



# Managing Water Resources at the Regional and State Level

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# Source of Drinking Water

## Primarily Community Water Systems

Town	Percent Private Well	Percent on Public Water Supply
New Castle	0	100
Portsmouth	0	100
Seabrook	2	98
Rye	3	97
Newington	8	92
Exeter	10	90
Hampton	11	89
North Hampton	21	79
Salem	27	73



# Source of Drinking Water

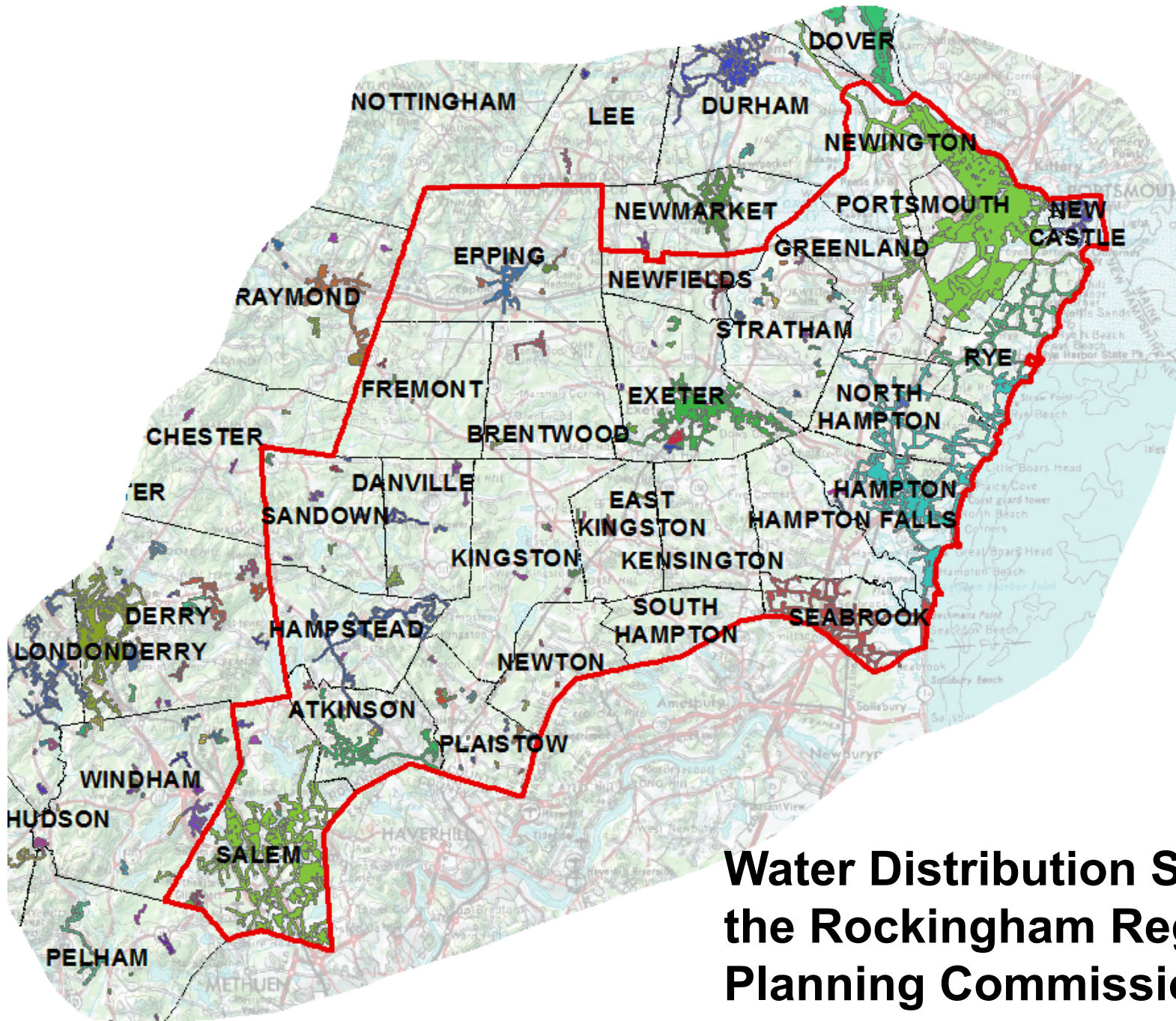
## 50-50 Community Water Systems/Private Wells

