

2016PT10 Kennedy Brook / Mantle Lake Watershed Plan Development

Grantee: Presque Isle, City of

Watershed Information:

Kennedy Brook is a small stream located in Presque Isle, Maine. The 1,997 acre (3.1 square mile) Kennedy Brook Watershed is part of Presque Isle's urbanizing area. According to land use data, the watershed is composed of agriculture, forest, industrial, municipal and residential land uses. It is estimated that 25% of the watershed is developed, 58% is in agriculture and the remaining 17% is comprised of mixed land uses. The brook drains into the Presque Isle Stream. The reach of Presque Isle Stream located at the confluence with Kennedy Brook is on Maine's list of impaired Waters. Much of the University of Maine at Presque Isle (UMPI) campus is located within the watershed (UMPI faculty will be active participants in the project). The Pine Street Elementary School also borders the brook which opens the opportunity for water quality educational programs and stream "adoption" by local students.

In 1877, Kennedy Brook was dammed to create Mantle Lake, a 4 acre lake, to serve as the original water supply for the city. In 1911, the City began using the Presque Isle Stream as its water supply, but retained ownership of the land around Mantle Lake. Today, Mantle Lake and the surrounding area is an important municipal park and recreational area, serving as the focal point for recreational activities (including fishing for children and senior citizens) for the surrounding community. However, Mantle Lake experiences algal blooms for most of the summer, every summer. Mantle Lake serves as a fishing location only for children aged 16 and under and senior citizens. No swimming or boating is allowed in the lake. The land immediately surrounding the lake on the East, South and West contains popular hiking and recreational vehicle trails. The north side of the lake is a park consisting of picnic pavilions and a playground. The lake itself was dredged in 2010. Kennedy Brook is not large enough or deep enough for swimming or boating.

Kennedy Brook (segment ME0101000412_140RO) was listed in the 2012 305b Integrated Report under category 5A – for periphyton non-attainment likely due to agriculture and urban effects. Presque Isle Stream is listed for aquatic life impairments. More recently, 2014 bio-monitoring data from monitoring station S-646 indicate that Kennedy Brook, a Class B stream, is not meeting the class B aquatic life standard. Elevated nutrient levels (nitrogen and phosphorus) are indicated in a 2014 Aroostook monitoring report from the Maine DEP. Kennedy Brook is, however, meeting the Class C standard so restoration of this stream is a reasonable goal.

The City of Presque Isle does have an adopted comprehensive plan consistent with Maine's Comprehensive Planning and Land Use Regulation Act.

Problem/Need:

Kennedy Brook is experiencing water quality degradation due to a combination of urban and agricultural issues. The urban/stormwater sources are in the lower part of the watershed and agricultural sources are located primarily in the upper portion of the watershed. Ten years ago, Central Aroostook Soil & Water Conservation District conducted a watershed survey and

stream habitat walks. Most, but not the entire watershed was surveyed. Encouraging signs noted as a result of the survey were presence of beaver, trout seen both above and below Mantle Lake, buffers of trees along much of the stream, and long stretches of stream without adjacent development. The biggest concerns noted were sediments entering the stream from storm drains, abundant algae growth, sedimentation originating from crop land, unstable recreational trail crossings, trash accumulation along the shore and in the stream, and inadequate buffers along the stream from US Route 1 (Main Street) to the confluence of the Presque Isle Stream. Impervious cover is also noted as a contributor to the degradation of water quality.

While the data and information collected during this time period provides valuable background information, there are gaps that need to be addressed in order to fully understand the impact of the watershed on Kennedy Brook. Stressors, particularly from the urbanized area, need to be identified and documented. The watershed planning process will fill this gap and allow for a more targeted implementation program once the plan is adopted by the stakeholders and implemented. The stakeholders in the watershed including the City of Presque Isle, the Maine Department of Environmental Protection, University of Maine at Presque Isle, and watershed landowners have indicated the need for, and interest to restore this waterbody.

