## #2014RT08 Trout Brook Restoration Project, Phase II

Grantee: Town of Cape Elizabeth

### WATERSHED INFORMATION

Trout Brook is located in the City of South Portland and Town of Cape Elizabeth, in the southeastern corner of Cumberland County, the State's most populous county. The City of South Portland has approximately 23,000 residents and the Town of Cape Elizabeth has approximately 9,000 residents. South Portland is 12.93 square miles and its land uses range from urban to suburban. Cape Elizabeth is 14.5 square miles and has suburban and rural land uses.

The Trout Brook watershed encompasses 0.9 square miles in South Portland and approximately 1.45 square miles in Cape Elizabeth (total area is 2.35 square miles). At its headwaters in Cape Elizabeth, it is a Class B fresh water stream. At the South Portland city line it becomes a Class C fresh water stream until it reaches the tidal waters of Mill Cove where it flows into the Fore River and ultimately Casco Bay. The Trout Brook watershed has a complex mix of land uses that includes dense residential, commercial, agricultural, institutional and forest land. In 2005, the Combined Sewer Overflow (CSO) that discharged into Trout Brook was removed. The entire watershed is classified as a "regulated area" under the NPDES Phase II Stormwater Program.

Trout Brook's surficial geology consists of the Presumpscot formation, which is characterized by silt and clay with some sand; therefore the fine sediment observed in the stream is partly natural in origin. The riparian zone in the upstream portions of the watershed consists of trees and understory plants and is fairly undisturbed, and the middle and downstream portions have altered riparian buffers from lawns and invasive plants such as Japanese Knotweed.

Trout Brook is on Maine's 303(d) list for degraded aquatic habitat potentially caused by urban nonpoint source pollution. Trout Brook is also listed as an Urban Impaired Stream in Maine DEP's Chapter 502, which means that it does not meet state and federal water quality classifications due to polluted runoff from impervious cover (IC). In August 2005, the Maine Department of Environmental Protection (MDEP) completed an IC Total Maximum Daily Load (TMDL) for Trout Brook. Water quality sampling completed during the Watershed Management Plan indicated areas with low dissolved oxygen (DO), elevated phosphorus, and elevated chloride and specific conductance.

While Trout Brook does not meet its State water quality classification, there is great potential to restore its water quality: Trout Brook supports a native brook trout population, and there are multiple parcels managed by land trusts and municipalities for recreation including the seven-acre Trout Brook Preserve in South Portland and the 70-acre Winnick Woods in Cape Elizabeth.

The South Portland Land Trust (SPLT) completed a Master Plan for the Trout Brook Preserve that will enhance the recreational opportunities provided by Trout Brook's close proximity to densely populated residential areas. The Winnick Woods Master Plan received the Maine Association of Planners 2007 Plan of the Year Award for its proposal to manage part of Winnick Woods, in conjunction with the adjacent United States Fish and Wildlife Service (USFWS) land, as a habitat for the New England Cottontail.

The City of South Portland's protected Sawyer Marsh is an eight-acre marsh that provides a rare scenic vista. Mill Creek Park is a ten-acre park at the bottom of the watershed. The City recently completed a Master Plan that identifies key restoration recommendations for Trout Brook's riparian

area. In addition, the South Portland Conservation Commission (SPCC) identified Trout Brook as an area where some of the City's Wetlands Compensation Funds could potentially be used for restoration activities. Given the extensive public interest, the City of South Portland worked with the Town of Cape Elizabeth, MDEP and Cumberland County Soil and water Conservation District (CCSWCD) to develop a watershed-based management plan that was completed in December 2012.

