

A New, Comprehensive Approach to Stormwater Management



MassDEP Spring 2009



What's the Problem?

- 1) **Water quality:** ~75% of Massachusetts' assessed waterways are impaired.
- 2) **Water quantity:** ~50% of Massachusetts' assessed rivers/streams don't have enough water during the summer.



Stormwater Connection?



Stormwater

- is an old problem
- causes toxic algae bloom and damages water quality.
- carries pollutants into our surface waters, preventing rainwater from seeping back into the ground for natural treatment and to replenish our aquifers.



Current Framework

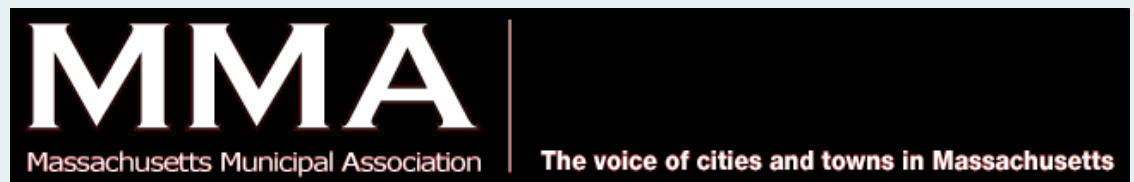
Places burden on municipalities to manage stormwater....



Efforts by cities and towns alone are not enough to address the stormwater problem.

Is There a Better Approach?

- MassDEP convened a stakeholder group comprised of business interests, academics, municipalities and environmentalists.



Comprehensive Approach Proposed early 2009

- Shares towns' current responsibility for stormwater management with large private landowners.
- Targets large impervious surfaces statewide.
- Takes more aggressive action in the Charles River Watershed TMDL area.



Who Was Proposed to be Covered?

- **Statewide:** All privately owned new developments, redevelopments and existing developments with large impervious surfaces.
- **Charles River Watershed:** Same as above, but different threshold.



In or Out?

- What Kinds of Uses?
 - Private larger impervious surfaces are “In”
 - Limited exclusions: sporting camps, RV parks and camps, detached single family dwellings, local state or federal government properties
 - Government owned properties are “Out”; most are regulated by EPA
 - Regulated since 2003 by MS4 program (e.g., 237 Massachusetts towns, MHD, DCR, Mass Turnpike, larger prisons and hospitals)
 - Few regulated by individual permits (e.g., Worcester, Boston, Logan Airport)

In or Out?

- Thresholds
 - Statewide: ≥ 5 acres impervious surface
 - In TMDL areas: ≥ 2 acres of impervious surface

If You're In . . . What Do You Have To Do To Comply With The SWGP?

- All: Baseline Performance Standards (aka Good Housekeeping)
- New developments and Redevelopments: install LID techniques and stormwater BMPs
- In TMDL areas: also meet pollution reduction requirements

Statewide Rules: Existing Developed Properties

- Meet “Baseline Performance Standards” (aka Good Housekeeping), e.g.,
 - Establish a “Stormwater Management Plan”
 - Train employees and Log SMP actions
 - Sweep Paved Surfaces
 - O&M of LID Techniques and Structural Stormwater BMPs
 - Comply w/NPDES Construction General Permit
- And for non-residential uses
 - Additional source control and pollution prevention measures



Statewide Rules: Redevelopments

- Meet “Baseline Performance Standards” (aka Good Housekeeping)
- Meet “Additional Performance Standard for Redevelopment of Impervious Surfaces”
 - At least same level of stormwater management as before redevelopment
 - Infiltrate at least 40% of redevelopment volume
 - If site constraints “prevent” that infiltration, can use other methods to reduce impervious surface and/or treat the redevelopment volume

Statewide Rules New Properties

- Meet “Baseline Performance Standards” (aka Good Housekeeping)
- Meet “Additional Performance Standard for Development of Impervious Surface”
 - Meet Standards 3- 6 of the Stormwater Management Standards
 - Recharge, Water Quality, LUHPPLs, Critical Areas

Charles River Watershed

- Implement good-housekeeping practices, like sweeping parking lots & a stormwater management plan.
- Meet redevelopment or new project standards
- Install structural stormwater controls (within a certain timeframe) to reduce phosphorus by recharging runoff back into the ground.



