MassDOT Linear Highway Project Stormwater Regulation under TS4, Wetlands Regulations and MassDEP Stormwater Handbook

August 25, 2020

Agenda

- Welcome and opening remarks:
  - Kathleen Baskin, Assistant Commissioner, BWR, MassDEP
  - Stephanie Moura, Director, Wetlands and Waterways Program, MassDEP
- MassDOT-Highway regulation under the NPDES program – Newton Tedder, EPA
- Overview of proposed revisions of MassDEP stormwater handbook – Lealdon Langley, MassDEP
- Question and answer/ discussion – advisory committee only
- Question and answer/ discussion – audience

Goals

- Maintain or improve environmental protection
- Provide consistency between DOT Design Manual, MassDEP Stormwater Handbook, the MassDEP TS4 Permit, and EPA's TS4 permit.
- Create efficiencies for Conservation Commissions, Stormwater system designers, MassDEP, and DOT

NPDES Permitting For Small Municipal Separate Storm Sewer Systems (MS4)

- 1987 amendment mandated that stormwater was to be regulated under the NPDES program
- Phase II regulations required these permits – 1999
- 260 municipalities covered in Massachusetts
- All “non-traditional” MS4s in urbanized areas also require permits

History

2003

MassDOT-Highway (Formerly Massachusetts Highway Department) obtained coverage for stormwater discharges under the 2003 Massachusetts and New Hampshire MS4 General Permit

September 2018

MassDOT-Highway submitted an individual permit application on September 25, 2018

2016

Massachusetts MS4 General Permit required all 2003 permit holders to submit an NOI for coverage or an individual permit application by September 28, 2018

2020–2021

Discharges from MassDOT-Highway's MS4 remain covered under the 2003 MS4 General Permit until issued an individual permit by EPA and MassDEP

MassDOT

Phase II Individual MS4 Permit Application

Included :

- Current SWMP
- Plan to reduce pollutants discharging to impaired waters
- MassDOT stormwater handbook for stormwater controls during the construction phase and for post-construction
- Studies characterizing MassDOT stormwater discharges
- Chloride application and reduction plan
- Illicit discharge detection and elimination plan

Individual TS4 Permit Contents

Individual permit tailored to MassDOT-Highway transportation system – **Transportation Separate Storm Sewer System Permit (TS4)**

SIX MINIMUM CONTROL MEASURES

- PUBLIC EDUCATION
- PUBLIC INVOLVEMENT
- ILLICIT DISCHARGE DETECTION & ELIMINATION
- CONSTRUCTION SITE RUNOFF
- POST-CONSTRUCTION STORMWATER MANAGEMENT
- GOOD HOUSEKEEPING/POLLUTION PREVENTION

WATER-QUALITY BASED REQUIREMENTS

- IMPAIRED RECEIVING WATERS
  - NITROGEN OR PHOSPHORUS
  - METALS
  - SOLIDS
  - BACTERIA OR PATHOGENS
  - CHLORIDE
  - OIL AND GREASE
- TMDL REQUIREMENTS

All requirements based on 2016 Massachusetts MS4 General Permit

Post Construction Stormwater Management

- New and Re-Development projects disturbing >1 acre must meet Massachusetts Stormwater Standards and Handbook
- New and Re-Development must meet numeric pollution reduction requirements for TSS and TP

MassDOT requirements will rely on one set of standards to the extent possible

MassDOT requirements will require compliance with Massachusetts Stormwater Standards and Handbook

Good Housekeeping/Pollution Prevention

- O&M procedures
- Catch basin cleaning
- Street sweeping
- SWPPP

MassDOT requirements tailored to address operation and maintenance of all stormwater assets

