Massachusetts Department of Environmental Protection Stormwater Advisory Committee

Meeting 1: February 12, 2020

MassDEP Stormwater Advisory Committee Meeting 1: Objectives and Agenda

Meeting Objectives

- Overview of regulatory context and key topics
- Overview/feedback on AC ground rules, schedule

Agenda

- Welcome and Introductions
  a. Introductions and review agenda, ground rules, and meeting line-up

- Overview of Regulatory Frameworks / Wetlands Context

- Topical Overviews and AC Discussion
  a. Updating Precipitation Projections
  b. Aligning DEP SW Handbook with EPA MS4 Permit
  c. DEP SW Handbook and EPA TS4 Permit – Appropriate Controls for MassDOT

- Comments from other Interested Stakeholders and the Public

- Wrap Up

MassDEP Stormwater Advisory Committee Members

ORGANIZATION	AC Designee	TITLE
Home Builders and Remodelers Association Central Massachusetts	Guy Webb	Executive Director
Home Builders and Remodelers Association of Massachusetts	Jeffrey Brem	HBRA Board VP/Treasurer
National Association of Industrial and Office Properties	Chip Nylen	Designee
MassDOT - Highway Division	Henry Barbaro	Environmental Analyst
Member At Large	Rich Claytor	AC Member At Large
Member At Large	Robert Roseen	AC Member At Large
Massachusetts Audubon Society	Heidi Ricci	Assistant Director of Advocacy
Massachusetts Rivers Alliance	Ian Cooke	MRA Board Member
Massachusetts Association of Conservation Commissioners	Sandra Brock	MACC Board Member
MA DEP Wetlands Program (AC Chair)	Stephanie Moura	Director, Wetlands and Waterways Division
MA DEP Wetlands Program	Lisa Rhodes	Wetlands Program Chief
U.S. Environmental Protection Agency	Newton Tedder	Project Manager
MA Executive Office of Energy and Environmental Affairs	Vandana Rao	Director of Water Policy
MA Department of Fish and Game	Michelle Craddock	Streamflow Restoration Program Manager
Massachusetts Municipal Association	Ariela Lovett	Legislative Analyst
Central Massachusetts Regional Stormwater Coalition	John Woodsmall, III	CMRSC Co-Chair
Pioneer Valley Planning Commission	Patty Gambarini	Co-Leader, Land Use/Environment Section
Association of Massachusetts Wetland Scientists	Stacy Minihane	AMWS Board - Vice President
Boston Society of Civil Engineers Section	Ronald Burns	Senior Vice President

MassDEP Stormwater Advisory Committee Meeting Line-up and Schedule

Mtg	Main Topics	Date/Location
1	Kick-off and Topical Overview	Wed 2/12/20 1:30-3:30pm Boston
2	Aligning DEP stormwater rules with EPA MS4 in wetland areas	Tues 3/24/20 1:00-4:00pm Worcester/CERO
3	Updating precipitation projections MS4 follow-up from Mtg 2	Thurs 4/16/20 1:00-4:00 Boston
4	Precipitation follow-up from Mtg 3 Other Topics, including • TS4 permit/Special Considerations for DOT Advisory Committee Wrap-up and Next Steps	Tues 4/28/20 1:00-4:00pm Boston

Updating the MassDEP Wetlands Regulations and Stormwater Handbook

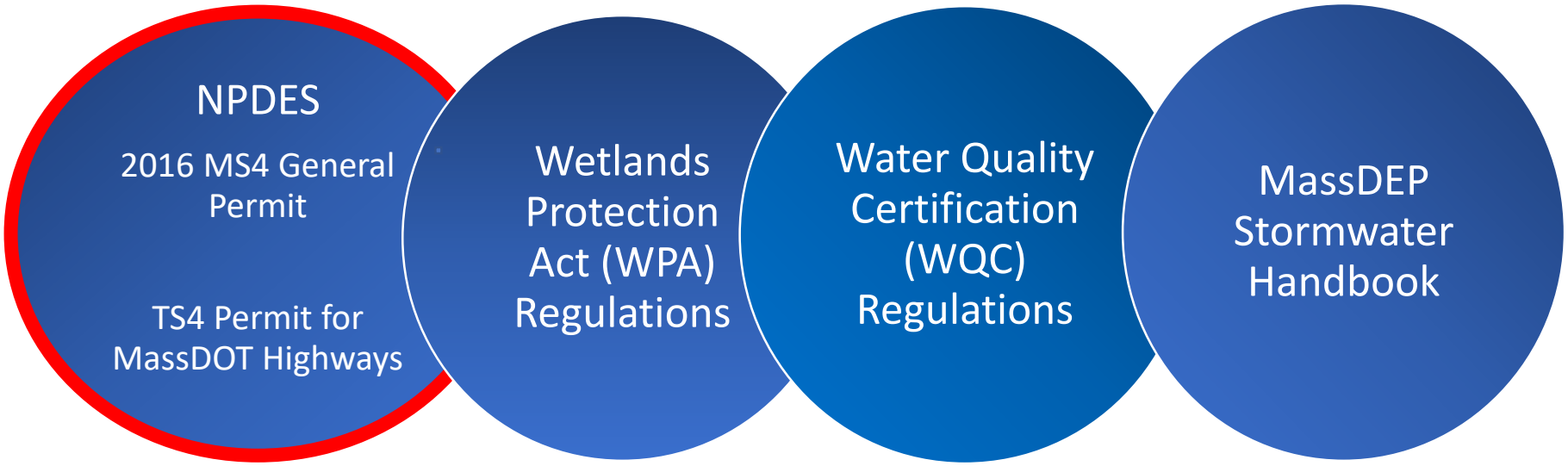
Advisory Committee Overview

February 12, 2020

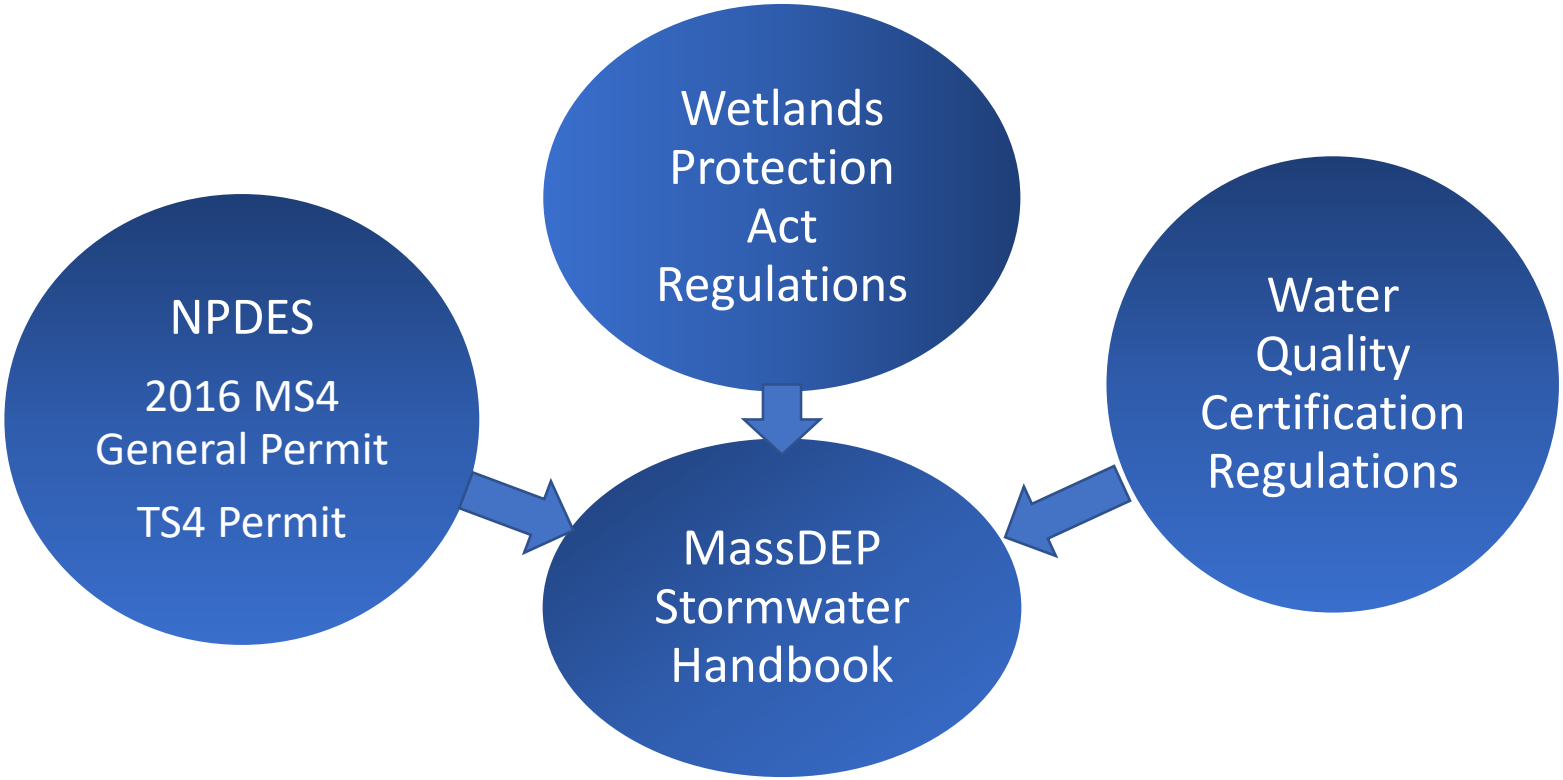
Regulatory Tools to be Discussed at Advisory Committee Meetings