There is considerable momentum for restoration and public involvement in the watershed. Specifically:

- Students from Mahoney Middle School have been involved with monitoring the water quality of Trout Brook; releasing brook trout into the stream; and installing a buffer along the portion of stream that runs through the school grounds. Students from Skillin and Dyer Elementary Schools have also monitored water quality and released brook trout.
- The City of South Portland fixed a leaking sewer pipe and paved under the sand-salt storage pile located on O'Neil Street. Both issues were identified during the planning process.
- Two habitat restoration grants have been implemented : one Casco Bay Estuary Partnership grant in the Trout Brook Preserve (2012) and one Royal Bank of Canada grant in Hinkley Park (2013).
- Funds from the Natural Resource Conservation Service (NRCS) supported construction of a nutrient management facility at a small farm near the Trout Brook headwaters in 2012-2013. This project resulted in numerous inquiries from other businesses regarding grant opportunities for water quality improvements in the watershed. NRCS has offered considerable evaluation and design support to *Phase II*.
- The City of South Portland is currently implementing Phase I of the Trout Brook Restoration Project. Phase I includes restoring vegetated buffers eight sites along 800 feet of stream, installing rain gardens and conservation practices at four strategic locations in the upper and middle subwatersheds, and completing targeted outreach in priority neighborhoods by an Urban Youth Conservation Corps. In its first year, the Trout Brook Restoration Project. Phase I has generated excitement within the City of South Portland and the Town of Cape Elizabeth by building momentum, visibility and community support to enhance the communities' quality of life by improving the local aquatic environment.

It is clear that all watershed stakeholders are eager to restore Trout Brook, and there is excellent momentum in place to ensure success.

## PROBLEM / NEED

Through the development of the Trout Brook Watershed Management Plan, all relevant data reports and surveys were summarized, and the watershed was broken into upper, middle, lower Trout Brook, Mill Creek and Kimball Brook subwatersheds. Each subwatershed was analyzed for percent imperviousness based on catchment areas, as well as severity of bank erosion, trash dumping (yard waste and toxics), adequacy of buffer and likeliness for implementation success.

The Trout Brook Watershed Management Plan (2012) identified five action items for restoration: (1) address existing conditions; (2) prevent further decline of water quality; (3) implement a community outreach and education program; (4) conduct a monitoring program; and, (5) establish a Trout Brook Workgroup.

Action item 1 included the following tasks: (1) **Reduce nutrient loading from upper watershed** from the golf course, farms and the intensely managed lawns at the top of the watershed and the dense residential areas in the mid-lower sections of the watershed. (Targeted outreach to residents

occurring during Phase I); (2) **Reduce chloride loading from middle watershed** (addressed, 2013); and, (3) **Improve stream habitat and address low baseflow** (partially addressed through habitat grants, Phase I activities, 2012-2013, culvert replacement will be incorporated into the City of South Portland's Capital Improvement Plan).

Two of the three tasks from Action Item 1 have either been addressed or will be addressed before 2023 (the restoration period identified in the Management Plan). The nutrient reduction task includes addressing stormwater and bank erosion at two properties along Ocean House Road: the Walnut Hill Equestrian Center (WHEC) and the Church of Jesus Christ of Latter-day Saints (LDS), identified as Stormwater Catchments M and O in the management plan. CCSWCD and the Town of Cape Elizabeth completed preliminary outreach to WHEC and LDS early in Phase I, and the property owners were very receptive to addressing stormwater, erosion, and manure storage issues on the properties. When these issues are addressed nutrient inputs to the upper Trout Brook watershed will be significantly reduced, and five of the eight highest priority sites identified in the Plan will have been addressed. *Phase II* specifically addresses:

- LDS detention basin is currently not functioning and could be rehabilitated to address nutrients, and flow could be reduced by managing roof and WHEC runoff.
- The stream bank at the edge of the LDS property is eroding due to parking lot runoff, and could be addressed with a landscaped underdrained soil filter and the bank stabilization.
- The WHEC arena gutters and downspouts are currently failing. The gutters and downspouts could be replaced and rainwater captured in cisterns for later use or controlled discharge.
- The WHEC paddocks currently sheet flow to the LDS parking lot. The adjacent gravel roadway can be regraded, and stabilized ditches could be installed in the paddocks to direct flow into a treatment area (proposed gravel wetland) along the western edge of the property.
- Currently horse manure is stored uncovered on the property. A covered manure storage facility could be constructed south of the stable/arena building.