MassDOT requirements to ensure long term maintenance on prioritized schedules

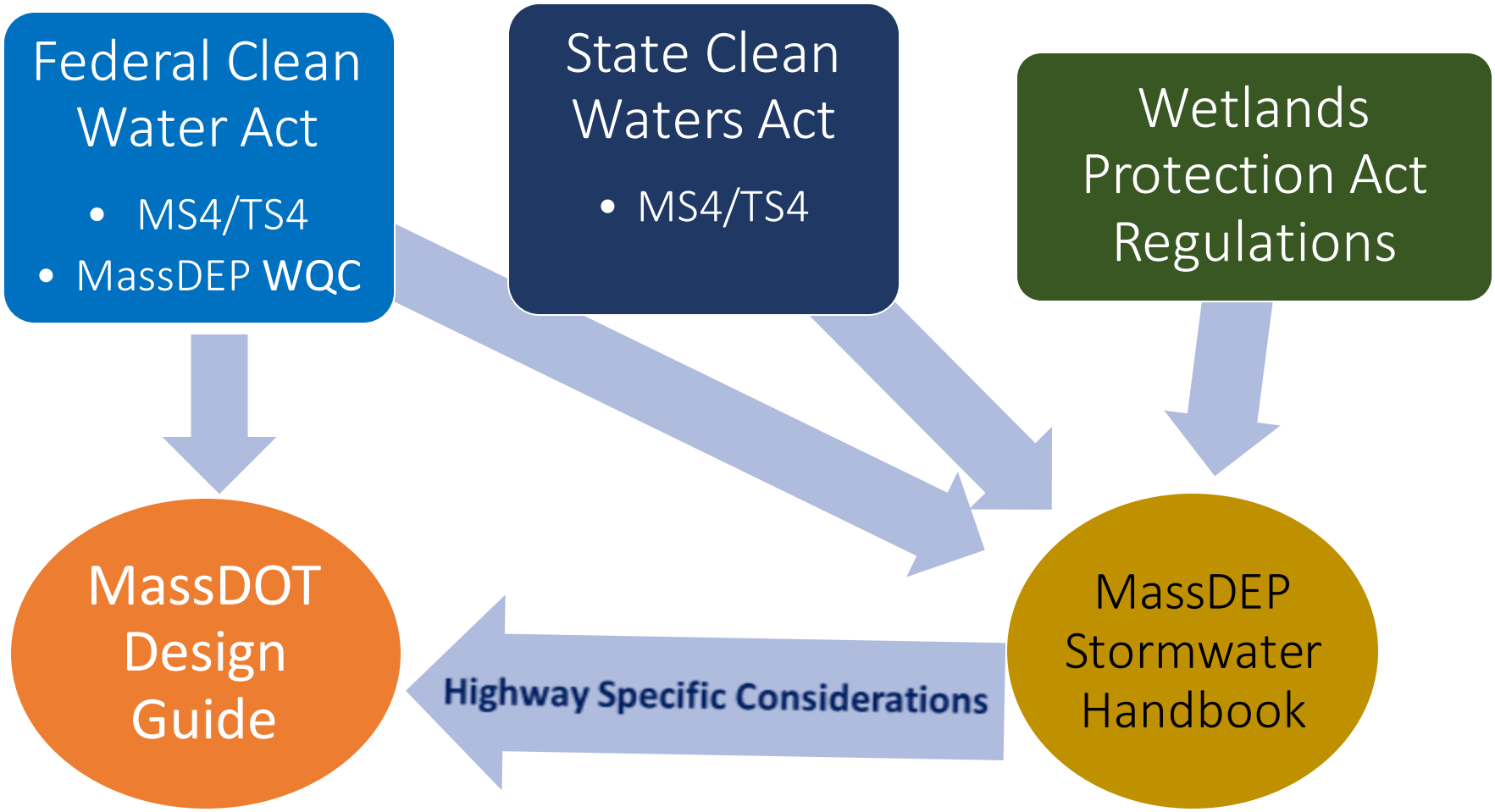
Timing

MINIMUM 30-DAY PUBLIC COMMENT PERIOD ON DRAFT TS4 PERMIT 2020 OR EARLY 2021

FINAL TS4 PERMIT ISSUED 2021

5 YEAR PERMIT TERM

Stormwater Management Regulatory Framework

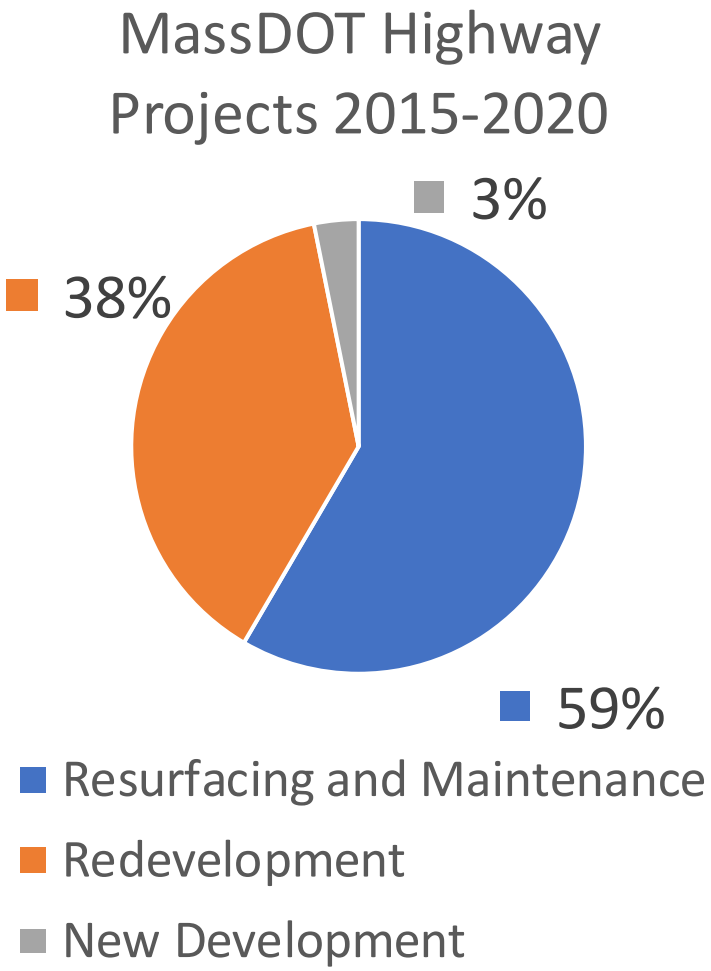


Regulation of Roadway Projects Under Wetlands Protection Act

Roadway Development and Redevelopment Projects within Wetlands Protection Act (WPA) jurisdiction:

- are subject to MassDEP's Stormwater Regulations and Stormwater Handbook; and
- require approval under the WPA and usually Section 401 of the Clean Water Act

