

APPENDIX D

Summary of Grant Projects Funded by the Casco Bay Estuary Project

MUNICIPAL GRANTS

Town of Brunswick - Coastal Protection Zone Homeowner's Manual

In 1991, the Town of Brunswick adopted a progressive Coastal Protection Zone Ordinance to protect marine resources and reduce nitrogen loading into two of the town's embayments, Maquoit and Middle bays, which have extensive soft-shell clam resources threatened by residential and agricultural development. The Bays Committee, an active citizen's group, developed a homeowner's handbook to educate the more than 600 residents living in the Coastal Protection Zone. The handbook, *Why the Grass is Always Greener Over the Septic Tank and Other Facts of Life*, was drafted and illustrated by the Committee to explain provisions of the new ordinance and their environmental rationale. It also provides suggestions for how homeowners can reduce pollutant and nutrient-loading into the bays. The handbook was mailed to each property owner within the new Coastal Protection Zone.

Casco Bay Estuary Project Grant: \$4,500

Local Contribution: \$5,190 of Committee and staff time

Town of Cape Elizabeth - Greenbelt Interpretative Signs

The project developed another link of the town-wide greenbelt system by building a half-mile pedestrian trail around a portion of Great Pond and an associated high-value wetland, with interpretative signage explaining wetland ecology and native wildlife. The trail helps residents learn about the value of wetlands and experience the benefits of their protection firsthand.

Casco Bay Estuary Project Grant: \$1,500

Local Contribution: \$1,764 cash; \$4,911 donated expertise

Town of Cape Elizabeth - Town Center Stormwater Management Plan Project

The Cape Elizabeth Town Center Planning Committee had identified the need to develop and implement a stormwater management plan for the 200-acre Town Center. The Town Center is a compact developed area with a typical mix of urban uses: school complex, shopping center, residential development, business district, and municipal facilities. The goal of the plan is to improve the quality of the stormwater flowing from the area despite the site constraints that limit the use of natural treatment systems (*e.g.*, wet ponds and vegetative buffers).

The stormwater management plan proposes a multi-pronged approach:

(1) increased use of municipal best management practices such as regular street sweeping, catch-basin cleaning, and public education on proper use of fertilizers, pesticides, and hazardous materials; (2) infrastructure improvements to alleviate capacity limitations; (3) reduction in erosion potential; and (4) development of a mechanical treatment system to remove oils and sediments as pre-discharge treatment.

Casco Bay Estuary Project Grant: \$12,000

Local Contribution: \$4,238

Town of Cumberland - Shellfish Resource Survey and Water Quality Monitoring

Cumberland has only recreational clamming, but many clam flats that have been polluted or depleted now have healthy populations that could support a viable commercial fishery. Due to state budget cuts, the water quality monitoring program necessary to maintain or reopen commercial clam flats has fallen to the town. With this grant, the town established a shellfish management program staffed by trained volunteers who conduct shellfish resource and shoreline pollution source surveys. As a direct result of their work, the Maine Department of Marine Resources has reopened for harvesting two productive flats that were closed for many years.

Casco Bay Estuary Project Grant: \$1,372

Local Contribution: \$960 (Town staff plus uncounted hours of volunteer time to conduct sampling and survey work)

Town of Durham - Runaround Pond Study

The Conservation Commission was concerned about phosphorus-loading and algal blooms in Runaround Pond, which was created by a dam built in the 1800s to provide power to a gristmill. The dam now shows signs of failure that could drain the pond and threaten the survival of its aquatic habitats. A study was conducted to assess engineering of the dam, collect stream baseline flow and water quality data, conduct biological surveys, inventory recreational and scenic values, and recommend zoning changes to protect the resource. The study

process and results provided an excellent opportunity for public education (using a video and other means) on the value and benefits of the pond area. While zoning changes have not yet been enacted, residents did support establishment of a pond watershed "protection area."

Casco Bay Estuary Project Grant: \$3,750

Local Contribution: \$1,251 in cash and town staff time. In addition, the Conservation Commission and others contributed time and equipment to develop a videotape about Runaround Pond.

Town of Falmouth - Watershed Management Plan

The project produced a practical, educational guide to watershed planning for town residents using local examples of poor watershed planning that resulted in costly damages for property owners and the town. The guide recommends improvements in watershed management that property owners can make and provides an overview of the regulatory process. The guide's unique approach of using local examples to highlight watershed problems won the project two publication awards from the Maine Association of Planners and the Northern New England Chapter of the American Planning Association.

Casco Bay Estuary Project Grant: \$10,000

Local Contribution: \$3,334

Town of Falmouth - Stormwater Management Plan

The Stormwater Management Plan represents the next phase in the town's effort to raise public awareness about watershed issues and the impacts of development. The plan introduces residents to stormwater management planning; analyzes town watersheds (identifying major pollution threats from stormwater in each); and recommends actions to reduce or prevent impacts in each watershed.