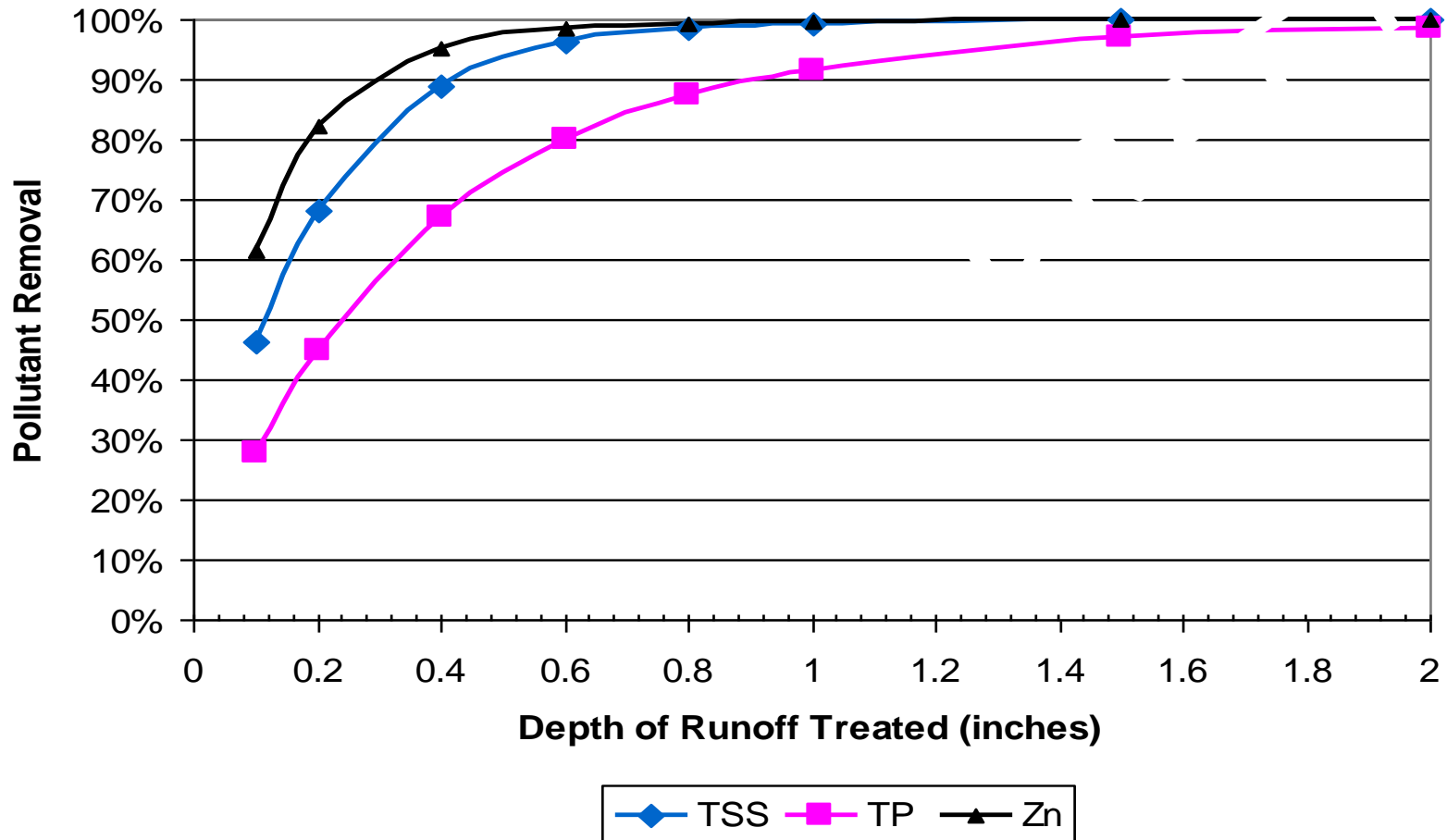
How To Achieve the TMDL Pollution Reduction: Use Infiltration BMPs

- Use EPA's "BMP Performance Curve" model to estimate pollution reduction from BMPs
 - BMPs must be designed according to Stormwater Management Handbook
 - DEP will presume the pollution reduction percent from the model is achieved
 - Model varies results based on soil type, land use, BMP type and runoff volume directed to the BMP