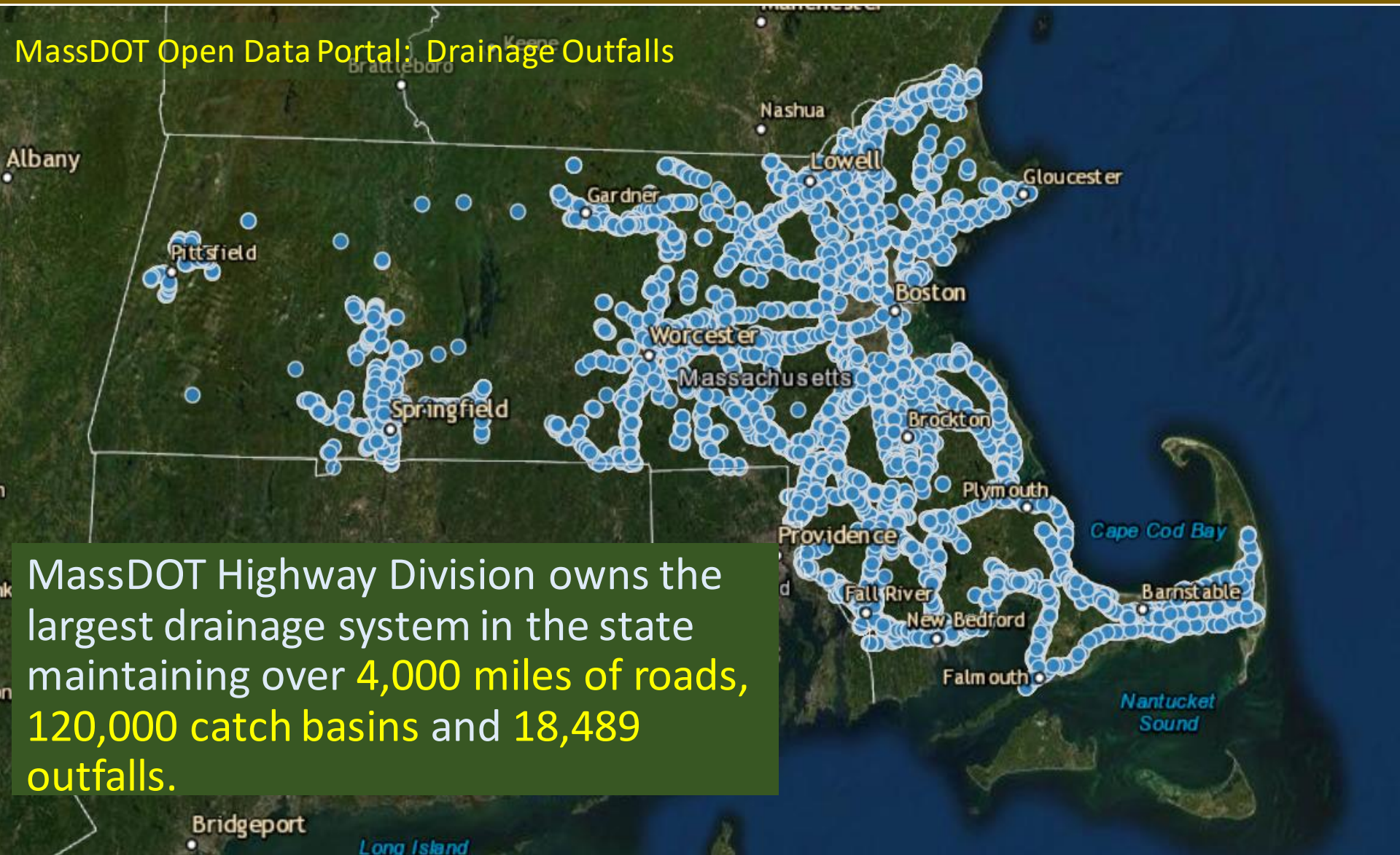
MassDOT Roadway Projects



- Roadway redevelopment improves safety, capacity and stormwater management
- Wetlands Protection Act Variances address major projects
  - Cambridge Memorial Drive
  - I-90/I-495 Intersection

MassDOT Highway Specific Considerations will address stormwater management for long, linear public roadway projects

Highway Specific Considerations for MassDOT Linear Highway Projects



MassDOT Highway Division owns the largest drainage system in the state maintaining over 4,000 miles of roads, 120,000 catch basins and 18,489 outfalls.

Highway Specific Considerations for MassDOT Linear Highway Projects

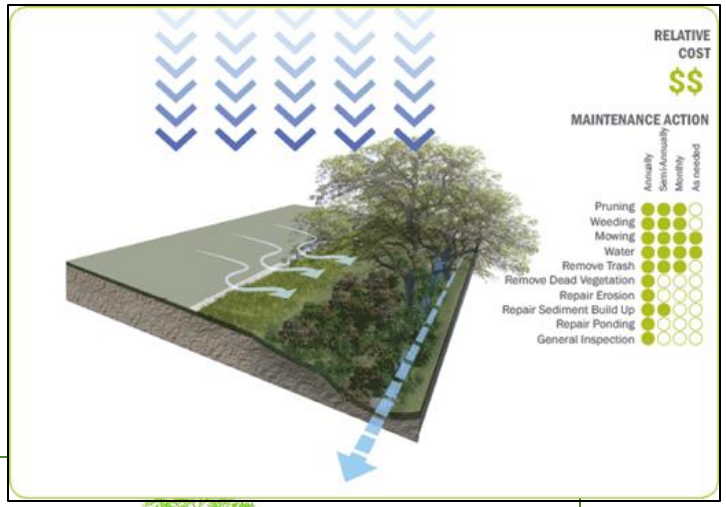
Limited land area within some ROWs make it difficult for highway projects to install standard SCMs

