

# State Guide Plan Consolidation: Potable Water Elements

## Rhode Island Water 2030

State Planning Council

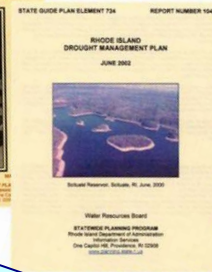
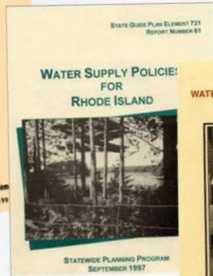
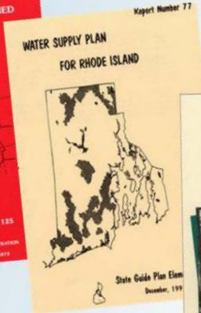
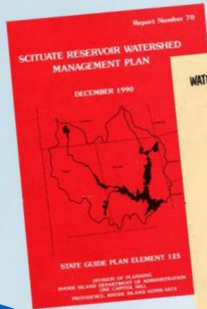
September 15, 2011

Nancy Hess

Supervising Land Use Planner



# Rhode Island Water 2030



STATE GUIDE PLAN ELEMENT 721  
REPORT

**RHODE ISLAND  
WATER 2030**

**RHODE ISLAND  
DIVISION OF  
PLANNING**

Rhode Island Department of Administration  
Division of Planning  
**Statewide Planning Program**  
One Capitol Hill  
Providence, Rhode Island 02908

[www.planning.ri.gov](http://www.planning.ri.gov)

**DRAFT**  
08.19.11

# Rhode Island Water 2030

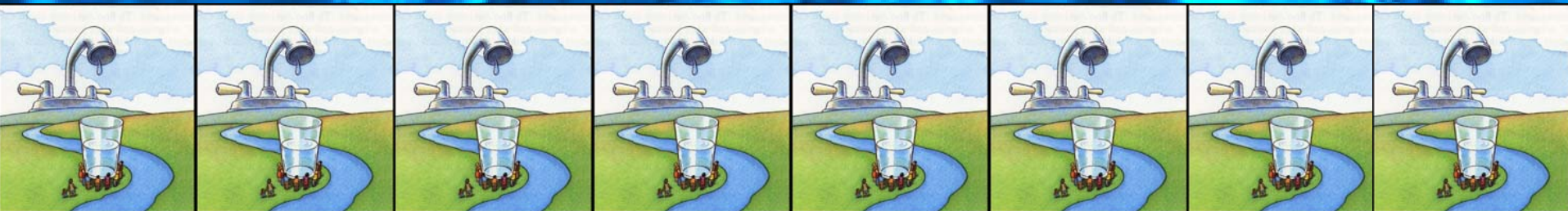
<b>Ken Ayers</b>		<b>DEM Agriculture</b>
<b>Clay Commons</b>		<b>DOH Division of Water Quality</b>
<b>Kathy Crawley</b>		<b>Water Resources Board</b>
<b>James DeCelles</b>		<b>Chief Engineer/Manager Pawtucket Water Supply Board Combined Surface &amp; Groundwater Supplier</b>
<b>Julia Fogue</b>		<b>Director Newport Water Department Surface Water Supplier</b>
<b>Susan Licardi</b>		<b>Director North Kingstown Water Department Groundwater Supplier</b>
<b>Pamela Marchand</b>		<b>Chief Engineer, Providence Water Supply Board &amp; RI Water Works Association President Surface Water Supplier</b>
<b>Eugenia Marks</b>		<b>Audubon Society of Rhode island</b>
<b>Henry Meyer</b>		<b>Manager Kingston Water District Groundwater Supplier</b>
<b>Alisa Richardson</b>		<b>DEM Office of Water Resources</b>
<b>Elizabeth Scott</b>		<b>DEM Office of Water Resources</b>
<b>June Swallow</b>		<b>DOH Division of Water Quality</b>
<b>Harold Ward</b>		<b>Water Resources Board &amp; Coalition for Water Security</b>



