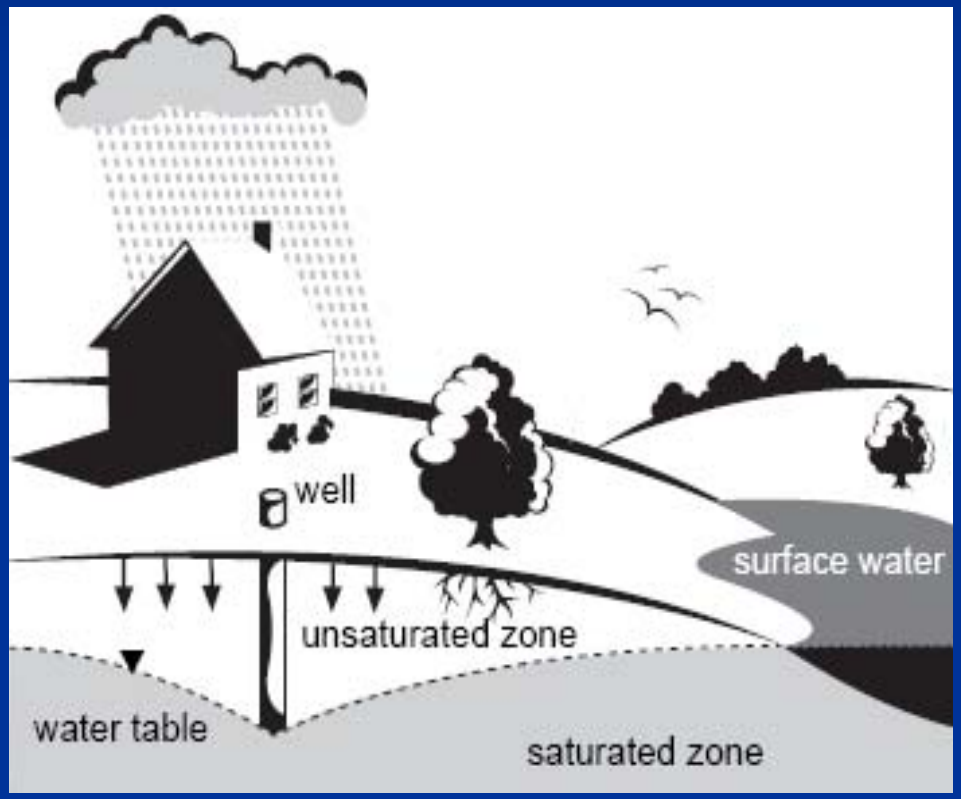
Tri-Town Aquifer Best Management Practices

December, 2006

Introduction

- A Source Water Protection Grant was awarded in 2002 to address drinking water protection in Belmont, Tilton & Northfield.
- The towns are experiencing significant growth pressures in the commercial/industrial zones that overlie the aquifer.
- The Tri-Town Aquifer BMP Guidebook is a priority recommendation to address these growth pressures.

Why Use BMPs?