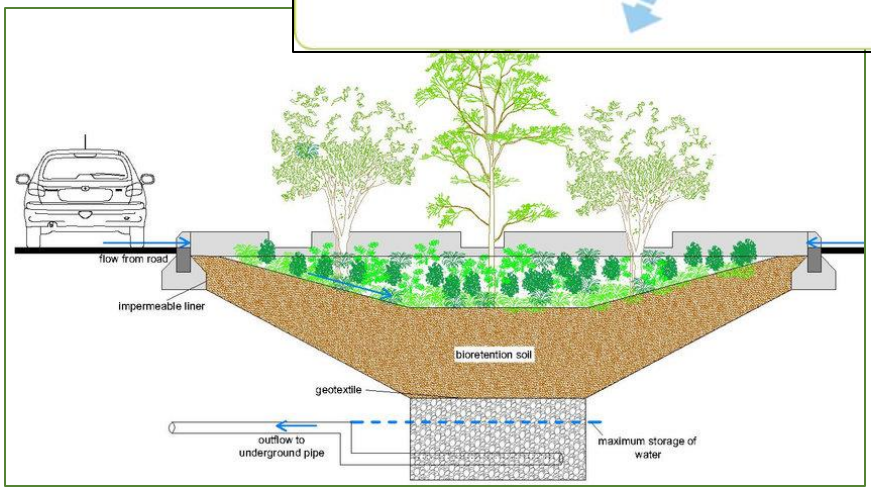
MassDEP Proposes Revisions to Stormwater Handbook to better align with MS4 and TS4

- MassDOT applied for a TS4 permit with EPA/MassDEP
  - Replaces 2003 MS4 permit
- Presenting TS4 to SAC now allows MDOT to finalize MDOT Design Guidance and EPA to draft the TS4 permit
- Highway Transportation Sector TS4 presents unique opportunity for MDOT/EPA/MassDEP to better manage stormwater

Highway Specific Considerations for MassDOT Linear Highway Projects Will

- encourage the use of LID practices along highway networks to meet WPA/MS4 stormwater standards.
- be incorporated into the Stormwater Handbook.





TS4 Permit will provide

- greater geographic coverage of regulated stormwater management
- incentives to improve existing stormwater outfalls
- TSS and TP load reductions
- greater emphasis on compliance with Total Maximum Daily Loads (TMDL)

Highway Specific Considerations for MDOT

Wetland Protection	New Stormwater Discharges
	Macro Approach
SCMs	EPA Curves to calculate %TSS and %TP removal
	Linear Stormwater Practices
	Peak Rate/ Bioretention
	Porous Pavement Filter Course
O&M	Maintenance Access
	O&M Approach
Catch Basins	Inlet Grates for Catch Basins
	Hoods for Deep Sump Catch Basins

New Stormwater Discharges

Current: New outfall or new discharge point

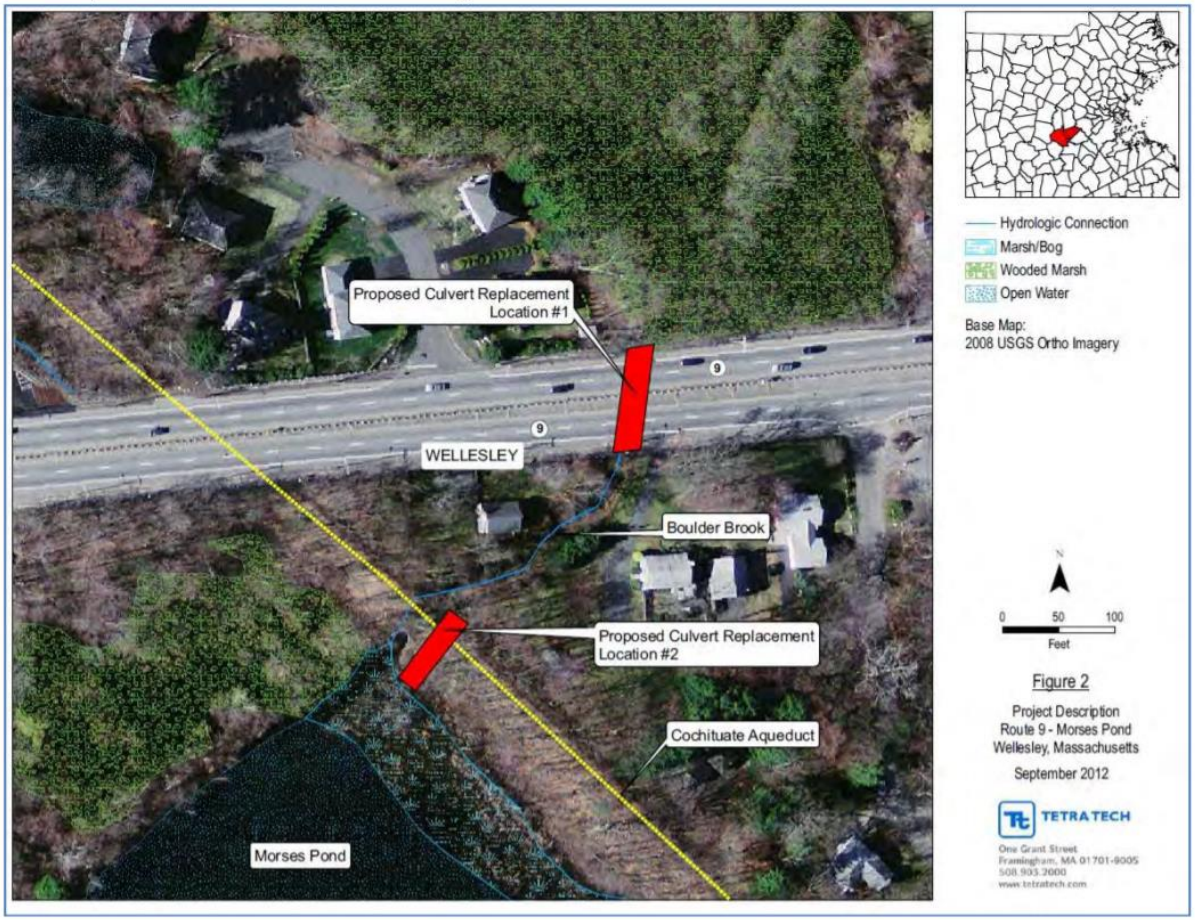
Proposed: Allows reconfiguration of existing unmanaged or inadequately managed discharges to be considered as "existing", provided it improves WQ and reduces resource area impact.