It should be noted that some restoration work has occurred in the watershed through the Kennedy Brook/Mantle Lake Watershed Improvement Project from 2007-2009. This project was funded through Section 319 Funds and treated over 65 acres of agricultural land at Cavendish Farms.

Purpose:

The purpose of this project is to develop a locally supported, watershed-based management plan that will outline actions needed to improve Kennedy Brook's water quality and aquatic habitat to attain Class B standards and to build local support for implementation of this plan. Kennedy Brook does not adequately support aquatic life. Kennedy Brook is considered impaired under Maine law and the Federal Clean Water Act.

Project Duration:

Project start: November, 2016

Project completion: December, 2017

General Project Plan:

The City of Presque Isle will administer and manage the project (Task 1) and convene and help facilitate two stakeholder meetings and at least three landowner meetings (Task 2), and work with state and federal agencies and project consultants to assess the status of stream health relative to applicable water quality standards. The City will retain a qualified watershed management and assessment project consultant team to assist with technical all components of the project. The consultant team qualifications will include: public facilitation and participation, watershed plan experience, water quality monitoring, geomorphic assessment, and stormwater retrofit survey experience.

The City will use appropriate competitive procurement procedures to secure assistance with

plan development including hiring a consultant to facilitate stakeholder meetings (Task 2) lead the technical advisory committee, and conduct all field work (Tasks 3, 4, and 5) including the geomorphic assessment and watershed reconnaissance inventory as well as the development of a draft and final watershed management plan that follows the nine elements required by the US Environmental Protection Agency (Task 6). This project will be conducted to meet applicable quality assurance procedures in the DEP document "Maine Section 319 NPS Management Program Quality Assurance Program Plan, 2011" accessible at <http://www.maine.gov/dep/water/grants/319.html>.

All press releases, outreach materials, project signs, and plans will acknowledge that the project is funded in part by the United States Environmental Protection Agency under Section 604(b) of the Clean Water Act. EPA's logo will not be included on materials unless the Grantee receives prior instruction and approval from EPA. Refer to the Grant Agreement, Rider A. Section III. F. Acknowledgement

Tasks, Schedules & Estimated Costs

Task 1: Project Management

The City of Presque Isle and the Maine DEP will sign a contract outlining project roles, responsibilities and funding arrangements. The City will administer the project and will oversee the timely submittal of deliverables and reports to the Maine DEP including semi-annual progress reports and final progress report. The City will track the project budget using accounting software, and utilize the DEP NPS Site Tracker Tool to document and track NPS sites found during the surveys (Task 4 and 5). This task also assumes bi-monthly calls with the project consultant and the Maine DEP project administrator/manager.

Start Date: November 1, 2016 End Date: December 31, 2017

Cost: Grant: \$2,500 + \$2,000 In-Kind Match = \$4,500 Total Estimate

Task 2: Stakeholder Meetings /Landowner Participation

The City of Presque Isle (with contractor assistance) will convene and facilitate two stakeholder meetings to garner input and support for the project elements. Presentations will be delivered at each of these meetings by project staff and consultants to illustrate the water quality issues and potential solutions to address these issues. These meetings will be facilitated in a manner so that public input can be allowed to guide the particular elements of the plan, including the specifics of the watershed implementation plan. Particular focus will be provided at the meetings to illustrate the various stressors to the stream that cause water quality impairment. A preliminary meeting and final meeting are planned. Additionally, up to five separate on-site landowner meetings are planned to educate key stakeholders about project goals, and how they relate to the City's planning and regulatory decisions.

Start Date: First Stakeholder meeting by December 2016; Second Stakeholder meeting by October 2017; Five Landowner Meetings by November 2017. End Date: December 2017

Cost: Grant: \$3,500 + \$2,000 In-kind Match = \$5,500 Total Estimate

Task 3: Develop Technical Components of Watershed-Based Management Plan through a Technical Advisory Committee (TAC)

The City of Presque Isle (with contractor assistance) will develop a Technical Advisory Committee (TAC) made up of key watershed stakeholders with local and technical knowledge to oversee the technical elements of the project, and eventually, the watershed-based plan.

