

Changes in Research & Information Gathering

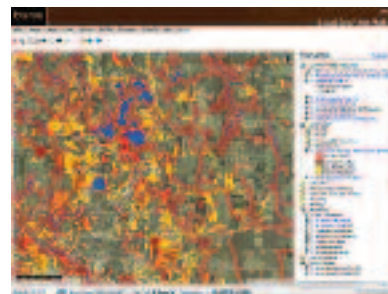
Land use decisions are only as good as the information upon which they are based. Accurate, comprehensive and easily accessible information is critical to effective community planning. NEMO programs are helping communities gather and analyze land use information, whether it's conducting a simple community resource inventory or visualizing future build-out scenarios using sophisticated GIS tools.

► **Arizona:** Watershed groups and communities throughout Arizona are accessing the **geospatial data** AZ NEMO provides on their website to facilitate land use planning. For example, the Upper Gila Watershed Partnership (Safford, Arizona) utilized the data on the AZ NEMO website to support their ultimately successful grant application to the Arizona Water Protection Fund to remove a river levee and restore the Gila River to natural flow conditions.

► **Colorado:** AWARE Colorado (the CO NEMO effort) workshop surveys demonstrate the program is having an impact in the state. Ninety-three percent of participants indicate that the presentations **increased their knowledge** about strategies communities can employ to prevent negative water quality impacts due to land use. In addition, the majority of respondents indicated they were very likely to consider the information presented about water quality impacts when making land use and/or community planning decisions.

► **Connecticut:** The CT NEMO **Community Resource Inventory Online** (CRI) has made geographic information systems information and maps available to every town in the state. CT NEMO staff have conducted several workshops across the state introducing the website and have put together a newsletter and mailed it to every town commission. On average, 660 individuals access CRI maps on the site each month.

► **Connecticut:** CT NEMO has **three interwoven stormwater tools online**. The Planning for Stormwater site directs people to general low impact development (LID) information and links them to specific sections of the state stormwater quality manual. The LID Inventory site interactively takes users to LID emplacements around the state, and the LID Regulations site allows them to read the complete text of local LID regulations in Connecticut towns. Together, these sites are visited about 650 times per month.



A sample screen capture of Planning with POWER's new online tool, Local Community Decision Maker. The image depicts land cover change between 1992 - 2003.

► **Indiana:** Planning with POWER (the IN NEMO effort) has developed a **web-based Local Decision Maker GIS Tool** that is helping communities understand the resources they have and to integrate those resources into land use plans and decisions.

► **Kansas:** The KS NEMO Program provided support for other groups to make presentations to city and county officials on **identifying native forests and prairies** in Douglas County, as well as identifying already impacted areas that are better suited for industrial or similar types of development.



► **Maine:** ME NEMO worked with the Sagadahoc Region Rural Resource Initiative (SRRRI) to conduct a **regional build-out analysis** for the seven towns in the region and hope to preserve the rural character and resources of the region. The SRRRI group is also gathering natural resource information for the region to **coordinate land use decisions regarding zoning and natural areas**. The SRRRI runs a model to rank habitat in the region, and then combines the habitat priorities with undeveloped blocks to show critical large blocks. ME NEMO is working to make this digital data available to the towns, and several of them are integrating it into land use plans. Topsham is using it in a natural resource plan; Harpswell is using it in an open space plan.

► **Maine:** ME NEMO has developed a popular **“Standards of Practice” workshop for town facilities and maintenance staff**. Through this effort the program has trained 350 public works employees from 25 towns on standard operating procedures to improve water quality. A participant from the town of Cape Elizabeth reports “The training has raised the awareness level of the employees that have attended the training sessions. On two occasions, employees have brought to my attention two possible IDD’s (illicit discharge detections) in catch basins. They are definitely more aware of what is proper and not proper in a typical catch basin.” ME NEMO has shared its training materials with educators in 28 states, Puerto Rico and Australia and it is currently being modified for use in Florida to train municipal staff.

► **Minnesota:** In collaboration with Northland NEMO, the city of Duluth is conducting a **paired**

neighborhood assessment of residential stormwater best management practices (BMPs) in two neighborhoods. The city of Duluth planning department is also distributing Northland NEMO’s “Building Superior Coastal Communities” **guidebook to developers** interested in building in the community.

► **Nevada:** NV NEMO workshop evaluations indicate that they are having a wide range of **impacts beyond just local land use officials**. A nursery worker used



A landscaper in Nevada modified his practices to address excessive irrigation water use after attending a NEMO training. (Photo courtesy of NV NEMO.)

the information in designing and planning medium-size residential landscape projects, and a landscaper became more conscious of the problem of excessive irrigation water use. One respondent noted “When we’re approached by other organizations needing our help

on water issues, NV NEMO training helps me to understand the issue involved and how we can help.” Students in 2006 rated the course materials and presentations highly (4.7 out of 5), with no score lower than 4. They rated their improved understanding at 4.6 out of 5, and feel more likely to ask for more information during plan review (4.7 out of 5).

► **New Hampshire:** NROC (the NH NEMO effort) has worked with several communities to integrate **community surveys** into local land use decisions and plans. Community groups conducted surveys

in New Durham (re: their master plan) and Wakefield (re: conservation funding). NROC communities have also sought to develop better water quality data. Rollinsford initiated a **water quality monitoring** program on local streams. Wakefield commissioned a synthesis of existing water quality data in order to better understand the status of their lakes.