Macro Approach

Current: Stormwater mitigation must be provided on-site, i.e. at the resource area /buffer zone altered

Proposed:

- Avoid disproportionate impacts to wetland resource areas
- Provide flexibility for mitigation within sub-watersheds

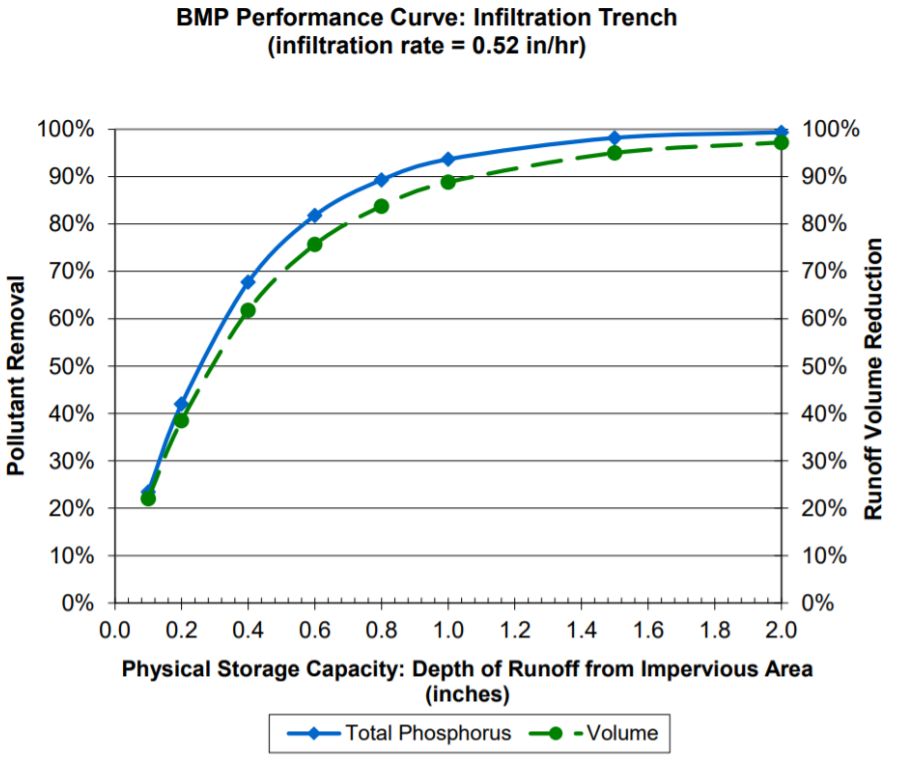


EPA Curves to calculate %TSS and %TP removal

Current: MassDEP SCM and BMP Credit

Proposed: Use EPA Curve according to SCM Crosswalk. If no EPA curve available, see MassDEP Table TSS in MA Stormwater Handbook

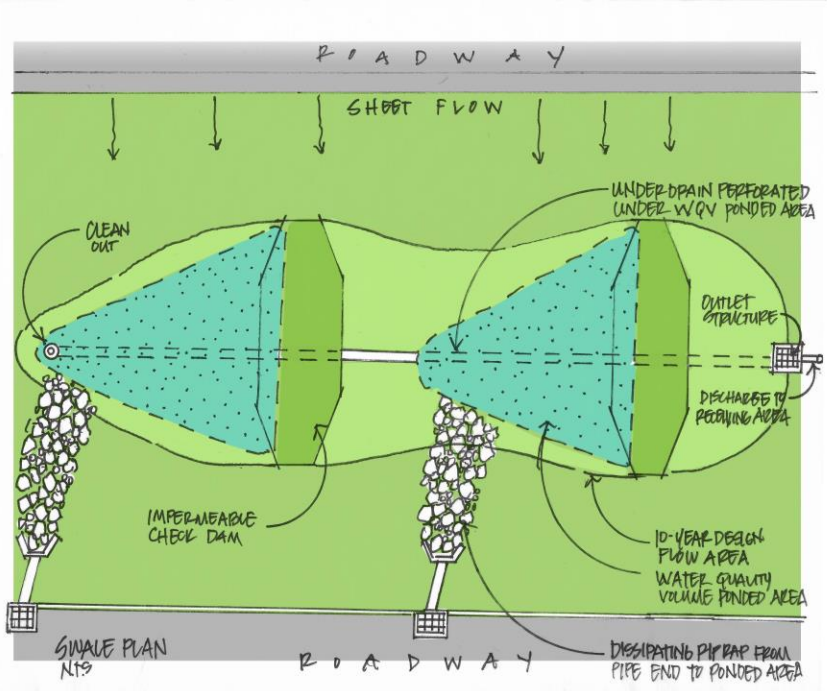
- Pollution reduction curves from MS4 Appendix F Attachment 3

