

Boston Harbor & Taunton Permit Meeting

April 23, 2015

Sharon Community Center

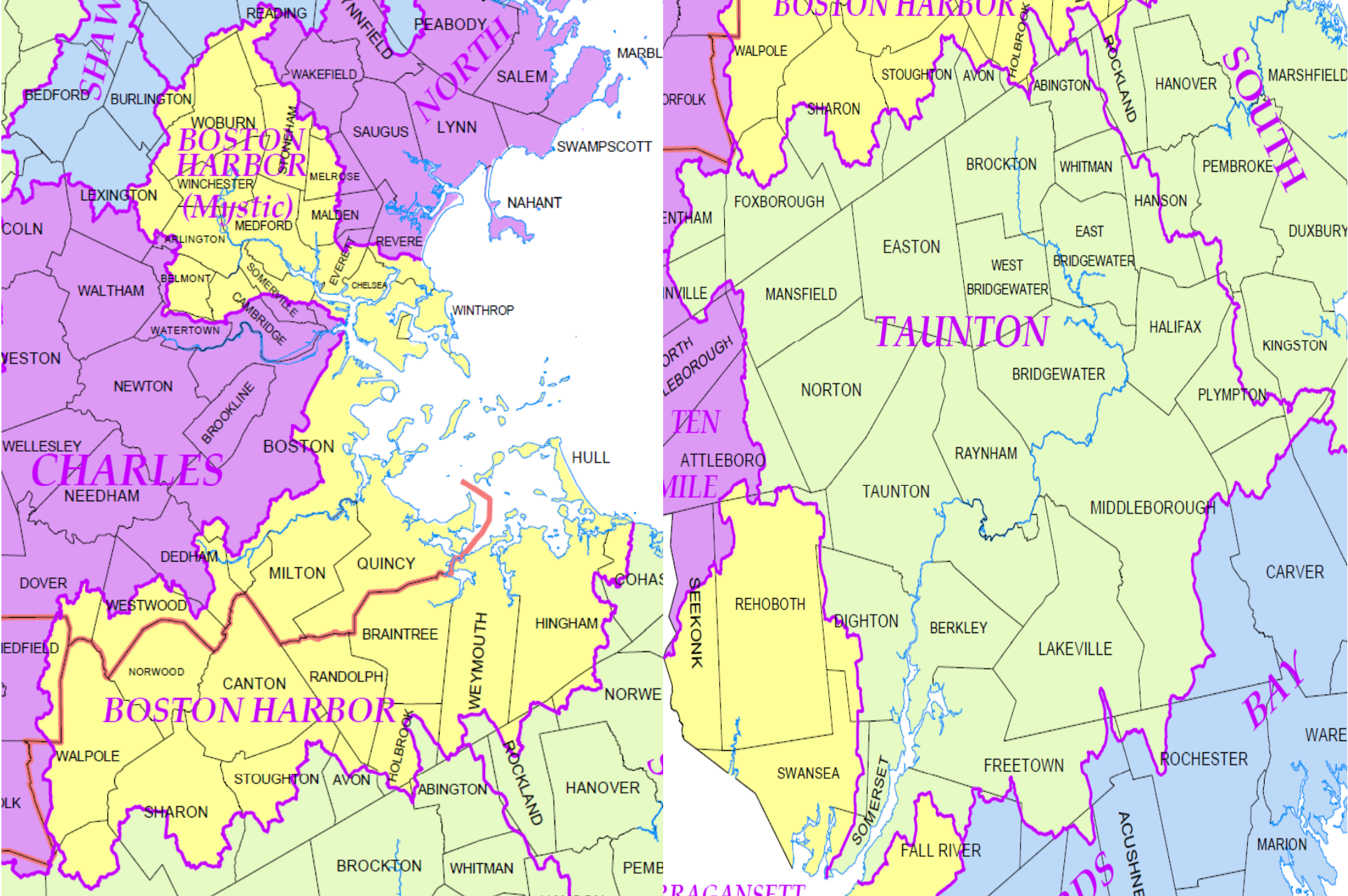
MA Executive Office of Energy and Environmental Affairs
Department of Conservation and Recreation
Department of Environmental Protection
Department of Fish and Game

Boston Harbor & Taunton Meeting

Agenda

- Introductions
- WMA Permit Renewal Process
- Boston Harbor & Taunton Specifics
- Questions & Answers
- Informal Agency Consultations

Boston Harbor & Taunton Basins



Meeting Purpose- Part One

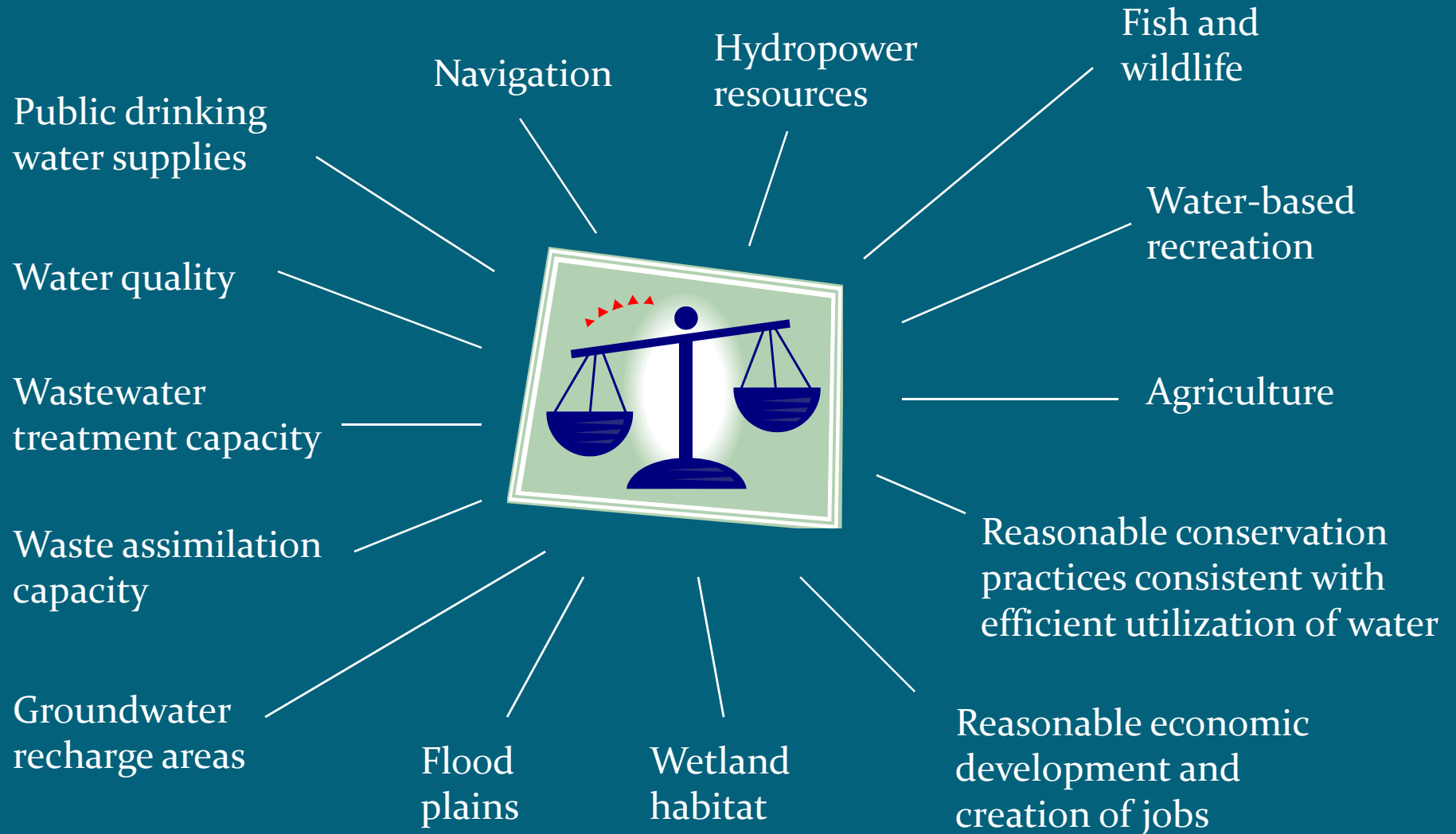
- Explain the WMA permit renewal process, including:
 - WMA Purpose
 - Permit Review Schedule
 - Water Needs Forecasts
 - Safe Yield
 - Permit Conditions
 - New Permit Requirements

Meeting Purpose- Part Two

- Review Boston Harbor & Taunton data and requirements, including:
 - Water Use
 - Baselines
 - Water Use Restrictions
 - Coldwater Fisheries Resources (CFRs) and Requirements

Water Management Act Purpose

Chapter 21G, Section 7 **Reasonable protection of ...**



Boston Harbor & Taunton Permit Renewal Schedule

Timeline	Activity	Notes
April 23, 2015	Outreach meeting	
April & May 2015	Revised Water Needs Forecast where applicable	
April- August 2015	Consultation meetings	As necessary
May – June 2015	MassDEP issues Order to Compete (OTC)	
June – Sept. 2015	Applicant prepares response to OTC	
Sept.- Oct. 2015	OTC response due back	
October 2015	MassDEP reviews	Mtgs. as necessary
November 2015	Draft permit issued and public comment period	
February 2016	Issue final permits*	

* Permits may be appealed for up to 21 days after permit issuance. Permits under appeal are not considered final permits.

