

2017 Watershed Update

Agenda

Wednesday, March 29, 2016

Municipality of Anchorage

Alaska Department of Transportation and Public Facilities

At the BP Energy Center, Birch Room

900 E. Benson Blvd.

The Municipality of Anchorage and Alaska Department of Transportation and Public Facilities

Welcome you to the APDES Watershed Update Highlighting

Anchorage Storm Water Permit Compliance Activities

Welcome Municipality of Anchorage and Alaska Department of Transportation

Refreshments provided starting at 9:00 a.m.

Program

9:30 APDES Storm Water Permit Compliance – Term III Permit

9:45 Compliance Activities of Coming Year

ADOT&PF Green Roads

Catch Basin & OGS Management

Storm Water Utility Consideration

10:45 Poster Session of Projects for 2016

11:15 Drainage Design Criteria Project Update

Birch Room

Or

Cuddy Park Waterfowl Management

Aspen Room

11:45 Discussion – Project Team Will Be Available To Address Questions

12:00 Adjourn

We're pleased to have you join us for all or a portion of the 2017 Watershed Update

You can find additional information on the stormwater permit at anchoragestormwater.com

2017 Watershed Update

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 At the BP Energy Center
 900 E. Benson Blvd.

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2017 Watershed Update

**Municipality of Anchorage
Alaska Department of Transportation
and Public Facilities**

*A.laska
P.ollutant
D.ischarge
E.limination
S.ystem*

Today's Agenda

APDES Meeting Agenda:

BIRCH Room

- 9:30 **APDES Program – Term III**
- 9:45 Compliance Related Activities 2017
- ADOT&PF Green Roads
 - Catch Basin & OGS Management
 - Storm Water Utility Consideration
- 10:45 Poster Session of 2016 Projects
- 11:15 Drainage Design Criteria Project Update
- 11:45 Discussion – Project Team Available for ?'s
- 12:00 Adjourn

ASPEN Room

- 11:15 Cuddy Park
Waterfowl Project

Welcome to the APDES Annual Meeting!



Municipality of Anchorage
and Alaska Department of Transportation
and Public Facilities



Update on
Anchorage Storm Water
Permit Compliance Activities

- APDES
- MS4
- Phase I
- Term III

APDES Annual Meeting

Permit:

Effective August 1, 2015

Permit Programs

- ✓ Illicit and Industrial Discharge
- ✓ Infrastructure and Street Management
- ✓ Construction
- ✓ New Development
- ✓ Public Education
- ✓ Monitoring

Evaluate Programs

- ✓ Private Snow Disposal Site Controls
- ✓ Sand Storage Shed Assessment
- ✓ Animal Facilities Performance Standards
- ✓ Watershed Plans

APDES Annual Meeting

ADOT&PF Green Roads

Presented by:

Jim Amundsen, P.E.
Chief, Hwy Design Group

APDES Annual Meeting

Catch Basin & OGS Management

Presented by:

Melinda Tsu, P.E.
MOA Project Administrator




STORMWATER SEDIMENT MANAGEMENT FACILITY PM&E PROJECT 12-61

PROJECT MANAGER: JOHN SMITH, P.E.

PROJECT ADMINISTRATOR: MELINDA TSU, P.E.

DESIGN CONSULTANT: BILL SPENCER, P.E. AND TERESA PETERSON, P.E., HDR, INC.

PROJECT STAKEHOLDERS: PAUL VANLANDINGHAM AND
ERIC HODGSON, M&O, STREET MAINTENANCE
KRISTI BISCHOFBERGER, PM&E, WATERSHED MANAGEMENT



PERMIT REQUIREMENTS



❖ ANCHORAGE MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT AKS02558

- 3.4 storm water infrastructure and street management – the permittees must maintain their MS4 and related facilities to reduce the discharge of pollutants from the MS4 to the MEP.
 - 3.4.2 catch basin and inlet cleaning
 - 3.4.2.1 collect and develop rate of fill data
 - 3.4.2.2 use results from the rate study to update maintenance schedules
 - 3.4.3 within five years of the effective date of this permit, the permittees must develop and implement a standard operating procedure (SOP) for the treatment and disposal of catch basin and OGS wastes. The SOP shall address both solid and liquid portions of the waste stream.