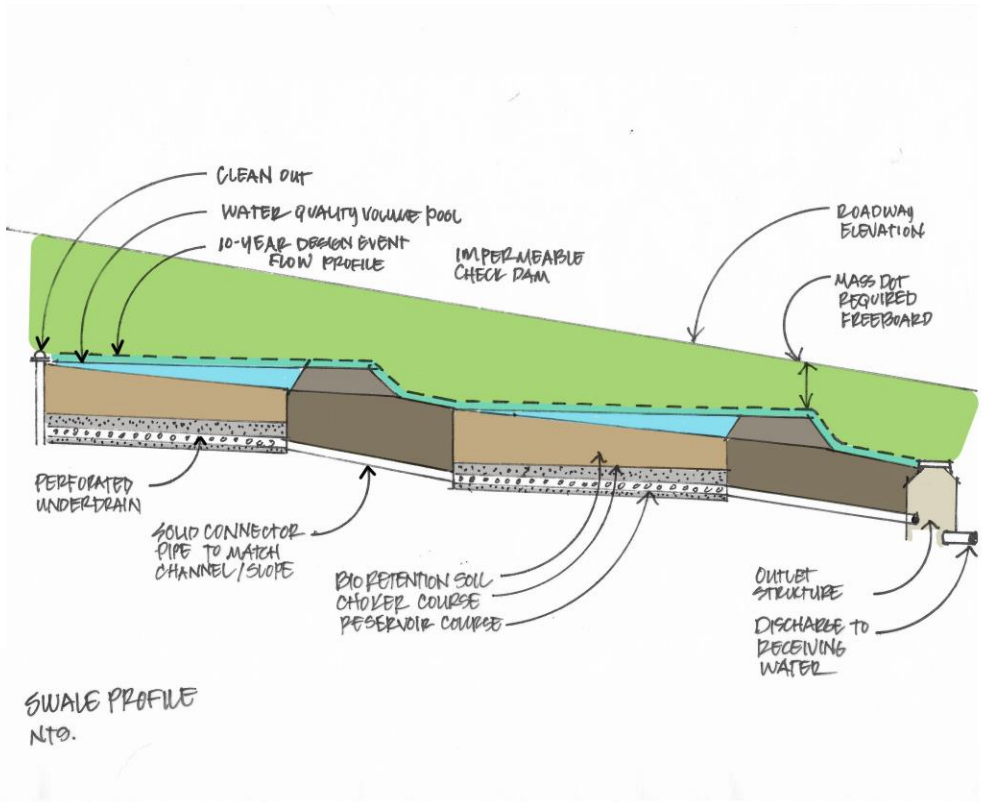


Linear storm water management practice

Current: MassDEP SCM Design specifications

Proposed: MassDOT design specification, provided MassDEP conditions met



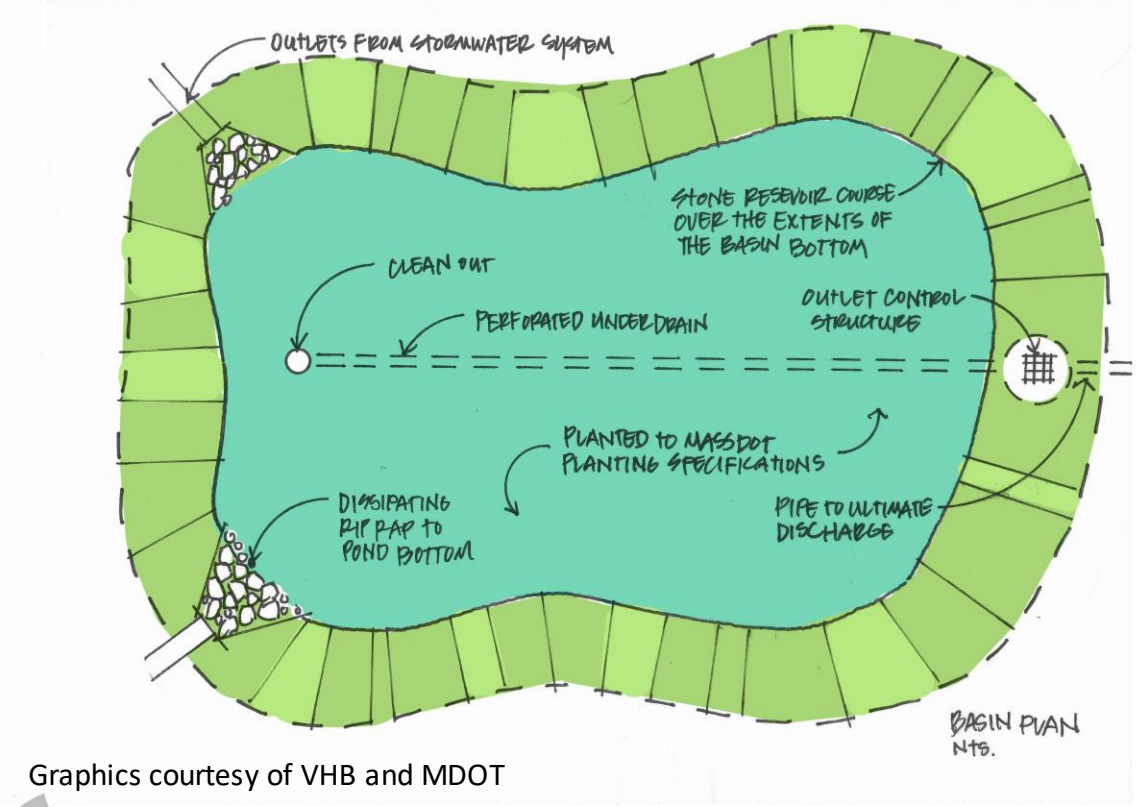


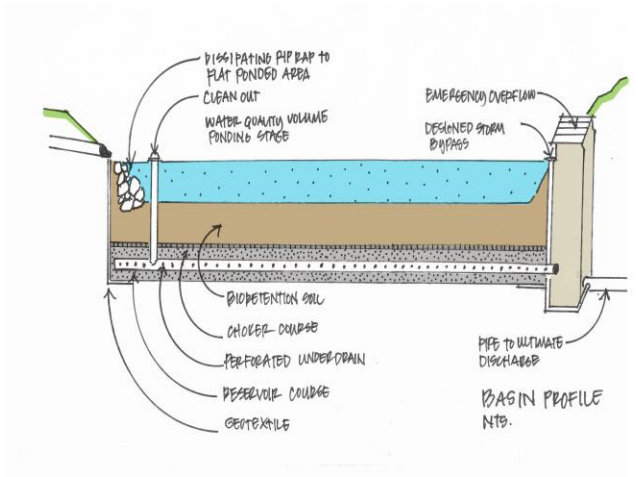
Graphics courtesy of VHB and MDOT

Bio-retention for linear infrastructure

Current: No peak rate credit for bioretention

Proposed: Peak rate credit for bioretention, provided MassDEP conditions met.





