

Village of Ridgefield Park Supplemental CSO Team

Meeting Number 5

Commissioner's Conference Room

Village of Ridgefield Park Municipal Building

June 11, 2018, 9:00 am

Group Meeting Minutes

1. Introduction
 - a. Meeting began at 9:00 am
 - b. John Dening opened the meeting with a safety discussion about hurricane preparedness.
 - c. John Dening reviewed the topics discussed at the last quarterly meeting held on March 12, 2018 and asked if there was any questions on the previous meetings for questions. No questions were asked at that time about previous topics.
2. Presentation by John Dening about the Sewer System Characterization Report, which is due on July 1, 2018 (see power points).
3. Discussion and Questions
 - a. Florence Muller asked what impact the Skymark development will have on CSO discharges. John Dening indicated that the new development will be in the separated sewer area and is in the downstream part of the Ridgefield Park sewer system, so the impact will be minimal.
 - b. John Rolak noted that the Village's website now includes links to information on CSOs and requested that the team go to, and review for input, the content on the website.
 - c. Next steps will include developing alternatives and associated cost estimates. Next year we will submit options to the DEP. We will also compare the impact of the CSOs to other sources of contamination to determine how much control is needed. The Village's ability to pay for upgrades will drive the timeline for completion.
4. Meeting concluded at 10:15 am

Minutes submitted by Donna Gregory

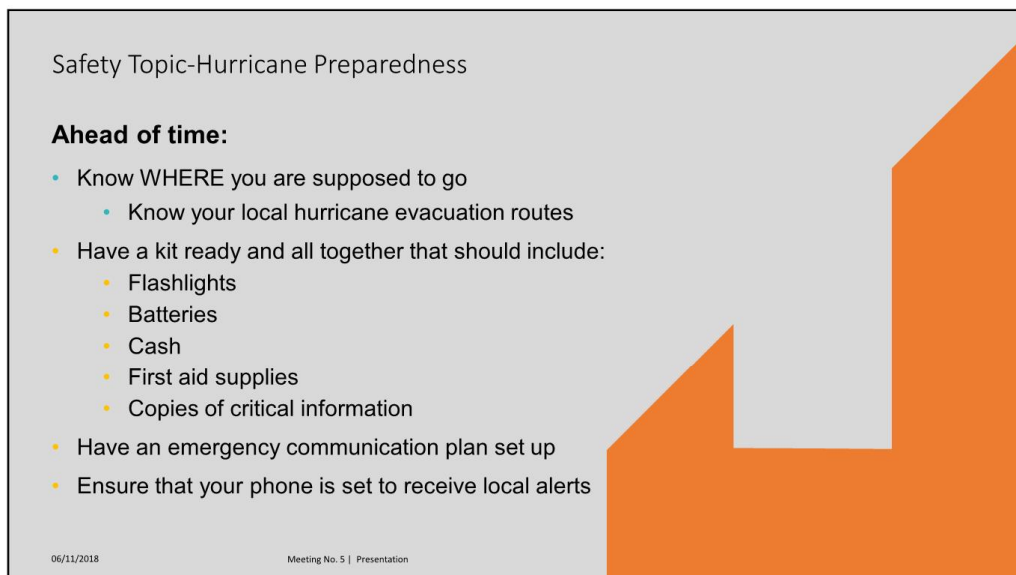
Village of Ridgefield Park Supplemental CSO Team
Meeting Number 5
June 11, 2018, 9 am

Name	Organization	Email	Phone Number
John Rolak	Mott MacDonald	John.rolak@mottmac.com	973-912-2521
John Dening	Mott MacDonald	John.dening@mottmac.com	
Donna Gregory	Mott MacDonald	Donna.gregory@mottmac.com	908-727-0638
Flo Muller	Ridgefield Park Shade Tree Commission	flomart@nj.rr.com	201-814-9019
Mark Olson	Chairman, Green Team	mark-olson@verizon.net	
Stephen Quinn	Ridgefield Park Environmental Commission	stephencquinn@aol.com	
Linda Quinn	Ridgefield Park Environmental Commission	linda.quinn125@gmail.com	
Nancy Kempel	DEP	nancy.kempel@dep.nj.gov	
Jennifer Feltis	DEP	Jennifer.feltis@dep.nj.gov	
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Ed Monco & RP PPW		ed81563@gmail.com	201-440-4860

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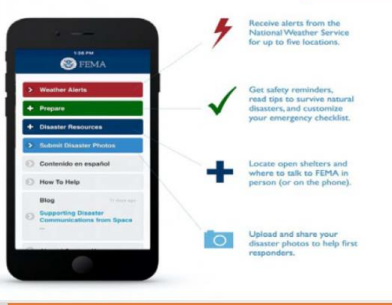
Safety Topic-Hurricane Preparedness

Hurricane Watch:
Conditions possible within the next 48 hrs.

Hurricane Warning:
Conditions are expected within 36 hrs.

Good resources:

- FEMA smartphone app
- Ready.gov
- NWS National Hurricane Center



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World Meteorological Organization - 2018 Hurricane Monikers

• Alberto	• Leslie
• Beryl	• Michael
• Chris	• Nadine
• Debby	• Oscar
• Ernesto	• Patty
• Florence	• Rafael
• Gordon	• Sara
• Helene	• Tony
• Isaac	• Valerie
• Joyce	• William
• Kirk	

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6/20/2018

Supplemental CSO Team
Meeting No. 5 Agenda

Refresher - In Meeting #4 We Covered:

- Consideration of Sensitive Areas
- Update on Typical Year Analysis
- Update on Computer Model
- Update on Sewer System Characterization Report

Any Questions On Previous Topics?

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Sewer System Characterization Report
Prior Discussion

The Major Elements of a Sewer System Characterization Include:

- I. Rainfall Records (Typical Year – Meeting 2)
- II. Combined Sewer Characterization (Meeting 1 and 2)
- III. CSO Monitoring (Meeting 2)
- IV. Modeling (Meetings 2 and 4)
- V. Sensitive Area Analysis (Meeting 4)

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6/20/2018

Supplemental CSO Team

Meeting No. 5 Agenda

Topics to Discuss Today:

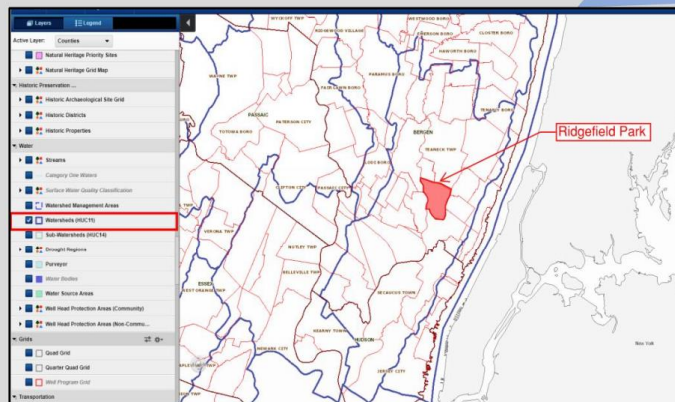
- Sewer System Characterization Report
 - Receiving Waters
 - Collection System
 - Use of Prior Data
 - Modeling
 - Typical Year Rainfall and Analysis
 - Sensitive Areas

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Receiving Waters

Hackensack River Watershed (HUC-11 02030103180)



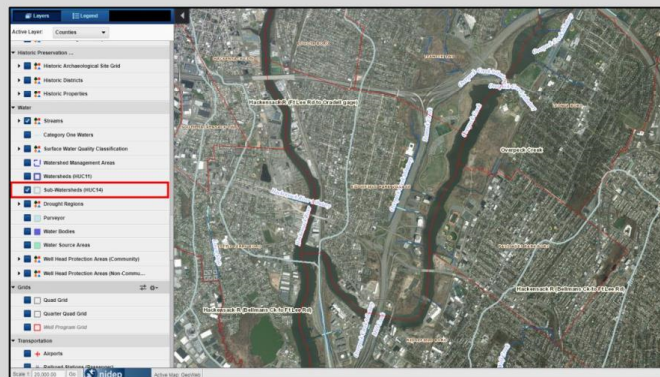
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6/20/2018

Receiving Waters

Overpeck Creek Sub-Watershed (HUC-14 02030103180040; Sub-watershed ID 05BB04)
Hackensack River, Fort Lee Road to Oradell gage (HUC-14 02030103180030; Sub-watershed ID 05BB03)



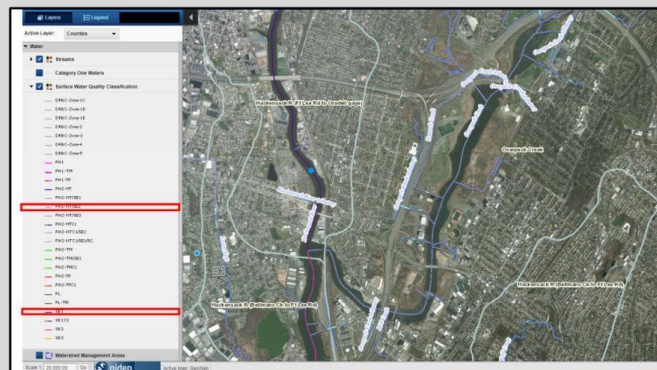
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9