EPA

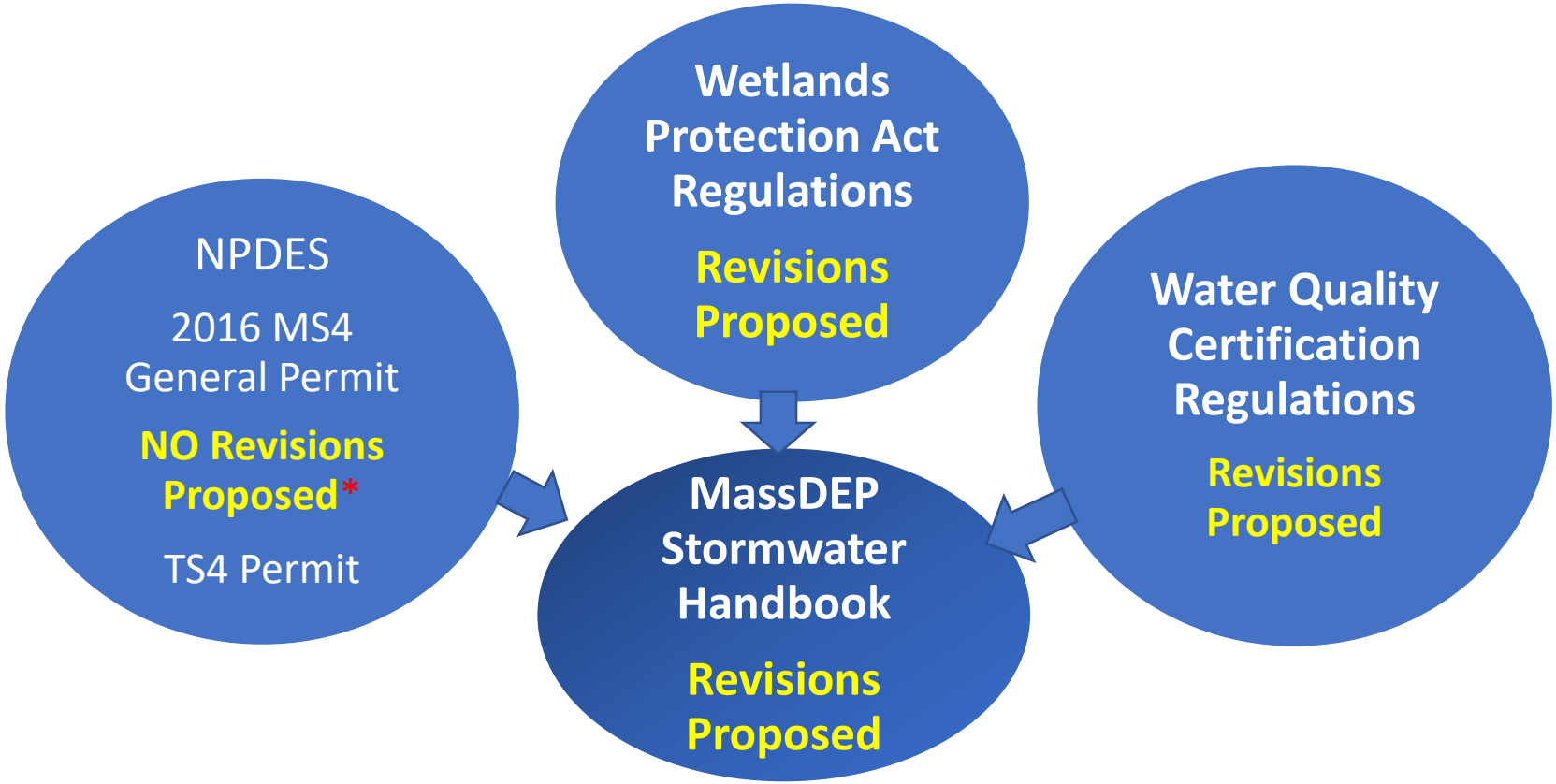
MassDEP



Regulations Requiring Compliance with MassDEP Stormwater Handbook



Regulatory Tools Requiring Revisions



* EPA May Propose Revisions per the Settlement

Proposed Updates to WPA/WQC Regulations and MassDEP Stormwater Handbook

1. Precipitation Intensity and Frequency Data

2. Alignment of WPA/WQC Regulations with 2016 MS4 General Permit

3. Special Considerations for MassDOT projects (requires changes to Stormwater Handbook only)

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Updating Precipitation Data

- WPA/WQC Regulations & SW Handbook Rely on Precipitation Data to define Design Storms

- Design Storms Used to:
  - Design Stormwater Management Systems
  - Delineate Land Subject to Flooding
  - Design stream crossings

Updating Precipitation Data

- Precipitation Data developed in 1961
- MassDEP compared 1961 Data to more current precipitation atlases published recently
- 1961 Data Does not Reflect Current or Future Precipitation Patterns
- Bring WPA/WQC regulations and SW Handbook up to date and address future conditions

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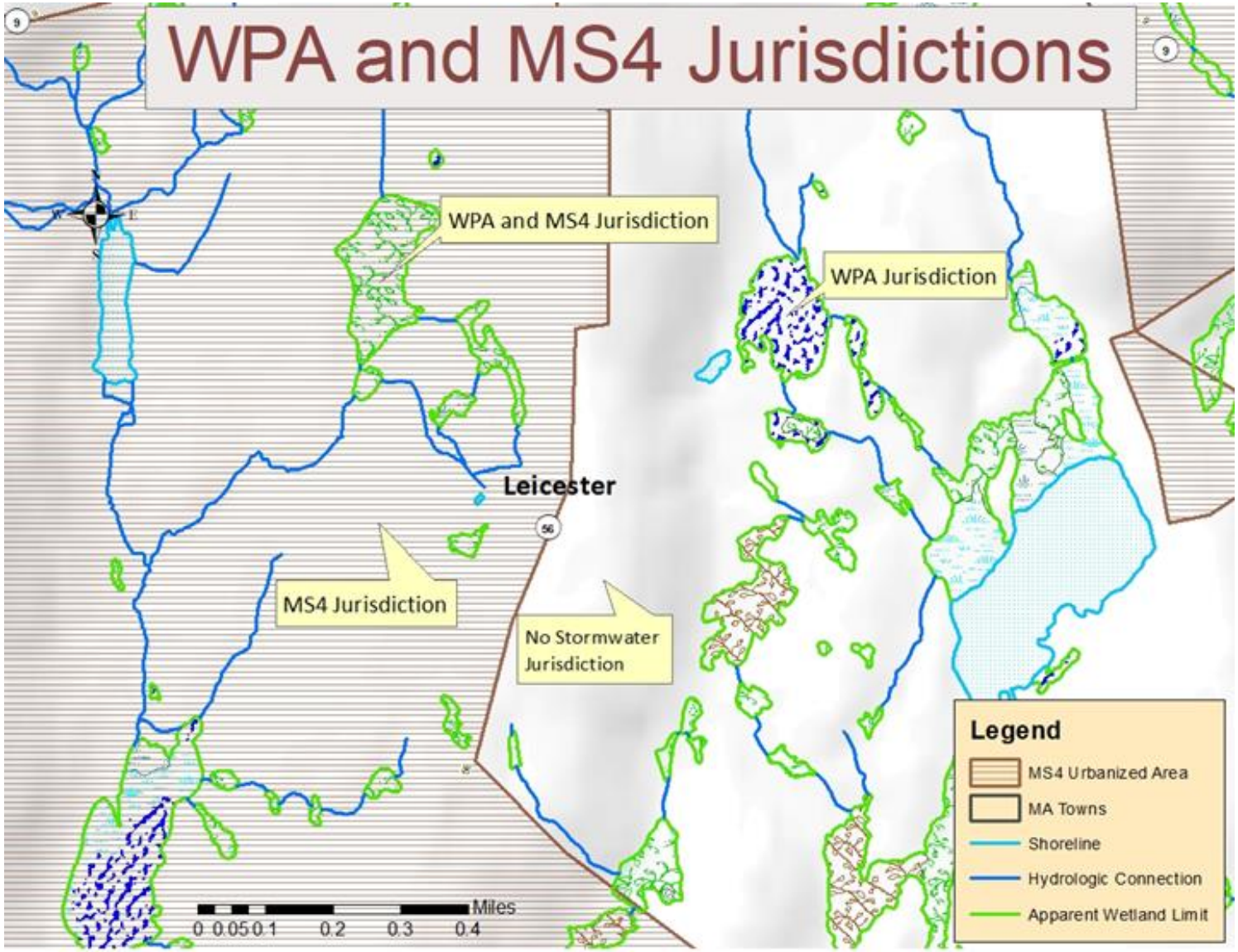
Alignment of WPA/WQC Regulations with 2016 MS4 General Permit

- WPA/WQC regulations & MS4 General Permit require compliance with MassDEP Stormwater Handbook

- Some Wetlands Standards are Different than 2016 MS4 General Permit Standards

- Difficult to Implement in Overlapping Areas!

