


**Minnesota Pollution
Control Agency**

 520 Lafayette Road North
St. Paul, MN 55155-4194

2015 CWP Application Form

 Minnesota Clean Water Partnership (CWP)
Nonpoint Source Pollution Project

Doc Type: Application

- Before submitting the application form, review the 2015 Clean Water Partnership (CWP) Grant and Loan Program Notice of Grant Opportunity (NGO).
- This form must be submitted electronically as per instructions listed in Section IX of the NGO.

Project Classification

Select whether the project will be a protection or restoration project. It may be both. Protection and restoration are defined in Section IV of the NGO.

Check project category: ☐ Protection ☒ Restoration ☐ Both

Project Title

Keep the title descriptive and **short**. You will be using it many times. It should include the water body name (if applicable) and the type of activity. There is a **maximum** of 50 characters, including spaces. (*Examples: Lake Smith Diagnostic Study; Brown Creek Implementation Project*)

Project title: Northwood Lake Water Quality Improvement Project

Sponsoring Organization

Sponsoring organization (See Section III of NGO for applicant eligibility):

Bassett Creek Watershed Management Commission

Primary contact person (The primary contact person is the person who can be contacted for additional information):

Laura Jester, Administrator c/o Keystone Waters LLC

Street address: 16145 Hillcrest Lane

City: Eden Prairie State: MN Zip: 55346

Phone: 952-270-1990 Fax: None Email: laura.jester@keystonewaters.com

Project Budget Projection

State the amount of the grant and/or loan funds requested, the total match (both cash and in-kind) you and your partners will be providing. Remember, local match is a financial commitment made by the grant recipient and other local agencies to help with the success of the project.

Grant funds requested: \$300,000

Loan funds requested \$0

Match funds, including
cash and in-kind services: \$1,052,000

Total project cost (sum
of other 3 lines): **\$1,352,000**

Project Location

You must include all project location information that is applicable. Be sure to select a basin. If applicable, attach a map of the application area.

Major watershed: Mississippi River - Twin Cities 8-digit Hydrologic unit code: 07010206

Sub-watershed: Bassett Creek Watershed Hydrologic unit code: 27-0627-00 GPS location: _____

What type of **water body** does it affect? (check all that apply)

☒ Stream ☒ Lake ☐ River ☐ Groundwater ☐ Other

Water body name(s): Northwood Lake, North Branch Bassett Creek

Basin (check all that apply):

☐ Lake Superior ☐ Lower Mississippi/Cedar ☒ Upper Mississippi ☐ Minnesota ☐ Rainy
☐ Red River ☐ Des Moines ☐ Missouri ☐ St. Croix

Is the water of concern a drinking water source? ☐ Yes ☒ No

Project Plan Information

If applicable, include web address, page numbers and effective dates from any local or regional water plans relating to this project. If a MPCA-approved Total Maximum Daily Load (TMDL) Implementation Plan is applicable, please include the appropriate information.

Comprehensive Local Water Plan: City of New Hope 2008 Local Water Management Plan (incorporated in Appendices of the Comprehensive Plan beginning on page 546: http://www.ci.new-hope.mn.us/eservices/documentcenter/pdf/com_dev/comp_plan-0909.pdf.) Tables 6.2 and 8.2 show water quality improvements for Northwood Lake and its tributary area as high priorities. The Implementation Program in Table 8.5 on page 56 identifies water quality improvements at this location as "Implementation Activity #8."

MPCA-approved TMDL Implementation Plan: 2004 Bassett Creek Watershed Management Plan, Table 12-2 page 12-27, Project NL-1; http://www.bassettcreekwmo.org/2nd%20Generation%20Plan/Final%20Plan%20September%202004/12_Admin.pdf . Proposed plan amendment to update this project slated for approval in June 2015; info at <http://www.bassettcreekwmo.org/PlanAmendments/PlanAmendmentHome.htm>.