## PURPOSE

The primary purpose of this project is to significantly reduce medium and high impact nutrient sources in the upper watershed. Approximately 35,000 square feet (0.80 acres) of roof runoff from WHEC and LDS buildings will be directed into cisterns reducing the peak discharge to the stream and reducing water temperatures by eliminating contact time with pavement. Parking lot runoff will be directed to an underdrained filter that will cool the water and delay the peak discharge time. Each of these retrofits will have the long-term impact of stabilizing stream hydrology, reducing water temperatures, and increasing DO in the stream.

Runoff from approximately 1.9 acres of paddocks will be directed to a gravel wetland which will reduce nutrient inputs to the stream during storm events. Manure from 21 horses will be moved from an open, uncontained storage pile to an enclosed covered storage facility that will eliminate stormwater contact with the manure. Each of these retrofits will have the long-term impact of stabilizing stream hydrology, reducing nutrient inputs and increasing DO in the stream. Given the existing conditions of the Trout Brook watershed, the overall project goal is to enhance the community's quality of life by improving the local aquatic environment.

## PROJECT DURATION

Project Start Date: February 1, 2014 Project Completion Date: January 31, 2016

## GENERAL PROJECT PLAN

The *Trout Brook Restoration Project, Phase II* will be administered by the Town of Cape Elizabeth. CCSWCD will be a subgrantee and serve as the Project Coordinator with extensive partner support from the Town of Cape Elizabeth. Project activities will be guided by the approved Watershed Management Plan, and the Trout Brook Workgroup will be invited to participate in the process. Key project partners include City of South Portland, Cape Elizabeth Conservation Commission (CECC), South Portland Conservation Commission (SPCC), NRCS, WHEC landowner and operator, LDS landowner, Cape Elizabeth Engineer (AMEC), the United States Environmental Protection Agency (EPA), and MDEP.

Through this project, the Town of Cape Elizabeth, NRCS, AMEC and CCSWCD will use the following approach to complete the design, construction, monitoring and outreach tasks in *Phase II*:

- **Data Collection**: Complete a field survey, review existing GIS and engineering data for the two properties and surrounding area, delineate subcatchments, complete HydroCAD™ analyses, and coordinate with NRCS for manure storage area design (**CCSWCD, AMEC**).
- **Engineering Design**: Complete engineering design drawings, specifications, and cost estimates for up to six project areas on two properties. The designs will include: two roof runoff collection and distribution systems, drainage swales, a gravel wetland, detention basin rehabilitation, a landscaped underdrained soil filter, and a manure storage facility. Develop Operation & Maintenance (O&M) Plans for each property (**CCSWCD, NRCS, AMEC**).
- **Construction**: Construct up to six projects on two properties during Summer/Fall 2014 (**CCSWCD, WHEC, CECC**).
- **BMP Performance Monitoring**: Install upstream and downstream continuous monitoring stations for stream flow/volume, DO, and temperature. Collect pre- and post-construction stormflow and baseflow samples for total phosphorus and total nitrogen to evaluate changes over time (**CCSWCD, Cape Elizabeth, South Portland**).
- **Education & Outreach**: Coordinate with the Trout Brook Workgroup, conduct extensive outreach and publicity campaign, reach out to additional agricultural groups to identify other sites that can leverage additional funds (e.g. NRCS), complete O&M training for landowners and public works employees for each system (**Cape Elizabeth, South Portland, CCSWCD**).
- **City/Town Council Updates** (**Cape Elizabeth, South Portland, CCSWCD**).

The goal of the *Trout Brook Restoration Project, Phase II* is to address nutrient loading from an identified agricultural source and propose additional stormwater best management practices (BMPs) in the upper watershed. In addition to including two showcase stormwater retrofit projects (a landscaped underdrained soil filter and a gravel wetland); the proposed project will also significantly reduce stormwater flow into the stream by managing runoff from approximately 35,000-square feet of roof on the two properties.