WPA and MS4 Jurisdictions



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Proposed Updates to WPA/WQC Regulations and MassDEP Stormwater Handbook

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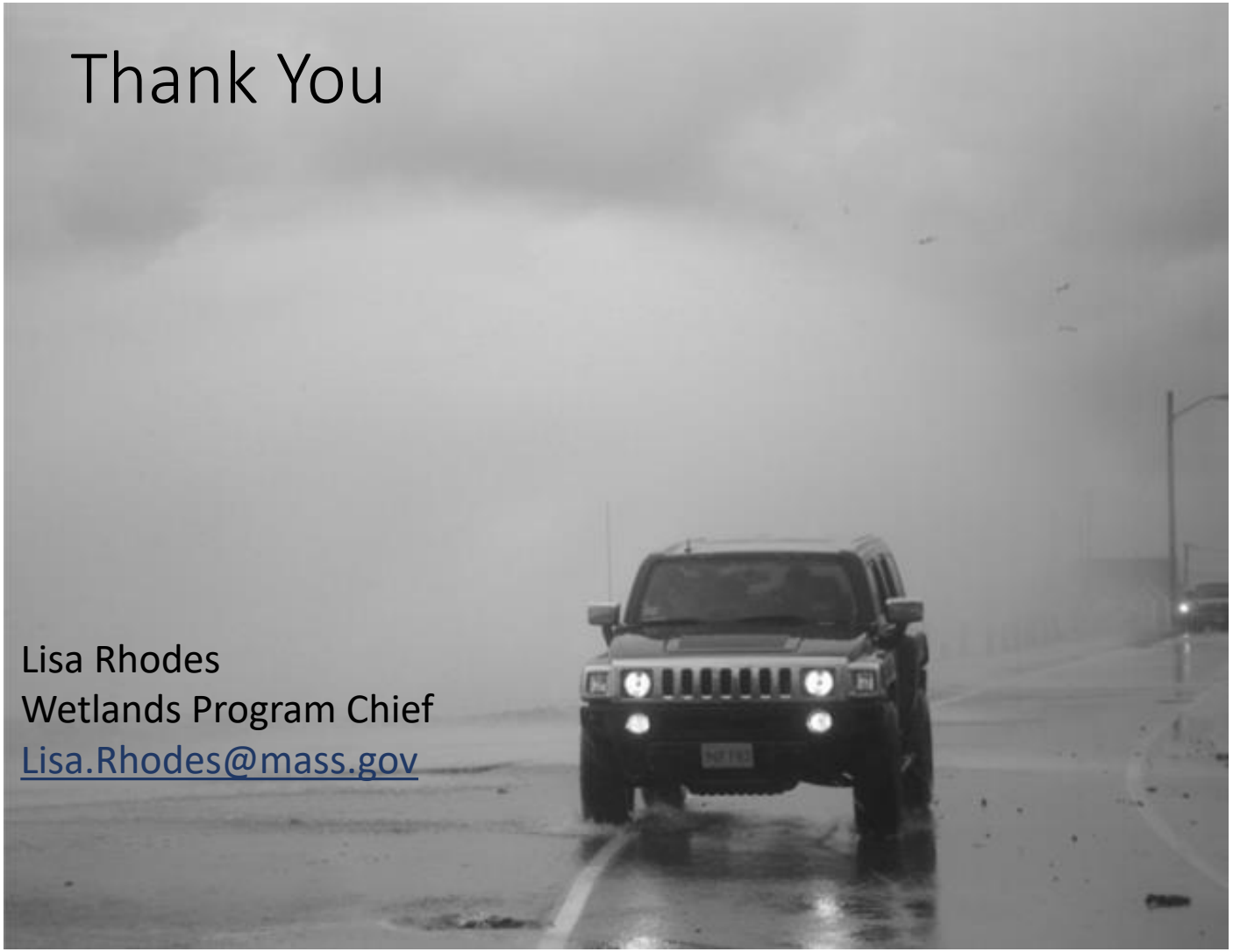
Special Considerations Chapter for MassDOT Projects in MassDEP Stormwater Handbook (Goal: align with MassDOT Highway TS4 Permit)

- MassDOT is a MS4 regulated entity
- MassDOT Requested TS4 Permit due to Long Linear Project constraints
- EPA expected to issue Draft TS4 permit in Spring 2020
- MassDEP Proposes New Chapter for MassDEP Stormwater Handbook – Special Considerations for MassDOT Highways
- MassDEP to collaborating with EPA for consistency

Thank You



Lisa Rhodes
Wetlands Program Chief
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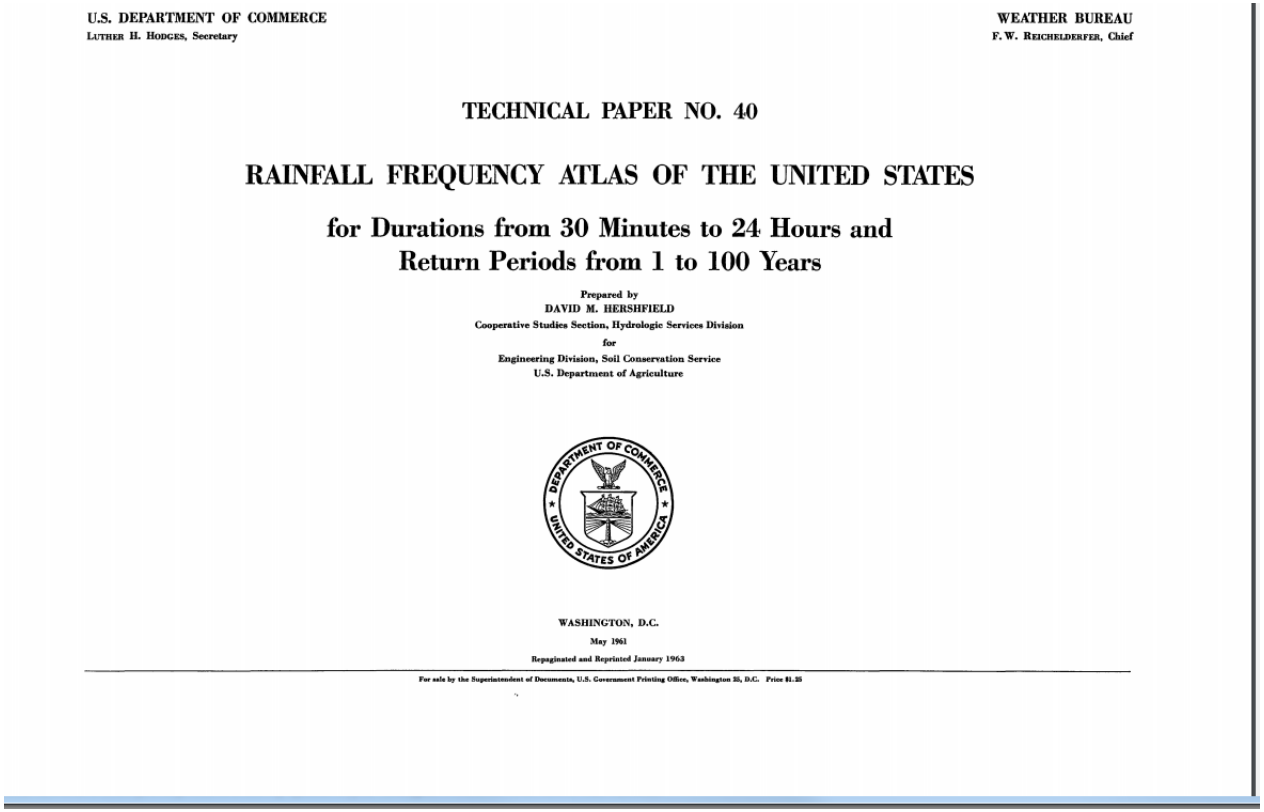
MassDEP

Increasing Precipitation: Updating MassDEP Wetlands Regulations & Stormwater Handbook