# Rhode Island Water 2030

## Basic Assumptions

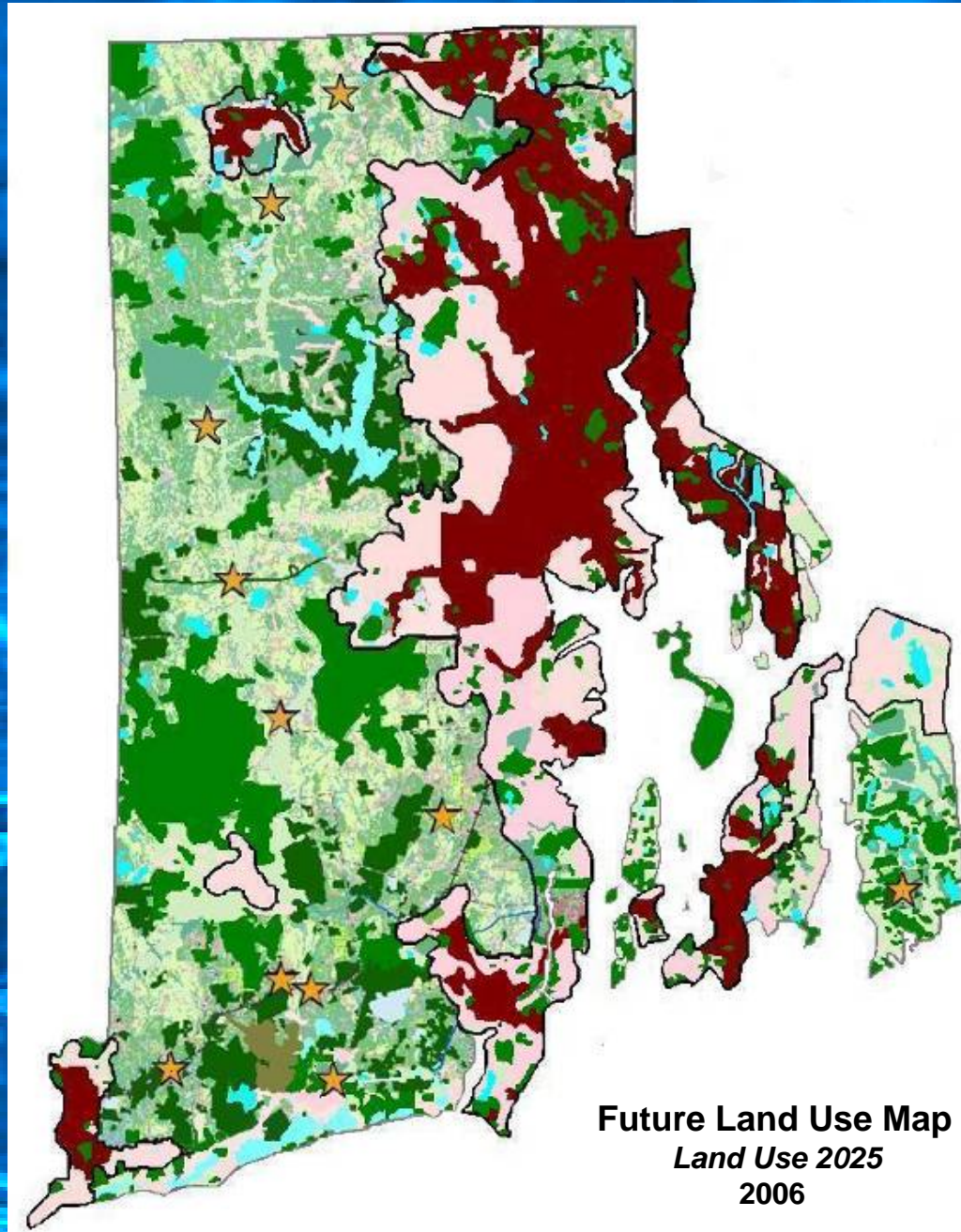
- ◆ The understanding of the interdependencies among natural and social systems is ever evolving
- ◆ Water management decisions must be incremental adjustments from the status quo; and
- ◆ Water resource decisions must be made recognizing varying interests of public and private sectors.



