

Millers River

MassDEP/Division of Watershed Management



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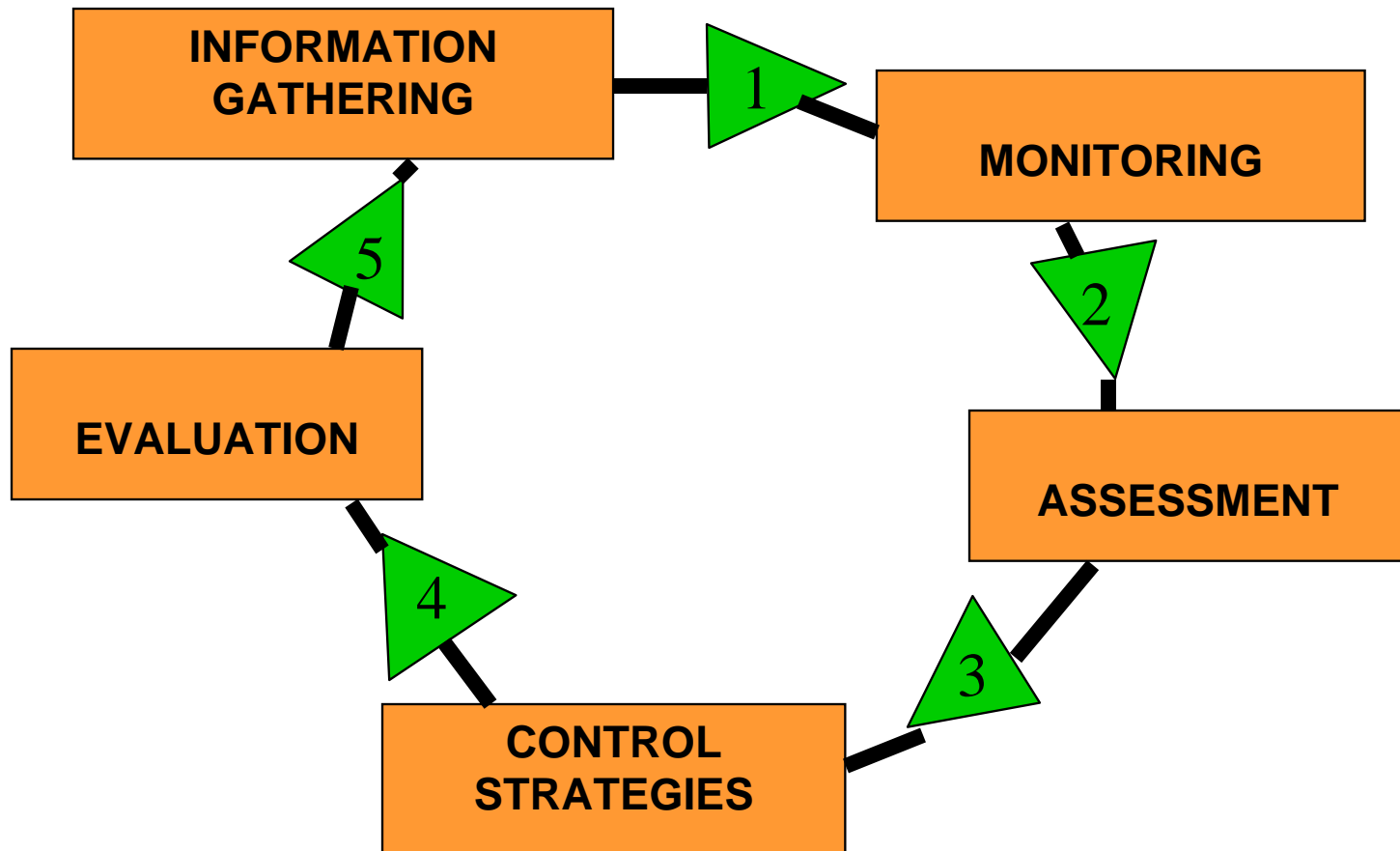
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Mission

