Integrated Water Resources Management and Medway

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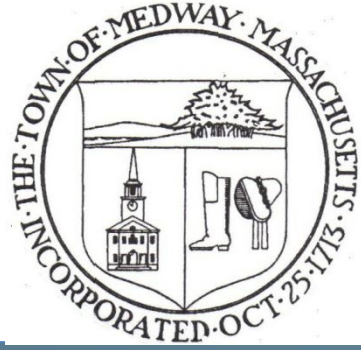
Board of Selectmen / Conservation / Water Planning, August 15, 2016

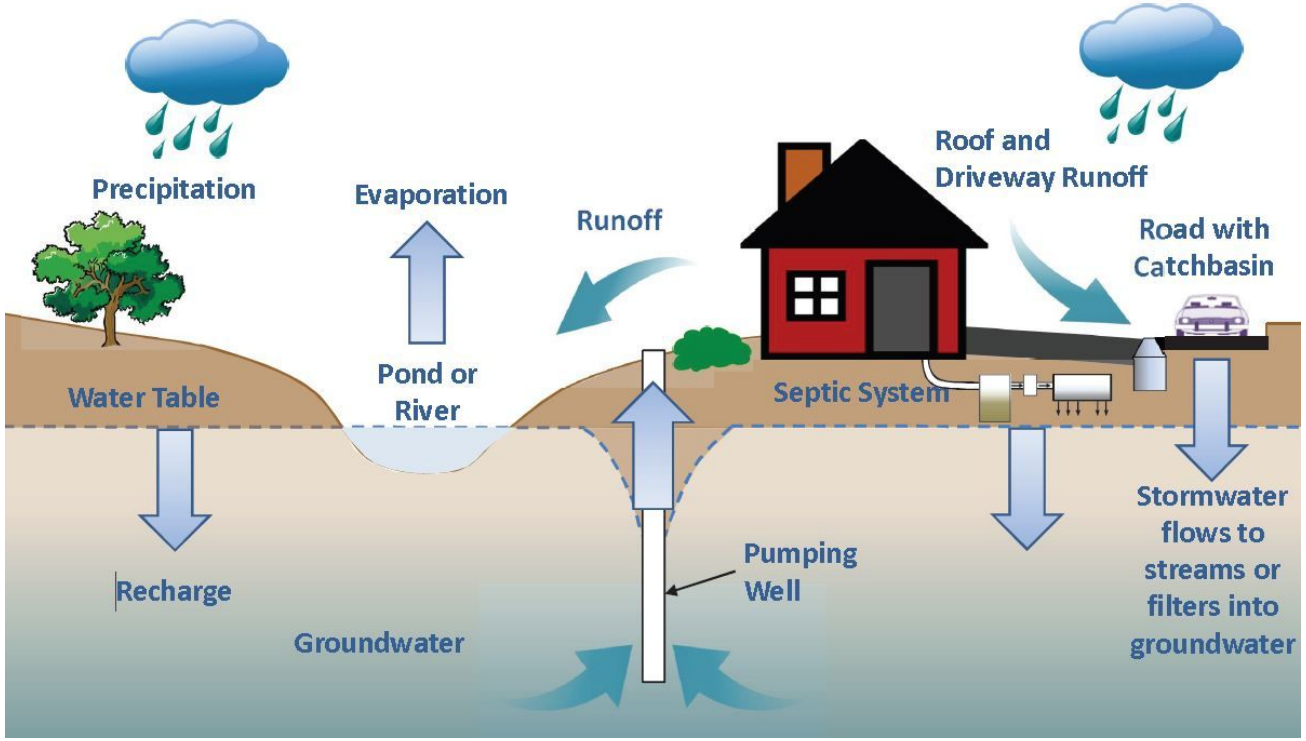
KLEINFELDER
Bright People. Right Solutions.