In managing this project, NPS Program grant funds will not be used to undertake, complete or maintain any work otherwise required by existing permits or orders. Grantee will ensure that permits required for construction are secured prior to construction, and that BMPs are constructed in an acceptable manner, before reimbursing landowners according to applicable Cost Share Agreements.

The project will be conducted within the Cape Elizabeth Urbanized Area designation. The project activities are not permit requirements under the town's Municipal Separate Storm Sewer System (MS4) General MEPDES permit effective July 1, 2013.

## TASKS, SCHEDULES & ESTIMATED COSTS

**TASK #1: Project Management** The Town of Cape Elizabeth and the MDEP will sign a contract outlining project roles, responsibilities and funding arrangements. The Town of Cape Elizabeth will complete a Letter of Agreement with CCSWCD to define roles and funding. CCSWCD will serve as project coordinator and facilitate letters of agreement with other project partners (WHEC and LDS). CCSWCD will track project progress, expenses and local match, carry out invoicing and submit semi-annual progress reports and a Final Project Report. In addition, CCSWCD will provide the pollutants controlled report to MDEP by December 31st each year for conservation practices installed that year. CCSWCD will also assist in updating Trout Brook's NPS Site Tracker with information on sites addressed through this grant project. (2/14 to 12/16)

**First year output goals:** Applicable subcontractor agreements, two progress reports and one PCR.

**COST:** 319 grant: $3,660 match: $2,960 total: $6,620

**Task #2: Data Collection** CCSWCD will complete data collection (coordinating with other project partners as necessary). Data will include existing data (GIS data, field survey, engineering reports and drawings) as well as project-specific pre-design and design information (field survey, subcatchment delineations, HydroCad, and NRCS reports and designs). (2/14 to 7/14)

**First year output goals:** Complete all data collection and summarize (to be included in design).

**COST:** 319 grant: $5,634 match: $1,360 total: $6,994

**TASK #3: Engineering Design** Six stormwater and agricultural best management practices (BMPs) will be designed to manage stormwater runoff from the WHEC and the LDS. (2/14 to 7/14) Each is presented below in subtask. See attached forms for watershed-based plan information and the NPS site list.

**Task 3A: WHEC Stable Roof Gutters, Downspouts & Cisterns**. The current stable roof gutters and downspouts located on the WHEC stable roof on dysfunctional. Runoff from the 18,000-square foot roof quickly concentrates on the gravel access road and drains through the paddock areas picking up significant amounts of nutrients. With assistance from NRCS, CCSWCD will design a new roof gutter and downspout system. The downspouts will all be tied into storage cisterns for on-site irrigation use or slow controlled discharge.

**Task 3B: WHEC Drainage Swales and Gravel Wetland**. Currently, approximately 1.9-acres of paddock and riding area discharge concentrated runoff across the LDS parking field and/or directly into Trout Brook riparian areas. With assistance from NRCS, CCSWCD will design a network of drainage swales to collect runoff from the downhill side of the paddock areas. These swales will discharge to a new gravel wetland to be designed with assistance from AMEC. The gravel wetland will provide storage capacity for the runoff and treatment to cool and remove nutrients and other pollutants.

**Task 3C: WHEC Manure Storage Facility**. Currently, WHEC stores its horse manure in an approximately 400-square foot open area subject to rain events and runoff. The manure is provided free of charge to local businesses and local residents as compost. With the assistance of NRCS, CCSWCD will design a new manure storage facility. The approximately 600-square foot facility will be equipped with a concrete slab floor, partial side walls on three sides, and a roof structure. Compost generated from the manure will still be available to local community members but will be better protected and more easily accessed.

**Task 3D: LDS Roof Gutters, Downspouts and Cisterns.** The current LDS building gutters and downspouts on the approximately 17,000-square foot roof discharge directly to the property's paved surfaces. Runoff from the roof quickly concentrates on the paved surfaces and drains across the parking area directly to the riparian buffer of the stream. The runoff generated from the site exhibits high temperatures and the excessive flow has caused some erosion at the bank of the stream. CCSWCD will design a new roof gutter and downspout system. The downspouts will all be tied into storage cisterns for on-site irrigation use or slow controlled discharge.