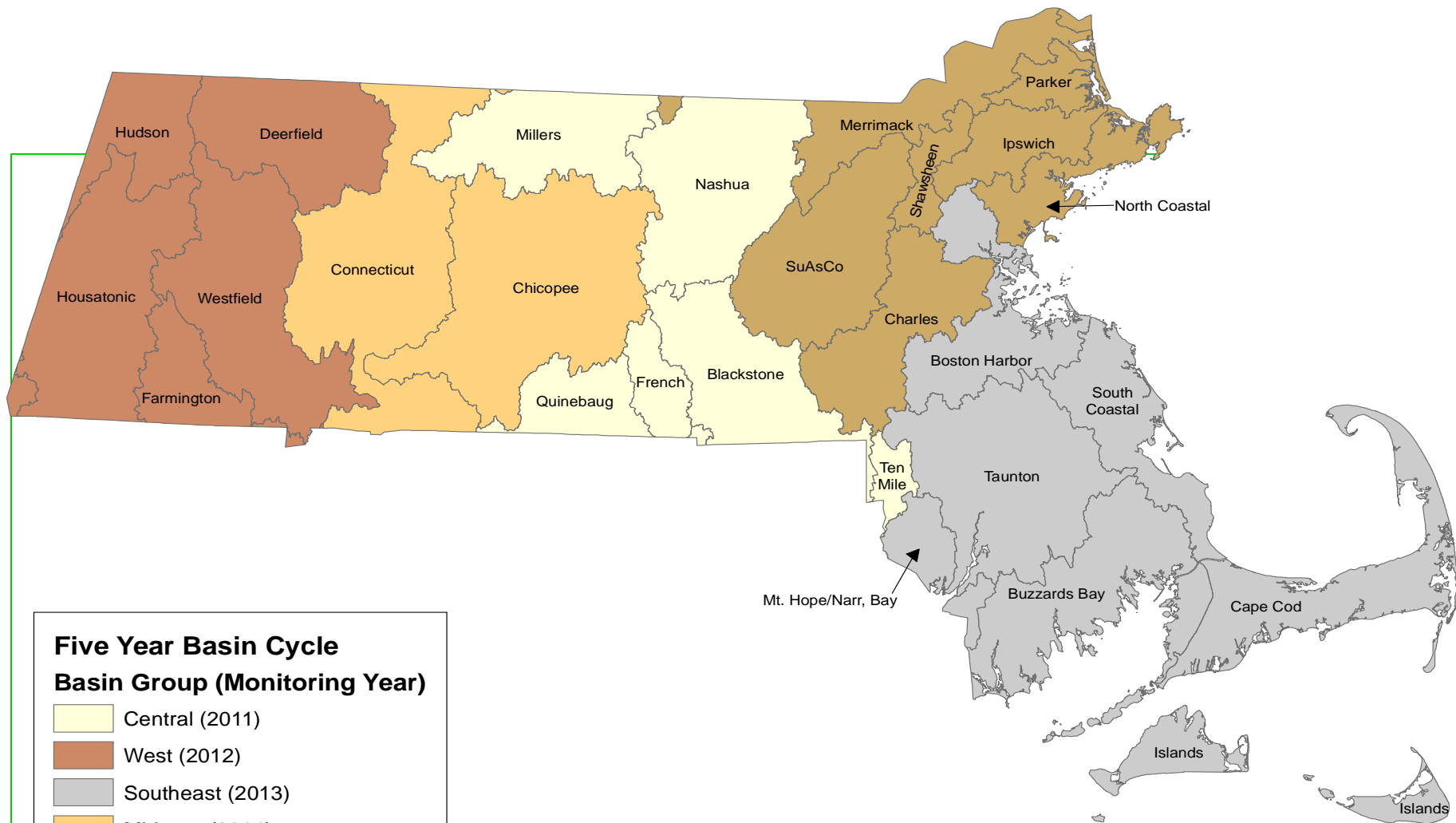
- As enacted in 1972, §303(d) of the Clean Water Act requires States to:
 - Identify waters not meeting State water quality standards
 - Integrated List [§303(d) list]
 - Total Maximum Daily Load (TMDL)
 - Maximum amount of nutrient that can enter a water body ...and still meet water quality standards

Watershed 5 Year Cycle



Watershed Monitoring

- 27 Watersheds in MA
- Monitor Rivers and Streams
- Watersheds are regionally assigned to five groups with each group containing an approximately equal quantity of river miles



