

Water Resources Commission Meeting

November 10, 2016



DUANE LEVANGIE
WMA PROGRAM CHIEF
MASSDEP

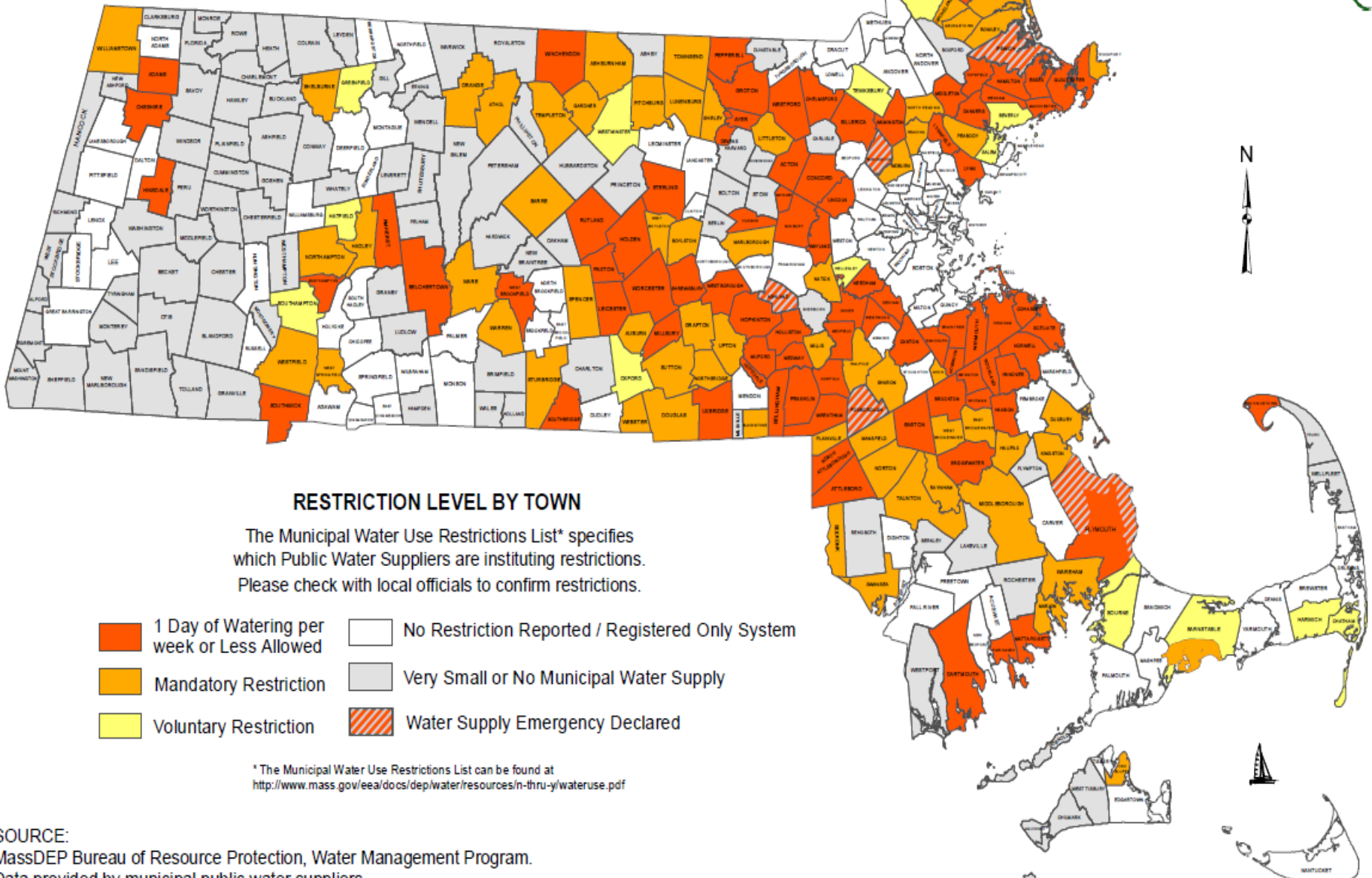
REBECCA McENROE, P.E.
SUPERINTENDENT
SUDBURY WATER DISTRICT

PATRICIA VINCHESI
TOWN ADMINISTRATOR
SCITUATE MA

CURRENT MUNICIPAL WATER USE RESTRICTIONS