Wetland Regulations Require Use of Precipitation Data for Design



U.S. DEPARTMENT OF COMMERCE
LUTHER H. HODGES, Secretary

WEATHER BUREAU
F. W. REICHELDERFER, Chief

TECHNICAL PAPER NO. 40

RAINFALL FREQUENCY ATLAS OF THE UNITED STATES

for Durations from 30 Minutes to 24 Hours and
Return Periods from 1 to 100 Years

Prepared by
DAVID M. HERSHFIELD
Cooperative Studies Section, Hydrologic Services Division
for
Engineering Division, Soil Conservation Service
U.S. Department of Agriculture

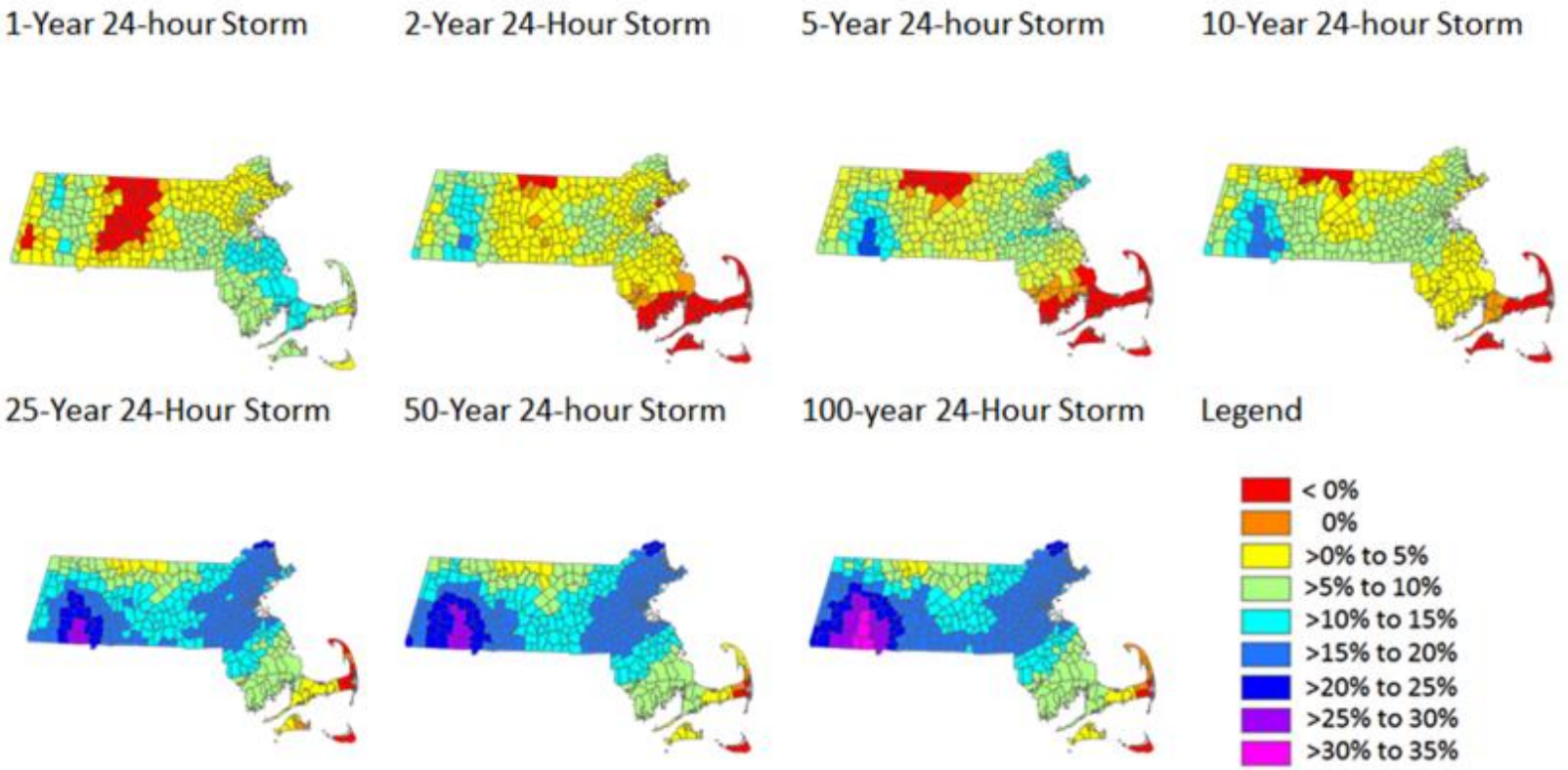
WASHINGTON, D.C.
May 1961
Repaginated and Reprinted January 1963

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. Price $1.25

Design storms specified in Wetland regulations and Stormwater Handbook

Resource	Design Storm
Vernal Pool boundary	2.6 in. storm in 24-hours (310 CMR 10.57(2)(a)6.). Approximates TP40 Statewide 1-year 24-hour storm.
BLSF area likely significant to wildlife habitat	4.8 in. storm in 24-hours in absence of FEMA profile data (310 CMR 10.57(2)(a)4.). Approximates the TP40 Statewide 10-year 24-hour storm.
BLSF Boundary	7.0 in. storm in 24-hours in absence of FEMA profile data (310 CMR 10.57(2)(a)3.a.) Approximates the TP40 Statewide 100-year 24-hour storm.
ILSF Volume	1-year 24-hour design storm
ILSF Boundary	7.0 in. storm in 24-hours in absence of FEMA profile data (310 CMR 10.57(2)(b)3.). Approximates the TP40 Statewide 100-year 24-hour storm.
Stormwater peak runoff rate attenuation	2-, 10-, and 100-year 24-hour storms specified in TP40 (MassDEP 2008 Massachusetts Stormwater Handbook and MassDEP 2002 Hydrology Handbook for Conservation Commissioners).
Stormwater water quality volume	First ½-inch and 1-inch of runoff, depending if the stormwater discharge is directed to or near a critical area, soil with rapid infiltration rate, or land use with higher potential pollutants.

Present Day Conditions: Change in Precipitation Values TP40 to NOAA 14



2015/2019 NOAA 14 Compared to 1961 Technical Paper 40

Percentages indicate the change in rainfall amount from TP40 to NOAA14 data

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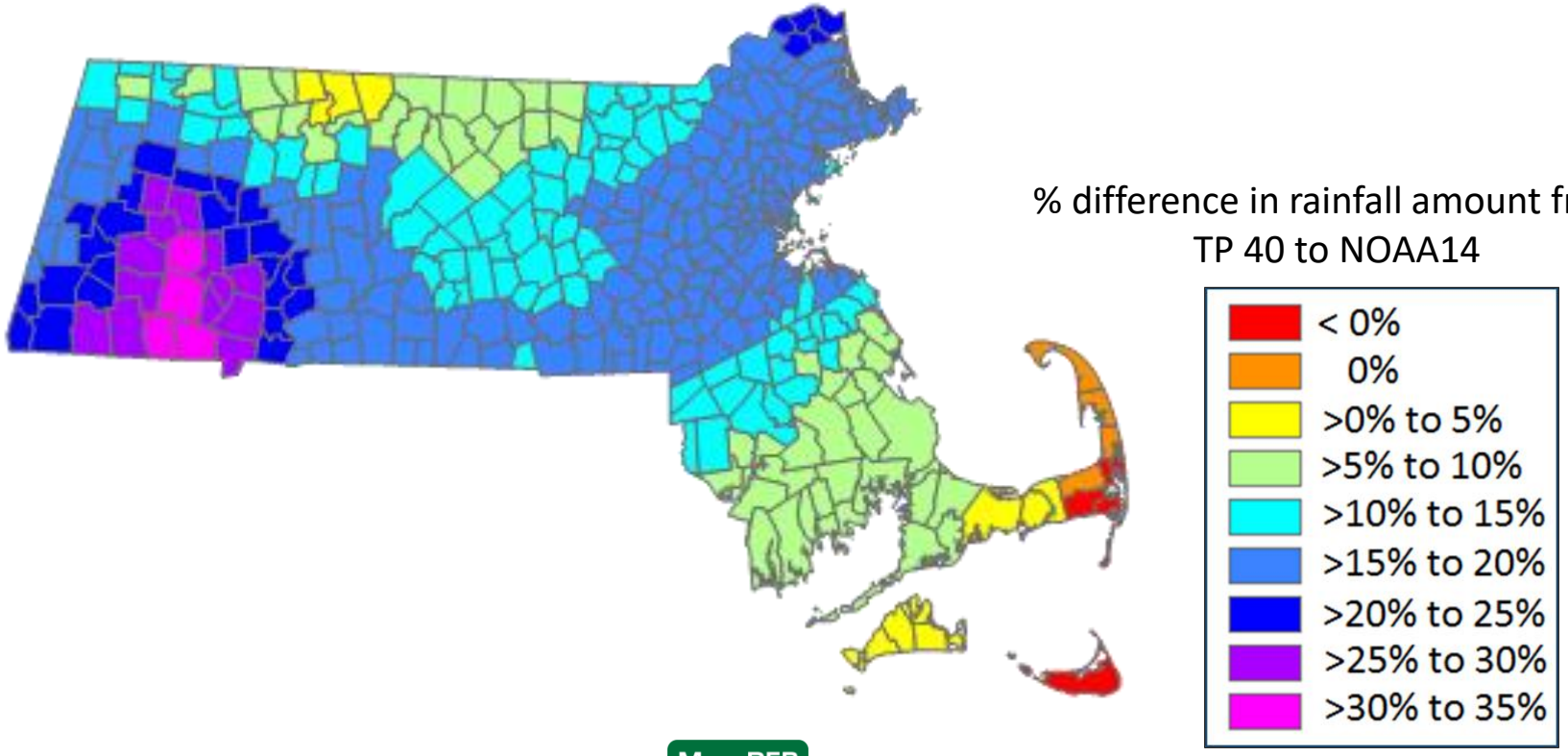
Comparison between TP40 and NOAA14 (percent differences in rainfall data) for 100-year 24-hour storm