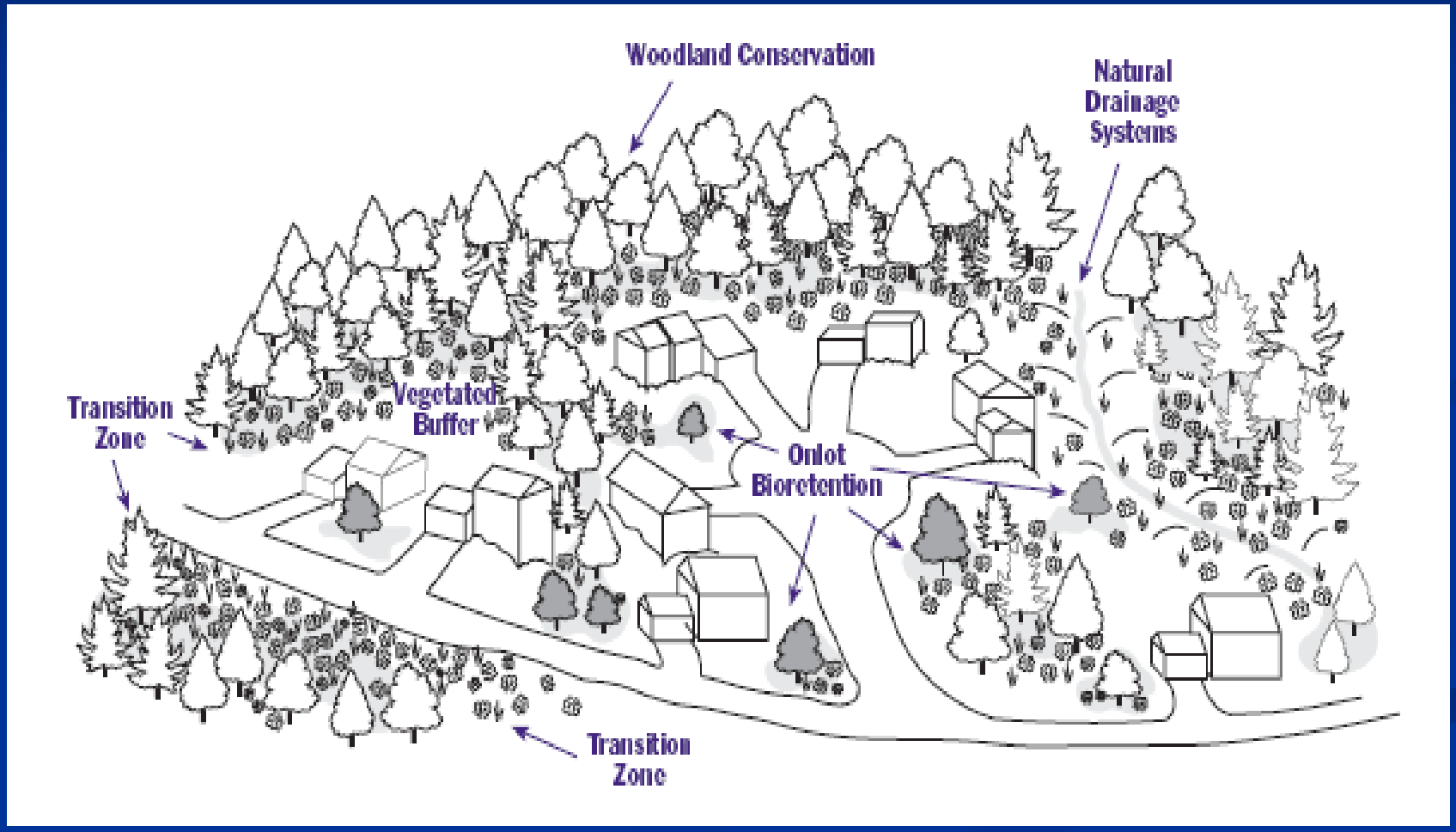


- Water Quality
  - Chemicals
  - Bacteria
  - Oil
- Water Quantity
  - Diversions
  - Recharge
  - Perviousness

BMP Chapters

- Conservation Design
- Site Design
- Erosion & Sediment Control
- Septic Systems
- Road Maintenance
- Gravel & Sand Pits
- USTs & ASTs
- Commercial & Industrial Sites
- Residential

