REBUILDING I-93 SALEM TO MANCHESTER

PROJECT FACT SHEET

STORMWATER MANAGEMENT

One of the main issues relative to water quality is the treatment of stormwater that is generated during a rain event. Both during and after construction, stormwater runoff can contain suspended solids (sand or other fine particles), phosphorous and nitrogen. These nutrients are deposited and accumulate on pavement during dry periods. When there is rainfall, nutrients are washed off the pavement and into drainage pipes or off the side of the road directly into streams, rivers, wetlands, and ponds. To improve water quality, NHDOT utilizes a number of methods to remove these nutrients prior to the stormwater entering local streams, lakes, ponds and other water bodies. Goals of handling stormwater runoff include:

RECENTLY CONSTRUCTED GRAVEL WETLAND DETENTION BASIN AT EXIT 2 PARK-AND-RIDE

- Collecting more runoff from paved surfaces
- Allowing clean ambient water passage underneath the roadway
- Treating the runoff to improve water quality
- Recharging groundwater
- Reducing channel erosion
- Providing flood control

The standards for stormwater treatment are set by the USEPA and NHDES. To meet the applicable standards, the NHDOT utilizes the following means for treating stormwater runoff and providing flood control:

- Grass swales
- Infiltration basins
- Extended wet detention basins
- Extended dry detention basins
- Gravel wetlands.

The water quality permits for the I-93 project require strict standards for stormwater treatment. These include pre- and post-construction monitoring, as well as a no net increase for total suspended solids, phosphorous and nitrogen. I-93 is one of the first projects to implement methods for meeting these new standards. Through research at the University of New Hampshire's Stormwater Center, design details for Gravel Wetlands have been developed. This relatively new form of treatment improves the removal of nutrients from stormwater. Gravel wetlands will be used extensively throughout the Salem to Manchester Corridor to treat post-construction stormwater runoff.

UNIVERSITY OF NEW HAMPSHIRE STORMWATER CENTER

The UNH Stormwater Center operates a facility that provides unique technical resources by studying issues specific to stormwater management strategies, including design and field treatment, as well as providing technology demonstrations and workshops. For more information, visit their website at www.unh.edu/erg/cstev/index.htm.

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MOVING AHEAD

During construction, there are often large areas of disturbed ground, that are neither paved nor vegetated, creating a significant potential for erosion. As is NHDOT's standard practice, each I-93 construction project will be required to develop a Storm Water Pollution Prevention Plan (SWPPP) and to implement Best Management Practices (BMPs) to protect water quality. These practices minimize the amount of erosion, and correspondingly, also minimize the amount of suspended solids in stormwater runoff.

Note turf establishment on slope and placement of silt fence to prevent erosion.

RECENTLY CONSTRUCTED GRAVEL DETENTION WETLAND BASIN AT EXIT 2 PARK-AND-RIDE

For information relating to storm-water structures and mosquitoes, go to:

www.epa.gov/npdes/pubs/sw_wnv.pdf

Other water quality efforts funded by NHDOT as part of the Rebuilding I-93 project include:

- Funding of NHDES TMDL Chloride Study and efforts to reduce salt in waterways
- Funding of NHDES Drinking Water Supply Land Grant for the protection of land around Massabesic Lake
- Design and construction of flood mitigation in various locations
- Increased monitoring of public and private wells to minimize impacts of construction
- Hazardous spill containment structures in the Exit 3/Canobie Lake/Cobbett's Pond area
- Purchase of 1000 acres of mitigation land to preserve its current undeveloped status