Non-Essential Outdoor Water Use Restrictions

as of September 28, 2016



RESTRICTION LEVEL BY TOWN

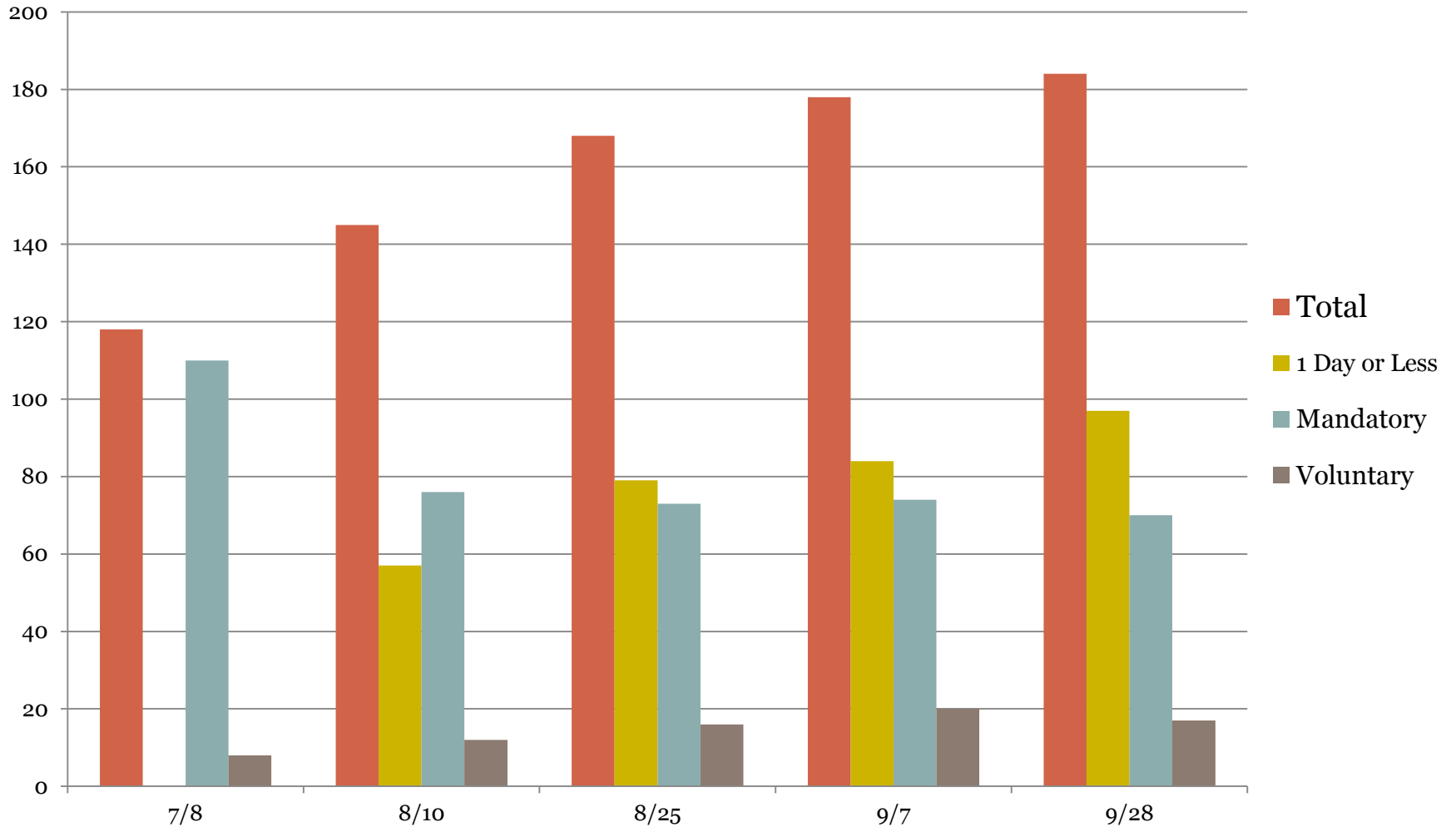
The Municipal Water Use Restrictions List* specifies which Public Water Suppliers are instituting restrictions. Please check with local officials to confirm restrictions.

