Updates: Medway's Integrated Water Resources Management Program (IWRMP) & NPDES MS4 Permit

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Board of Selectmen, February 17, 2015

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THE TOWN OF MEDWAY MASSACHUSETTS INCORPORATED OCT 25 1713

IWRMP & MS4 Update - Agenda

I. NPDES MS4 Permit Update
   1. Overview; timeline
   2. Expected challenges
   3. Implications for Medway
   4. Draft comment letter
   5. How is Medway positioned?
   6. Next steps

IWRMP & MS4 Update - Agenda

II. IWRMP Update

1. Program Overview
2. IWRMP Phase I
   - Work completed & Findings
   - Grant-funded additional projects
3. Original vs. Current IWRMP Drivers
   - Water, Wastewater, Stormwater
4. IWRMP Proposed Next steps

NPDES Program Overview

- Clean Water Act - regulates point source discharge of pollutants to waters of the US
  - National Pollutant Discharge Elimination System (NPDES) Program is the regulatory permitting mechanism
  - Wastewater Treatment Plants
  - Industrial Sources
  - Stormwater Sources
  - Construction Activity

NPDES MS4 General Permit Program

- Municipal Separate Storm Sewer System (MS4)
  - General Permit allowing the discharge of stormwater to waterways via municipal drainage systems, including:
    - Roads, curbs, gutters
    - Catch basins, ditches
    - Swales, culverts, gullies
    - Manmade channels, piped conveyances
- Existing 2003 – 2008 MS4 General Permit administratively extended & still valid

NPDES MS4: Maximum Extent Practicable (MEP)

- Six 'Minimum Control Measures'
  1. Public Education / Outreach
  2. Public Involvement / Participation
  3. Illicit Discharge Detection & Elimination (IDDE) Program
  4. Construction Site Runoff Control
  5. Stormwater Management in New/Re-development
  6. Good Housekeeping / Pollution Prevention

Water Quality Based Effluent Limitations

- Total Maximum Daily Loads (TMDL)
  - Specific pollutant ‘diet’ for certain receiving waters
  - Approved by EPA

- Other Impaired Waters
  - Water Quality Limited Waters (no approved TMDL)

NPDES MS4 Program Overview

- EPA Region 1 vs Nationwide Perspective
- New England states & MA

Overall Trends –

- maturing program
- more expansive & more inclusive
- much more quantitative
- regional solutions