Safe Yield

55% of Annual Drought Basin Yield + **Reservoir Storage**

- New methodology* determines maximum withdrawal volumes on annual basis and major basin scale.

*For more detailed description, see the Sustainable Water Management Initiative Framework Summary (November 28, 2012)

Basin	Safe Yield	Total Annual Authorized Withdrawals*	Total Annualized Registered Volume *	2013 Reported Use *
Boston Harbor	55.1 mgd	38.9 mgd	31.62 mgd	29.89 mgd
Taunton	134.3 mgd	92.24 mgd	66.14 mgd	76.5 mgd

* Withdrawal volume calculated based on 365 days

Water Needs Forecasts (WNF)

- Applications for WMA Permits require a forecast of water needs for the permit term
- DCR develops forecast
- WRC Method:
 - Population and Employment forecasts
 - 65/10 and Current Trends scenarios
 - + 5% Buffer
 - At least 3 years of reliable data
 - Temporary allocation where necessary
- URL: www.mass.gov/eea/wnf-method

Steps in Developing a Water Needs Forecast

- DCR complies and analyzes data
- Public Notices: *Environmental Monitor*; status report to WRC
- DCR develops draft forecast; discussions with water supplier
- Basin-wide public meeting (this meeting)
- PWS includes forecast in WMA permit application

General Timeframe: 2 months-
All complete in this basin

Data from Water Supplier

1. Water-use data based on actual metering for 3 to 5 years (from ASRs):
 - Residential
 - Industrial, Commercial, Municipal (Nonresidential)
 - Treatment plant losses (if any)
 - UAW
2. Population served by water system (including out of town and seasonal)
3. Anticipated significant changes in water use (large projects not captured in projections)

Data Obtained by DCR

Data	Sources
Current Town-wide Population	U.S. Census, Planning Office
Population Projections	Regional Planning Agency
Current Employment	Regional Planning Agency
Employment Projections	Regional Planning Agency

WMA Permit Conditions

1. Efficiency Requirements

- 65 residential gallons per capita day (RGPCD)
- 10% unaccounted-for-water (UAW)
- BMPs (leak detection & repair, metering, pricing, public education etc.)

2. Seasonal limits on nonessential outdoor water use

Boston Harbor & Taunton

Nonessential Outdoor Water Use Restrictions

Non-Essential: Uses not required for health or safety reasons, by regulation, for production of food or fiber, for maintenance of livestock, or to meet the core function of a business

RGPCD for prior year	Calendar		STREAMFLOW			
	May 1 to Sept 30	7 day Low- Flow Trigger	Flow above ABF	Flow below ABF	7 day Low- Flow Trigger	
	< 65 →	7 days *	1 day *	7 days	7 days*	1 day*
	>65 →	2 days *	1 day*	7 days	2 days*	1 day*

* No watering 9 am to 5 pm on any day

ABF= Aquatic Base Flow

7 Day Low Flow calculated from period of record flows from a local USGS stream gage

Surface water PWSs with a Summer Management Plan with environmental considerations approved by MassDEP may vary from above requirements

Golf Standard Conditions

All permitted golf courses will be required to:

- have a conservation program that includes
 - metering,
 - irrigation system maintenance,
 - turf management, and
 - education;
- limit nonessential irrigation during drought;
- optimize withdrawals to protect cold water fisheries; and
- minimize impacts if the golf course is in a groundwater depleted subbasin.

New or expanding golf courses may also be required to:

- mitigate irrigation impacts; and
- show that there is no alternative source that is less environmentally harmful.

Cranberry Standard Conditions

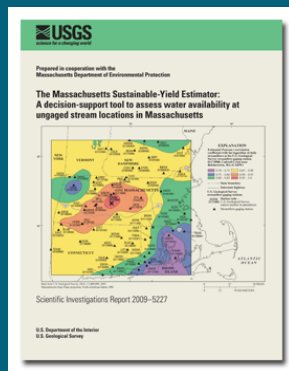
NRCS Certified Conservation Farm Plan required

- Implement BMPs in accordance with UMASS Cranberry Experiment Station as applicable. BMPs include:
 - Nutrient Management
 - Sprinkler System Design & Use
 - Water Control Structures
 - Water Resource Protection and Enhancement

<http://www.umass.edu/cranberry/pubs/bmps.html>

Science and Policy Informing WMA Permit Requirements

- USGS Studies: August withdrawals and impervious cover have significant impact on fluvial fish



SYE



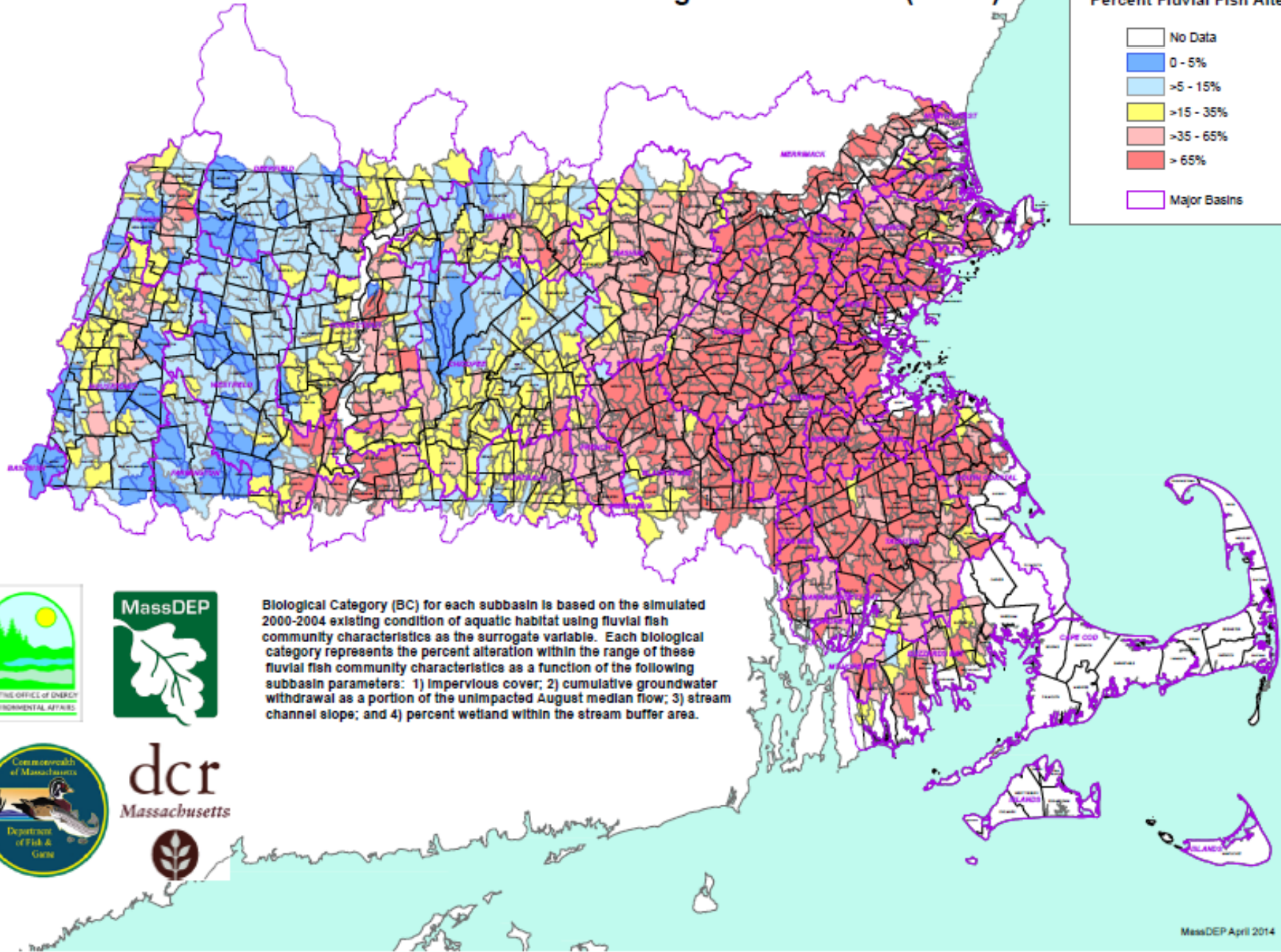
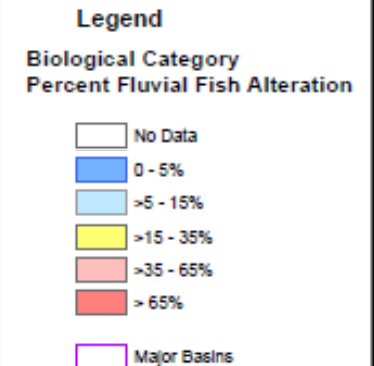
MWI



Fish and Habitat

- SWMI Advisory and Technical Committees helped us develop policy from science
- Five Biological and Groundwater Categories (1=least impact, 5 = most impact)
 - Categories use fluvial fish as surrogate for healthy aquatic habitat,
 - Impervious cover and August groundwater withdrawals used to represent impacts
- Streamflow Criteria mark the boundaries between categories (310 CMR 36.14)