# Rhode Island Water 2030

## *Land Use 2025* Smart Growth policies

- ✓ Direct growth within USB
- ✓ Mix land uses
- ✓ Growth Centers & compact design patterns
- ✓ A range of housing choices
- ✓ Foster communities with a strong sense of place & walkable neighborhoods
- ✓ Preserve open space and critical environmental areas
- ✓ Use existing infrastructure
- ✓ Provide transportation choices



# Rhode Island Water 2030

## **1997 Mission Statement:**

To ensure that the State's short and long range water supply needs are met in the most cost-efficient and environmentally sound manner.

## **2011 Vision Statement:**

**To ensure safe, reliable, ample water supplies to meet the State's short and long range needs while preserving the physical, biological, and chemical integrity of the water resources of the State.**

# Rhode Island Water 2030

## **3 Parts:**

**Part 1: Rhode Island's Potable Water Setting**

**Part 2: Potable Water Issues Today**

**Part 3: Assuring There's Water for Tomorrow**

## **Changes to All Sections:**

- ◆ Made topical additions/edits to reflect comments
- ◆ All parts now begin with a "key points" box
- ◆ Added more graphics/ pictures
- ◆ Summarized more text with bullets and text boxes as suggested
- ◆ Created appendices with text references
- ◆ Added Water Glossary

# Rhode Island Water 2030

## Original Part 1: Rhode Island's Potable Water Setting

Where Does Our Potable Water Come From?

Who Does What?

