

On the Ground Changes



With Spotlights on Georgia NEMO and Connecticut NEMO

Changes in procedures, plans and regulations result in on-the-ground changes to the way a community alters (or does not alter) its landscape. As noted in the beginning of this report, NEMO's emphasis on natural resource based planning gives rise to a wide range of local actions covering both the conservation and development sides of community growth. On the ground, these can range from permanent protection of open space to more environmentally sustainable development design.



RI NEMO helped convince the University of Rhode Island to install two porous pavement parking lots.

► **Kingston, Rhode Island:** When a new parking area was proposed at the University of Rhode Island's (URI) Kingston campus, the RI NEMO Program, which is based at URI, provided not only assessment results that demonstrated the need to control impervious cover and runoff but also information on pervious options. University planners chose to construct two parking lots (accommodating up to 1000 vehicles)

with **porous pavement**. The choice to use an alternative pavement was motivated by the location of the lots within the Pawcatuck sole source aquifer, within the town of South Kingstown's groundwater protection overlay district and within the wellhead protection area (WHPA) for the University's wells.

► **California:** The California Coastal Commission, which coordinates the CA NEMO Partnership, required a large residential/commercial subdivision in the City of Oxnard to **minimize impervious surfaces**, direct all rooftop runoff to vegetated areas and install best practices to **treat polluted runoff**

before discharge to the adjacent harbor. Also, a recent golf course project in the City of Malibu implemented a **water reuse/recycle system** and the use of **biofiltration swales** onsite to eliminate dry weather runoff from the site and reduce the pollutants in stormwater runoff. In addition, the El Dorado County Resource Conservation District, another CA NEMO partner, recently completed a gully repair project where they prescribed **rain barrels and bio-infiltration devices** for runoff control.

► **Little Falls, Minnesota:** When a new business park was proposed in Little Falls, MN, the Northland NEMO Program worked with the city to ensure impacts on natural resource protection were mitigated. As a result, the project went from curb and gutter, pipes and ponds to **vegetated swales, rain gardens and bioretention**. Thanks to these on-the-ground changes, the site was able to capture a 100 year storm and saved the City over \$200,000.

► **Kandiyohi County, Minnesota:** Following several Northland NEMO workshops, the county worked with the Minnesota Department of Transportation to significantly modify the construction of a major

highway project, establishing more **stormwater treatment ponds** as well as substantial increases in spending on erosion and sediment control.

▶ **Watertown, Connecticut:** Working with CT NEMO, Watertown has built two **major subdivisions** using “**low impact development**” (LID) techniques such as narrow roads, grass swales and pervious driveways. The Town of Old Saybrook has also built an LID subdivision (*see photo, opposite page*).

▶ **Nottingham, New Hampshire:** The New Hampshire NEMO effort, NROC, provided educational and technical support to the Town of Nottingham over a one year period. The town has since collaborated with the neighboring Town of Deerfield and a local land trust to complete a **conservation easement on an 89 acre parcel** of prime wildlife habitat that the towns share.

▶ **Chico Creek, Washington:** The WA NEMO Program worked with Kitsap County to develop a citizen-driven, watershed-based planning process for the Chico Creek Watershed. Through the effort the community identified valuable wildlife

corridors and areas worthy of protection from development. When a local timber company put two parcels of land within those areas on the auction block, Kitsap County was able to identify the more valuable parcel, in terms of wildlife corridor, salmon habitat protection and continuity with other protected lands, and to **mobilize over 1 million dollars within a month to purchase the land.**



WA NEMO helped Kitsap County identify key salmon habitat and wildlife corridors. (Photo courtesy of Paul Nelson.)

▶ **Harris County, Texas:** The TX NEMO Program is working with the Harris County Flood Control District on a major **stormwater wetland project** that incorporates both tidal and nontidal wetlands. The project is the result of a collaboration between the Texas Master Naturalists (a volunteer organization of Texas Sea Grant, Texas Cooperative Extension and Texas Parks and Wildlife Department) and local high school students from predominantly minority inner-city schools near the stormwater wetland.

▶ **Erie County, Pennsylvania:** The PA NEMO Program worked with the County of Erie, the Lake Erie Region Conservancy, the Pennsylvania Department of Conservation and Natural Resources,



Erie County, Pennsylvania and its partners purchased the development rights of a 39 acre tract of waterfront for conservation.

and local landowners to **preserve a 39 acre tract of Lake Erie waterfront** through the purchase of development rights from the current landowners. The property is highlighted by a two-tiered bluff system and provides critical habitat for flora and fauna.

