



PISCATAQUA REGION
**Estuaries
Partnership**



Assessment of Key Municipal Planning Regulations for Water Quality Protection in the Piscataqua Region

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The Physical “Piscataqua Region”

- 1 Big Watershed
- 11 Sub-watersheds



The Political “Piscataqua Region”

- 2 States
- 52 Municipalities
- 4 Regional Planning Commissions





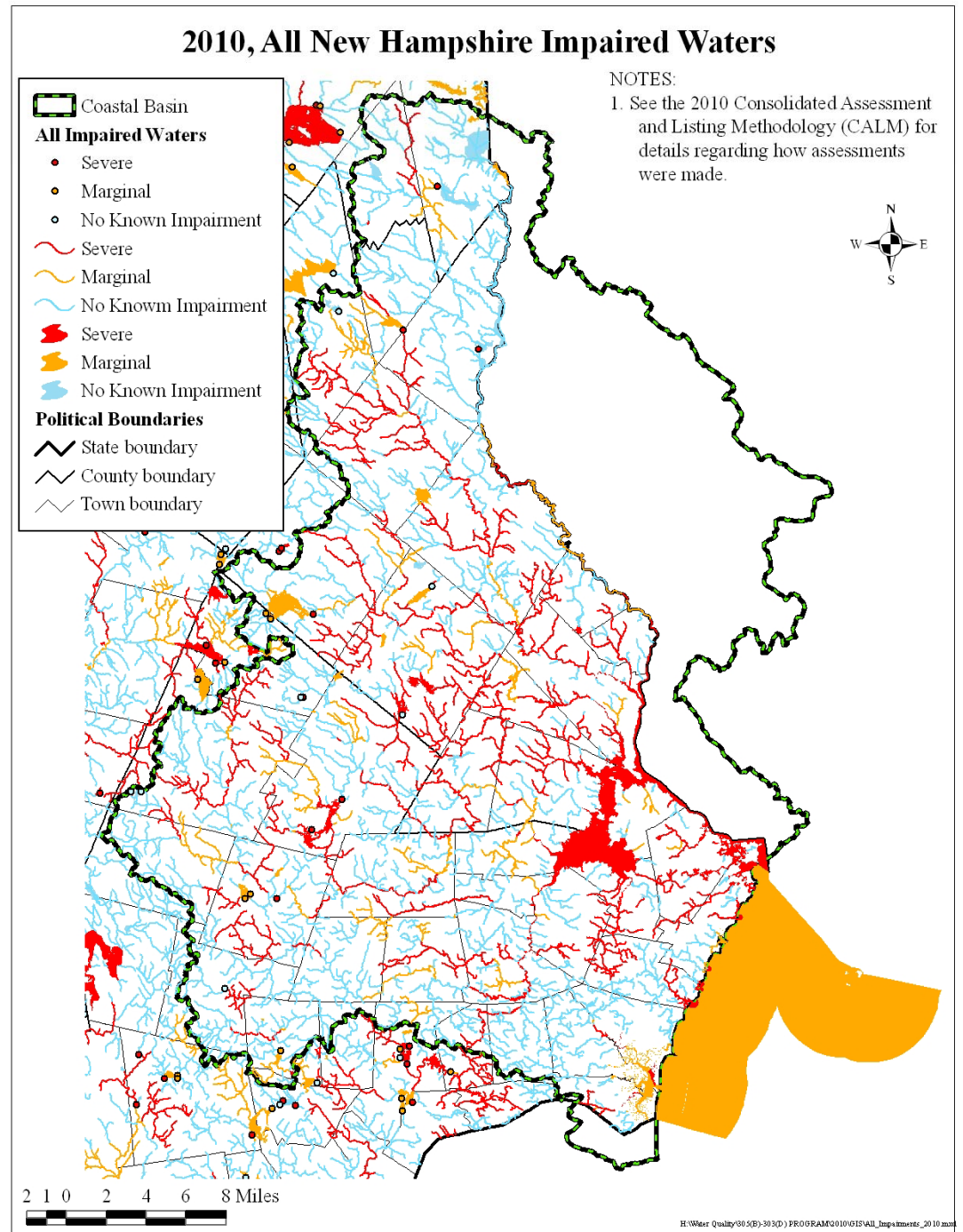
PISCATAQUA REGION
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The Regional Water Quality Picture

Blue = Waters meet
Clean Water Act
Requirements

Orange = Marginal
Impairment

Red = Severe
Impairment



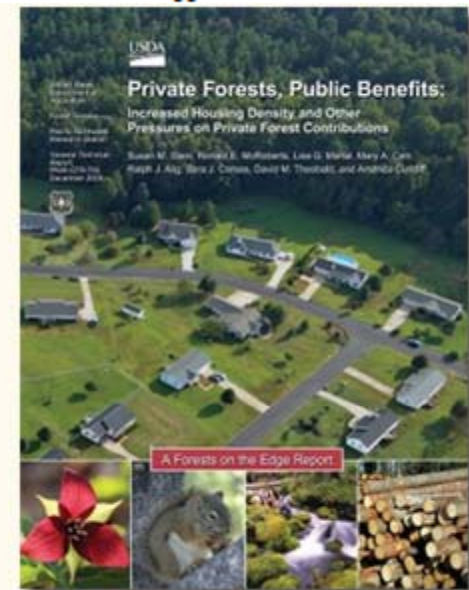


Right now is a window of opportunity to determine the future of this region...

The 15 watersheds projected to experience the most change in water quality as a result of increases in housing density on private forest lands

Numerical Rank	Watershed	State(s)	Water quality index ^a	Private Forest projected to be developed (percent)
1	Piscataqua-Salmon	Maine, Massachusetts, New Hampshire	74.6	63
2	Contoocook	New Hampshire	75.5	55
3	Etowah	Georgia	68.1	
4	Merrimack	Massachusetts, New Hampshire	66.3	
5	Seneca	Georgia, North Carolina, South Carolina	68.5	
6	Deep	North Carolina	74.4	
7	Coosawattee	Georgia	65.8	
8	Haw	North Carolina	65.1	
9	Upper Bear	California	63.7	
10	Upper Cape Fear	North Carolina	61.3	
11	Upper Broad	North Carolina, South Carolina	69.9	
12	Saluda	North Carolina, South Carolina	70.9	
13	Upper Neuse	North Carolina	60.6	
14	Four Hole Swamp	South Carolina	69.1	
15	Rivanna	Virginia	68.3	

^a Water quality indices are based on a combination of factors including the percentage of each watershed in that is private





What is the current status of
municipal water protection policies in
the Piscataqua Region Watershed?

