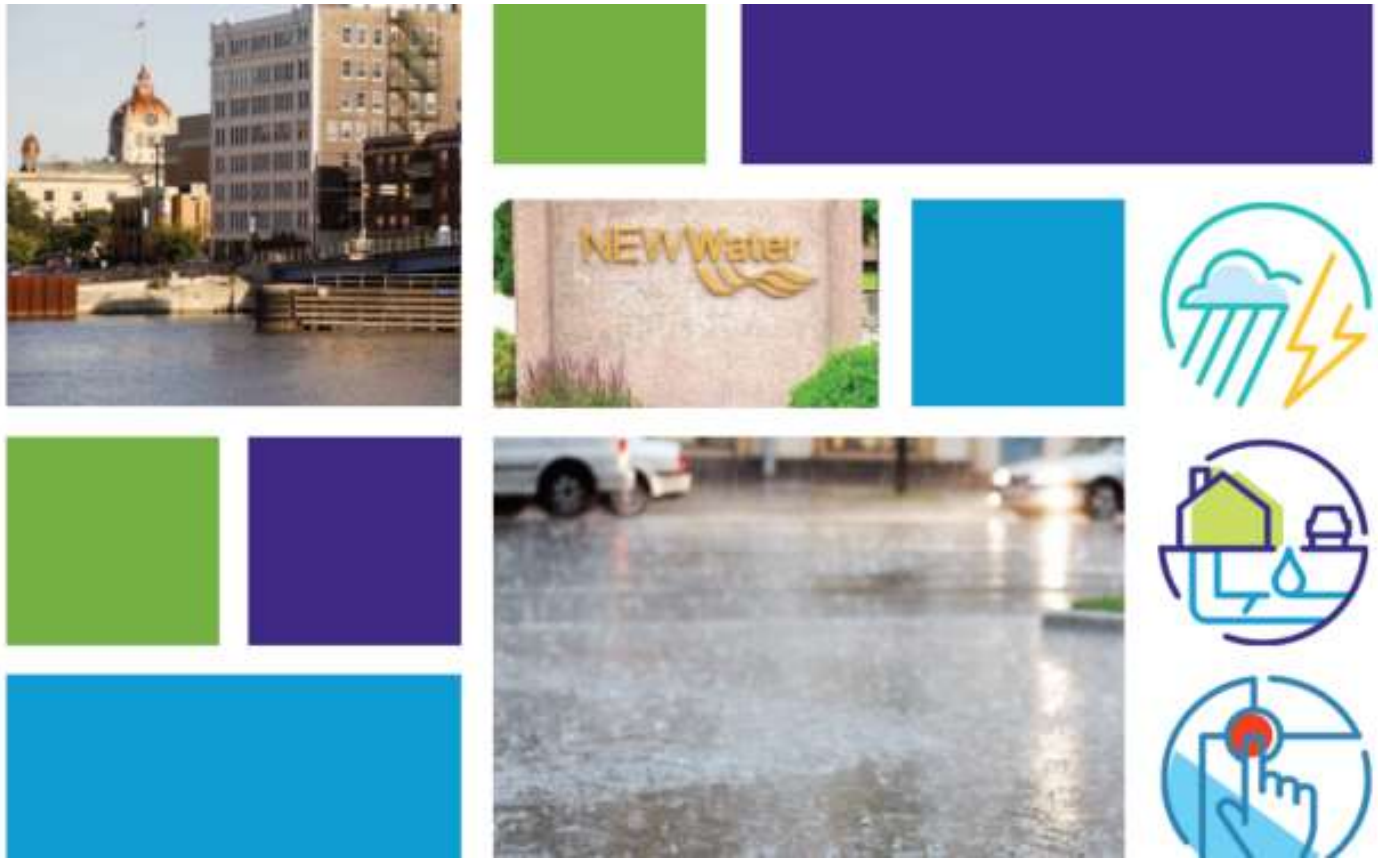
NEW Water, Green Bay, WI

I&I Stakeholder Advisory Group Meeting

September 15 | 2021



Agenda

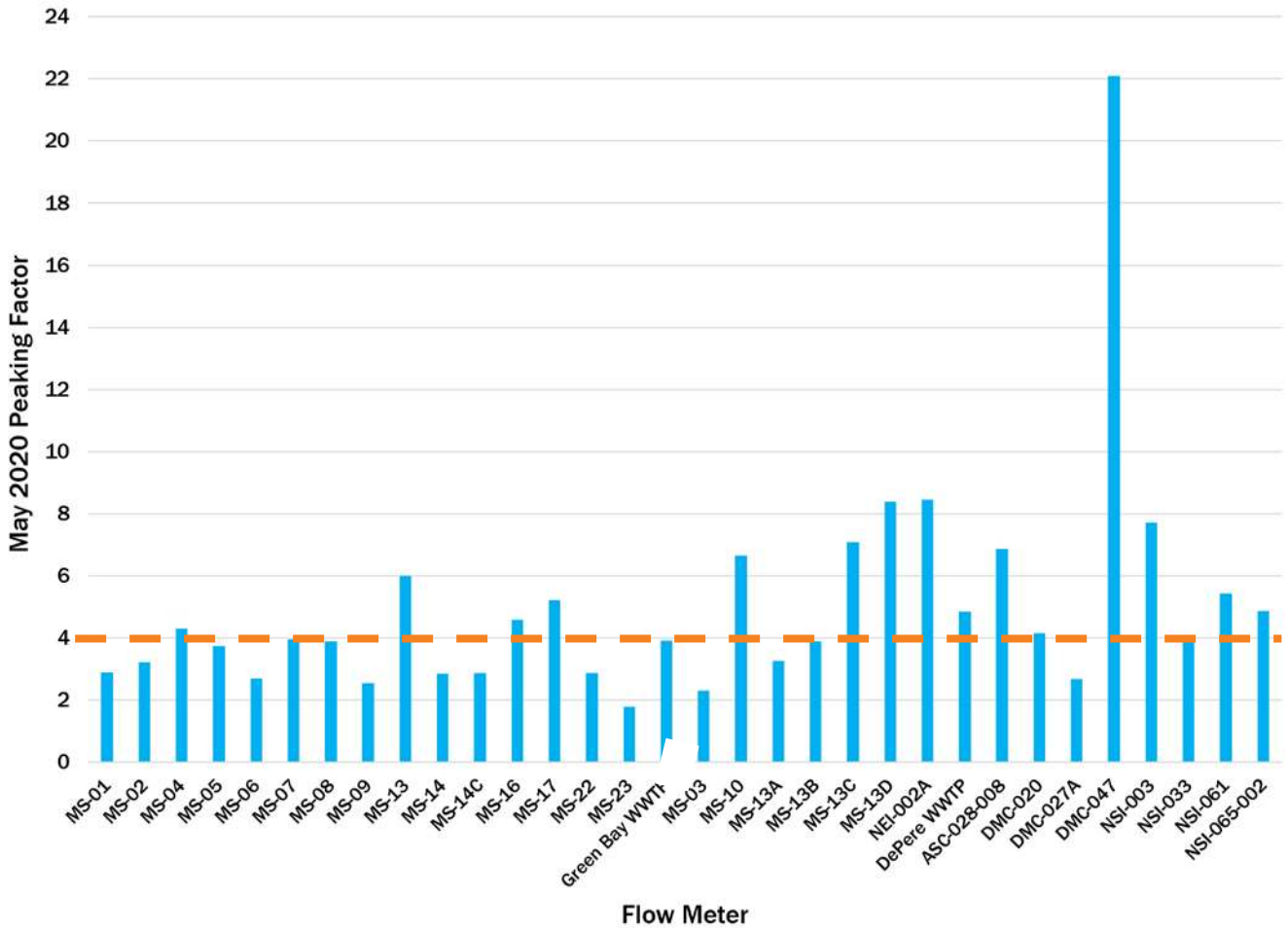
1. Meeting Objectives
2. Existing I&I in Service Area
3. Possible Regional I&I Program Elements
   - Education
   - Financial Assistance
   - Technical Assistance
4. I&I Limits
5. Enforcement Options
6. Next Steps