Potable Water Systems in Rhode Island

Private Wells

Resources of State Significance

Scituate Reservoir

Big River

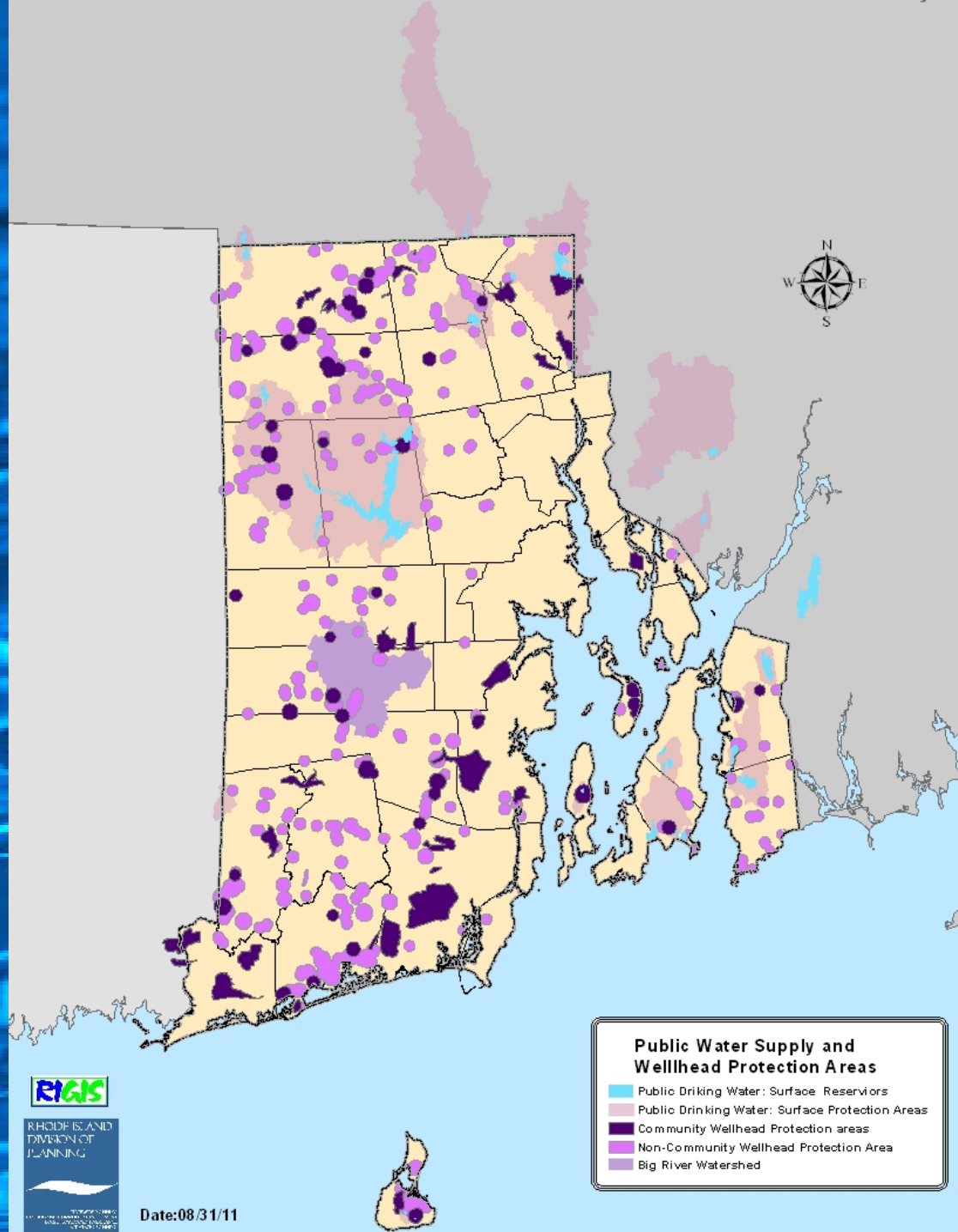
### Part 1: Changes

- ◆ Added description of Drinking Water Surcharge program
- ◆ Added description of RI CWFA
- ◆ Added 2010 drinking water facts
- ◆ Added description of WSSMP review findings
- ◆ Updated private wells section
- ◆ Updated 2 figures:
  - ◆ Rhode Island's Water Supply and Wellhead Protection Areas
  - ◆ Potable Water Sources

# Rhode Island Water 2030

## Part 1: Key Points:

- ◆ Precipitation provides all the water we use.
- ◆ The State's waters are shared, interconnected natural resources.
- ◆ The sources of water currently available are surface water and groundwater resources.
- ◆ Economic prosperity in the State has and will be tied to our water resources.
- ◆ 7 state agencies along with several federal agencies, municipalities, public suppliers and citizens affect the use of water in the State.
- ◆ Rhode Island has a total of 490 public water supply systems. The 490 systems vary widely from small rural restaurants to large municipal suppliers.
- ◆ Areas of significance to the water supply of the State are the Scituate Reservoir, the Big River Area, and the 3 groundwater aquifer systems classified as "Sole-Source Aquifers" by EPA
- ◆ This Plan is intended to serve as the foundation of potable water supply policies for future water management decisions to be made across multiple jurisdictional levels.

