

State Guide Plan Update

Water Quality 2035

Progress Report



Presentation to
Rivers Council
March 9, 2016



Water Quality 2035

- *New* guide plan element that consolidates policies and actions targeting water quality and aquatic habitat protection and restoration in one plan.
- Streamlining of State Guide Plan. Will replace 4 existing Elements:
 - #162 **RI Rivers Policy and Classification Plan (2004)**
 - #711 Blackstone Region Water Resources Management Plan (1981)
 - #715 CCMP for Narragansett Bay (1992)
 - #731 NPS Management Plan (1995)and by reference RI Groundwater Protection Strategy & RI Wellhead Protection Program

Alignment with other SGP Elements

- Will not be duplicative.
- Will cross-reference and reinforce policies and actions already reflected in:
 - Land Use 2025
 - Water 2030
 - Transportation 2035
- Drawing from and integrating related planning efforts:
 - Comprehensive Conservation Management Plan for Narragansett Bay (2012)
 - Clean Water Needs Survey (2012)
 - Systems Level Plan – BRWCT (2008)

Water Quality 2035

Advisory Committee

DOP – SPP & WRB

DEM – OWR & BRWCT (formerly)

CRMC

DOH

DOT

Audubon Society of RI

Rivers Council

Narragansett Bay Estuary Program

Save the Bay

Narragansett Water Pollution Control Association

EPA

2 Watershed Councils: Wood Pawcatuck & Woonasquatucket

Salt Ponds Coalition

5 Municipalities: Providence, Middletown, S Kingstown, West
Greenwich & Westerly

URI – Coop Ext. -WTS Center & Coastal Institute

US NRCS

Clean Waters Support RI's Economy

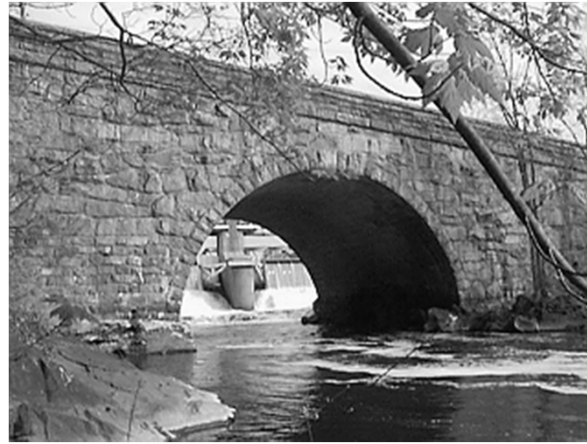
Tourism & Recreation

- 3 million beach visitors annually
- \$227 million increase in economic output due to spending by boaters
- over 300 fishing tournaments annually
 - ✓ 38,224 saltwater licenses
 - ✓ over 40,000 freshwater licenses
- Manufacturing & Industry
- \$636 million in direct wages for 14,500 jobs in industries dependent on clean water (2008)

Commercial Fisheries

- RI commercial fisheries landings = 4,968 jobs; \$150 million in total sales (2010)
- Aquaculture - now 55 farms with \$5.23 million in sales (2014)

Scope of the Plan - Statewide



Coastal waters - Rivers - Streams- Lakes- Ponds- Groundwater - Wetlands



Water Quality Management

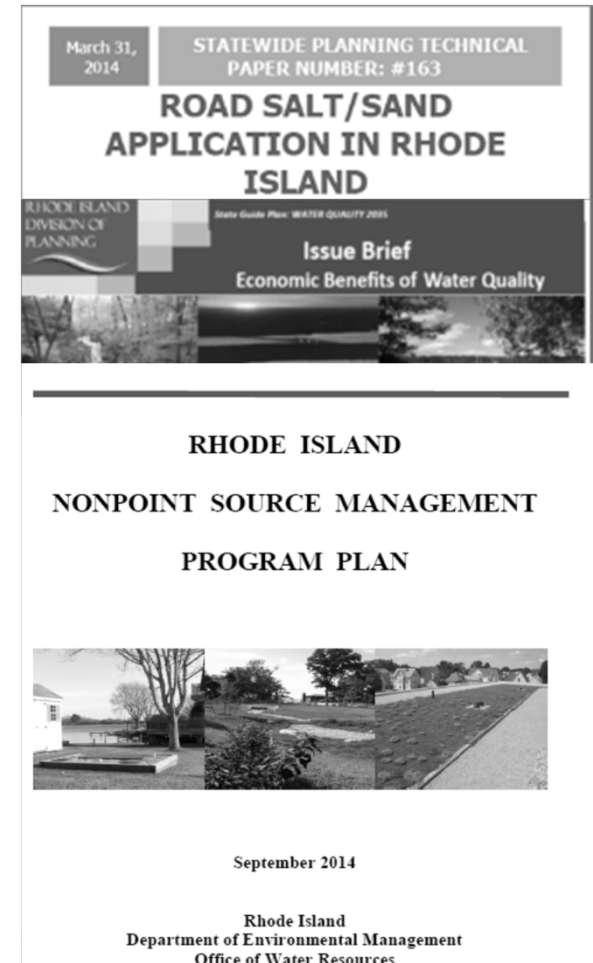
where we have been...

