

2015
SPECIALTY
CONFERENCE
& WORKSHOP
SERIES

Implementing Integrated Wet Weather Solutions in a Digital World

October 26 – 27, 2015 • UMass Lowell Conference Center • Lowell, MA



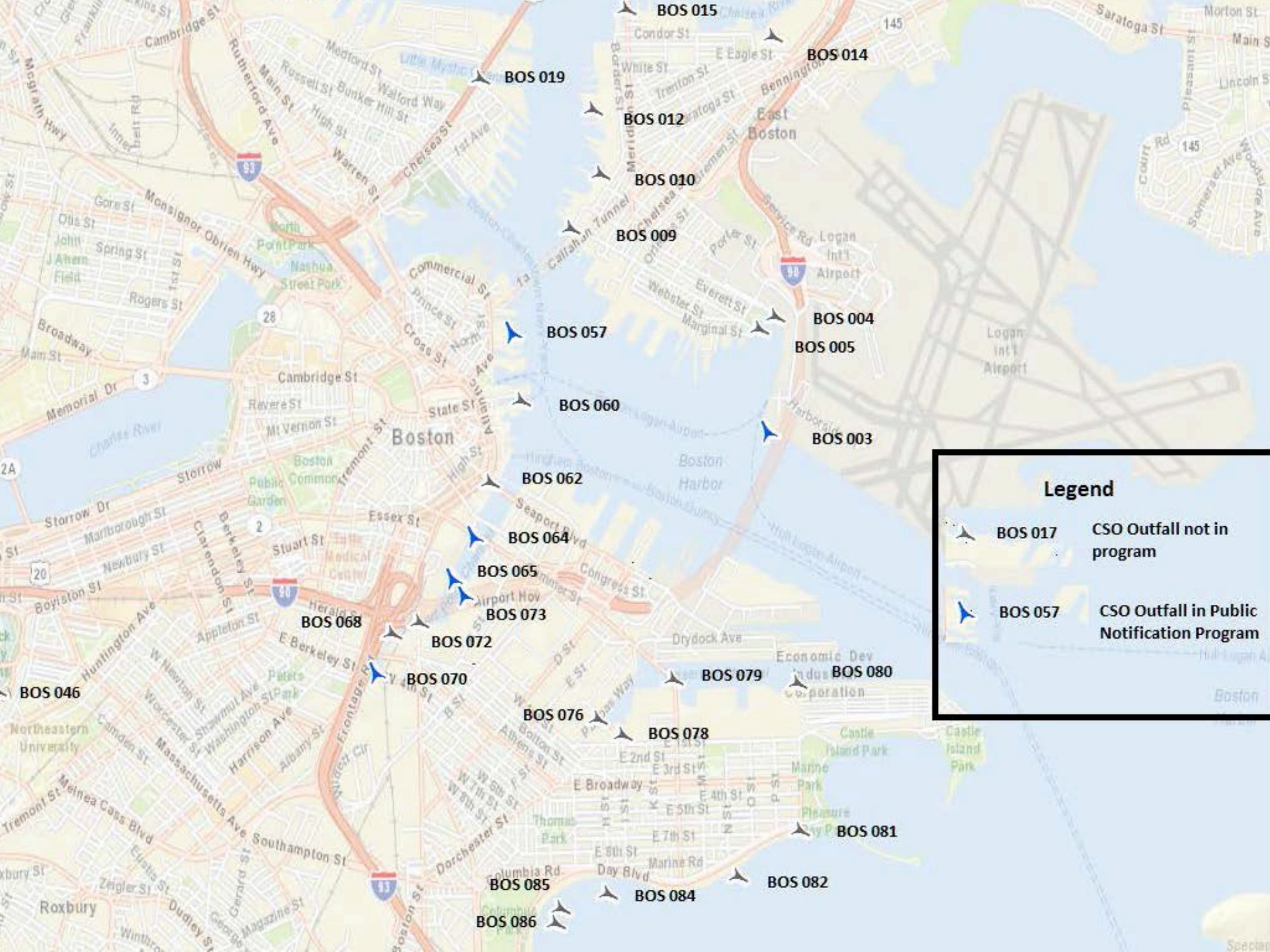
Boston's Pilot Project to Measure CSO Flows Relies on New Technology and Scattergraphs to Detect Overflows

