



**CURRENT STATUS OF THE DEVELOPMENT OF  
THE  
WET WEATHER FEASIBILITY STUDY AND  
RECOMMENDED IMPROVEMENTS FOR THE  
CITY OF PITTSBURGH SEWERAGE SYSTEM**



July 18, 2012

# Topics

1. **Discuss what this is all about**
2. **Provide an overview of the status report document**
3. **Review how we got to this point**
4. **Summarize the preliminary findings contained in the status report**
5. **Review the next steps in this process**

# What is this all about?

- **PWSA/City is required to control wet weather sewage discharges as necessary to achieve compliance with current water quality standards. ALCOSAN and the other 82 tributary communities are required to do the same**
- **This is required by:**
  - **Federal law and Federal and State regulations**
  - **A legally binding (and unfunded) Consent Order and Agreement (COA) that the PWSA/City entered into with the regulatory agencies in 2004.**
- **The COA requires that the PWSA/City:**
  - **Develop and submit a Final Wet Weather Feasibility Study to the agencies by July 2013.**
  - **By roughly 2026, construct and place into operation all of the facilities that are required to achieve water quality compliance.**
  - **Coordinate/cooperate with ALCOSAN and the other municipalities as they develop similar and related plans.**

# Overview of the Status Report Document

REPORT ON THE CURRENT STATUS OF THE  
DEVELOPMENT OF THE  
WET WEATHER FEASIBILITY STUDY  
FOR THE  
CITY OF PITTSBURGH  
SEWERAGE SYSTEM

May 16, 2012



- It is a means of informing the **PWSA/City** representatives of the status of the planning efforts and the preliminary findings and allow input and feedback
- It is structured as an interim document that will evolve and expand into the final **Wet Weather Feasibility Study and Recommended Improvements**
- The document will comply with **ALCOSAN's** request for information

July 18, 2012

# Overview of the Status Report Document

## I. Overview of Planning Process

- **Provides an introduction and background to the process, including: regulatory requirements and generalized system descriptions.**
- **Reviews the PWSA and regional planning processes and how the preliminary findings were developed.**
- **Summarizes the findings in terms of the locations and types of improvements, cost and effectiveness.**

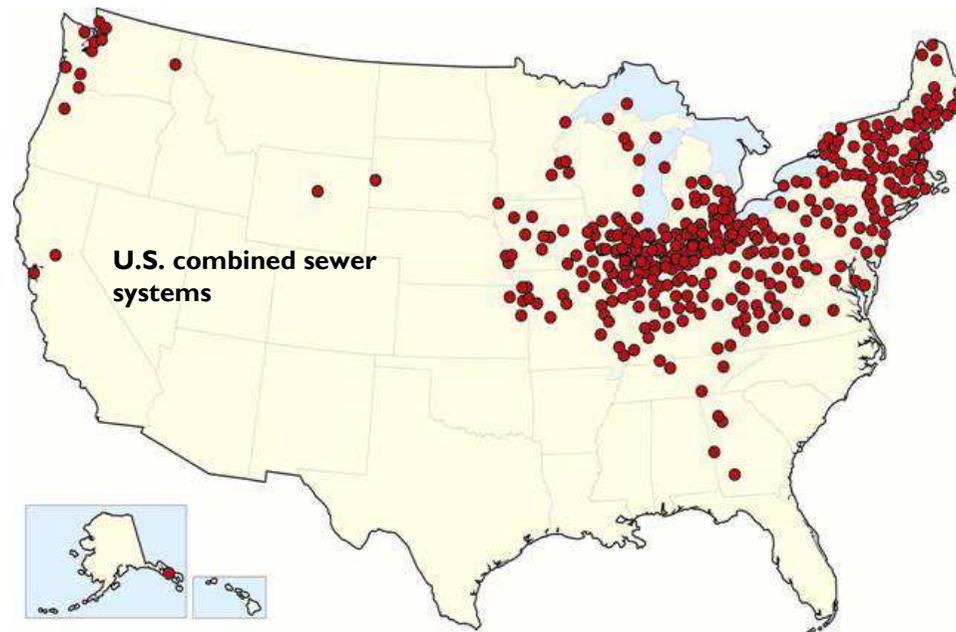
# Overview of the Status Report Document

## 2. Sewershed Narratives

- **Present specific technical data for each of the “complex sewersheds” identified by ALCOSAN**
  - **Assessment of system performance capabilities**
  - **Identification and sizing of improvements**
  - **Development of cost estimates**
  - **Computation of CSO volumes**
  - **Computation of flows to ALCOSAN’s facilities**