HOW MANY? HOW MUCH?

❖ MOA STORM WATER INFRASTRUCTURE:

- 8,000 MOA catch basins and catch basin manholes
- 261 oil and grit separators (OGS)
- Annual cleaning includes
 - Approximately a third of the CB
 - All OGSs
 - 300 to 700 CY sediment annually

❖ ANCHORAGE BOWL INFRASTRUCTURE:

- 11,500 CB, CBMH, and OGSs



PROJECT GOALS

- ❖ Meet MS4 requirements
- ❖ Meet regulatory disposal requirements
 - Liquid waste
 - Solid waste
- ❖ Develop a low maintenance facility that is operator friendly
- ❖ Communicate closely with M&O



PRELIMINARY PROJECT WORK PLAN

- Site Selection
- Field Work
- Permitting
- Zoning And Land Use
- Waste Characterization
- Existing Facilities Research
- Treatment Alternatives Analysis
- Recommended Alternative
- Preliminary Engineering Summary Report

NEW LAND USE

TITLE 21 CHAPTER 21.05: USE REGULATIONS

21.05.060 INDUSTRIAL USES

E. WASTE AND SALVAGE:

10. STORMWATER SEDIMENT MANAGEMENT FACILITY

A. Definition

A facility designed specifically for the collection, processing, storage, and disposal or redistribution of sediment collected from stormwater pipelines, catch basins, sedimentation basins, infiltration systems, stormwater grit separators, and roadways.

(Location, dimensional standards, material limitations, screening, noise and dust, etc.)

RECOMMENDED ALTERNATIVE



Pierce Country Washington

- Facility - covered sloped tipping floor
- 15,000 SF canopy, concrete floor 0.75% slope, settling basin

