

# Long Creek Restoration Project

## EXECUTIVE SUMMARY

### Project Overview

The Long Creek Restoration Project is a collaborative, community-based initiative convened by the City of South Portland and led by a Steering Committee made up of representatives from the four Long Creek watershed municipalities (South Portland, Portland, Westbrook and Scarborough), area businesses, non-profit organizations, and state agencies. The City of South Portland obtained a grant from United States Environmental Protection Agency (EPA) and Maine Department of Environmental Protection (MEDEP) to partner with the other watershed municipalities and individual stakeholders in this effort.

A number of watershed landowners and other stakeholders have served on the Project's Steering Committee, including the Portland Regional Chamber, Fairchild Semiconductor, National Semiconductor, Marriott Sable Oaks, CB Richard Ellis/Boulos Property Management, Bramlie Development Corporation, Portland International Jetport, and the Maine Mall, among others. Participating organizations and agencies include the South Portland Land Trust, Casco Bay Estuary Partnership, Cumberland County Soil and Water Conservation District, ecomaine, the Maine Wetlands Bank, the Conservation Law Foundation, Maine Department of Transportation, Maine Turnpike Authority and MEDEP.

The Long Creek Restoration Project has been working for eighteen months to develop a coordinated watershed restoration plan that will bring the stream back into compliance with state and federal water quality standards, and to open up new recreation opportunities for local residents and visitors.

### Our Mission:

*Develop and implement a cost-effective, environmentally-responsible, and equitable plan for restoring and protecting Long Creek and its watershed.*

### Long Creek Watershed

Long Creek is a meandering stream with four primary branches. Long Creek's headwaters originate in Westbrook, from where it flows through the Maine Mall area of South Portland. Its several branches join together and flow into Clark's Pond. Clark's Pond waters then flow into the Fore River, and ultimately into Casco Bay.

The Long Creek "watershed" is the area of land from which water flows into the branches of Long Creek above Clark's Pond. The watershed encompasses 3.45 square miles, located in South Portland, Westbrook, Portland and Scarborough.



## The Problem

Years of urbanization have significantly impaired the stream's health, as well as its ability to support recreation and wildlife, such as brook trout. The cause of the stream's degradation is increasing volumes of stormwater runoff – and the various pollutants associated with it – flowing into its waters from impervious areas such as parking lots, roadways, and rooftops. As a result, Long Creek no longer complies with state and federal water quality standards and is classified as one of 31 “urban impaired” streams in Maine. State and federal law require that Long Creek be restored to meet water quality standards.

In actions independent of the Long Creek Project's planning effort, regulatory agencies have announced that watershed landowners will be required to meet new, more stringent requirements to address water quality problems. Owners of individual parcels in the watershed with one acre or more of “impervious cover” – rooftops, parking lots and road ways – will be required to meet new regulatory conditions required by MEDEP, under a preliminary order from the EPA. Stricter regulatory requirements will also affect municipalities and other public entities in the watershed. Beginning in 2009, all municipalities with land in the Long Creek watershed will be required to commit to taking significant steps to address stormwater impacts of town facilities and roads. New requirements will go into effect regardless of whether the Long Creek Restoration Project implements its collaborative plan.



## Why develop a restoration plan?

The reality of impending new regulatory requirements has significantly influenced this planning process. The Long Creek Restoration Project has focused on developing a restoration plan that provides a better approach to meeting new regulatory requirements than parcel-by-parcel regulation. The Long Creek Restoration Project believes that the watershed management plan sets out a course of action that will be more effective in restoring the stream and less costly to landowners than parcel-by-parcel regulation.



Fore River and Casco Bay. The collaborative plan can also have other important benefits, such as attracting private and federal dollars for green jobs and green infrastructure. In addition, a restored Long Creek has the potential to be a significant asset to the area, providing aesthetic, recreational and other amenities.

There are other important reasons to develop a restoration plan. Restoring Long Creek is important to the health of Clark's Pond -- once a popular place to swim and fish -- and to the ecological health of the

## Coordinated Program vs. Individual Permit Approach

Landowners with parcels in the Long Creek watershed with one acre or more of IC are expected to be required to obtain a Maine Pollutant Discharge Elimination System (MEPDES) stormwater permit (i.e., an individual or general permit) sometime in 2009, under a preliminary order by the EPA. The Watershed Management Plan creates the opportunity to ask regulatory agencies to give landowners the option of participating in a coordinated program under a general permit in lieu of obtaining an individual permit. A coordinated program will be more effective in restoring the stream and less costly for individual landowners than meeting conditions necessary for individual permits, for the following reasons:

First, stormwater flow does not follow individual property boundaries. For this reason, it is most effective and least costly to develop stormwater restoration practices for "catchments" (land areas that drain to a specific location) serving all the parcels in the catchment. This can be done through a cooperative program, but cannot be accomplished under individual permits.