- | | |
|--|--|
|  1 Day of Watering per week or Less Allowed |  No Restriction Reported / Registered Only System |
|  Mandatory Restriction |  Very Small or No Municipal Water Supply |
|  Voluntary Restriction |  Water Supply Emergency Declared |

* The Municipal Water Use Restrictions List can be found at <http://www.mass.gov/eea/docs/dep/water/resources/n-thru-y/wateruse.pdf>

SOURCE:
MassDEP Bureau of Resource Protection, Water Management Program.
Data provided by municipal public water suppliers.
For more information contact MassDEP Water Management Program at 617-292-5706.

Outdoor Water Use Restrictions 2016



EMERGENCY DECLARATIONS APPROVED IN 2016



- **Ashland** – low GW levels; allow purchase from MWRA that requires an IBT approval
- **Plymouth** – meeting demands and system pressure issues; use of an existing well despite it being below the pond level shutoff triggers in WMA permit. No longer in effect.
- **Ipswich** – low reservoir levels; use of existing wells at volumes that may exceed the WMA permitting threshold
- **Foxborough**- source testing and availability; use of existing well with IBT and WMA groundwater shutoffs values in effect
- **Burlington** – Reservoir levels and stream limits; allows purchase from MWRA that would require an IBT approval
- **Cherry Valley & Rochdale** – Reservoir Levels declining; allows purchase from MWRA/Worcester