Meeting Objectives

- Review what is already being done to address I&I
- Discuss possible elements to an I&I program
- Discuss flow limits
- Discuss how to enforce I&I mitigation

Current I&I Conditions

- I&I response at most meters
- Measured peak flows at some sites exceed typical design standards that allow for peaking factors between 2.5 and 4.0
- Extreme events and seiches create additional I&I stressors
- Prior studies documented regional system surcharging that can impact meter equipment function
- In large events, ratios of daily volume to dry weather at NEW Water Facilities have potential to exceed design-criteria based ratios



Existing I&I Efforts

Municipal Customer	Public Property Inspection	Public Property Repairs and Replacement	Public Property Maintenance	Private Property Inspection	Private Property Repairs and Replacement	Flow Monitoring	Past I&I Study Completed	Annual Capital Improvement Plan	Interested in Technical Assistance?	Interested in Education Assistance?	Interested in Financial Assistance?
1	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
2	✓	✓	✓	✓	✓			✓	✓	✓	✓
3	✓	✓	✓	✓	✓	✓	✓				✓
4	✓	✓	✓	✓	✓	✓					✓
5	✓	✓	✓	✓	✓			✓	✓		✓
6	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓

Common Themes from Interviews So Far

- Most municipalities are doing some I&I mitigation work
- Most are interested in standard policies, ordinances, SOPs related to I&I mitigation
- Municipalities interested flow meters/flow monitoring but having issues receiving budget approval to proceed; could NEW Water help?
- Interested in NEW Water providing public information/outreach
- Interested in collaborating with other municipalities on I&I mitigation techniques and lessons learned
- Some worried about NEW Water rate increases to support the I&I program
- Some not interested in mandatory flow compliance
- Some okay with using funds to help with I&I mitigation anywhere within the service area, but some would want funds used in their municipality and some do not want financial assistance if that means their rates increase

Possible I&I Program Element: Education

Municipal Employee Audience

- Training materials
- Informational material
- Topics of investigation/inspection, rehabilitation, construction inspection, public engagement

Property Owner Audience

- Brochure templates
- Informational flyers
- Web page/social media content

Other Audiences

- Governing bodies

Possible I&I Program Elements: Education

Advantages

- Consistent messaging to customers
- Ability to reach more customers

Disadvantages

- Not enough resources available to meet all customer needs
- If the only program element, then noticeable I&I mitigation not likely to occur

Possible I&I Program Element: Financial Assistance

How to Accomplish

- How will the financial assistance be funded?

How to Distribute

- Community cost share
- Property owner cost share
- Low interest loan

What Could Funds be Used for

- Minimally-funded, voluntary lateral inspection program
- Funding for non-code related PPII issues
- Funding for code related PPII issues
- Repairs for municipal I&I issues
- Education support
- Technical support

Possible I&I Program Elements: Financial Assistance

Advantages

- Financial help to complete the work may increase participation, may increase work completed

Disadvantages

- Not enough resources available to meet all customer needs
- Source of financial assistance currently unknown
- If the only program element, then noticeable I&I mitigation likely not to occur