Second, stormwater flow from some catchments is likely to have greater impacts on Long Creek than flow from other catchments, so that restoration of certain catchments may provide greater restoration

*A restoration plan creates the opportunity to implement a coordinated program that will be more effective in restoring the stream and less costly for individual landowners than meeting conditions necessary for individual permits, for the following reasons.*

opportunities. A restoration plan creates the opportunity to implement the most environmentally and cost-effective measures in certain catchments in a logical sequence. It also provides the opportunity to implement the most cost-effective measures within catchments first, to learn which measures work best and to then assess whether more expensive actions are needed.

Third, a coordinated program can fund stream-bank and in-stream restoration projects that are critical to restoring the stream, and may prove among the most cost-effective actions possible in Long Creek. These types of projects require extensive coordination across multiple parcels and are difficult or impossible to accomplish through individual permit requirements.

Fourth, as in medicine, prevention is more cost-effective than a cure. A coordinated program can:



1) provide a coordinated pavement sweeping and storm drain maintenance program that will be more effective and less costly than having each landowner contract for their own maintenance; 2) provide education about more environmentally benign (and less costly) landscaping that will reduce pollutants; and 3) promote changes in municipal land use regulations that minimize the creation of stormwater runoff.

Fifth, having a plan will greatly enhance the ability to obtain grants to help pay for the overall effort, which will reduce costs to municipalities and property owners over time.

## What the Plan includes:

The Project's Steering Committee has overseen the Project's work since its formation in August, 2007. The Long Creek Restoration Project hired FBE Environmental, who, working with Woodard and Curran and Field Geology Services, have undertaken extensive field work and analysis. The results of their work are set out in Sections 1 through 6 of the Watershed Management Plan. The Technical Advisory Committee guided the Technical Consultants in both the design of their study and the development of proposed actions.

Section 1 describes the purpose of the plan, the technical work, and the stakeholder involvement in developing the plan, including the roles of the Project's various committees. Section 2 describes the watershed, including its soils, geology, hydrology, population, and development. Section 3 describes applicable water quality standards, and the degree and causes of impairment (failure to meet water quality standards) in the watershed. Section 4 describes the watershed restoration goals and objectives and the reasons for evaluating various approaches to restoration.

## Key proposed restoration steps include:

- *Coordinated restoration of stream banks and stream channels in priority locations.*
- *A coordinated program of structural retrofits of stormwater systems in the watershed, prioritized by environmental and cost-effectiveness. This program builds in an iterative approach that allows for evaluation of effectiveness.*
- *Proposed revisions of municipal codes to remove barriers to effective treatment of stormwater runoff and encourage "low impact development."*
- *A coordinated and cost-effective pollution-prevention, street-sweeping, and maintenance program.*

Section 5 describes proposed steps to restore the watershed. These proposed steps were developed by the Technical Consultants with advice from the Technical Advisory Committee and have been adopted by the Project's Steering Committee. Section 5 includes discussion of the following:

Section 5.2 sets out recommendations concerning "Structural Management Opportunities in the Built Environmental." This section identifies opportunities for structural retrofits of stormwater systems in the watershed, prioritized by environmental and cost-effectiveness. The process used by the Technical Consultants to develop this list, with input from the Technical Advisory Committee, is described in this section.

The list identifies retrofit opportunities within priority MEDEP catchment areas (areas of land that drain to a single outfall) that exhibit the most potential for water quality enhancement with minimum capital investment and maximum partnership potential. While these recommended retrofit opportunities have the potential for reduction of polluted stormwater discharges to Long Creek, additional survey and engineering evaluation will be needed to determine the final water quality and quantity treatment level. Planning level cost estimates were developed for individual stormwater retrofits and cost summaries are included for each priority catchment.

The program developed to construct retrofits would employ an iterative "adaptive management approach" that allows for evaluation of effectiveness, as described in Section 6. Within priority catchment areas, structural stormwater management recommendations have been separated into three tiers to allow for an adaptive management approach.

Tier 1 addresses retrofit opportunities that have very good cost-benefit ratios, have minimal impact on existing infrastructure (e.g. parking areas, pavement, etc.) and would be most likely to provide a significant reduction in polluted stormwater discharges.