Receiving Waters

SE-1 and FW2-NT/SE2



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10

6/20/2018

Receiving Waters Sampling



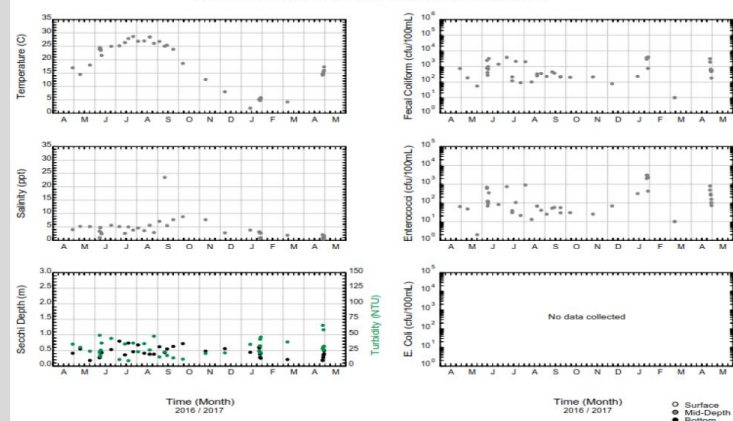
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Meeting No. 5 | Presentation

11

Receiving Waters Sampling

Hackensack River & Tributaries, Hackensack River, B2



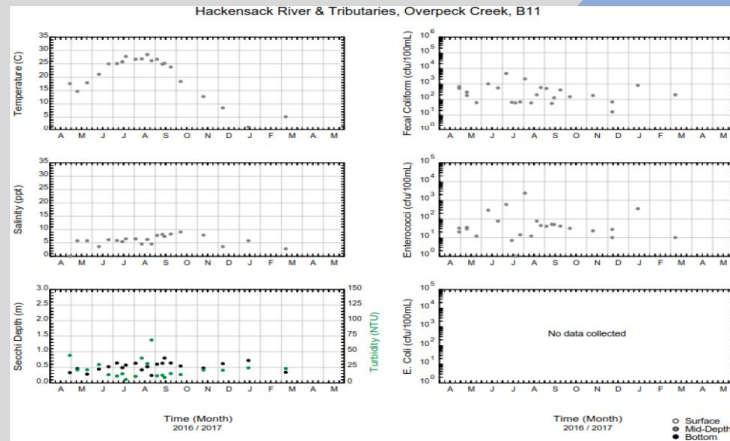
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Meeting No. 5 | Presentation

12

6/20/2018

Receiving Waters Sampling

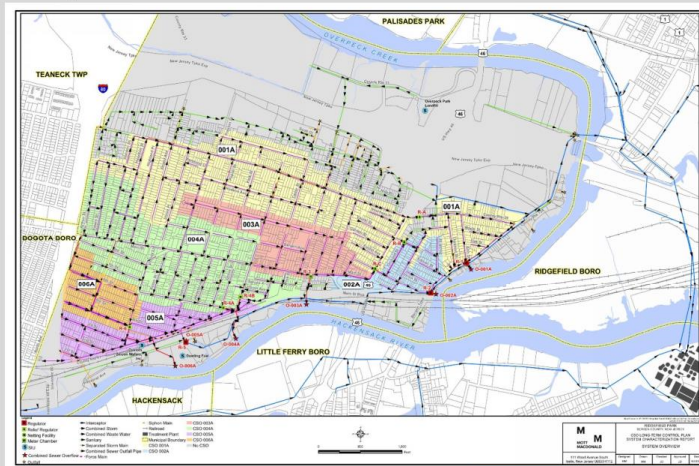


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Meeting No. 5 | Presentation

13

Collection System - Overall



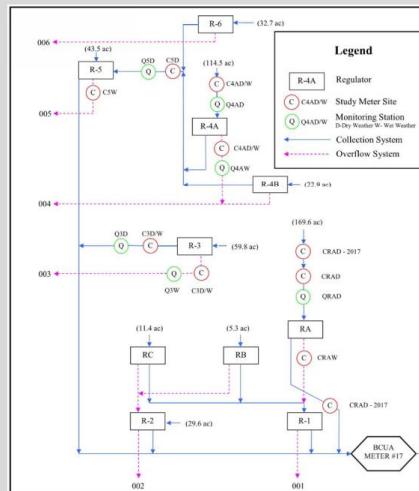
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Meeting No. 5 | Presentation

14

6/20/2018

Collection System

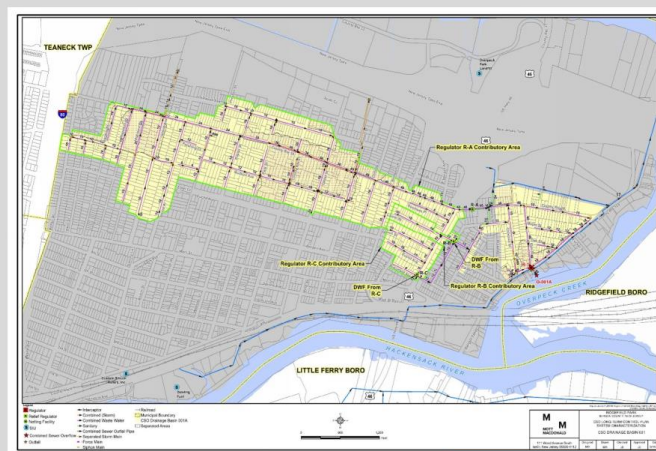


6/11/2018

Meeting No. 5 | Presentation

15

Collection System – Basin Level



6/11/2018

Meeting No. 5 | Presentation

16

6/20/2018

Collection System – Basin Level

Pipe Statistics Regulator Basin 001		
Pipe Size	LF of Pipe	% of Total LF
8"	1,709	4%
10"	14,295	35%
12"	9,793	24%
15"	4,540	11%
18"	2,784	7%
20"	972	2%
22"	26	0.1%
24"	2,230	6%
29"	155	0.4%
36"	1,241	3%
48"	3,719	9%
Unknown	657	2%
Total	40,412	100%

6/11/2018

Meeting No. 5 | Presentation

17

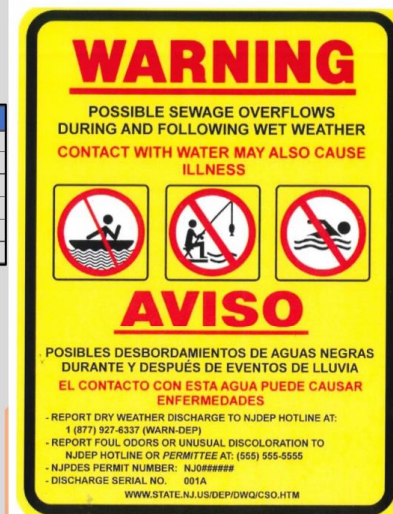
Collection System – Facilities

Outfalls

Outfall	Latitude*	Longitude*	Receiving Water
001	40° 50' 43"	74° 1' 31"	Overpeck Creek
002	40° 50' 49"	74° 1' 38"	Overpeck Creek
003	40° 51' 13"	74° 1' 40"	Hackensack River
004	40° 51' 27"	74° 1' 49"	Hackensack River
005	40° 51' 35"	74° 1' 49"	Hackensack River
006	40° 51' 38"	74° 1' 56"	Hackensack River

6/11/2018

Meeting No. 5 | Presentation

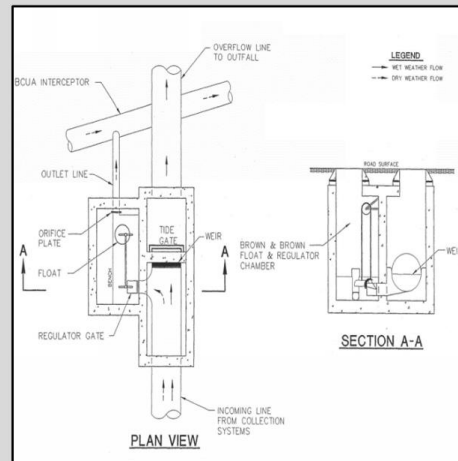


6/20/2018

Collection System – Facilities

Regulators

Regulator	Type	Function	Owner
R-A	Float	Internal Relief	Ridgefield Park
R-B	Float	Internal Relief	Ridgefield Park
R-C	Float	Internal Relief	Ridgefield Park
R-I	Float	CSO Regulation	BCUA
R-2	Float	CSO Regulation	BCUA
R-3	Vortex Valve	CSO Regulation	Ridgefield Park
R-4A	Vortex Valve	CSO Regulation	Ridgefield Park
R-4B	Vortex Valve	CSO Regulation	Ridgefield Park
R-5*	Float	CSO Regulation	BCUA
R-6	Vortex Valve	CSO Regulation	Ridgefield Park



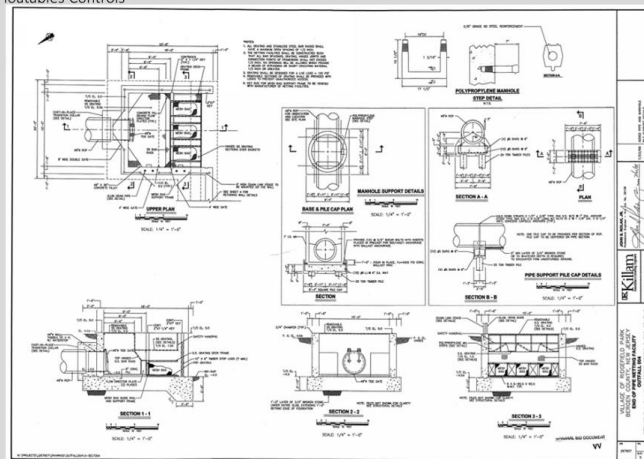
6/11/2018

Meeting No. 5 | Presentation

19

Collection System – Facilities

Solids and Floatables Controls



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20

6/20/2018

Use of Prior Data

- Land Use
- Impervious Cover
- Population
- Sewer System

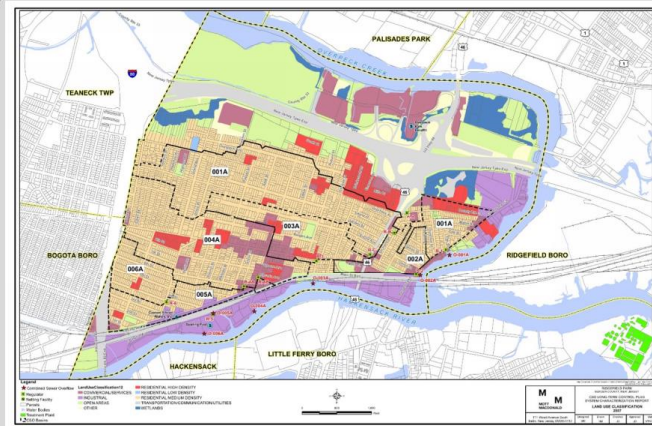
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Meeting No. 5 | Presentation