► **Rhode Island:** The RI NEMO Program worked with the state’s Water Resources Board and Department of Health to develop a consistent way for municipalities and other water suppliers to **identify threats and rank susceptibility of drinking water sources** to pollution and track trends over time. All municipalities and private water suppliers with major community water supplies will be using the method to **update water supply management plans**, as required by Rhode Island Water Resources Board regulations, and can integrate this information into land use decisions.

► **Rhode Island:** In partnership with the Department of Environmental Management and a private firm, RI NEMO developed the **Rhode Island Wastewater Information System (RIWIS)**: a statewide, web-accessed database that organizes local information about onsite systems and cesspools, including their location and condition, inspection results and maintenance. Towns are using the database to develop **wastewater management programs**, a basic element in protecting groundwater supplies, private wells and public drinking water sources. Through a series of workshops and technical support, RI NEMO has increased the number of towns actively using the site in their programs from 3 to 12.

► **South Carolina:** Following significant turnover in their land use boards, the town of Bluffton and Beaufort County invited the SC NEMO team to conduct a workshop for elected officials and a second one for planning commission members, staff and citizens. Since then, the Bluffton town administrator and mayor now require all of the town’s officials and staff to attend at a minimum a “**refresher**” **course of NEMO 101** on an annual basis.

► **South Carolina:** A small grants program coordinated by SC NEMO funded the Beaufort County **Storm Drain Marker Project**. Beaufort County Public Works partnered with a local environmental



Anne Kitchell, volunteer project coordinator, demonstrates the installation of a storm drain marker in Beaufort, South Carolina. (Photo courtesy of SC NEMO.)

organization (Friends of the Rivers) to identify and mark more than 1000 storm drain inlets throughout the county’s municipalities and unincorporated areas. In addition to the public education component of the project, the marked inlets, local outfalls

and associated structural **stormwater management practices are being documented with a GPS (global positioning system)** to field verify and/or update county infrastructure mapping. This will allow for inspection for potential illicit discharge investigation, repair and maintenance and will be recorded and reported to the county public works department.

► **Texas:** TX NEMO created a new initiative, **WaterSmart Landscaping: Habitat Highways**, to address habitat loss and fragmentation by generating public awareness; **training and empowering volunteers**



Habitat Highways trainees participate in hands-on design and installation of a school habitat at Travis Elementary School, Houston. (Photo courtesy of TX NEMO.)

with information and the skills to preserve, restore and create urban wildlife habitats; and forming social networks to best address urban wildlife and habitat problems. The program held its inaugural training series and receiving enthusiastic response from participants and local

media. Direct training was limited to 40 participants, but the reach of these trainees is multiplied as they continue their role as advocates for wildlife. Several students from this first HH class have gone on to initiate habitat projects in the community.



Spotlight on Minnesota

The Vermillion River Watershed

The education efforts of Northland NEMO and its partners, over a number of years, have catalyzed significant impacts in the Vermillion River Watershed, a world class trout stream and the largest Minneapolis/St. Paul area watershed.

Surface and Groundwater Study

Northland NEMO provided opportunities for the Vermillion River Watershed Joint Powers Organization Board and the Watershed Planning Commission to further their goals by initiating a surface and groundwater study that included a **parking utilization study** and a **waterway/watershed assessment**.

These efforts led to creating the *Optimal Regulatory and Market Framework to Preserve Stream Flow and Temperature Stability in an Urbanizing Trout Stream in the Midwest*, a plan for a market-based set of regulations that seek to protect the river from warm water flows that are damaging the stream as a prime trout habitat. Specifically, the regulations would establish temperature control requirements to preserve the cold water inflows (e.g., via infiltration and shading). The regulation would allow for “trading” between development in areas that have the greatest opportunity and benefit to achieve these functions with areas that are limited by soil characteristics, groundwater table constraints or land use factors.

Watershed Initiative Project

Friends of the Mississippi River, a local Northland NEMO partner, initiated a watershed initiative project that contributed to the adopted watershed standards, a receipt of an EPA Grant, and development of a **“pollution-trading” program** that will offer “credits” for offsetting thermal loading (heat pollution) to the

Vermillion River and its tributaries. The credits are to be given for practices listed on a menu of low impact development and restoration activities that reduce thermal, nutrient and sediment pollution while improving overall water management within the watershed.

The Lakeville Low Impact Development Study

The Lakeville Low Impact Development Study was a finalist for a 2006 *Minnesota Environment*

Initiative Award in the land use category. The project was a partnership between the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency, Emmons Oliver Resources, the Friends of the Mississippi River and several local watershed units. The **side-by-side comparison of two development scenarios** addressed stormwater quality, stormwater volume and rates, development costs, development yield, 30-year maintenance costs, property values, quality of life,

environmental benefits and meeting national and local models.

Vermillion Stewards Program

Finally, the Vermillion Stewards Program was established to provide watershed citizens education on their responsibilities to protect the river at the individual property owner scale. These impacts grew from planting a seed rooted in NEMO-based education while comprehensively working with many local partners.



New regulations protect the Vermillion River and its tributaries from warm water flows that are damaging prime trout habitat. (Photo courtesy of Northland NEMO.)