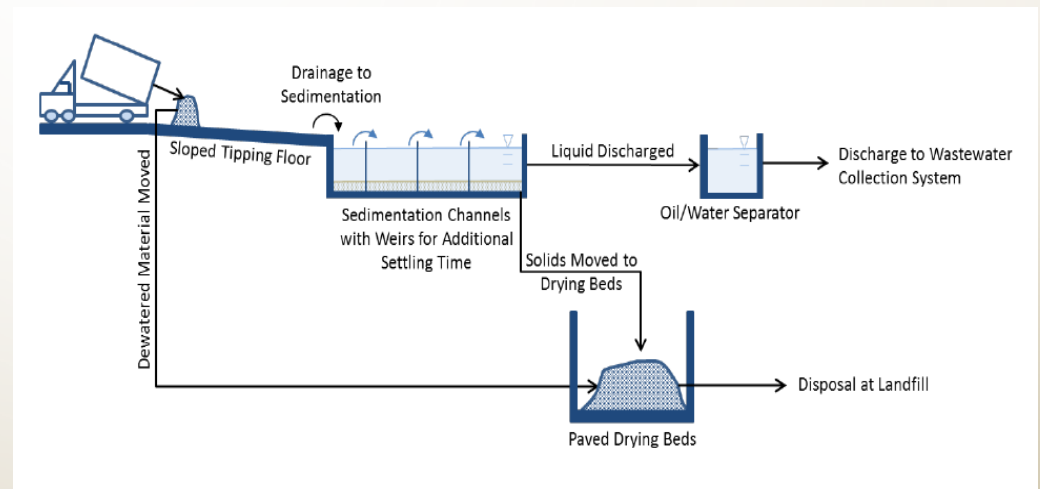
RECOMMENDED TREATMENT PROCESSES

➤ CATCH BASIN WASTE STREAM – TIPPING FLOOR TO SEPARATE

- LIQUID – DISCHARGED TO AWWU SEWER AFTER SETTLING BASIN
- SOLIDS – DISPOSAL AT LANDFILL AFTER DEWATERED, DAILY COVER

➤ OGS WASTE STREAM – CONTAINMENT WITH WEIR OVERFLOW

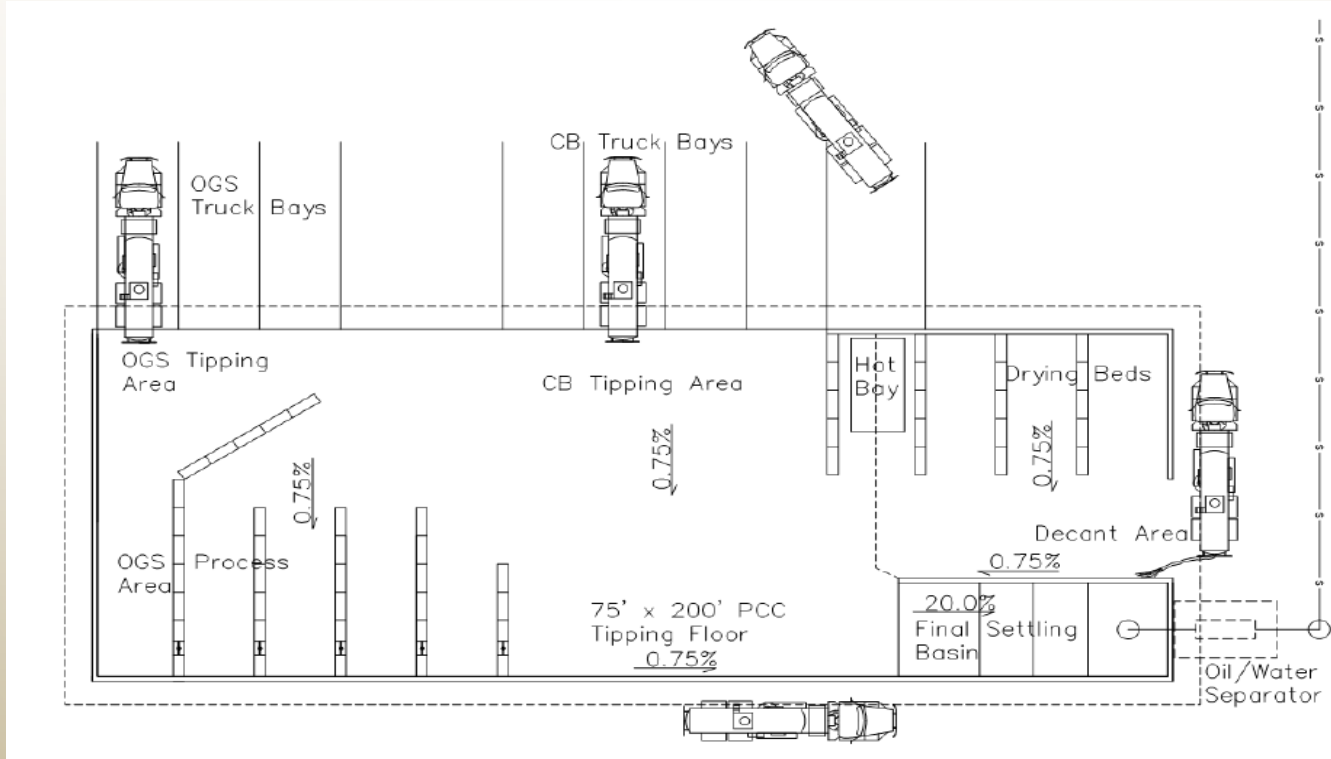
- LIQUID – DISCHARGED TO AWWU SEWER AFTER SETTLING BASIN
- SOLIDS – DISPOSAL AT LANDFILL AFTER DEWATERED



CONCEPT FACILITY SITE PLAN



CONCEPT DECANT PAVILION LAYOUT



SCHEDULE



- SURCHARGE SITE - 2017
- 65% THROUGH FINAL DESIGN – 2017-2018
- SECURE FUNDING 2018 BOND REQUEST
- CONSTRUCTION 2018 – 2019
- OPERATIONAL IN 2019

APDES Annual Meeting

Stormwater Utility Project

Presented by:

Jason Bockenstedt
MOA Project Manager

Poster Session

- Wet Weather Monitoring
- Dry Weather Monitoring
- Pesticide Monitoring
- Low Impact Development Monitoring
- Rain Garden Program
- Drainage Design Criteria Timeline
- WMS Mapping