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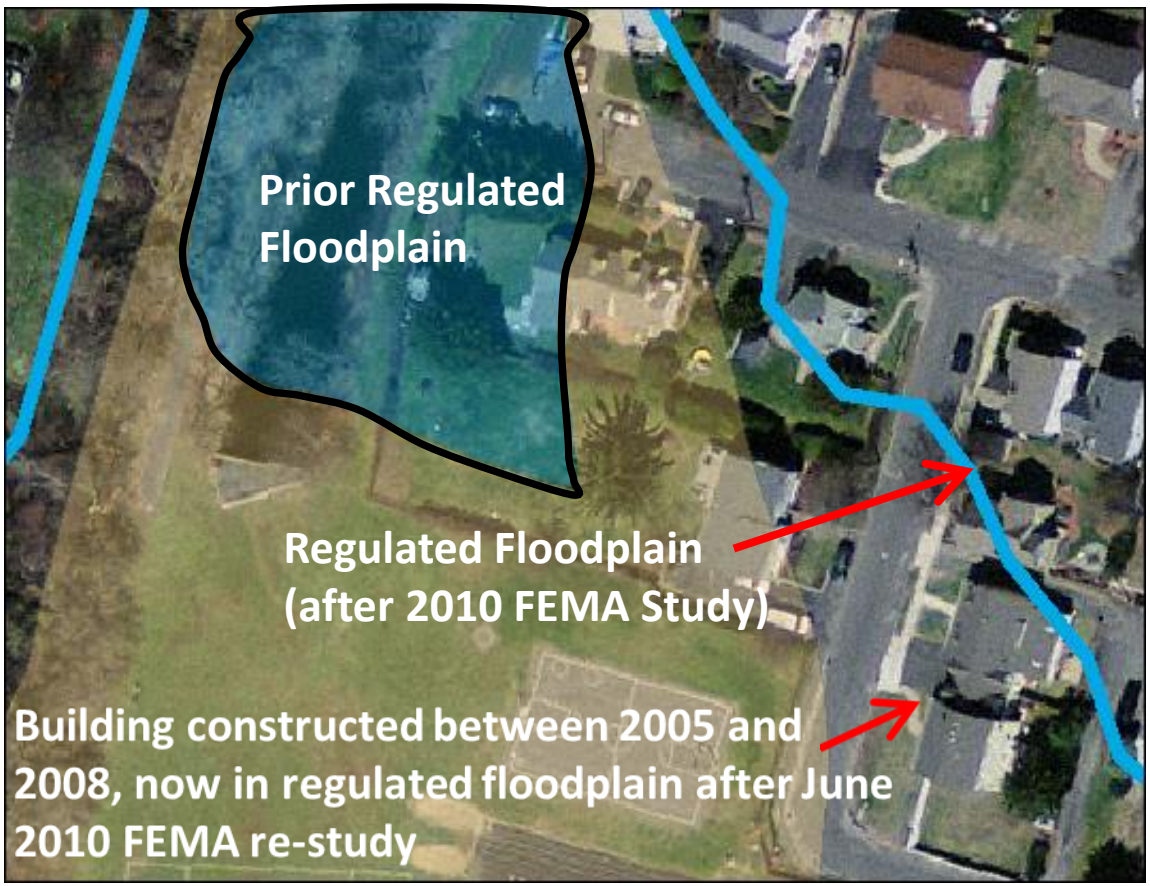
What Are We Addressing by Adopting NOAA14?
Catching Up to Present Day Conditions!

For Example

- Existing stormwater and other infrastructure not large enough to treat current or future precipitation
- Floodplain boundaries don't reflect current conditions – properties flooded

MassDEP

Effects Caused By Greater Precipitation: More Flood Prone Areas



Executive Order 569: Establishing an Integrated Climate Change Strategy for the Commonwealth

September 16, 2016

…WHEREAS, extreme weather events associated with climate change present a serious threat to public safety, and the lives and property of our residents…

…within two years of this Order, publish a Climate Adaptation Plan that includes a statewide adaptation strategy incorporating: (i) observed and projected climate trends based on the best available data, including but not limited to, extreme weather events, drought, coastal and inland flooding…

State Hazard Mitigation and Climate Adaptation Plan (SHMCAP) September 17, 2018

- EEA Resilient Massachusetts Action Team (RMAT) – Advance Priority Actions from SHMCAP

- Action Item – SHMCAP Chapter 7: DEP Update precipitation data used by wetlands program

DEP: Update precipitation data used by wetlands program.	
Action Description:	Update Precipitation projections (models) used by the wetlands program to condition work in wetland resource areas and design stormwater controls.
Executive Office:	Executive Office of Energy and Environmental Affairs
Lead Agency:	Department of Environmental Protection (DEP)

MassDEP


Precipitation Trend Increasing
in Many Locations in MA
More Rain and More Floods

Near-Term Action

- Adopt NOAA 14 Precipitation Atlas to replace TP40
- Add Factor of Safety (FOS)
- Advisory Committee Consider FOS options:
  - NOAA14 Precipitation Atlas plus Multiplier (NOAA14+)
  - RMAT Variation of NOAA14+
  - Other Options

Long-Term Actions: Downscale Global Circulation Model (Beyond Scope of this Committee)

THANK YOU

Lisa Rhodes
Wetlands Program Chief
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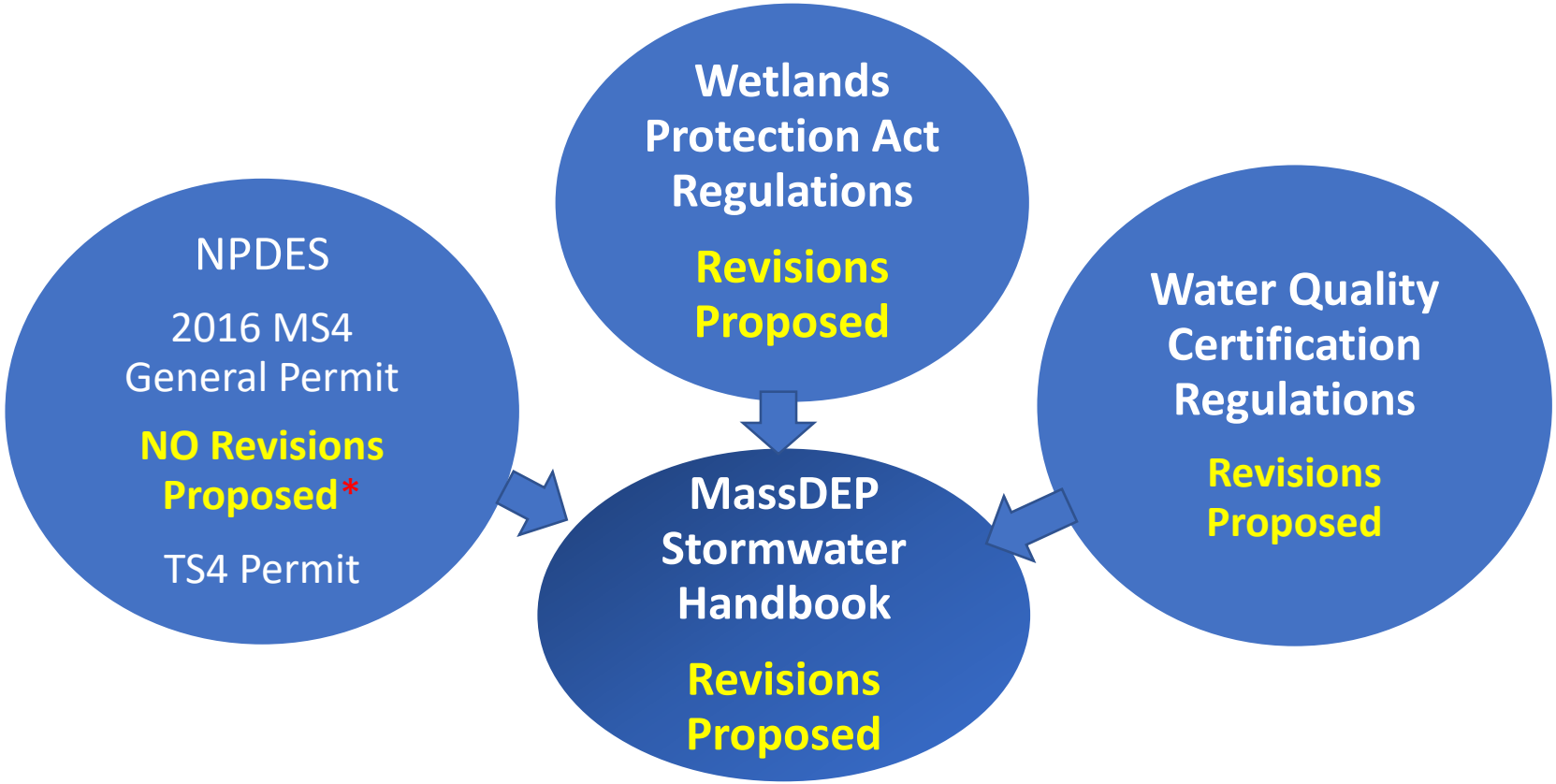
Regulatory Tools Requiring Revisions to Align the Wetlands Regulations and MS4