Casco Bay Estuary Project Grant: \$6,500

Local Contribution: \$3,500

Town of Freeport - Pollution Source Identification Study

More than 70 percent of the town's clam flats were either permanently or conditionally closed because of pollution. Limited water quality sampling indicated that malfunctioning individual septic systems might be contributing bacteria to the streams and drainageways that feed into the Harraseeket River and Casco Bay. The sampling program targeted the watersheds of two closed clam-flat areas and sampled more than 41 sites for suspected pollution, including coliform bacteria, nitrogen, and, in some cases, hydrocarbons. Pollution sources were identified and eliminated in all but three cases, helping to ensure that the newly opened clam flat remains available for harvesting.

Casco Bay Estuary Project Grant: \$5,481

Local Contribution: \$1,850

Town of Harpswell - Shellfish Resource Assessment in Doughty and Stover Coves

This project presents a model two-step evaluation process that can be used by other Maine communities to maximize the economic benefits of their soft-shell clam resources. The Town of Harpswell selected Stover Cove and Doughty Cove to target for possible remedial action as both areas had been closed to harvesting because of suspected or identified bacterial contamination sources. To determine if such remediation was going to be cost-effective, the town conducted a shellfish resource survey to determine the economic value of in-flat shellfish and a pollution source survey to determine the likely cost of eliminating existing or potential sources of bacterial contamination. Stover Cove turned out to have resources of limited value and significant bacterial pollution that could not be traced to identifiable sources. Doughty Cove, however, contained abundant resources and two readily removable sources of potential pollution: an overboard discharge unit and an outhouse. After these were addressed and the area reopened in 1994, commercial harvesters were making as much as \$1,000 per day during the initial week of harvesting.

Casco Bay Estuary Project Grant: \$3,893

Local Contribution: \$1,500

Town of Harpswell - Shellfish Protection Program

The Town of Harpswell currently licenses 67 commercial clam diggers to harvest on the town's flats. To protect these economically valuable flats from pollution, the town is now developing a Shellfish Protection Plan. The plan will recommend strategies for preventing pollution, particularly from upland land use activities. Its recommendations will be incorporated into public educational materials distributed to property owners near clam flats. The plan will also determine incompatible land uses that the town may consider prohibiting from the watersheds of important flats.

Casco Bay Estuary Project Grant: \$2,912

Local Contribution: \$967

Town of Naples - Crooked River Aquifer Protection Study

The Village of Naples sits directly atop a very productive sand and gravel aquifer, a cause of concern to townspeople as they plan for future development. The project used volunteers to conduct a house-to-house survey of residents to determine current land use patterns in the aquifer area. While zoning recommendations for increased protection have not yet been enacted, the study has educated residents about the vulnerability of this resource.

Casco Bay Estuary Project Grant: \$8,337

Local Contribution: \$4,052

Cities of Portland and Westbrook - Capisic Brook Watershed Public Education/Outreach Project

As part of its combined sewer overflow abatement efforts, the City of Portland completed the Capisic Brook Watershed Study (which outlines a plan to eliminate the active combined sewer overflows and reclaim the brook as a public recreational resource). To increase public awareness about water quality problems in the brook's watershed (which includes 188 acres in two urban cities) and to instill a sense of ownership among the brook's abutting residents, the project organized three programs to acquaint citizens with volunteer water quality monitoring. The program used 20 students to collect and analyze water samples from six sites along Capisic Brook and Capisic Pond. The Capisic Brook Cleanup Day teamed public works crews with citizen volunteers to remove more than 10 tons of litter and debris from a 1-mile stretch of the brook. The Streambank Erosion/Sedimentation Survey inventoried the brook's banks for eroded sites and reported problems and recommendations to incorporate into the Capisic Brook Watershed Study.

Casco Bay Estuary Project Grant: \$10,000

Local Contribution: \$3,333

City of South Portland - Clark's Pond Stormwater Treatment Efficiency

The City of South Portland wanted to evaluate the effectiveness of Clark's Pond for stormwater treatment. The 16-acre pond receives drainage from a 4,500-acre watershed that includes the largest concentration of shopping malls in Maine. One storm event was sampled and analyzed for suspended solids, oil and grease, several metals, and fecal coliform bacteria. Results show that the pond is providing limited stormwater treatment by serving as a sediment trap for contaminated sediments flowing into the pond, which remain as the flow continues on to Casco Bay.

