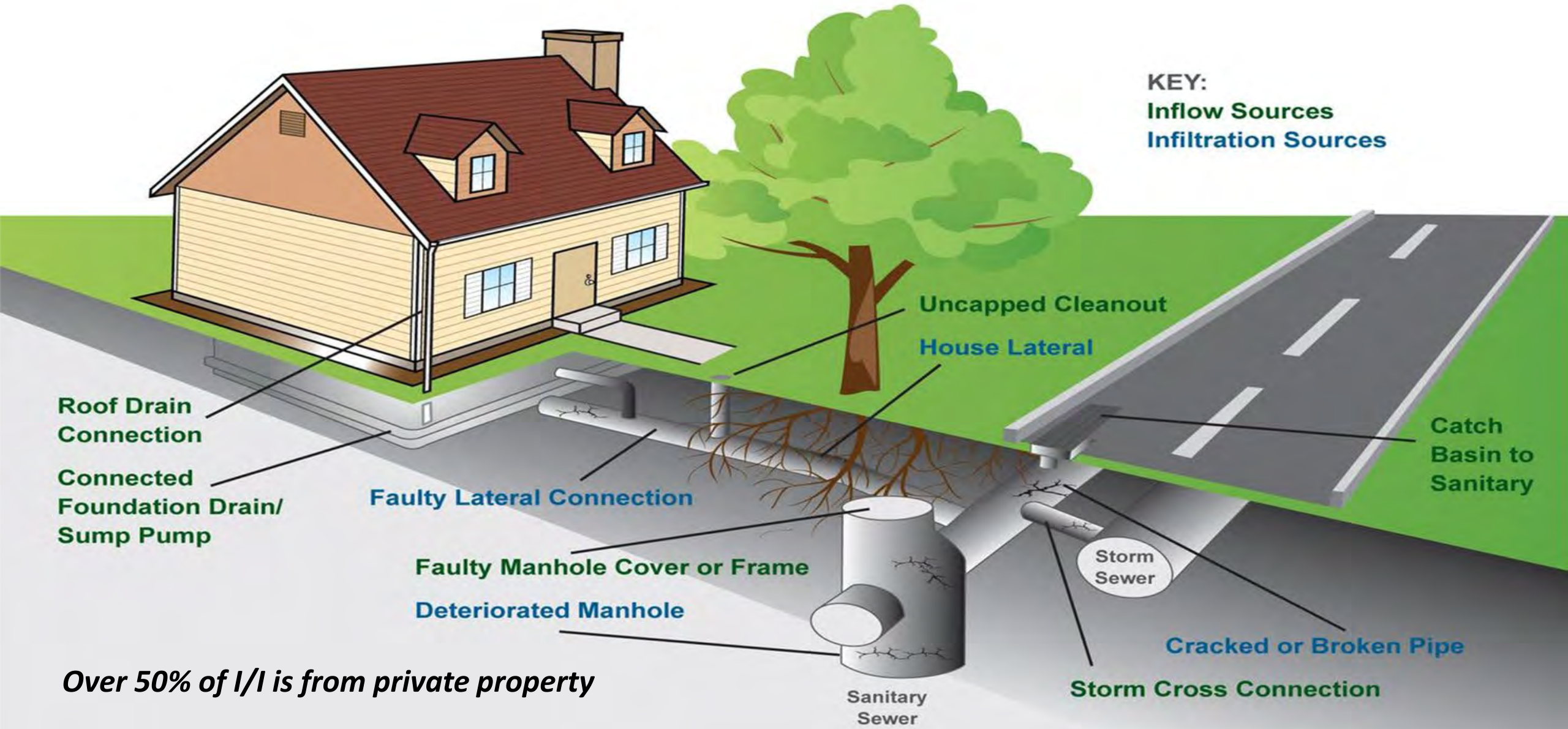


Approval of Increased Fees and Professional Services Contract Amendment for the 2021 Inflow and Infiltration Reduction Program Engineering Services