Piscataqua Region Environmental Planning Assessment

Purpose: Determine the existing status of environmental planning and regulation in the 52 municipalities that comprise the watershed for the Great Bay and Hampton-Seabrook estuaries.

- Identify gaps and inconsistencies
- Inform regional planning efforts
- Help target assistance to municipalities in making improvements over next 10 years



Assessment Methodology

- Standardized assessment for each municipality
- Interviewed key experts
- Developed municipal and regional recommendations
- Final Report

Topics Included in Assessment:

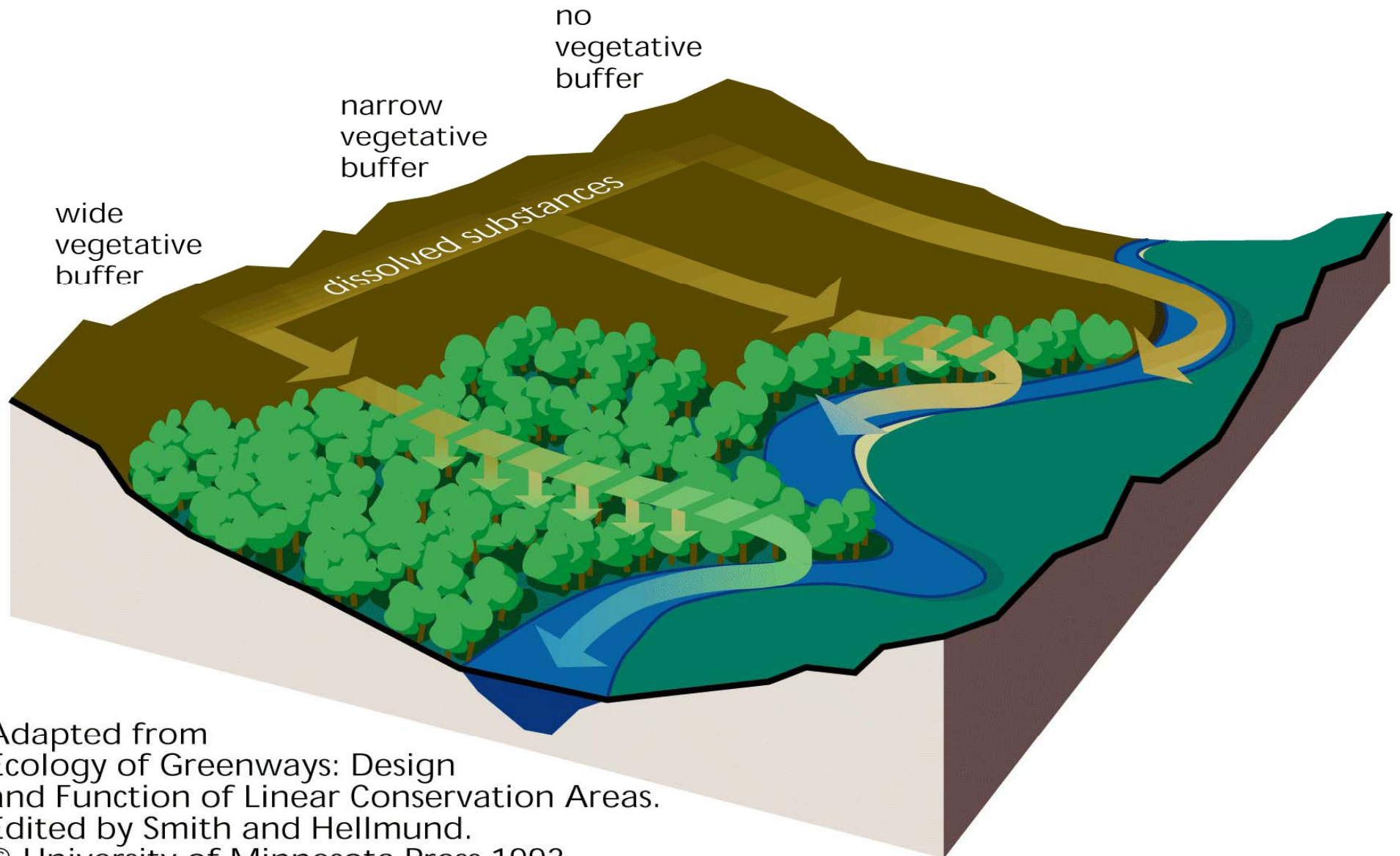
- Conservation Fundamentals
- Wildlife Habitat Protection
- Wetland Protection
- Shoreland Protection
- Stormwater Management
- Impervious Surface Limits
- Erosion & Sediment Control
- Drinking Water Protection
- Floodplain/Hazard Planning
- Non-Regulatory Conservation Efforts