Integrated Water Resources Management Agenda

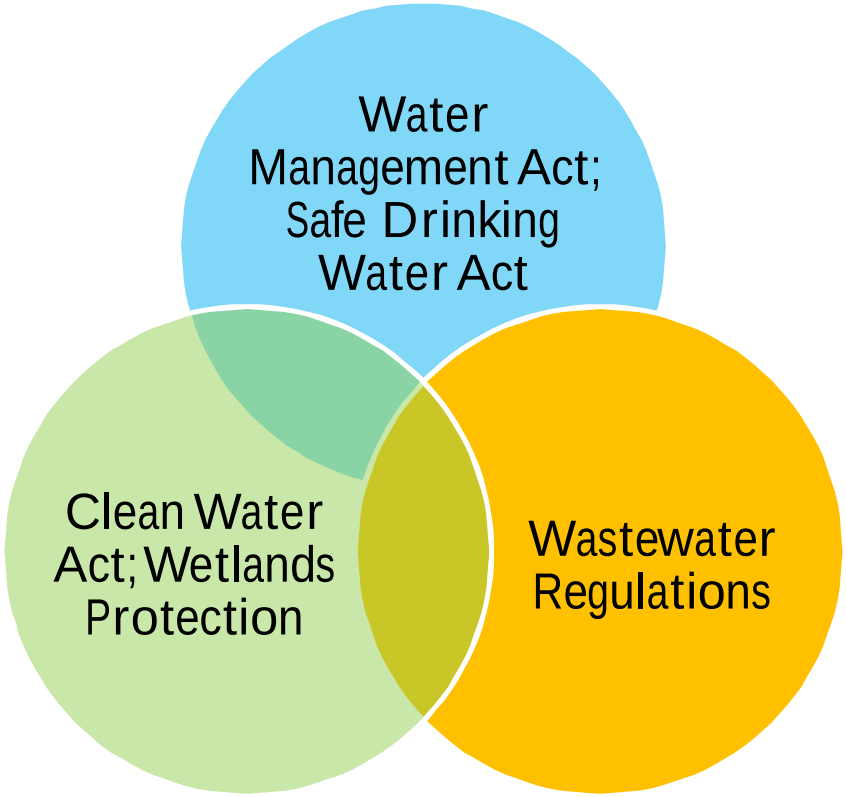
1. What is Integrated Planning? Why Integrated Planning?
2. Medway's Water Resources Challenges
   A. Drinking Water
   B. Wastewater
   C. Stormwater
3. Medway's Integrated Plan
4. MS4 Program & IWRMP
5. Timeline & Tasks
6. Next Steps

Why Integrated Water Resources Planning?



Water resources and infrastructure are all interconnected !

Why Integrated Water Resources Planning?



Water resources and infrastructure regulations overlap !

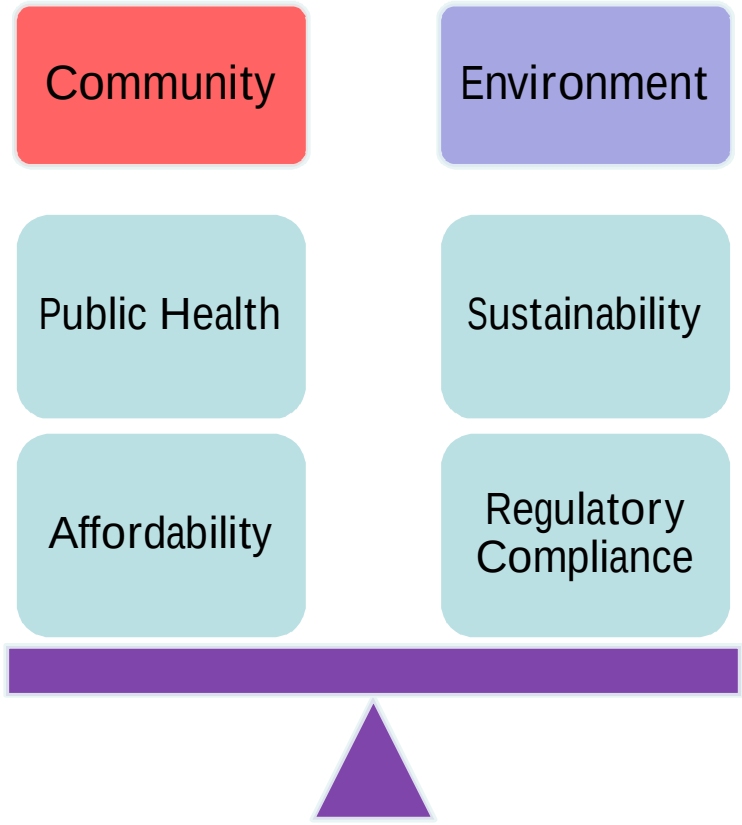
Why Integrated Water Resources Planning?