Other plans that refer to this project work:

Project Summary Information

Your responses will be used by the Minnesota Pollution Control Agency (MPCA) for scoring criteria. Responses to the following six questions may not exceed three pages.

What is condition of the water body(ies) being addressed?

What is the water body type and location? Is the water of concern of state and regional significance and priority? How so? Is the water(s) of concern currently meeting beneficial uses and known to be not impaired? What are water uses and impairments? Describe specific problems and identify pollution sources. How are the water body concerns addressed in the local and/or basin water plans? What specific water quality concerns will this project address?

Northwood Lake is located along the North Branch of Bassett Creek in the City of New Hope immediately east of Highway 169. The North Branch of Bassett Creek flows directly into the lake at its northwest corner, and flows out of the lake through a control structure at its southeast corner. Therefore, the lake is directly tributary to the North Branch Bassett Creek which flows into Bassett Creek and into the Mississippi River in downtown Minneapolis. Northwood Lake is classified as a shallow lake with a water surface area of 15 acres, a maximum depth of 5 feet, and a mean depth of 2.7 feet. The lake's watershed area is approximately 1,341 acres and lies within fully developed areas of the cities of Plymouth and New Hope. The Northwood Lake shoreline is developed with single family homes and is used for aesthetic viewing, boating, and fishing. The Friends of Northwood Lake group actively pursues projects around the lake and advocates for the lake's health. A popular community park, Northwood Park, is located at the eastern end of the lake. This is the City of New Hope's premier park hosting multiple community events and attracting residents from around the area every year.

Northwood Lake is included on the State's Impaired Waters List (303(d) list) due to high nutrients. Pollutants enter the lake from the fully developed watershed, much of which has little or no stormwater treatment. In addition to high phosphorus, pollutants entering the lake include bacteria, solids, chlorides, PAHs, and other toxins. The North Branch of Bassett Creek is impaired for bacteria.

Northwood Lake is a priority lake for the Bassett Creek Watershed Management Commission (BCWMC) and the City of New Hope and it has been the focus of monitoring, studying, and planning for decades. Over the past 40 years, the City of New Hope has completed multiple storm water improvement projects in the lake's watershed. In 1996 the BCWMC completed the Northwood Lake Watershed and Lake Management Plan which identified several best management practices (BMPs) to help improve water quality in the Northeast Drainage District, the area of the current proposed improvements. The lake has been regularly monitored by the BCWMC and through the Citizen Assisted Monitoring Program since 1977. Once every four years the BCWMC completes very detailed monitoring collecting data on lake water quality, zooplankton, and aquatic plants. Reports from 2000, 2005, 2009 and 2013 can be found at <http://www.bassettcreekwmo.org/WaterData-Projects/WaterData-ProjectsHome.htm>.

The City of New Hope first identified needed water quality improvements in Northwood Park in their 1996 Surface Water

Management Plan. In 2008 the City adopted a Local Water Management Plan (LWMP) that identifies the need for water quality improvements for discharges to Northwood Lake in Table 6.2 on Page 31 of the LWMP. Table 8.2 on Page 52 of the LWMP identifies water quality improvements within the drainage area tributary to Northwood Park as a “priority system improvement project” and Table 8.5 in the LWMP identifies water quality improvements at this location as “Implementation Activity #8”.

The BCWMC included a project similar to the project proposed in this application in its 2004 Watershed Management Plan (Project NL-1, Table 12-2, page 12-27 at http://www.bassettcreekwmo.org/2nd%20Generation%20Plan/Final%20Plan%20September%202004/12_Admin.pdf.) After further investigation and a feasibility study, the current project was developed and is included in a proposed amendment to the 2004 BCWMC Watershed Plan. (During the 60-day review period for the Plan Amendment, there were no comments from any review agencies on this proposed project. A public hearing on the Plan Amendment is scheduled for March 19, 2015.)