**Commission Meeting
January 13, 2022**



Sources of Inflow and Infiltration



Over 50% of I/I is from private property

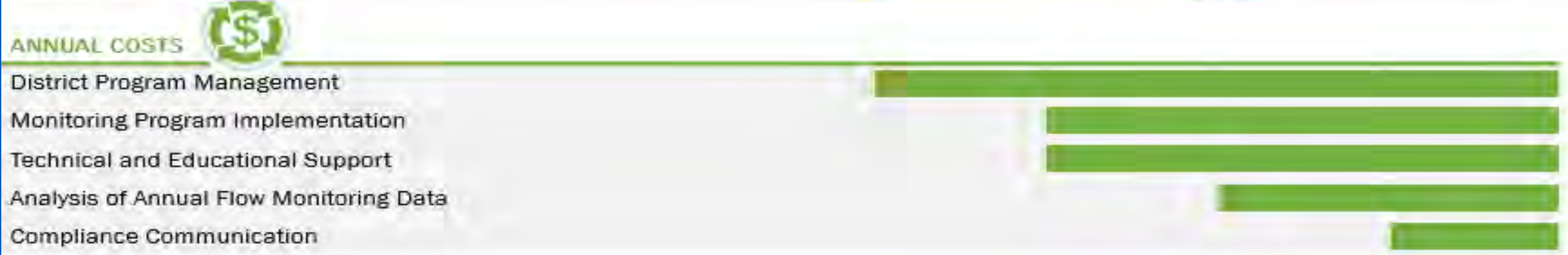
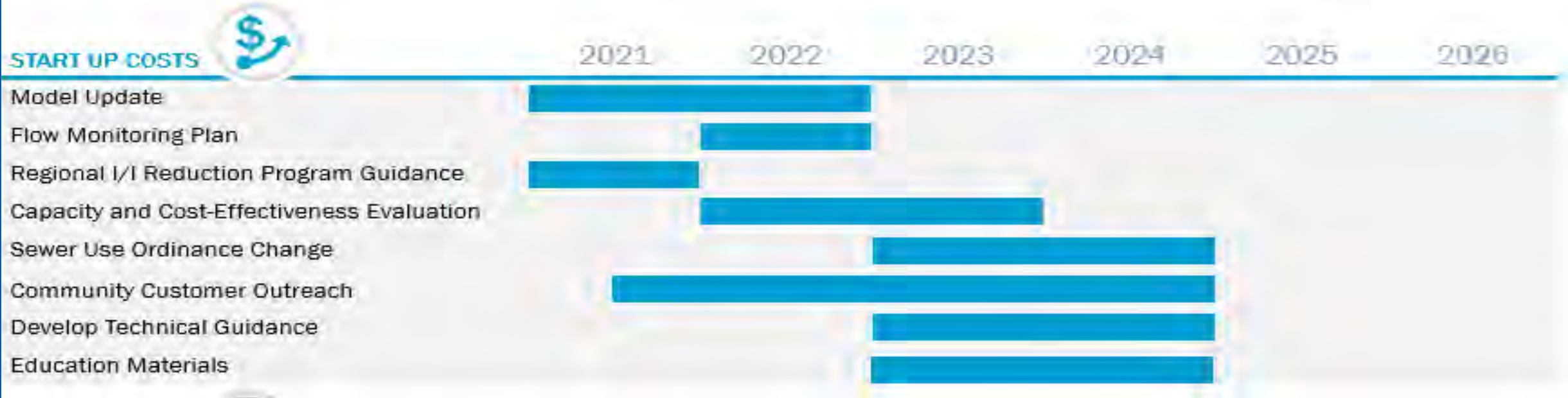


I/I reduction provides value by

- ❑ Increasing resilience to changing weather patterns
- ❑ Deferring needs for capacity increases
- ❑ Improving system performance
- ❑ Meeting regulatory requirements