NPDES MS4 MA Permit – expected timeline

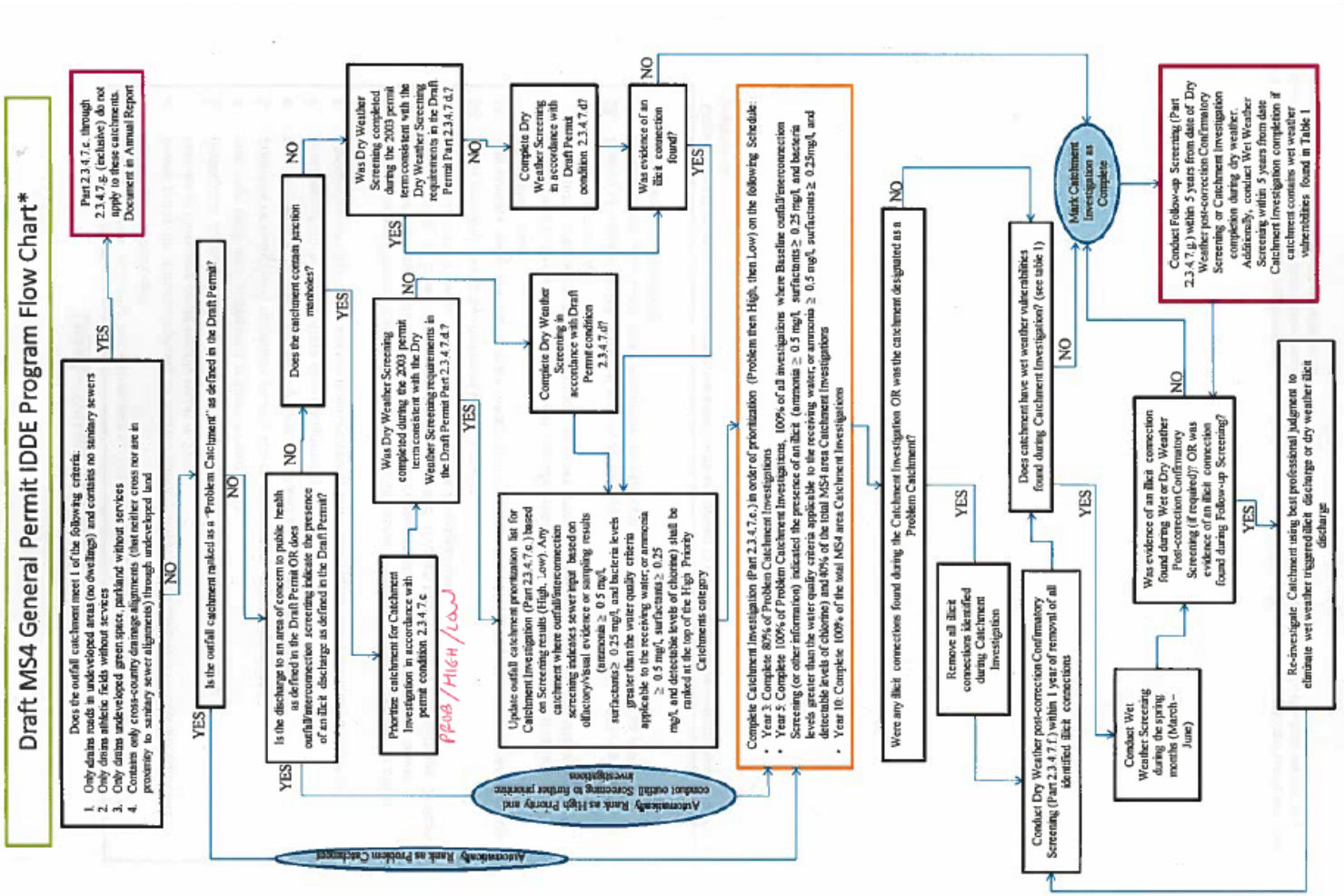
- Comments on Draft due February 27, 2015
- Final Permit (estimated) by December 2015
- Effective Date (estimated) July 2016
- http://www.epa.gov/region1/npdes/stormwater/MS4_MA.html

Major Challenges of New MS4 Permit

- Major increase in data collection, management & reporting
- Increased operation & maintenance requirements
- Stormwater planning and assessment activities
- Compliance with TMDLs
- Major capital projects for stormwater improvements
- Significant increase in administrative costs

- *Many studies project at least 2X increase of program costs*

Major Challenges of New MS4 Permit



Key Comments on Draft MS4 Permit

- IDDE Investigations / Mapping:
  - Sewer system mapping / evaluation excessive
  - Wet weather monitoring relief not provided
  - Manhole inspections excessive
  - SSO requirements redundant
- Affordability / Integrated Planning:
  - Affordability should be a component of the program
- EPA / DEP inconsistency

Key Comments on Draft MS4 Permit

- Roadway projects – need an exemption from 1” rule
- Good housekeeping cost assumptions flawed
- New discharger definition unclear
- Phosphorus Load Calculations / Assumptions

Medway MS4 Challenges

- TMDLs – Charles River (and tributaries)
  - Phosphorus
  - Bacteria
  - Obligatory Phosphorus Control Plan (3 Phases over 20 Years) to meet 32% reduction in P Discharges

- Annual Program Cost Projections
  - Current: $350,000 Future: $800,000
  - Capital Projects for Phosphorus Control ~$29M

How is Medway positioned for MS4?