Casco Bay Estuary Project Grant: \$6,616

Local Contribution: \$2,055

Town of West Bath - Overboard Discharge Removal Program Project

Productive shellfish flats in West Bath have been closed to harvesting for years because of nearby overboard discharge sewage treatment systems (by law, the flats in the vicinity of overboard discharge systems must be closed to harvesting). While the West Bath Shellfish Committee wanted to seek state funds to remove overboard discharge sewage treatment systems that impact three shellfish areas, the town had no staff to administer the \$100,000 state grant. The Casco Bay Estuary Project grant enabled the town to hire an individual who had successfully administered an overboard discharge systems removal program in a neighboring town. Seventeen overboard discharge sewage treatment systems in four neighborhoods were tar-

geted for removal, with alternative inground systems designed for 15 homes. The town hopes that additional systems may be installed in the future once interpretation of the state's new plumbing code regulations has been clarified.

Casco Bay Estuary Project Grant: \$2,687

Local Contribution: \$900

Cumberland County Soil and Water Conservation District - Erosion and Sedimentation Control: On-site Workshop for Local Boards

Stormwater runoff is the fastest growing source of pollution in the Casco Bay watershed. The region's development boom of the past 20 years has added 37,000 new housing units along with the supporting network of roads, parking lots, and commercial facilities to the lower watershed alone. Controlling erosion during the construction phase of new development could significantly reduce the sediment load entering surface water bodies. To educate local planning boards and code enforcement officers about best management practices for erosion and sedimentation control, this workshop combined a session in which participants conducted a mock review of plans for a nearby development project, followed by a field trip to conduct an on-site inspection of the same development under construction.

Casco Bay Estuary Project Grant: \$3,444

Local Contribution: \$1,243

Town of Windham - Best Management Practices Workshop Series

The Town of Windham's Water Resources Commission identified a need for training on best management practices among municipal staff and boards (as well as for land use practitioners such as engineers, developers, and site evaluators in the private sector). The town sponsored two seminars (each offered twice): "Stormwater and Phosphorus Control" and "Erosion Control." Speakers described the manuals for best management practices developed by the Maine Department of Environmental Protection, and led a case study demonstrating appropriate steps for site evaluation and best management practice selection. Windham's workshops provided the first introduction on best management practices for private-sector participants as state-sponsored best management practice training efforts have focused on municipalities.

Casco Bay Estuary Project Grant: \$7,878

Local Contribution: \$4,014

Town of Brunswick - Ground and Surface Water Protection Project

In 1988, Maquoit Bay in eastern Casco Bay experienced a catastrophic algal bloom that killed off all the bottom-dwelling animals, including a valuable soft-shell clam population. Since then, the Town of Brunswick has adopted a Coastal Protection Zone Ordinance aimed at reducing potential pollution sources (including numerous small residential lots with on-site septic systems

close to the water). The town used this grant to inventory the status of septic systems on the 542 developed lots of the Coastal Protection Zone Ordinance; conduct on-site surveys of 21 systems; prepare septic-system management alternatives to improve inspection and maintenance of systems; and identify funding options for upgrading and replacing systems.

Casco Bay Estuary Project Grant: \$34,000

Local Contribution: \$11,333

PUBLIC OUTREACH MINI-GRANTS

Highland Lake Association - Volunteer Water Quality Monitoring Program

The Highland Lake Association established a water quality monitoring program to track clarity and dissolved oxygen in the lake through twice-monthly samplings. The association purchased equipment and supplies and developed a quality assurance plan to begin its sampling program. An effort is underway to educate residents, beginning with a survey of residents to determine what they know about the impact of typical homeowner activities on lake water quality. Following the survey, informational materials related to lake water quality protection were distributed to residents.

Casco Bay Estuary Project Grant: \$1,750

Grantee's Contribution: \$750

Forest Lake Association - Educational Workshops for Lakefront Property Owners

The Forest Lake Association sponsored three workshops for lake area residents: "Camp Road Maintenance and Improvement to Control Runoff and Erosion," "Shoreland and Waterway Buffer Planting for Erosion Control," and "Septic Basics and Maintenance."

Casco Bay Estuary Project Grant: \$600

Grantee's Contribution: \$200

Portland Harbor Marine Debris Council - Marine Debris Public Education Campaign

To educate fishermen, recreational boaters, and the public about the problem of marine debris, a sign with the message "Stow It, Don't Throw It! Stop Ocean Pollution" was designed and printed. Fifteen signs were distributed to Portland waterfront business operators and installed by the Maine Conservation Corps on each pier in the Portland Harbor area. In addition, 200 polypropylene refuse collection bags with the imprinted message: "Stop Ocean Pollution, Bring Trash Back To Port" were designed, produced, and distributed to fishermen, marinas, and recreational boaters around Casco Bay.

Casco Bay Estuary Project Grant: \$2,000

Grantee's Contribution: \$10,332

Maine Audubon Society - Estuary Interpretative Signs

The Maine Audubon Society designed and installed two interpretative signs at its Gilsland Farm facility highlighting the significance of the Presumpscot River estuary and the diversity of species inhabiting Casco Bay.