Return at 11:15 for *Drainage Design Criteria Project Update*

APDES Annual Meeting

Drainage Design Criteria Update

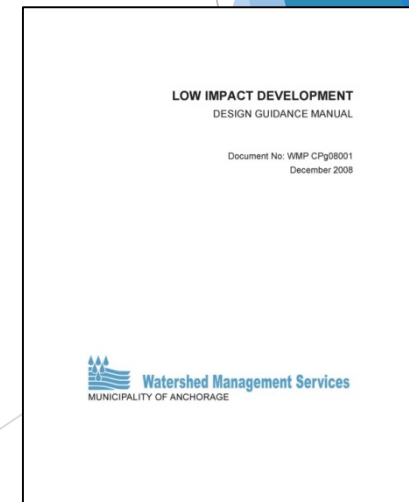
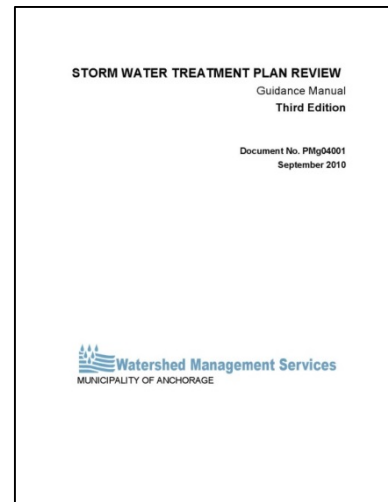
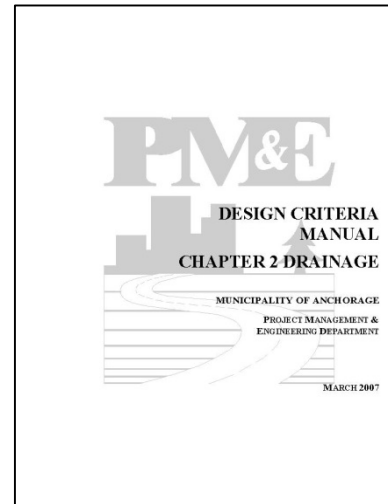
Presented by:

Janie Dusel, P.E.
AWR Engineering

Drainage Design Criteria Update Process

Existing (old) criteria are presented in four manuals:

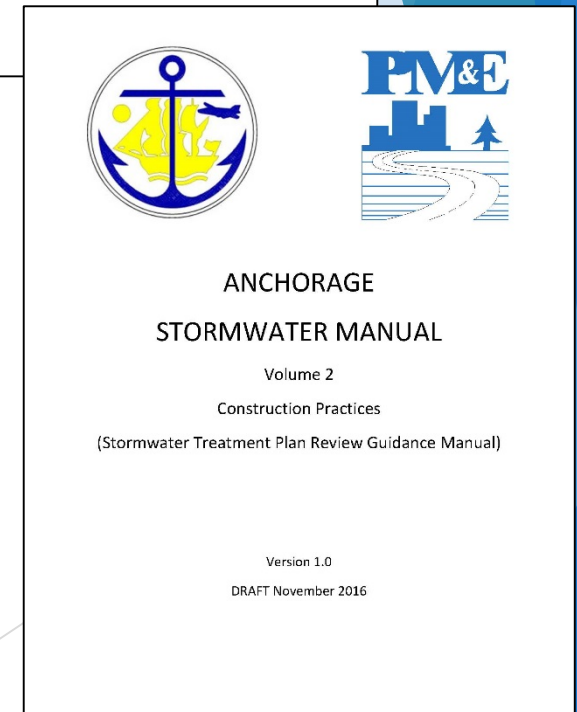
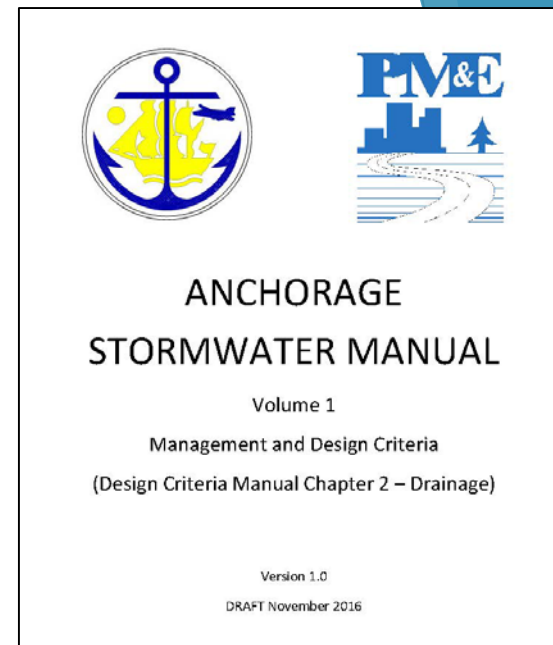
1. 2007 Design Criteria Manual (DCM) Chapter 2 Drainage
2. Drainage Design Guidelines
3. Stormwater Treatment Plan Review Guidance Manual
4. Low Impact Development Design Guidance Manual