- Over 40 years of federal Clean Water Act implementation
- Success in controlling most point sources of pollution (*direct discharges*)
- Greater understanding of the impacts of non-point (*diffuse*) sources of pollution, especially stormwater runoff
- Growing emphasis on biological indicators as better measures of the cumulative effects of various stressors on aquatic ecosystems
- Recognition of the need for adaptive management especially in light of changing climate and emerging issues



Progress Since 2013

- Stakeholder Advisory Committee
 - 11 Meetings - Sept 2013 – present
- Technical Paper & Issue Brief (2014)
- Content used to update the RI Nonpoint Source Management Plan – Sept 2014
- Guide Plan Element:
 - current draft is 75% +/- complete



Organization of the Element

Pollution Sources

1. Introduction & Vision
2. RI Water Resources & Trends
3. WQ Management Framework
4. WQ Monitoring & Assessment
5. Planning
6. Pollution Sources & Aquatic Habitat Management

Barriers to Stream Connectivity

Water Withdrawals

Implementation Matrix

Wastewater & OWTS

Stormwater

Road Salt & Sand Application

Discharges to Groundwater

Agriculture

Lawn/Turf Management

Pesticide Application

Boating and Marinas

Underground & Aboveground Storage Tanks

Waste Management- Solid & Hazardous

Site Remediation

Dredging

Pet Waste

Waterfowl

Land application of WWTF solids

Surface Mining

Silviculture

Atmospheric deposition

Marine and riverine debris

Aquaculture

Contaminants of emerging concern

Part 1 Intro & Vision

Rhode Island's water resources will support healthy aquatic ecosystems and meet the needs of current and future generations by protecting public health, supplying drinking water, providing bountiful recreational opportunities and supporting a vibrant economy.

- **Two goals:**

- Protect /prevent further degradation.
- Restore degraded waters and aquatic habitats.