Natural Vegetated Buffers

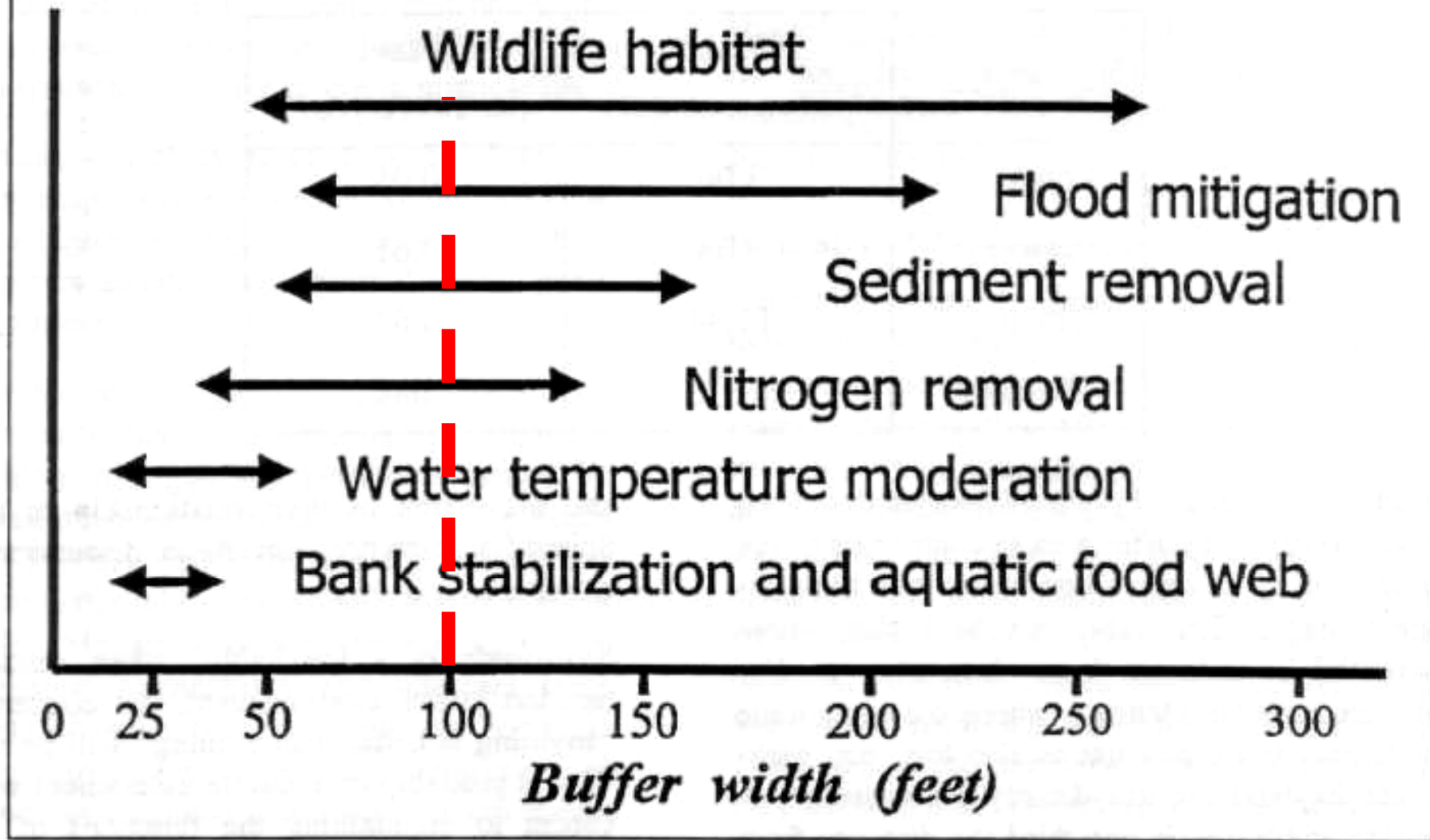
“The simplest, cheapest, and most effective way to protect streams, rivers, and lakes is to leave an area of undisturbed native vegetation adjacent to the water body.” - NHDES

Buffer Width Affects Water Quality



Adapted from
Ecology of Greenways: Design
and Function of Linear Conservation Areas.
Edited by Smith and Hellmund.
© University of Minnesota Press 1993.

Minimum Widths



Wetlands are natural pollutant filters

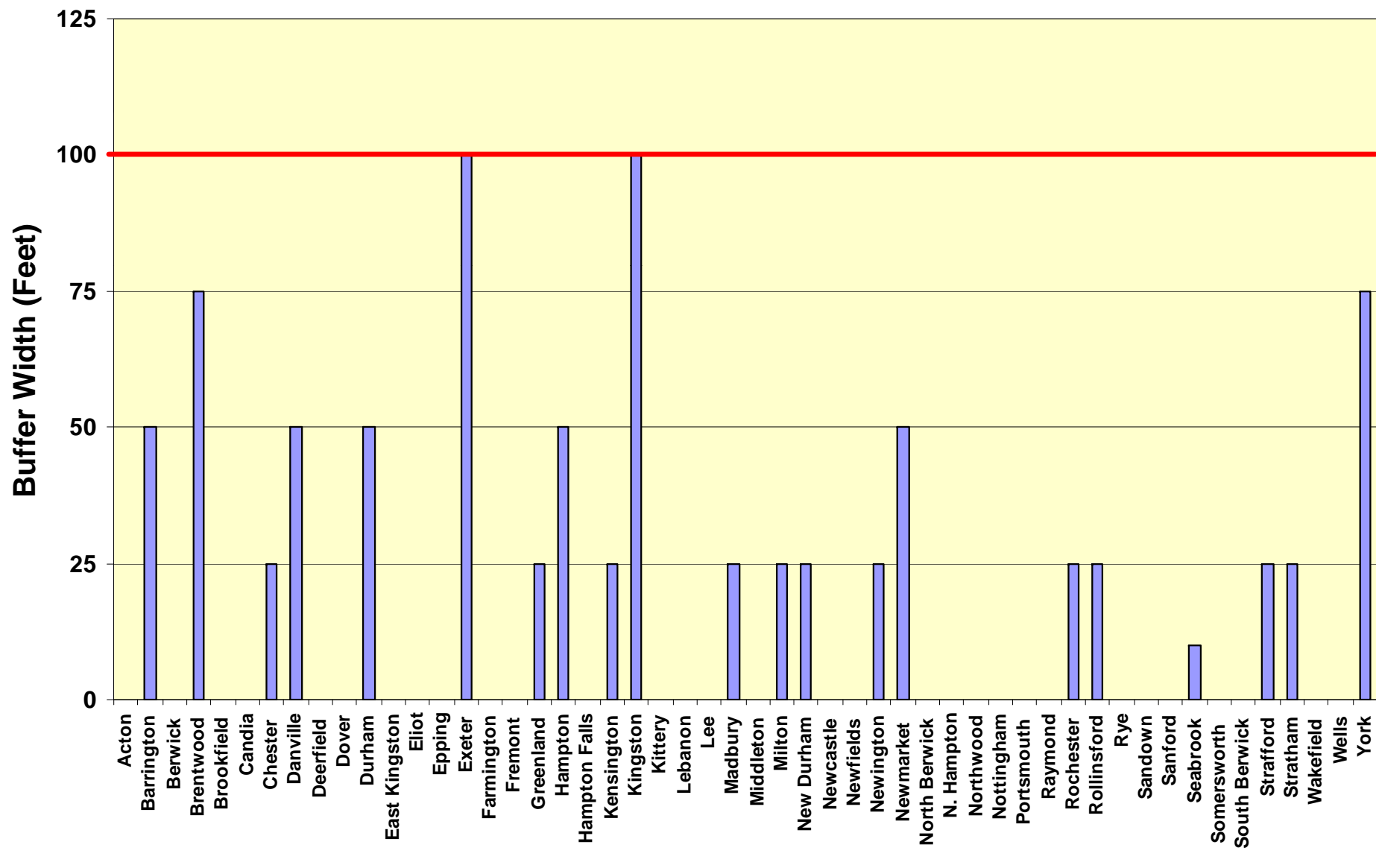
Water Purification Goods and Services:

- Slow flowing water to capture sediments
- Transform nutrients in water and sediments
- Filter water to improve groundwater quality



No Soil or Vegetation Disturbance Buffer Widths for Wetlands in the Piscataqua Region Watershed by Municipality

— = 100' Suggested Protective Standard



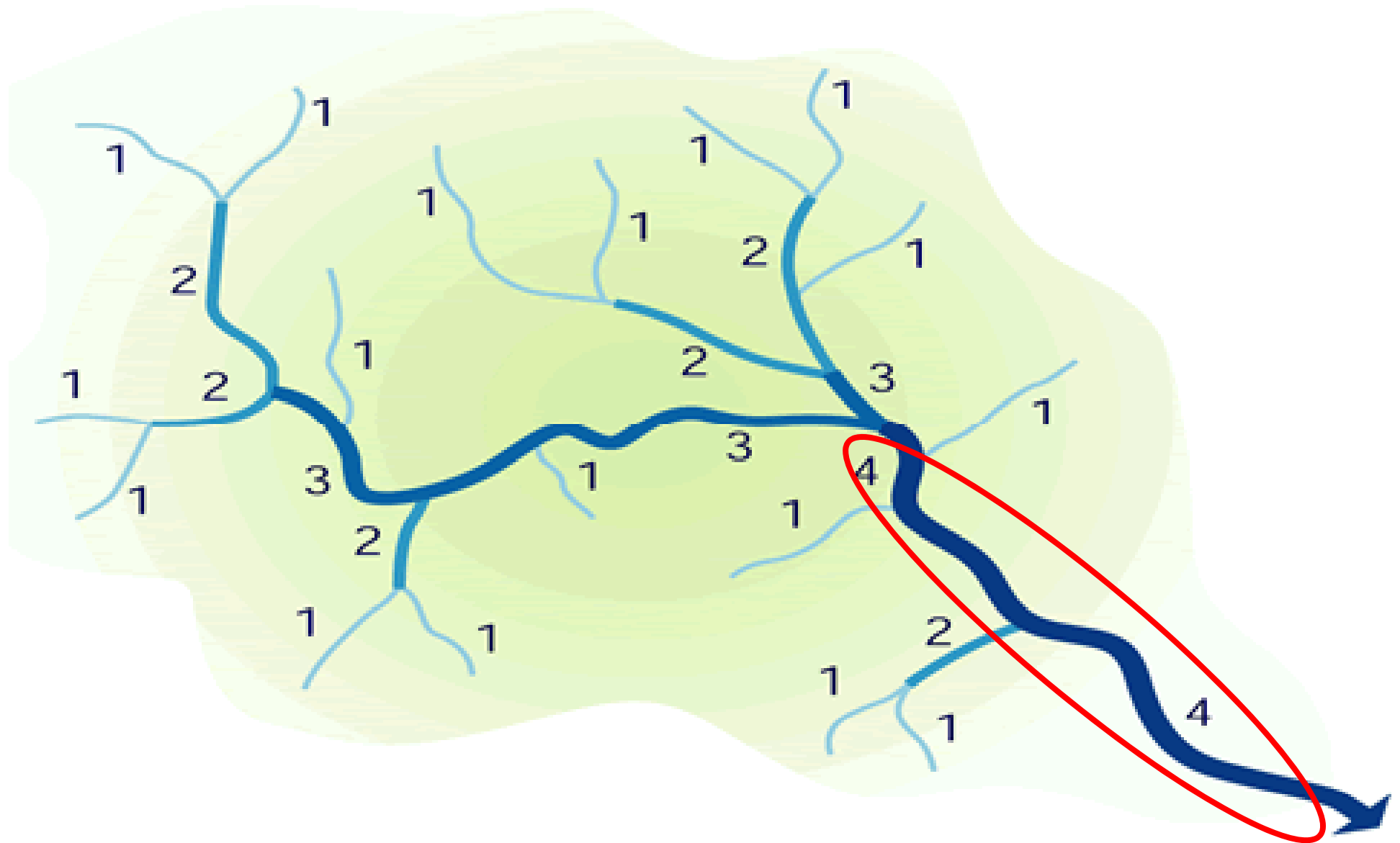
Shoreland Buffers

Key Questions:

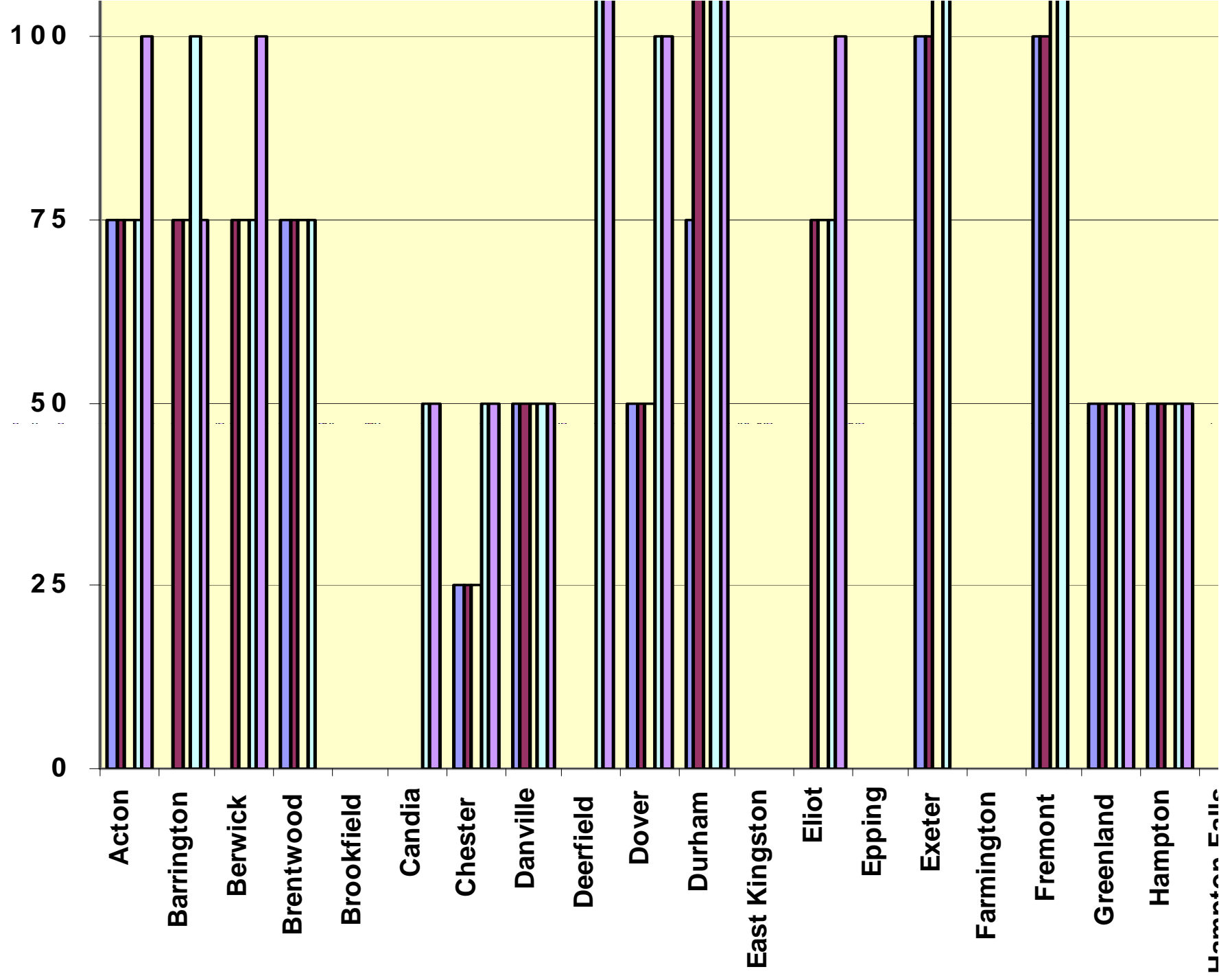
- What level of protection do town regulations provide to shorelands of streams, rivers, ponds, and lakes?
- How consistent are “buffer” and “setback” requirements within shorelands?

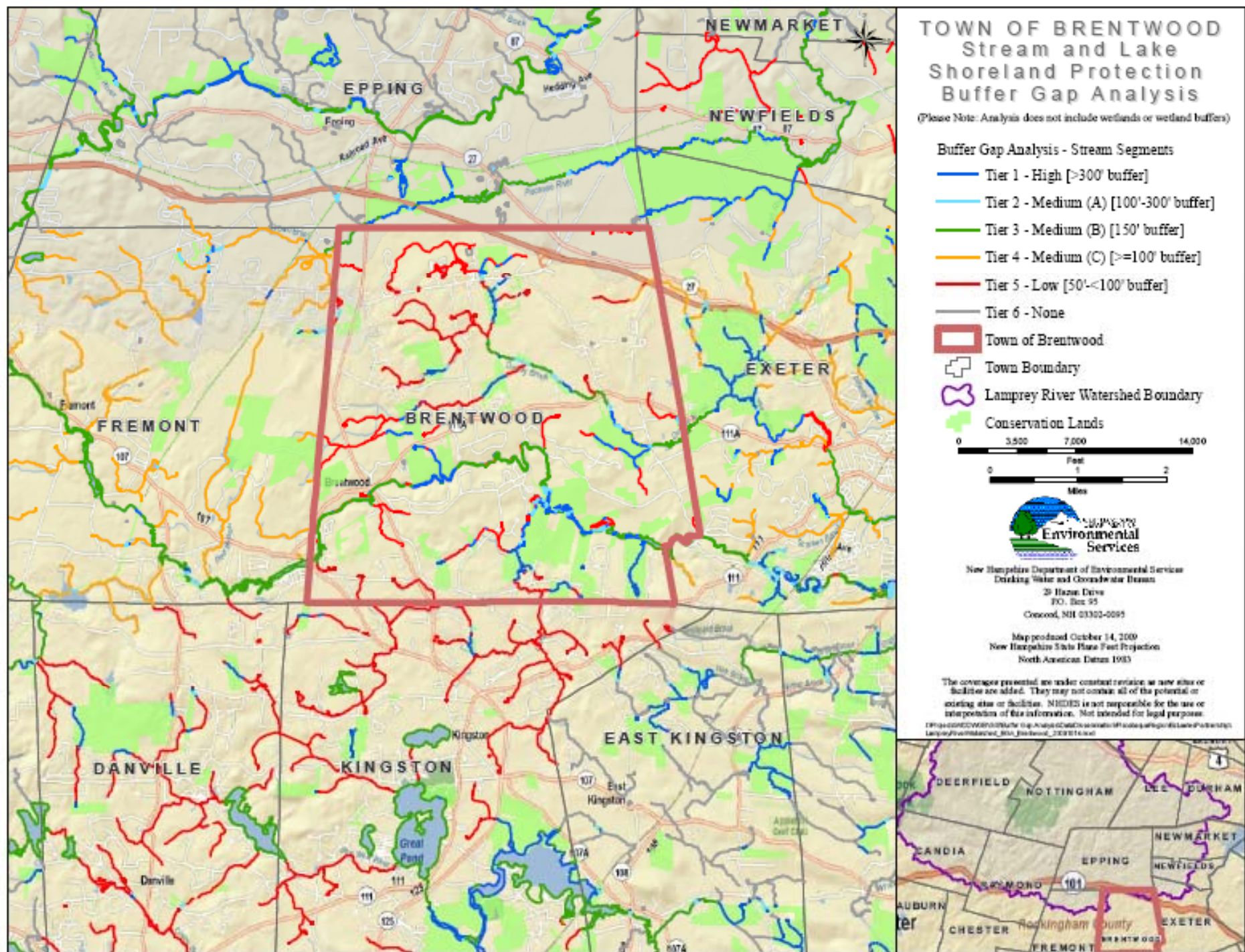


Stream “orders” – how big a stream?