A feasibility study for this project was completed in November 2014. The project will capture and treat runoff from over 110 acres of currently untreated urban area. The project will reduce total phosphorus loads by an estimated 22 pounds per year and will reduce other pollutants carried in storm water runoff and snowmelt. Water quality in Northwood Lake, the North Branch of Bassett Creek, the main stem of Bassett Creek and the Mississippi River will be improved through the implementation of this project.

What are the expected water quality benefits of this project?

What water quality outcomes will be achieved because of this project? How does the proposed project maximize water quality protection or restoration of the water of concern in the project area? What are specific environmental, administrative, and social behavior outcomes?

According to the November 2014 Feasibility Study, this project is expected to remove 22 pounds of phosphorus per year in addition to other pollutants associated with storm water runoff and snowmelt. Additional benefits of the project include water conservation through the storage and use of storm water as irrigation water for adjacent ballfields. It's estimated that up to 3.8 million gallons of drinking water may be conserved annually due to irrigation using storm water captured through this project.

The project will be located on two different parcels of public land on the east and west ends of Northwood Lake. The use of public land maximizes the project area and allows for efficient (and appropriately sized) BMPs. Rather than squeezing smaller, less efficient BMPs between private properties, this project uses parkland for a large-scale project that can be easily accessed and maintained by the City of New Hope.

If applicable – How will the proposed project facilitate the adoption of the best management practices (BMPs) by the community in the project area and how does the proposed project use technically feasible BMPs to abate or prevent non-point source pollution?

Some of the project's components including the rain gardens and the parts of the stormwater reuse system will be visible to the public and park users. These practices and their benefits to water quality and water conservation will be explained through educational signage at Northwood Park. The signs will also describe best practices homeowners can use to further improve water quality in the lake and creek.

Specify and summarize what water quality data or other information on which you are relying. In addition to data and information that you have, in some cases data may be available from the Environmental Data Access system at: <http://www.pca.state.mn.us/data/eda/index.cfm>) defines water quality outcomes that will be achieved.

The BCWMC and local residents have been monitoring and collecting data on Northwood Lake since 1977. In the last ten years, the average of all June-September observations show average total phosphorus concentrations of 215 ug/L., average chlorophyll a concentrations of 25 ug/L, and average Secchi transparencies measurements of 0.99 meters. The latest monitoring data confirms that Northwood Lake is still impaired for excess nutrients and not meeting State water quality standards for shallow lakes. However, chlorophyll-a and Secchi transparency levels have been quite close to the shallow lake eutrophication standards since 2000, with average annual chlorophyll-a and Secchi depth levels meeting the standards six and nine times, respectively, during the fourteen year period. Comparison of the historical water quality, phytoplankton and macrophyte data indicates that the lake has switched into more of a stable, plant-dominated system with fewer blue-green algae since 2000. As a result, it is expected that incremental reductions in phosphorus loading to Northwood Lake will significantly increase the likelihood that the water quality response standards will be met on a more regular basis. In addition, much of phosphorus loading reduction realized from the implementation of this project will target soluble phosphorus, so it is expected to result in disproportionately greater lake water quality benefits than other BMPs that only remove particulate phosphorus.

Describe your project. Be sure to demonstrate a clear understanding of work to be done and high potential for project success.

What key activities will need to be taken to accomplish the work and in what timeframe? Demonstrate that the project plan is thoroughly developed and based on water quality standards. Describe staff, collaborator, and/or subcontractor qualifications to do the work. Who will manage project activities? Do you have experience doing this type of work? Is there an education and outreach component to communicate project results to citizens, local managers, and decision makers? *If applicable* – How will the project help select the proper BMP or combination of BMPs for the project area? Will the project develop BMPs focused on key sources of non-point source pollution?