Part 1 Intro & Vision

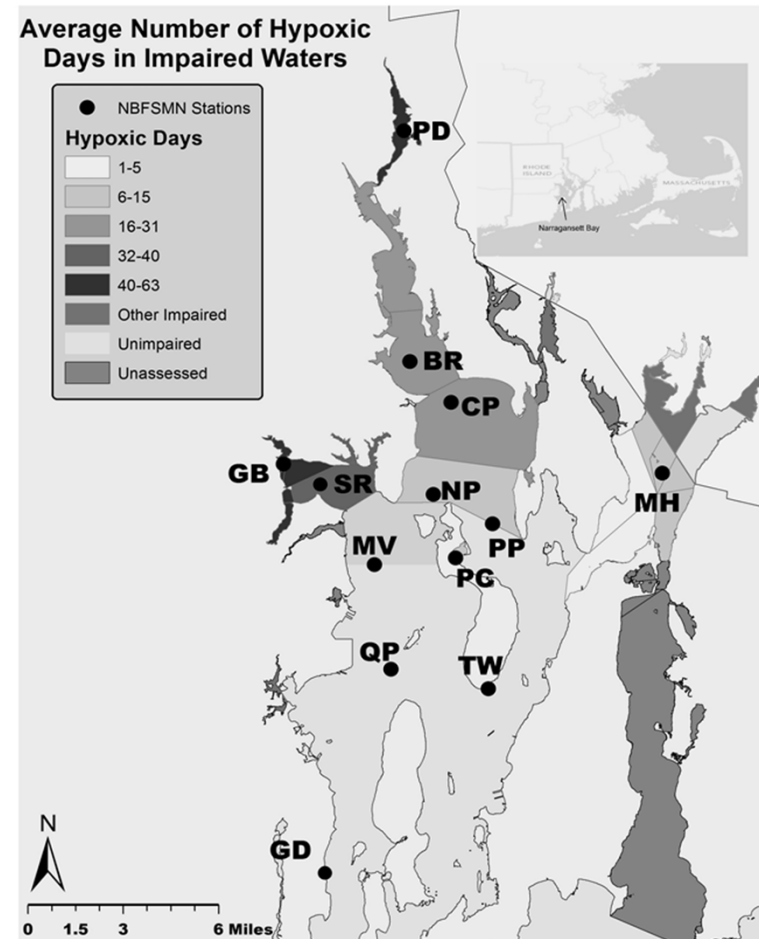
Key Management Principles

- Watersheds are appropriate unit for managing water quality.
- Pollution should be prevented whenever possible.
- Management based on sound science and regularly incorporates new scientific understanding.
- Monitoring is essential to provide information needed for effective management.
- New technologies should be adopted where beneficial.
- Need well informed citizenry and engaged interested stakeholders.
- Collaborative effort is needed across all governmental jurisdictions, other organizations and programs to ensure success.