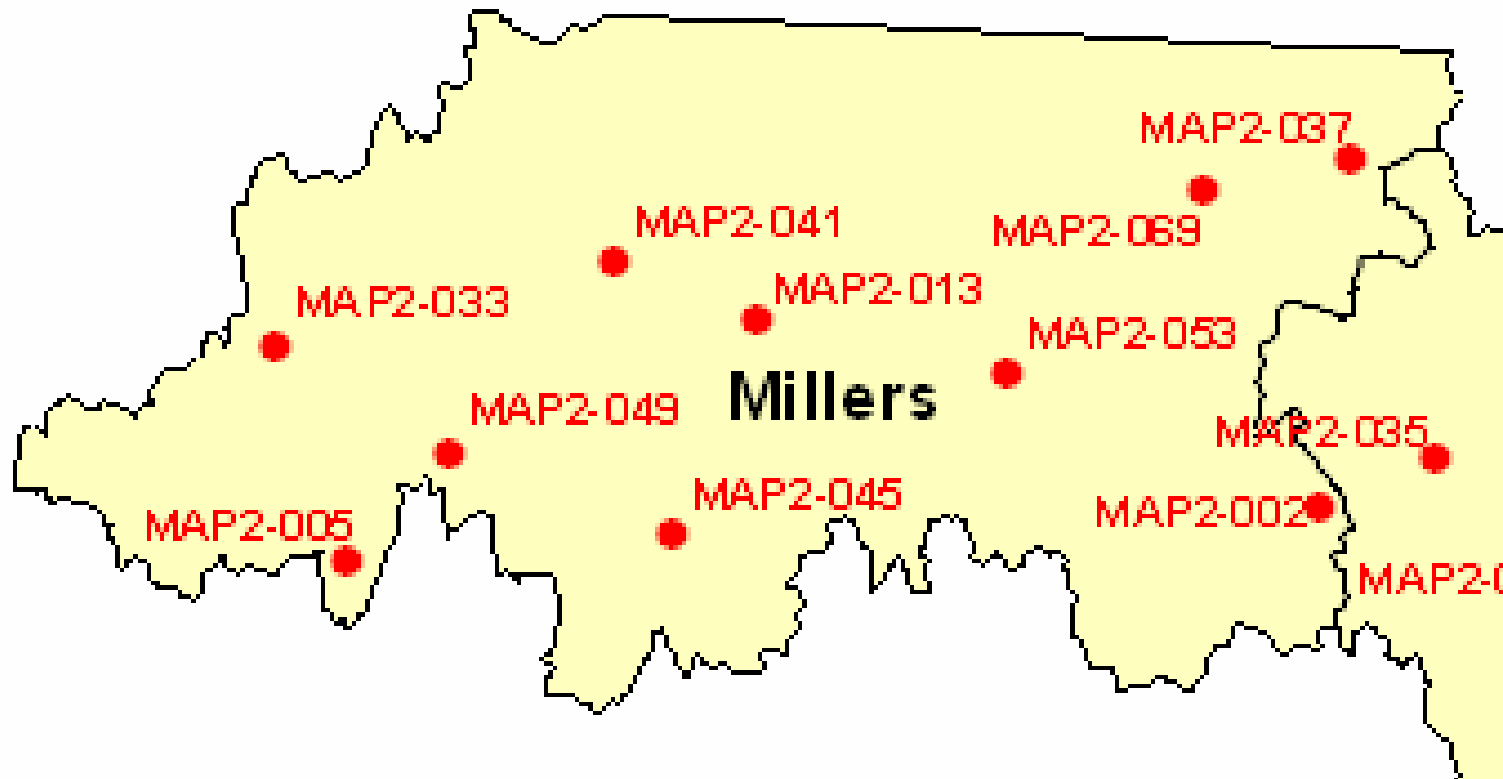
**Five Year Basin Cycle
Basin Group (Monitoring Year)**

- Central (2011)
- West (2012)
- Southeast (2013)
- Midwest (2014)
- Northeast (2015)

Water Quality Monitoring

- Targeted Monitoring
 - Sites are specifically selected
 - Traditional approach
- Probabilistic Monitoring
 - Randomly selected sites to provide an unbiased assessment of water quality throughout the watershed

Probablistic Sites



Intensive Water Quality Sampling

- Multiple probe (DO, temp, pH, specific conductance)
- Chemistry/Nutrients
- Bacteria
- Periphyton/Chlorophyll
- Macroinvertebrate & Habitat Assessment
- Fish Toxics
- Toxicity Testing (USEPA)



Water Quality Sampling

- SMART Monitoring – CERO
 - Continuous monitoring at 5 stations every other month
 - Multiple probe (DO, temp, pH, specific conductance)
 - Chemistry/Nutrients
 - Bacteria
 - Long Term Trends



Assessment

- Data undergoes Quality Control
 - Quality Assurance Project Plan
 - Blanks, duplicates, replicates, spikes
- Other data
- For each segment a determination is made as to whether or not individual designated uses are supported

Assessment

- If impaired goes on Integrated List in:
 - Category 5 - impaired and requiring one or more TMDLs
 - Category 4a - impaired but not requiring TMDLs

Integrated List

- Numerous Waterbodies on the list for
 - Organic enrichment/low DO
 - Turbidity
 - Nutrients
 - Over-abundance of nuisance aquatic plants
- Indicate eutrophication

Sources of Pollution

- Point Sources
 - WWTPs
 - NPDES permits
- Nonpoint Sources
 - Septic Systems, Fertilizers, Agriculture, Stormwater

Stormwater

- Water from rain & snow melts that flows across land
- Pollutants deposited on land are carried by runoff into waterbodies
- Pollutants
 - Nutrients, solids, metals, salt, pathogens, pesticides, hydrocarbon

Reports

- Assessment of Potential NPS for Millers River Watershed
- TMDL for Selected Millers Basin Lakes
<http://www.mass.gov/dep/water/resources/millers.pdf>
- Millers River Watershed Water Quality Assessment Report
<http://www.mass.gov/dep/water/resources/35wqar.pdf>

Assessment of NPS Report

- ● ● ●
- MRPC & FRCOG

- Identified potential sources of NPS
 - Stormwater
- Recommendations on actions to take

TMDL for Lakes

- On list for DO, Turbidity, nutrient & over-abundance of nuisance aquatic plants
- P nutrient of concern – limiting factor
- Report used estimates of water runoff & modeling
- P limit established & corrective actions outlined
- Authority to regulate NPS on local level
- Recommends Stormwater Best Management Practices be implemented

Water Quality Assessment Report

- Recommendations
- Impervious Surface Analysis
- Preserve and prevent water quality degradation
- Land use protection techniques
- LID

Questions