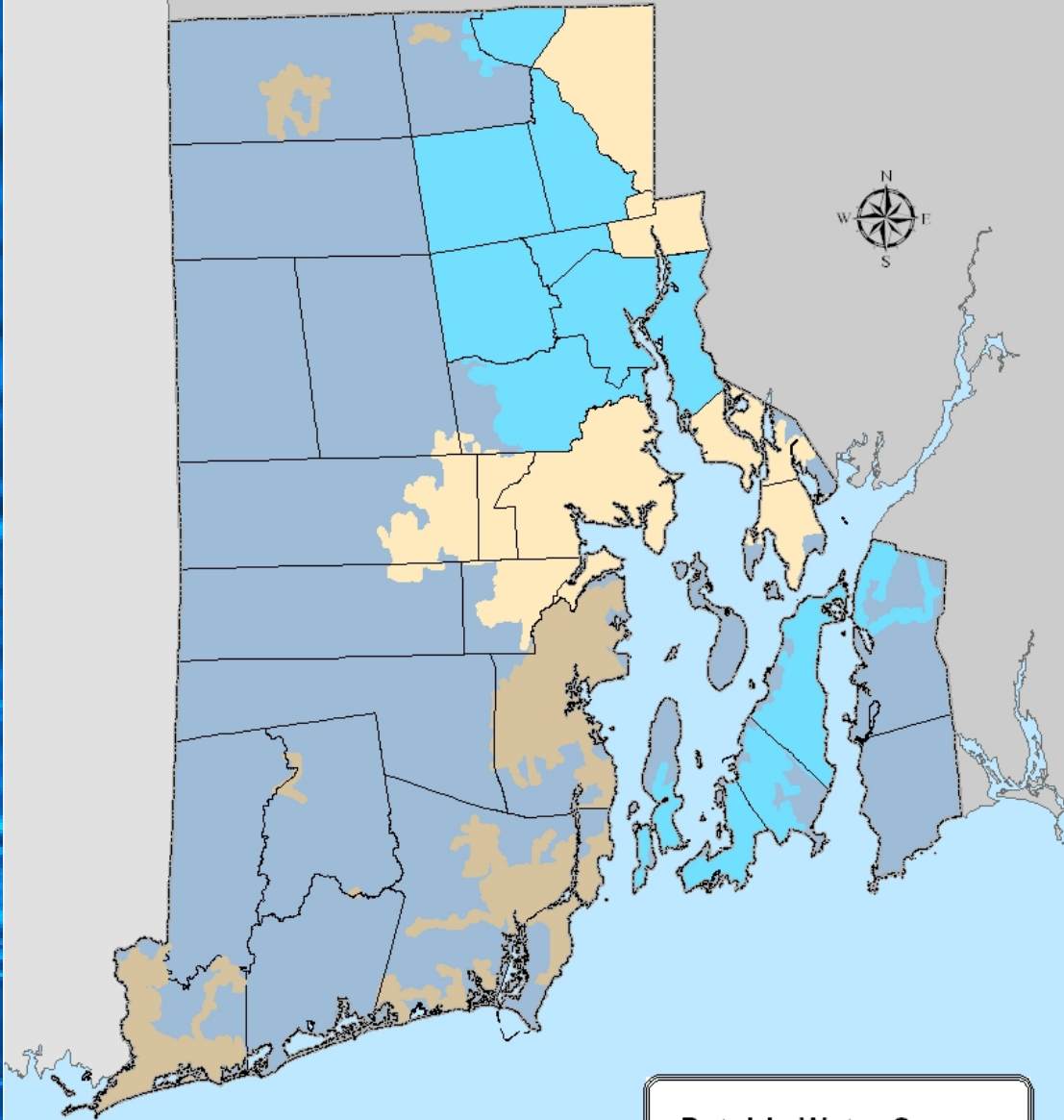


RHODE ISLAND  
DIVISION OF  
PLANNING



Date:08/31/11

# Part 1



**Potable Water Sources**

- Surface Water
- Groundwater
- Combined Water
- Well Water



Date:08/31/11



# Rhode Island Water 2030

## Original Part 2: Potable Water Issues Today

What Have We Got?

What Are We doing With It?

What's New to Think About?

## Part 2: Changes

- ◆ Updated precipitation stats & total estimated water use
- ◆ Expanded smart growth section within Land Use & Sprawl
- ◆ Expanded small systems section
- ◆ Expanded Economic / Agriculture section
- ◆ Added comparison with neighboring state's water rates
- ◆ Expanded water supply in comprehensive plans section
- ◆ Refined climate change section with RI specific data from 2011 Watershed Counts report

# Rhode Island Water 2030

## Part 2: Key Points:

- ◆ Rhode Island has sufficient supplies but water but is not always located where it is needed or available in sufficient quantities for all uses at all time:
  - ◆ Northern Rhode: has generally adequate supplies.
  - ◆ South County: groundwater is not always available when and where needed.
  - ◆ East Bay: has generally adequate supplies.
  - ◆ Central Region: both housing and economic growth are stressing available supplies.
- ◆ 60% of RI's developed water supply comes from the Scituate Reservoir.
- ◆ 16 of 39 RI communities depend upon the Scituate Reservoir for potable water in one way or another
- ◆ Managing summer peak use is now the biggest water supply issue.
- ◆ Sprawling development as identified in *Land Use 2025* is detrimental to the long term sustainable future of water supply for the State.
- ◆ A system of understandable information is needed for making informed and predictable land use decisions based on water availability among other factors.
- ◆ Technology, data, management and financing of water systems are healthy but need more support.
- ◆ Our water resources are finite and require managing for sustainability as well as public health.
- ◆ Our water rates compared to our neighboring states are relatively lower. This should be considered an economic advantage for our State.