CSO Specialty Conference 2015



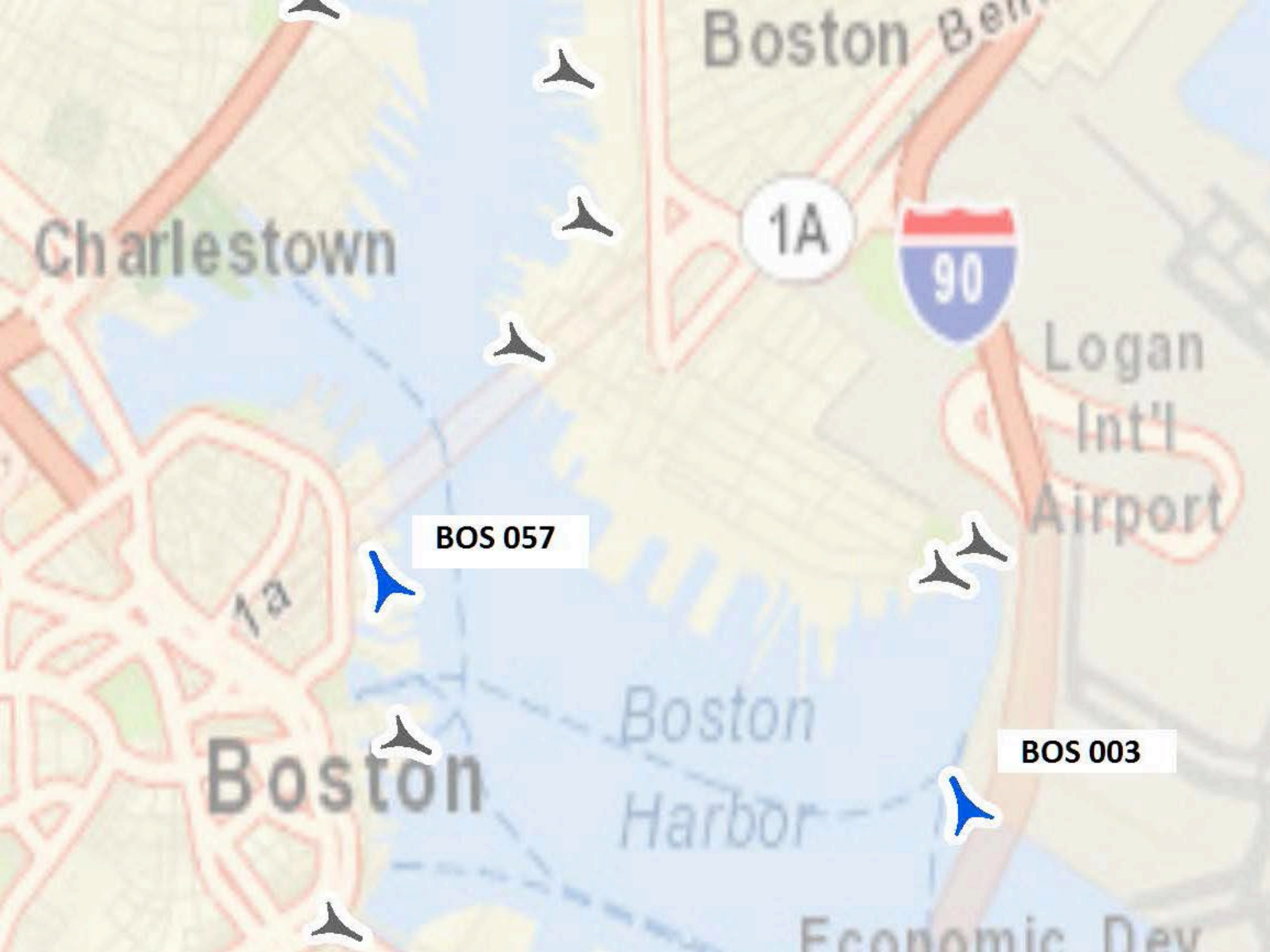
Introduction

- Pilot Project – 30 month program (Oct 2013-2015)
- 10 Regulator Locations – now to 5 locations
- Outfalls Discharge into Boston Harbor and Fort Point Channel



Project Goals

- Identify overflows – Activation, Duration and Volume
- Post information onto Commission's webpage
- Monitor influent combined flow for system characterization and model calibration