- Accomplishments / Next Steps:
  - ✓Bylaws in place
  - ✓IWRMP Phase I Tasks *(detail next..)*
  - ✓Grant-funded Stormwater Utility Feasibility Study
  - FY15-16 - Staff training & outfall inspections
  - FY16 – Will require additional staff for investigation & compliance tasks

IWRMP – Integrated Water Resources Management

- Drinking Water
- Wastewater
- Stormwater

IWRMP – Integrated Planning Benefits

- Current / future needs clearly identified
- Solutions prioritized - most cost effective and beneficial projects come first
- Positioned to meet current & pending challenge
- Leverage with regulatory agencies
- Access to more funding sources
- Builds resiliency into infrastructure planning

IWRMP – Phase I focus

- Stormwater MS4 compliance tasks
- Comply with 2003 Permit while addressing future Permit expectations

IWRMP Phase I Tasks Completed

- ☑Citizens Advisory Task Force
- ☑Stormwater Educational Outreach Materials
- ☑Update to Stormwater Management Plan
- ☑GIS Outfall Compilation & Stormwater Map
- ☑Priority Outfall Inspection & GPS Location
- ☑Illicit Discharge Detection & Elimination Plan
- ☑Municipal Good Housekeeping Manual

IWRMP Phase I Complete

☑ Educational Outreach Materials

Integrated Water Resources Management

The purpose of the Integrated Water Resources Management Program (IWRMP) is to look at all of Medway's water resources holistically and determine how to manage Medway's drinking water, wastewater, stormwater and surface water needs in a balanced way that protects the environment and allows for sustainable growth.

What are your Local Water Resources?

Choate Pond

Surface Water

All of Medway is located within the Charles River Basin. The Charles River forms ²/₃ of Medway's southern border with Franklin. Like Choate Pond, many of Medway's surface waters provide important wildlife habitat and popular recreational areas for residents. Wetland areas throughout Town also provide essential flood protection.

Groundwater

Medway residents receive their water supply from ground water sources. The Town's four supply wells draw their water from the underground sand and gravel aquifer of the Charles River basin.

Highland Street Water Tank

Protecting Medway's

How Can You Hel

Get Involved!

Participate in neighborhood cleanups and the annual Medway Clean Sweep & Pride Day events.

Watch for notices about IWRMP upcoming meetings.

Charles River

Choate Park

Choate Pond

Simple

Protect

- ✓ Limit the use phosphorus
- ✓ Compost you
- ✓ Have your se regularly
- ✓ Practice Wat
- ✓ Never dump & take unwa waste collect
- ✓ Direct downspouts away
- ✓ Pick up after your pet
- ✓ Use low-phosphate or pho

Yard Waste Recycling & Composting

Town Of Medway, MA
Department of Public Services
Environmental Services
www.townofmedway.org
"A Green Community"

Town of Medway
Integrated Water Resources Management Program (IWRMP)

Photo by Mark Wilcox

the IWRMP is to look at all ater resources holistically how to manage Medway's , wastewater, stormwater ater needs in a balanced cts the environment and sustainable growth.