21

Use of Prior Data

Land Use - 2007



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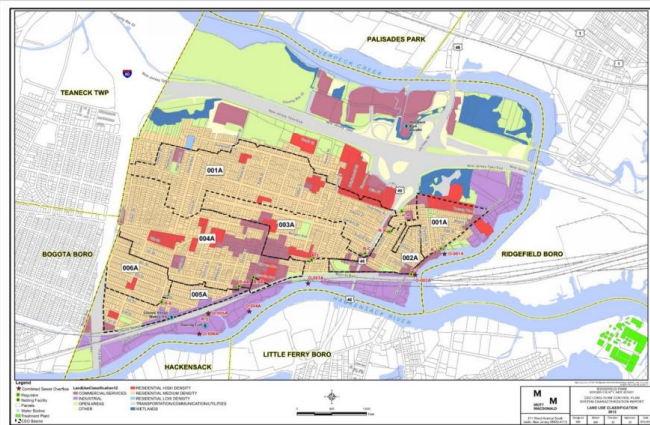
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22

6/20/2018

Use of Prior Data

Land Use - 2012



6/11/2108

Meeting No. 5 | Presentation

23

Use of Prior Data

- Land Use – No Change
- Impervious Cover
- Population
- Sewer System

Basin	Land Use Classification Category	Land Use 2007 (ac)	Land Use 2012 (ac)	Difference from 2007 to 2012 (ac)
Non-CSO Area	Commercial/Services	57.5	58.7	1.2
	Industrial	81.0	82.5	1.5
	Open Areas	311.0	306.5	-4.5
	Other	39.2	39.4	0.2
	Residential High Density	29.0	29.0	0.0
	Residential Medium Density	1.1	1.1	0.0
	Residential Low Density	47.4	47.4	0.0
	Transportation/Communication/Utilities	128.8	128.8	0.0
001	Wetlands	45.5	47.2	1.6
	Commercial/Services	6.0	6.0	0.0
	Industrial	1.3	1.3	0.0
	Open Areas	2.5	2.5	0.0
	Other	0.6	0.6	0.0
	Residential High Density	13.0	13.0	0.0
	Residential Medium Density	0.1	0.1	0.0
	Residential Low Density	160.8	160.8	0.0
002	Transportation/Communication/Utilities	1.9	1.9	0.0
	Wetlands	0.0	0.0	0.0
	Commercial/Services	4.4	4.4	0.0
	Industrial	0.1	0.1	0.0
	Open Areas	3.3	3.3	0.0
	Other	0.1	0.1	0.0
	Residential High Density	0.0	0.0	0.0
	Residential Medium Density	21.1	21.1	0.0
003	Residential Low Density	0.0	0.0	0.0
	Transportation/Communication/Utilities	0.6	0.6	0.0
	Wetlands	0.0	0.0	0.0
	Commercial/Services	8.4	8.4	0.0
	Industrial	0.0	0.0	0.0
	Open Areas	2.5	2.5	0.0
	Other	0.0	0.0	0.0
	Residential High Density	4.0	4.0	0.0
	Residential Medium Density	44.8	44.8	0.0
	Residential Low Density	0.0	0.0	0.0
	Transportation/Communication/Utilities	0.1	0.1	0.0
	Wetlands	0.0	0.0	0.0

6/11/2018

Meeting No. 5 | Presentation

24

12

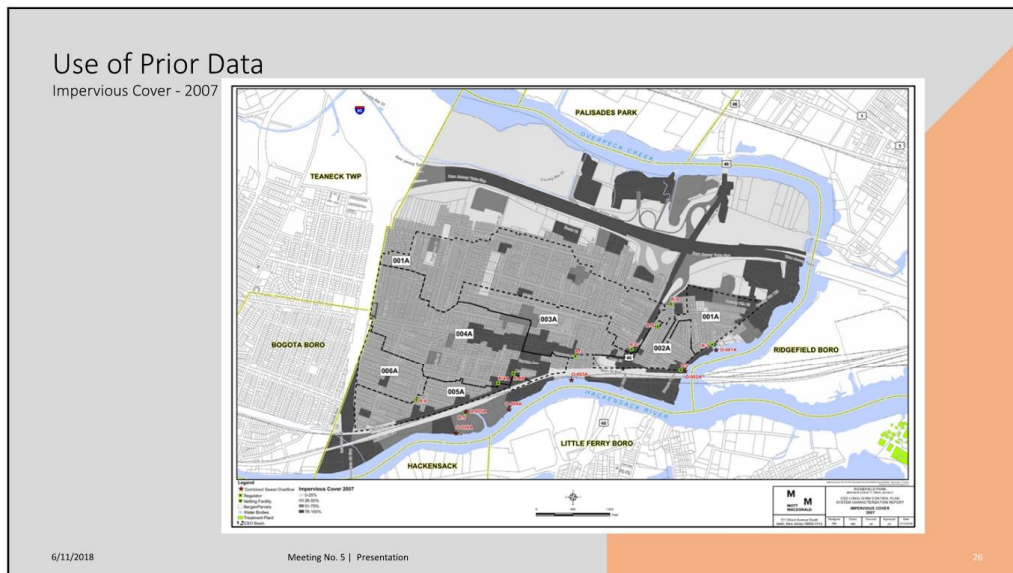
6/20/2018

Use of Prior Data		Basin	Land Use Classification Category	Land Use 2007 (ac)	Land Use 2012 (ac)	Difference from 2007 to 2012 (ac)
<ul style="list-style-type: none"> Land Use – No Change Impervious Cover Population Sewer System 	004		Commercial/Services	22.8	22.9	0.2
			Industrial	0.0	0.0	0.0
			Open Areas	0.6	0.6	0.0
			Other	0.0	0.0	0.0
			Residential High Density	13.9	13.9	0.0
			Residential Medium Density	99.3	99.2	-0.2
			Residential Low Density	0.0	0.0	0.0
			Transportation/Communication/Utilities	0.8	0.8	0.0
			Wetlands	0.0	0.0	0.0
	005		Commercial/Services	2.7	2.7	0.0
			Industrial	6.8	6.8	0.0
			Open Areas	2.4	2.4	0.0
			Other	0.0	0.0	0.0
			Residential High Density	0.9	0.9	0.0
			Residential Medium Density	30.0	30.0	0.0
			Residential Low Density	0.0	0.0	0.0
			Transportation/Communication/Utilities	0.8	0.8	0.0
			Wetlands	0.0	0.0	0.0
	006		Commercial/Services	0.1	0.1	0.0
			Industrial	0.0	0.0	0.0
			Open Areas	0.0	0.0	0.0
			Other	0.0	0.0	0.0
			Residential High Density	1.0	1.0	0.0
			Residential Medium Density	31.4	31.4	0.0
			Residential Low Density	0.0	0.0	0.0
			Transportation/Communication/Utilities	0.2	0.2	0.0
			Wetlands	0.0	0.0	0.0

6/11/2018

Meeting No. 5 | Presentation

25



6/11/2018

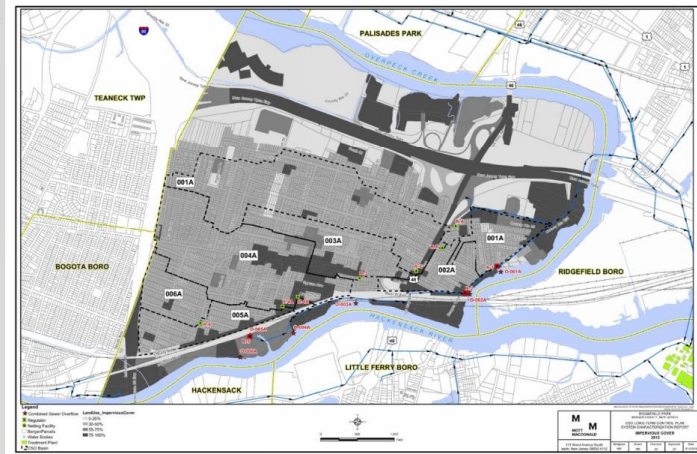
Meeting No. 5 | Presentation

26

6/20/2018

Use of Prior Data

Impervious Cover - 2012



6/11/2018

Meeting No. 5 | Presentation

27

Use of Prior Data

- Land Use – No Change
- Impervious Cover – No Change
- Population
- Sewer System

Basin	Impervious Surface 2007	Impervious Surface 2012	Difference Impervious Surface 2012-2007
Non-CSO Area	32.4%	35.1%	2.6%
001	39.3%	39.3%	0.0%
002	42.8%	42.8%	0.0%
003	44.7%	44.7%	0.0%
004	45.9%	46.0%	0.1%
005	46.9%	46.9%	0.0%
006	37.1%	37.1%	0.0%

6/11/2018

Meeting No. 5 | Presentation

28

6/20/2018

Use of Prior Data

- Land Use – No Change
- Impervious Cover – No Change
- Population – No Change
- Sewer System

2000 Census
12,873

Ridgefield Park village, New Jersey	
Population	
Census 2010 Total Population	
12,729	Source: 2010 Demographic Profile

Ridgefield Park village, New Jersey	
Population	
2016 ACS 5-Year Population Estimate	
12,976	Source: 2010-2016 American Community Survey 5-Year Estimates

6/11/2018 Meeting No. 5 | Presentation 29

Use of Prior Data

- Land Use – No Change
- Impervious Cover – No Change
- Population – No Change
- Sewer System – No Change

2007 Characterization is Valid!

6/11/2018 Meeting No. 5 | Presentation 30

6/20/2018

Model development goals

- 1 Accurately represent the performance of the Ridgefield Park infrastructure
- 2 Integrate with BCUA model
- 3 Consistently meet model calibration/validation criteria
- 4 Ultimately have a reliable tool for the evaluation of alternatives.