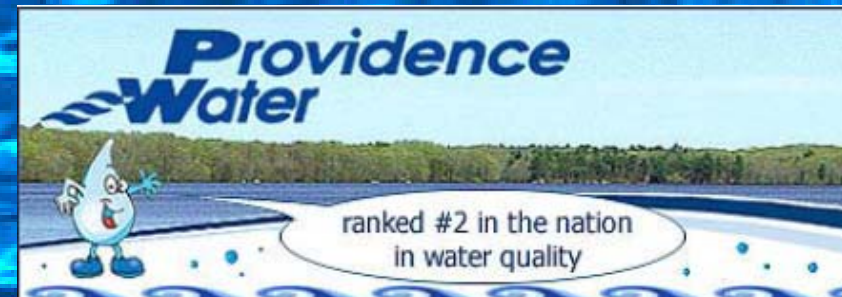
# Rhode Island Water 2030

**The WRB estimates that the 2011 total water demand for all major public systems is:**

Average Daily Demand: ~134 MGD  
Maximum Peak Daily Demand: ~180 MGD

## **We need to:**

- ◆ Invest in existing infrastructure before building new infrastructure
- ◆ To evaluate old infrastructure against current standards to make sure that good money does not follow bad
- ◆ To ensure that all investments are performance based
- ◆ To create a schedule for funding and maintenance and stick to it.



# Rhode Island Water 2030

## Annual Seasonal Dry Periods

- ◆ Occur every year as seasonal events
- ◆ Involve a spring, summer and maybe fall of decreasing rainfall
- ◆ Characterized by extremely dry and hot weather, but they do not extend from one year to the next.
- ◆ **They are not to be considered droughts.**
- ◆ Should be considered in ongoing demand management planning by water suppliers.
- ◆ They occur when seasonal peaks demands for water are the highest.

# Rhode Island Water 2030



Hunt River Average Flow



Hunt River Low Flow

# Rhode Island Water 2030

## Original Part 3: Assuring There's Water for Tomorrow

Vision

### Part 3: Changes

Future Water Supply

- ◆ Completed future demand section
- ◆ Expanded description of PUC role in rates

Integrated Management

- ◆ Expanded water rate section
- ◆ Expanded water quality section re stormwater impacts

Water Resource Management

- ◆ Added DEM LID Manual reference
- ◆ Added annual dry seasonal period in:
  - ◆ Demand management
  - ◆ Drought
  - ◆ Emergency management
- ◆ Added to Drought section:
  - ◆ definition of agricultural drought vs. hydrological drought
  - ◆ sequence of drought impacts
  - ◆ refined changing between drought phases
- ◆ Reinstated Emergency Management Goal under Water Resource Management
  - ◆ DOH helping with updating emergency management section
  - ◆ Added future concluding section

# Rhode Island Water 2030

## Part 3: Key Points:

- ◆ The vision for water supply in RI is to .....
- ◆ Goals and policies exist in 2 over arching categories:
  - ◆ Integrated Management and Planning
  - ◆ Water Resources Management
- ◆ The 2 over arching categories were divided into 10 subthemes:
  - ◆ Integrated Management and Planning
  - ◆ Water Resource Management
  - ◆ Resource Assessment
  - ◆ Water Quantity
  - ◆ Water Quality
  - ◆ Demand Management
  - ◆ Climate Change
  - ◆ Potable Supply Management
  - ◆ Drought Planning
  - ◆ Emergency Management
- ◆ Strategies are presented for each policy under each subtheme
- ◆ Timeframes were set for strategies;
  - ◆ As Needed
  - ◆ Ongoing
  - ◆ Short term (1-2 years)
  - ◆ Medium term (3-5 Years)
  - ◆ Long term (more than 5 years)
- ◆ 30 Partners were identified for lead or supporting roles.