Charlestown

Boston

1A

90

Logan Int'l Airport

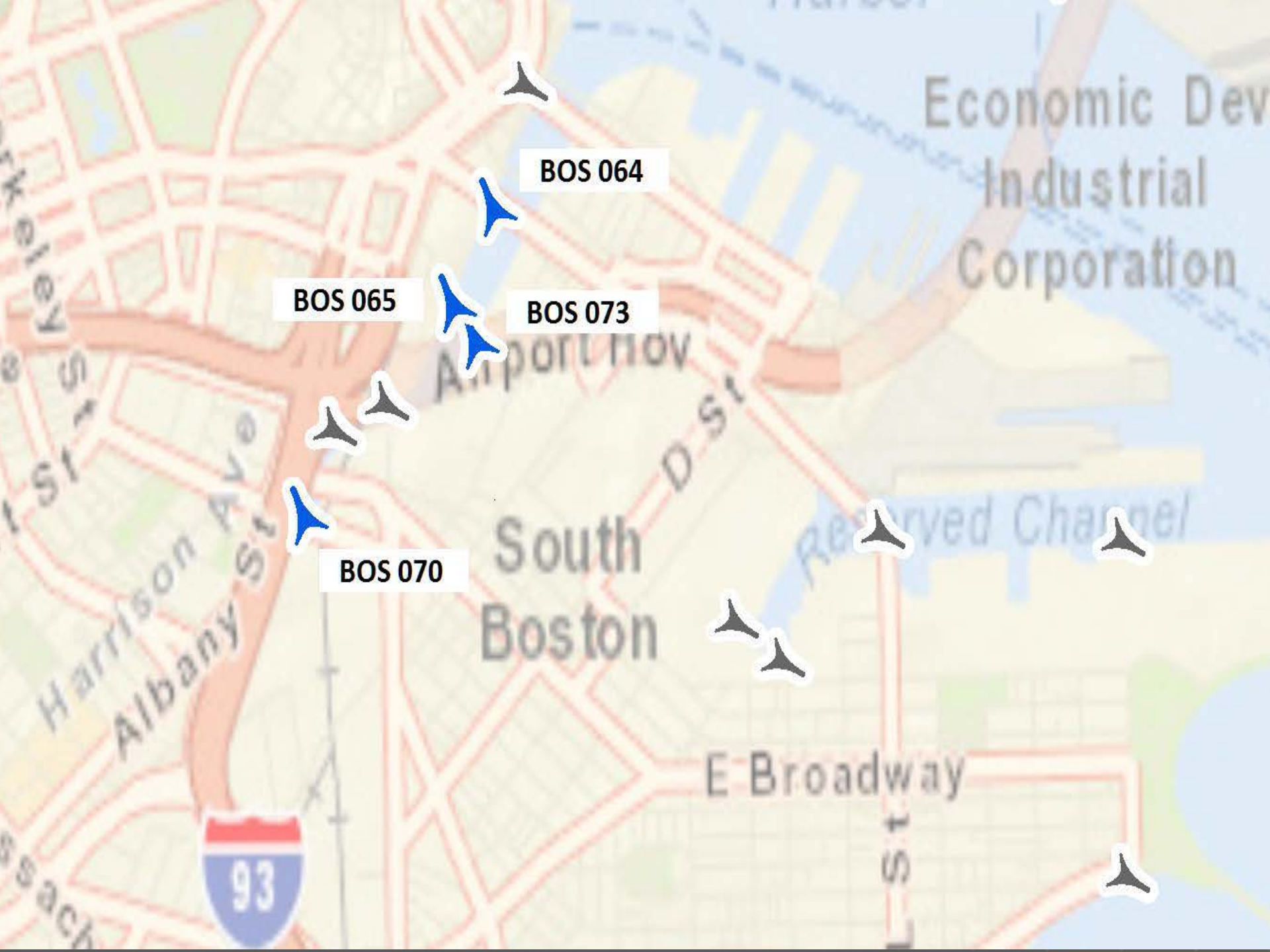
BOS 057

Boston

Boston Harbor

BOS 003

Economic Dev



BOS 064

BOS 065

BOS 073

BOS 070



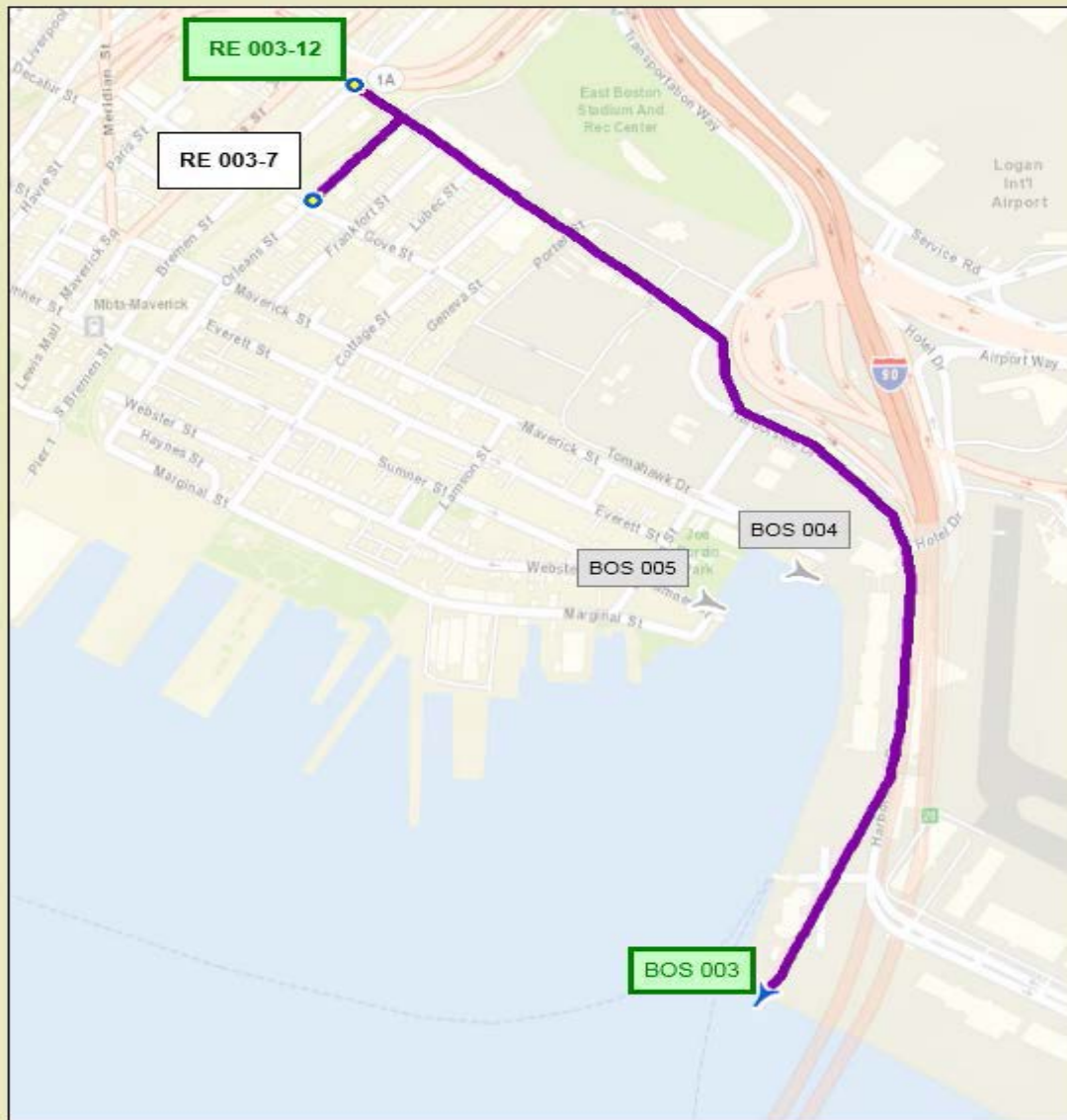






Changing uses along Fort Point Channel

East Boston



Select Site: RE 003-12 ▼

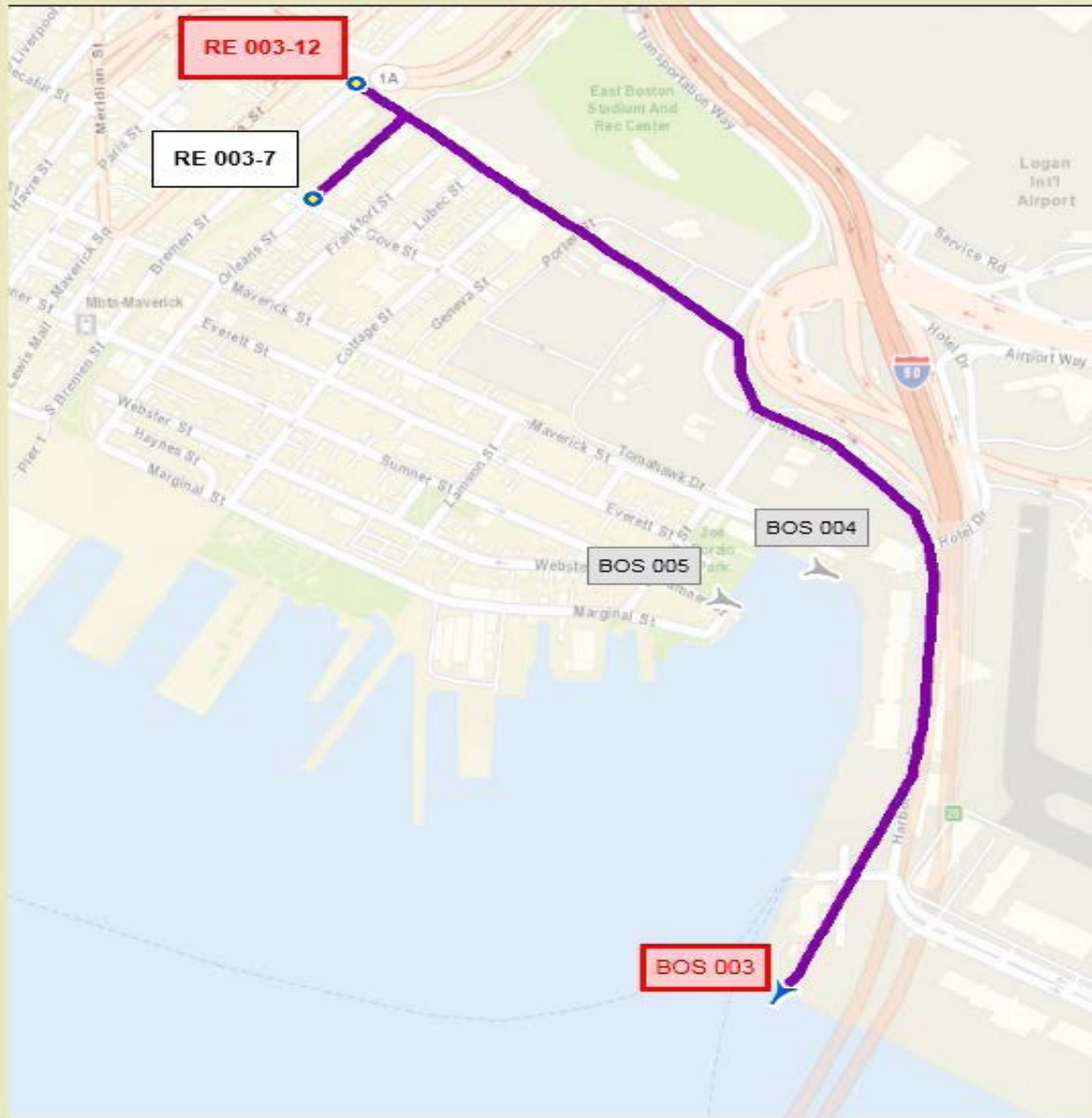
Date Range: Last 7 Days ▼

Data Set: Preliminary ▼

Site	Event Start	Event End	Duration	Data Set
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No events found!