Town	Percent Private Well	Percent on Public Water Supply
Atkinson	49	51
Greenland	57	43
Newfields	59	41
Raymond	59	41

# Source of Drinking Water

## Primarily Private Wells

Town	Percent Private Well	Percent on Public Water Supply
Danville	66	34
Hampstead	67	33
Epping	68	32
Stratham	72	28
Plaistow	73	27
Brentwood	81	19
Newton	88	12
Sandown	89	11
East Kingston	92	8
Fremont	92	8
Hampton Falls	99	1
Kensington	100	0
Kingston	100	0
South Hampton	100	0



## Water Distribution Systems in the Rockingham Regional Planning Commission Communities



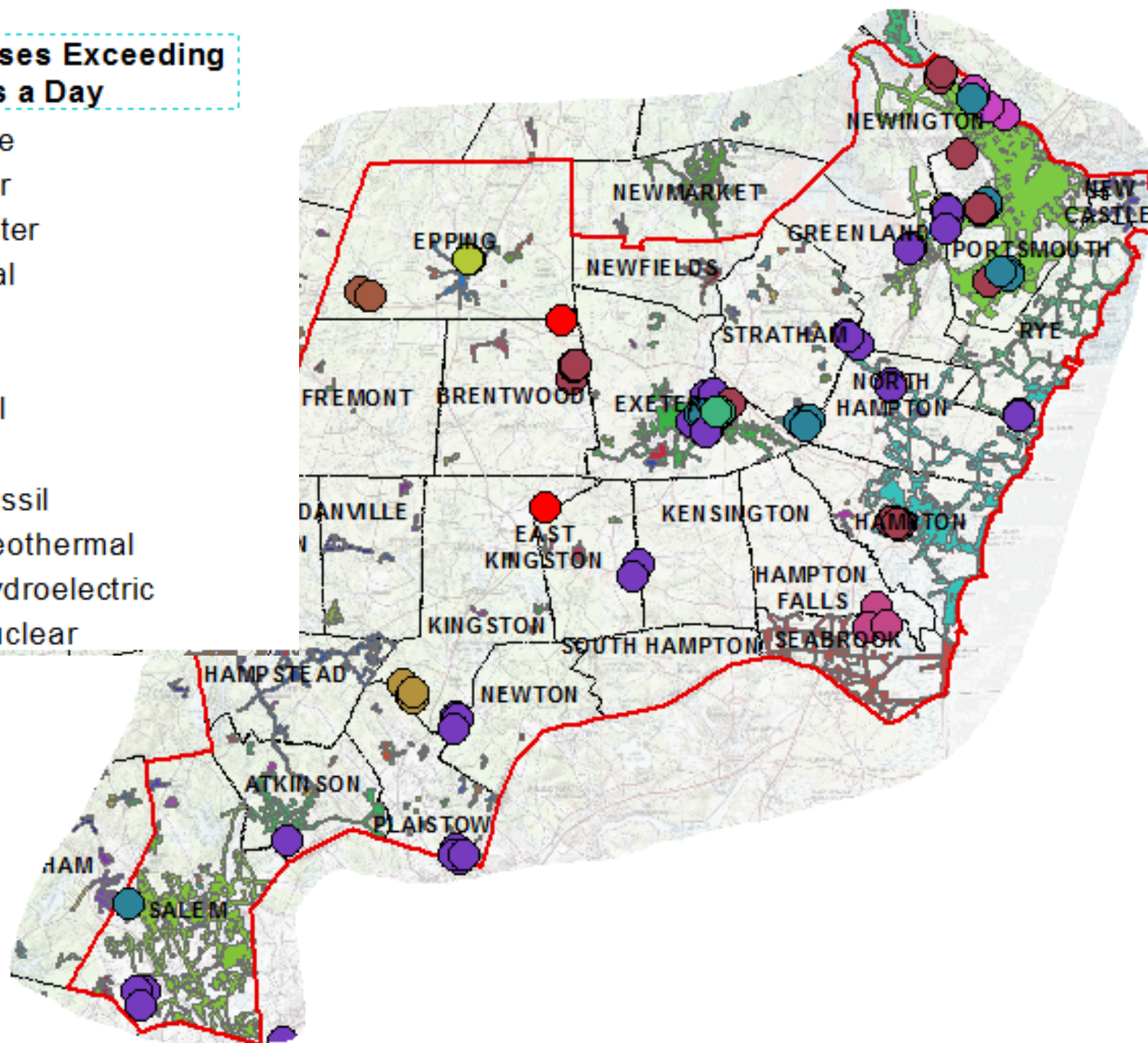
# Sources of Water for Community Water System