6/11/2028

Meeting No. 5 | Presentation

31

Village of Ridgefield Park

- One of three municipalities within BCUA with combined sewers (and CSOs)
- Conveys flow to the BCUA interceptor system through BCUA meter 17
- Original collection system model developed in 2006 and updated in 2017

6/11/2018


Meeting No. 5 | Presentation

32

6/20/2018

Sewer System Characterization Report
Info Works Computer Model Update

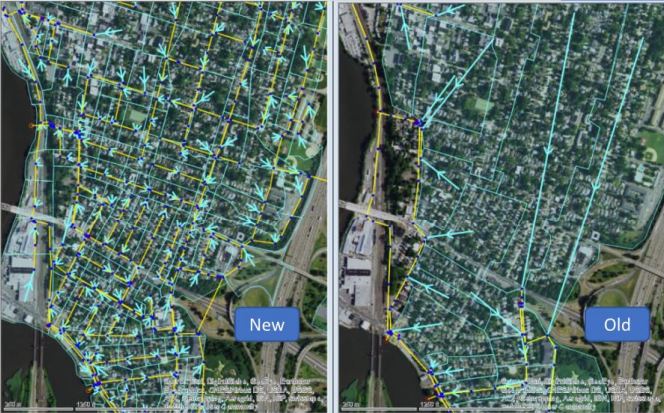
- GIS Sewer Reaches and Details Added



6/11/2018 Meeting No. 5 | Presentation 33

Sewer System Characterization Report
Info Works Computer Model Update

- GIS Sewer Reaches and Details Added

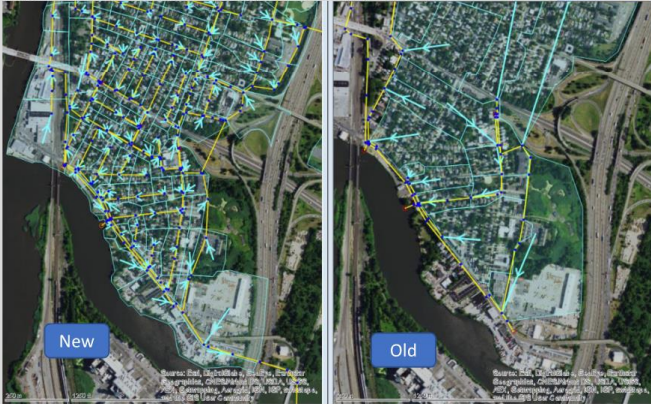


6/11/2018 34

6/20/2018

Sewer System Characterization Report
Info Works Computer Model Update

- More Sewer Reaches and Details Added




The image shows two side-by-side aerial maps of a city area, illustrating the sewer system. The left map is labeled 'New' and the right map is labeled 'Old'. Both maps show a network of sewer lines in yellow and blue, with arrows indicating flow direction. The 'New' map shows a more extensive and detailed network of sewer reaches compared to the 'Old' map. The maps are overlaid on a satellite image of the city, showing streets, buildings, and a river.

6/11/2018 Meeting No. 3 | Presentation 35

Sewer System Characterization Report
Info Works Computer Model Update

- Additional Separate Storm Sewer Reaches Located and Added to Model



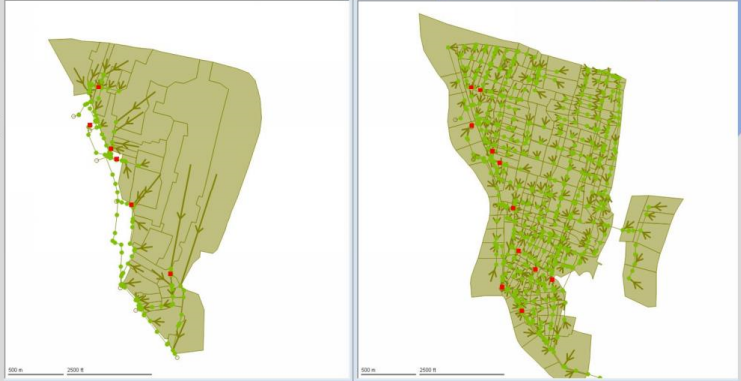
The image shows an aerial map of a city area, illustrating the sewer system. The map shows a network of sewer lines in yellow and blue, with arrows indicating flow direction. The map is overlaid on a satellite image of the city, showing streets, buildings, and a river. The map highlights additional separate storm sewer reaches that have been located and added to the model, indicated by red outlines around the new reaches.

6/11/2018 Meeting No. 5 | Presentation 36

6/20/2018


Sewer System Characterization Report
Info Works Computer Model Update

- Additional Sewer Control Facilities



6/11/2018 Meeting No. 5 | Presentation 37

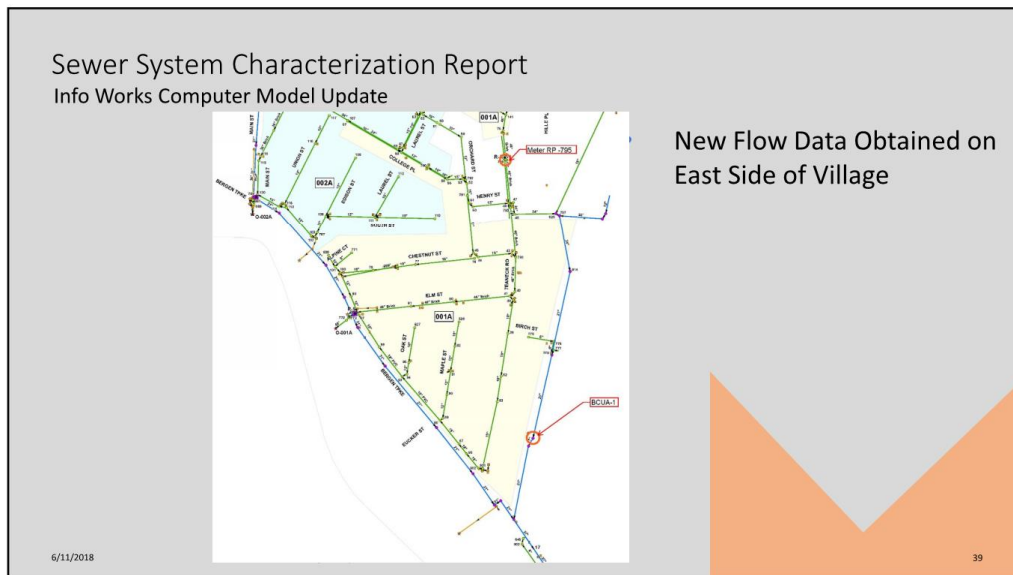
Sewer System Characterization Report
Info Works Computer Model Update



- New Flow Data Obtained on East Side of Village

6/11/2018 Meeting No. 5 | Presentation 38

6/20/2018



Model Calibration/Verification Review

- The state of model calibration/validation was evaluated by reviewing:
 - Peak Flow vs. Peak Flow graphs
 - Volume vs. Volume graphs
 - Individual storm results vs. calibration/validation criteria
- Overall goals when reviewing calibration:
 - High R^2 value and low bias in the peak flow and volumes graphs
 - Sufficient number of storm events meeting calibration/validation numerical criteria

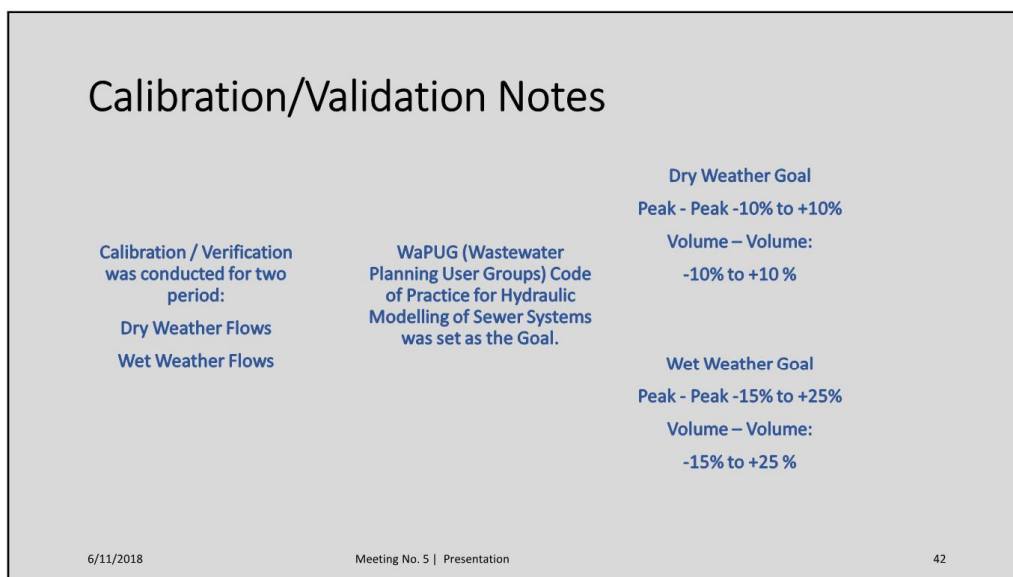
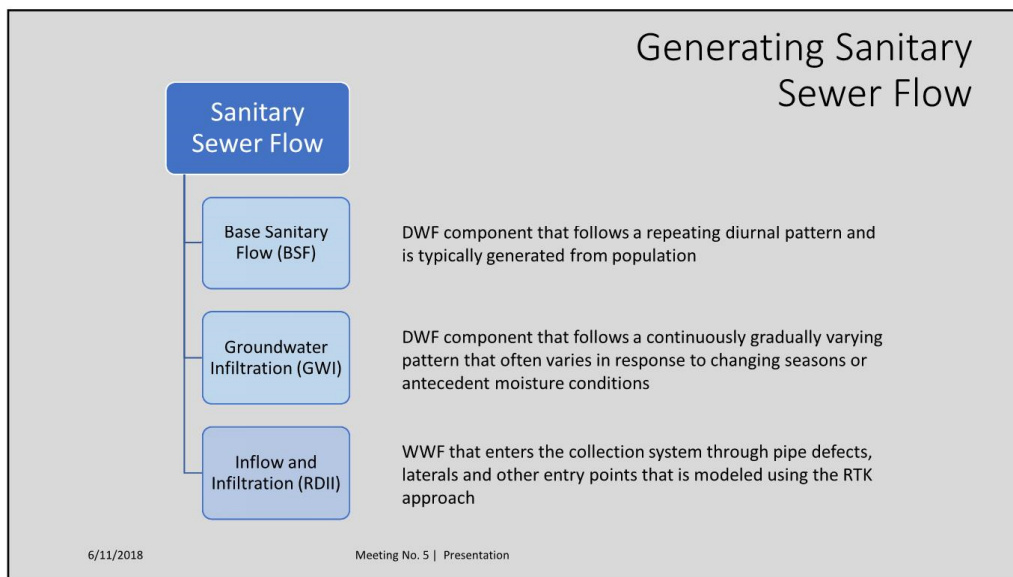
6/11/2018