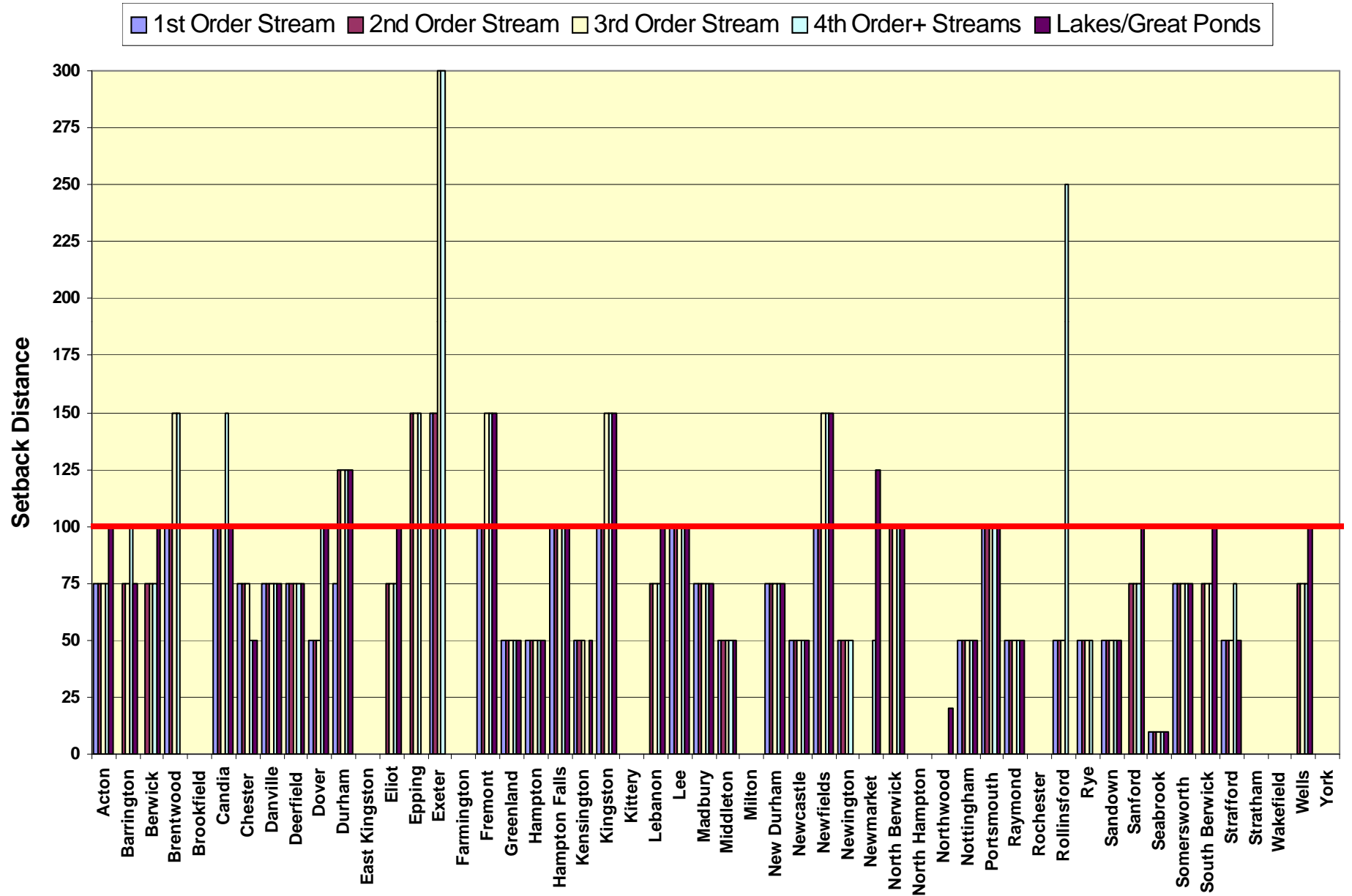


Buffer Width

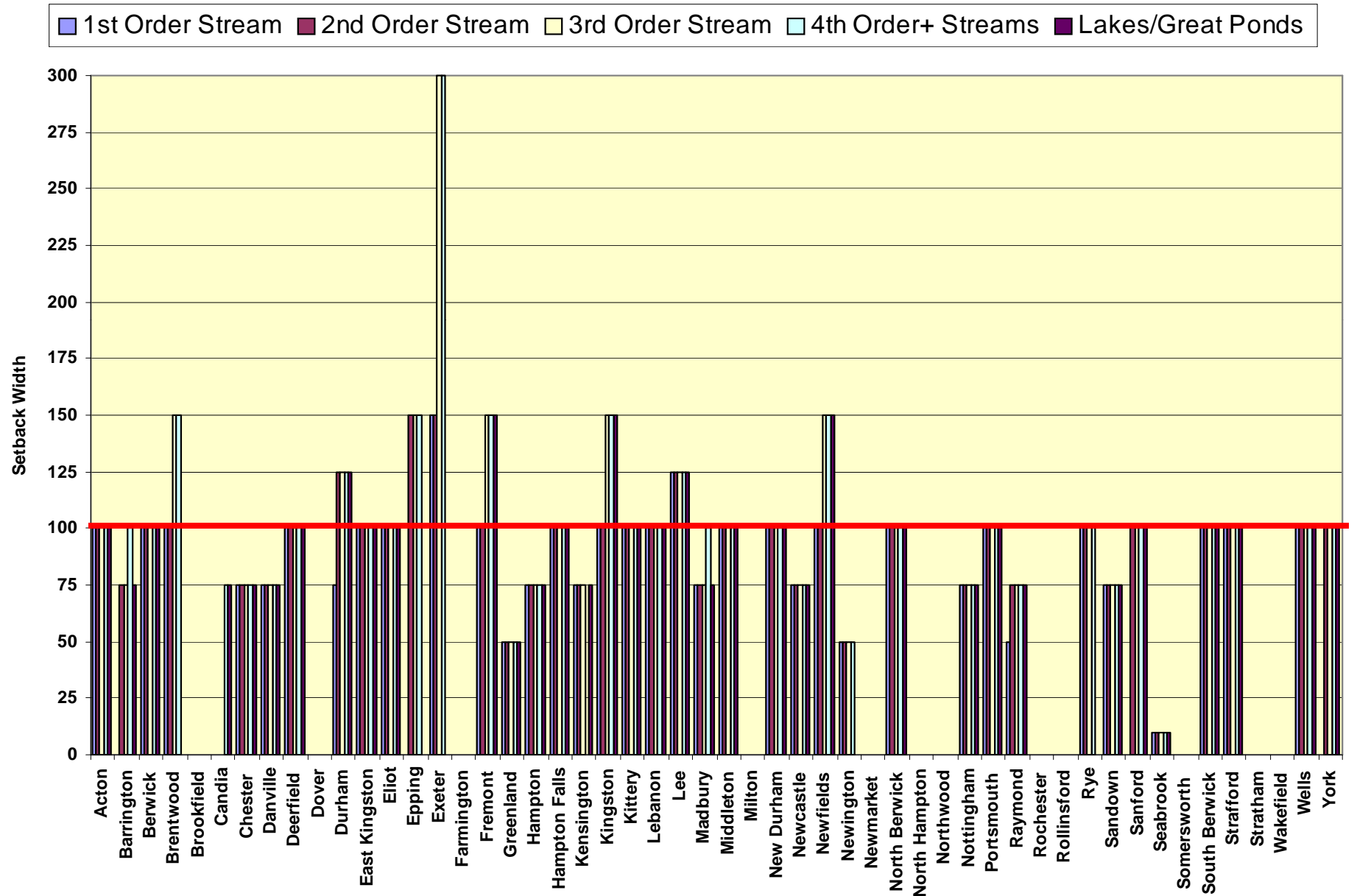




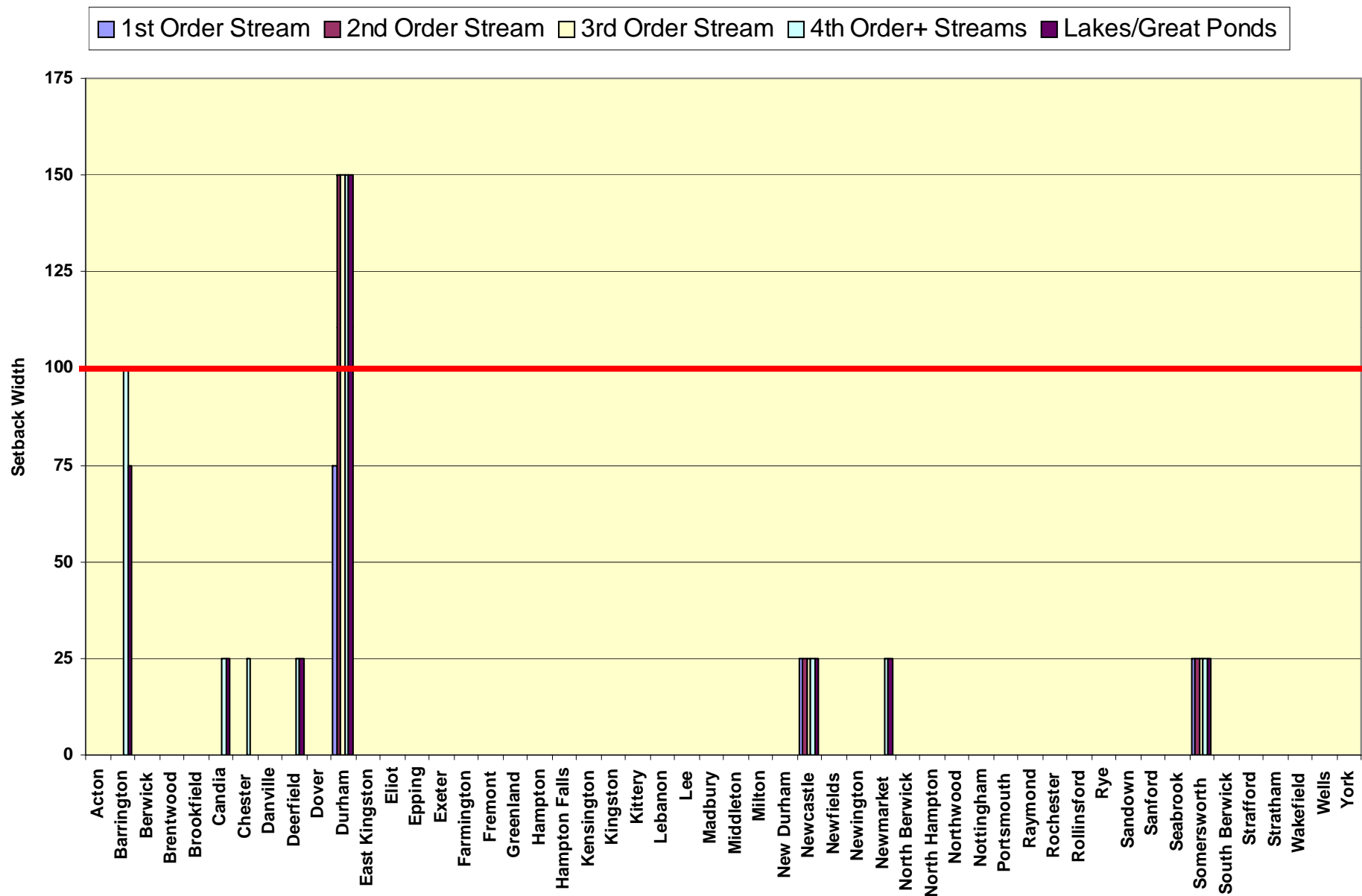
Building Setback Distances for Different-Sized Waterbodies in the Piscataqua Region Watershed by Municipality



Septic Setback Distances for Different-Sized Waterbodies in the Piscataqua Region Watershed by Municipality



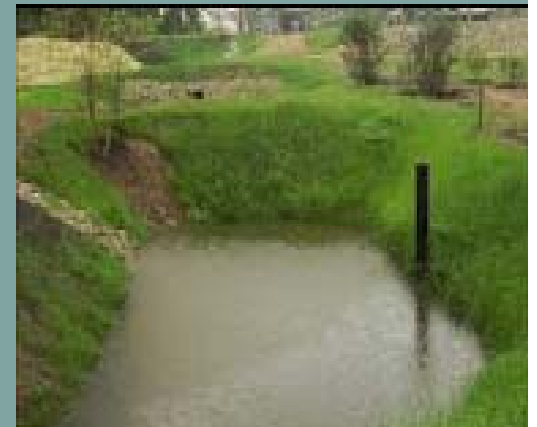
Fertilizer Application Setback Distances for Different-Sized Waterbodies in the Piscataqua Region Watershed by Municipality



Stormwater Management

Key Questions:

- Where are stormwater management regulations found in each town?
- How do the standards for each town compare with current state recommendations and innovative new practices?





