Water Needs Forecasting Overview

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dcr
Massachusetts

Role and Purpose of WNF:

Indicate system water volume needs at Years 5, 10, 15, & 20

WMA new permits/renewals require an OWR 20-year forecast of system water needs

Occasional other reasons for forecasting (e.g. comprehensive planning)

Forecast is specific to each water supplier

WRC-approved methodology

Key Milestones:

Mid-1980s: WRC approves original water needs forecasting methodology

1991: WRC approves revised methodology

2001: WRC approves policy for developing water needs forecasts

2006: WRC approves update of Water Conservation Standards

2007: WRC approves update of "Policy for Developing Water Needs Forecasts for Public Water Suppliers and Communities and Methodology for Implementation"

2009: WRC approves revision to "policy" ("administrative updates")

2010: WRC approves adaptation of methodology for Cape & Islands

2017: WRC approves revision to policy and methodology: increased buffer to 10% for Cape & Islands

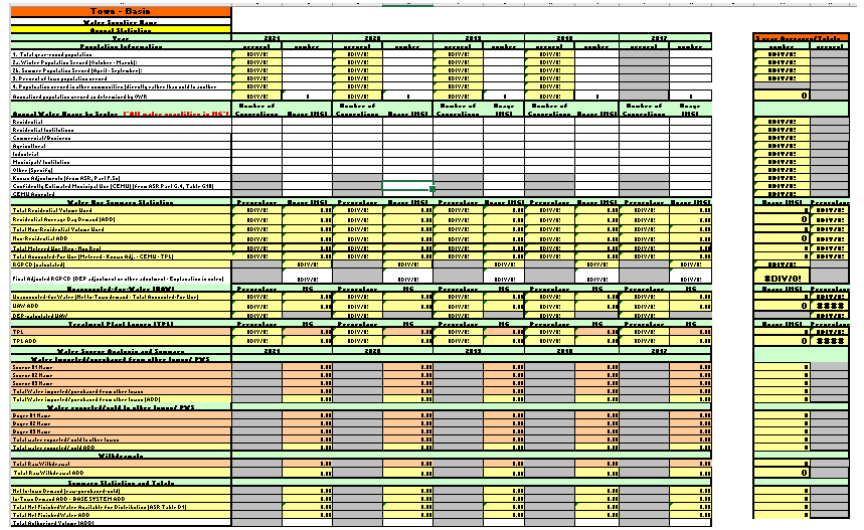
Steps in Developing Forecasts:

1) Compile and review ASR data, identify gaps

2) Gather additional data
   - PWS, town planners, RPAs, consultants
   - Census data
   - DOT Pop and Emp projections

3) Develop draft forecast

Metered Finished Water Use (MG)	2022		2021	
	Number of connections	Volume (MG)	Number of connections	Volume (MG)
Residential	4676	**364.416**	4285	**361.693**
Residential Institutions				
Commercial/Business	346	**84.216**	338	**79.627**
Agricultural				
Industrial				
Municipal/Institutional/Non-profits	58	**96.848**	58	**16.822**
Other				
Total Use	5080	**545.48**	4681	**458.142**



Steps in Developing Forecasts:

4) Share draft forecast letter with DEP (opportunity to address any critical concerns)

5) Discuss draft forecast letter with stakeholders

6) Develop final forecast letter with any input received during discussions

Assuming 65 rcpcd and 10% unaccounted-for water:

	2014	2019	2024	2029
Projection (mgd)	0.56	0.57	0.57	0.57
			Five Percent Buffer (mgd)	+ 0.03

Assuming water use continues at current rgpcd and unaccounted-for water levels during the permitting period:

	2014	2019	2024	2029
Projection (mgd)	0.67	0.68	0.68	0.69
			Five Percent Buffer (mgd)	+ 0.03

Data used in projections:

Water-use data for 3 to 5 years (from ASRs):