Part 2 RI Water Resources & Trends

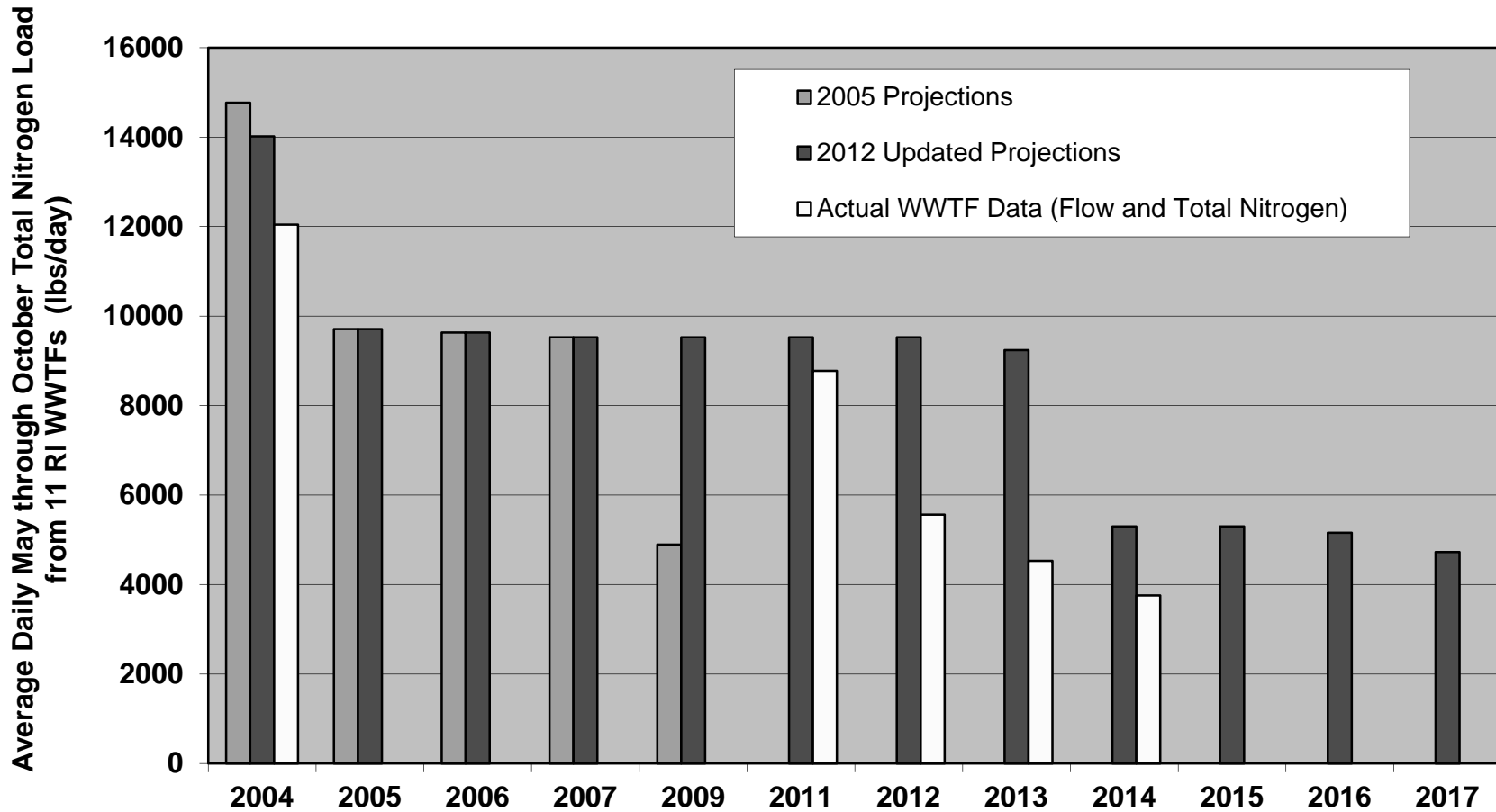
Water Quality: Narragansett Bay

- About 1/3 of the Bay experiences low dissolved oxygen.
- Not all areas of the bay are equally affected.
- About 24% assessed shellfishing waters are impaired (pathogens).
- WWTFs have achieved over 50% reduction in loading of nitrogen.



Part 2 RI Water Resources & Trends

Projected and Actual Seasonal Nitrogen Load Reductions (May through October)
from 11 RI WWTFs Impacting Upper Narragansett Bay



Projected calculations are based on 1995 and 1996 May through October WWTF flows.
Loadings will increase as WWTF flows increase to their approved design flows.

WWTFs - Burrillville, Cranston, East Greenwich, East Providence, NBC - Bucklin Point, NBC - Fields Point, Smithfield, Warren, Warwick, West Warwick, Woonsocket.

Part 2 RI Water Resources & Trends

Signs of Progress in the Bay

- Increased number of shellfishing days due to Combined Sewer Overflow Abatement (Phases I & II)
- Plans for the opening of urban beach (Sabin Pt., East Prov)
- > 25 % increase in sea grasses from 2006 – 2012
- Improving benthic habitat conditions (recent research, EPA et al)

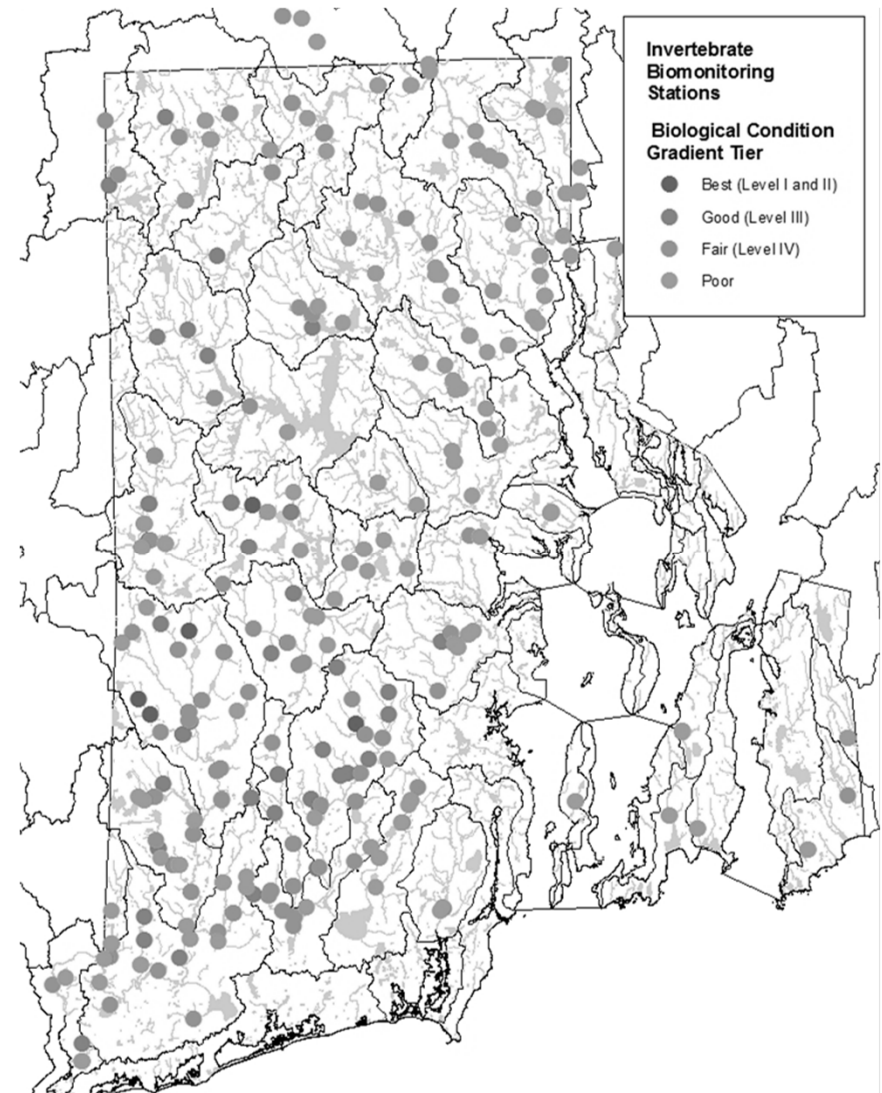
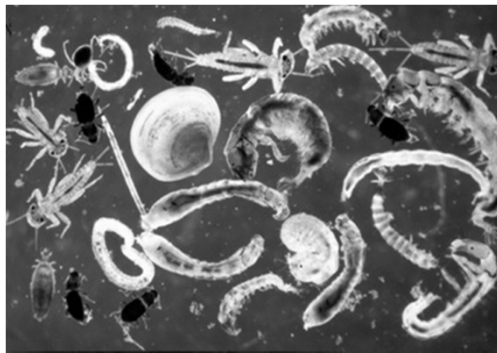