- *Pressure on aging infrastructure*
- *Pressure on available land*
- *Competition for limited resources*

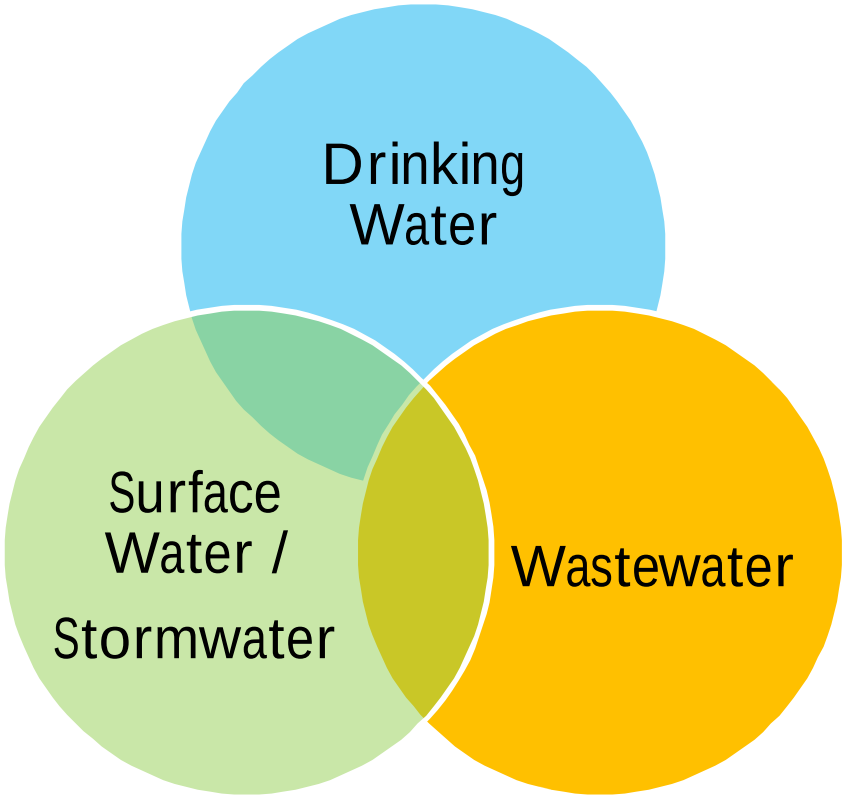
What is Integrated Water Resources Planning?

"evaluates alternative means for addressing current and future wastewater, drinking water, and stormwater needs and identifies the most economical and environmentally appropriate means of meeting those needs"