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Aligning MA Stormwater Handbook with EPA MS4 Stormwater Requirements

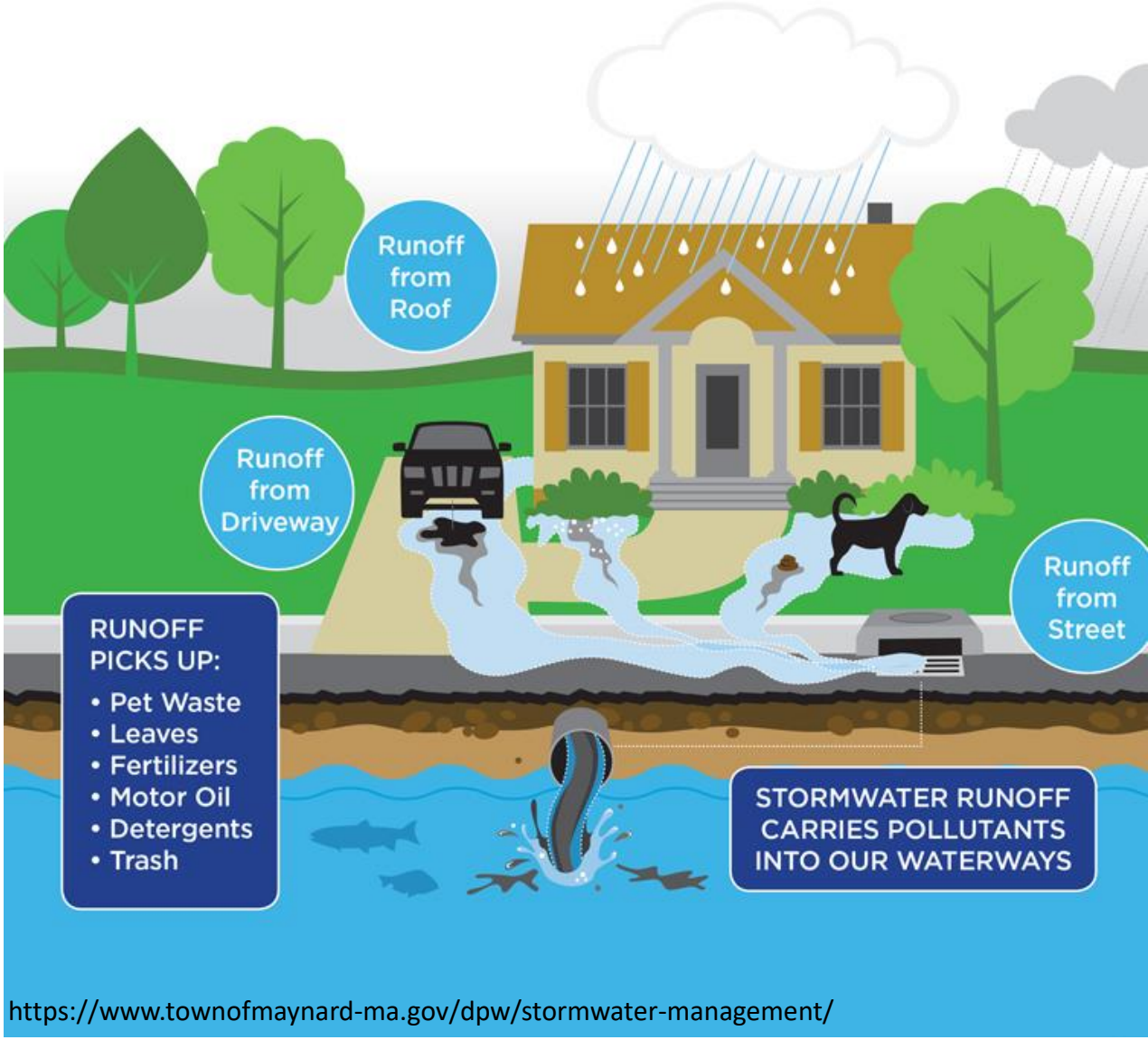
Stormwater Handbook Advisory Committee Meeting 1,

February 12, 2020

Stormwater

- Largest source of pollution to our rivers, streams, ponds, lakes, and wetlands.
- Quintessential “urban” problem: hard surfaces don’t allow for natural water (in)filtration.
- Infiltration removes pollutants, including Total Suspended Solids and Phosphorus.
- Low Impact Development planning provides opportunity for infiltration.

How do we keep these resources fishable and swimmable (clean)?