East Boston



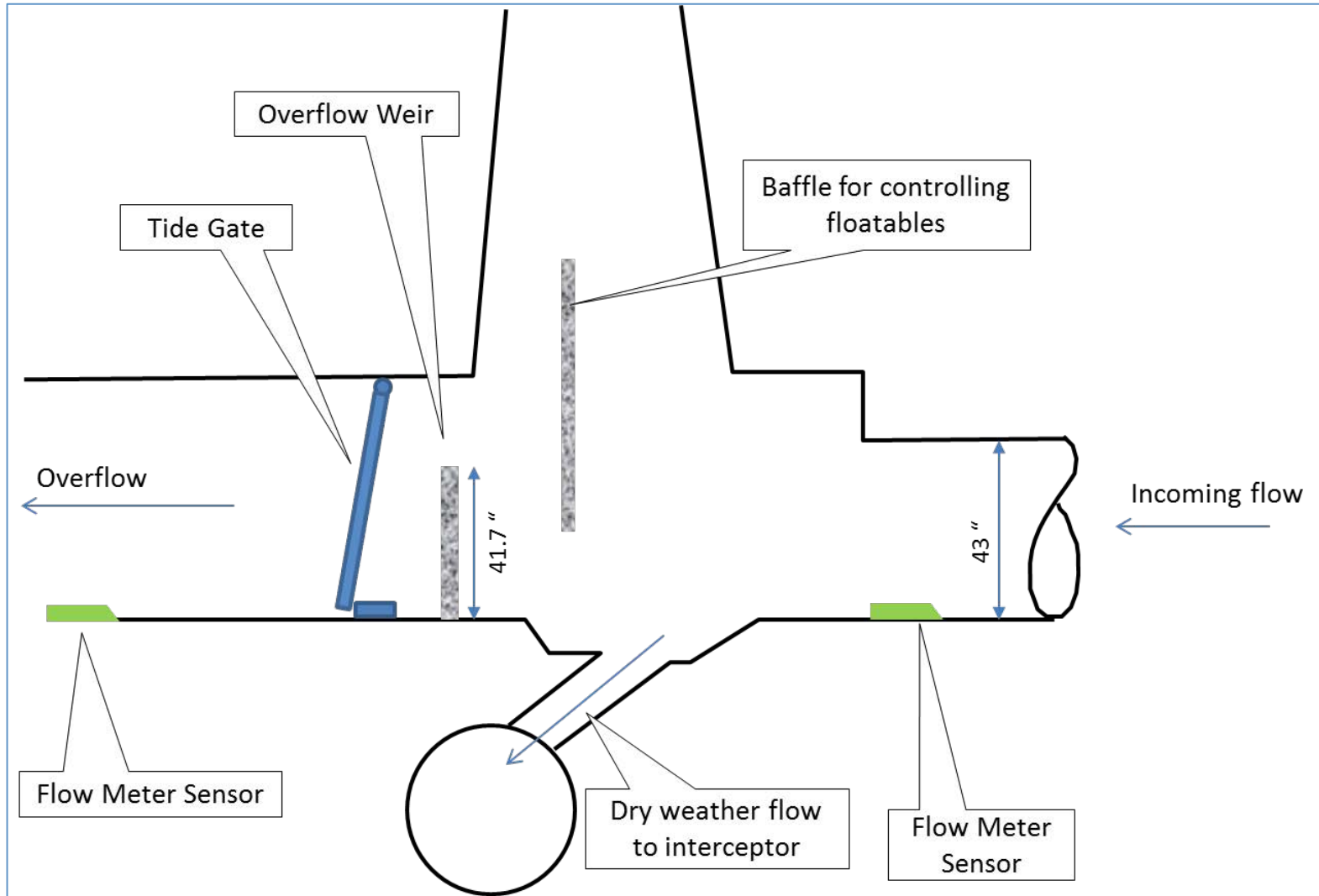
select Site:

Date Range:

Data Set:

Site	Event Start	Event End	Duration	Data Set
RE003-12	2015-10-14 04:20	2015-10-16 07:15	2d 2h 55m	Preliminary
RE003-12	2015-10-11 22:00	2015-10-13 02:35	1d 4h 35m	Preliminary