Tier 2 addresses field identified opportunities that have average cost-benefit ratios, minimize impact on existing infrastructure, and are likely to provide additional water quality benefits beyond those proposed in Tier 1.

Tier 3 addresses the remaining impervious area within each catchment that is not managed under Tier 1 and Tier 2. Tier 3 recommendations typically have lower than average cost to benefit and may require significant modifications to paved areas and other infrastructure. Tier 3 recommendations are only likely to be required if Long Creek continues to fail water quality criteria after completion of various structural, non-structural, riparian, in-stream and geomorphic enhancement projects.

Section 5.3 sets out recommendations concerning "Non-Structural Management Opportunities for the Built Environment." These include three categories of recommendations:

Land use planning recommendations for municipalities to: 1) consider code, zoning and design guideline revisions; 2) convene long-term planning committees and coordinate with other entities to integrate issues addressed in the plan with other planning efforts; and 3) refine and complete a Long Creek watershed stormwater drainage map.

Pollution prevention recommendations that address: 1) development of a pavement sweeping program; 2) materials substitution and management steps; 3) promotion of appropriate landscape practices, and 4) a facilities inspection and maintenance program.

Education and training recommendations, including: 1) consideration of a stormwater grant program for private management efforts; and 2) development of a Long Creek stewardship program.

Section 5.4 sets out recommendations concerning "Restoration Opportunities for the Aquatic Environment." While the structural and non-structural restoration practices described in Sections 5.2 and 5.3 will greatly aid in the recovery

***While structural and non-structural restoration practices will greatly aid in the recovery of the Long Creek watershed, improvements must also be made to stream-side and in-stream habitats.***

of the Long Creek watershed, improvements must also be made to riparian (stream-side) and in-stream habitats. A summary of recommended riparian habitat, in-stream habitat, geomorphology, and other restoration projects located throughout the Long Creek watershed is presented in this section. Most projects consist of multiple types of restoration work that should be completed concurrently. This grouped approach is similar to the one recommended for structural retrofits and will minimize disturbance to a given project area, allow for greater economies of scale by reducing costs, and provide more visible and substantive improvements to the watershed in comparison to a site by site approach. Because most of the development in the Long Creek watershed occurs several meters above the stream channels and forested floodplains, a unique opportunity exists to complete stream restoration projects without the risk of adjacent

Section 6 describes a specific recommendation to adopt a methodology that allows for monitoring and evaluation of effectiveness of restoration activities. The Long Creek Restoration Project Steering Committee agrees that a monitoring and evaluation component will be important to ensuring success in restoring the stream and ensuring that activities are as cost-effective as possible.

The Long Creek Restoration Project's Models and Outreach Committee developed a proposed funding and administrative structure to implement a coordinated restoration program, which is set out in Section 7 of the Plan.

## Funding the Implementation of the Plan

Section 7 sets out a proposed institutional and funding structure to implement a coordinated restoration program. The Long Creek Restoration Project proposes that implementation of the coordinated restoration program be funded primarily by public and private landowners in the watershed that choose to participate in the coordinated program as an alternative to meeting the conditions of individual permits. The Long Creek Restoration Project proposes that "start up" funds be devoted in part to seeking private and public grant dollars to help fund implementation of the coordinated program to the maximum extent possible. (See below). Total estimated cost for Plan implementation will be approximately \$14 million including implementation of all structural and nonstructural recommendations as well as the administration of the general permit including billing, legal, tracking and reporting.

The Long Creek Restoration Project envisions that many or most of the private landowners in the watershed with one or more acres of impervious cover are likely to choose to participate in the coordinated restoration program rather than obtain an individual permit. The Long Creek Restoration Project anticipates that in all or almost all cases, cost of participation in the restoration program would be significantly less than the cost of complying with conditions necessary to obtain an individual permit.

## Use of Fees

The fee for participation in the restoration plan will cover these program activities:

- Obtaining and administering grants for watershed projects
- Riparian stream and streambank restoration projects: Revegetating stream banks and fixing the stream channel along important stretches
- Constructing and maintaining structural retrofit projects on the priority list
- Implementing a coordinated monitoring program, and periodic re-evaluation of priorities in light of data
- Running incentive programs and providing education to landowners seeking to reduce their impact on water quality
- Providing a coordinated maintenance and "good-housekeeping" program (street sweeping, pollution prevention, drain maintenance, reporting to meet permit requirements), taking advantage of economies of scale

The total cost of implementing the restoration plan will be determined based on the cost of providing these services. Priority riparian projects and structural retrofits will be constructed

based on cost-effectiveness. Priority lists of these projects will be reviewed periodically in light of information from the monitoring and evaluation program.