Casco Bay Estuary Project Grant: \$3,000

Grantee's Contribution: \$1,639

Eco-Links - Waste Oil Education and Recycling Project

To educate recreational boaters about proper disposal methods for solid waste, waste oil, and human waste, educational materials (*i.e.*, brochures, posters, and signs) were prepared and distributed to marinas, boatyards, yacht clubs, and other marine businesses in the Brunswick area. The project also started a recycling program for waste oil from marine users, placing oil collection storage tanks and recycling containers in Brunswick and Portland.

Casco Bay Estuary Project Grant: \$2,550

Grantee's Contribution: \$1,000

Cumberland County Soil and Water Conservation District - Best Management Practices "Slide Rule"

This project created a field tool for those using erosion and sedimentation control best management practices. Designed for contractors, local code officers, and others working at construction sites, the "BMP Slide Rule" provides dimensional and application rate guidelines for a variety of best management practices.

Casco Bay Estuary Project Grant: \$3,000

Grantee's Contribution: \$5,512

Maine Coast Heritage Trust - Open Space Conference

Grant funds were used to plan and produce a day-long statewide conference on "Trails, Greenways, and Open Space," which drew more than 200 land trust members and other citizens interested in land conservation. Sessions covered topics such as conducting an open space inventory; planning, designing, and operating multi-use trails; and overcoming landowner and land trust concerns about liability and public access. Since then, local land trusts have raised more than \$2 million toward land conservation efforts.

Casco Bay Estuary Project Grant: \$2,000

Grantee's Contribution: \$4,640

Presumpscot River Watch - Volunteer Water Quality Monitoring Program

Presumpscot River Watch, an active volunteer group that is monitoring water quality in the river and its tributaries at more than 30 locations, used this grant to purchase equipment and supplies, produce a training video (and an accompanying packet of training materials for new volunteers), and have an intern to facilitate school and summer monitoring programs.

Casco Bay Estuary Project Grant: \$3,000

Grantee's Contribution: \$1,000

Portland Trails - Educational Materials Development

To encourage public participation in creating and maintaining a 30-mile recreational trail system in the most urbanized section of Casco Bay's watershed, Portland Trails developed a promotional slide show and brochure. This effort increased the visibility of Portland Trails and attracted more than 400 new members.

Casco Bay Estuary Project Grant: \$3,000

Grantee's Contribution: \$1,515

Friends of Casco Bay - Casco Bay Bibliography

A bibliography of written materials on Casco Bay was created to lead interested readers to the wealth of available information related to Casco Bay. *The Bibliography for Casco Bay* is a comprehensive list of references on all aspects of Casco Bay, copies of which are in area libraries.

Casco Bay Estuary Project Grant: \$1,400

Grantee's Contribution: \$466

Harpswell Conservation Commission - Educational Video and Poster

The Harpswell Conservation Commission created a water quality video for presentation on cable television to increase local awareness of activities that affect water quality. The video, which featured local residents discussing local problems (to increase interest and credibility), focuses on groundwater and coastal water quality issues. To accompany the video, the Commission created a poster describing actions individuals can take to protect and improve water quality. The project won a 1995 Planning Project Award from the Maine Association of Planners and is in the running for the Best Planning Project award from the Northern New England Chapter of the American Planning Association.

Casco Bay Estuary Project Grant: \$720

Grantee's Contribution: \$360

Portland Water District - Educational Computer Program About Septic System Maintenance

A Windham high school student, with technical assistance from the Portland Water District, rewrote Purdue University's interactive septic system program using the State of Maine's subsurface wastewater disposal rules as a guide. The easy-to-use program was distributed to towns throughout the watershed.

Casco Bay Estuary Project Grant: \$675

Grantee's Contribution: \$300

Maine Island Trail Association - Educational Signs for Casco Bay Islands

The Maine Island Trail Association created 42 signs explaining low-impact use techniques for six Casco Bay islands. It also designed and printed 5,000 brochures entitled "Fragile Lands: A Guide to Low-Impact Techniques for Use of Maine Islands" for distribution to islands, schools, and members of the public.

Casco Bay Estuary Project Grant: \$1,998

Grantee's Contribution: \$750

Maine Coast Heritage Trust - Open Space Map for Casco Bay

The Casco Bay Open Space Project mapped the existing protected open space in 12 municipalities surrounding Casco Bay. The resulting map visually demonstrates the interconnectedness of these "greenways" and highlights the benefits of regional planning for open space preservation. An accompanying manual, "How to Conduct an Open Space Inventory," has been distributed to land trusts, municipal conservation commissions, and communities within the Casco Bay watershed. Workshops have been held to train citizen volunteers on how to use the map and manual in local preservation efforts.

Casco Bay Estuary Project Grant: \$2,225

Grantee's Contribution: \$935