Meeting No. 5 | Presentation

40

20

6/20/2018



6/20/2018

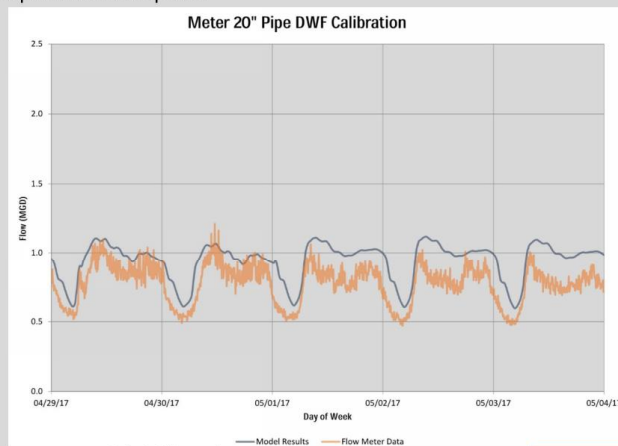
Calibration/Verification of Hydraulic Model

Dry Weather Flows

06/12/2018

Meeting No. 5 | Presentation

Sewer System Characterization Report Info Works Computer Model Update



6/11/2018

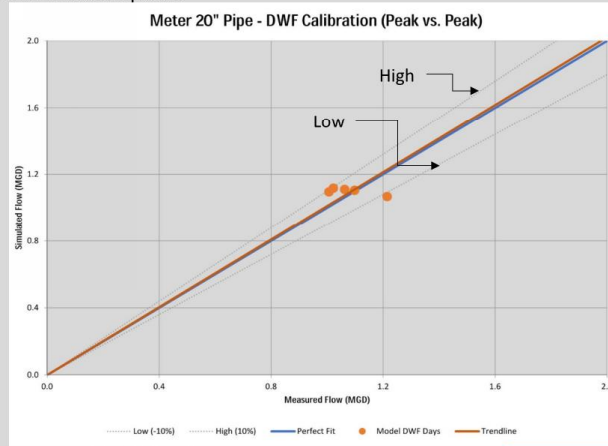
Meeting No. 5 | Presentation

44

22

6/20/2018

Sewer System Characterization Report Info Works Computer Model Update

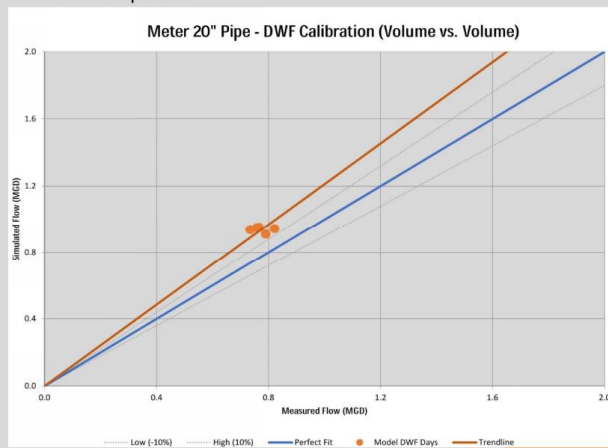


6/11/2018

Meeting No. 5 | Presentation

45

Sewer System Characterization Report Info Works Computer Model Update



6/11/2018

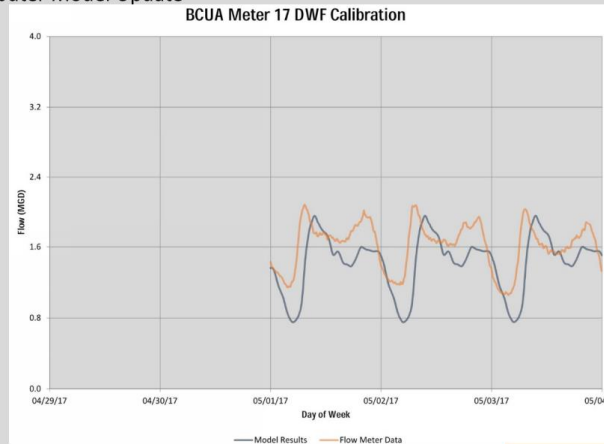
Meeting No. 5 | Presentation

46

23

6/20/2018

Sewer System Characterization Report Info Works Computer Model Update

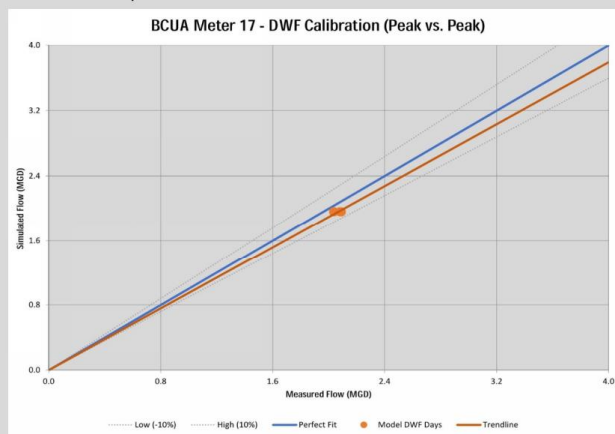


6/11/2018

Meeting No. 5 | Presentation

47

Sewer System Characterization Report Info Works Computer Model Update



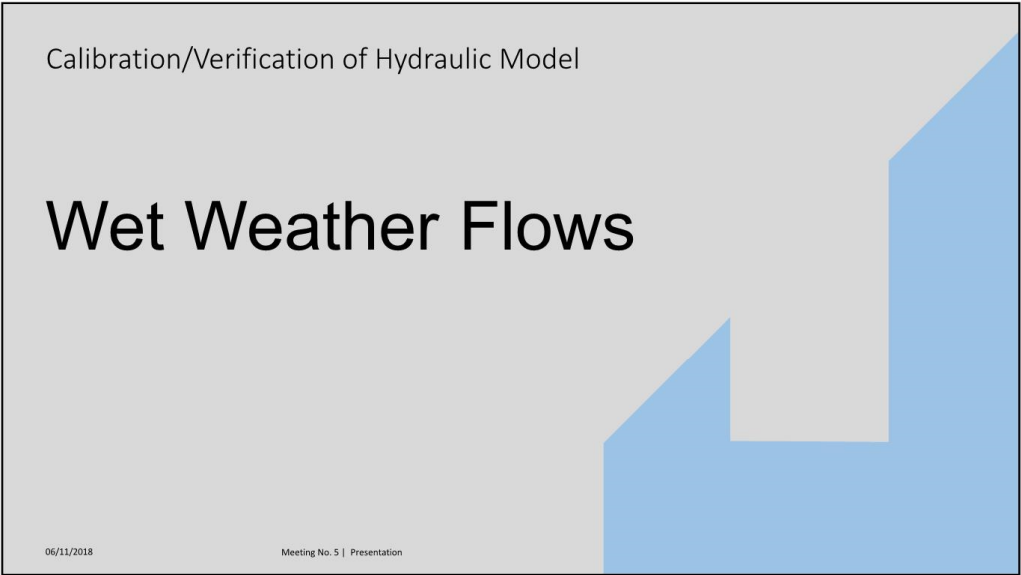
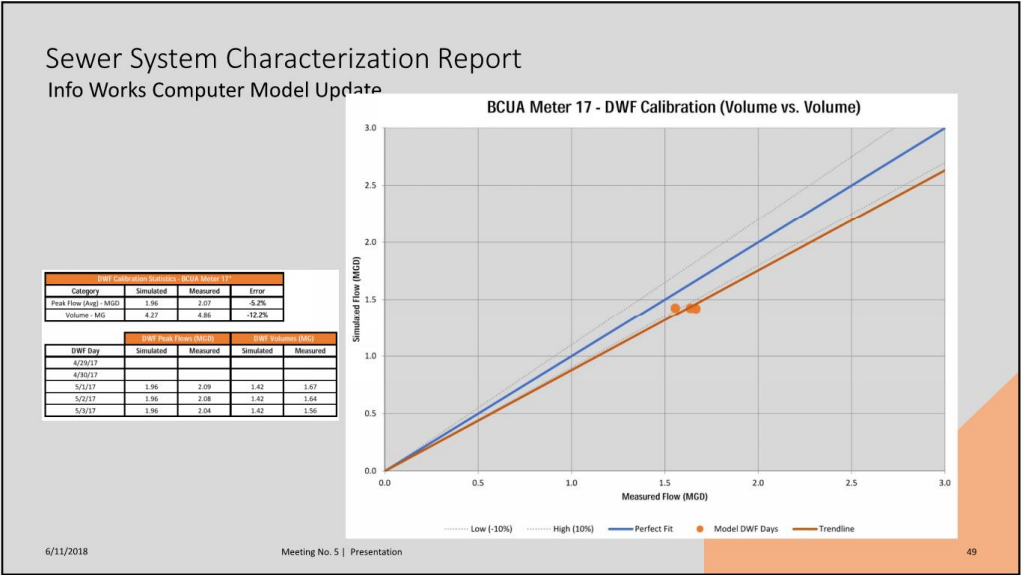
6/11/2018