▶ **Alexander City, Alabama:** The AL NEMO Program has partnered with Alexander City, the Alabama Cooperative Extension Program–Tallapoosa County, the Auburn University Landscape Architecture (AULA) Department and the Middle Tallapoosa Clean Water Partnership to install **four rain garden demonstration projects** throughout the city. The demonstrations are part of an overall effort to protect Lake Martin from stormwater runoff. In addition, Auburn University is getting its own house in order, implementing a **stream restoration project** using natural channel design and installing pervious concrete on campus.

▶ **Glocester, Rhode Island:** In partnership with the University of Rhode Island’s (URI) Onsite Wastewater Training Center, RI NEMO worked with the Town of Glocester on the Chepachet Village Decentralized



RI NEMO helped Glocester develop a plan for wastewater treatment.

Wastewater Demonstration Project. Chepacet is a densely developed, historic mill village that was facing failing septic and stormwater drainage problems along the Chepacet River. RI NEMO helped the town implement **alternative onsite wastewater technologies** and developed a conceptual plan for village wastewater treatment using GIS mapping.

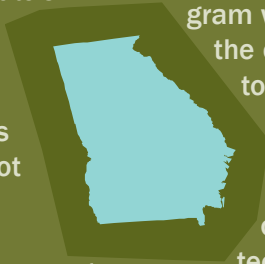
Spotlight on Georgia

Helping Coastal Communities Protect Open Space

The University of Georgia Sea Grant Program launched a NEMO effort in 2000 focused on the state's rapidly developing coastal communities.

After participating in the National NEMO Network's Open Space Planning Boot Camp (page 30), Coastal Georgia NEMO added an open space planning component to their educational program.

The program presented open space planning materials at several regional and statewide conferences, such as the Georgia Planning Association, the Alliance for Quality Growth, the Georgia Quality Growth Partnership, the Association of Natural Resource Extension Professionals and the Coastal Georgia Advisory Council. Two coastal counties received targeted assistance in open space planning,



with tremendous results.

In Bryan County, the GA NEMO program worked in collaboration with the county greenspace planner to present an open space workshop to the Board of Commissioners. The presentation included definitions of open space, options for protection and how to conduct a resource inventory. The County then conducted a resource inventory that was incorporated into the county's application to the Georgia Community Greenspace Program, from which it received \$200,000 in funding to purchase property or easements for permanent protection.

The County formed a citizen advisory group to help identify land protection priorities and incorporate them into the County's Open Space Plan. Areas identified for protection included farmland, river banks, parks, buffer zones, freshwater (isolated) wetlands and areas within the 100-year floodplain. The County set a goal to permanently protect 20,734 acres of land.

The GA NEMO program also partnered with the St. Simons Land Trust to hold a workshop on conservation easements for community

planners, local governments, assessors, appraisers and others in Glynn County. The county set land protection priorities and developed an open space decision matrix to help guide the focus on priority parcels. County funds were used to purchase several properties for open space protection, including 65 acres along the Altamaha River and 13 acres on St. Simons Island. The County is also working with the St. Simons Land Trust to permanently preserve county park lands and sub-division open space set-asides.



Bryan County, Georgia formed a citizen advisory group to help identify land protection priorities and incorporate them into the County's Open Space Plan.

Contact Georgia NEMO

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Spotlight on Connecticut

A National Demonstration Project for Low Impact Development

Soon after receiving NEMO training, the Town of Waterford volunteered to work with the EPA and CT DEP on a novel stormwater research project. The proposal was to build the first research site that would focus exclusively on suburban development. This research project, termed the Jordan Cove Urban Watershed National Monitoring Project, focused on a unique public/private partnership to incorporate and monitor the effectiveness of a variety of stormwater best management practices (BMPs) in the Glen Brook Green Subdivision.

The 18-acre subdivision consists of two parts. The traditional section uses a standard lot layout, 24 ft asphalt roads with curb and gutter drainage collection and turf landscaping. The second section uses a variety of low impact design techniques, such as a



clustering of lots, community open space, a 20 ft wide concrete-paver road with a grassed-swale drainage system, a cul-de-sac with a vegetated center island for the retention and infiltration of runoff and shared driveways with a variety of pervious pavements. The study was constructed so stormwater runoff from the site could be monitored during all phases of construction and for several years after completion.

Although the results from the Jordan Cove study are still coming in, current monitoring data are extremely favorable. The low impact section of the development has shown less than half the stormwater runoff volume as compared to the traditional development. In fact, early results show that during storm events the low impact sites seem to be mimicking the natural hydrology of the area. This reduction

in runoff means fewer pollutants getting to the nearby stream and less impact from increased volume of water coming off development.

In 2006, the NEMO Team will be creating a multimedia CD and website devoted to “telling the story” of this unique project.



Individual homes at Jordan Cove have pervious driveway materials, rain gardens handling roof runoff and “no mow” zones in the back yards featuring native vegetation.



Sunken, vegetated cul-de-sac center accepts and treats runoff.

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