Only three systems use surface water

- ▶ Salem – surface water only
- ▶ Portsmouth – surface water & groundwater
- ▶ Exeter – surface water and groundwater
- ▶ Dover – Groundwater only but uses surface water to artificially recharge aquifers

# Other Water Uses Exceeding 20,000 Gallons a Day

- Aquaculture
- Bulk Hauler
- Bottled Water
- Commercial
- Industrial
- Irrigation
- Institutional
- Mining
- Power - Fossil
- Power - Geothermal
- Power - Hydroelectric
- Power - Nuclear





# Who Has a Right to Our Water?

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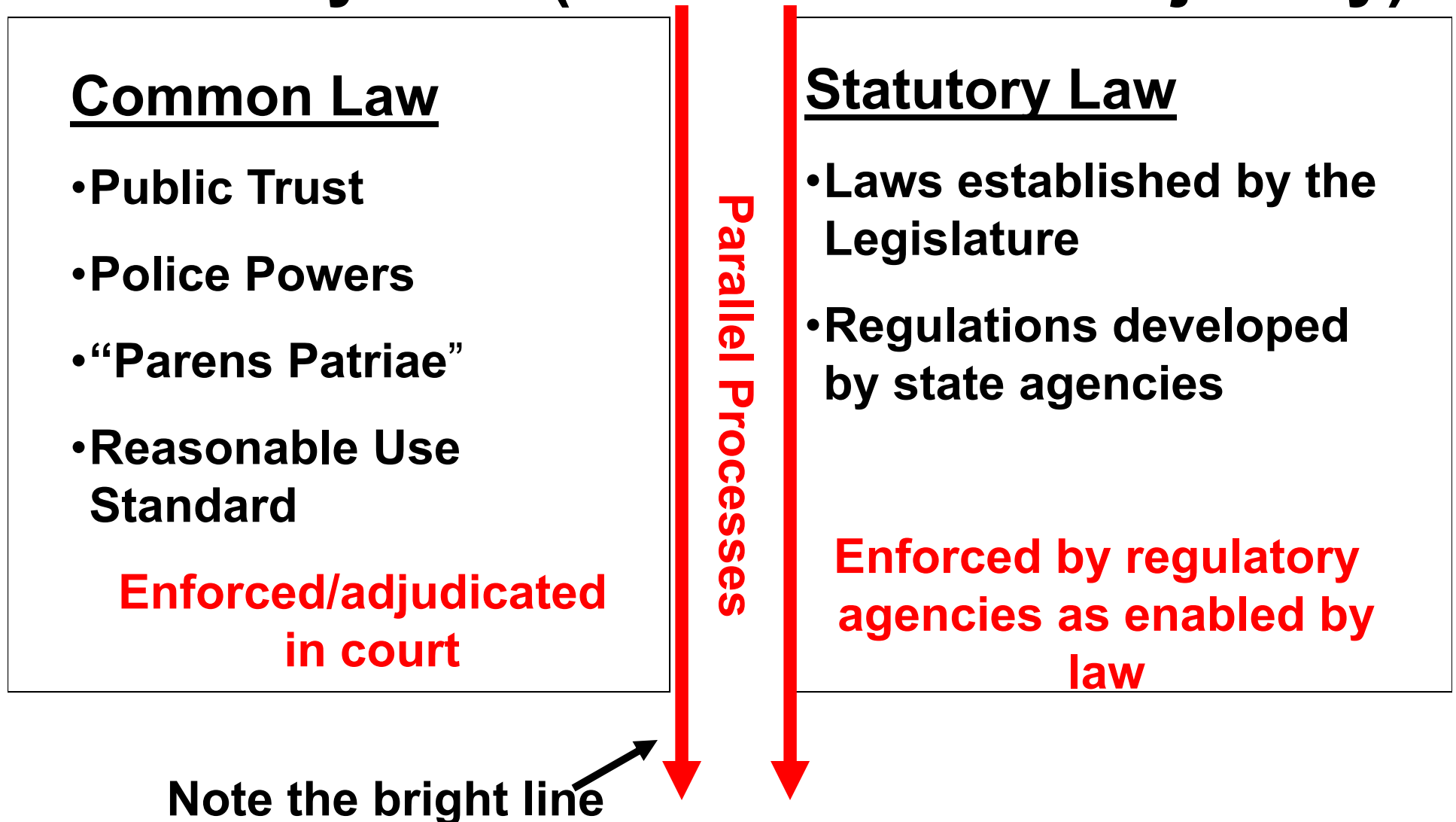
**Water is a shared resource.**