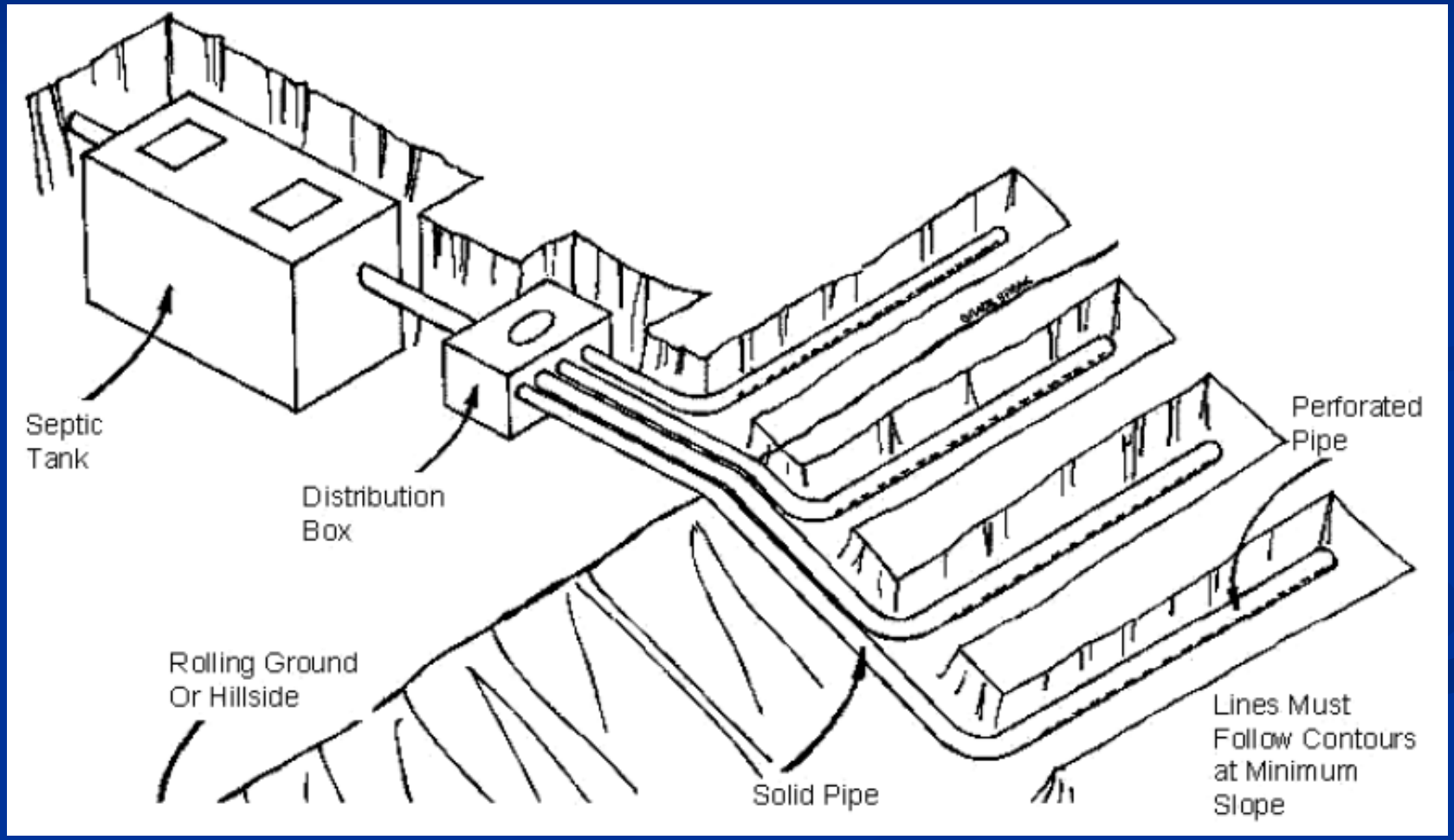
Conservation Design



Site Design BMPs

Erosion & Sediment Control BMPs

Septic System BMPs

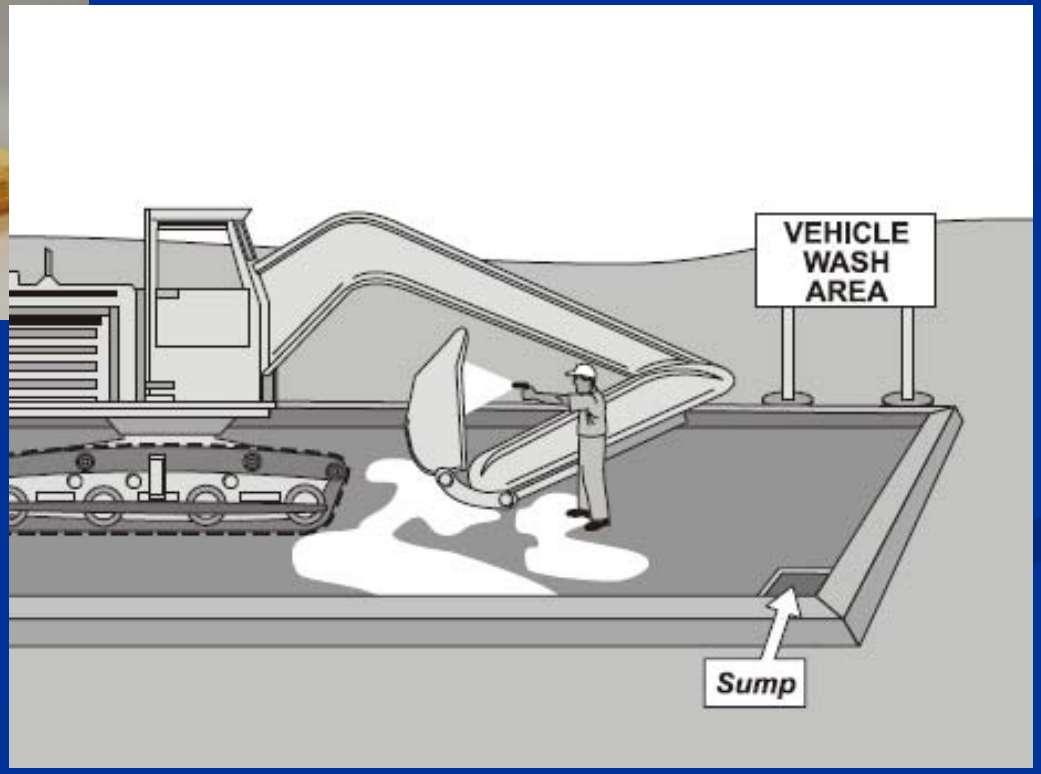


Road Maintenance BMPs

Gravel & Sand Pit BMPs

UST & AST BMPs

Commercial & Industrial BMPs



Residential BMPs

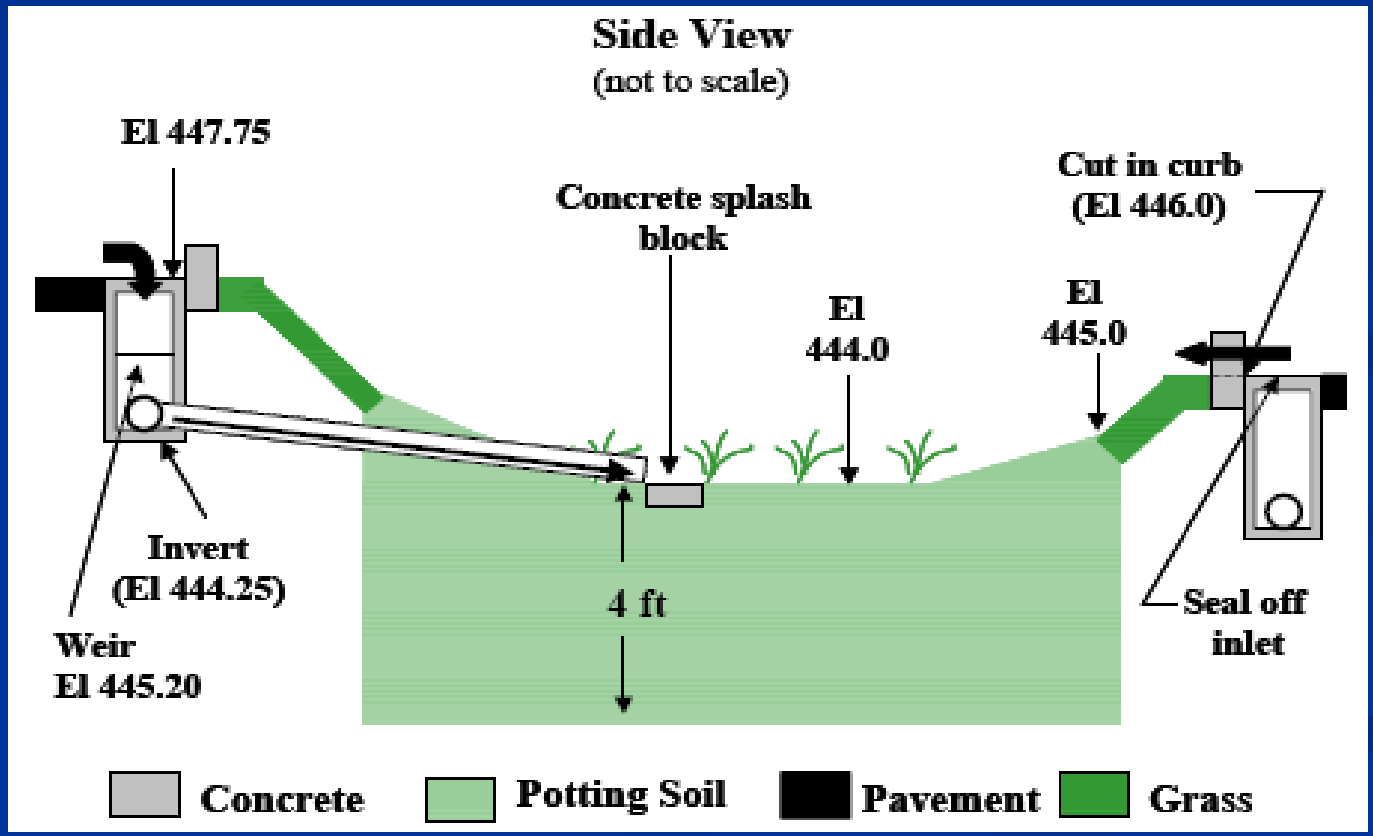
Appendix A
Regulatory Checklist

Regulated Activity	Requirements	Definition
Construction on ≥1 acre site http://www.des.nh.gov/Stormwater/construction.htm	Construction General Permit (CGP)	Construction activity that disturbs one or more acre of land, including that conducted by a municipality.
Groundwater Discharge http://www.des.state.nh.us/dwspp/gwdisch.htm	Groundwater Release Detection Permit	The proposed facility or activity includes a hazardous waste disposal facility, lined solid waste landfill, lined