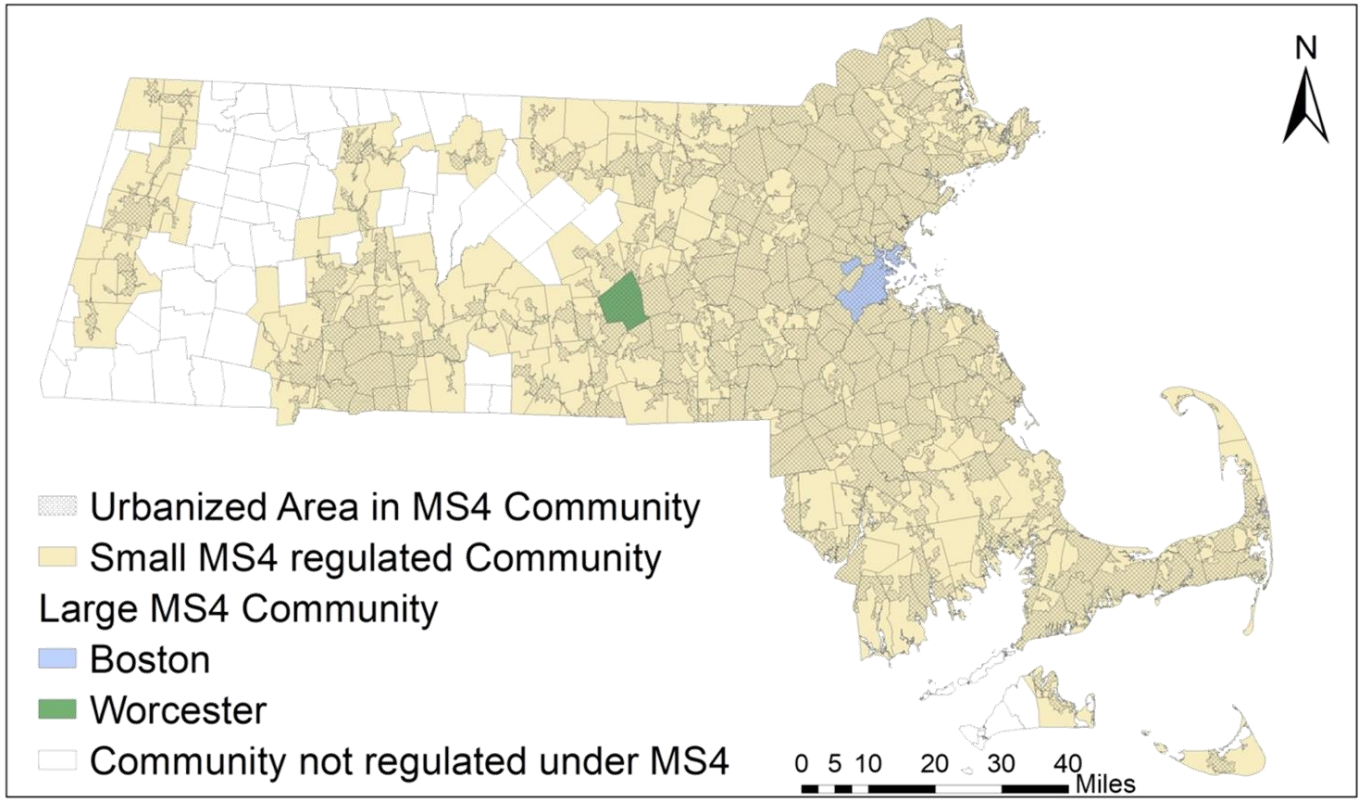


https://www.townofmaynard-ma.gov/dpw/stormwater-management/

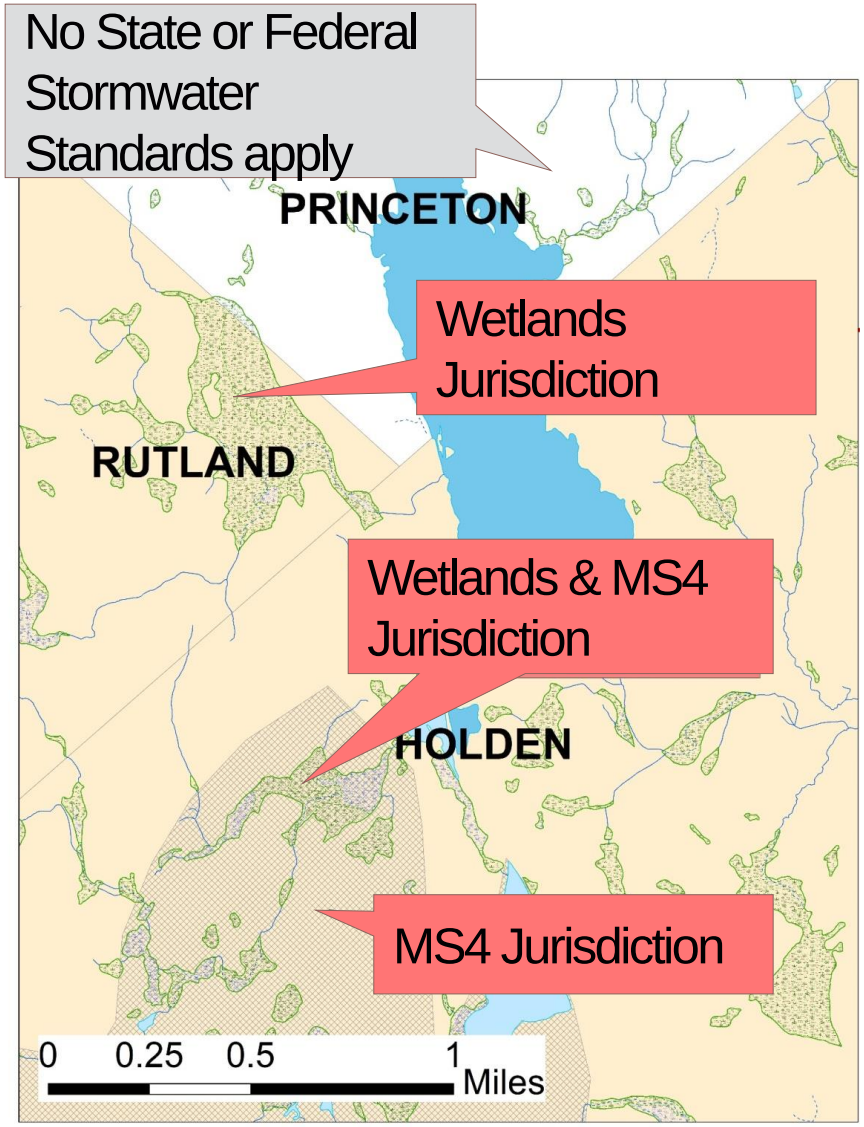
MassDEP

Regulatory Tools Addressing Stormwater in MA

- Towns: bylaws and ordinances
- MassDEP: Wetlands Regulations
- US EPA: 2016 MS4 Permit



Comparing Wetlands Regulations and MS4



Wetlands jurisdictional areas and MS4 urbanized areas may overlap.

Multiple layers of regulations can lead to confusion.

What applies where?

Currently, two sets of dissimilar and, in some cases, conflicting rules.

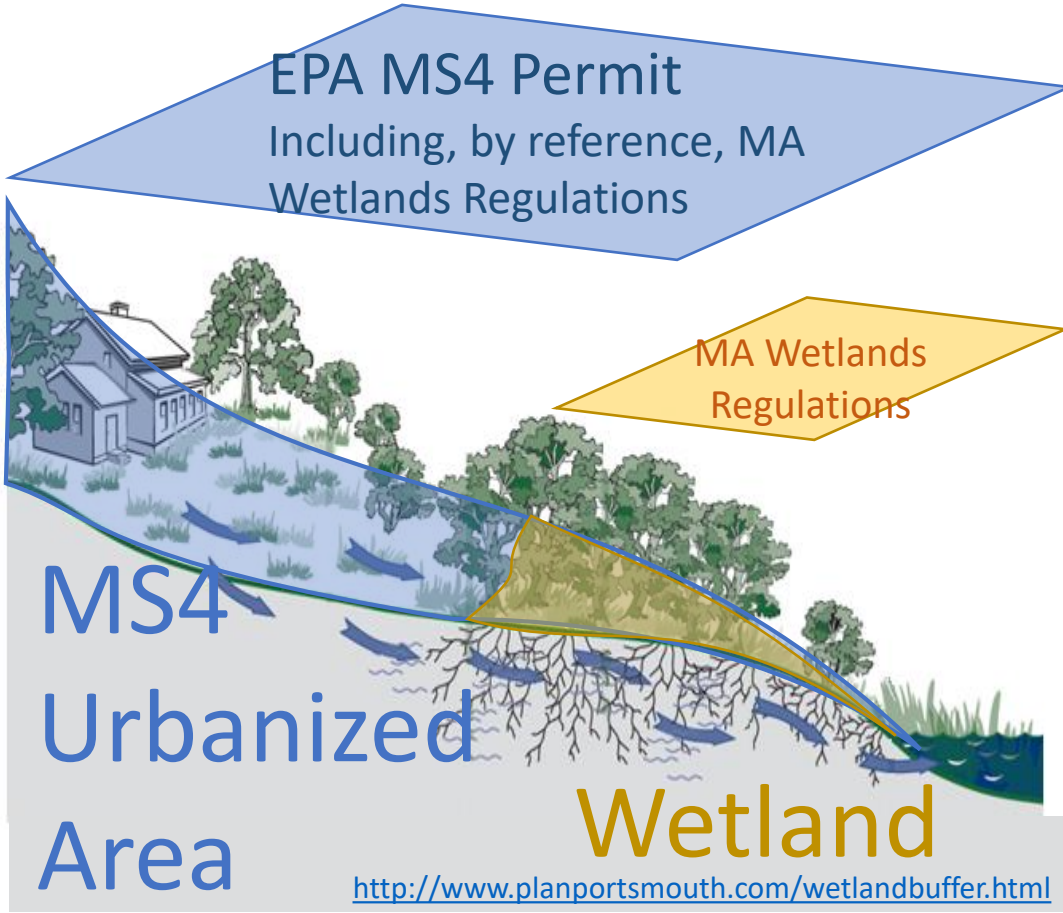
Example: TSS removal rates

MA towns and Stormwater Coalitions requested an alignment between MA Wetlands Regulations and EPA MS4 Requirements

MassDEP

Layers of Stormwater Regulations in Urban Areas

- *Commonwealth of MA* – Wetlands Regulations and Stormwater Handbook
- *Federal EPA* – Municipal Separate Sewer System (MS4) General Permit in 260 municipalities
  - MS4 references and requires compliance with the MA Stormwater Handbook