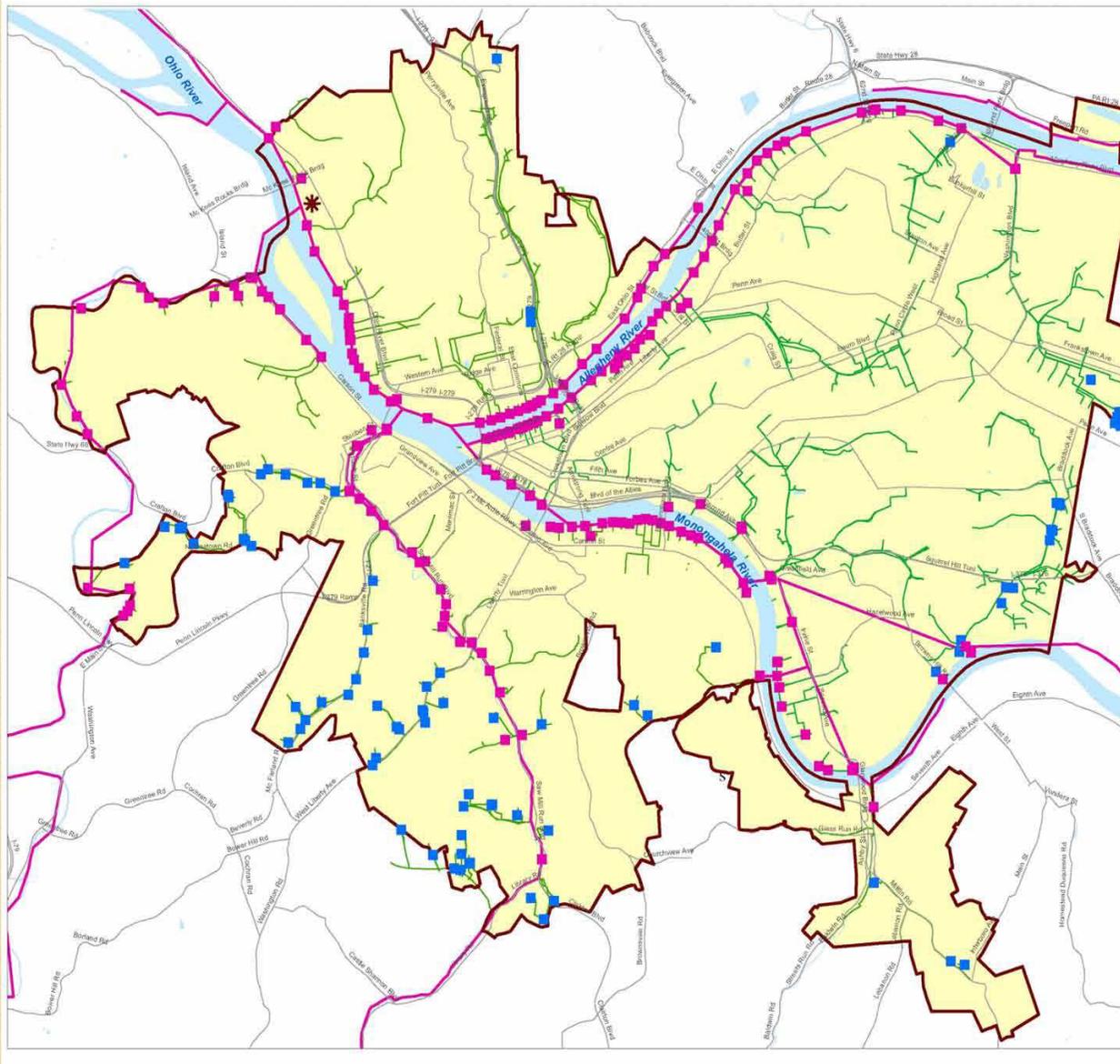
# How we got to this point

- Nationwide, everyone is required to control wet weather sewage discharges as necessary to achieve compliance with water quality standards:
  - Adequately control combined sewer overflow (CSO) discharges
  - Eliminate separate sanitary sewer overflows (SSO)
  - Eliminate excessive manhole surcharging/flooding



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# How we got to this point



- **PWSA /City** is responsible for overflows from its **CSO** structures
- **Other municipalities** are responsible for their **CSOs** and **SSOs**
- **ALCOSAN** is responsible for overflows from its **CSO** structures
- **ALCOSAN** has committed to accept and handle all flows delivered to its facilities (**Z Agreement**)

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# How we got to this point

2002

- PWWSA begins preparation on its own of its long term CSO Control Plan (costing approximately \$15M).

2004

- Municipal consent orders are issued.
- PWWSA changes direction of planning activities to the preparation of a Draft Feasibility Study.