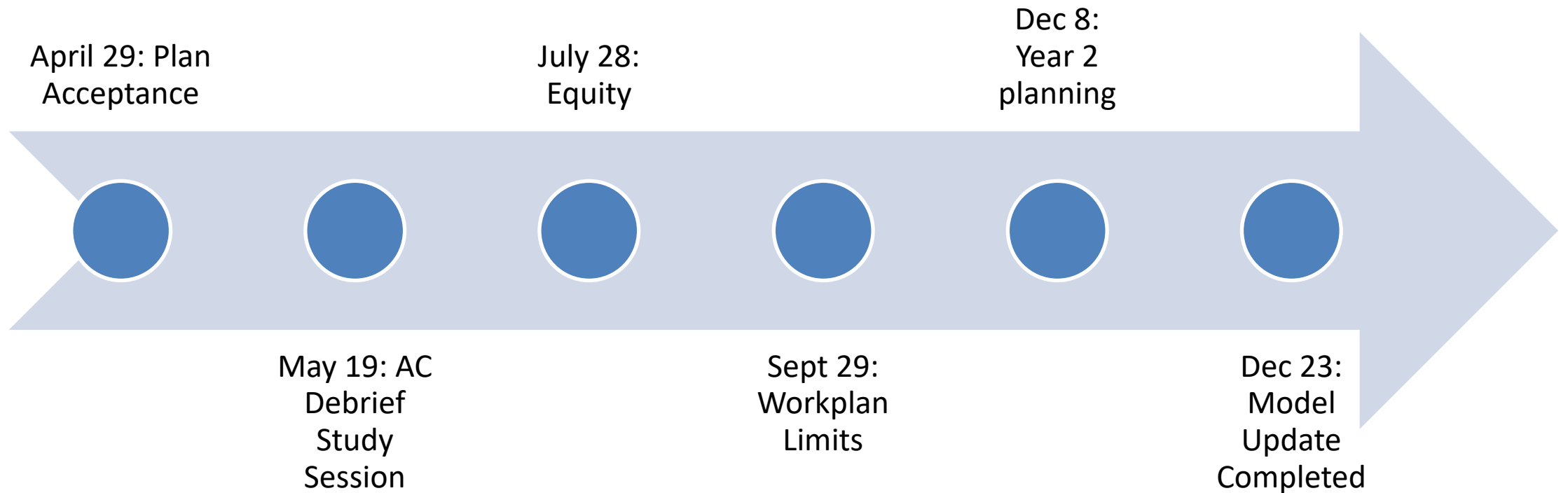


Implementation Plan (as presented April 29, 2021)