Meeting No. 5 | Presentation

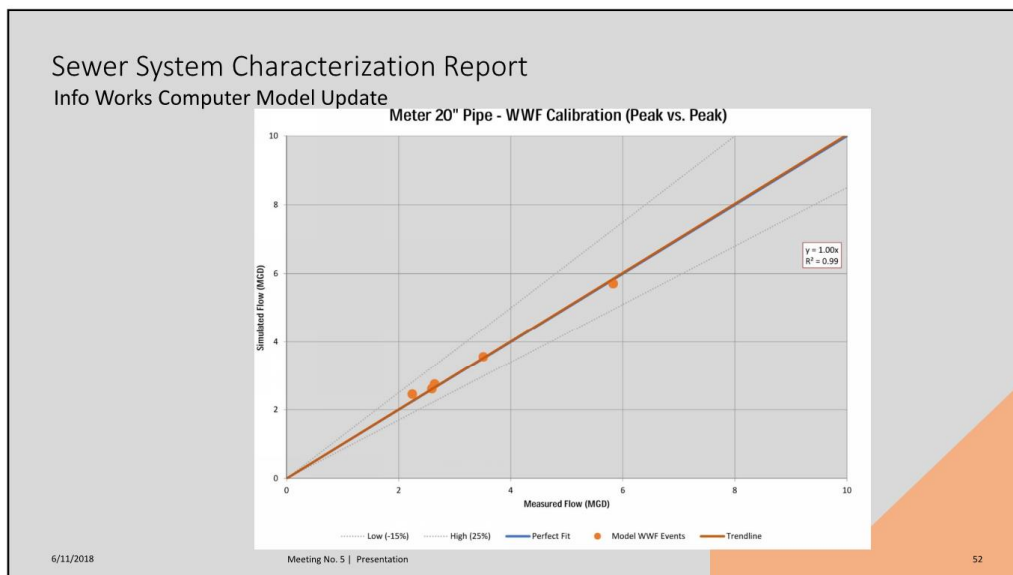
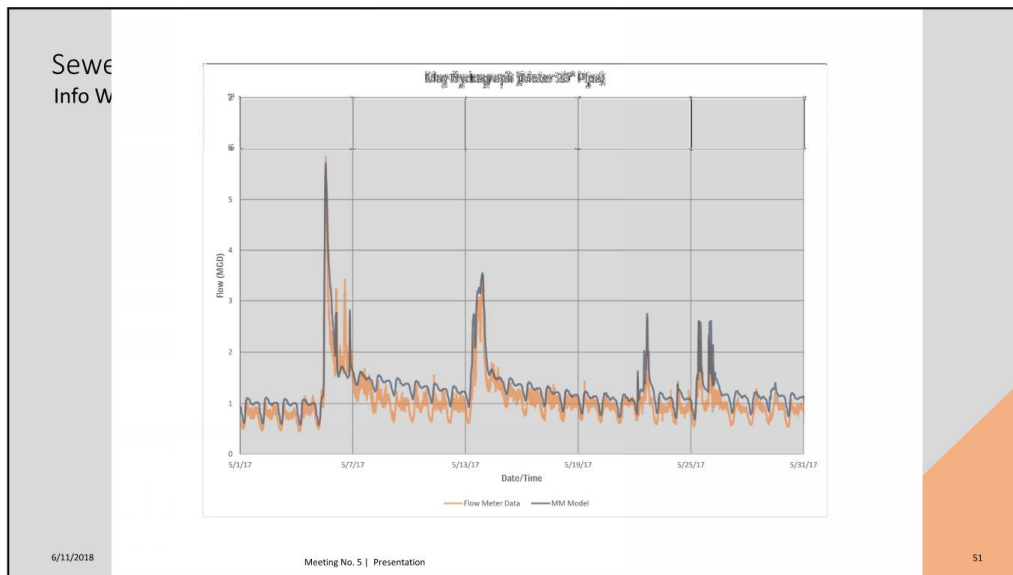
48

24

6/20/2018

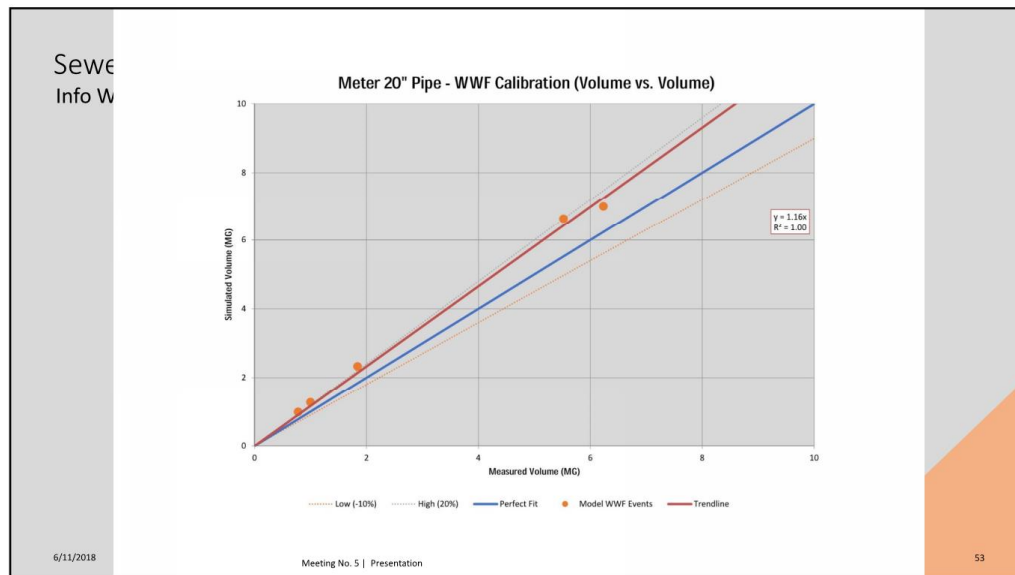


6/20/2018



26

6/20/2018

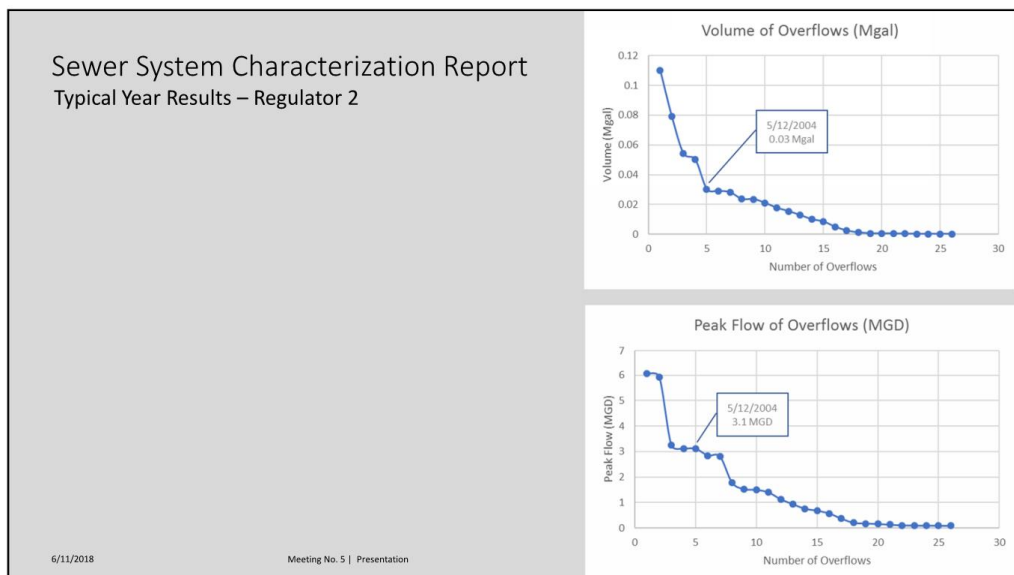
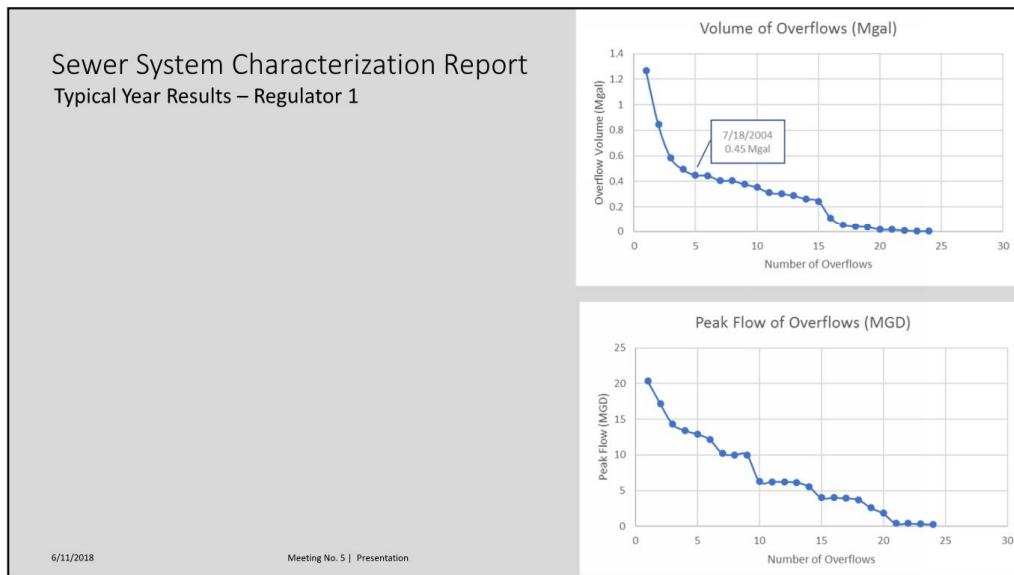