**Task 3E: LDS Detention Basin Rehabilitation.** Currently, there is an existing detention basin located at the western edge of the LDS back parking field. The detention basin is tied into a catch basin that exists in the low corner of the parking field completing the stormwater management system for the site. The catch basin and detention basin appear surcharged with sediment from the excessive runoff generated on the LDS's impervious surfaces and the WHEC's northern paddocks. It is expected that completion of Task 3B will greatly reduce the amount of runoff leaving WHEC. CCSWCD will develop rehabilitation plans for the LDS drainage system and detention basin and consider opportunities to retrofit the basin's outlet control structure (e.g. gravel bench inlet) to achieve better treatment levels.

**Task 3F: LDS Underdrained Soil Filter & Bank Stabilization.** Currently, there is bank erosion caused by significant amounts of concentrated stormwater draining from the northwestern corner of the LDS's northern parking field. It is expected that the work performed in Task 3D will reduce the amount of runoff flowing to this area. With the assistance of AMEC, CCSWCD will design a small underdrained, landscaped soil filter to collect, cool and treat the runoff from the parking field and adjacent areas. The portion of stream bank that is eroding will be stabilized.

**First year output goals**: Collect all data, complete predesign and design studies, and finalize construction packages for the six identified areas on WHEC and LDS properties.

**COST:** 319 grant: $16,914 match: $4,640 total: $21,554

**TASK #4: Construction** Six stormwater and agricultural BMPs will be constructed to manage stormwater runoff from the WHEC and the LDS. (8/14 to 10/14) Each is presented below in subtask.

**Task 4A: WHEC Stable Roof Gutters, Downspouts & Cisterns**. Runoff from the 18,000-square foot roof will be outfitted with a new roof gutter and downspout system. The downspouts will all be tied into storage cisterns for on-site irrigation use or slow controlled discharge. This work task will be awarded through a competitive bidding process involving at least three independent contractors capable of performing the work.

**Task 4B: WHEC Drainage Swales and Gravel Wetland**. Approximately 550-linear feet of drainage swale will be constructed to collect runoff from the downhill side of the paddock areas and discharge it to a new gravel wetland. The gravel wetland will provide storage capacity for the runoff and treatment to cool and remove nutrients and other pollutants. The wetland will be located on just north of the WHEC western riding stable. The wetland will be sized to treat the first inch of runoff from the catchment area. WHEC employees will develop the drainage swale network and construction of the gravel wetland will be awarded through a competitive bidding process involving at least three independent contractors capable of performing the work.

**Task 4C: WHEC Manure Storage Facility**. A new manure storage facility will constructed to manage the manure generated from the 21 horses stabled at the farm. An approximately 600-square foot structure equipped with a concrete slab floor, partial side walls on three sides, and a

roof structure will be constructed. Compost generated from the manure will be made available free of charge to local community members. This work task will be awarded through a competitive bidding process involving at least three independent contractors capable of performing the work.

**Task 4D: LDS Roof Gutters, Downspouts and Cisterns.** A new roof gutter and downspout system will be constructed for the approximately 17,000-square foot LDS roof. The downspouts will all be tied into storage cisterns for on-site irrigation use or slow controlled discharge. This work task will be awarded through a competitive bidding process involving at least three independent contractors capable of performing the work.

**Task 4E: LDS Detention Basin Rehabilitation.** The existing detention basin and associated drainage system (e.g. catch basin and drain line) located at the western edge of the LDS back parking field will be rehabilitated. The catch basin and drain line will be flushed and cleaned by Town personnel. LDS volunteers will follow the rehabilitation plan developed by CCSWCD and remove excessive vegetation, re-develop berms where necessary, and provide improvements to the outlet control structure as recommended.