Possible I&I Program Element: Technical Assistance

Flow Monitoring

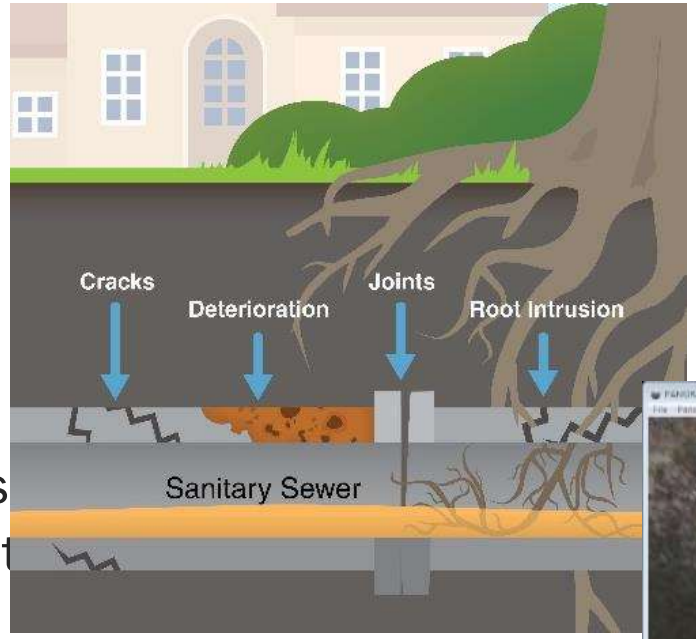
- Community contribution
- Focused area investigations
- Micro monitoring

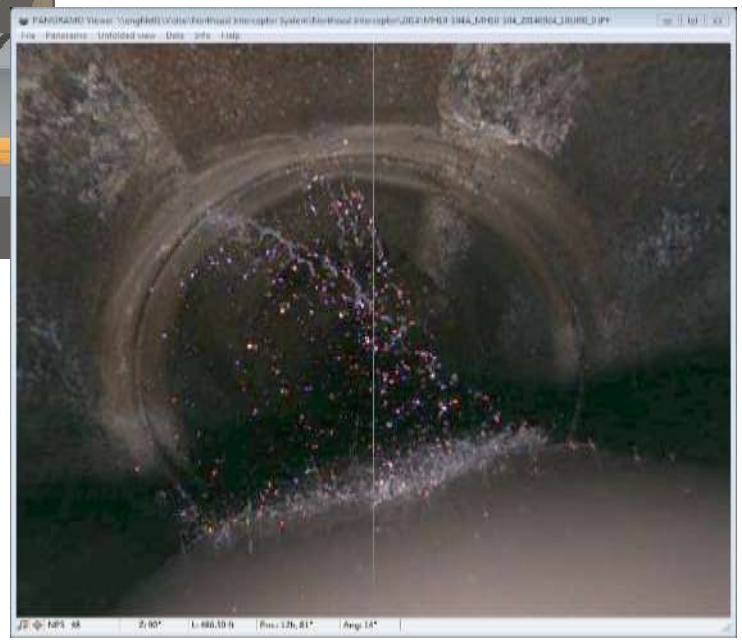
Technical Standards

- Investigation/Inspection
- Repair standards and approved products
- Program strategy and policy development
- Collaboration opportunities

Project Development

- Inflow vs. Infiltration diagnosis
- Hydraulic diagnosis
- Rehabilitation project recommendations/scoping





What Resources Will Be Needed to Support Flow Monitoring?

- Site Selection Effort
  - Determine Priority Areas for Monitoring Flows
- Determine Approach for Implementing Monitoring Program
  - In House Resources
  - Contracted Resources
- Obtain/Procure Equipment And/Or Resources
- Confirm Capabilities to Store and Process Collected Data
- Establish Processes for Data Analysis

Possible I&I Program Elements: Technical Assistance

Advantages

- Consistent flow monitoring, collected data, flow evaluations
- Consistent policies, processes, methods
- Shared resources
  - Maximize access and knowledge of experts
  - Share lessons learned

Disadvantages

- May not have enough resources available to meet all customer needs
- If the only program element, then noticeable I&I mitigation likely not to occur

Why are I&I Limits Important?

- Establish clear limits for excessive I&I in the system
- Allow a balance between capacity and wet weather flows
- Can distinguish between limits on peak flow and volumes of flow over longer periods of time (days or weeks)

How do you Set and Enforce I&I Limits?

What will be used?