Drainage Design Criteria Update Process

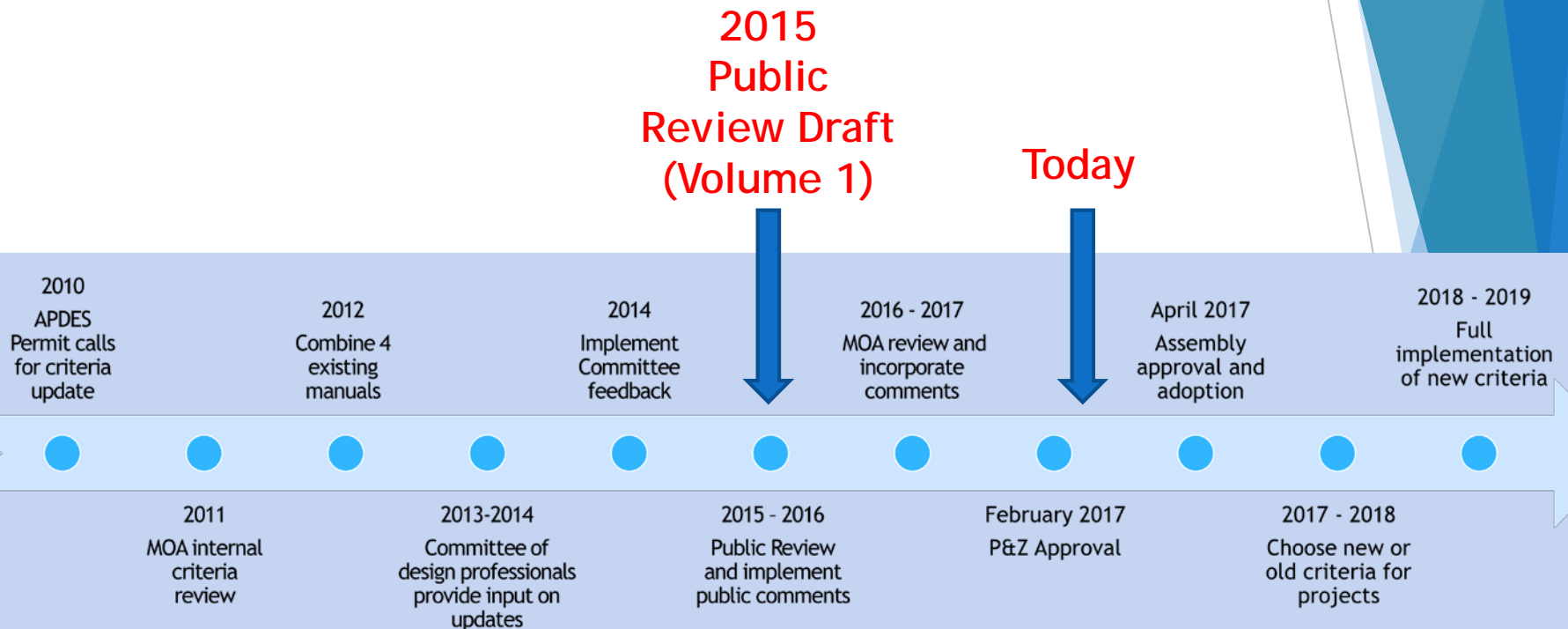
Why are we updating the drainage criteria?