Example CSO Regulator – RE070/8-3



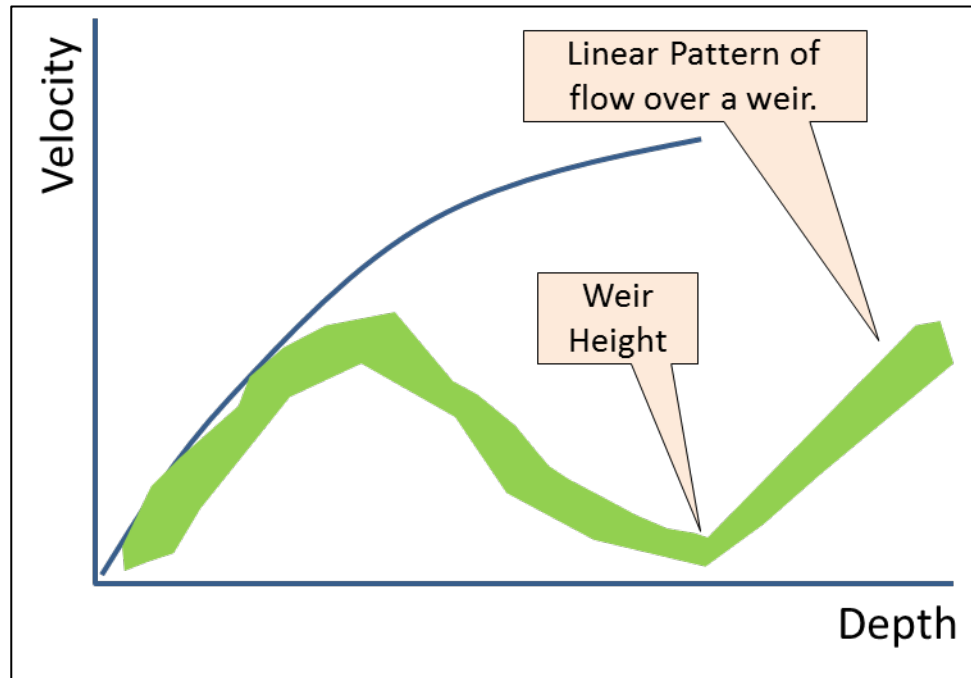
Outfall pipe RE070/8-3



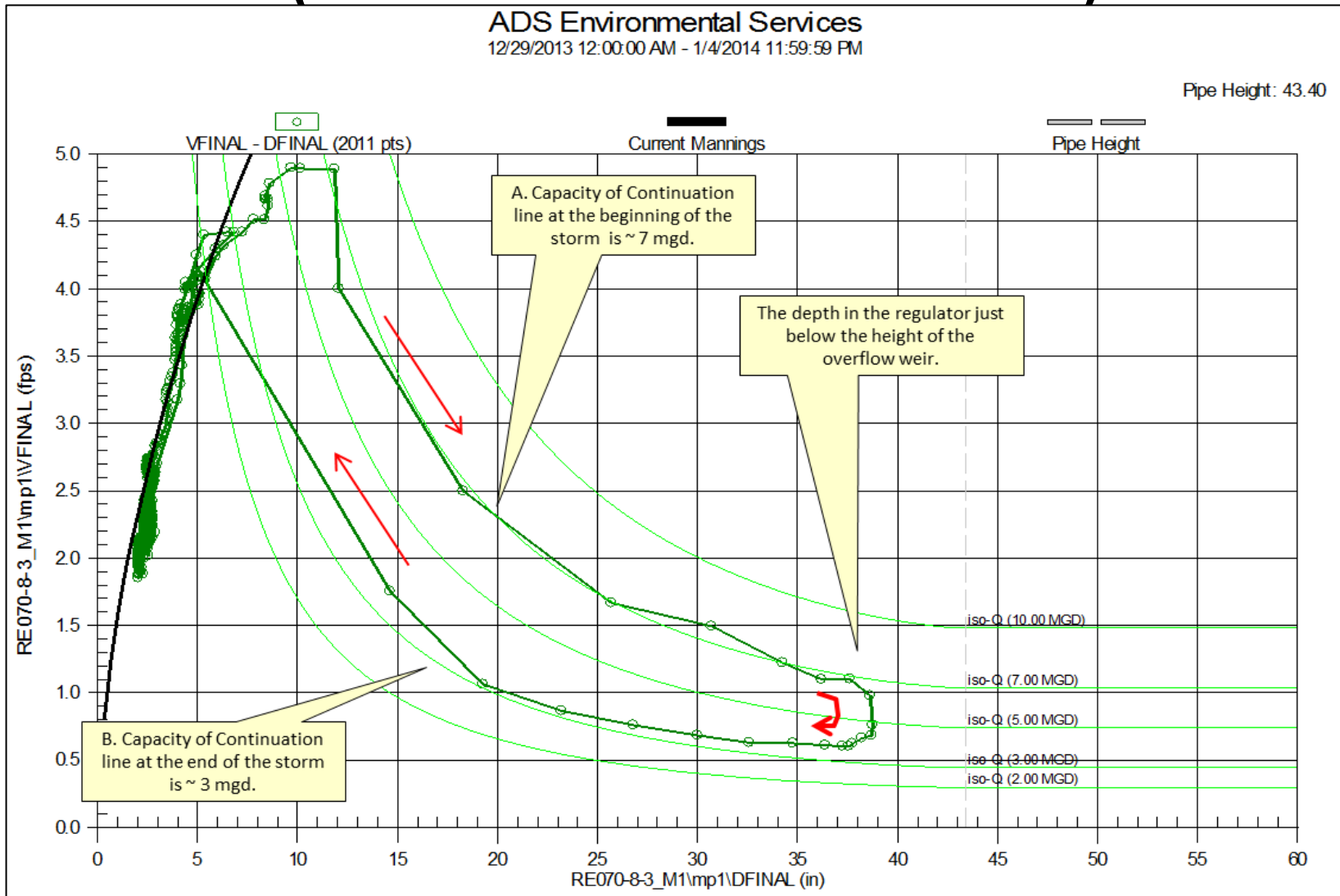
Influent Pipe RE070/8-3



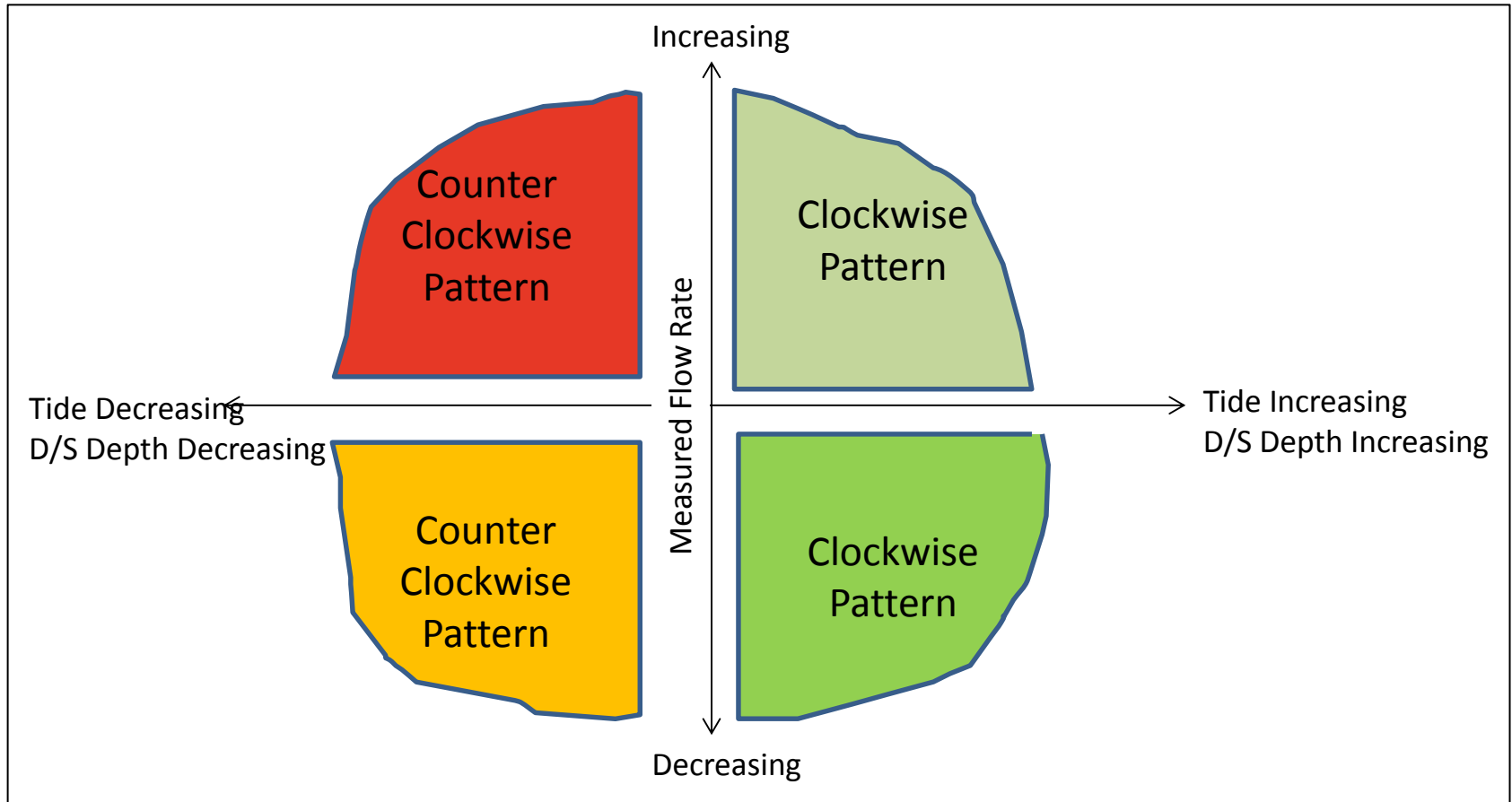
Example Scattergraph - CSO overflow Influent flow meter perspective