TAC members are expected to include the City of Presque Isle (planning and public works), the University of Maine at Presque Isle, project consultants, Maine DEP, Central Aroostook Soil & Water Conservation District (CASWCD), USDA's Natural Resource Conservation Service (NRCS), and interested landowners and citizens with technical expertise. While the TAC will meet three times over the course of the project, the TAC will provide advice on and review of the technical aspects throughout the project. It is anticipated that key elements of the final watershed plan will be developed through the diligent work of this team.

The responsibilities of the contractors with the assistance of the TAC will include:

- conducting a stressor analysis process, and refining the field methods planned for the stream corridor assessment/geomorphic assessment (see task 4);
- providing input on the use of secondary data (see description below);
- working with project team to identify key areas of impervious cover that may be contributing to water quality degradation;
- providing input on field methods planned for the stream crossing and outfall reconnaissance survey (see task 4), and the storm water retrofit reconnaissance inventory (see task 5);
- prioritizing sites and areas for storm water mitigation (see task 5);
- helping identify a site for a local demonstration project (see task 5);
- assisting with the development of cost estimates for structural and non-structural best management practices; and reviewing the draft and final Watershed Management Plan; and
- review the information from task 4 with the goal of defining the stressor(s) for the water quality impairment; the stressor(s) that most need to be addressed in the Kennedy Brook watershed. This will include all potential influences including agriculture, impervious cover, habitat alterations, hydrological impacts and chloride

Secondary Data - Along with using newly-collected data, the watershed-based plan will make use of secondary (preexisting) data for the stream. The TAC will assist with the evaluation of secondary data to determine if the data is acceptable to use for this project. The City or qualified consultant, with assistance from DEP, will prepare a brief "Secondary Data Quality Assurance Guide" with selection criteria appropriate for the project that will ensure that secondary data are "good enough" to support project conclusions, decisions or actions.

Start Date: Identify Participants November 2016; First Meeting April 2017; Final Meeting

November 2017. End Date: December 2017.

Cost: Grant: \$5,500 + \$2,000 In-Kind Match = \$7,500 Total Estimate

Task 4: Kennedy Brook Stream Assessment

The City of Presque Isle (with Maine DEP and contractor assistance) will conduct field survey activities to build on the surveys conducted between 2002 and 2006 to provide valuable baseline information on the basic physical and ecological characteristics of Kennedy Brook. In order to: properly assess Kennedy Brook, it is critical to understand the physical (geomorphic survey/culvert and outfall survey), biological (stream corridor survey), and chemical (monitoring) components of the stream channel and riparian corridor.

Subtask 4a. Fluvial Geomorphic and Stream Corridor Assessment: A fluvial geomorphological study and stream corridor assessment of Kennedy Brook will be conducted to quantify changes to the stream channel and provide insight into the effects of current and future storm water management practices on the stream's habitat. The assessment will include: a background review and historic assessment, reach delineation, rapid geomorphic assessment and a rapid stream assessment, detailed geomorphic assessment following standard protocols, data integration and analysis, water quality and geomorphic condition monitoring, and establishing the structure for a long-term monitoring program including recommendations for in-stream habitat restoration. The stream corridor assessment will be conducted simultaneously and will assess at the biological components of the stream corridor including riparian cover. A Quality Assurance Project Plan (QAPP) will be developed by the City or its qualified consultant for the geomorphological assessment and provided to DEP for its review and approval prior to conducting the assessment. The QAPP will be developed in accordance with the MDEP Quality Management Plan. A summary report will be provided as a project deliverable and will include documentation of all field activities as well as specific recommendations for addressing issues that were identified in the survey.