1. Incorporate new APDES permit requirements
2. Consolidate and simplify the four manuals for ease of use
 - ▶ Volume 1 - Management and Design Criteria: Criteria for *permanent* stormwater management
 - ▶ Volume 2 - Construction Practices: Criteria for *temporary* stormwater management during construction



Drainage Design Criteria Update Process

What have we done so far?



Volume 1

Changes since 2015 Public Review Draft

- ▶ 2015 Presentation outlined changes from existing criteria to new criteria and presented the 2015 Public Review Draft.
 - Public/user comments
 - MOA comments
 - Stakeholder comments
- ▶ Today's presentation is focused on changes to the criteria AFTER the 2015 Public Review Draft.

Volume 1

Changes since 2015 Public Review Draft

Project Classifications

- ▶ Added a fourth category and slightly modified definitions
- ▶ Exempt, Small, *Medium*, Large
 - ▶ Exempt - Stormwater management requirements generally don't apply
 - ▶ Small - Less than 10,000 square feet of disturbance OR residential fill and grade permit with less than 5,000 CY of fill
 - ▶ **Medium** - 10,000 square feet or more square of disturbance AND ONE of the following:
 - ▶ Project area does not exceed 0.75 acres
 - ▶ Landcover doesn't change by more than 5%
 - ▶ Large - 10,000 SF or more and not a Medium Project

Volume 1

Changes since 2015 Public Review Draft

Added a Drainage Certification Form

- ▶ Applies to Small and Medium Projects
- ▶ Reduces the amount of required reporting
- ▶ Presented in Appendix A of Volume 1.

Volume 1

Changes since 2015 Public Review Draft

Updated Design Storms

- ▶ New design storms are from NOAA's Atlas 14 Precipitation-Frequency Atlas of the United States
 - ▶ Published in 2012 - Document and website
 - ▶ Provides precipitation data for the entire State.
 - ▶ Longer length of data and more robust statistical analysis
 - ▶ Anchorage storms increased generally 30 to 45%
- ▶ Separate design storms are presented for Girdwood.
 - ▶ Unchanged from 2015 Draft

Volume1

Changes since 2015 Public Review Draft

Updated Design Storms

Design Storm	Description of Use in Design	Old (2007 DCM) Depth (in)	New Anchorage (Atlas 14) Depth (in)	New Girdwood (Atlas 14) Depth (in)
1-year, 24-hour	Extended detention (for downstream channel protection)	1.09	1.04	3.35
2-year, 24-hour	Peak Control / Channel Protection	1.26	1.4	4.05
10-year, 24-hour	Conveyance for piped storm drain systems and non-stream open channels; peak flow detention.	1.77	2.28	5.72
50-year, 24-hour	Streams of 1 st and 2 nd Order ¹	2.25	3.19	7.44
100-year, 24-hour	Conveyance of regulated stream or streams \geq 3 rd Order; flood analysis for conveyance systems and site designs	2.48	3.59	8.20