**Task 4F: LDS Underdrained Soil Filter & Bank Stabilization.** A small underdrained, landscaped soil filter to collect, cool and treat the runoff from the parking field and adjacent areas will be constructed in the western corner of the LDS northern parking field. It is anticipated that the landscaped filter will occupy the location of four to five current parking stalls. The outlet for the filter will discharge to a new riprapped drainage installed to mitigate the erosion occurring at this location. This work task will be awarded through a competitive bidding process involving at least three independent contractors capable of performing the work.

**First year output goals:** Constructed stormwater and agricultural BMPs to control and treat stormwater from the WHEC and LDS properties prior to discharge to Trout Brook.

**COST:** 319 grant: $73,924 match: $47,574 total: $121,498

**TASK #5: Pre and Post Construction In-stream Monitoring** As outlined in the Trout Brook Watershed Plan, in-stream monitoring will be conducted to assess whether retrofits have addressed enough nutrient sources in the upper watershed to positively impact DO. In-stream monitoring will include hydrology (cross-sectional flow monitoring with stage measurement to be completed concurrent with water chemistry sampling), nutrient sampling (total phosphorus and total nitrogen) during storm and baseflow periods, and seasonal continuous DO and temperature monitoring. Monitoring stations will be installed upstream and downstream of the proposed retrofits and begin prior to construction in order to quantify pre-construction conditions. Monitoring will continue during construction and for one field season following construction. Monitoring will be completed by municipal staff and volunteers using a DEP-approved CCSWCD Quality Assurance Project Plan (QAPP) developed outside of this Phase II project and project Sampling and Analysis Plan (SAP). (2/14 to 12/15)

**First year output goals:** Project SAP, One technical memorandum summarizing Year 1 data collection.

**COST:** 319 grant: $4,420 match: $8,071 total: $12,491

**TASK #6: Education & Outreach** This task will include several components to ensure success of the overall project and that the general public and interested community groups are aware of the work being performed.

**Task 6A: Press Releases:** The Cape Elizabeth Town Planner will develop press releases to raise awareness about the project and to highlight the ongoing restoration efforts in the Trout Brook watershed. Press releases will be generated as needed with at least one press release for each structural BMP constructed as part of this project.

**Task 6B: Outreach to Agricultural Groups:** Supporting and preserving the agricultural community within Cape Elizabeth is a priority for the Town. There are three farms in the Trout Brook watershed. Outreach to these farms was identified in the Watershed Based Plan as a priority and outreach was initiated in the current *Trout Brook Restoration Project, Phase I*. The Cape Elizabeth Town Planner will continue that outreach and follow up on the concerns discussed with the farms during *Phase I*. If needed, the Town Planner will work with NRCS to provide technical assistance as requested and identify possible BMPs for future implementation on the farms within the watershed.

**Task 6C: Educational Tours & Signs:** The Cape Elizabeth Town Planner, members from the Cape Elizabeth Conservation Commission, and CCSWCD staff will host at least two educational tours of the structural BMPs constructed as part of this project. These tours will be open to the public and will be advertised in local newspapers and on the Town's website. The tours will showcase each structural BMP while explaining how they protect water quality and work toward restoring Trout Brook. The Cape Elizabeth Town Planner and Conservation Commission will develop signs for at least three of the structural BMPs constructed as part of this project. The signs will serve to educate the public and highlight the project's success. 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 319 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.

**Task 6D: Operation & Maintenance Plans:** Operation and Maintenance (O&M) plans will be developed by CCSWCD for each of the agricultural and stormwater BMPs installed on the WHEC and LDS properties. On-site field training will also be conducted by CCSWCD personnel and made available to the property owners, municipal officials and up to four public works employees.