2007

- ALCOSAN's consent decree is issued.
- PWWSA's Draft Feasibility Study preparation continues.

2008

- PWWSA's Preliminary Draft Feasibility Study is completed and recommended PWWSA CSO control solutions are identified.
- Finalization of the plan requires coordination with ALCOSAN's and other upstream municipalities' plans. Those plans are in the early stages of development.

2007-  
2010

- Evolving requirements for coordination with other regional plans and specific planning requirements and conditions established by ALCOSAN and regulatory agencies require additional investigations of the PWWSA Preliminary Draft Feasibility Study recommendations.

2010 -  
Present

- The Preliminary Draft Feasibility Study recommendations are refined based upon updated planning requirements and input from ALCOSAN, other municipalities and regulatory agencies. Interim information is provided to ALCOSAN and affected municipalities and Draft Feasibility Study information is developed for submission to ALCOSAN by July 2013.

July 18, 2012

# How we got to this point

2010 -  
Present

- The Preliminary Draft Feasibility Study recommendations are refined based upon updated planning requirements and input from ALCOSAN, other municipalities and regulatory agencies. Interim information is provided to ALCOSAN and affected municipalities and Draft Feasibility Study information is developed for submission to ALCOSAN by July 2013.

2013

- January 2013 ALCOSAN submits its final Wet Weather Plan.
- New Inter-municipal agreements must be negotiated by approximately March 2013.
- July 2013 PWSA submits Final Feasibility Study.

2014  
(est.)

- PWSA's Feasibility Study is approved by the PADEP, ACHD and USEPA.

2015

- Facilities engineering design, construction and program financing activities commence.

2015-  
2026

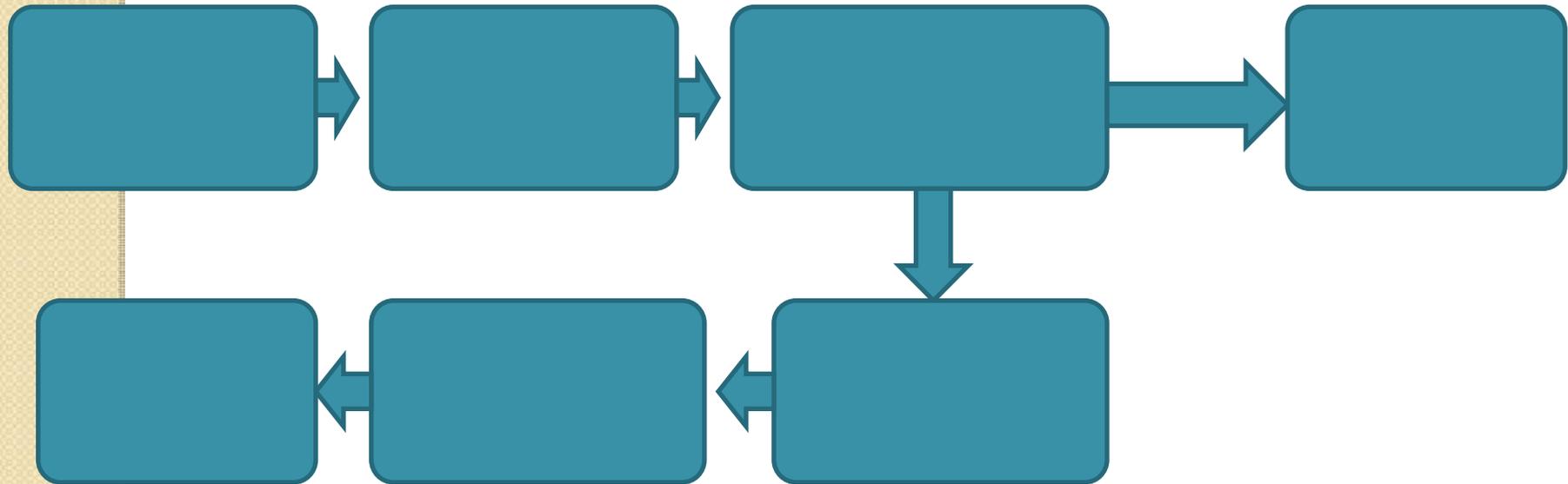
- The design and construction of recommended improvements are completed.

2026

- All proposed facilities are in operation.