Start Date: May 2017; End Date: July 2017

Cost: Grant: \$7,500 + \$3,000 In-kind Match = \$10,500 Total Estimate

Subtask 4b. Culvert & Storm water Outfall Reconnaissance Inventory:

In combination with the geomorphic assessment, the City or its qualified consultant will conduct a culvert and storm water outfall inventory, documenting the location and condition of culverts and storm water outfalls within the stream corridor. The culvert survey will evaluate the impact of culverts or other stream crossing structures, identify barriers to fish and other wildlife, and set priorities for restoration. The outfall reconnaissance inventory will identify the location and condition of storm water outfalls in the stream, identify potential illicit discharges, and prioritize outfalls for follow-up monitoring. A summary report will be provided as a project deliverable. A Survey Implementation Plan (SIP), under the *Maine Lake & Stream Watershed Survey Generic QAPP*, will be developed and provided to DEP for review and approval prior to conducting the survey.

Start Date: May 2017; End Date: December 2017.

Cost: Grant: \$4,000 + \$1,500 In-kind Match = \$5,500 Total Estimate

Subtask 4c. Water Quality Monitoring:

Data collected to date for Kennedy Brook has been somewhat sporadic. Water quality data collected to date will be summarized. In order to establish a good baseline for basic parameters including dissolved oxygen (often a surrogate measure for nutrient issues), temperature, and conductivity, data loggers will be placed in at least two locations in Kennedy Brook. The data sampling will follow Maine DEP's *Monitoring NPS & TMDL Streams QAPP* last updated June 14, 2016, *Continuous Monitoring of Water Quality Standard Operating Procedures (SOP)* June 7, 2016 and a *Project Analyses Sample Plan (SAP)*. The SAP will be developed and submitted to Maine DEP for approval prior to any water quality monitoring. The project consultant and UMPI faculty and students will analyze the results and present to the project Technical Advisory Committee. The ultimate goal will be to have project stakeholders continue this monitoring for several years in order to track changes in water quality over time.

Start Date: May 2017; End Date: December 2017.

Cost: Grant: \$4,000 + \$7,500 In-kind Match = \$11,500 Total Estimate

Task 5: Watershed Reconnaissance, Inventory, and Prioritization

The watershed retrofit reconnaissance will follow an abbreviated method and approach utilized in the other successful watershed planning projects. The first step of the inventory will be to locate (and provide mapping, if project resources allow) the existing stormwater infrastructure and flow paths of stormwater. The reconnaissance will include an inventory and assessment of all land uses (agricultural and nonagricultural lands), potential storm water storage and on-site retrofit sites in the watershed. These retrofits will provide storm water treatment in locations where practices previously did not exist or were ineffective, or include modifications to existing storm water practices or construction of new practices. Specific in-stream needs, such as culvert retrofits and riparian recovery sites (from task 4) will be included in the prioritization process. Working with the NRCS and CASWCD the watershed reconnaissance will identify and address potential agricultural issues and best management practices (BMPs) in the watershed. The impact, cost, and feasibility of the identified BMPs, structural, non-structural, and habitat retrofits will be assessed. Using this information and input from the TAC, the potential retrofits and BMPs will be prioritized. The final document will include a complete listing of retrofit and agricultural BMP opportunities, cost estimates for addressing these concerns, GIS maps of the hot spots, and the retrofit prioritization.

Start Date: Start field work in May 2017, complete field work by October 2017 End Date: Submit final retrofit report by December 2017

Cost: Grant: \$6,000 + \$3,000 Cash Match = \$9,000 Total Estimate

Task 6: Develop Draft and Final Watershed Management Plan

The City of Presque Isle will develop a well-informed, user-friendly, effective watershed management plan for Kennedy Brook. The plan is intended to guide the management of this stream for approximately ten years. This report will be developed to meet the nine minimum elements of watershed planning, including estimating current pollutant loads and the necessary pollutant load reductions needed for the stream and watershed in order to meet water quality standards. Recommendations will include provisions for BMPs (agricultural and nonagricultural) and adaptive management to provide the flexibility needed to ensure efficient and successful plan implementation. The plan will also include a chapter dedicated to the increasing development of the watershed and potential changes to land use planning and ordinances that can help address the stormwater issues related to the growth. The draft Watershed Management Plan will be reviewed by the TAC and any other interested parties for refinement and revision. Key findings and recommendations from the plan will be presented and adopted by the Presque Isle City Council, incorporating all relevant comments and suggestions to produce the final version of the Watershed Management Plan.