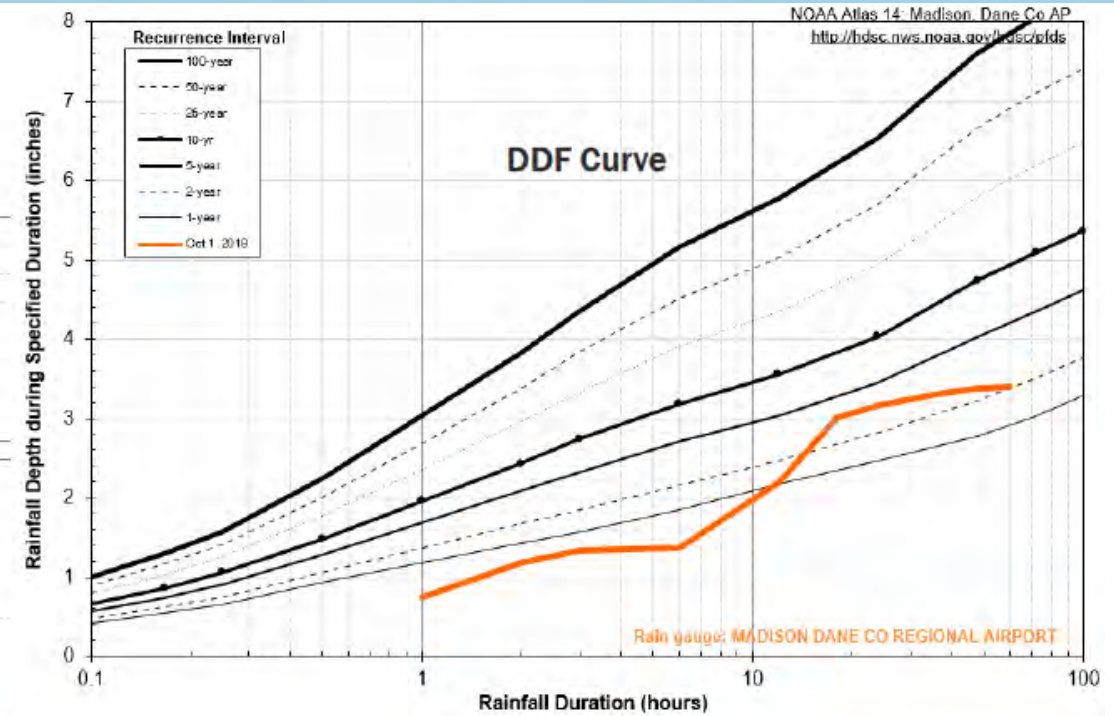
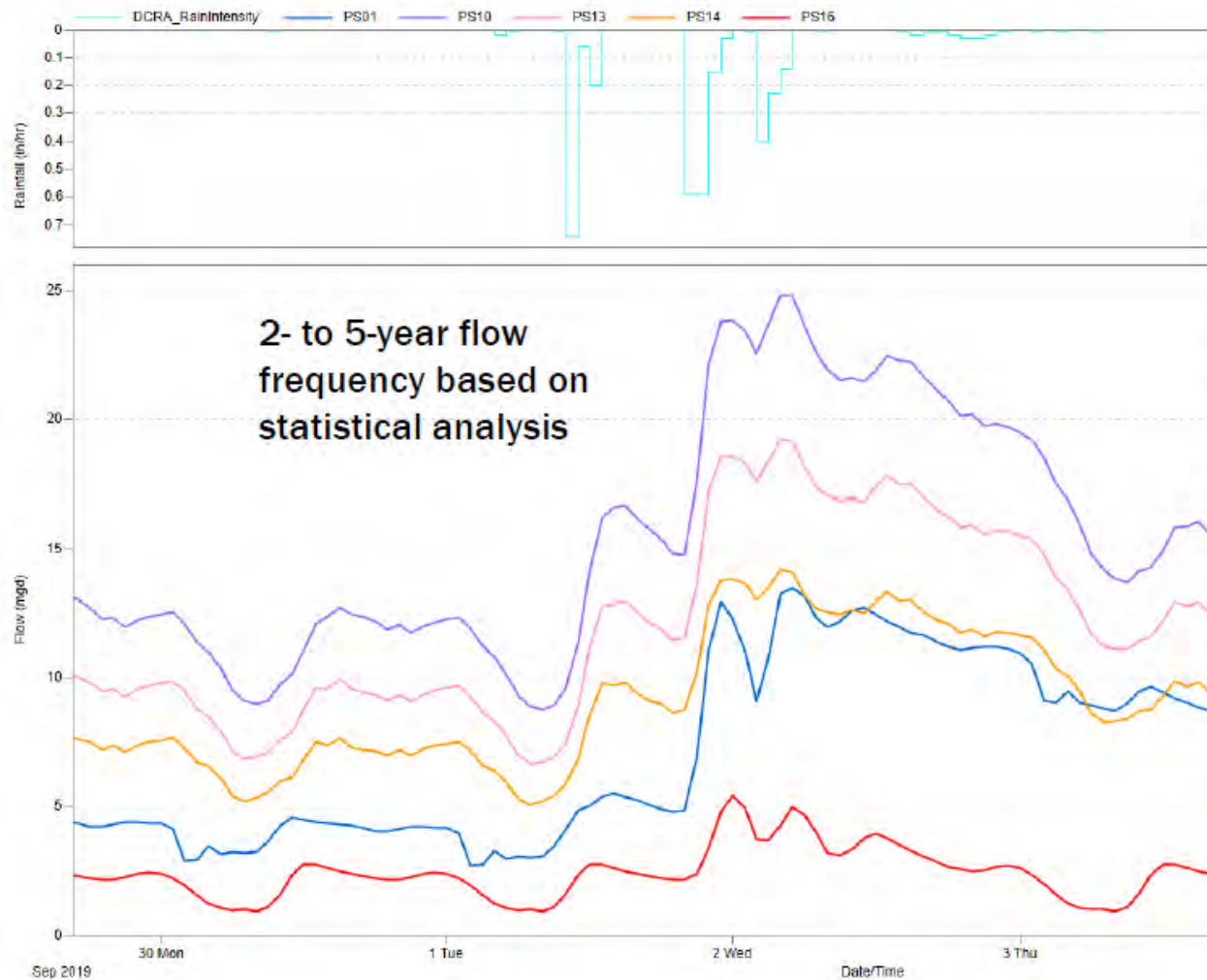
	Current Year (Existing budget)	Year 1	Year 2	Year 3	Year 4	Year 5
Estimated Ramp-Up Plan Costs by Year:	100,000	175,000	\$250,000	\$400,000	\$450,000	\$500,000