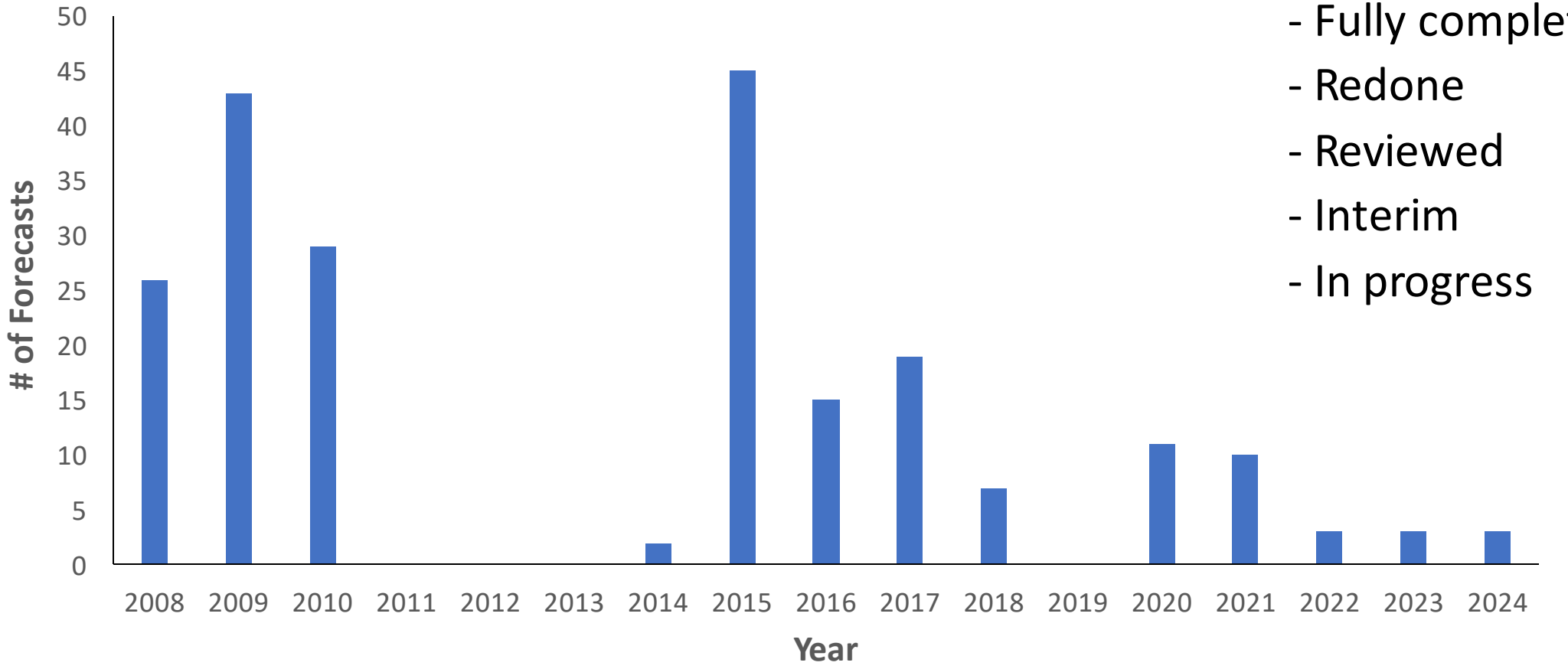
- Residential
- Nonresidential
- Treatment plant losses (if any)
- Purchased/sold
- CEMU
- UAW

Population served by water system (including out of town and seasonal)- present and projected

Employment- present and projected (for non-res estimates)

Anticipated significant changes in water use

WNF Statewide Summary:



*Includes forecasts that were:

- Fully completed
- Redone
- Reviewed
- Interim
- In progress

Recently Completed/Ongoing Forecasts:

Beverly-Salem- completed

Dover (Aquarion)- completed

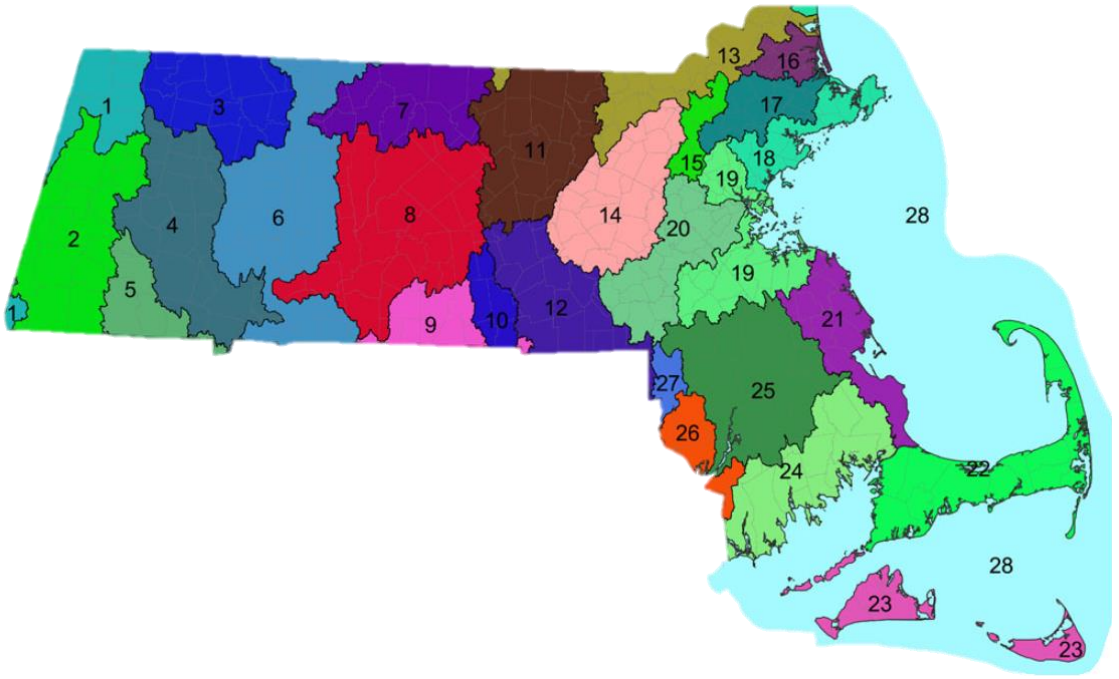
Southwick- completed

Wilkinsonville- completed

Kingston- in progress

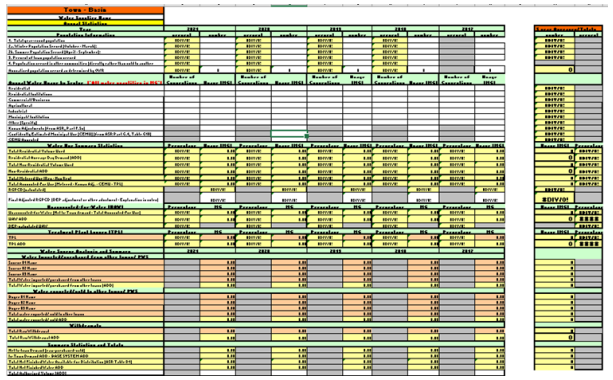
Onset- in progress

Dunstable- in progress



Future Considerations:

1) Upgrading data storage/management systems
2) Beginning discussions with DEP on WNF methodology- last significant updates in 2007
3) Water Conservation Standards- last updated in 2018



THE COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION
100 CAMBRIDGE STREET, BOSTON MA 02114

Policy for Developing Water Needs Forecasts for Public Water Suppliers and Communities and Methodology for Implementation

December 13, 2007
Revised March 9, 2017

I. POLICY STATEMENT

It is the policy of the Commonwealth of Massachusetts that the Water Resources Commission (WRC) shall develop water needs forecasts for public water suppliers and communities seeking increased water withdrawals under the Water Management Act (WMA) and for other purposes as deemed appropriate by the Commission. As a result of the development of the water needs forecast, the WRC may make recommendations to the public water suppliers or communities regarding water use, system efficiency or other issues. Where such water needs forecasts may be pursued for actual withdrawal use by a public water supplier or community, at a minimum, permitting by the Massachusetts Department of Environmental Protection (MassDEP) is required.