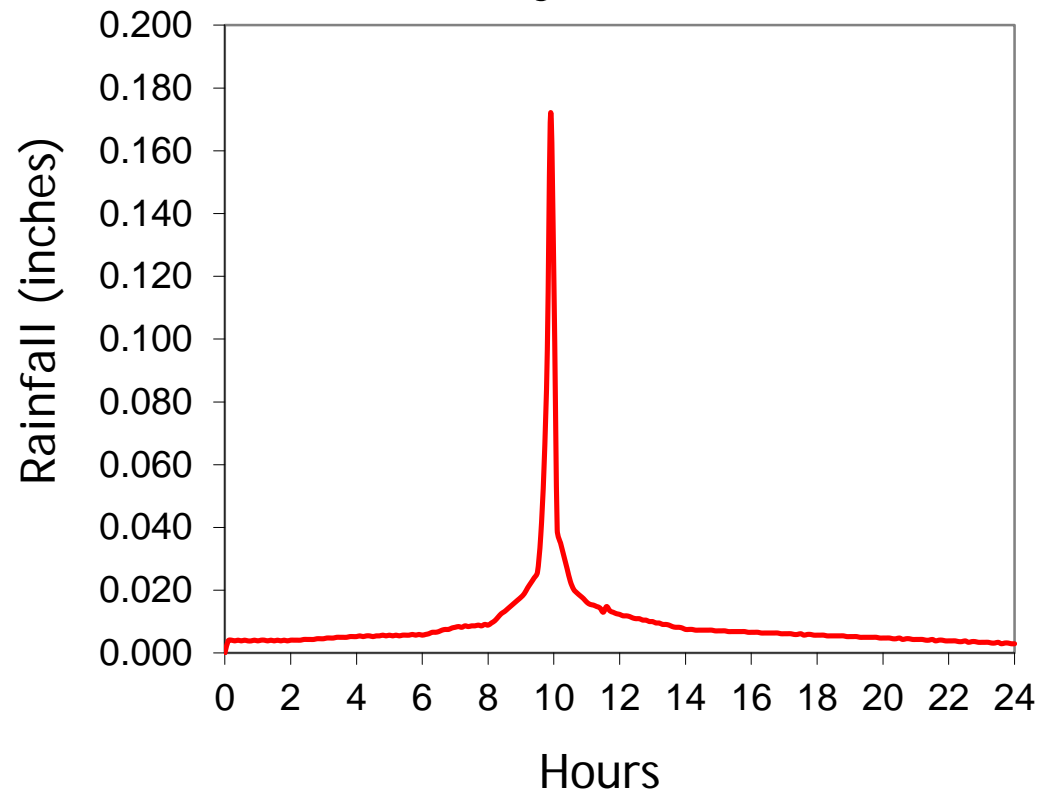
Volume 1

Changes since 2015 Public Review Draft

Updated Design Storms

- ▶ NOAA provides rainfall totals for design storms and IDF (intensity-duration-frequency) information.
- ▶ The shape of the 24-hour storm (hyetograph) is currently NRCS Type 1 standard distribution.

NRCS Type 1 Distribution
(10-yr, 24-hr)