Emergency Declaration Conditions

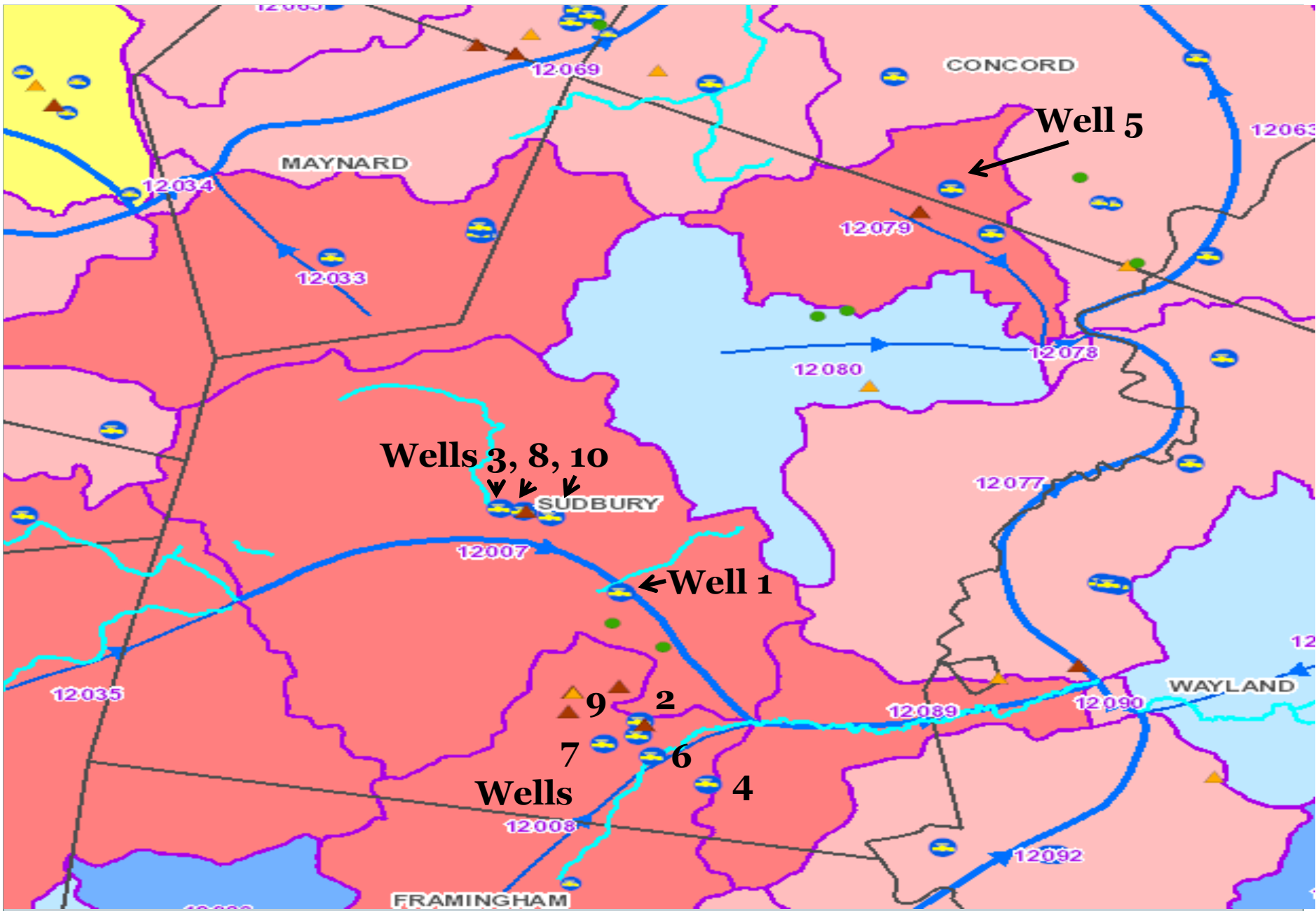


- System-wide ban on non-essential water use for the duration of the declaration
- Reporting on measures:
 - to notify consumers of the ban including text of Reverse-911 calls and any additional means to deliver information
 - taken to implement and enforce the ban, including assesement of penalties or fines
 - trends on water use during the declaration
 - to limit the use of private wells
- Declaration may not exceed six months

Sudbury Water Use Facts



- **18,317 population served**
 - 6108 total service connections
 - 5796 residential connections (84% of metered use in 2015)
- **Registered: 1.72 mgd** (7 gw sources)
- **Permit: 0.36 mgd** (2.08 mgd total) (4 gw sources)
- 69 RGPCD and 12% UAW in 2015
- 2014 use = 1.72 mgd / 2015 use = 1.88 mgd



Sudbury Water Sources & Groundwater Withdrawal Categories

Sudbury's Proactive History



- No new residential irrigation systems are allowed to connect to the public water supply.
- Restrictions allowed 2x per week outdoor watering based on voting precinct.
- Initial outdoor irrigation ban tied to water levels in the Concord River (usually occurring sometime in May)