The Northwood Lake Water Quality Improvement Project will treat storm water runoff from over 110 acres of currently untreated urban land. The project includes the installation of a variety of practices at two different locations adjacent to the lake that will maximize storm water treatment while minimizing the amount of land removed from useable park space. At the east end of the lake project components include a structural treatment device for pre-treatment of runoff, underground storm water re-use chamber (160,000 gallons capacity), pump house, distribution system to irrigate 6.4 acres of adjacent ball fields, and finally a system overflow directed into a series of linear rain gardens prior to discharging into Northwood Lake. At the west end of Northwood Lake, a wet ponding basin will be constructed in a green space area between Trunk Highway 169 and Jordan Avenue. Storm water runoff from rear yard areas and Jordan Avenue draining from the south will be directed into the pond for treatment before discharging into an existing storm sewer pipe tributary to Northwood Lake.

These project components were analyzed and fully described in the Feasibility Study for the Northwood Lake Improvement Project (November 2014) and listed as concepts "A" and "C." In preparing the feasibility study, existing conditions (including soil borings and infiltration conditions) were surveyed and analyzed to determine the best BMP options, their location, size, and pollutant removal effectiveness. The feasibility study was approved by the BCWMC at their November 2014 meeting and is available at: <http://www.bassettcreekwmo.org/Meetings/2014/2014-November/5A-FinalFeasibilityReport-NorthwoodLakeStormWaterImprovements-11-12-14.pdf>.

In accordance with the BCWMC's process to implement capital improvement projects like this, once the amendment is approved for the 2004 BCWMC Watershed Plan to appropriately list this project in Table 12-2 (expected in the summer of 2015), the BCWMC will order the project and enter into a contract with the City of New Hope to design and construct the project. The City of New Hope will use its consulting engineering firm to design the project components according to the feasibility study and all necessary State and local permits will be sought. The BCWMC Engineer will review 50% design plans and will make recommendations to the BCWMC regarding approval. This process is repeated for the 90% (final) design plans. The City of New Hope will then submit bid documents, contract with a construction firm, and oversee construction. The City will report back to the BCWMC on construction progress and will prepare a final report at the end of the project. Construction is expected to begin in May 2016. The project should be completed in September 2016.

The BCWMC has managed its capital improvement program in the manner described above with great success for over ten years, implementing 1 - 2 projects per year in cooperation with its member cities.

What community and political support does your project have, and what is the likelihood that the proposed project will serve as a demonstration or provide useful information or examples for local, regional, or state efforts for nonpoint source pollution control?

What other local, state, federal water quality projects are going on in the area? How does the project coordinate with federal, state local agency, LGU, community organizations for water quality protection or restoration? Does the project have transferability statewide, within a multi-county area, or within its basin or to a similar hydrologic setting? To what other funding programs, and for how much, have you applied or do you plan to apply? How do you plan to sustain funding for administrative staffing beyond the term of this grant? Who from your community is involved in your project and how is community support demonstrated? Be specific. Which groups are involved and how will or do these groups work together? Describe previous work done together and the accomplishments. Who is the project lead? Who are stakeholders and what are partner roles, relationships, priorities and resources?

The BCWMC is committed to the improvement and protection of its lakes, streams, and wetlands and therefore implements a robust and comprehensive capital improvement program (CIP) in partnership with its member cities. Every year since 2004, the BCWMC has levied, through Hennepin County, the funds needed to implement large-scale projects to improve impaired waterbodies or protect healthy waterbodies. Examples of projects implemented by the BCWMC include stream restorations along much of Plymouth Creek and Bassett Creek, the Wirth Lake outlet structure which resulted in the delisting of Wirth Lake for nutrients, and the installation or improvements of storm water quality ponds and other practices throughout the watershed. Although the Cities of Plymouth and New Hope have implemented various storm water BMPs, the water quality of Northwood Lake still needs vast improvement. The City of New Hope is very supportive of this proposed project as it will not only improve water quality in the lake and stream, but it also preserves park space through the use of an underground storm water storage and irrigation system, eliminating the need for a large storm water pond within Northwood Park. This park is heavily used as a gathering place for community events. Within a fully developed city such as New Hope, park land is precious. Community meetings about this project (June 24 and August 13, 2014) resulted in a high level of support from surrounding residents, park users, Friends of Northwood Lake, and the New Hope City Council.