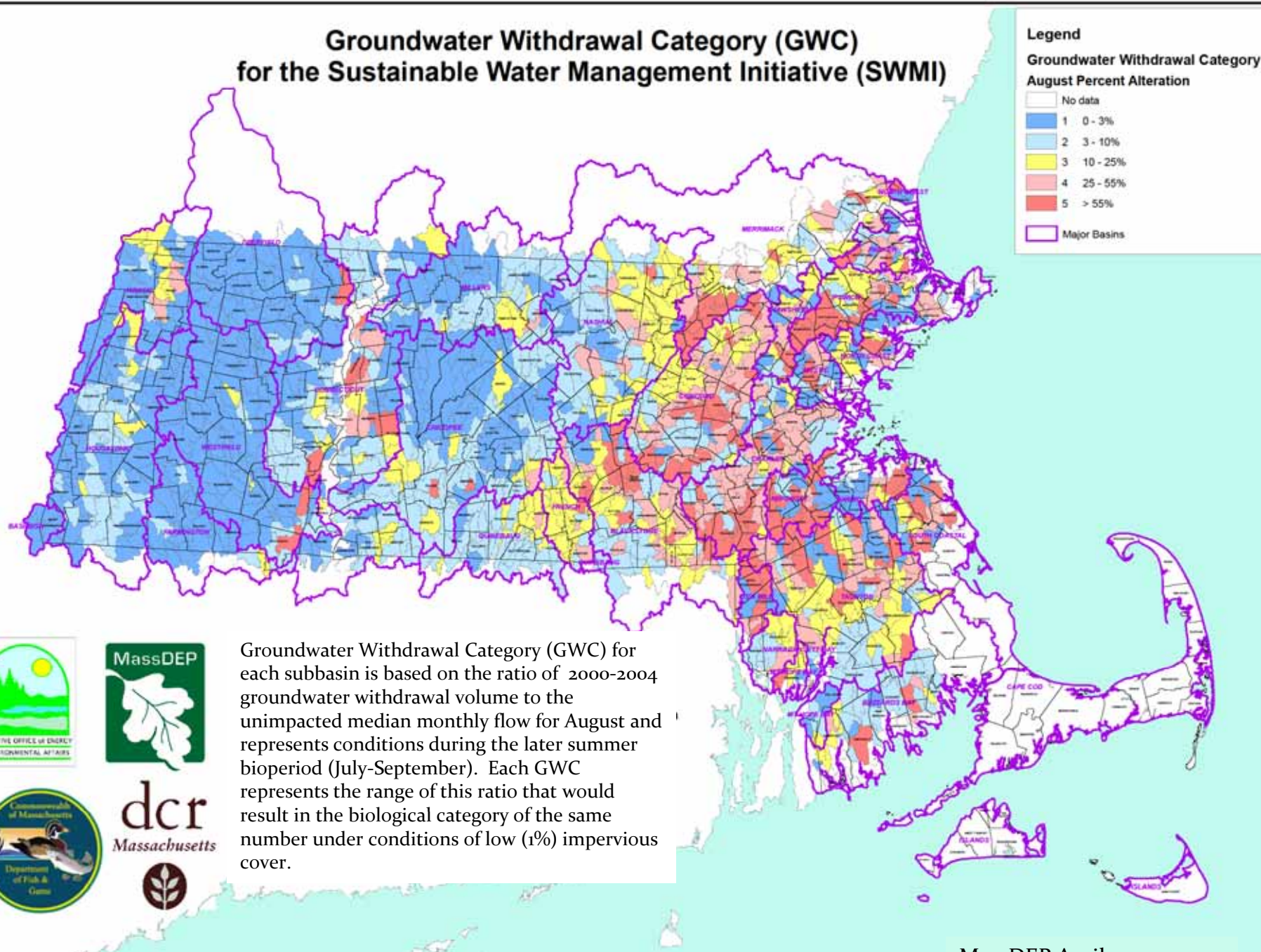
Biological Category (BC) for the Sustainable Water Management Initiative (SWMI)



Biological Category (BC) for each subbasin is based on the simulated 2000-2004 existing condition of aquatic habitat using fluvial fish community characteristics as the surrogate variable. Each biological category represents the percent alteration within the range of these fluvial fish community characteristics as a function of the following subbasin parameters: 1) impervious cover; 2) cumulative groundwater withdrawal as a portion of the unimpacted August median flow; 3) stream channel slope; and 4) percent wetland within the stream buffer area.



Groundwater Withdrawal Category (GWC) for the Sustainable Water Management Initiative (SWMI)



Groundwater Withdrawal Category (GWC) for each subbasin is based on the ratio of 2000-2004 groundwater withdrawal volume to the unimpacted median monthly flow for August and represents conditions during the later summer bioperiod (July-September). Each GWC represents the range of this ratio that would result in the biological category of the same number under conditions of low (1%) impervious cover.

New Permit* Requirements

- CFR Consult for withdrawals in subbasins with Coldwater Fishery Resources (CFRs)
- Minimization for groundwater withdrawals in “ $\geq 25\%$ August Net Groundwater Depleted” Subbasins
- Mitigation commensurate with impact, for requests above baseline, in consultation with agencies
- Show no feasible alternative for requests that change a category

*Those with only registrations are not subject to these requirements

Coldwater Fisheries Resource (CFR) Consult

- Basin meeting serves as the preliminary consult
- Goal: Reduce impacts to CFRs through optimization
- Optimization template will be provided



Minimization

Required* in subbasins defined as having an August net groundwater depletion (NGD) of 25% or more by MA Water Indicator Study data.

(NGD= Aug unaffected flow – Aug GW withdrawals + Aug GW returns)

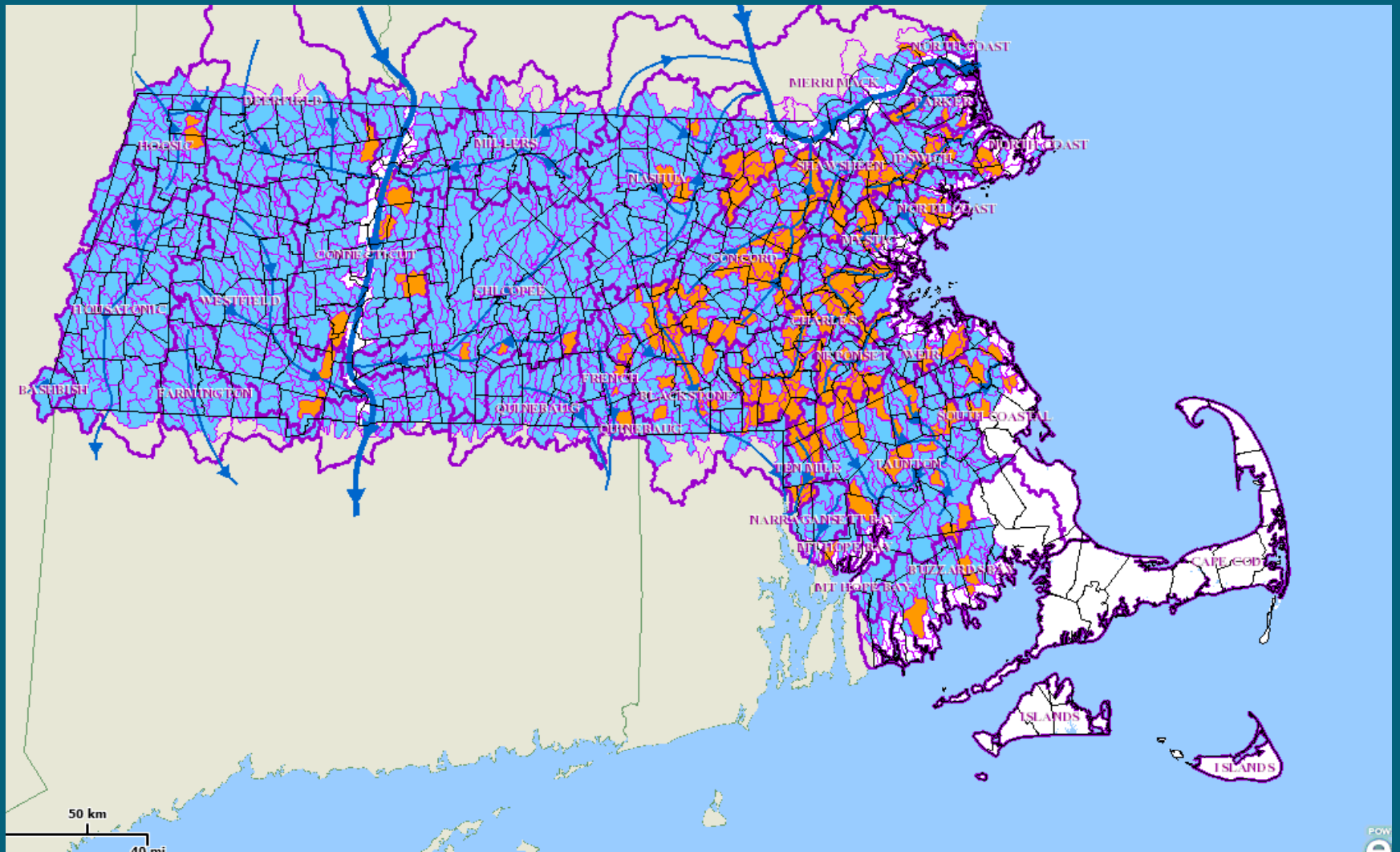
Minimization Requirements (to the greatest extent feasible):