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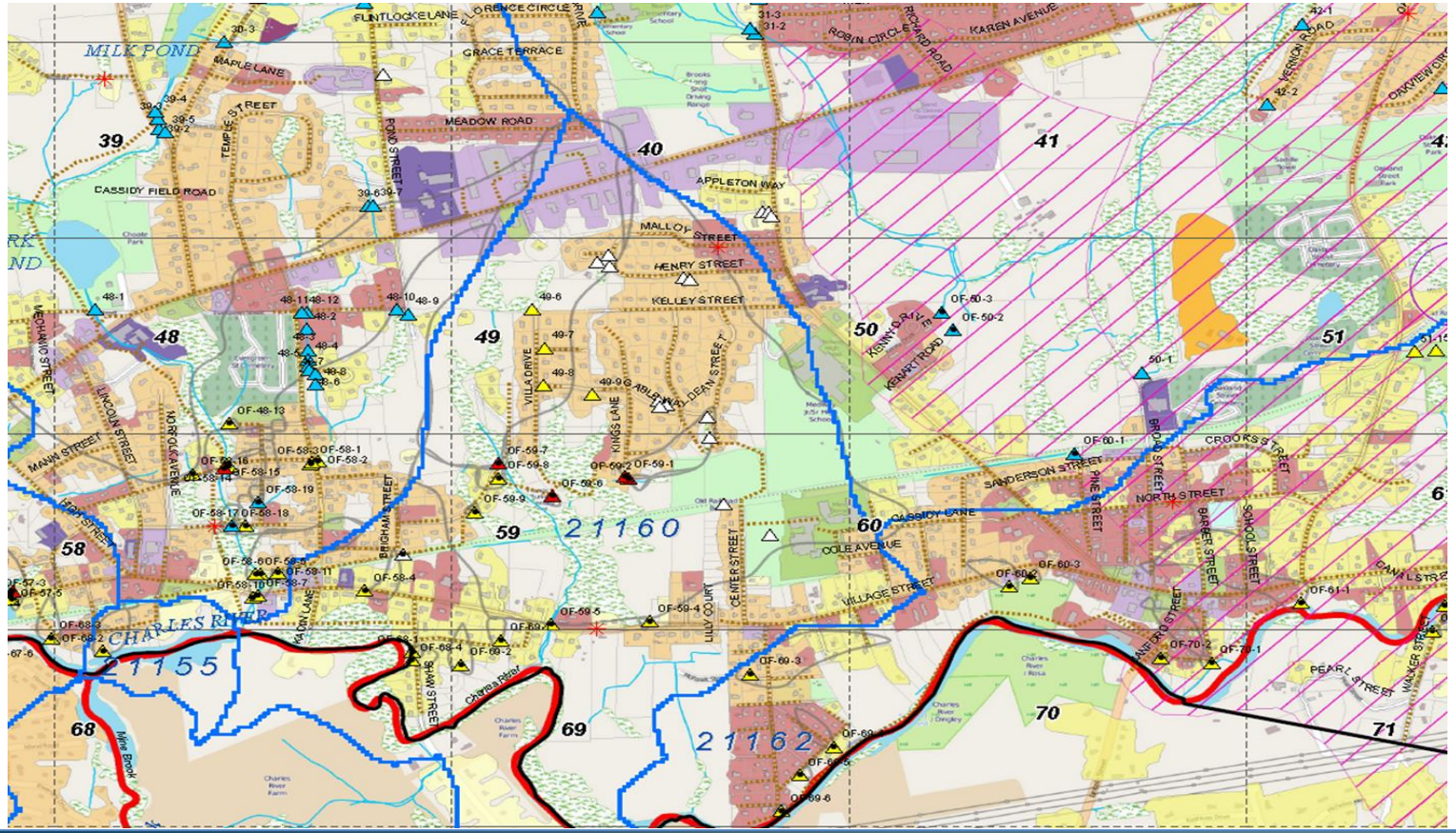
IWRMP Phase I Complete