## What does this mean for Private Landowners and Municipalities?

If a private landowner chooses to participate in the coordinated program, the landowner's fee would be determined based on the area of impervious cover on the property. Landowners would receive credit for effective treatment systems in place at the time the landowner opts into implementation of the Restoration Program, or for treatments systems the landowner adds after opting in. This will provide an incentive for landowners to take cost-effective actions to address stormwater runoff on their property.

Public sector entities, including municipalities, MaineDOT and the Maine Turnpike Authority, are also expected to require permit coverage under a stormwater discharge designation for the Long Creek watershed, and may also choose to participate in the implementation of this plan. The contribution of each would be determined based on the area of impervious cover owned. (For a municipality, this would include town roadways, maintenance facilities, municipal buildings and associated parking areas.) If they choose to meet their permit requirements by participating in the Restoration Program, Maine DOT and the Maine Turnpike Authority would implement retrofit opportunities they have identified to address the priority stormwater source areas for which they are responsible, or would contribute in a manner equivalent to private landowners, based on their areas of impervious cover. To the extent public sector entities have road construction and maintenance resources and engineering and technical expertise, they would be allowed to contribute an equivalent level of services and/or expertise toward implementation of the plan in lieu of cash contributions.

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Both public and private landowners would receive credit if they undertake maintenance, good-housekeeping, and reporting that would otherwise be performed by the restoration program. This would be especially important to municipalities and other entities that have their own maintenance, inspection, and reporting systems in place, but is an option that would be available to all program participants.

## Administering the Restoration Plan

After reviewing a range of possible administrative models, the Long Creek Restoration Project recommends an interlocal agreement between participating municipalities, which would contract with the Cumberland County Soil and Water Conservation District (CCSWCD) to administer the implementation of the coordinated Restoration Program under the direction of a governing board made up of representatives of municipalities, private landowners, concerned non-profits and state agencies.

The Long Creek Restoration Project recognizes a number of advantages to this approach. Primarily, relying on an existing regional entity to administer the program will be less costly and

more efficient. It has been determined that the CCSWCD is well suited to implement this coordinated Restoration Program.

CCSWCD is an entity of the State established to promote stewardship and conservation of soil and water resources in the Cumberland County area. Under its enabling legislation, it has the authority to serve as an agent for a discharge permit; to secure low interest State Revolving Fund loans; and partner with municipalities, state agencies, private landowners, and non-profits. CCSWCD has extensive experience coordinating across municipal boundaries and with multiple municipalities and MEDEP on water quality issues; applying for and administering grants; and experience providing education and technical services to public and private entities.

CCSWCD will work with the four watershed municipalities to draft an interlocal agreement to establish a quasi-municipal entity, hereafter referred to as the Long Creek Watershed Management District (LCWMD). The organization of the LCWMD under the Maine interlocal agreement statute would permit creation of a governmental entity that would be overseen by a governing board. The interlocal agreement statute would limit the personal liability of governing board members under the Maine Tort Claims Act so that they would have the same protections as any other Maine public officials, which will be important to obtaining participation of governing board members. In order to ensure adequate representation of public and private landowners, the interlocal agreement will set out the composition of the governing board, which will require that specific numbers of private landowners be appointed. Appointments to the governing board will be by the City or Town Councils.

Individual landowners would agree to participate in the Long Creek Watershed Management Plan by entering into agreements with the new District. When landowners constituting a specific percentage (set by the new LCWMD governing body) of impervious surface have signed agreements, the new District then would become effective, entering into construction, maintenance and monitoring contracts and beginning the implementation of the management plan for the five-year permit. If MaineDOT and MTA choose to participate in the Restoration Program, they could be part of the interlocal agreement with the municipalities or opt to be members like the private landowners.

## Next Steps

Some "program start up" work will be required. The program start up period will provide the opportunity to address essential program details such as the cost of participation; how landowners can opt into and out of the program; level and predictability of fees; assurance that contribution through participation will be valued; and how to include provisions to ensure cost effectiveness for landowners who want to redevelop their property and stay in the program.

This work will precede the date when private landowners are asked to make a decision on whether they wish to meet their permit obligations by participating in the restoration program, or by obtaining an individual permit. A primary task of "program start-up" will be to meet with landowners to determine whether they are potentially interested in participating in the restoration plan, and to determine which participating landowners will receive credits. The outreach to landowners will also include gathering input to determine other questions that will need to be addressed in order for landowners to participate.