Photos: Providence Journal, NOAA

Part 2 RI Water Resources & Trends

Rivers and Streams

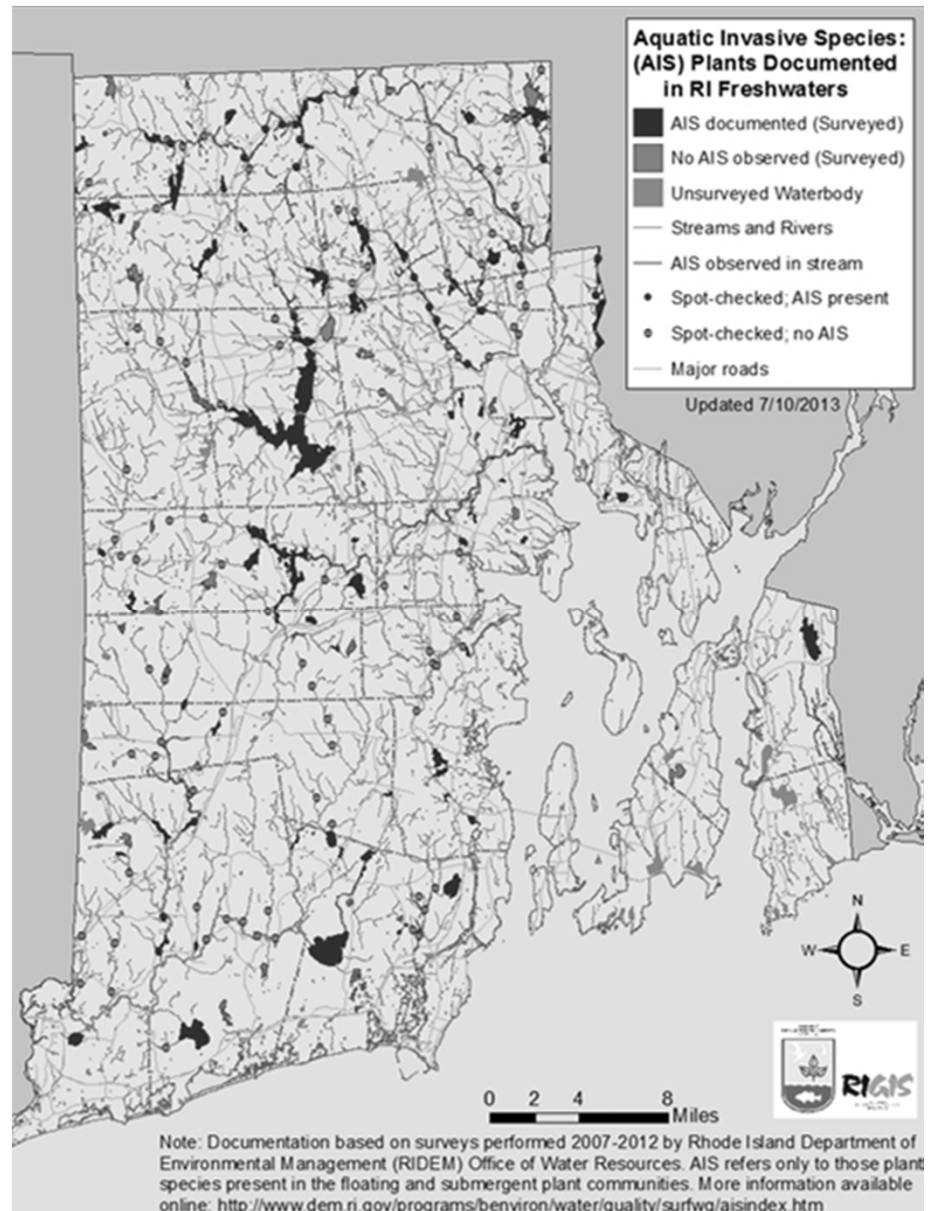
- In 2012 - 31% of rivers and streams assessed for aquatic life use are considered impaired (62% of RI's 1,420 miles were assessed)
- Degraded aquatic life conditions linked to intensity of land use