I/I Program – 2021 Highlights



Model Calibration

Primary Calibration Event (October 1-2, 2019) Total DCRA Rainfall Depth = 3.4 inches

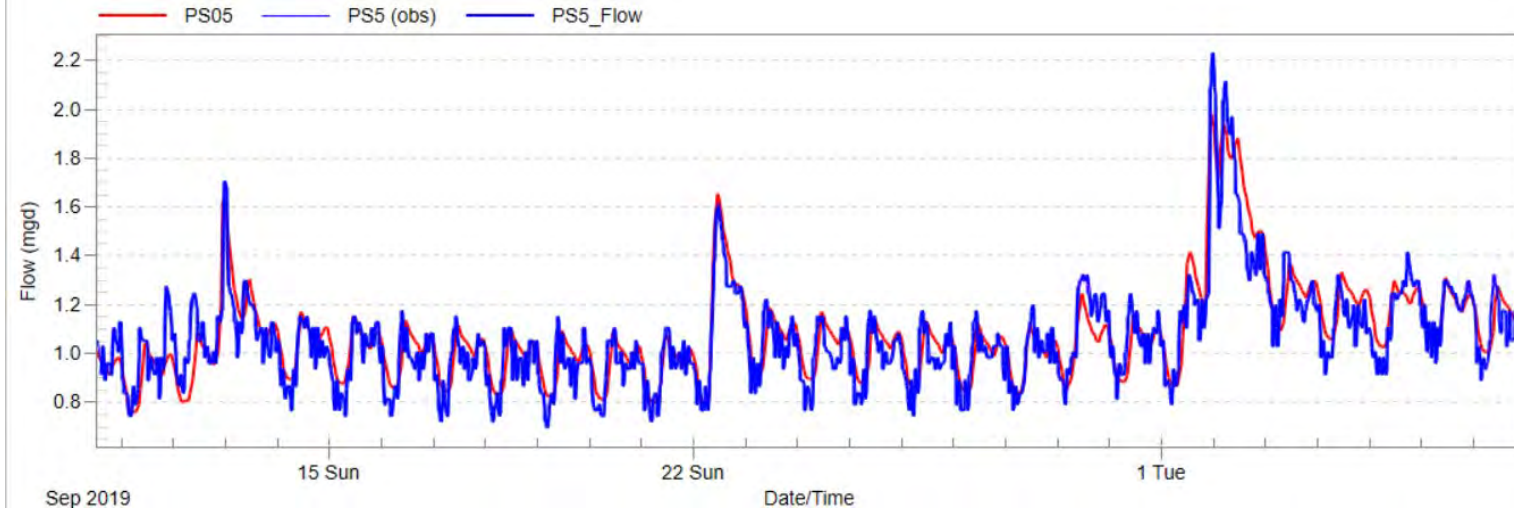


The DDF curve shows the rainfall recurrence interval of the event, which may differ slightly from the flow frequency.

Model Calibration

- Heavy groundwater (aquifer) response
- Similar parameters for all basins
- Little “fast” response

PS05



Inflow and Infiltration Reduction Program Implementation Plan

(Updated January 2022)

IMPLEMENTATION COSTS	2021	2022	2023	2024	2025	2026
Model Update						
Flow Monitoring Plan						
Regional I/I Reduction Program Guidance						
Capacity and Cost-Effectiveness Evaluation						
Sewer Use Ordinance Change						
Community Customer Outreach						
Develop Technical Guidance						
Education Materials						
ANNUAL PROGRAM COSTS	2021	2022	2023	2024	2025	2026
District Program Management						
Monitoring Program Implementation						
Technical and Education Support						
Analysis of Annual Flow Monitoring Data						
Compliance Communication						
TOTAL PROGRAM COSTS BY YEAR:	\$100,000	\$175,000	\$250,000	\$400,000	\$450,000	\$500,000