The City of New Hope has pledged at least \$206,000 toward this project. The BCWMC is prepared to fund the remainder of the project, likely with a Hennepin County tax levy, as needed. However, there is a long list of projects in need of BCWMC financial support. Grant funding is sought to offset the BCWMC funds so that other projects can be implemented.

One major feature of this project is the large underground storm water storage area and use of this storm water to irrigate ballfields in the park. As space (and public appetite) for traditional storm water ponds decreases, innovative practices such as underground storage areas will become important to understand and implement efficiently. The BCWMC is willing and able to share design

features and lessons learned about the project with other entities.

This project is cooperative by nature, has the support of the city and its residents, involves an innovative practice, improves water quality, conserves drinking water, and preserves precious open space.

How will you quantitatively measure the success of your project?

What will be changed, by when, and by how much? What is your baseline data? Be sure to include water quality standards. What are your interim management measures? What do you predict to be water quality improvements by the end of the grant period? How will you measure whether desired outcomes have been achieved? How will success be measured in ways meaningful to citizens, local managers, and decision makers?

The water quality of Northwood Lake will improve due to the capture of storm water from over 110 acres of currently untreated urban area. Total phosphorus loadings to the lake will be reduced by an estimated 22 pounds per year. Water quality monitoring through the BCWMC monitoring program and the Citizen Assisted Monitoring Program will continue to track water quality trends in the lake. Detailed monitoring reports are prepared by the BCWMC Engineer and presented to the BCWMC Board of Commissioners, member cities, and members of the public. The project will be maintained by the City of New Hope in accordance with their public works maintenance schedule and plan.

Please list what non-point source grant or loan projects you have managed since 2010, and whether projects were managed in accordance with the terms and conditions specified in the MPCA grant or loan agreement. If you have a record of poor performance with the state, you may provide an explanation below.

The BCWMC has not applied for CWP grants from the MPCA in the recent past. However, the BCWMC Engineer (Barr Engineering) has experience managing CWP grants for other clients and will bring this experience to the BCWMC in managing this CWP grant. Additionally, the BCWMC Administrator (Laura Jester) has experience managing CWP and 319 grants for her previous employer. Ms. Jester's most recent CWP grant project was the Lower Mississippi River WMO Watershed Restoration and Protection Strategy (WRAPS) Study. She also managed the 319 grant entitled the Mississippi Makeover Project (part of the Lower Vermillion and South Metro Mississippi River Turbidity TMDL Implementation Projects).

Budget Information

Remember to check your addition – both across and down – several times! Correct totals are a pass/fail criteria.

Dollar amounts for the grant, loan, match and grand total must match the Project Budget Projection on page 1 of the application. Your application will be eliminated from further review if budget numbers do not match and/or budget math is incorrect.

Project expenditure budget

Complete the following table by listing the objectives that will comprise your project and estimated cost of each objective. The budget should address the cost of setting up monitoring stations, collecting monitoring data, reducing the data, public education, writing the diagnostic study and implementation plan, Best Management Practices (BMPs) activities, project administration, etc. Costs listed for each objective must be realistic.