Location of Stormwater Management Requirements in Municipal Regulations

Question	Stormwater Ordinance	Site Plan Regulations	Subdivision Regulations	Soil Disturbance Threshold For Regulations
Number of Towns in Region (52 Total)	3 yes	34 yes	42 yes	35 ND
% of Towns in Region	6%	65%	81%	67% ND

ND = not defined



Local Stormwater Management Requirements

Question	Clean Water Act Phase II Community?	Low Impact Development Required?	Mimick Pre Development Hydrology?	Maximize On-Site Infiltration?	Surety Required From Developer?	Does Town Have A Stormwater Utility (Fee)?
Number of Towns in Region (52 Total)	30 yes	5 yes	18 yes	14 yes	29 yes	0 yes
% of Towns in Region	58%	10%	35%	27%	56%	0%



Local Stormwater Management Standards Relative to Model Ordinance

Question	Effective Impervious Cover < 10% of Site?	Stormwater Ponds Designed for 50 yr 24 hr Storm?	Infiltration Devices Designed for 10yr 24 hr Storm?	Post Dev. Match Pre Dev. Peak Flow for 10 and 50 yr 24 hr Storm?	Post Development Runoff Volume = 90-110% Pre Development?
Number of Towns in Region (52 Total)	2 yes	13 yes	20 yes	21 yes	4 yes
% of Towns in Region	4%	25%	38%	40%	8%



Impervious Surface Limits (% of lot coverage) by Zoning Category in Municipalities

Question	Aquifer Protection Area	Rural Zone	Residential Zone	Commercial
Number of Towns in Region (52 Total)	21 ND	37 ND	32 ND	24 ND
% of Towns in Region	40% ND	71% ND	62% ND	46% ND

ND = not defined

Erosion & Sediment Control

Key Questions:

- How clear are the requirements for controlling sediment runoff at development sites?
- How do the standards for each town compare with state recommendations and how often are on-site inspections conducted?





Location of Erosion & Sediment Control Regulations Within Municipal Documents

Question	E&S Control Ordinance?	Site Plan Regulations	Subdivision Regulations	Soil Disturbance Threshold For Regulations
Number of Towns in Region (52 Total)	2 yes	32 yes	43 yes	31 ND
% of Towns in Region	4%	62%	83%	60% ND

ND = not defined

Review of Erosion and Sedimentation
Control Programs in the Piscataqua Region

March 31, 2010



- Prepared by:
 - FB Environmental & Altus Engineering
 - Selected from 7 proposals
- Project Period:
 - 8/3/09 to 3/31/10
- PREP Investment:
 - \$42,000

Project Study Design

State and Federal Programs Assessment

- (a) Review of permits from 2006-2008
- (b) Interviews with State staff

In NH: Alteration of Terrain Permits;
Wetlands/Shorelands Permits; and
federal Construction General
Permits

In ME: Natural Resources Protect Act
Permits; Stormwater Management
Law; Site Location of
Development Law; Maine
Construction General Permits

Municipal Programs Assessment

- (a) Survey of staff in 15 municipalities

- Building Permits
- Site Plan Reviews
- Maine Shoreland Zoning Act

- (b) Review of permits from 2006-2008
for 6 municipalities: Berwick,
Kittery, York, Exeter, Rochester,
and Rye

- Paper records
- Construction Data New England
- Electronic datasets
- Cross reference with State permits

Construction Contractor/Site Inspector Survey

Survey of 16 firms. The questions sought to characterize the types of ES&C control programs required for sites, specifications of program requirements, the extent of site inspections performed and by whom.

Key Recommendations

- Review and Revise E&S Control Ordinances and Regulations
 - Establish uniform, minimum E&SC measures throughout the PREP study area.
 - Establish E&SC measures for single family dwellings.
- Develop and Implement ES&C Certification Programs
 - e.g. Maine Voluntary Contractor Certification Program
- Process Improvements
 - Conduct E&SC preconstruction conferences
 - Increase frequency of site inspections
 - Develop innovative mid-level site problem notifications



Other Regulatory Provisions in Municipalities

Question	Are Conservation Subdivisions Mandatory?	Steep Slope Protection Ordinance?	Charge Development Impact Fees?	Are Septic Regulations More Stringent Than State Regulations?
Number of Towns in Region (52 Total)	13 yes	13 yes	28 yes	17 yes
% of Towns in Region	25%	25%	54%	33%

Conclusions

- The town-by-town approach to implementing environmental protection regulations for the Piscataqua Region is complex, inconsistent, and very hard to accurately assess/monitor for progress.
- Environmental standards in place at the local level vary greatly, and are generally inadequate to address the pressing environmental threats to the water resources of the area.

Clear Priorities for Work:

- Implement consistently protective wetland and shoreland buffer and development setback standards across the watershed.
- Integrate mandatory low impact development techniques and standards (including consideration of wildlife habitat) into development permitting processes.
- Update stormwater and erosion/sediment control regulations and oversight.

Who Can Help?

- Innovative Land Use Planning Techniques Handbook
(http://des.nh.gov/organization/divisions/water/wmb/repp/innovative_land_use.htm)
- Natural Resources Outreach Coalition
(UNH Coop. Ext, PREP, GBNERR, DES, RPCs, UNH Stormwater Center, etc.)
- Regional Planning Commissions
- PREP Grants (<http://www.prep.unh.edu/programs/grant-programs.htm>)
 - Community Technical Assistance Grant Program
 - Coastal Watershed Land Protection Transaction Grants
 - Local Grant Program
- NH Coastal Program Grants
- Many others...



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Thank You!