Sewer System Characterization Report Info Works Computer Model Update

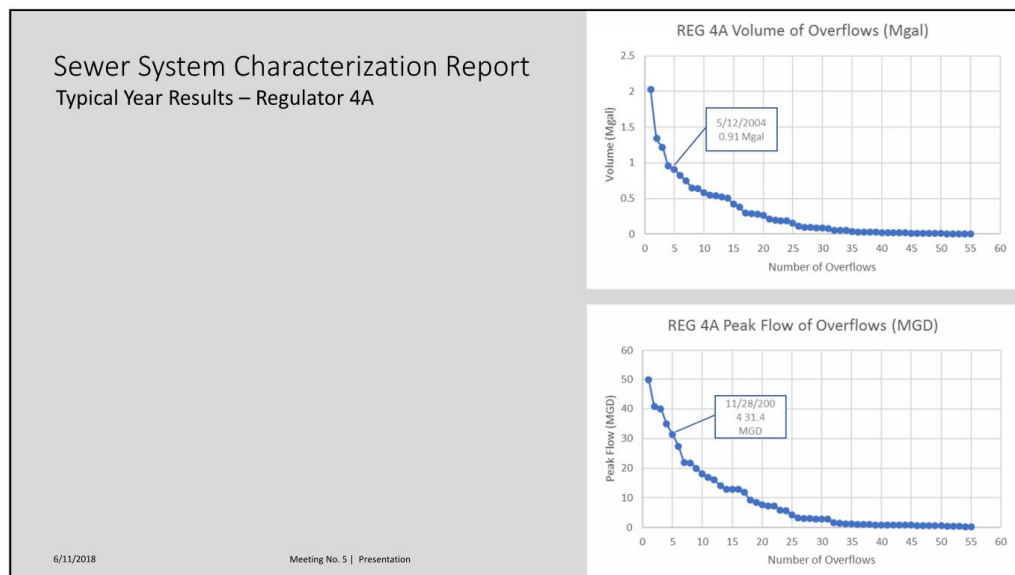
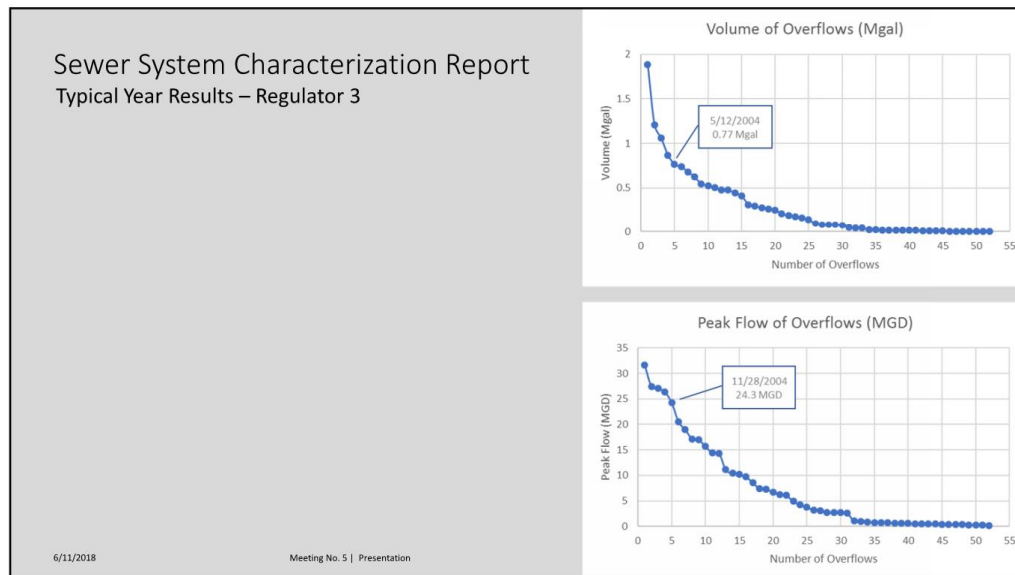
Meter 20" Pipe Wet Weather Flow Statistics										
Storm Date	Type	Peak Flow (MGD)			Storm Volume (MG)			Peak Depth (Inches)		
		Measured	Simulated	% Diff.	Measured	Simulated	% Diff.	Measured	Simulated	Diff.
05/05/17	Calibration	5.83	5.71	-2.2%	6.23	6.99	10.9%	62.5	61.9	-0.5
05/13/17	Calibration	3.51	3.56	1.3%	5.52	6.63	16.7%	27.8	31.3	3.5
05/22/17	Validation	2.64	2.75	3.8%	1.00	1.27	21.3%	20.8	17.6	-3.2
05/25/17	Validation	2.59	2.61	0.7%	1.84	2.33	21.0%	21.0	16.3	-4.8
06/14/17	Calibration	2.24	2.45	8.5%	0.78	0.98	21.0%	20.8	15.0	-5.8
Totals		3.4	3.4	1.5%	3.1	3.6	15.6%	30.6	28.4	-2.2

6/11/2018 Meeting No. 5 | Presentation 54

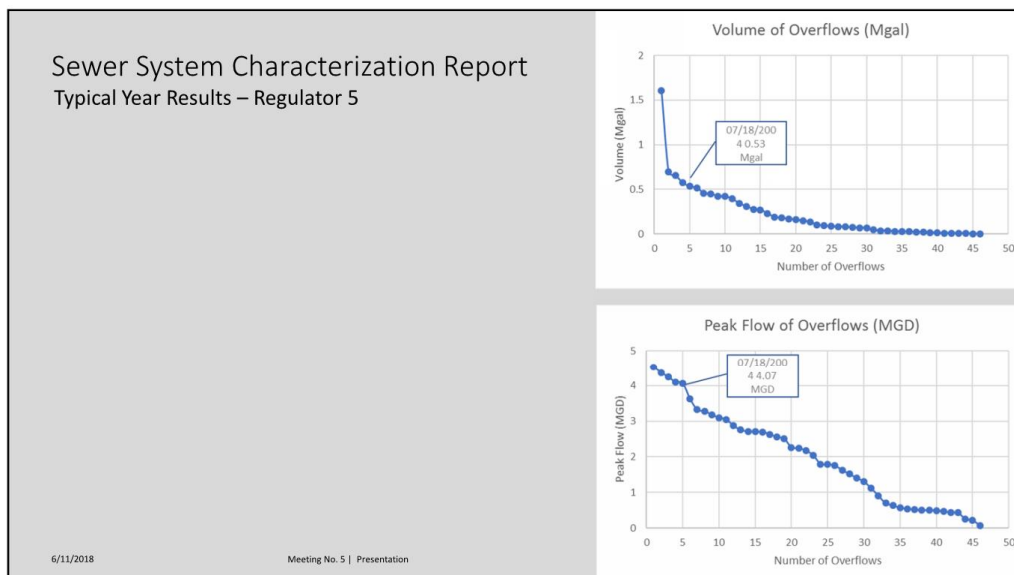
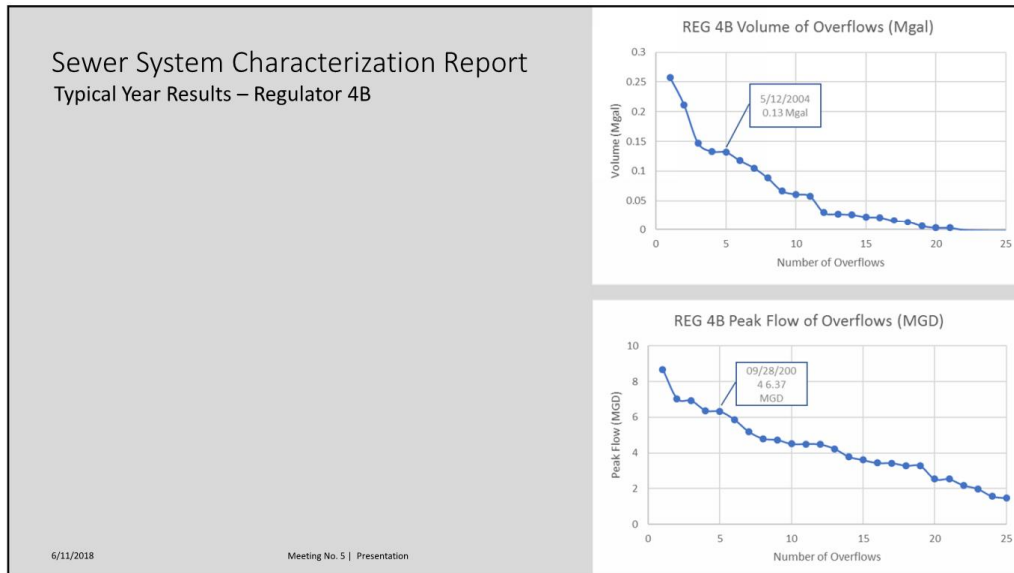
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6/20/2018