**First year output goals:** Copies of all key press releases, outreach materials and O&M plans for the BMPs installed.

**COST:** 319 grant: $3,496 match: $8,374 total: $11,870

**Task 7 – Pollution Reduction Estimates:** Project staff will estimate NPS pollutant load reductions and resources protected under this project. During design or installation of conservation practices at NPS sites, appropriate field measurements will be recorded to prepare estimates of pollutant load reductions. Estimates will be prepared for all NPS sites, unless there is not an applicable estimation method. Results will be summarized on MDEP's "Pollutants Controlled Report" (PCR), which will be submitted to the MDEP, by December 31st of each project year. Documentation of the estimation procedures used will be kept in the Grantee project file and will be available for review. (3/14 to 12/15)

**1st Yr. Output Goal**: One PCR
**Cost:** Grant - $1,540 Local Match - $0.00 Total - $1,540

## DELIVERABLES

Three (3) copies of each deliverable will be provided to the DEP Agreement Administrator (AA). The DEP AA will forward a copy of all deliverables to EPA. Each deliverable will be labeled according to procedures described in the DEP document "Nonpoint Source Grant Administrative Guidelines."

1. Contract, sub-agreements, semi-annual progress reports and one final project report (Task 1)
2. NPS Site Tracker Summary (Task 1)
3. NPS Site Report for each of the six BMPs (Task 4)
4. Project SAP (Task 5)
5. Summary of water quality monitoring results (Task 5)
6. Copies of press releases and signs (Task 6)
7. Pollutants Controlled Reports each year until project completion (Task 7)

## INTERAGENCY COORDINATION, ROLES AND RESPONSIBILITIES:

The **Maine Department of Environmental Protection** will administer project funding, serve as the project advisor and participate on the Steering Committee.

The **US Environmental Protection Agency** will provide project funding and guidance.

The **Town of Cape Elizabeth** will serve as the project sponsor, be responsible for grant administration, subcontractors and property owner coordination, Trout Brook Workgroup participation, leading lead the education and outreach task, and assisting with monitoring. The Town has committed $22,000 in cash match and $9,290 in in-kind match to *Phase II*.

The **Cumberland County Soil & Water Conservation District** will be responsible for grant administration, serve as the Project Coordinator and will be responsible for the coordination and implementation of all project tasks. The District Engineer will manage the design contractor(s), review final design documents as necessary, coordinate with NRCS, and lead the BMP maintenance training. CCSWCD will provide $2,990 in in-kind match for project manager oversight.

The **Cape Elizabeth Conservation Commission** will provide $2,000 in cash match, participate in the Trout Brook Work Group, attend the BMP Maintenance training, and assist with volunteer planting(s) for soil filters and/or buffer restoration.

The **City of South Portland** will participate in the Work Group, BMP Maintenance training, and lead the monitoring effort. The City has committed $3,200 in in-kind match to *Phase II*.

The **Natural Resources Conservation Service** will be an active participant in *Phase II*. They will be providing technical and design assistance to CCSWCD staff, prepare an engineering report, attend technical meetings, and serve as a technical coach. CCSWCD estimates that NRCS's participation in this project will save almost $4,000 of contract (i.e., grant-funded) design labor.

The **South Portland Conservation Commission** will participate in the Work Group, participate in educational tours, attend BMP Maintenance training, and assist with monitoring and planting(s).

The **Walnut Hill Equestrian Center** will provide $7,000 in in-kind match and $10,000 in cash match, allow access to their property for gravel wetland construction, and maintain any stormwater infrastructure installed on their property under this grant.

The **Church of Jesus Christ of Latter-day Saints** will provide $1270 in in-kind match, allow access to their property for detention basin rehabilitation and stormwater retrofits, and maintain any

stormwater infrastructure installed on their property under this grant.

**AMEC Environment & Infrastructure** will perform stormwater design services under contract to the town of Cape Elizabeth and has committed $4,000 in in-kind match to *Phase II*.

## EXPECTED ENVIRONMENTAL OUTCOME:

The work completed at the WHEC and LDS properties will result in an immediate reduction in phosphorus loading to Trout Brook by an estimated 7.6 pounds of phosphorus per year (STEPL). The long-term outcome of improved DO and macroinvertebrate community recovery downstream of the restoration will likely occur outside of the project period. The long term goal is to improve Trout Brook's water quality so that it meets State water quality standards (Class B in Cape Elizabeth and Class C in South Portland and along the shared town border).