- MassDEP

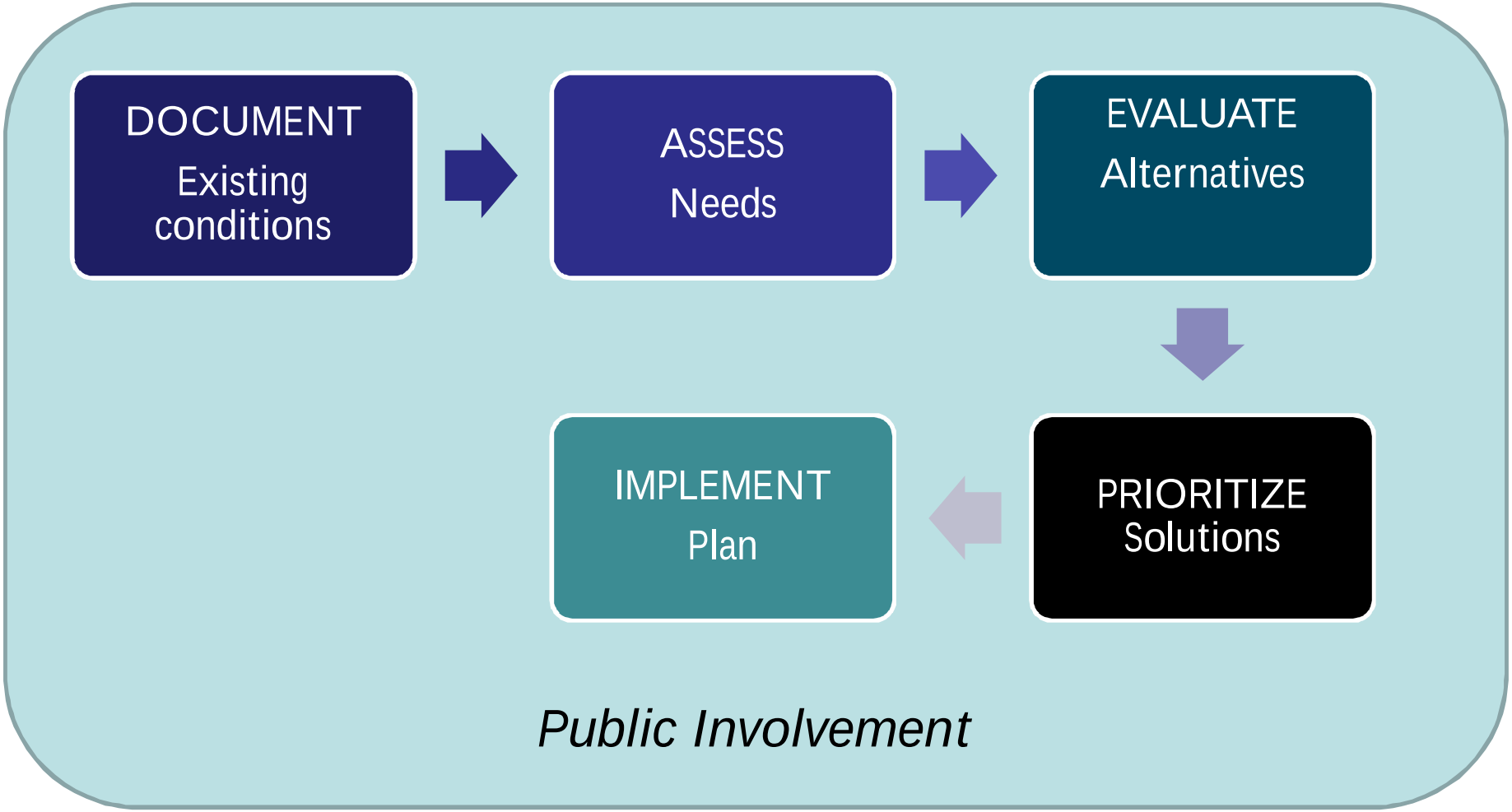


What is Integrated Water Resources Planning?



- What Resources exist?
- What condition are they in?
- What requirements must be met?
- What are the needs & priorities of the community?
- How can they be balanced and sequenced?
- What is our short & long term plan?

Integrated Water Resources Planning Process



Integrated Water Resources Planning in MA

Who is doing it?

- Brewster
- Canton
- Easthampton
- Springfield
- Truro
- Medway
- Others..

Benefits of Integrated Water Resources Planning

- Needs identified
- Solutions prioritized

- *Increased access to funding sources*
- *Regulatory leverage*
  - *DEP*
  - *EPA*
- *Proactive vs reactive*
- *Most cost effective and beneficial projects come first*

Medway's Water Resources Challenges

Water bans in effect as drought continues

Medway: State executive OKs Exelon expansion Milford Daily News
With **Medway** unable to provide the average of 95,000 gallons of **water** the plant will need per day, Exelon has been in talks with neighboring Millis to ...

Storm water permit, and huge expense, may be incoming

WATER SUPPLY & DEMAND ASSESSMENT IN RELATION TO EXELON POWER 'WEST MEDWAY II' PROJECT

Water: a costly commodity in MetroWest

Like Bellingham, Medway's water is pumped out of the ground, which brings naturally occurring high levels of iron and manganese.

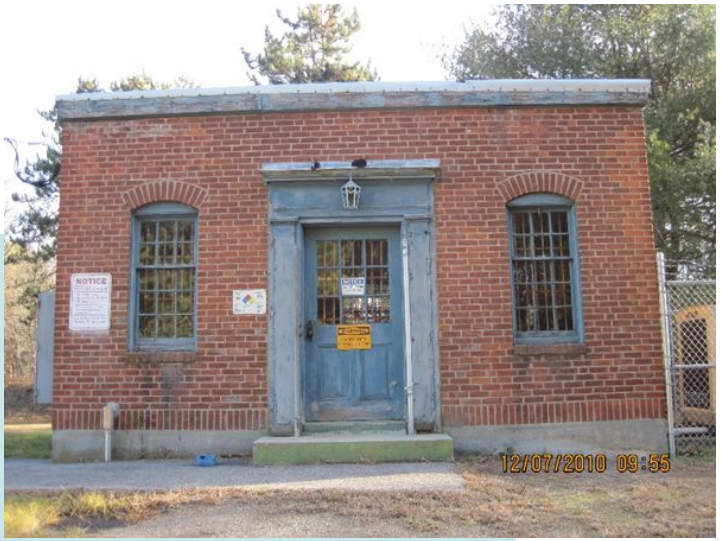
Medway crews repond to three water main breaks

Medway losing 100,000 gallons of water a day

By Zachary Comeau, Daily News Staff

Medway's Water Resources Challenges:

Drinking Water



Quantity

- Lack of well supply capacity
- Lack of well redundancy
- Aging water mains
- Demands increasing
- New regulatory constraints / requirements (WMA 2014)
- Offsets will be required to seek higher permit limit

Quality

- High iron and manganese in several wells
- Treatment Facility needed

Challenges are increasing..