- ☑ Stormwater Mapping



IWRMP Phase I Complete

☑ NPDES Documentation, Outfall Prioritization

ILLICIT DISCHARGE DETECTION & ELIMINATION PROGRAM PLAN

FOR
TOWN OF MEDWAY, MASSACHUSETTS

LATEST REVISION: JANUARY 2014

Watershed ID	Watershed	Outfall_ID	MS4 Status	STREET	PROBLEM CATCHMENTS	POTENTIAL ILLICIT DISCHARGE SCORE	PRIORITY RANKING LEVEL	ACTION	
VEIGHTING FACTOR									
21153-S	Chicken Brook-South	58-13	y	WELLINGTON ST		53	MEDIUM	Review Inspection Notes	
21153-S	Chicken Brook-South	58-14	y	WELLINGTON ST		53	MEDIUM	Review Inspection Notes	
21153-S	Chicken Brook-South	58-15	y	WELLINGTON ST	PROBLEM	65	MEDIUM	Reinspect and Sample	
21153-S	Chicken Brook-South	58-16	y	WELLINGTON ST		53	MEDIUM	Review Inspection Notes	
21153-S	Chicken Brook-South	58-17	y	GUERNSEY ST		59	MEDIUM	Reinspect and Sample	
21153-S	Chicken Brook-South	58-18	y	GUERNSEY ST		47	LOW	Intial Dry Weather Inspec	
21153-S	Chicken Brook-South	58-19	y	GUERNSEY ST		43	LOW	Intial Dry Weather Inspec	
21153-S	Chicken Brook-South	58-2	y	COTTAGE ST		53	MEDIUM	Review Inspection Notes	
21153-S	Chicken Brook-South	58-3	y	WELLINGTON ST		49	MEDIUM	Review Inspection Notes	
21153-S	Chicken Brook-South	58-5	y	COTTAGE ST		59	MEDIUM	Reinspect and Sample	
21153-S	Chicken Brook-South	58-6	y	COTTAGE ST		53	MEDIUM	Review Inspection Notes	
21153-S	Chicken Brook-South	58-7	y	VILLAGE ST		57	MEDIUM	Review Inspection Notes	
21155	Charles River	68-2	Y	CHARLES ST		71	MEDIUM	Review Inspection Notes	
21156	Charles River	56-4	Y	AMELIA WAY		57	MEDIUM	Intial Dry Weather Inspec	
21156	Charles River	57-1	Y	SHERWOOD DR		63	MEDIUM	Review Inspection Notes	
21156	Charles River	57-2	Y	SHERWOOD DR		63	MEDIUM	Review Inspection Notes	
21156	Charles River	57-3	Y	VILLAGE ST		63	MEDIUM	Review Inspection Notes	
21156	Charles River	57-4	Y	VILLAGE ST	PROBLEM	87	MEDIUM	Reinspect and Sample	
21156	Charles River	57-5	Y	VILLAGE ST		63	MEDIUM	Review Inspection Notes	2014
21156	Charles River	57-6	Y	VILLAGE ST		63	MEDIUM	Review Inspection Notes	2014

Town of Medway

Municipal Services Operations & Maintenance Manual
DRAFT

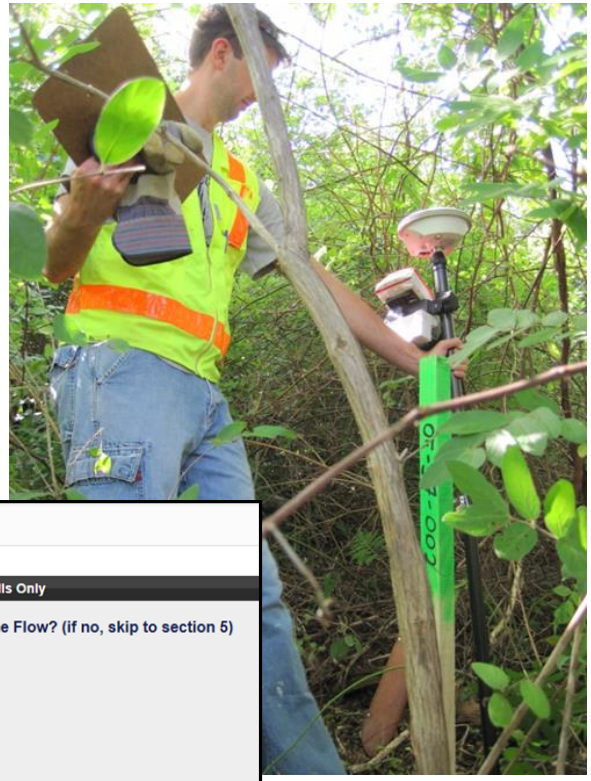
A Guide to Good Housekeeping Best Practices to Prevent Stormwater Pollution