Part 2 RI Water Resources & Trends

Lakes and Ponds

- Largest cause of impairment is aquatic invasive plants.
- Fewer ponds are eutrophic but are focus of increased management attention.
- Cyanobacteria blooms – also getting greater attention.



Part 2 RI Water Resources & Trends

Wetlands

Freshwater Wetlands

- Degraded wetland condition correlated with disturbance in wetland buffer.



Saltmarshes

- Salt marshes are threatened by sea level rise (“drowning”).



Part 4 Water Quality Management and Assessment

Statewide Assessment of Aquatic Habitat

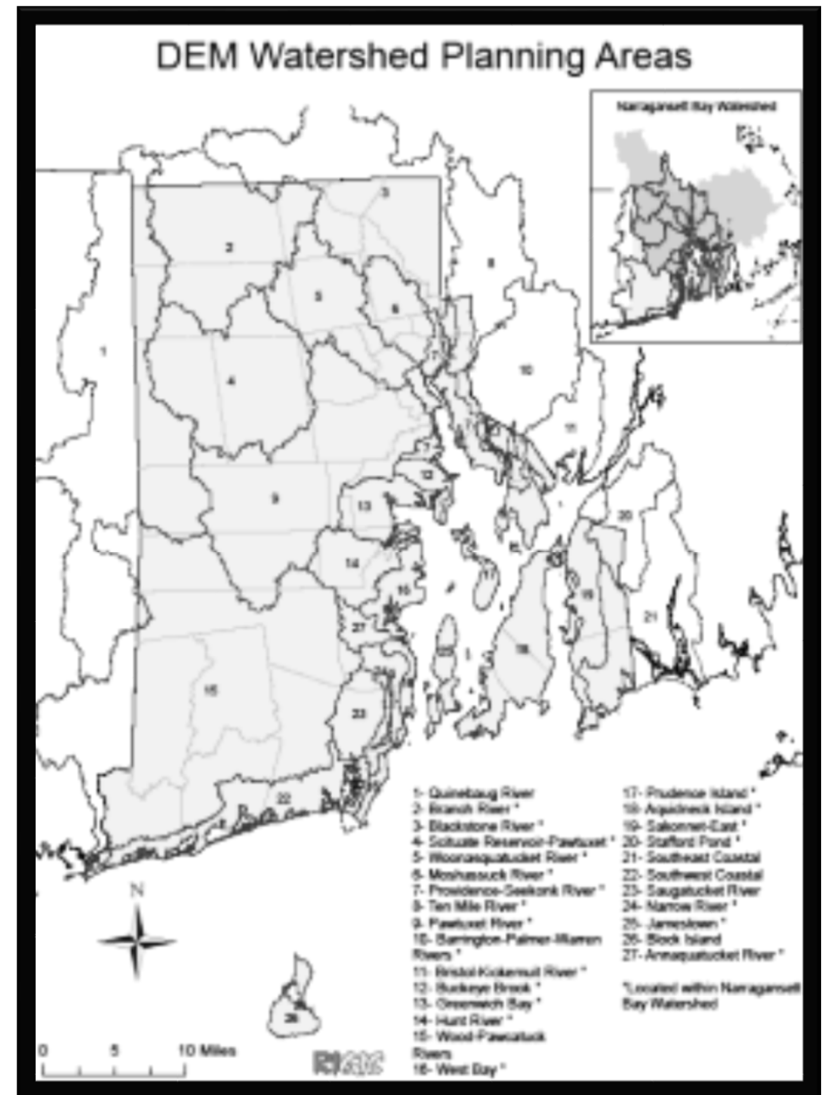
Aquatic habitats are of high importance to state, regional and federal fish and wildlife conservation efforts.