Drought 2016 Timeline- Sudbury

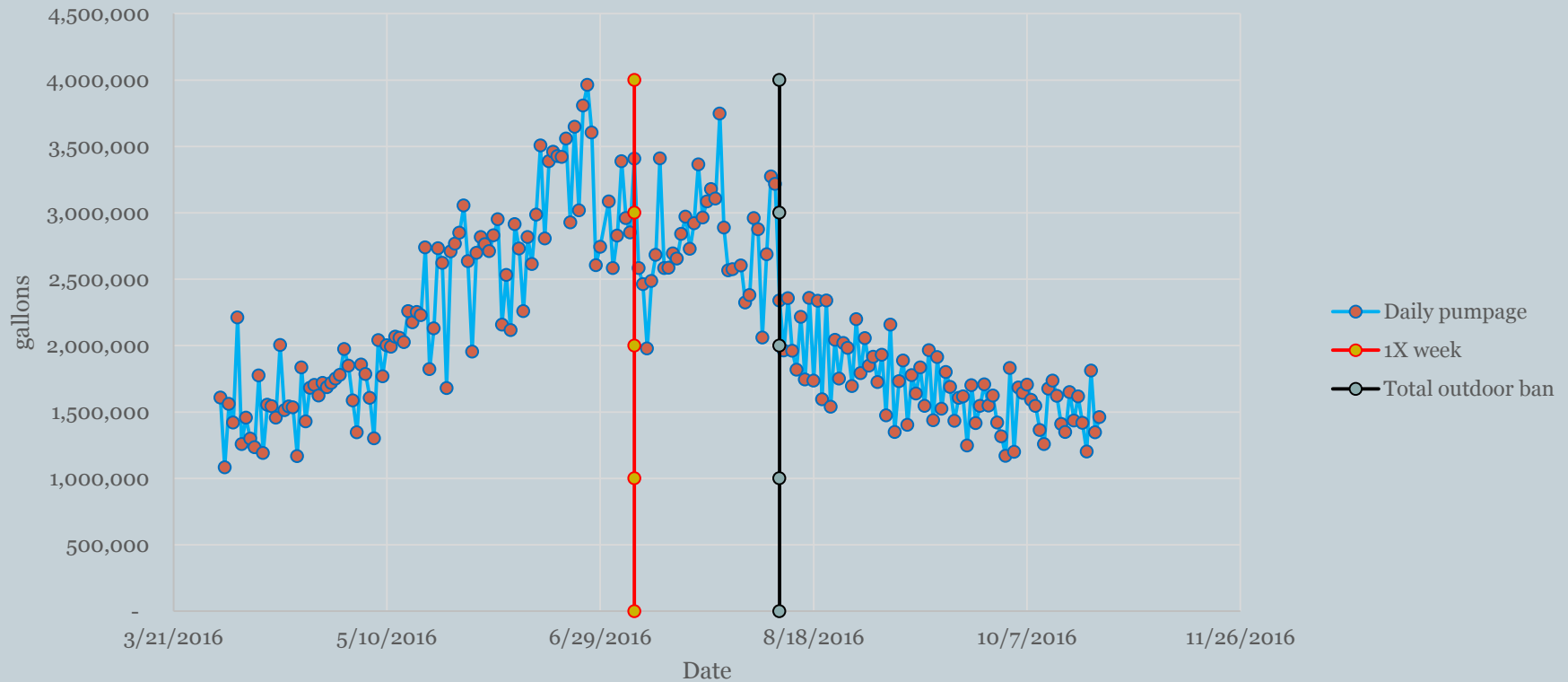


- 5/14 - Implemented standard restrictions (2 times/week based on WMA requirements)
 - Average daily pumpage = 2.8 mgd
- 7/8 – Implemented 1 time/week outdoor watering restriction due to drought declaration
 - Average daily pumpage = 2.8 mgd
- 8/11 – Outdoor watering ban (hand held watering allowed)
 - Average daily pumpage = 1.8 mgd

Sudbury Water Daily Pumpage



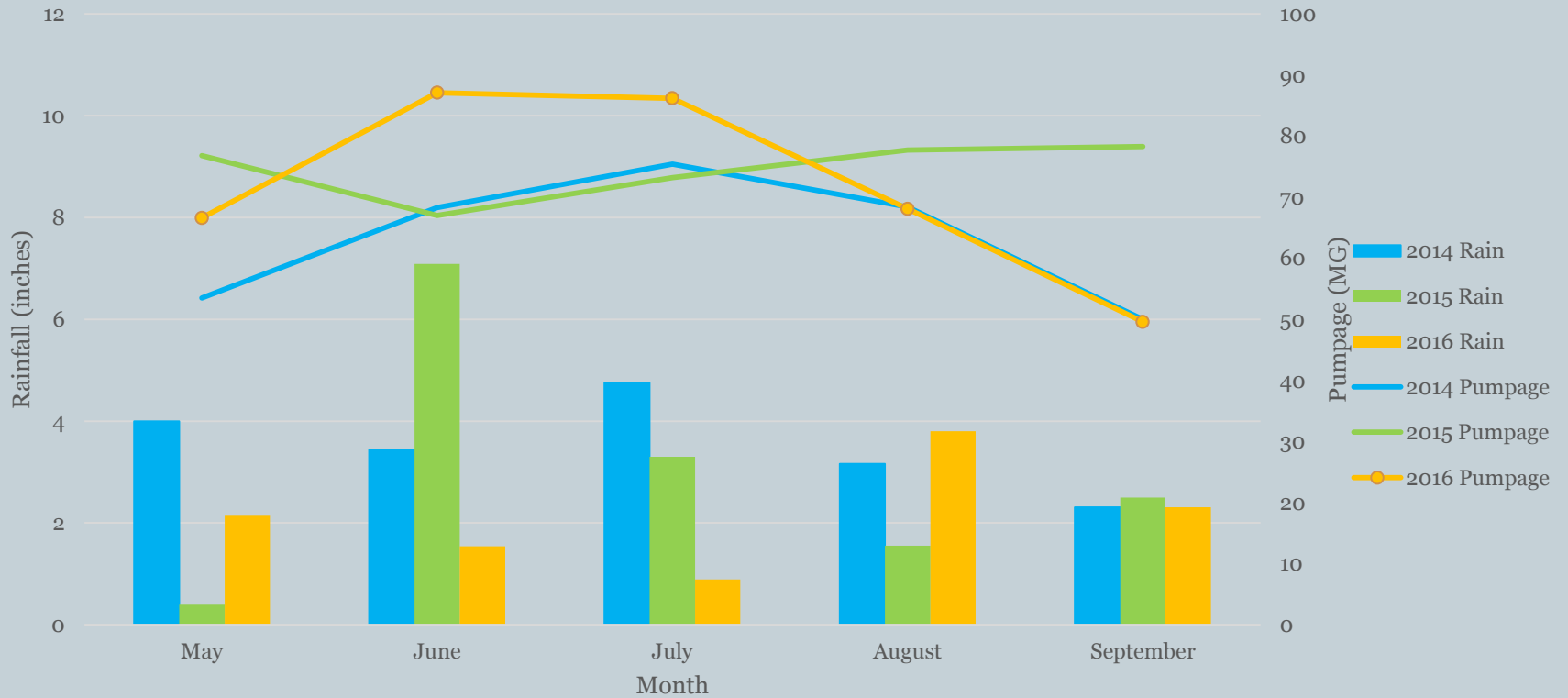
Sudbury Water District Daily Pumpage 2016