Scattergraph – RE070/8-3 (29Dec13 Storm Event)



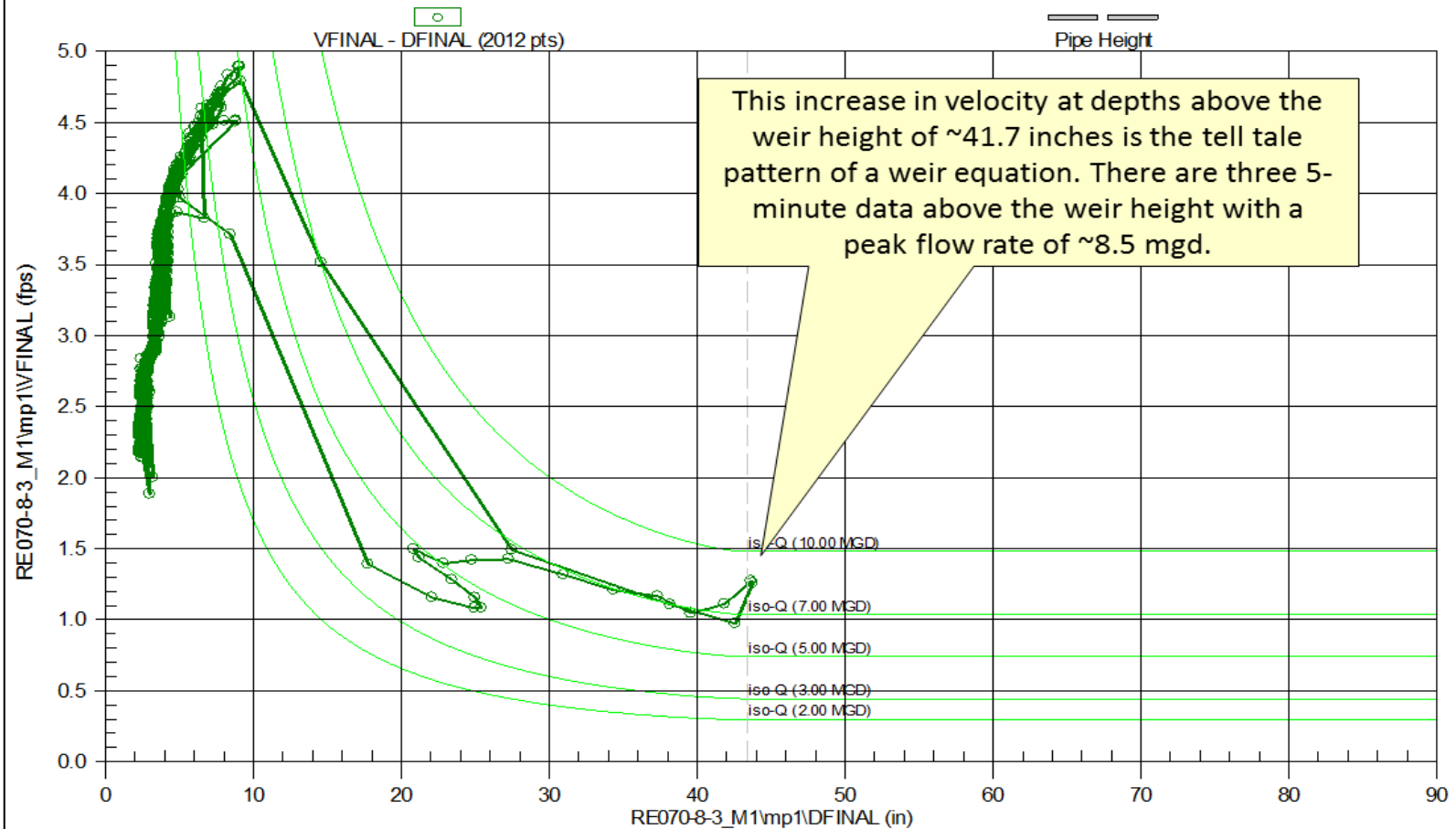
Scattergraph Observation – CSO discharge pattern during tide cycles



Scattergraph RE070/8-3 (30Mar14 Storm)