## PROJECT COORDINATOR:

Patrick Marass, Cumberland County SWCD
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(207) 892-4700; pmarass@cumberlandswcd.org

## ESTIMATED TOTAL COST, FEDERAL AND NONFEDERAL SOURCES

**A.**

| | | |
|---|---|---|
| Federal (Section 319) Funds: | $ | 109,588 |
| Nonfederal Match | $ | 72,979 |
| **Total:** | **$** | **182,567** |

| **B. Sources of Match** | **Cost** |
|---|---|
| CCSWCD Professional Development | $2,990 |
| Town of Cape Elizabeth Planner | $7,590 |
| South Portland Stormwater Coordinator | $3,200 |
| Volunteer (Workgroup, planting, invasives removal) | $2,359 |
| Citizen Scientist Volunteer | $1,560 |
| Public Works | $1,700 |
| WHEC & LDS Equipment, Operator, & Materials | $25,580 |
| Cape Elizabeth Cash Match | $22,000 |
| Cape Elizabeth Cons. Commission Cash Match | $2,000 |
| AMEC Cash match | $4,000 |
| **Total** | **$72,979** |

## BUDGET INFORMATION

**Part 1, Estimated Personnel Expenses:**

| Name/Title | Hourly Rate | Total Hours | Salary and Fringe | TOTAL |
|---|---|---|---|---|
| Town Planner | $55 | 138 | $7,590 | **$7,590** |
| Stormwater Program Coordinator | $50 | 64 | $3,200 | **$3,200** |
| Public Works Staff | $30 | 40 | $1,200 | **$1,200** |
| **Total:** | | | | **11,990** |

**Part 2, Budget Estimates By Cost Category:**

| Category | 319 Grant | Non-Federal Match | Total Cost |
|---|---|---|---|
| Salary & Fringe | $0 | $11,990 | **$11,990** |
| Subgrantee[1] | $29,714 | $2,990 | **$32,704** |
| Contractual[2] | $8,000 | $4,000 | **$12,000** |
| Donated Services-Labor | $0 | $3,919 | **$3,919** |
| Construction[3] | $67,500 | $38,080 | **$105,580** |
| Travel[4] | $364 | $0 | **$364** |
| Other[5] | $4,010 | $12,000 | **$16,010** |
| Indirect Costs | $0 | $0 | **$0** |
| **Totals** | **$109,588** | **$72,979** | **$182,567** |

[1] Subgrantee - CCSWCD: Engineer (204 hours at $91/hour = $18,564); Project Manager (145 hours at $50/hour = $7,250); Scientist (48 hours at $65/hour = $3,120); Finance Director (4 hours at $65/hour=$260); Outreach Coordinator (8 hours at $65/hour=$520).
[2] Contractual – AMEC: $8,000.
[3] Construction – Task 4A ($5,000), Task 4B ($23,500), Task 4C ($18,000), Task 4D ($4,000), Task 4E ($2,000), Task 4F ($15,000)
[4] Travel – 827 miles at $0.44/mile = $364

[5] Other – Stilling well supplies ($200) Flow meter rental ($1560), total P and N samples (40 at $50 each = $2,000), stormwater samplers ($250), donated educational signage ($500), donated equipment services & materials ($11,000), donated vac truck & crew ($500)


Trout Brook Watershed
South Portland
Cape Elizabeth
Proposed Project Area
Downstream monitoring station located below Route 77
LDS
Ocean House Road (ME Route 77)
Trout Brook
WHEC
Location of upstream monitoring station
* BMPs are NOT Drawn to Scale
Trout Brook Watershed
Restoration Project, Phase II
Proposed Project Area
Legend
Trout Brook Watershed
Trout Brook
Property Boundry
Town Boundry
Proposed BMPs
Collect Arena Roof Runoff
Swales
Gravel Wetlands
Manure Storage Facility
Collect Church Roof Runoff
Rehabbed Detention Basin
Soil Filter / Bank Stabilization
0 25 50 100 Feet
N
Data: MEGIS, CCSWCD, ME DEP
Coordinates: NAD83, UTM, 19N
Map: CCSWCD, September 2013
Cumberland County Soil & Water Conservation District