- 58% of habitats prioritized in the new State Wildlife Action Plan as key habitats for species of greatest conservation need (SGCN) were aquatic habitats.
- 89% of SGCN rely on or utilize aquatic habitats

Part 5 Planning

Watershed Based Plans

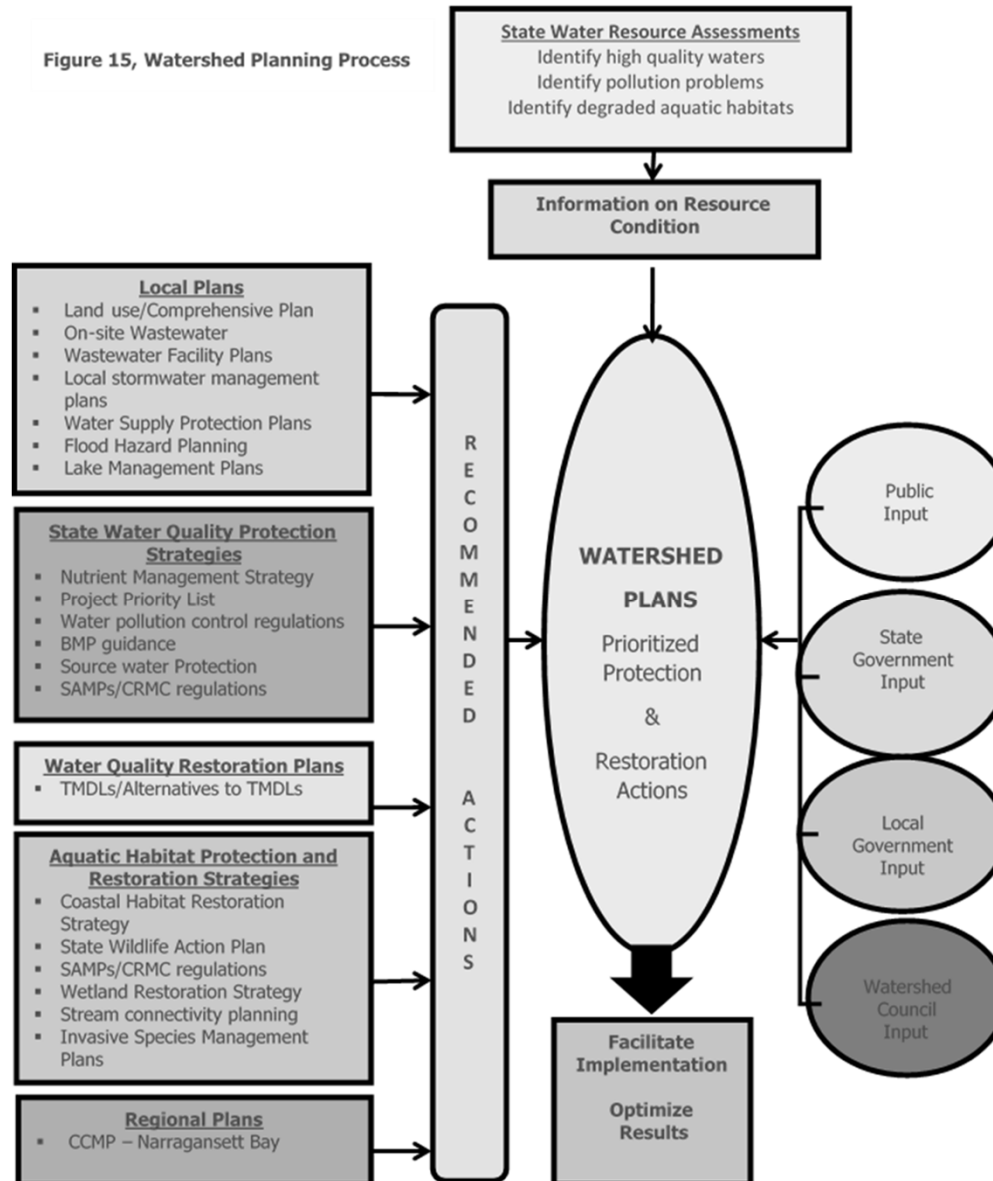
- Mechanism to integrate planning for actions within a watershed.
- Foster collaboration and alignment of resources to optimize results.
- Plans required by EPA for expenditures of certain Clean Water Act implementation funds.
- Need to be easy to understand and use.