ADS Environmental Services
3/30/2014 12:00:00 AM - 4/5/2014 11:59:59 PM

Pipe Height: 43.40

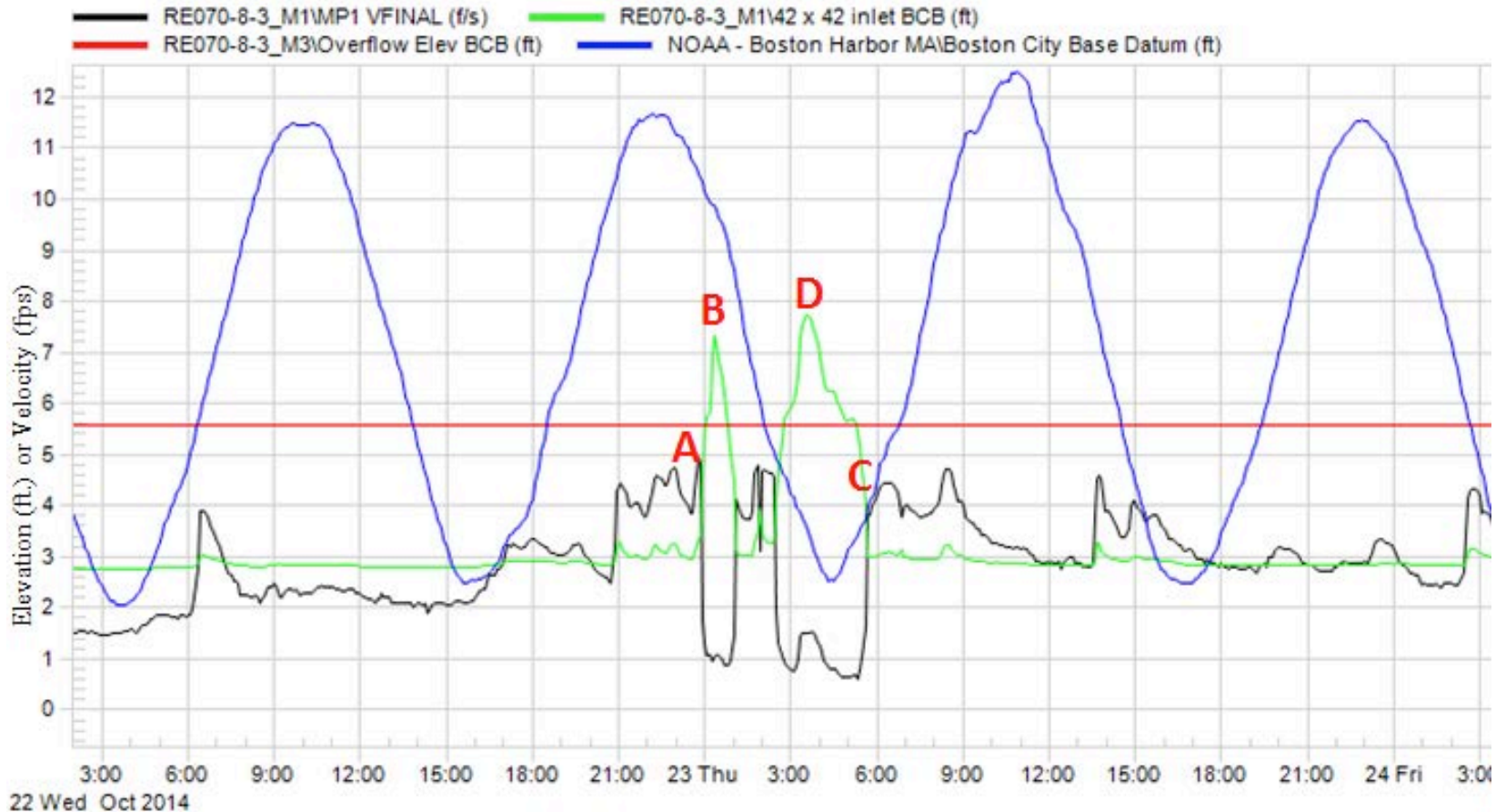


Hydrograph RE070/8-3 (23 Oct14 Storm)

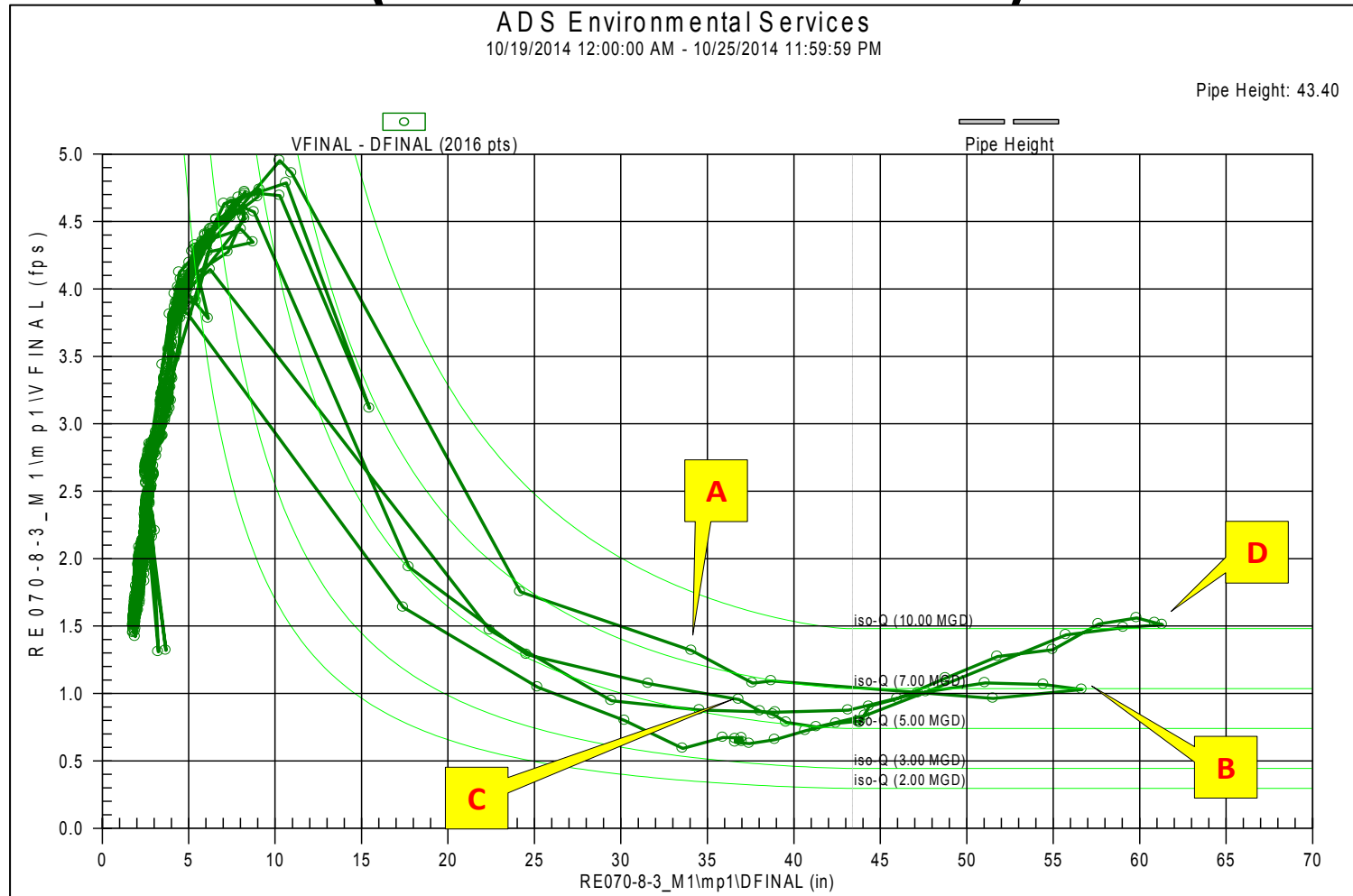
RE070-8-3_M1 / RE070-8-3_M3 / NOAA - Boston Harbor MA

Start Date: Oct 22, 2014 11:55:03

End Date: Oct 24, 2014 13:50:33



Scattergraph RE070/8-3 (23 Oct14 Storm)