Raw data
Modeled results
Rain events – typical, large, design
Customer agreements

Consider scaling

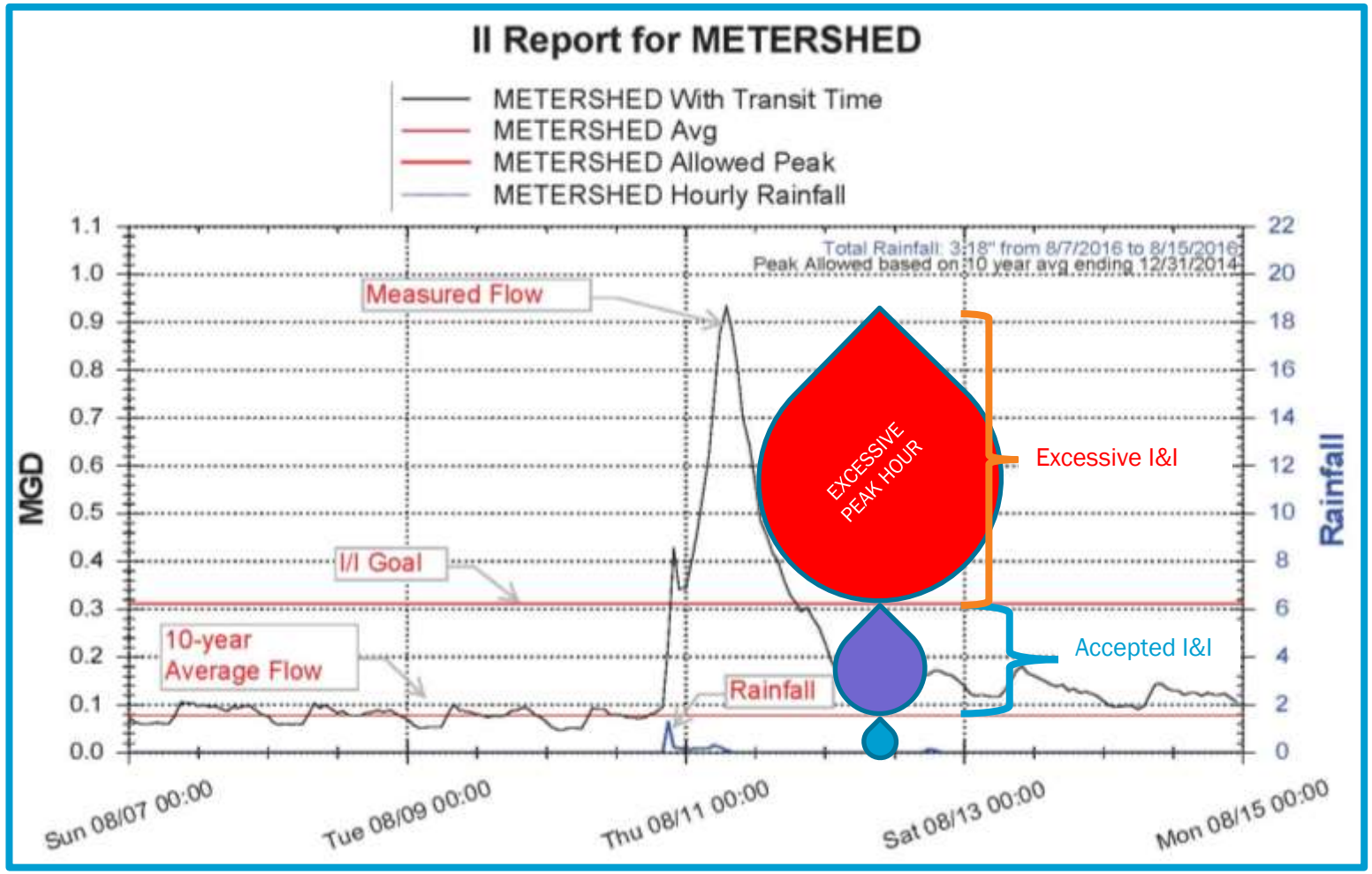
Tributary area
Interceptor leg
Municipality