Rainfall Vs. Pumpage



Monthly rainfall vs pumpage
2014-2016



Sudbury Public Outreach

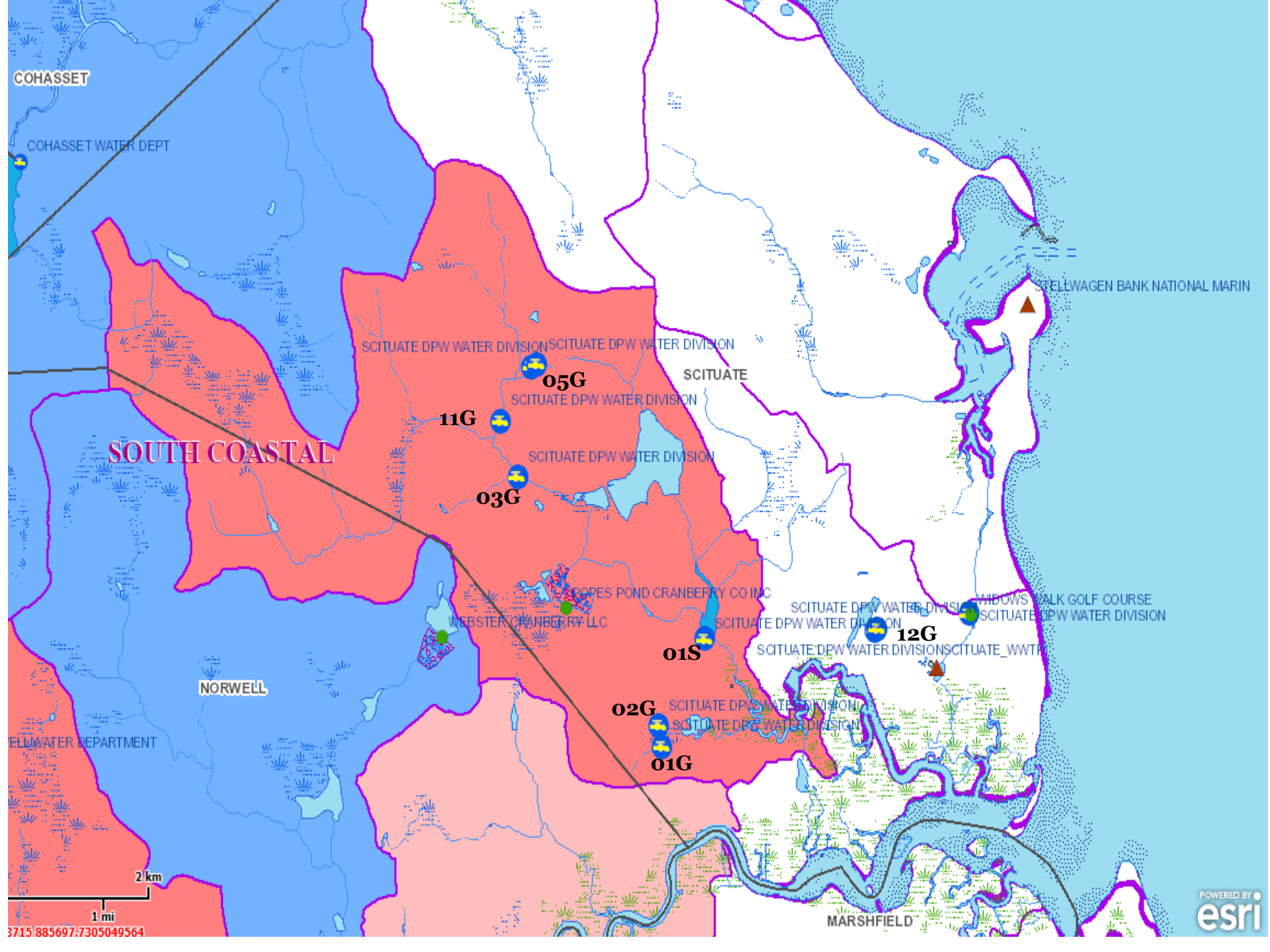


- Facebook Postings & emails via District's email alert list
- Sandwich boards and trailer mounted lit signs along major routes in town
- Added education material to website
- For homes with private irrigation wells offered a free sign in exchange for inspection to insure no cross connection exists.
- Enforcement
 - Violations of bans being issued

Scituate Water Use Facts



- **18,680 winter population served**
 - 7,727 total service connections
 - 7,438 residential connections (88% of metered use in 2015)
- **Registered: 1.49 mgd** (1 sw & 6 gw sources)
- **Permit: 0.31 mgd** (1.80 mgd total could be increased to 1.85 mgd with mitigation plan.)
- 58 RGPCD and 20% UAW in 2015
- 2014 use = 1.53 mgd / 2015 use = 1.46 mgd
- Approx. 65- 70% of water is from GW sources



COHASSET

COHASSET WATER DEPT

STELLWAGEN BANK NATIONAL MARIN

SOUTH COASTAL

SCITUATE DPW WATER DIVISION

SCITUATE

11G

05G

03G

SCITUATE DPW WATER DIVISION

POPES POND CRANBERRY CO INC

WEBSTER CRANBERRY LLC

SCITUATE DPW WATER DIVISION

WIDOWS WALK GOLF COURSE

01S

12G

SCITUATE DPW WATER DIVISION

02G

SCITUATE DPW WATER DIVISION

01G

NORWELL

ELM WATER DEPARTMENT

MARSHFIELD

2 km

1 mi

POWERED BY esri

3715 885697 7305049564

Scituate's Proactive History



- Restrictions allow 1 day per week of watering based on voting precinct.
- May 2015 prohibited new irrigation systems being added to system
- Bans tied to reservoir levels
- Streamflow restoration efforts on First Herring Brook