- Desktop Optimization
- Water Releases and Returns
- Additional Conservation Measures

*Permittees may avoid Minimization through:

1. Data refinement- showing August NGD is less than 25%, or
2. By conducting a Site-Specific Fish Community Assessment

Minimization



Mitigation

Mitigation Standard:

- “commensurate with impact”, defined as:
 - volume of increase over baseline
 - does the increase cause a category change?
- considers cost and efficacy

Baseline is the largest of the following:

- 2003 – 2005 water use + 5%
- 2005 water use +5 %
- the community’s registered volume
- Must be in compliance with volume authorized in 2005

Permit Tiers

Tier 1 = No increase above baseline	—————>	no mitigation
Tier 2 = Increase but no category change	—————>	commensurate mitigation
Tier 3 = Increase and category change	—————>	commensurate mitigation (2:1 if indirect mitigation) show no feasible alternative

Mitigation Requirements

Direct Mitigation

Can be volumetrically calculated

Eligible Activities:

1. Infiltration and inflow improvements
2. Stormwater recharge (directly connected impervious area redevelop to recharge)
3. Surface water releases



Indirect Mitigation Activities

Qualitative Credit System

- Install & maintain Fish ladder
- Culvert replacements meeting crossing standards
- Stream bank/channel/buffer restoration
- Private well bylaw
- Stormwater utility, bylaw with recharge or implement MS4*
- Acquire property in Zone I or II, or for other resource protection
- Infiltration/Inflow removal program
- Remove dam or flow barrier

*must result in increased recharge to get credit



Mitigation Plan Development

Action hierarchy

- 1st: Demand Management to stay below baseline
- 2nd: Direct/quantifiable mitigation
- 3rd: Indirect/non-quantifiable mitigation

Location hierarchy (where a choice exists)

- 1st: same subbasin as withdrawals (considering water quality)
- 2nd upstream from the subbasin of withdrawals (considering water quality)
- 3rd: same major basin as withdrawals
- 4th: different major basin

Take cost and
feasibility
into account

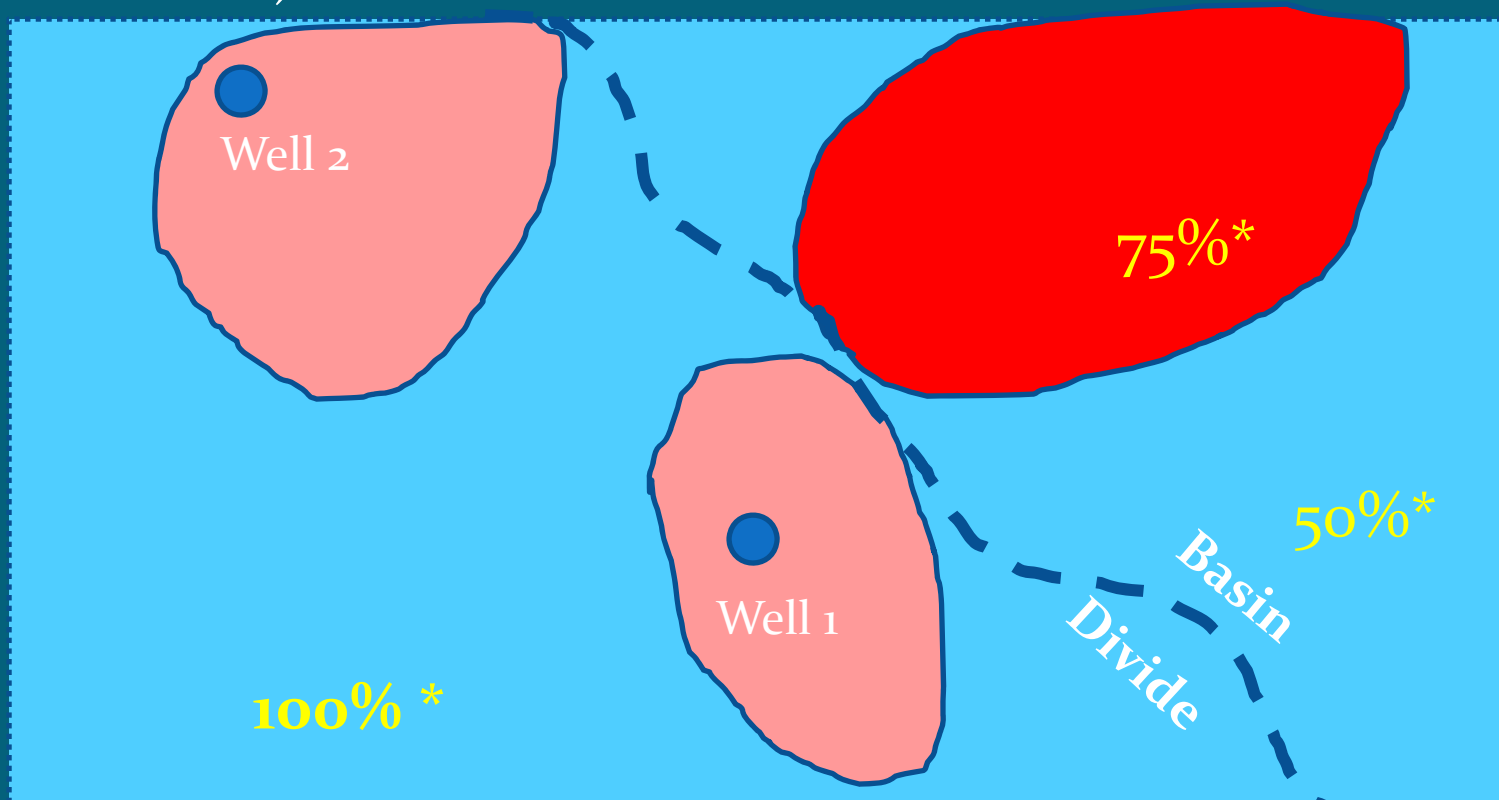
Mitigation Plan Timing

- Mitigation Plan is a live document
- Must be submitted at start of permit, can be phased-in based on use
- Retroactive credits (since 2005) considered if activity/benefit still in effect
- Volumes over Baseline must be mitigated prior to withdrawal (with allowances if withdrawals are already over baseline)

Mitigation Adjustments

Withdrawal location(s) and wastewater returns may result in adjustments in mitigation volumes and credits

- Wastewater Adjustment (* also adjusted by consumptive use factor)
- Location Adjustment Factor



Boston Harbor & Taunton Basin Specifics

- Who withdraws & how much?
- What are my water use restriction triggers?
- Who needs to minimize?
- Who has Cold Water Fishery Resources?
- What is my baseline?
- Do I need to mitigate? Projected Tier?
- What mitigation options exist?

Total Boston Harbor Water Use

Use Type	Registered Users	Permitted Users	Registered Volumes (mgd)*	Permitted Volumes (mgd)*
PWS	13	9	28.67	6.63
Golf Course	6	6	0.79	0.35
INDUST	2	0	2.02	0
CRAN	2	0	0.08	0
AGRI	1	0	0.06	0
COMM	0	1	0	0.3
Total	24	16	31.62	7.28

* Withdrawal volume calculated based on 365 days

Total Taunton Water Use

Use Type	Registered Users	Permitted Users	Registered Volumes (mgd)*	Permitted Volumes (mgd)*
PWS	25	24	44.93	21.93
CRAN	74	18	18.6	3.759
GOLF	9	5	0.54	0.41
INDUST	5	0	1.97	0
AGRI	4	0	0.10	0
Total	117	45	66.14	26.1

* Withdrawal volume calculated based on 365 days

Permitted Boston Harbor Users

Name	Registration Volume (mgd)	Current Permit Volume (mgd)	Total Authorized Volume (mgd)
Canton Water Department	0	2.67	2.67
Colonial Water Company	0	0.14	0.14
Dedham Westwood Water District	2.62	0.49	3.11
Foxborough Water Department	0.64	0.73	1.37
Norwell Water Department	0.32	0.4	0.72
Sharon Water Department	0.55	0.73	1.28
Stoughton DPW Water Division	1.08	0.13	1.21
Walpole Sewer & Water Department	2.25	1.09	3.34
Weymouth Department of Public Works	4.51	0.49	5
Black Rock Golf Course	0	0.18	0.18
Boston Golf Club	0	0.15	0.15
Braintree Municipal Golf Course	0	0.05	0.05
South Shore Country Club	0	0.098	0.098
Walpole Country Club	0	0.1	0.1
Winchester Country Club	0	0.16	0.16
Parkview Condominium	0	0.35	0.35

Permitted Taunton Users (Non-Cranberry)