MassDEP

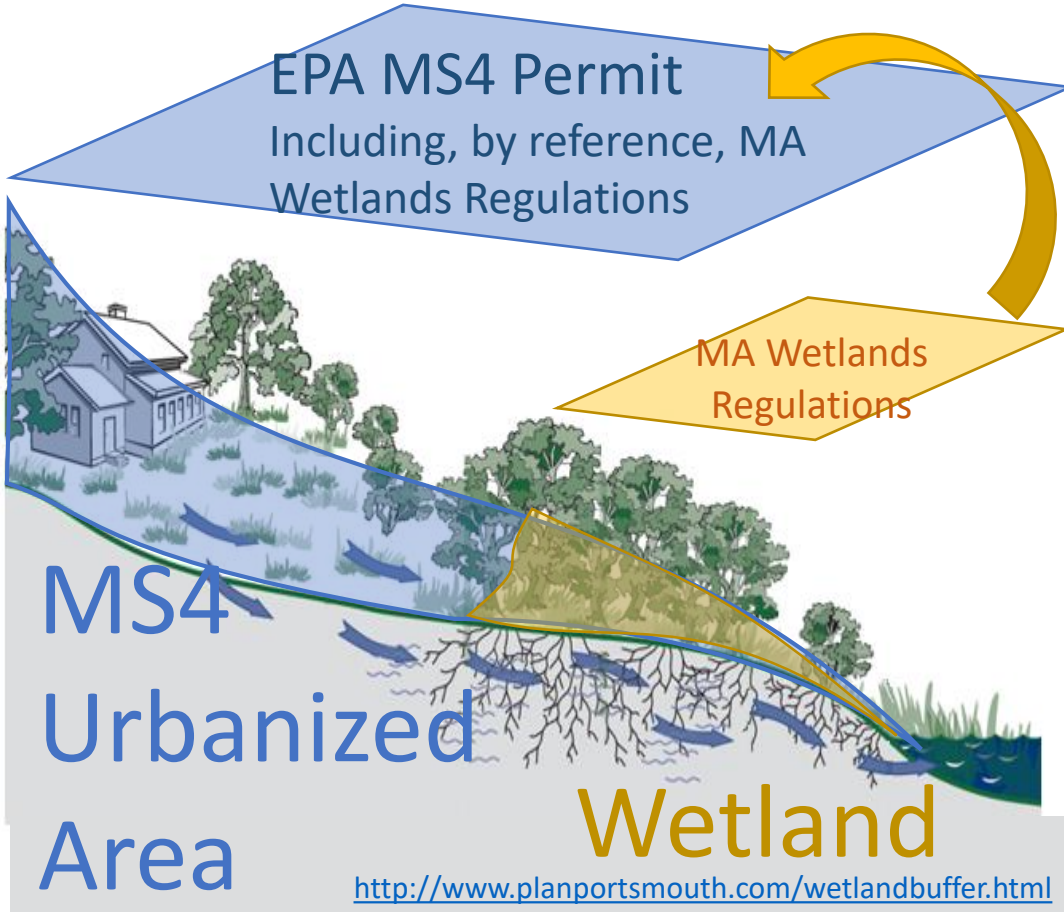
Layers of Stormwater Regulations in Urban Areas

WPA Jurisdictional Area will not change

- *Commonwealth of MA* – Wetlands Regulations and Stormwater Handbook

- *Federal EPA* – Municipal Separate Sewer System (MS4) General Permit in 260 municipalities
  - MS4 references and requires compliance with the MA Stormwater Handbook

Requires knowledge of which regulations are stricter in overlap areas.



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Which MA Stormwater Standards are being modified?

1. No new stormwater conveyances may discharge untreated stormwater.
2. Post-development peak discharge rates shall not exceed pre-development peak discharge rates.
3. Loss of annual recharge to groundwater shall be eliminated or minimized.
4. Remove 80% of the average annual post-construction load of Total Suspended Solids.
5. Higher potential pollutant load land uses shall implement source control and pollution prevention.
6. Within Zone II or Interim Wellhead Protection Area of a public water supply and near Critical Areas stormwater discharges require specific source control and pollution prevention measures.
7. Redevelopments are to comply with Standards 2, 3, 4, 5, and 6 to the MEP and improve existing conditions.
8. Control of erosion, sedimentation and other pollutant sources during construction and land disturbance.
9. Long-term operation and maintenance plan shall be developed and implemented.
10. All illicit discharges to the stormwater management system are prohibited.

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MassDEP

Updating the 2008 MassDEP Stormwater Handbook

- Simplify the stormwater permitting process while providing benefits of resilience and drainage infrastructure

- Help communities achieve higher protection of water and wetland resources

Thank you

Questions?

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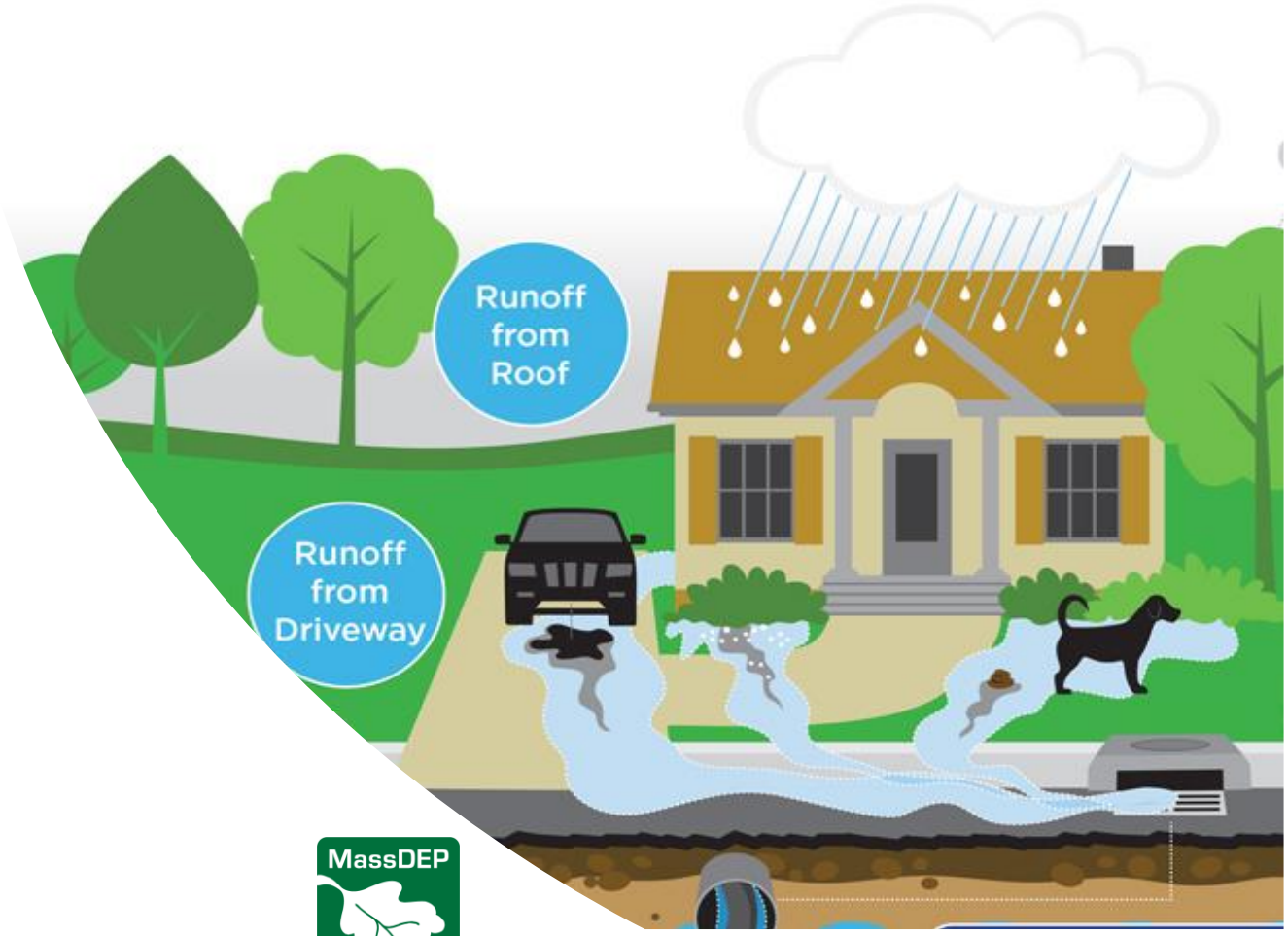

Revising MassDEP Stormwater Handbook

Appropriate Controls for Massachusetts Department Of Transportation (MDOT) Linear Highway Projects

Background Information on MassDOT

- MassDOT is an MS4 entity that requires a federal permit to discharge stormwater to Waters of the United States within the Commonwealth
- MassDOT Highway has applied to EPA for a Transportation Separate Storm Sewer System (TS4) Permit
- MassDOT Highway Division is unique and warrants special consideration because:
  - limited land area within some Rights Of Ways (ROWs) constrain standard Source Control Measures (SCM)
  - MDOT owns the largest drainage system in the state maintaining over:
  - 120,000 catch basins
  - 36,000 miles of roadway
  - 18,489 outfalls

Appropriate Controls for MassDOT Linear Highway Projects

- State Stormwater requirements for MDOT will be incorporated into a chapter of the Stormwater Handbook
- Revised Stormwater Handbook will have Public Comment Period
- Equally or more protective of wetland resources
- Alignment of State's Stormwater Standards with TS4
  - O&M Requirements
  - Comprehensive Plan and Schedule of MDOT O&M Activities
  - Piloting and Adaptive Management of MDOT Actions
  - Data Management and Submittal

Appropriate Controls for MassDOT Linear Highway Projects

- Consistent mechanism for granting pollution reduction credits for Total Suspended Solids and Total Phosphorus
- Inclusion of LID practices along highways to meet WPA and MS4 requirements
- TS4 Permit still in development – updates will follow

Thank you

Lealdon Langley, Director, Division of Watershed Management

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