Peak flow versus flow volume

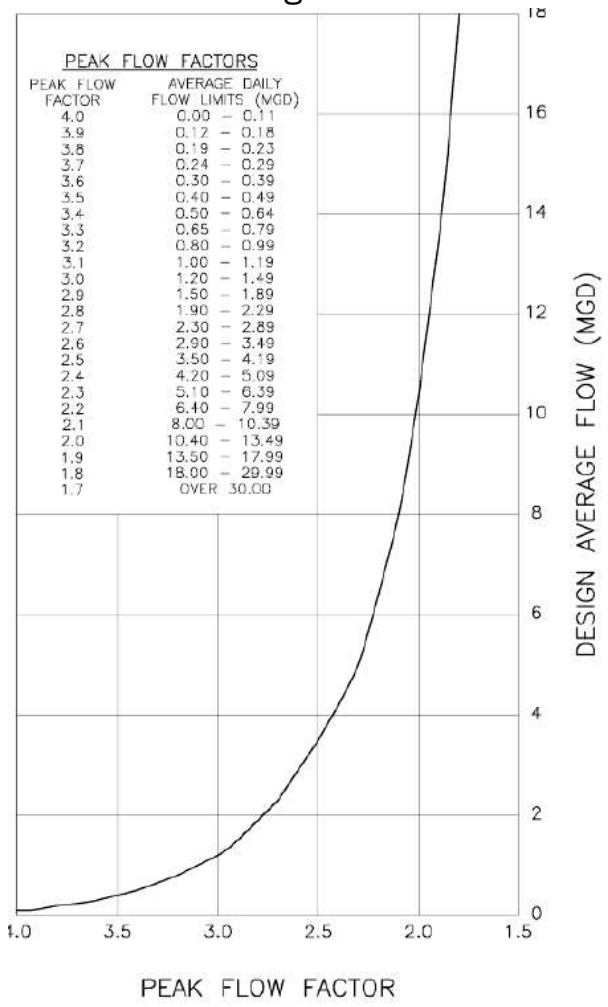
Current NEW Water Sewer Use Ordinance Approach for Flow Limits

- Customer allocations for interceptor segments are based on agreements
- Customer peak flows are compared to the customer's allocated capacity
- Unreasonable endangerment surcharge:
  - Can apply whenever flow from the customer exceeds total allocated capacity in any interceptor segment
  - Is 3x the daily billing assignable in which capacity was exceeded
  - Is in addition to other GBMSD service charges
- Customer can apply for reimbursement toward the cost of corrective construction (does not include I&I studies, SSES, facility planning, design, bidding, or other costs expended in preparation for actual construction)

