | \$36,000         | \$0              |
| 4            | Test scoring system                                   | \$0          | \$6,000  | \$0          | \$6,000  | \$6,000          | \$6,000          |
| 6            | Finalize grading process and publish technical paper  | \$0          | \$42,000 | \$0          | \$42,000 | \$42,000         | \$42,000         |
|              |   |              |          |              |          | <b>\$176,000</b> | <b>\$54,000</b>  |
| <b>TOTAL</b> |   |              |          |              |          |                  | <b>\$230,000</b> |

**Timeline**

The following table outlines the proposed timeline for the project.

| <b>Task</b>  | <b>Schedule</b>                    |
|--|------------------------------------|
| <b>Field data collection for lakes, streams and wetlands</b>   | May 2015 through September 2015    |
| <b>Meet with TAC, MCWD staff, and MCWD Board</b>               | January 2015 through June 2016     |
| <b>Develop grading scale break points</b>                      | October 2015 through December 2015 |
| <b>Test scoring system</b>                                     | October 2015 through March 2016    |
| <b>Publish technical paper for lakes, streams and wetlands</b> | October 2015 through June 2016     |

Wenck Associates is ready to start immediately and will commit the necessary resources to the project team in order to assure technical excellence and customer service. Thank you for this opportunity to continue working with the Minnehaha Creek Watershed District. If you have any questions or need additional information, please do not hesitate to contact me at (763) 479-4200.

Sincerely,



Joe Bischoff  
Project Manager/Principal