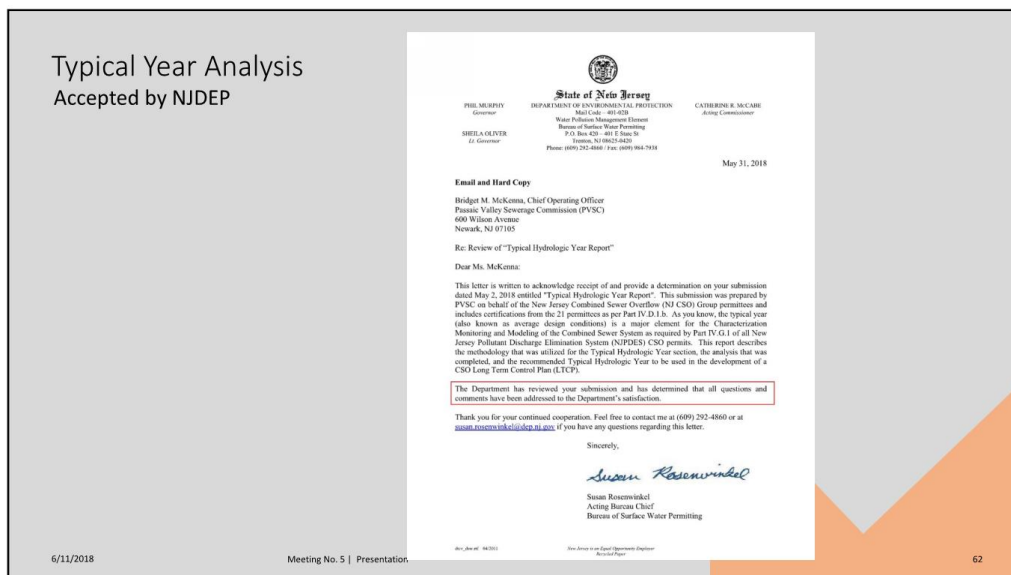
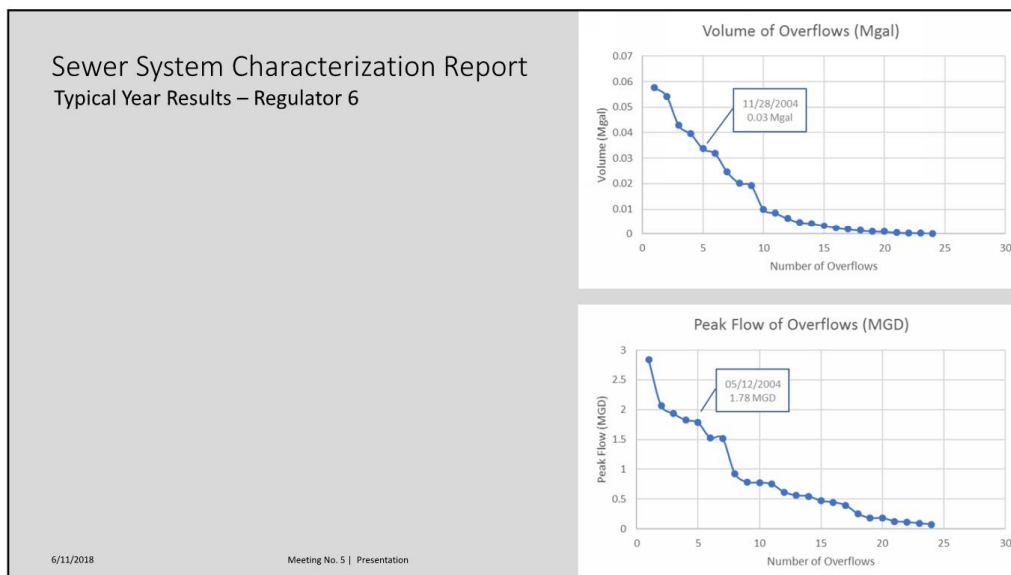


6/20/2018

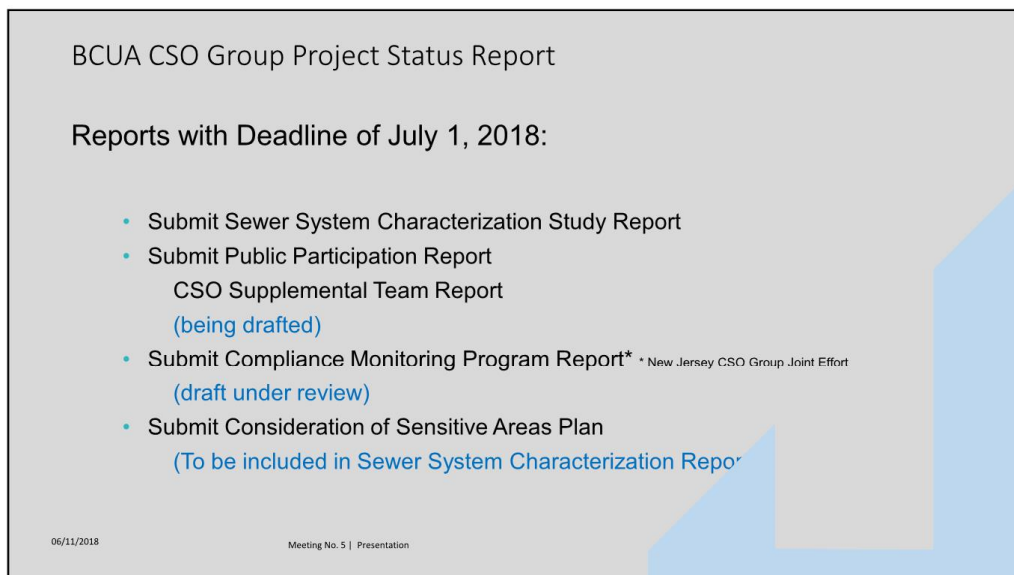
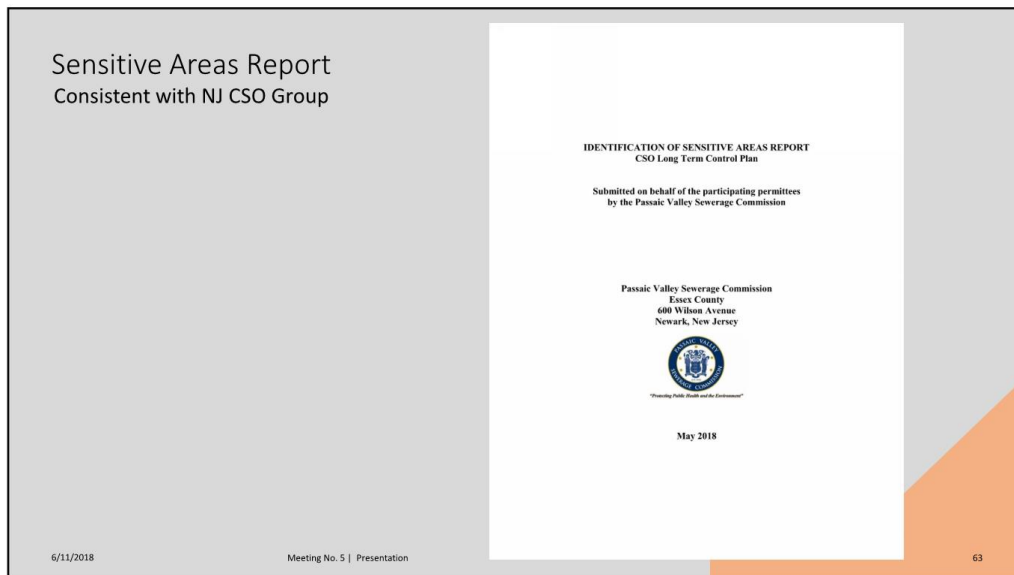


30

6/20/2018

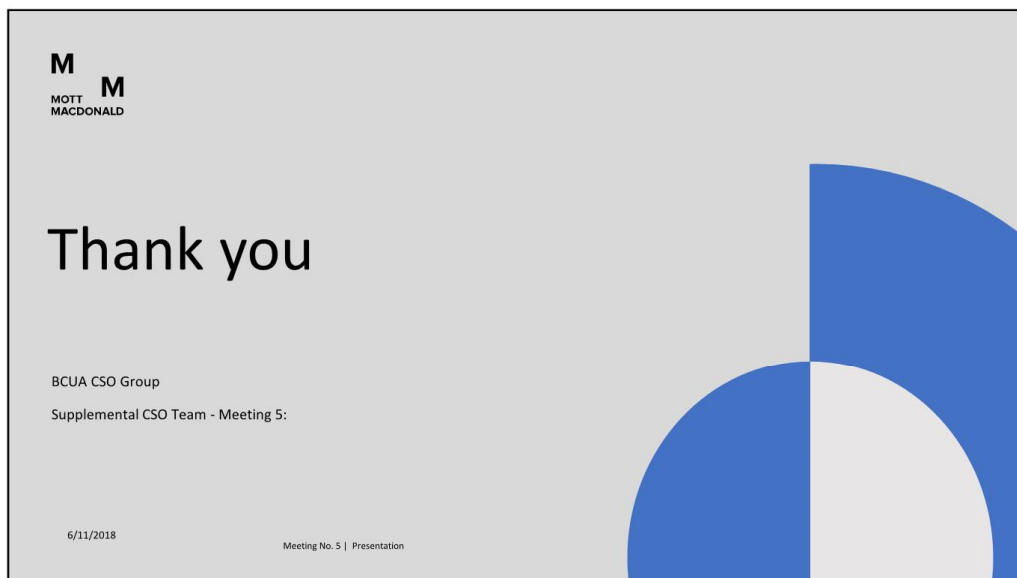


6/20/2018



32

6/20/2018



33