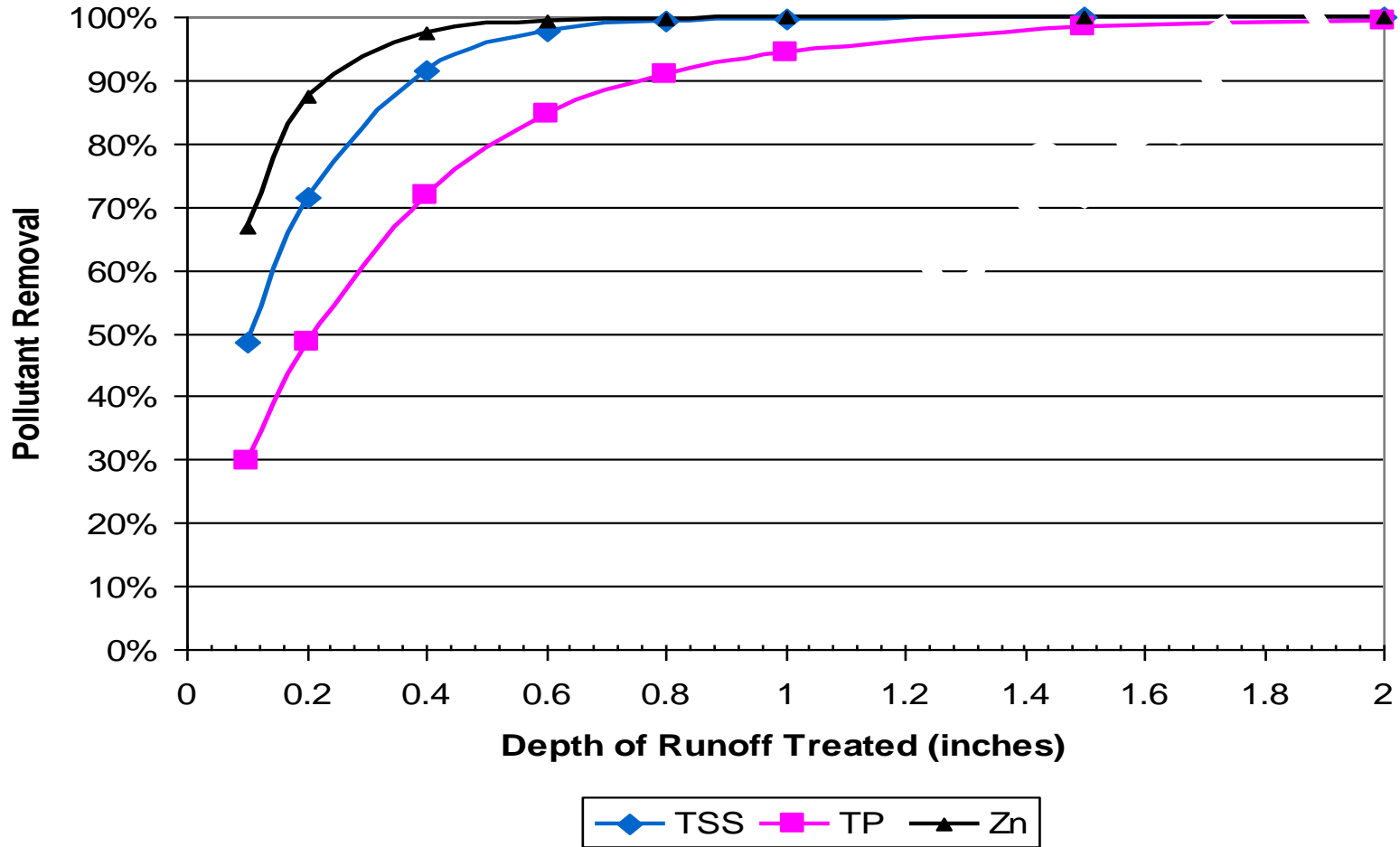
EPA's BMP Performance Curve Model

- Estimates pollution Reductions
 - From 8 different BMPs
 - Infiltration Basin
 - Gravel Wetland
 - Wet Pond
 - Bioretention
 - Infiltration Trench
 - Porous Pavement
 - Dry Pond
 - Grass Swale
 - By land use, land use and soil type, or depth of choker course
 - Varies by depth of runoff treated
- DEP presumption: pollution reductions will be achieved, if designed, built and maintained properly

BMP Performance Curve: Infiltration Basin
Land Use: Commercial
(Soil infiltration rate 0.27 in/hr)



BMP Performance Curve: Infiltration Basin
Land Use: Commercial
(Soil infiltration rate 1.02 in/hr)



How will MassDEP Manage the Program?

- Stormwater General Permit (SWGPP)
- Self-certification style program, modeled on the Environmental Results Program (ERP)
- MassDEP will provide:
 - Technical assistance, including a workbook, sample best management practices (BMPs) and mapping assistance.
 - “Credits” for owner/operators who reduce pollution by more (or earlier) than required.
 - Support for a “Trading” program that will make off-site infiltration projects possible.



What's Next?

- Stakeholder and interest group meetings
 - Review and discuss major issues raised by public comments
 - Review of the Stormwater Workbook
- Second public comment period about the program
 - Regulations
 - General permit
 - Workbook

Moving Forward



- **Smart stormwater management =**
 - Cleaner water
 - Increased protection of public health
 - More water to meet rising demand

Questions?