For each objective, identify the task to be done, amount of grant and/or loan funds to be used for the task, and amount of match (local cash and in-kind) to be provided for the task. Add additional rows as necessary.

| Objectives | Funding types | | | | Total |
|---|------------------|--------------------|----------|----------|--------------------|
| | Grant | Local cash | In-kind | Loan | |
| 1. Design Project - Develop project plans and specifications for west end and east end components | | \$75,000 | | | \$75,000 |
| 2. Construct West End Project - Construct stormwater wet ponding basin west of Northwood Lake | \$120,000 | | | | \$120,000 |
| 3. Construct East End Project - Reroute existing storm sewer; construct underground stormwater storage and irrigation system and associated rain gardens east of Northwood Lake | \$176,000 | \$787,000 | | | \$963,000 |
| 4. Manage Construction – Conduct surveys and inspections; record plans | | \$160,000 | | | \$160,000 |
| 5. Install Public Education – Design, fabricate, and install educational signage in Northwood Park | \$4,000 | | | | \$4,000 |
| 6. Manage Project – Review project designs, coordinate with city, track budgets and implementation, develop grant reports | | \$30,000 | | | \$30,000 |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |
| 11. | | | | | |
| 12. | | | | | |
| Total of program objectives: | \$300,000 | \$1,052,000 | 0 | 0 | \$1,352,000 |

Project support budget

Complete the following sections for all the sources of grant, loan, match money, and in-kind contributions for your project. The match requirement must be no less than the amount of the grant. Add additional rows as necessary.

Identify each source of funding for the application. This includes the amount of grant and loan funds requested and the amount of local cash and in-kind to be provided by each local, state, and federal contributing sponsor. The totals of the grant, loan, match, and grand total should agree with the Project Budget Projection on page 1 of the application and the Project Expenditure Budget. **MPCA staff or resources cannot be used as match.**

| Project sponsors | Project costs | | |
|--|------------------------------------|---------------------------------------|---------------------------|
| | Cash match contribution to project | In-kind match contribution to project | Total project support |
| A. Project sponsor contribution | | | |
| B. Local contributing sponsors: | | | |
| 1. Bassett Creek Watershed Management Commission | \$846,000 | \$0 | \$846,000 |
| 2. City of New Hope | \$206,000 | \$0 | \$206,000 |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| B. Subtotal | \$1,052,000 | | \$1,052,000 |
| C. State and/or federal contributing sponsors: (cannot be more than 20 percent of the total project costs.) | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| C. Subtotal* | \$0 | | \$0 |
| Total: All project sponsors' match (A+B+C) | | | |
| Grant amount requested (cannot exceed \$300,000): | \$300,000 | | \$300,000 |
| Loan amount requested (no maximum) | | \$0 | \$0 |
| | Total cash | Total in-kind | Total project cost |
| Grand Totals | \$1,352,000 | \$0 | \$1,352,000 |

Conflict of Interest

A conflict of interest occurs when any of the following conditions is present:

- (a) An applicant or potential grantee uses his/her status to obtain special advantage, benefit, or access to the MPCA's time, services, facilities, equipment, supplies, prestige, or influence.
- (b) An applicant receives or accepts money or anything else of value from another state grantee or grant applicant or has equity or a financial interest in or partial or whole ownership of a competing grant applicant organization.
- (c) An applicant is an employee or board member of the MPCA or is an immediate family member of an employee or board member of the MPCA.
- (d) An applicant or potential grantee is unable or potentially unable to render impartial assistance or advice to the State due to competing duties or loyalties.
- (e) A grantee's objectivity in carrying out the grant is or might be otherwise impaired due to competing duties or loyalties.
- (f) A grantee has an unfair competitive advantage through being furnished unauthorized proprietary information or source selection information that is not available to all competitors/applicants.

I certify that I have read and understand the description of conflicts of interest above and *(check one of the following two boxes)*:

- ☒ Based on the criteria and description above, I do not have any conflicts of interest.
- ☐ Based on the criteria and description above, I have an actual or potential conflict of interest, or the appearance of a conflict of interest, which I am listing immediately below.

Name/Relationship and/or Description of the Conflict of Interest (attach additional page if needed):

Exceptions to Sample Grant Agreement

Please note any exceptions to the Sample Grant Agreement (Attachment B). Any suggestions for alternate language in the Sample Grant Agreement must be presented here. The State is under no obligation to accept wording changes submitted by the applicant.