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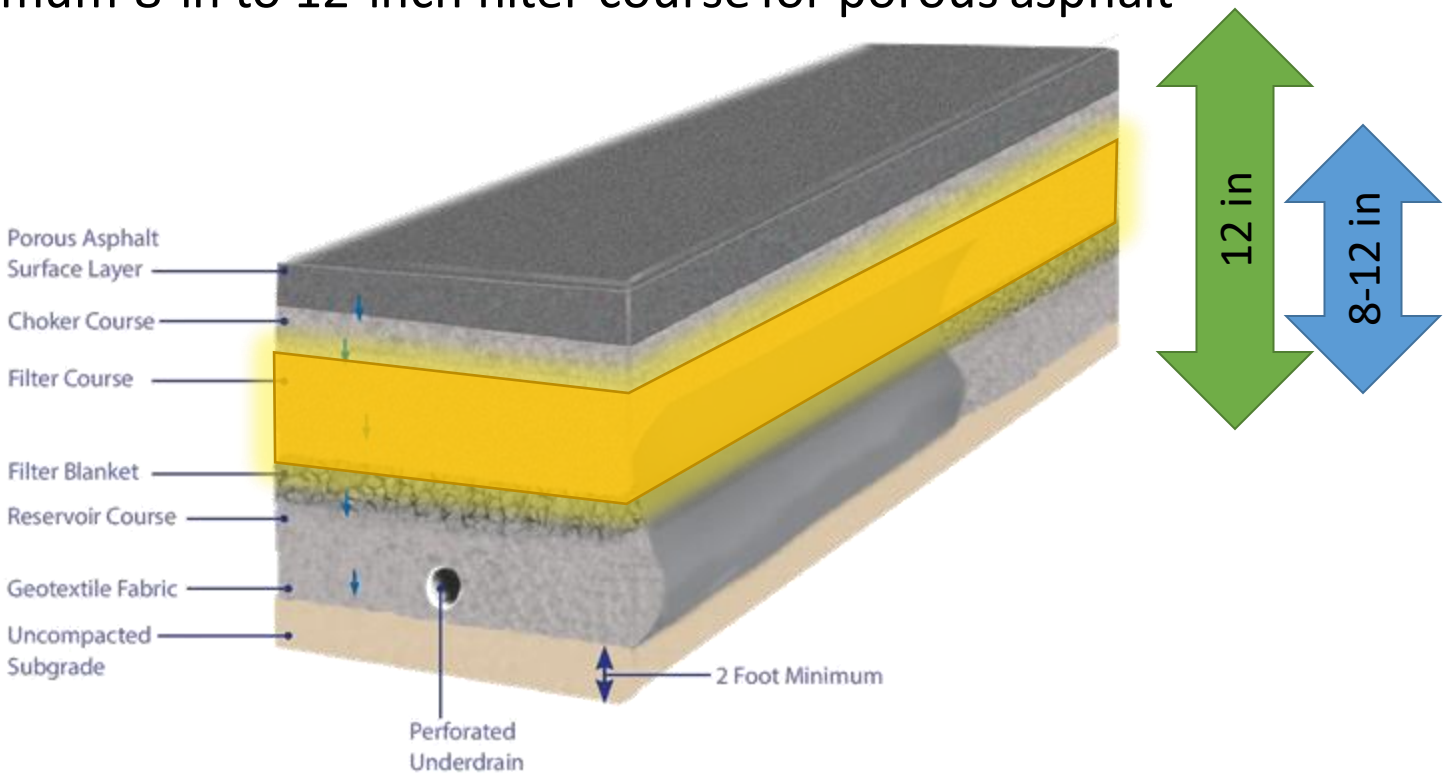
Porous Pavement Filter Course