 - Interim streamflow release plan
 - Fish ladder modifications
 - Plans for dam modifications

Drought 2016 Timeline- Scituate



- **5/1 - Implemented standard restrictions (1 day/week)**
 - 5/6 reservoir at 100% capacity
 - 6/1 reservoir at 65% capacity
 - 7/1 reservoir at 53% capacity
- **7/8 – Hand-held only watering allowed**
 - 7/15 reservoir at 43% capacity
- **8/5 - Total Ban**
 - Reservoir below 28% capacity triggering full ban
 - 8/8 release stopped
 - 9/1 reservoir at 21.5% capacity
 - 9/26 reservoir at 21.4% capacity

Controlling Demand in Scituate



Year	Peak Day + Date (mgd)	Peak Month Ave. (mgd)	Annual Ave. Day (mgd)
2016	2.64 (7/4)	1.94 (July)	
2015	2.97 (7/21)	1.92 (July)	1.46
2014	2.96 (7/1)	2.25 (July)	1.53

August 2016	Peak Day (mgd)	Average Day (mgd)	Comments*
8/1 – 8/10	1.668	1.42	8/5 Ban (.03" rain on 8/1)
8/11-8/20	1.473	1.36	0.38" 8/11; 0.22" 8/14-15
8/21- 8/31	1.431	1.26	0.77" 8/22; 0.12" 8/27

January 2015 averaged 1.20 mgd

* precip. values from DCR's Scituate gage

Scituate Public Outreach



- Drought Crisis Management Team meeting weekly
- Water Conservation Post-Card sent 9/2
- Town Website posting of PSA and Water Conservation tips
- Soliciting town residents to submit water conservation tips
- Facebook Postings & emails via Town email alert list
- Conservation education in schools with NSRWA
- Video series on Scituate's water supply + conservation tips
- Enforcement
 - Violations of bans being issued
 - Public posting of streets where violations occurred

Scituate PSA



<https://www.youtube.com/watch?v=XWME3YIKCWg>