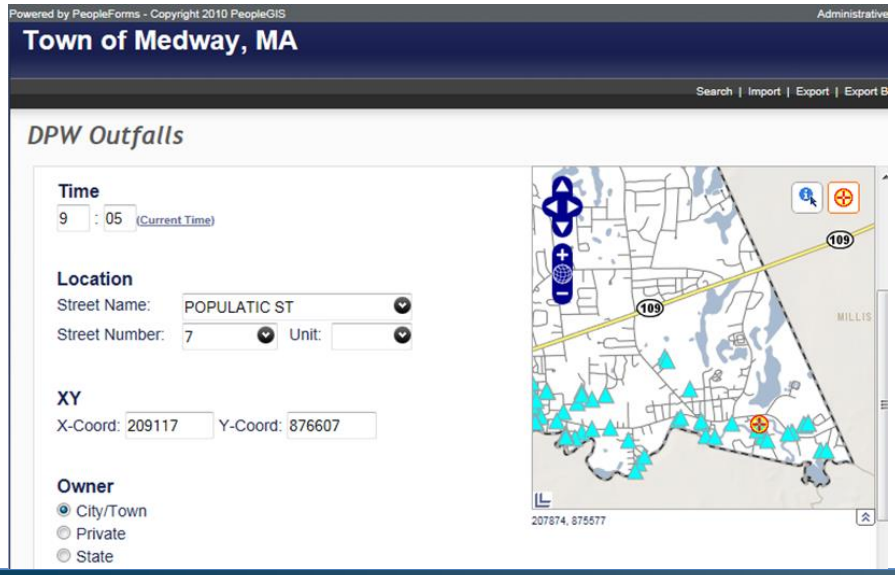
THE TOWN OF MEDWAY MASSACHUSETTS INCORPORATED OCT 25 1713

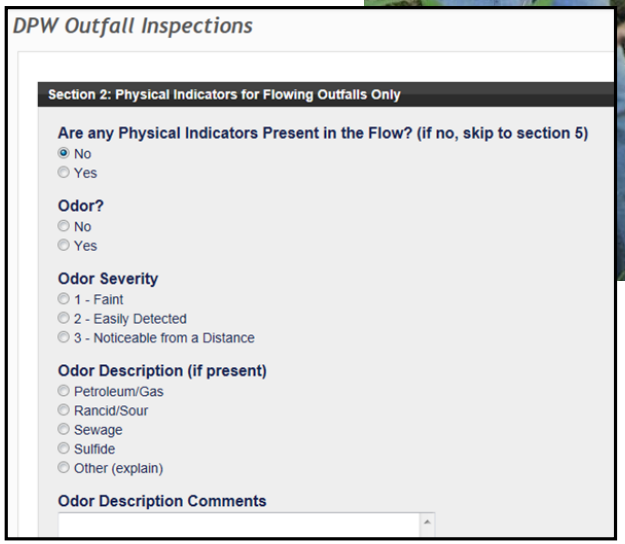
IWRMP Phase I Complete

☑ Outfall Inspection & Mapping

- Critical outfall outfalls mapped – 30% of total







Additional Grant-Funded Projects:

- FY13 DEP SWMI Grant - $95,000
  - Ranked solutions for water withdrawal offsets coming under new DEP regulation.
  - Ranking by cost effectiveness, benefit, feasibility.
  - Completed initial Stormwater Utility Feasibility & Revenue Study

Additional Grant-Funded Projects

- FY13 SWMI Grant – Top Recommendations

  - ✓ Conduct Town Water Audit
  - ✓ Conduct Top Water Users Audit & outreach
  - ✓ Continue NPDES MS4 implementation proactively
  1. Evaluate wellfield optimization
  2. Evaluate satellite well at Populatic
  3. Proceed with IWRMP next phase
  4. Explore Stormwater Utility funding option

Additional Grant-Funded Projects

- FY14 SWMI Grant $35,000 – Water Audits
  - Water Audit of Town system
  - Water Audit for Top 10 Water Users
  - Conservation Outreach to Top Users

- FY15 – Water Loss Evaluation & Grant Application
  - ➢ Follow up leak detection found 300,000 gpd leak!