Medway's Water Resources Challenges:
Waste Water

- Physical Limitations
  - High groundwater, extensive wetlands
  - Poorly drained soils
- Septic systems failing in unsewered areas
- Close to CRPCD permit limit
- CRPCD Disposal costs increasing
- Increasing development pressure on permit limits & land
- Sewer moratorium
- New wastewater regulations

Challenges are increasing..

Medway's Water Resources Challenges:
Stormwater

- MS4: Large annual cost increases (1.5-2x)
- Funding for stormwater management not dedicated
- Condition unknown for majority of stormwater infrastructure
- More frequent large storms cause flooding

- Charles River Phosphorus TMDL requirements
  - Phosphorus Control Plan
    - 30% reduction in P Discharges
    - 3 Phases over 20 Years
    - Future Costs Yr 6 -20 may exceed ~$15M

  - Development pressure or other Town needs may consume land needed for future BMPs

Challenges are increasing..

Medway IWRMP History & *Regulatory Changes*

2009 Medway Town Master Plan

#1 Concern: Water Quality and Quantity

2010 IWRMP planning meetings begin

Discussions with DEP, State Reps, local officials

EPA issues Draft MS4 Permit

2011 $500,000 SRF Loan application submitted for IWRMP

Prepared by KLF on Medway's behalf

2012 SRF Loan Awarded; IWRMP Scope Approved by DEP

Kleinfelder begins work on Phase I.

Focus on 2003 MS4 Stormwater compliance tasks

Medway IWRMP History & *Regulatory Changes*

2013
- IWRMP Phase I in progress
- *SWMI Grant study - evaluates Water Management Permit options*
- *WMA regs in preparation*
- *New Mn health advisory for water*

2014
- January: IWRMP phase I completed
- *EPA issues new Draft MS4 Permit*
- *DEP issues new WMA and Sewer regs*

2015
- IWRMP on hold pending final MS4 Permit
- *SWMI Grant water loss study*

2016
- April: EPA issues Final MS4 Permit
- *Effective date 7/1/17*
- *June: KLF completes Grant funded Stormwater Funding study*

IWRMP Phase I Tasks

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

Watershed ID	Watershed	Outfall_ID	MS4 Status	STREET	PROBLEM CATCHMENTS	POTENTIAL ILLICIT DISCHARGE SCORE	PRIORITY RANKING LEVEL	ACTION	Timeframe
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	ASAP
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	ASAP
21153-S	Chicken Brook-South	58-18	y	GUERNSEY ST		47	LOW	Intial Dry Weather Inspect	2014
21153-S	Chicken Brook-South	58-19	y	GUERNSEY ST		43	LOW	Intial Dry Weather Inspect	2014
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	ASAP
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	ASAP
21156	Charles River	56-4	Y	AMELIA WAY		57	MEDIUM	Intial Dry Weather Inspect	2014
21156	Charles River	57-1	Y	SHERWOOD DR		63	MEDIUM	Review Inspection Notes	2014
21156	Charles River	57-2	Y	SHERWOOD DR		63	MEDIUM	Review Inspection Notes	2014
21156	Charles River	57-3	Y	VILLAGE ST		63	MEDIUM	Review Inspection Notes	2014
21156	Charles River	57-4	Y	VILLAGE ST	PROBLEM	87	MEDIUM	Reinspect and Sample	ASAP
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

IWRMP Phase II Tasks

- Wastewater / Water / Stormwater
- 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 & MS4

- *Go to Chart of IWRMP tasks; interrelationship with MS4 Year 1-2 Tasks and compliance milestones*

MCWRS Proposed MS4 Appeal

- Narrow legal appeal specific to the definition of “Maximum Extent Practicable” and whether imposition of conditions to meet water quality standards goes beyond that definition
- Even if appeal were to be upheld, would not impact the MEP portions of the permit (the 6 MCMs)
- First 5 years of this permit term address planning rather than capital projects