# Rhode Island Water 2030

## Part 3: 2030 Estimated Water Needs

### 5 & 20 Year Average Day Demands (ADD) projected in WSSMPs

- ◆ All suppliers except 1 predict growth in water use in both planning periods
- ◆ The wholesale purchasers of PWSB rely on the legislated 150 GPCD to make predictions

#### ◆ In 20 years:

4 suppliers predict a deficit of current available water:

East Smithfield  
Greenville  
North Tiverton  
University of RI

7 suppliers predict the current available water will be less than 1 MGD:

Harrisville  
Jamestown  
Lincoln  
Portsmouth  
Smithfield  
South Kingstown  
Stone Bridge

# Rhode Island Water 2030

## Part 3: 2030 Estimated Water Needs

### **Based on Per Capita Basis Statewide Average GPCD & *Land Use 2025* needs:**

Additional Dwelling Units X RI Average Family Size X Average GPCD = Additional GPCD needed  
36,750 X 3.04 X 65 GPCD = 726,8000 Additional GPD needed

### **Estimated Future Water Needs on Per Capita Basis PWSB legislative GPCD& *Land Use 2025* needs:**

Additional Dwelling Units X RI Average Family Size X PWSB GPCD = Additional GPD needed  
36,750 X 3.04 X 150 GPCD = 16,758,000 Additional GPD needed

**The estimated 2030 long-term future water needs for *Land Use 2025* ranges from 7.2 Million additional GPD to 16.7 Million additional GPD.**

# Rhode Island Water 2030

## Implementation Matrix

2 over arching categories:

Integrated Management and Planning  
Water Resources Management

7 major goals

10 themes

18 policies

205 Strategies

30 Responsible partners

# Rhode Island Water 2030

## Implementation Matrix

<b>VISION</b>	<b>To ensure safe, reliable, ample water supplies to meet the State's short and long range needs while preserving the physical, biological, and chemical integrity of the water resources of the State.</b>
<b>GOALS</b>	<p style="text-align: center;"><b>Integrated Management &amp; Planning</b></p> <p>IPP-1. Integrate water resources and supply planning for water systems across intergovernmental and regional jurisdictions.</p> <p>IPP-2. Ensure the adequate technical, managerial, and financial capacity of water systems.</p> <p>IPP-3. Manage and plan for water systems that support sustainable, compact land use and concentrate development within the urban service boundary and or growth centers.</p> <p></p> <p style="text-align: center;"><b>Water Resource Management</b></p> <p>WRM-1. Manage and plan for the sustainable water use and development of the water resources of the State.</p> <p>WRM-2. Protect and preserve the health and ecological functions of the water resources of the State.</p> <p>WRM-3. Ensure a reasonable supply of quality drinking water for the State.</p> <p>WRM-4. Ensure the protection of public health, safety and welfare and essential drinking water resources during water supply emergencies</p>

# Rhode Island Water 2030

## Implementation Matrix

### Integrated Management & Planning

3 goals

1 policy theme > planning

8 policies

52 Strategies

### Water Resources Management

4 goals

9 policy themes:

Resource Assessment

1 Policy > 15 Strategies

Quantity

1 Policy > 11 Strategies

Climate Change

1 Policy > 3 Strategies

Potable Supply Management

1 Policy > 5 Strategies

Quality

3 policies > 25 Strategies

Resources of State Significance

Big River

4 Policies > 26 Strategies

Scituate Reservoir

2 Policies > 26 Strategies

Demand Management

1 Policy > 19 Strategies

Drought Mitigation

2 Policies > 13 Strategies

Emergency Management

1 Policy > 10 Strategies

# Rhode Island Water 2030

## Implementation Matrix

### **Integrated Management and Planning (IMP)**

#### **Goals and Policies**

**Goal IMP-1: Integrate water resources and supply planning for water systems across intergovernmental and regional jurisdictions.**

#### **Planning Policies:**

1. Include water quality/quantity issues for water supply sources in state water use and or municipal land use regulations.
2. Promote regional resource planning and management for existing and future sources of water supply.