# How we got to this point

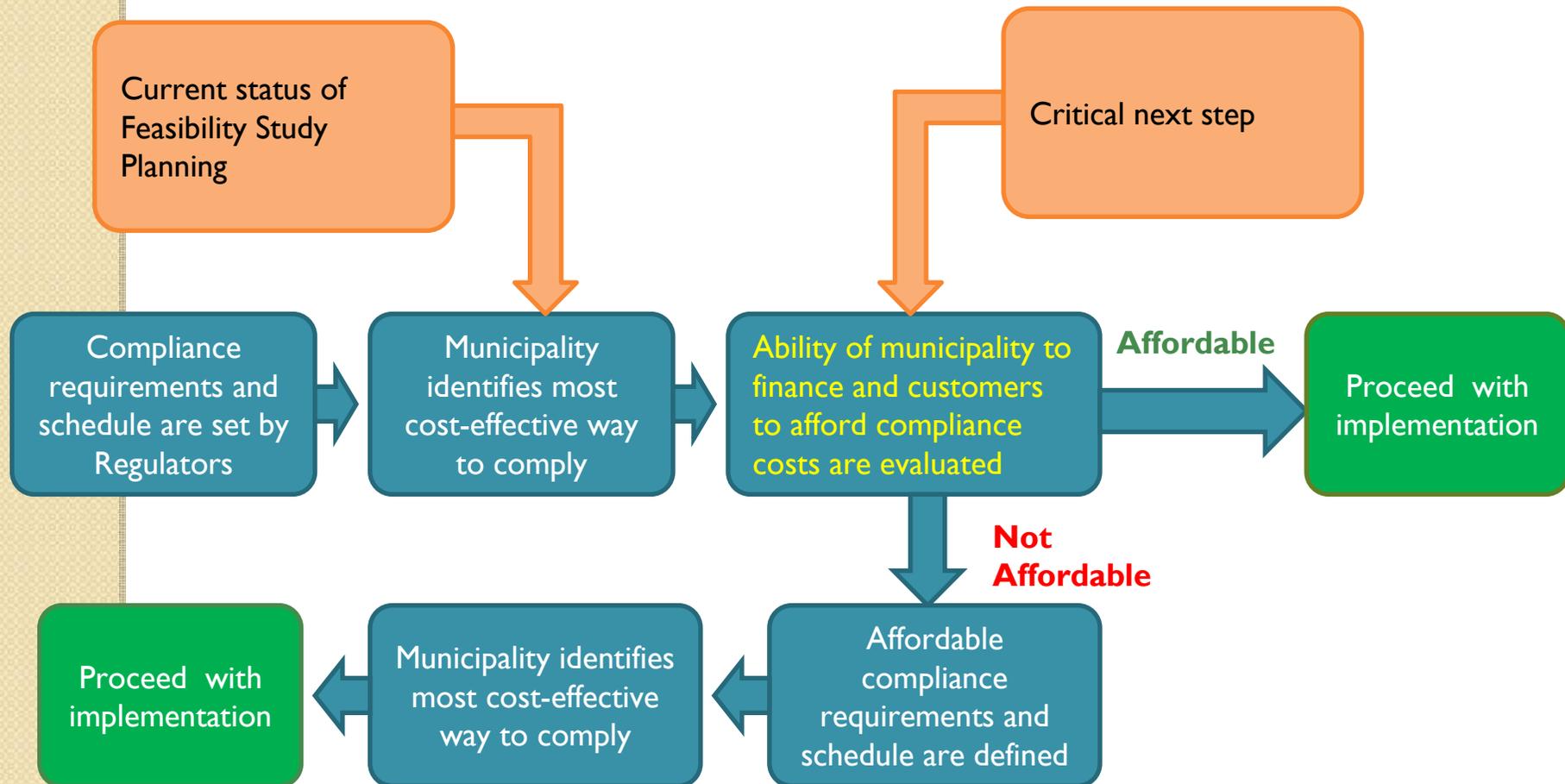
## Generalized Plan Development/Implementation Process