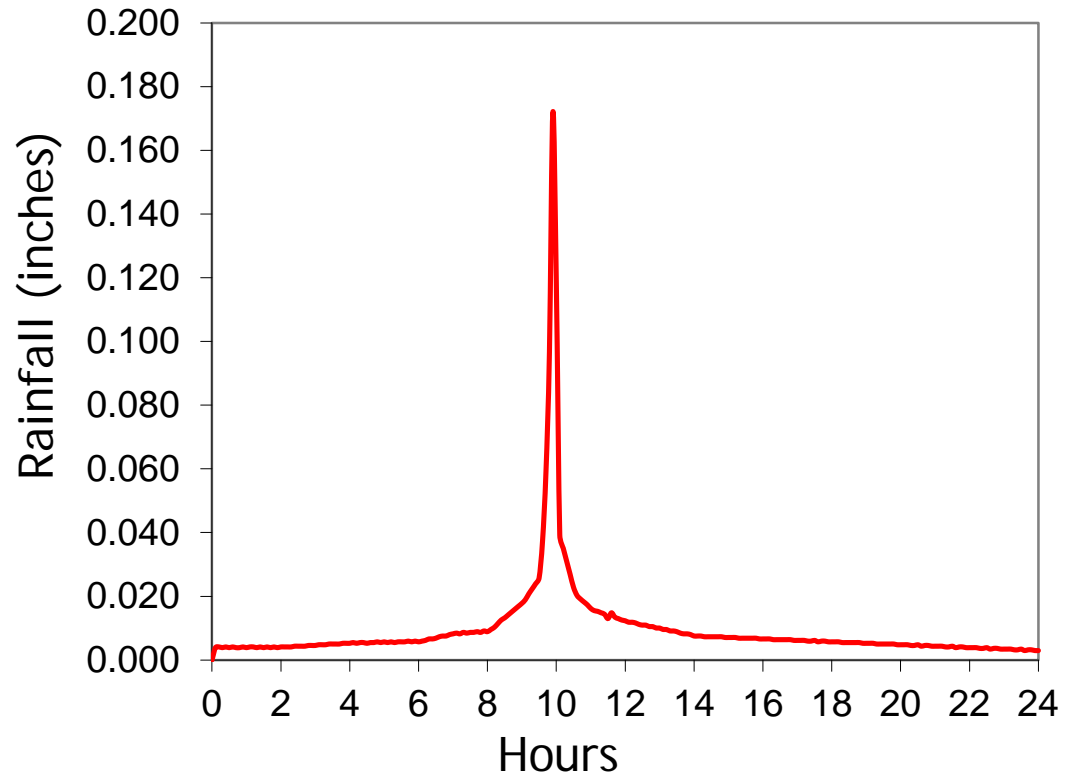
Volume 1

Changes since 2015 Public Review Draft

Updated Design Storms

- ▶ National trend toward developing new distributions to replace the standard NRCS Types. (Type 1, Type 1A, etc.)
- ▶ We are evaluating a new distribution that is specific to our area.
- ▶ Analysis is not complete, but more information will be available in the near future.

NRCS Type 1 Distribution (10-yr, 24-hr)



Volume 1

Changes since 2015 Public Review Draft

Peak Flow Control and Downstream Impacts

- ▶ Currently working through changes to this section based on MOA comments
- ▶ Downstream Impact Analysis is often difficult
 - ▶ Limited information about the existing system
 - ▶ Capacities are not known
- ▶ Still providing two options for peak flow control and downstream impacts, similar to 2015 draft
- ▶ Added a step-by-step guidance for designers
- ▶ Clarified guidance on the downstream stopping point

Volume 1

Changes since 2015 Public Review Draft

Peak Flow Control and Downstream Impacts

Existing Criteria and Draft Option 1	Maintain 10-year peak flow to 1.05 times existing.
	Downstream impacts required for the 10-year event.
	Demonstrate safe bypass downstream for the 100-year event OR Maintain 100-year peak flow to 1.05 times existing.
Draft Option 2	Maintain only the 10-year peak flow to 1.0 times existing
	No downstream impacts required for the 10-year event.
	Demonstrate safe bypass downstream for the 100-year event OR Maintain 100-year peak flow to 1.05 times existing.

Volume 1

Changes since 2015 Public Review Draft

Miscellaneous Changes

- ▶ Licensed landscape architects are permitted to prepare grading and drainage plans/reports for sites up to two acres.
- ▶ Criteria for mandated thaw systems is now limited to MOA-facilities.
- ▶ Construction Sequencing Plans is now called Construction Considerations Plan.
- ▶ Concrete Valley Gutters are disallowed for MOA facilities.

Volume 2 - Construction Practices

- ▶ This document was not available for review with the 2015 draft.
- ▶ The current 2016 draft is available for review.
- ▶ Requirements are based on the State of Alaska Construction General Permit.
- ▶ Outlines requirements for SWPPPs and related items.

Volume 2 - Construction Practices

- ▶ Generally the same as the existing 2010 STPRGM.
- ▶ Format has been made more user-friendly.
- ▶ Type 1 SWPPP form is now required for all projects that disturb less than 10,000 sf.
- ▶ Regulations were updated per the 2015 Alaska Construction General Permit.
- ▶ Criteria for permanent LID features were moved to Volume 1.

How to Provide Comments or Questions

Current Drafts - November 2016

<http://www.anchoragestormwater.com/>

Look under "Announcements" on the left hand side

▶ Kristi Bischofberger, MOA Watershed Manager

Email: bischofbergerKL@ci.anchorage.ak.us

Or

▶ Janie Dusel, AWR Engineering, LLC

Email: jdusel@awr-eng.com

The background features abstract blue geometric shapes, including triangles and polygons, in various shades of blue, creating a modern and professional look.

Questions?

Thank you for coming!



Q & A Discussion

Anchorage MS4 Permit