

Do you know where your water
comes from?

Managing your watershed/well
head for sustainability

NRPC Regional Water Infrastructure
Workshop

The Pennichuck Story – Developing a plan for a sustainable supply.

- It begins with detailed knowledge of our watershed.
- 1995 – We knew where our watershed was.
 - PWW owned 1,500 of 17,000 acres
- 2012 – We know where the quantity and quality of water is coming from.
 - Detailed understanding of
 - Land Use
 - Existing Zoning and Ordinances
 - Where our water was coming from
 - The sources of water quality problems
 - Allowed Pennichuck to develop a model of its watershed.
 - This Model allows Pennichuck to focus on making improvements to the watershed that are most effective.

What can be done to produce a sustainable water supply?

- Land Ownership – very expensive, limit to key watershed land
- Purchase protective easements - expensive
- Implement protective land ordinances that
 - Promote stormwater reduction/treatment
 - On site – by ordinance
 - On site – by providing Best Mgt. Practice designs
 - Off site – via public/private partnerships
- Educate the Public the impact of land use practices on their water supply.
 - Use NHDES PCS list to reach out to commercial customers
 - Educate Planning and Public Works staff

Stormwater threatens Water Supply sustainability

- Loss of base flow – reduction in available low flows
- Increase in water temperature
 - Lowers oxygen saturation levels
 - Increases release of iron and manganese
- Increase in nutrient loadings
- Increase in sediment loading due channel erosion caused by higher peak flows.

Stormwater Treatment Techniques

- Promote reduction in runoff via infiltration
 - Target post development infiltration to be less than pre development infiltration for 2 year-24 hour storm
- Promote reduction in rate of runoff via detention
 - Target post development peak flow to be less than or equal to predevelopment peak flow for 10 year-24 hour storm.
- Promote Qualitative storm water treatment
 - Use of treatment techniques
 - Maintenance of non disturb buffers.
- Promote treatment spread throughout the site.

Questions ???

Thank you.