# Rhode Island Water 2030

## Implementation Matrix

### **Integrated Management and Planning (IMP)**

#### **Goals and Policies**

**Goal IMP-2: Ensure the adequate technical, managerial, and financial capacity of water systems.**

#### **Planning Policies:**

1. Ensure the reliability of water supply infrastructure and water supply sources.
2. Ensure the investment in and charge all customers the full capital, operating and replacement costs of water systems.
3. Fairly impose the total cost of meeting the requirements of sustainability and demand management on all users.
4. Investigate regionalization where viable

# Rhode Island Water 2030

## Implementation Matrix

### **Integrated Management and Planning (IMP)**

#### **Goals and Policies**

**Goal IMP-3: Manage and plan for water systems that support sustainable, compact land use and concentrate development within the urban service boundary and or growth centers.**

#### **Planning Policies:**

1. Consider the cumulative impacts on water quality, overall water availability and public health when establishing the density of development.
2. Match future land use to existing water supply availability & demand, water use priorities and infrastructure.

# Rhode Island Water 2030

## Implementation Matrix

### **Water Resource Management Goals and Policies**

**Goal WRM-1: Manage and plan for the sustainable water use and development of the water resources of the State.**

#### **Policies:**

Resource Assessment: Ensure the overall long-term availability of potable water statewide.

Quantity: Manage water use and withdrawals based upon water availability that considers hydrological capacity, public health, and protection of aquatic resources.

Climate Change: Ensure adequate potable supplies for now and the future in the context of a changing climate.

Potable Supply Management: Ensure the protection of public health, safety and welfare as the priority use of potable water while striving to protect other uses and the economic well-being of the State.

#### Drought Mitigation & Response:

1. Reduce Rhode Island's vulnerability to long-term drought.
2. Minimize the effect of drought on public health and safety, economic activity, and environmental resources.

# Rhode Island Water 2030

## Implementation Matrix

### **Water Resource Management Goals and Policies**

#### **Goal WRM-2: Protect and preserve the health of ecological functions of the water resources of the State.**

##### **Policies:**

###### Quality:

1. Mitigate and prevent water contamination to protect existing and future sources of potable water.
2. Assure sufficient water is available to support other functions of water resources such as wastewater dilution without water quality impacts.
3. Prohibit public access and recreational use of surface water supply reservoirs.

###### Resources of State Significance:

###### Scituate Reservoir:

1. Encourage proactive watershed management for water quality protection.
2. Develop and implement tools that foster control to minimize water quality impacts in the watershed.

###### Big River:

1. In addition to water supply uses the area shall be kept as open space for passive enjoyment by state residents.
2. A safe and habitable environment shall be maintained for the tenants and uses within the watershed lands controlled by the State.
3. Encourage proactive watershed management for water quality protection.
4. Use the watershed for water supply augmentation through groundwater development.

# Rhode Island Water 2030

## Implementation Matrix

### **Water Resource Management**

#### **Goals and Policies**

**Goal WRM-3: Ensure a reasonable supply of drinking water for the State.**

#### **Policies:**

Demand Management: Reduce the overall demand for potable water.

**Goal WRM-4: Ensure the protection of public health, safety and welfare and essential drinking water resources during water supply emergencies**

#### **Policies:**

Emergency Management: Manage and conserve essential potable water resources in times of emergencies and or shortages

# Rhode Island Water 2030

## Implementation Matrix

<b>Integrated Management &amp; Planning</b>		Lead	Support	Timeline
<b>Goal IMP-1</b>	<b>Integrate water resources and supply planning for water systems across intergovernmental and regional jurisdictions</b>			
<b>Planning Policies</b>	1. Include water quality/quantity issues for water supply sources in state water use and or municipal land use regulations			
	<b>◆ Strategies</b>			
	A. Coordinate Water Supply Systems Management Plans (WSSMP) with comprehensive community plans	WS,M	WRB,DOP	O
	B. Ensure that Executive Summaries of WSSMP are included in comprehensive community plans	M,DOP	WRB,WS	O

# Rhode Island Water 2030

## Implementation Matrix

### Strategies & Time line:[205 Strategies]

		IMP strategies	WRM strategies
AN	As Necessary.....	3.....	19
O	Ongoing.....	25.....	73
ST	Short term (1-2 yrs).....	11.....	31
MT	Medium Term (3-5 yrs).....	10.....	16
LT	Long Term (more than 5 yrs).....	6.....	10

# Rhode Island Water 2030

## Questions ? & Discussion

Nancy Hess

222 - 6480

[Nancy.Hess@doa.ri.gov](mailto:Nancy.Hess@doa.ri.gov)