**Land owners have a right to reasonably use water on/adjacent to or underneath the land.**

**Land owners do not own the groundwater beneath their land.**

**Water use by a given land owner is constrained by common law and statutory law which protect the public's interests in water resources and other water users.**

# Common Law Exist Side by Side with Statutory Law (not administered jointly)





# Permitting Requirements

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## Two Standards

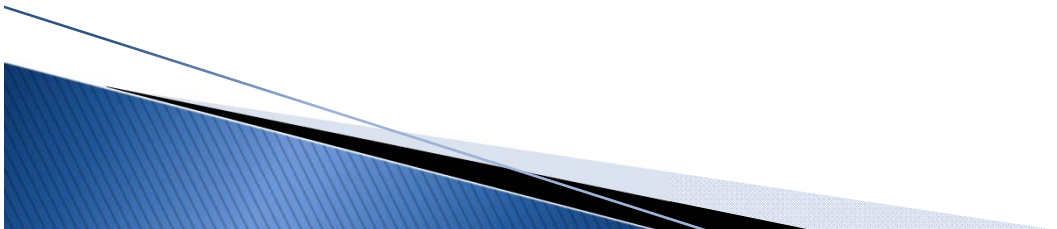
- ▶ Groundwater withdrawals developed prior to August 1998 or non potable groundwater uses less than 57,600 gallons – no statutory requirements
- ▶ Groundwater withdrawals developed after July 1998 and exceeding 57,600 gallons per day – substantial statutory requirements



# Ground Water Quality Goal

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All New Hampshire  
Groundwater Shall be  
Suitable as a Source of  
Drinking Water





# The State's Role

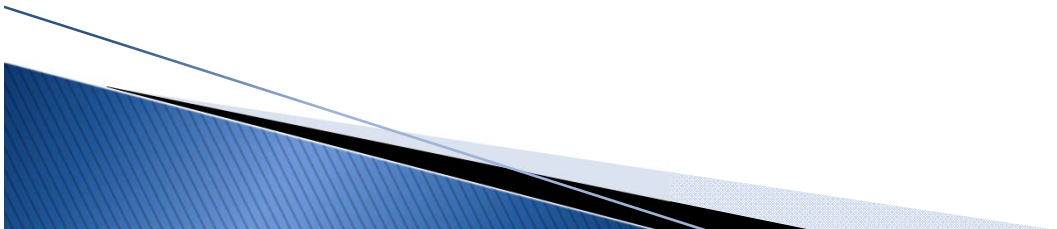
- ▶ Assess Groundwater Quality/Make Standards
- ▶ Remediate Contamination - Hazardous Waste and Petroleum/Leaking Tank Clean-Up Programs
- ▶ Prevent Contamination – Hazardous Waste Generator, Petroleum Storage Tank Programs, etc.
- ▶ Support Local Protection Efforts – Today's Focus



# Support Local Protection Efforts

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- ▶ Based on the premise that there will never be enough resources at the state level to adequately protect groundwater
- ▶ Local stewardship of the resource is key to preventing contamination from occurring
- ▶ Consistent with NH's philosophy of land use decisions being locally based





# DES Publications and Training

- |                   |   |
|-------------------|---|
| • Land protection | • Model easement and guidance, outreach       |
| • Zoning          | • Model ordinance                             |
| • BMPs            | • Model ordinance<br>• Inspector training     |
| • Education       | • Materials<br>• Training<br>• Guest speakers |