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# How we got to this point

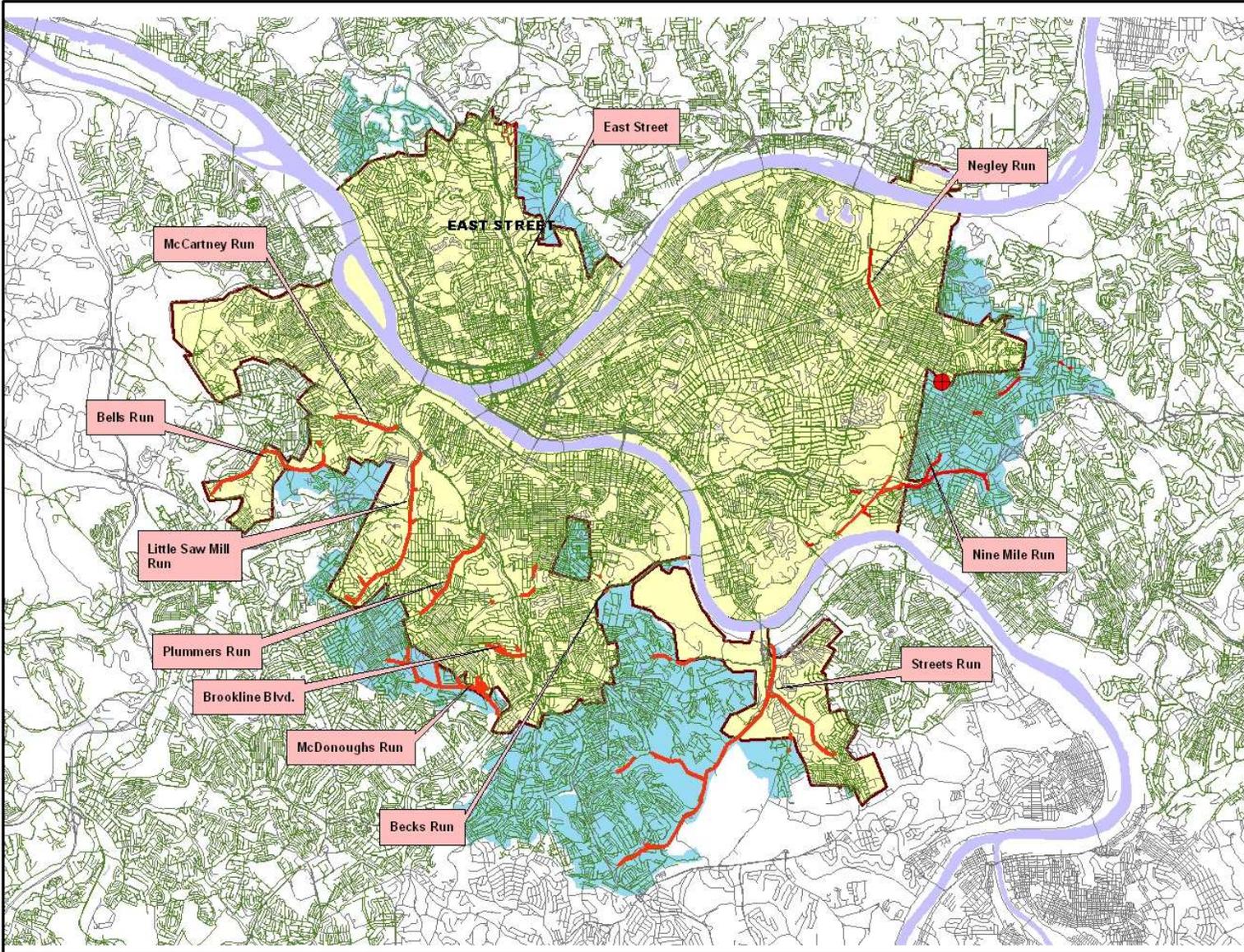
## Generalized Plan Development/Implementation Process



# Preliminary Findings

- Identification and preliminary siting and sizing of required **FACILITIES**
- Estimation of the total capital **COST** for construction of facilities
  - Total cost (including PWSA/City and upstream suburban community costs)
  - Cost to PWSA/City
- Computation of **COST-EFFECTIVENESS**

# Preliminary Findings - Facilities



**Legend**

- Wet weather storage
- Areas identified for sewer separation
- ▬ Relief/replacement sewers
- ▬ Existing sewers
- ▬ ALCOSAN interceptors
- ▬ Streets
- ▭ City of Pittsburgh Boundary
- ▭ Portions of upstream municipalities draining through the City of Pittsburgh

**Figure 5**  
**Identified Wet Weather Improvements**  
 PWSA Draft Feasibility Study



# Preliminary Findings – Total Costs (Cost in \$ Millions)

Average Overflow Frequency	2-Year Design Storm	5-Year Design Storm	10-Year Design Storm
	Total Project Capital Cost	Total Project Capital Cost	Total Project Capital Cost
0	\$245.67	\$263.95	<b>\$277.15</b>
4	\$195.64	\$214.60	\$226.18
10	<b>\$164.53</b>	\$178.98	\$191.62

- These costs include costs to the PWSA/City and associated suburbs.
- These costs do not include costs for ALCOSAN's system-wide improvements that will be added to the ALCOSAN charge.
- These costs do not include any costs for urban flood control that may be associated with the Stormwater Hydrologic / Hydraulic Modeling and Drainage Studies.