Start Date: Begin report outline by Sept. 2017 End Date: Submit report by December, 2017

Cost: Grant: \$9,000 + 2,000 In-kind Match = \$11,000 Total Estimate

Deliverables:

Three (3) copies of each deliverable will be provided to the DEP Agreement Administrator. Each deliverable will be labeled according to procedures described in the DEP document "Nonpoint Source Grant Administrative Guidelines"

1. Sub-agreements; Progress Reports; Final Project Report, NPS Site Tracker (Task 1)
2. Report of Attendance at Stakeholder Meetings (Task 2)
3. Approved Secondary Data Evaluation Table (Task 3), fluvial geomorphology QAPP (Task 4a); Approved outfall and culvert study SIP (Task 4b); Monitoring SAP (Task 4c)
4. Fluvial Geomorphic Report (Task 4a); Final Outfall & Culvert Study Summary (Task 4b); monitoring data summary and analysis (Task 4c);
5. Final Watershed Reconnaissance Report and Prioritization (Task 5)
6. Final Watershed Based Plan (Task 6)

Interagency Coordination, Roles & Responsibilities:

City of Presque Isle – Will act as the project coordinating entity and be an active participant in all phases of the project. Contributions are anticipated from the planning, public works, and code enforcement divisions.

Central Aroostook Soil & Water Conservation District – Will serve as a technical resource for agricultural issues.

Maine Department of Environmental Protection (DEP) Northern Maine Regional Office – Will serve as technical advisors for the project including serving on the TAC. DEP will

administer project funding, serve as project advisor, and will provide review and comment on all deliverables.

United States Department of Agriculture, Natural Resource Conservation Service – Will serve as a technical resource for agricultural issues including possible BMP recommendations and USDA TA & cost share program information.

United States Environmental Protection Agency -Will provide project funding through Section 604(b) of the Clean Water Act and staff will be invited and encouraged to serve on the TAC.

University of Maine at Presque Isle – Will serve as a key stakeholder on the project including the utilization of students to assist in the survey and analysis work for Kennedy Brook.

Project Coordinator:

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DUNS: 07-174-7018

Estimated Total Cost, Federal and Non-Federal Sources

Federal Section 604(b) funds:	\$41,600
Matching Funds:	\$23,000
Total Project Cost:	\$64,600

Match Sources:

City of Presque Isle cash: \$3,000; in-kind \$11,000;
Project stakeholders (including \$7,000 from UMPI) - \$9,000

Budget Information:

Part 1 Estimated Personnel Expenses: (Grantee staff only)

Position Name & Title	Hourly Rate	Number of Hours	Salary & Fringe	Total Grantee Personnel Expenses
Ken Arndt	\$30.00	220	\$50.00	\$11,000
Totals				\$11,000

Part 2 Budget Estimates by Cost Category

Cost Category	Federal Funds Section 604(b)	Non-Federal Match	Total Cost
Salary & Fringe (from Part 1)		\$11,000	\$11,000
Contractual	\$41,600	\$3,000	\$44,600
Subgrant			
Donated Services – Labor		\$9,000	\$9,000
Travel (mileage total)			
Supplies			
Totals	\$41,600	\$23,000	\$64,600

Contractual Services (\$44,600) for assistance with all tasks of the project including coordination with and presentations to the public, coordinating the Technical Advisory Committee, completion of the quality assurance documents and field analyses (geomorphic survey, culvert survey, water quality monitoring, watershed retrofit analysis), and development of the draft and final watershed plans. Contractual services are budgeted at an average hourly rate of \$70/hr. x 564 total hours (\$39,480) plus contractor travel and field supplies (\$2,120). The breakout of costs for travel and field supplies are \$2,000 for travel (mileage @ .44/mile, hotel, per diem) and \$120 for field supplies