Definition of Excessive I&I: A Data-Based Approach

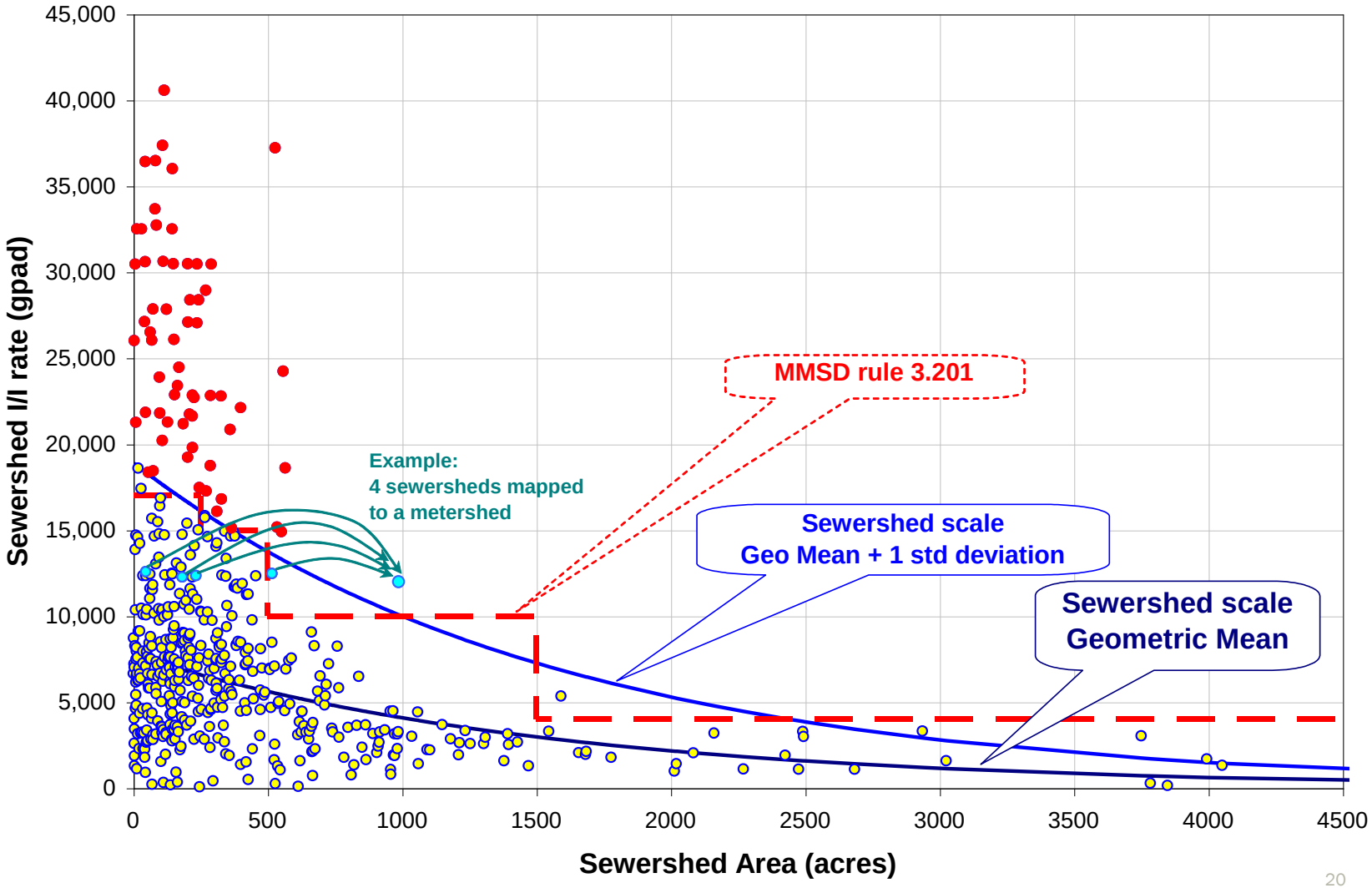


Historic Design Curve



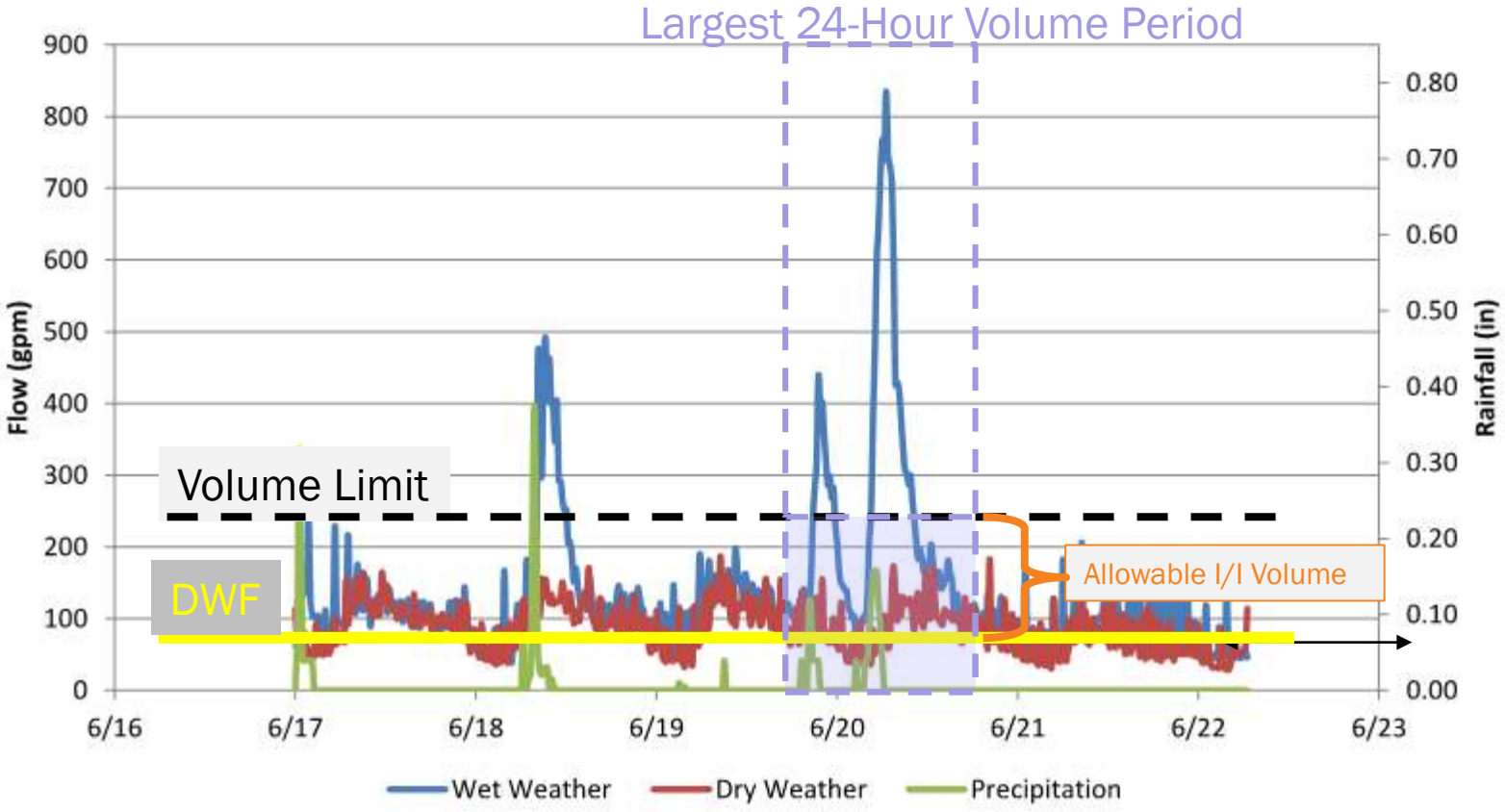
Standards for Excessive I/I: A Modeling-Based Approach

- Limit of 5-year peak hour I&I divided by tributary area (gpad)
- Modeling based characterization
- Exceeding limit triggers requirement for I&I plan and implementation



Standard for Exceeding I/I Volume Limits

DWF = 86 gpm (124,000 gpd); Max 24-hr volume during event = 360,000 gallons



EXAMPLE ONLY

- Downstream facilities have ability to handle 1.9 times dry weather flow over 24-hour period
- Volume standard set at 1.9 times DWF
- Flow data for events will be evaluated to find 24 consecutive hours with most flow volume
- Excess volume is any amount above 1.9 times DWF for the tributary area

Excess volume = 360,000 – 1.9 x 124,000
= 124,400 gallons

Enforcement Discussion

- How will the program be enforced?
  - Deposit-refund system
  - Risk-based user charge
  - Fees, charges, and taxes
  - Prohibitions
  - Flow restrictions
  - Restrictions on future work
  - NEW Water program ineligibility
  - Other ideas?
- What will be the steps / timeline for enforcement?
- What are the consequences for inaction?
  - Increased SSO risk
  - Necessary upgrades to plants
  - Possible loss of control if EPA takes over the program

Next Steps

- Finalize TM1: Existing I&I Conditions
- Complete interviews of municipal customers
- Complete TM2: Existing I&I Practices
- Hold SAG meeting to discuss alternatives
- Prepare TM3: I&I Program Alternatives
- Provide recommendation for program framework