July 18, 2012

# Preliminary Findings – PWSA/City Costs

- **Cost Sharing Between PWSA/City and Suburban Communities**
- **There are a number of methods that could be used to allocate costs:**
  - **Use existing agreements (generally obsolete)**
  - **Establish new agreements:**
    - **Number of customers served,**
    - **Amount of area served,**
    - **Size and length of tributary sewers,**
    - **Metered water usage,**
    - **Functional allocation of facilities and associated costs, etc.**
- **Cost sharing arrangements must be defined and agreed to through inter-municipal negotiations. PWSA/City needs to develop and implement model agreement that is applicable to all situations.**

# Preliminary Findings – PWSA/City Costs

- **Potential Equitable Cost Allocation Method**
- **Functional allocation of facilities and associated costs Use existing agreements.**
  - **Facilities that serve only the City of Pittsburgh would be paid for by the PWSA/City alone (i.e. , the user pays).**
  - **Facilities that serve only the Suburbs would be paid for by the Suburbs alone (i.e., the user pays)**
  - **Facilities that serve both the City and Suburbs (JOINT FACILITIES) would be paid for by both in proportion to the peak flows generated by each (i.e., the users pay).**
  - **How much of the cost of the JOINT FACILITIES is paid by each municipality is based upon how much flow from each municipality is conveyed by those facilities.**

# Preliminary Findings – PWSA/City Costs

## PWSA/CITY COSTS (in \$ Millions)

Average Overflow Frequency	2-Year Design Storm	5-Year Design Storm	10-Year Design Storm
	PWSA Project Capital Cost	PWSA Project Capital Cost	PWSA Project Capital Cost
0	\$195.774	\$203.401	<b>\$213.412</b>
4	\$143.933	\$153.238	\$162.287
10	<b>\$111.325</b>	\$120.136	\$127.568

- These costs include costs allocated PWSA/City
- These costs do not include costs for ALCOSAN’s system-wide improvements
- These costs do not include any costs for urban flood control that may be associated with the *Stormwater Hydrologic / Hydraulic Modeling and Drainage Studies*