Name	Registration Volume (mgd)	Permit Volume (mgd)	Total Authorized Volume (mgd)
Aquaria Water LLC	0	8.81	8.81
Attleboro Water Department	1.62	0.47	2.09
Avon Water Department	0.45	0.16	0.61
Bridgewater Water Department	1.66	0.74	2.4
Brockton DPW Water Division	0.04	0.83	0.87
East Bridgewater DPW	0.85	0.36	1.21
Easton Water Division	1.44	1.01	2.45
Foxborough Water Department	1.6	0.22	1.82
Halifax Water Department	0.35	0.33	0.68
Hanson Water Department	0.51	0.27	0.78
Mansfield Water Division	1.59	0.4	1.99
Middleborough Water Department	1.53	0.72	2.25
New Bedford Water Department	18.27	2.52	20.79
North Raynham Water District	0.32	0	0.32

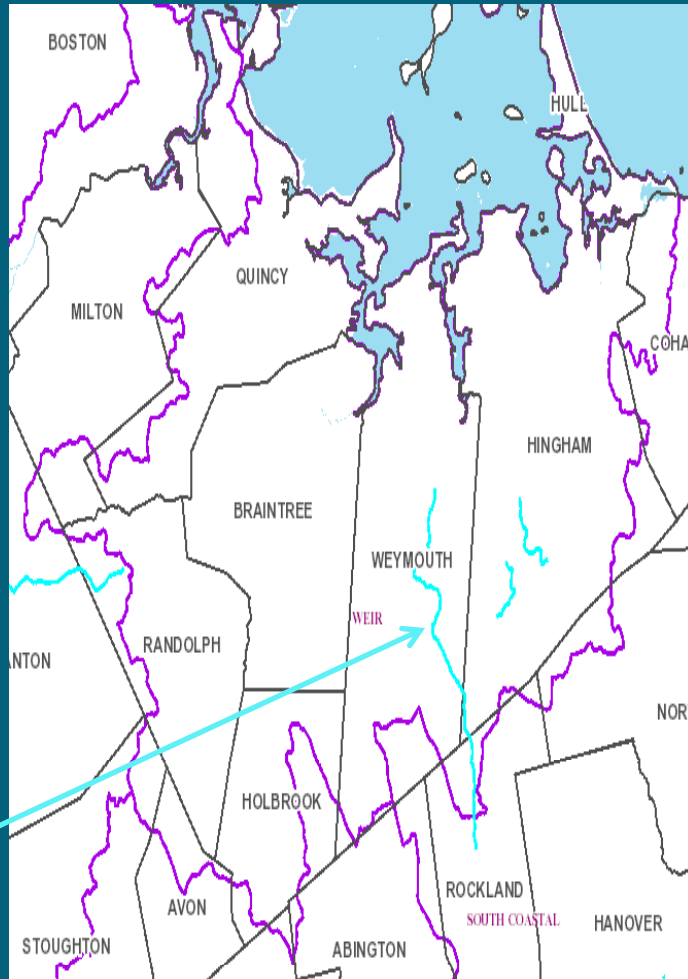
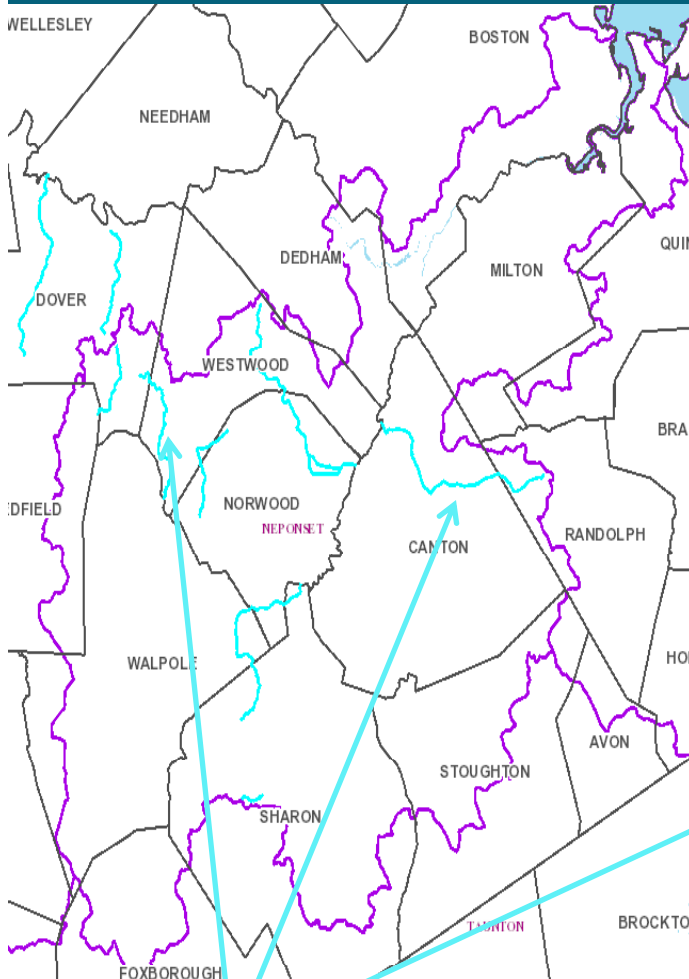
Permitted Taunton Users (Non-Cranberry)

Name	Registration Volume (mgd)	Permit Volume (mgd)	Total Authorized Volume (mgd)
Norton Water Department	1.21	0.64	1.85
Plainville Water Department	0.39	0	0.39
Raynham Center Water District	0.4	0.72	1.12
Sharon Water Department	0.55	0.73	1.28
Somerset Water Department	2.81	1.61	4.42
Stoughton DPW Water Division	1.14	0.13	1.27
Taunton Water Department	5.87	1.62	7.49
West Bridgewater Water Department	0.73	0.8	1.53
Wrentham DPW Water Division	0.38	0.23	0.61
DW Field Golf Course	0	0.11	0.11
LeBaron Hills Country Club	0	0.167	0.167
Olde Scotland Links Golf Course	0	0.14	0.14
Segregansett Country Club	0	0.12	0.12
Tournament Players Club of Boston	0	0.234	0.234

Permitted Taunton Users (Cranberry)

Name	Registration Volume (mgd)	Registered Cranberry Acreage	Permit Volume (mgd)	Permitted Cranberry Acreage	Total Authorized Volume (mgd)
Agawam Cranberry	0.59	66.3	0.16	18	0.75
Bayside Agricultural Inc	0.74	92.98	0.1	30.6	0.84
Bryant Hill Farms	0	-	0.184	37.5	0.184
CJW Realty Trust	0	-	0.09	17	0.09
Conway Cranberry	0	-	0.138	15.5	0.138
Jeffrey Tardanico	0	-	0.053	11.8	0.053
John L. Melville	0	-	0.14	24.5	0.14
Kenneth Harju	0.1	16.5	0.474	96.5	0.574
Morse Brothers	2.39	385.2	0.42	78.4	2.81
Nantasket Cranberry	0.37	41	0.08	8.8	0.45
Pride of Carver	0.28	31	0.13	24	0.41
RM Lawton Cranberries	0.45	50	0.1	18	0.55
Rezendes Family	0	-	0.52	110.2	0.52
South Street Realty Trust	0	-	0.1	18	0.1
Turkey Swamp Farm	0.16	17.7	0.05	10.2	0.21
White Dog Cranberry	0	-	0.29	55	0.29
William Couto	0.3	34.1	0.61	114.1	0.91
WL Byrne Inc	0.15	26.2	0.26	58	0.41

Boston Harbor Coldwater Fishery Resources



CFRs are considered a particularly sensitive receptor warranting protection.