Current: Minimum 12-inch filter course for porous asphalt

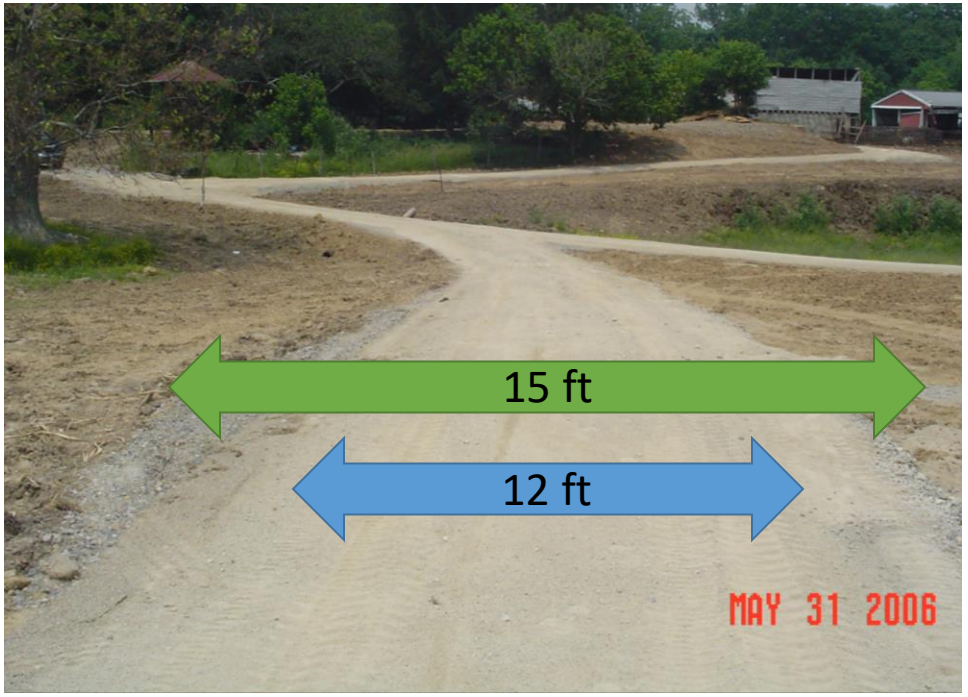
Proposed: Minimum 8-in to 12-inch filter course for porous asphalt



Graphics courtesy of VHB and MDOT

Maintenance Access

Current: Minimum at least 15 feet wide
Proposed: Minimum 12 feet wide to minimize environmental impact.



https://fairfieldswcd.org/access-road-stream-crossing/

O & M Approach

Current: MassDEP BMP minimum cleaning frequency by SCM type
Proposed: TS4 will require stormwater assets be maintained on a schedule with plan to be approved by EPA and MassDEP

Inlet Grates for Catch Basins

Current: Flow to catch basin inlet no greater than 3 cfs; open curb inlets not eligible for 25% pre-treatment credit

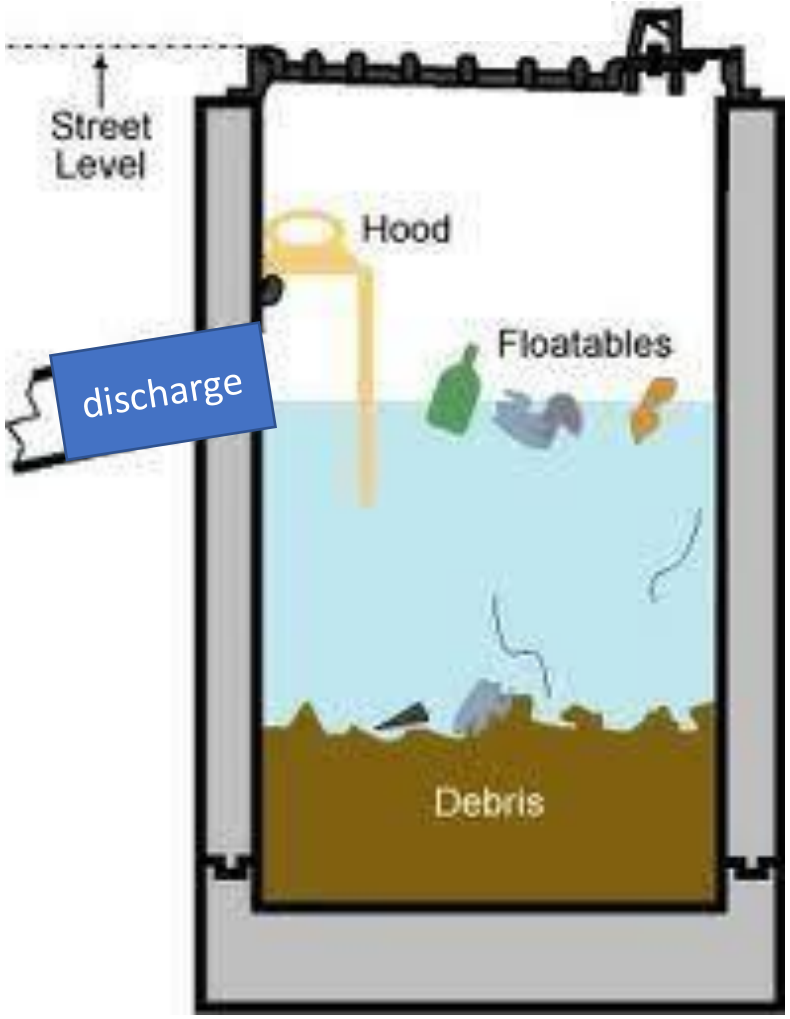
Proposed: Allowable orifice sizes broadened, flow rate <3 cfs; open curb inlets may be allowed

Deep Sump Catch Basins and Hoods

Current: Deep sump catch basins with hoods receive credit if:

1. Along roadways in commercial areas;
2. Within rest areas;
3. In MassHighway maintenance yards;
4. Where no other containment device is provided for discharges to critical areas
5. Within Zone II or within 0.5 miles of wellhead, whichever is closer to the wellhead.

Proposed: Hoods required at above AND 25% TSS credit can be obtained if <u>combination inlets</u> are used (horizontal inlet grate and curb cut grate)



Specific Considerations **beyond** MassDOT Highway

Wetlands Protection	New Stormwater Discharges	
	Macro Approach	?
SCMs	EPA Curves to calculate %TSS & %TP removal	
	Linear Stormwater Practices	?
	Peak Rate/ Bioretention	?
	Porous Pavement Filter Course	
O&M	Maintenance Access	
	O&M Approach	
Catch Basins	Inlet Grates for Catch Basins	
	Hoods for Deep Sump Catch Basins	

= All Projects (not just roads)
= DOT Highway
= DOT funded Municipal Rds
? = Under Discussion

Thank You