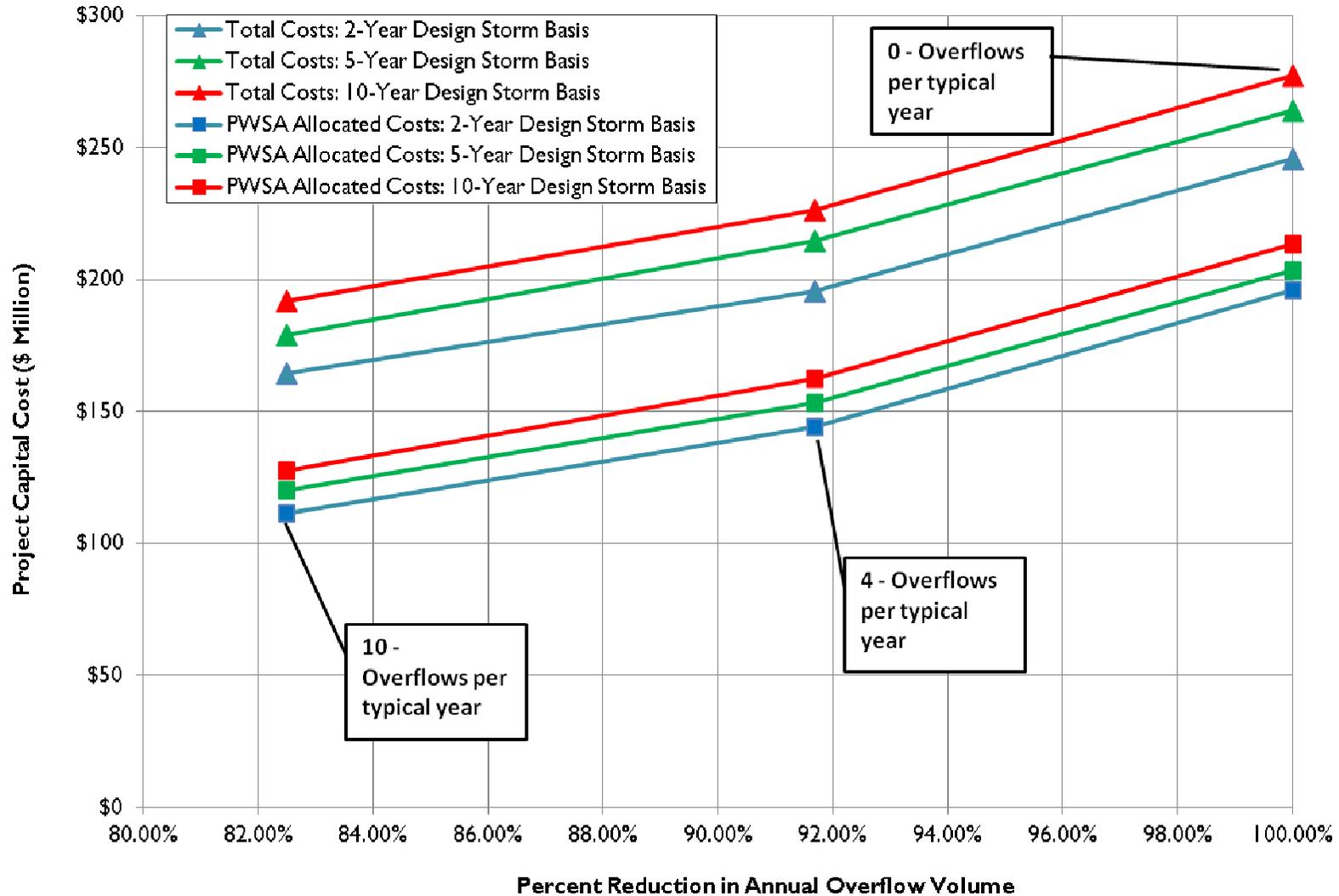
\$164.5 M to \$277.2 M

68% to 77%

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# Cost Effectiveness – Cost Performance Curves