Recommended Next Steps FY17

- ✓ Review MS4 annual costs Years 1-5
- Evaluate / decide on MS4 funding sources
- Issue Stormwater Fact Sheet(s); decide on additional outreach
- Evaluate necessary changes to ordinances; rules & regs
- Proceed with IWRMP Phase II tasks
- Complete MS4 NOI by Q4FY17
  - Due 9/29/17
  - *Funded Task under IWRMP*
- Begin SWMP in FY17
  - ID priorities ahead of FY18 funding cycle
  - *Funded Task under IWRMP*

IWRMP Phase II – Benefits of Proceeding in FY17

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

- *Outcome: Medway well-positioned to achieve regulatory compliance and balance growth with environmental / fiscal sustainability.*

Questions / Discussion

Revision Date: 8-15-16

Tasks and Timeline: Integrated Water Resources Management Plan (IWRMP) and MS4 Year 1 & 2

				MS4-YR 1								MS4-YR 2				
				FY17	FY17	FY17	FY17	FY18	FY18	FY18	FY18	FY19	FY19	FY19	FY19	
PROGRAM & TASK	COSTS		% Complete	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	NOTES
IWRMP	Cost to Complete		17%													Cost =Contract Limit minus Phase I work completed.
Existing / Future Conditions		DRINKING WATER	90%													
		WASTEWATER	0%													
		STORMWATER	30%			SWMP	NOI									NOI and SWMP are subtasks included in IWRMP Scope. Task supports development of Ph I MS4 PCP
Needs Assessment	$ 413,900	DW / WW / STORM	0%													Task supports development of Phase I MS4 PCP
Evaluation of Alternatives		DW / WW / STORM	0%													Task supports development of Phase I MS4 PCP
Plan Development		DW / WW / STORM	0%													
Task Force; Public Meetings		DW / WW / STORM	50%													
NPDES MS4	Total Cost YR 1+2	Permit Requirement														
NOI	~~$ 6,600~~	Prepare and Submit NOI	0%				IWRMP	by 9/27								Propose to complete 1 qtr ahead of deadline. Included in IWRMP
SWMP	~~$ 27,400~~	Develop Stormwater Mgmt Plan	0%			IWRMP					BY 6/30					Propose to complete ahead of deadline during IWRMP development
Public Education & Outreach	$ 20,600	Develop and Implement Public Education Program	20%					Minimum 2 messages to each of 4 Audiences over 5 years; at least 1 year apart								Some materials previously created; can be modified.
TMDL	~$250k - IWRMP tasks = ~$85k	Phase 1 Phosphorus Control Plan (PCP)	0%							Due Year 5. For efficiency propose completing most tasks by end of Year 2 as IWRM tasks support PCP development						BOS express desire to complete PH1 PCP by end Year 2. Subtasks of the IWRMP will partially support effort
IDDE	$ 157,600	SSO Inventory	0%													
		Outfall Inventory, Ranking	75%					update ranking				Update Annually				
		System Mapping	25%									Phase I due				
		IDDE Plan	75%					Update								
		Outfall Inspections	60%					60% complete				Revise Screening Procedures				
		Catchment Investigations	0%									Revise Written Procedure				
		Staff Trainings	0%					annually				annually				
Construction Runoff Management	$ 26,700	Ordinance Development	0%					2008 requirement; update if needed				Written inspection procedures				
		Site Inspections and Ordinance Enforcement	0%									Written inspection procedures				
New/Redevelopment/Post-Construction	$ 24,600	Update Ordinance	0%									Update per Permit requirements				
		Street Design and Parking; Green Infrastructure Assessments	0%													
		Municipal BMP Assessment	0%													
Municipal Good Housekeeping	$ 341,500	Muni Manual; Trainings	75%									Completed; update as necessary				
		Catch Basin Cleaning Procedures	0%									Implement optimized procedures				
		Street Sweeping	0%									Implement increased sweeping targeted areas				
		Muni BMP Inspections; Maint	0%									Implement				
		SWPPPs	0%									SWPPP for DPS Garage				
Program Evaluation, Records / Reporting	$14,000 (Year 1)	Annual Reporting	0%					Annual program evaluation and reporting				Annual program evaluation and reporting				

Revision date: 8-15-16

Year in which must be completed

Progress has been made via IWRM Phase I