Part 5 Planning

Watershed Based Planning

Figure 15, Watershed Planning Process



Other Work: Recent Statutory & Programmatic Changes

- Revised Freshwater Wetlands Law Affecting Role of Cities and Towns
- Clean Water Finance Agency evolution into Infrastructure Bank
- Cesspool Phase-Out A
- Elimination of the Bays, Rivers and Watersheds Coordination Team
- New regional EPA Southeast New England Program
- *Striving to have SGP clearly describe key roles of agencies and organizations involved in water quality management.*



Challenges & Discussion Points

Sustainable Infrastructure Financing

- Wastewater
 - 2015 RIDEM Priority Project List - \$1.464 billion
 - \$1.44 billion in wastewater projects,
 - \$4.424 million for on-site wastewater programs
 - RI receives +/- \$9-10 million/yr from EPA to capitalize CWSRF
 - Infrastructure Bank facing potential shortfalls in needed funding for Clean Water SRF program.



Challenges & Discussion Points

Stormwater

- Not as well characterized as wastewater but estimated to be in the hundreds of millions
- Local capacity (staff expertise & financing) to implement water quality actions
- Need for interface between State and small local groups

Climate Change

- Changing precipitation patterns – implications for infrastructure
- Sea-level rise impacts on coastal habitats
- Warming waters driving ecological changes





Challenges & Discussion Points

Data/information Gaps

- Sustaining existing monitoring efforts
- Fill priority gaps

Capacity to Manage and Synthesize Data

- Need the right tools: water quality model for Narragansett Bay
- Information technology systems: need to adapt to changes at federal level

State Program Capacity Gaps

- Examples:
 - Lake Management Program
 - Cyanobacteria
 - Fish Tissue contamination
 - Habitat Restoration

Part 6: Draft Actions

State Guide Plan Element: *Water Quality 2035*

Draft: November 2015

IMPLEMENTATION MATRIX - POLICIES and ACTIONS	LEAD	SUPPORT	TIME-LINE
Part 4 Water Quality Monitoring and Assessment Actions³			
Monitoring Policy: State monitoring is an essential component of water resource management.			
Actions			
A. Complete development of comprehensive environmental monitoring strategy, prioritize gaps and continue to strengthen coordination of monitoring activities through the RIEMC.			
B. Complete update of the RI Water Monitoring Strategy and Freshwater Wetlands Monitoring Strategy. Incorporate groundwater monitoring.			
C. Secure additional resources to support implementation of essential state monitoring programs. Prevent disruption in important on-going data collection efforts; e.g. streamflow.			
D. Prioritize gaps in existing data collection efforts. Through collaboration and new investment, initiate monitoring to reduce priority gaps including but not limited to surveillance of conditions that present public health threats (cyanobacteria, fish tissue contamination).			
E. Establish sentinel networks to collect data on a long-term basis to detect and characterize environmental change associated with changing climate, including participation in regional networks.			
F. Collaborate with and support volunteer monitoring programs that contribute data useful to state management planning and decision-making.		DOP	
Water Quality Assessment Policy: Water quality standards and criteria serve to protect the quality of RI waters and aquatic habitats.			
Actions			
A. Periodically review and update state water quality standards and criteria to reflect new scientific understanding and ensure appropriate levels of protection.			
B. Incorporate new tools, such as the biological condition gradient and tiered aquatic life uses, into the framework of water quality standards as a refinement which strengthens protection of high water quality waters.			
C. Develop numeric nutrient criteria as a refinement to existing narrative criteria.			
D. Develop and apply biocriteria, such as indices of biological integrity, as refinements to state water quality standards and criteria.			
E. Expand state capacity to synthesize and interpret data through the development and use of refined environmental indicators and metrics.			

³ See Part 4 for more details.





Next Steps

- Complete the draft
- Advisory Committee meeting– End of March 2016
- Stakeholder outreach
 - Rivers Council, Watersheds Counts, EMC, SCC, NWPC, RC&D, RIWWA, RISEP/RIAPA, NWPA legislative day, NBEP,
 - Possibly: WRB, PRA, others?
- Revise draft & prepare formal preliminary draft plan
- Initiate formal SGP review process
 - (+/- 6 months start → finish)

For Comments / Questions

DOP:

- Land Use Water Resources page:

<http://www.planning.ri.gov/statewideplanning/land/water.php>

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