IWRMP – Next Steps

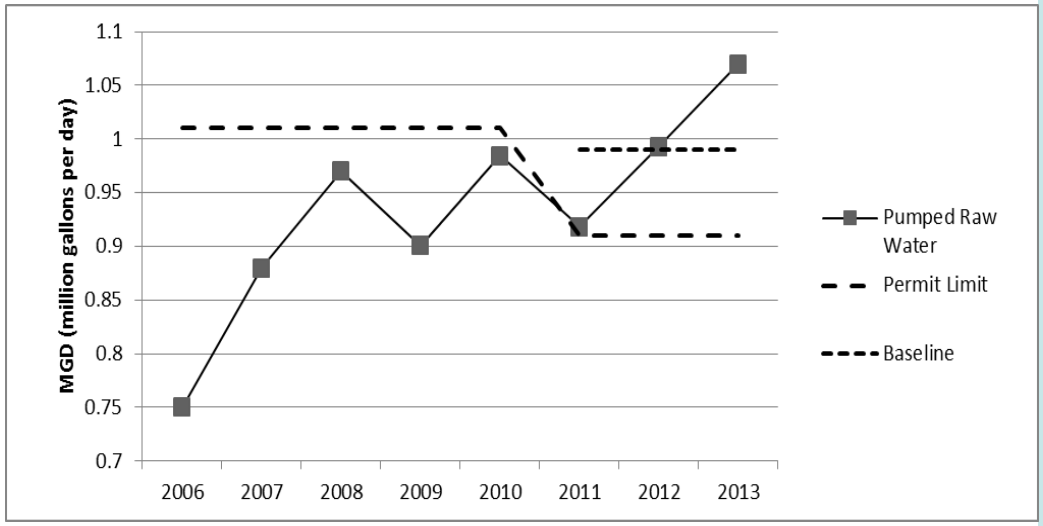
- The case for moving forward:

- *Pressure on all resources is increasing*
- *Competition for resources is increasing*

2009 Master Plan Town Goals

- *"Protect natural resources & rural character*
- *Expand commercial & industrial tax base*
- *Responsible development"*

IWRMP – Drivers - WATER



Challenges are increasing!

Key Issues

Quantity

- No operational flexibility
- Well yields declining
- Water losses high
- Demands increasing
- Exceeding baseline
- New regs will require mitigation actions for exceeding limits

Quality

- High Fe & Mn in several wells
- Treatment upgrades needed

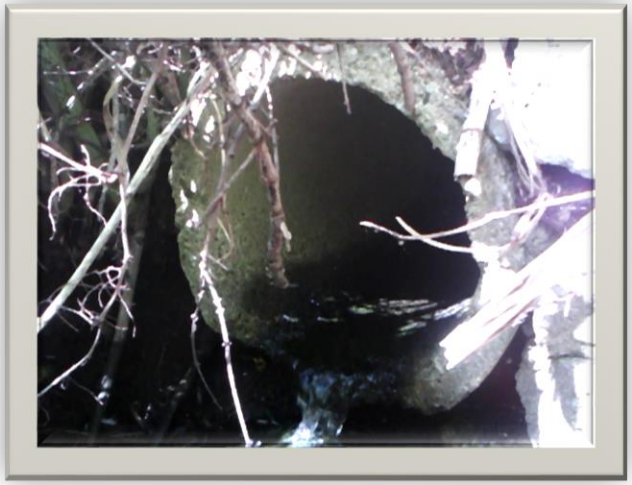
IWRMP – 2014 Drivers- WASTEWATER

Challenges are increasing!

Key Issues:

- Physical Limitations
  - High groundwater, extensive wetlands
  - Poorly drained soils
- Septic systems failing in unsewered areas
- Close to CRPCD permit limit
- CRPCD Disposal costs increasing
- Development pressure may consume land needed for future disposal
- Increasing development pressure on permit limits

IWRMP – Drivers- STORMWATER



Challenges are increasing!

Key Issues:

- Structure inventory logged on paper
- Mapping & digitization needed
- NPDES 2003 MS4 requirements
- Funding needs will drastically increase
- Funding for stormwater management not dedicated

- Condition unknown for majority of stormwater infrastructure
- NPDES MS4 2016 estimated $800k annual cost
- Charles Phosphorus TMDL requirements estimated $29M capital cost
- Development pressure may consume land needed for future BMPs

IWRMP Vision for What's Next

Phase II:

- Focus on Wastewater / Water
- Identify areas of convergence / incompatibility
  - (e.g. SWMI offsets, Stormwater infiltration BMPs, wastewater decentralized discharge opportunities or possible well sites)
- Outcome: Integrated Plan with Prioritized Projects

IWRMP Phase II – Benefits of Proceeding

- Maintain momentum & public engagement
- Proceeding holistically provides efficiency
- Proactive vs. Reactive Planning

- *Outcome: Medway well-positioned to achieve its goals to accommodate and attract sustainable growth*