Permit holders with CFRs

Dover Water Company

Dedham-Westwood Water District

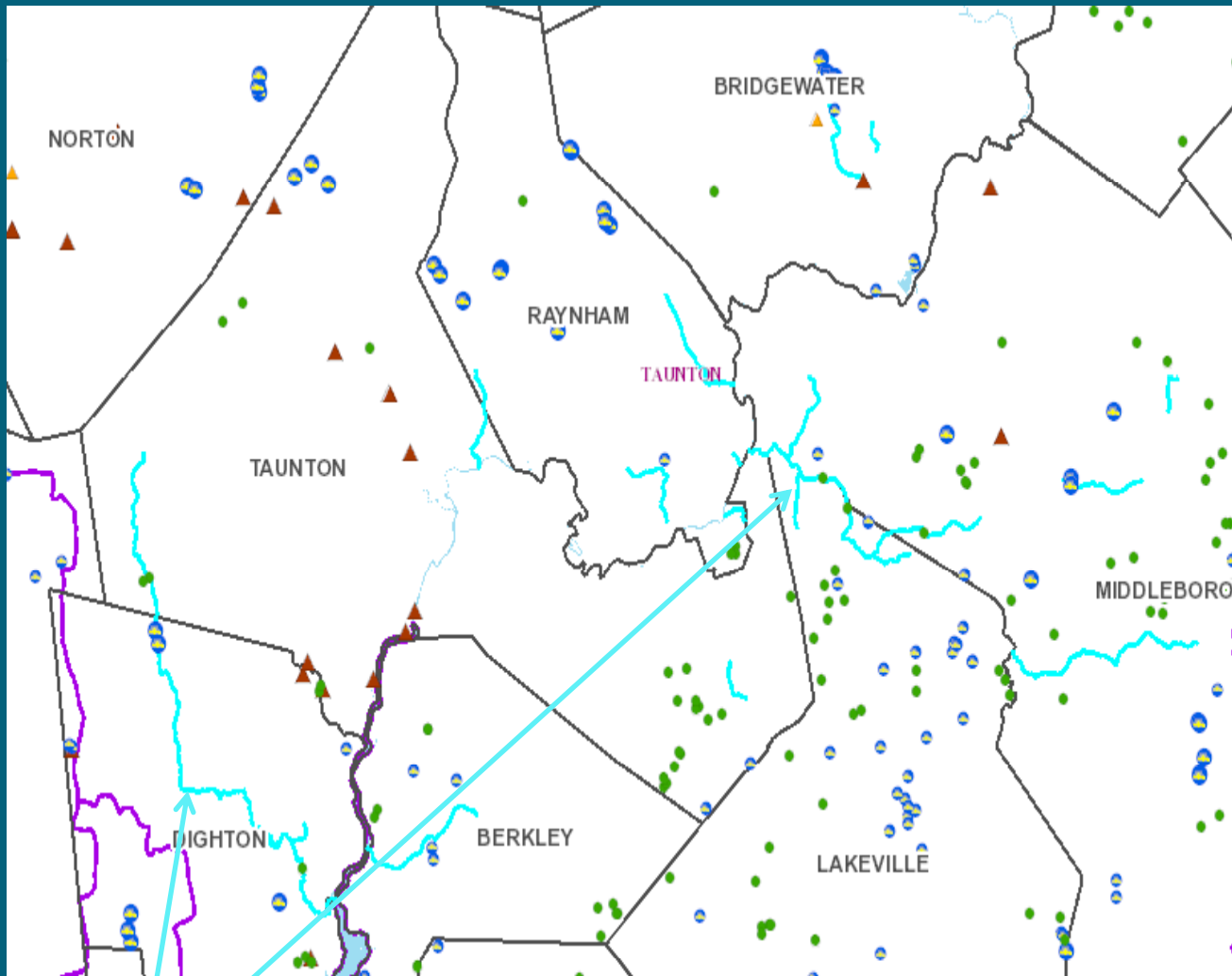
Canton Water Department

Weymouth DPW

Boston Golf Club

CFRs are light blue

Taunton Coldwater Fishery Resources



CFRs are light blue



CFRs are considered a particularly sensitive receptor warranting protection.

Permit holders with CFRs

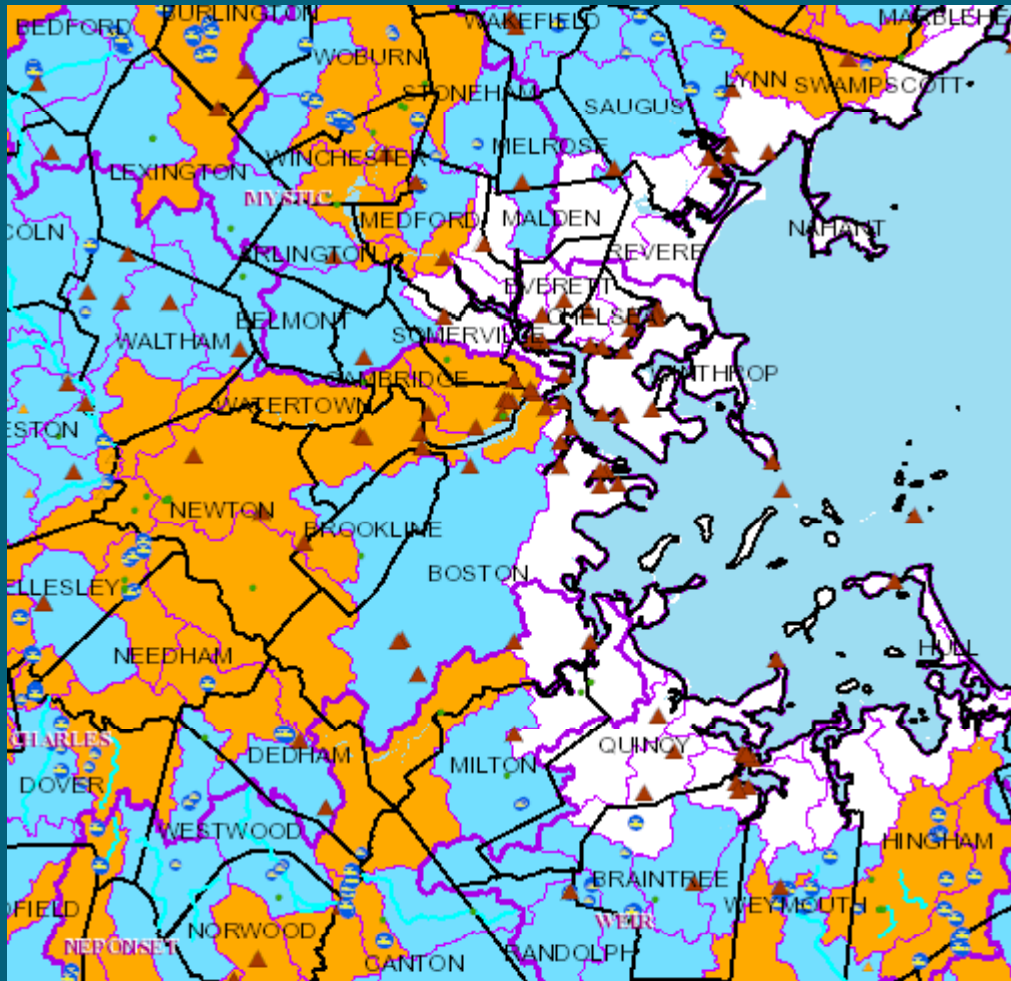
Middleborough Water Dept.

New Bedford Water Dept.

Segregansett Country Club

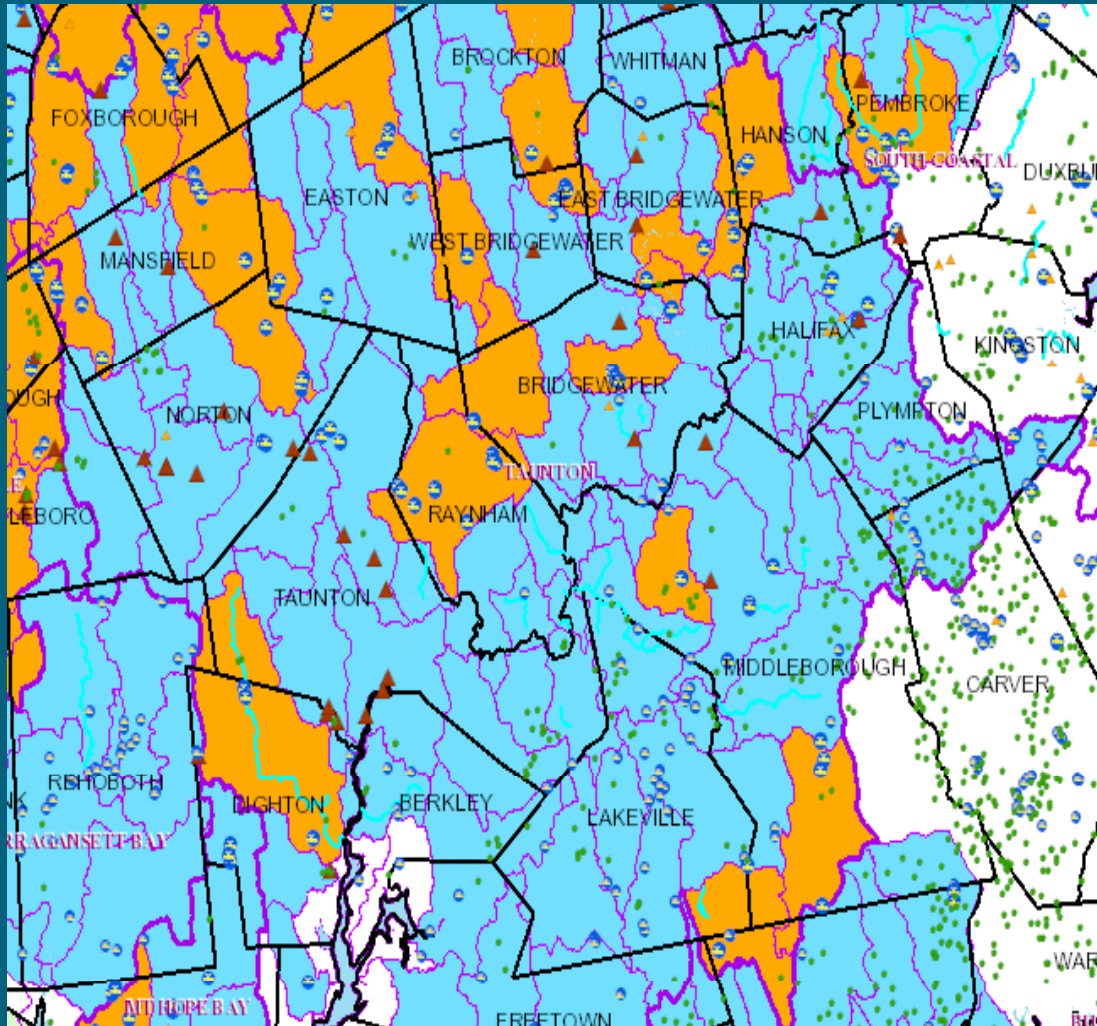
Somerset Water Dept.