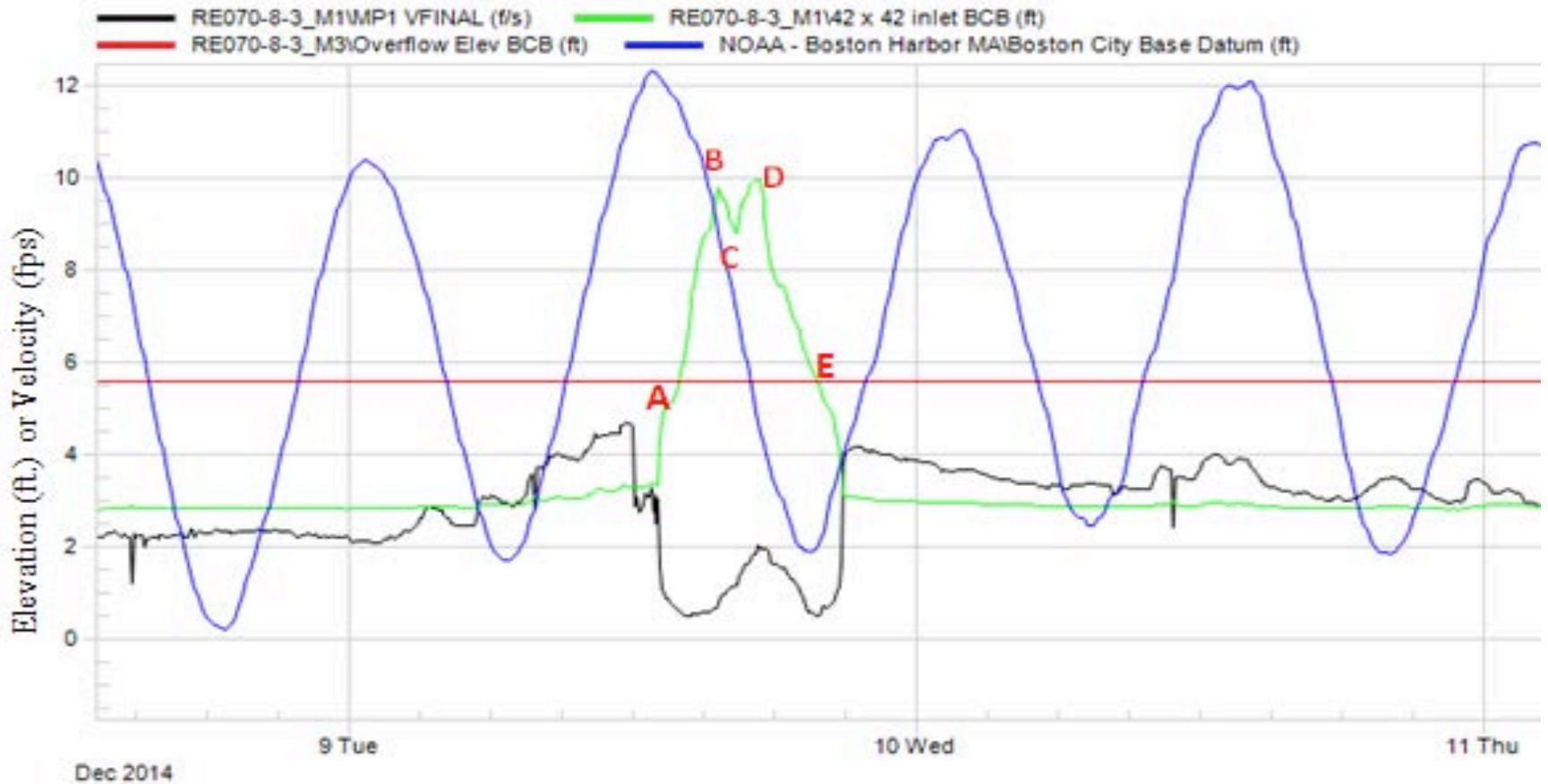


Hydrograph RE070/8-3 (9 Dec14 Storm)

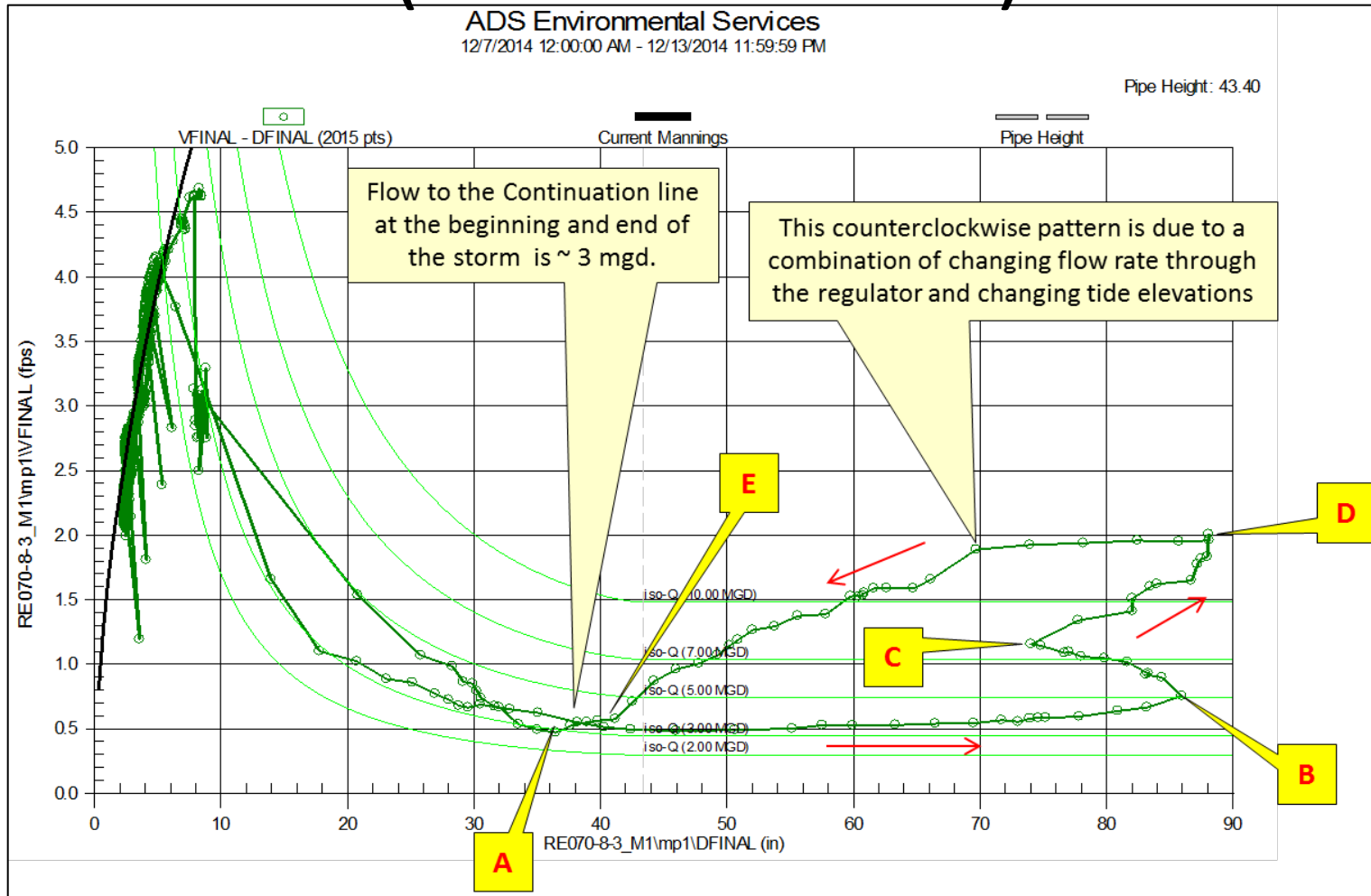
RE070-8-3_M1 / RE070-8-3_M3 / NOAA - Boston Harbor MA

Start Date: Dec 08, 2014 13:16:00

End Date: Dec 11, 2014 04:42:09



Scattergraph RE070/8-3 (9 Dec14 Storm)



Conclusions

- Influent flow data was much more reliable than outfall data
- Convert all depth data to a common elevation
- Improvements in flow monitoring technology create almost near-time access to the data
- Variation in interceptor flow will cause some uncertainty in calculating overflow volume
- Interceptor data can improve results
- Repeatable data with real-time analysis algorithms can produce results for public notification