wastewater lagoon, or a facility for processing soil contaminated with petroleum products; or the facility or activity (such as a new solid waste composting operation or an existing outdoor storage facility for deicing chemicals, junk/salvage yard, or snow dump) will be located in a Class GAA wellhead protection area.

Appendix B
Matrix of Site Design BMPs

Practice & Specifications	Advantages	Disadvantages	Cold Climate Restrictions
Infiltration BMPs			
Infiltration Basin *Size of drainage area:* Moderate to large *Site requirements:* Deep, permeable soils *Maintenance burdens:* High *Longevity:* Low *Comparative Cost:* Construction moderate but rehabilitation cost high	Provides ground water recharge Can serve large developments High removal capability for particulate pollutants and moderate removal for soluble pollutants When basin works, it can replicate pre-development hydrology more closely than other BMP options Basins provide more habitat value than other infiltration systems	Possible risk of contaminating ground water if used at high-risk sites Only feasible where soil is permeable and there is sufficient depth to bedrock and water table Fairly high failure rate If not adequately maintained, can be an eyesore, breed mosquitoes, and create undesirable odors Regular maintenance activities cannot prevent rapid clogging of infiltration basin	Avoid areas with permafrost Monitor ground water for chlorides Do not infiltrate road/parking lot snowmelt if chlorides are a concern Increase percolation requirements Use 20' minimum setback between road subgrade and BMP

Appendix C
Schematics of Site Design BMPs



Bioretention Parking Lot Island

Comments?