Boston Harbor Minimization Requirements



Permittees
Canton
Dedham-Westwood
Colonial
Foxborough
Norwell
Stoughton
Walpole
Weymouth
Black Rock Country Club
Boston Golf Club
Parkview Condominiums
Winchester Country Club

Taunton Minimization Requirements



Permittees
Avon
Bridgewater
E. Bridgewater
Easton
Foxborough
Hanson
Mansfield
Middleborough
North Raynham
Norton
Plainville
Raynham Center
Sharon
Somerset
Stoughton
W. Bridgewater
Segregansett Country Club

Boston Harbor PWS Baseline Volumes

Boston Harbor Basin PWS	Baseline Volume (mgd)	Reported Use 2011 (mgd)	Reported Use 2012 (mgd)	Reported Use 2013 (mgd)
Canton Water Department	1.33	0.45	1.05	1.59
Colonial Water Company	0.14	0.13	0.12	0.11
Dedham Westwood Water District	3.11	2.61	2.91	2.87
Foxborough Water Department	1.37	0.49	0.7	0.63
Norwell Water Department	0.6	0.41	0.42	0.34
Sharon Water Department	1.18	0.8	0.85	0.77
Stoughton DPW Water Division	1.21	0.76	0.59	0.46
Walpole Sewer and Water Department	2.53	2.02	2.17	2.11
Weymouth Department of Public Works	4.51	4.03	4.09	4.02

Taunton PWS Baseline Volumes

Taunton Basin PWS	Baseline Volume (mgd)	Reported Use 2011 (mgd)	Reported Use 2012 (mgd)	Reported Use 2013 (mgd)
Aquaria Water LLC	0	0.62	0	0.27
Attleboro Water Department	1.62	0.99	0.94	0.48
Avon Water Department	0.55	0.4	0.41	0.36
Bridgewater Water Department	1.83	1.61	1.58	1.61
Brockton DPW Water Division	0.65	0.49	0.52	0.51
East Bridgewater Water Department	1.25	0.87	0.98	0.99
Easton Water Department	2.23	1.83	1.93	1.81
Foxborough Water Department	1.6	1.12	0.89	0.57
Halifax Water Department	0.54	0.46	0.45	0.45
Hanson Water Department	0.72	0.59	0.58	0.6
Mansfield Water Department	1.59	1.5	1.47	1.5
Middleborough Water Supply	1.73	1.46	1.52	1.57

Taunton PWS Baseline Volumes

Taunton Basin PWS	Baseline Volume (mgd)	Reported Use 2011 (mgd)	Reported Use 2012 (mgd)	Reported Use 2013 (mgd)
New Bedford Water Department	18.27	12.13	12.49	12.77
North Raynham Water District	0.32	0.37	0.37	0.37
Norton Water Department	1.43	1.21	1.22	1.21
Plainville Water Department	0.39	0.5	0.46	0.37
Raynham Center Water District	0.82	0.95	0.94	0.96
Sharon Water Department	0.56	0.52	0.47	0.48
Somerset Water Department	3.63	3.2	2.61	3.08
Stoughton DPW Water Division	1.14	0.54	0.56	0.58
Taunton Water Department	6.44	5.79	5.81	5.9
West Bridgewater Water Department	0.73	0.63	0.62	0.61
Wrentham DPW Water Division	0.38	0.25	0.27	0.26

Boston Harbor Non-PWS Non-Cranberry Baselines

Name	Baseline Volume (mgd)	Current Total Allocation (mgd)	Reported Use 2011 (mgd)	Reported Use 2012 (mgd)	Reported Use 2013 (mgd)
Black Rock Golf Course	0.18	0.18	0.08	0.08	0.11
Boston Golf Club	0.09	0.15	0.04	0.05	0.04
Braintree Municipal Golf Course	0.05	0.05	-	-	-
Parkview Condominiums	0.18	0.35	-	0.11	0.14
South Shore Country Club	0.1	0.098	0.07	0.06	0.08
Walpole Country Club	0.1	0.1	0.08	0.12	0.11
Winchester Country Club	0	0.16	0.08	0.12	0.15

Taunton Non-PWS Non-Cranberry Baselines

Name	Baseline Volume (mgd)	Current Total Allocation (mgd)	Reported Use 2011 (mgd)	Reported Use 2012 (mgd)	Reported Use 2013 (mgd)
Bridgewater-Olde Scotland Links Golf Course	0.14	0.14	0.12	0.12	0.12
DW Field Park Golf Course	0.11	0.11	0.05	0.06	0.06
LeBaron Hills Golf Club	0.06	0.167	0.05	0.06	0.08
Segregansett Country Club	0.11	0.12	0.1	0.1	0.08
Tournament Players Club of Boston	0.21	0.234	0.11	0.1	0.15

Boston Harbor Nonessential Water Use Triggers

Trigger	May- June Trigger Value (cfs)	July – Sept. Trigger Value (cfs)	7 Day Low Flow Trigger Value (cfs)	Permittees assigned
Aberjona River at Winchester, MA	24	8	1.391	Parkview Condominiums; Winchester Country Club
Monatiquot River at E. Braintree	24	14	1.5	Braintree Municipal Golf Course
Old Swamp River near S. Weymouth	4	2	0.43	Weymouth; Black Rock Country Club; Boston Golf Club; South Shore Country Club
Neponset River at Norwood, MA	30	18	6.4	Walpole; Walpole Country Club
Neponset River at Greenlodge near Canton	75	45	18.3	Canton; Dedham- Westwood

Taunton Nonessential Water Use Triggers

Trigger	May- June Trigger Value (cfs)	July – Sept. Trigger Value (cfs)	7 Day Low Flow Trigger Value (cfs)	Permittees assigned
Taunton River near Bridgewater, MA	265	119	47	Avon; Bridgewater; E.Bridgewater; Easton; Halifax; Hanson; Middleborough; New Bedford; North Raynham; Raynham; Somerset; Stoughton; Taunton; W. Bridgewater; DW Field Golf Course; Olde Scotland Links Golf Course;
Wading River near Norton, MA	39	15	4.3	Foxborough; Mansfield; Norton; Plainville; Sharon; TPC Boston;
Segreganset River near Dighton, MA	10	4	0.1	Segregansett Country Club; LeBaron Hills Country Club

Online SWMI Interactive Maps

- GIS map provides an interactive graphic display that includes:
 - GWC & BC
 - August Net groundwater depletion
 - Water use points
 - Cold Water Fishery Resources
 - Aquifers and more

- Map is at

<http://www.mass.gov/eea/agencies/massdep/water/watersheds/sustainable-water-management-initiative-swmi.html>

MassDEP Permitting Tool

- Displays data and equations to determine BC, GWC, August NGD for 1400 subbasins.
- User may increase or decrease water use and see resulting change in above values.
- Two main views:
 - PWS information includes: recent usage, baseline volumes, projected usage, sources, and other users
 - Subbasin information includes: cumulative area, % of impervious cover, streamflow values, etc.

MassDEP Permitting Tool

Find by Subbasin ID: Find by PWS System Name:
Find by PWSID: Find PWS by Town Name:

Click to use pull
downs and to View
All Subbasins

All Water Use
Points in Subbasin
Report

Calculation Tool
Report

Click on "X" in upper right of this form to close this window and return to main page.

Subbasin Characteristics

Double Click on Sub Basin ID to view water use volumes

Sub Basin ID: **21154** Major Basin: **Boston Harbor** HUC12 Name: **East Branch Neponset River**

Subbasin Cumulative Data (includes this subbasin and all upstream contributing subbasins)

Subbasin Information	August Wastewater Discharges (mgd)	August Groundwater Withdrawals (mgd)	Additional GW Withdrawal Volume to Cause a Change in Existing GWC and BC:
Area (Square Miles): 3.14	Ground Water Discharge: 0.019	PWS and Commercial Wells: 1.115	To Change GWC (mgd): 0.000
Impervious Cover (%): 10.4	Septic Systems: + 0.123	Private Wells: + 0.005	To Change BC (mgd): 0
Surface water withdrawals exist in or upstream of subbasin: NO	Total Subsurface Discharge: = 0.142	Total Groundwater Withdrawals: = 1.120	
	Surface Water (NPDES): 0.000		

Individual Subbasin Data (only includes this subbasin)

Net Groundwater Depletion (NGD)

Coldwater Fisheries Resource Exist: Yes

Net Groundwater Depletion (%): 178.8

Positive value indicates depleted.
Negative value indicates surcharged.

Unaffected streamflow, Ground Water withdrawals, Groundwater Withdrawal Category (GWC) and Biologic Category (BC).