Capacity Evaluation Approach

Rainfall data from 1948-2021 used to complete flow recurrence frequency analysis:

Flow Recurrence Event Frequency	Timeframe of Event
2-5 year	October 1-2, 2019
5-year	July 17-19, 1977
10-year	July 5-7, 1993
Highest Peak Flow	June 7-10, 2008

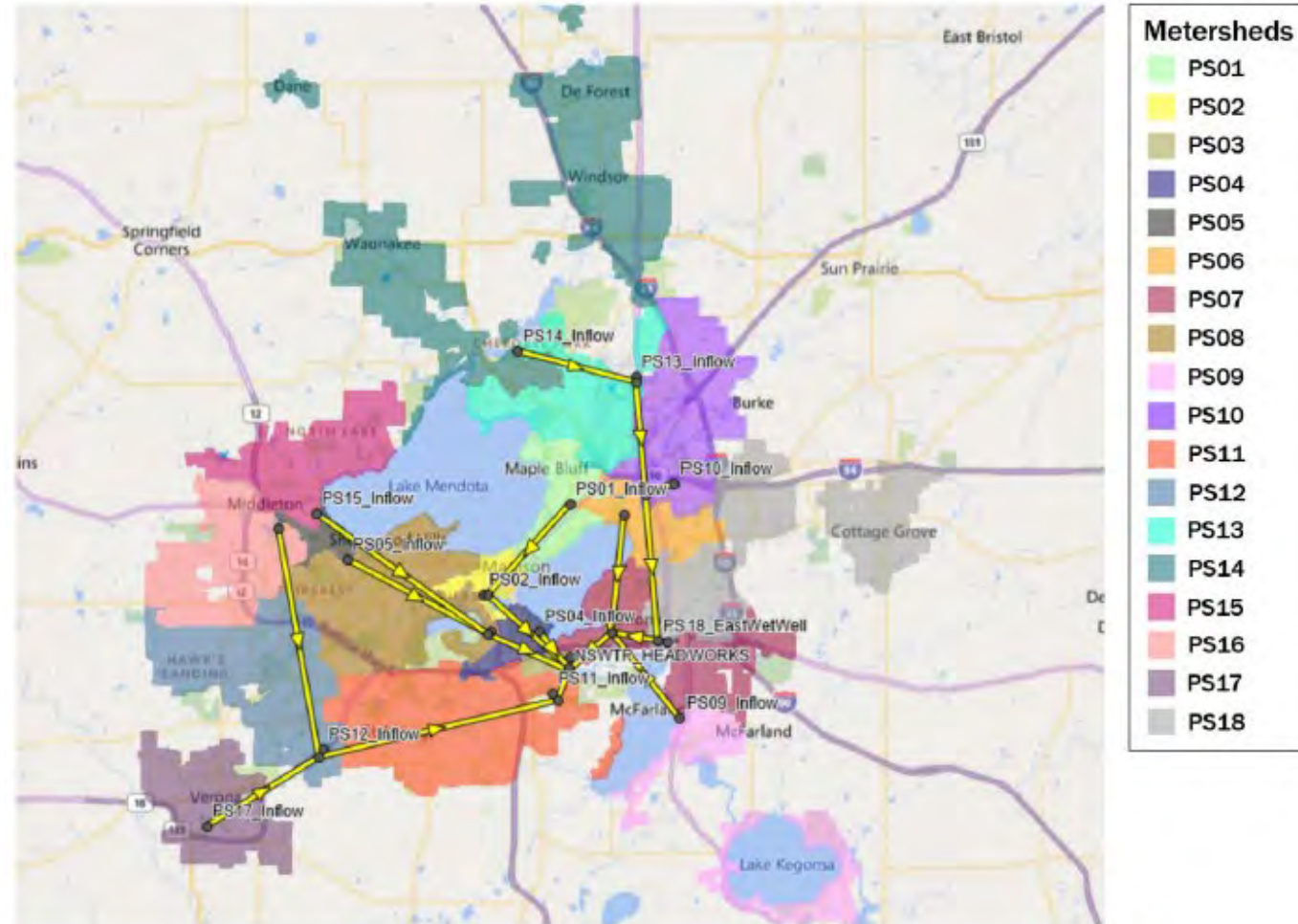


Figure 1-4. Map of simplified PCSWMM model, with metersheds shown

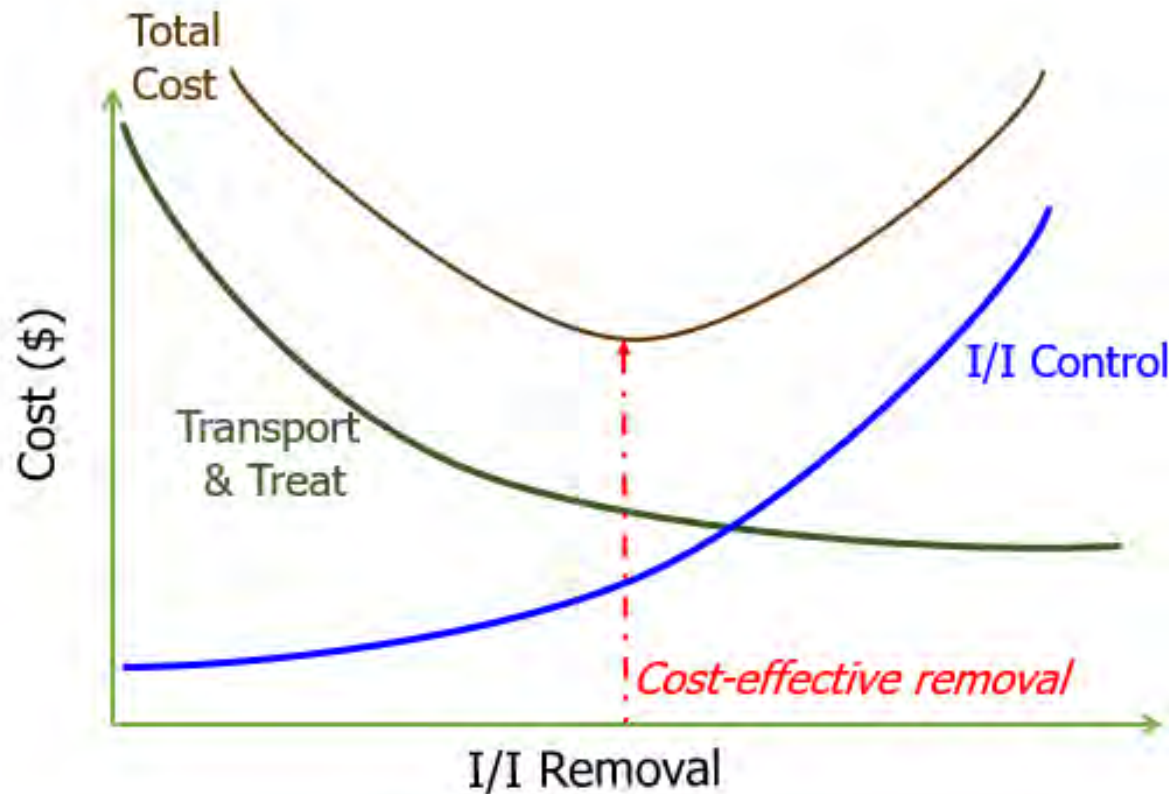
Capacity Evaluation Approach

Four Scenarios for Assessing Impact of I/I on System Capacity

Wastewater Flows	I/I Conditions	Purpose of Scenario
Existing	Existing	Understand extent of current capacity constraints from existing I/I
Existing	Existing Plus Degradation of System	Understand how much I/I from system degradation alone might impact system performance
Future	Existing	Understand whether future flows alone will cause capacity needs for comparison
Future	Existing Plus Degradation of System	Understand how much greater future capacity needs may be if I/I not maintained

Cost-Effectiveness Evaluation Approach

Total Cost Analysis for Given Level of Service



- Build Capacity Solutions
 - Conveyance
 - Storage
 - Treatment
- I/I Reduction
 - What does it cost?
 - What are the expected results?

Questions?

Requested Action:

Approve Resolution 2022-01-13-R9 amending the agreement and authorizing the transaction amount for 2021 infiltration and inflow reduction program engineering services with Brown and Caldwell for \$275,000.