# Management Approaches: Regulation

- ▶ Local land use regulations
  - ▶ Zoning
  - ▶ Subdivision review
  - ▶ Site plan review
- ▶ Groundwater reclassification
  - ▶ Restricts 6 high-risk land uses
- ▶ Watershed rules (state-local)
  - ▶ BMP enforcement
  - ▶ Protected buffers
  - ▶ Restricts land and water uses

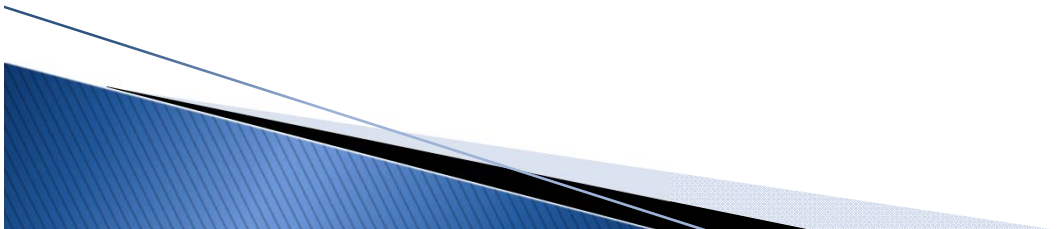


# Legal Mechanisms to Address Drought

- ▶ Large groundwater withdrawal permits – reduce withdrawals based on phase of drought
- ▶ Emergency authority to approve new large groundwater withdrawals
- ▶ Municipal authority to restrict or ban residential lawn watering during drought (applies to public and *private residential wells*)
- ▶ Authority to require dam owners to release water
- ▶ Authority to require a public water system to extend service to address a nearby emergency



# **NH's Response to Increased Flooding and Climate Trends**





# Challenges

- ▶ Existing infrastructure were designed based on the statistical analysis of hydrological data available in the 1960s and 1970s.
- ▶ The statistical analysis, which dictates design standards, **do not consider a transient climate or the effect of increasing human disturbances in watersheds.**
- ▶ NH needs to amend its messaging, rules, policies & practices to account for a transient climate and landscape to account for reasonably anticipated impacts.



# Existing Climate Trends

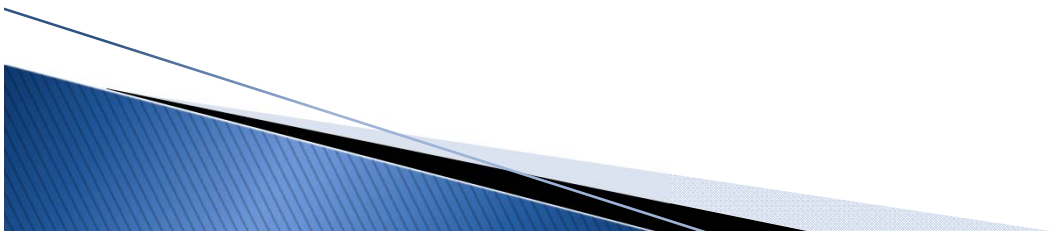
- ▶ More precipitation
- ▶ More extreme precipitation
- ▶ Winter warming
- ▶ Decreased snowfall
- ▶ Fewer days with snow on the ground
- ▶ Lake ice out days earlier
- ▶ Earlier spring runoff/recharge
- ▶ Extended growing season
- ▶ Sea level rise
- ▶ Drought??



# All Types of Water Systems - Impacts -

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- ▶ Electrical disturbances
- ▶ Flooding/asset damage
- ▶ Flooding/contamination events
- ▶ Water Demand – Increased growing season and increase heat waves
- ▶ New contamination threats





# DES Roles and Actions

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- ▶ Water sector preparedness
  - ▶ Impact and actions matrix by type of water system
  - ▶ Link water suppliers with \$
  - ▶ Support monitoring networks
  - ▶ Energy efficiency guidance
  - ▶ Water use efficiency and outdoor water use restriction guidance
  - ▶ Flood and geofluvial erosion hazard analysis
  - ▶ USEPA/NHDES back-up power generator technical and grant assistance
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**Questions??**