Estimated August Condition		Proposed Changes to existing GW Withdrawal		Existing vs. Proposed	
Change (+/-) to existing GW Withdrawal (mgd)		<input type="text" value="0"/>		<input type="button" value="Calculate"/>	<input type="button" value="Clear"/>
Unaffected Streamflow (mgd)*	<input type="text" value="0.547"/>	Unaffected Streamflow(mgd)	<input type="text" value="0.547"/>		
GW Withdrawals (mgd)**	- <input type="text" value="1.120"/>	Proposed Total GW Withdrawal (mgd)	- <input type="text" value="1.120"/>		
(Unaffected Streamflow) - (GW Withdrawals)	= <input type="text" value="-0.573"/>	(Unaffected Streamflow) - (Prop. GW Withdrawal)	= <input type="text" value="-0.573"/>		
(GW Withdrawals) / (Unaffected Streamflow)	= <input type="text" value="204.8%"/>	(Proposed GW Withdrawal) / (Unaffected Streamflow)	= <input type="text" value="204.8%"/>		
Groundwater Withdrawal Category (1-5) GWC:	<input type="text" value="5"/>	Proposed Groundwater Withdrawal Category (1-5)	<input type="text" value="5"/>	<input type="text" value="0.0%"/>	Percent Difference
Biologic Category (1-5) BC:	<input type="text" value="5"/>	Proposed Biologic Category (1-5)	<input type="text" value="5"/>	<input type="text" value="NO"/>	Change in GWC?
				<input type="text" value="NO"/>	Change in BC?

Summary Info for Boston Harbor Permits

Boston Harbor Permits	CFR Consult*	Minimization required	Projected Permit Tier	Alternative analysis
Canton Water Department	Yes	Yes	3	Yes
Colonial Water Company	Yes	Yes	1	No
Dedham Westwood Water District	No	Yes	1 or 2	No
Foxborough Water Department	No	Yes	1	No
Norwell Water Department	No	Yes	2	No
Sharon Water Department	Yes	Yes	TBD	TBD
Stoughton DPW Water Division	No	Yes	1	No
Walpole Sewer & Water Department	No	Yes	1	No
Weymouth Department of Public Works	No	Yes	3	Yes
Black Rock Golf Course	No	Yes	1	No
Boston Golf Club	Yes	Yes	2	No
Braintree Municipal Golf Course	No	No	1	No
South Shore Country Club	No	No	1	No
Walpole Country Club	No	No	1	No
Winchester Country Club	No	Yes	2	No
Parkview Condominium	No	Yes	2	No

*** Consultation with DFG will be required**

Summary Info for Taunton Permits (Non-Cranberry)

Taunton Permits	CFR Consult	Minimization required	Projected Permit Tier	Alternative analysis
Aquaria Water LLC	No	No	N/A	N/A
Attleboro Water Department	No	No	2	No
Avon Water Department	No	Yes	2	No
Bridgewater Water Department	No	Yes	2	No
Brockton DPW Water Division	No	No	2	No
East Bridgewater DPW	No	Yes	1	No
Easton Water Division	No	Yes	2 or 3	Maybe
Foxborough Water Department	No	Yes	1, 2 or 3	Maybe
Halifax Water Department	No	No	2	No
Hanson Water Department	No	Yes	2	No
Mansfield Water Division	No	Yes	2	No
Middleborough Water Department	Yes	Yes	3	Yes
New Bedford Water Department	Yes	No	1 or 2	No
North Raynham Water District	No	Yes	2	No

*** Consultation with DFG will be required**

Summary Info for Taunton Permits (Non-Cranberry)

Taunton Permits	CFR Consult *	Minimization required	Projected Permit Tier	Alternative analysis
Norton Water Department	No	Yes	2	No
Plainville Water Department	No	Yes	1 or 2	No
Raynham Center Water District	No	Yes	2	No
Sharon Water Department	No	Yes	1 or 2	No
Somerset Water Department	Yes	Yes	1, 2 or 3	Maybe
Stoughton DPW Water Division	No	Yes	1, 2, or 3	Maybe
Taunton Water Department	No	No	2	No
West Bridgewater Water Department	No	Yes	2	No
Wrentham DPW Water Division	No	No	2	No
DW Field Golf Course	No	No	1	No
LeBaron Hills Country Club	No	No	2 or 3	Maybe
Olde Scotland Links Golf Course	No	No	No	No
Segregansett Country Club	Yes	Yes	2	No
Tournament Players Club of Boston	No	No	2 or 3	Maybe

*** Consultation with DFG will be required**

Boston Harbor Permit

MassDEP Reviewers

Boston Harbor Basin Permit Holder	Reviewer
Canton Water Department	Connors
Colonial Water Company	Connors
Dedham Westwood Water District	McCann
Foxborough Water Department	Connors
Norwell Water Department	Friend
Sharon Water Department	Connors
Stoughton DPW Water Division	D'Urso
Walpole Sewer & Water Department	Connors
Weymouth Department of Public Works	McCann
Black Rock Golf Course	Butler
Boston Golf Club	Butler
Braintree Municipal Golf Course	Butler
South Shore Country Club	Butler
Walpole Country Club	Butler
Winchester Country Club	Butler
Parkview Condominium	Butler

Name	Email	Phone #
Julie Butler	julie.butler@state.ma.us	617-292-5552
Shi Chen	shi.chen@state.ma.us	617-292-5532
Susan Connors	susan.connors@state.ma.us	617-292-5560
Jen D'Urso	jen.durso@state.ma.us	617-654-6591
Richard Friend	richard.friend@state.ma.us	617-654-6522
Beth McCann	elizabeth.mccann@state.ma.us	617-292-5901
James Mclaughlin	James.mclaughlin@state.ma.us	508-946-2805

Taunton Permit Reviews

MassDEP Reviewers

Taunton River Basin Permit Holder	Reviewer
Aquaria Water LLC	McCann
Attleboro Water Department	D'Urso
Avon Water Department	Friend
Bridgewater Water Department	D'Urso
Brockton DPW Water Division	Connors
East Bridgewater DPW	Friend
Easton Water Division	McCann
Foxborough Water Department	Connors
Halifax Water Department	Friend
Hanson Water Department	D'Urso
Mansfield Water Division	Connors
Middleborough Water Department	Friend
New Bedford Water Department	Connors
North Raynham Water District	D'Urso
Norton Water Department	McCann

Name	Email	Phone #
Julie Butler	julie.butler@state.ma.us	617-292-5552
Shi Chen	shi.chen@state.ma.us	617-292-5532
Susan Connors	susan.connors@state.ma.us	617-292-5560
Jen D'Urso	jen.durso@state.ma.us	617-654-6591
Richard Friend	richard.friend@state.ma.us	617-654-6522
Beth McCann	elizabeth.mccann@state.ma.us	617-292-5901
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Taunton Permit Reviews

MassDEP Reviewers

Boston Harbor Basin Permit Holder	Reviewer
Plainville Water Department	Connors
Raynham Center Water District	D'Urso
Sharon Water Department	Connors
Somerset Water Department	Friend
Stoughton DPW Water Division	D'Urso
Taunton Water Department	McCann
West Bridgewater Water Department	Friend
Wrentham DPW Water Division	Connors
DW Field Golf Course	Chen
LeBaron Hills Country Club	Chen
Olde Scotland Links Golf Course	Chen
Segregansett Country Club	Chen
Tournament Players Club of Boston	Chen

Cranberry Permit Holder	Reviewer
All Cranberry Permits	Mclaughlin

Name	Email	Phone #
Julie Butler	julie.butler@state.ma.us	617-292-5552
Shi Chen	shi.chen@state.ma.us	617-292-5532
Susan Connors	susan.connors@state.ma.us	617-292-5560
Jen D'Urso	jen.durso@state.ma.us	617-654-6591
Richard Friend	richard.friend@state.ma.us	617-654-6522
Beth McCann	elizabeth.mccann@state.ma.us	617-292-5901
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Community-Specific One-Page Summary Sheet

Includes 6 summary tables:

- 1) Reported Use 2009-13
- 2) Performance Standards
- 3) WNF Scenarios
- 4) Permit Data
- 5) Subbasin Data
- 6) Streamflow Triggers

example

Permit Requirements*	
CFR Consult?	Yes/no
Minimization required?	Yes/no
Estimated renewal request in mgd	1.47
Baseline (BL) in mgd	1.54
Projected increase above BL in mgd	-0.07
Estimated Permit Tier	1
Mitigation Required?	no

*includes comments to explain data sources and decisions

WMA Regulations and Permit Assistance

- Regulation (**Promulgated November 7, 2014**) and Policy Development (**Ongoing**)
- Permit application forms and worksheets
- Financial assistance (Annual Grant Program)
 - Eligible planning projects:
 - Optimization
 - Outdoor water use restrictions
 - Implementation of reasonable water conservation
 - NEWWA and MWWA Toolbox of BMPs
 - Eligible implementation projects:
 - Demand management (water audits, soil moisture sensors etc..)
 - Mitigation projects designed to improve flow impacts
ex. dam removal, culvert replacement, etc.

Further information

- MassDEP Technical Resources webpage at:
<http://www.mass.gov/eea/waste-mgmt-recycling/water-resources/preserving-water-resources/sustainable-water-management/>
- MassDEP SWMI webpage at:
<http://www.mass.gov/dep/water/resources/swmi.htm>
- Massachusetts Sustainable Water Management Initiative (SWMI), Framework Summary, November 28, 2012 at :
<http://www.mass.gov/eea/docs/eea/water/swmi-framework-nov-2012.pdf>

- Duane LeVangie
MassDEP
Water Management Program Chief
One Winter Street, Boston, MA 02108
duane.levangie@state.ma.us
617 292-5706

Water Needs Forecast Contacts

Anne Carroll 617-626-1395
anne.carroll@state.ma.us

Michele Drury 617-626-1366
michele.drury@state.ma.us