Capital Cost vs Percent Reduction in Combined Sewer Overflow Volume

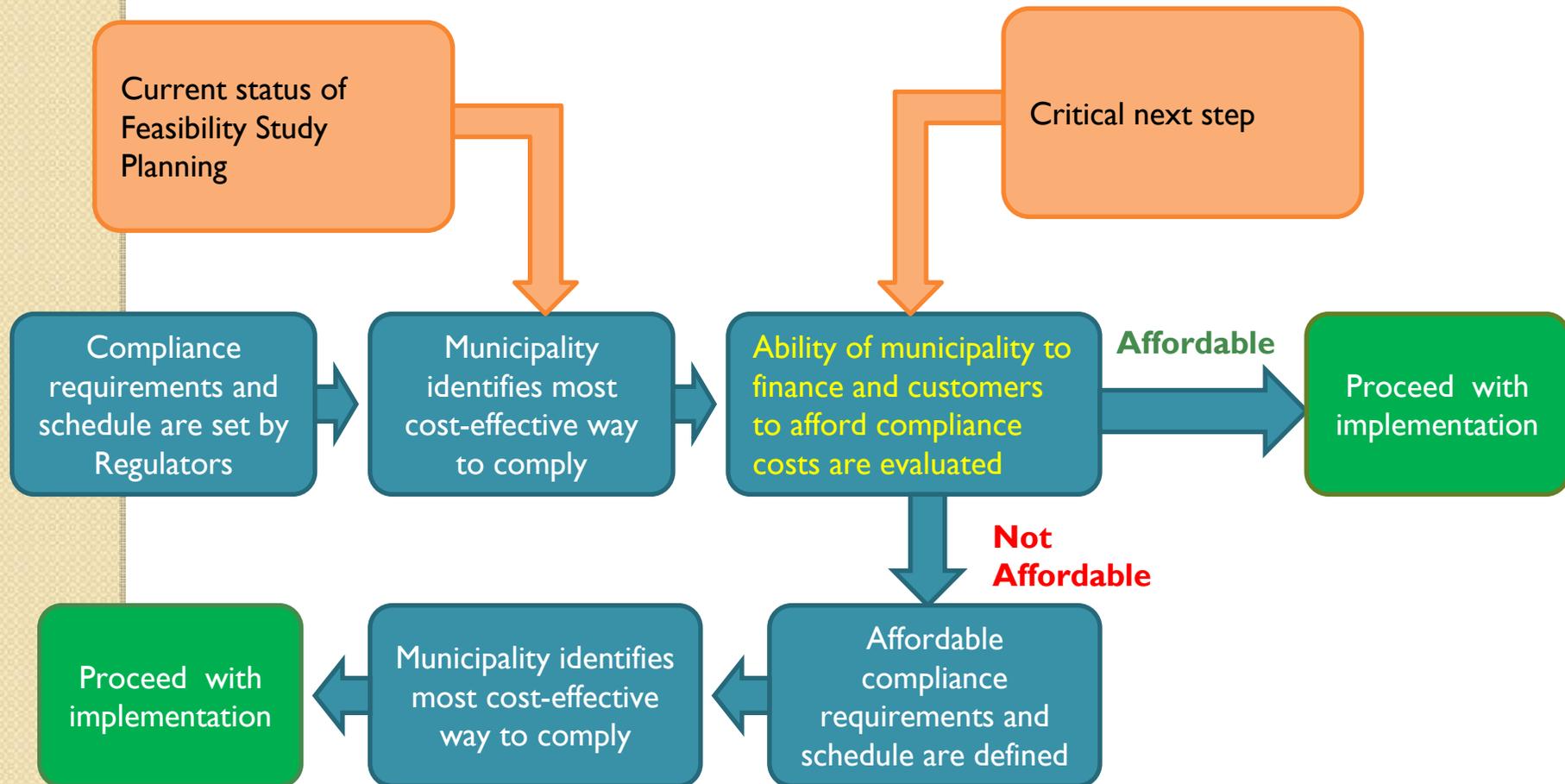


# Determination of Appropriate Level of Control and Schedule

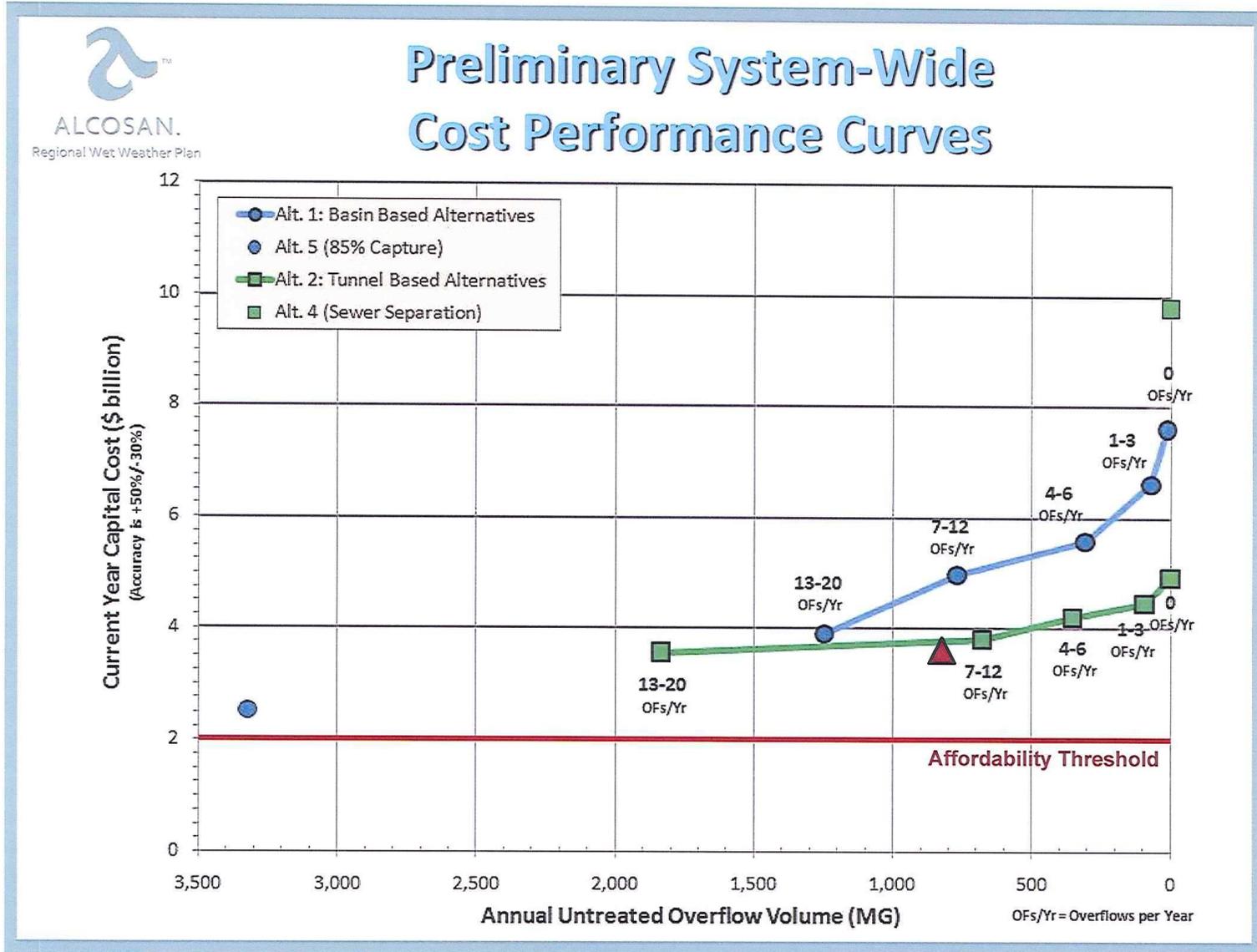
- **Proposed system improvements and implementation schedule must be identified in consideration of the following primary factors:**
  - **Ability to satisfy water quality requirements**
  - **Acceptability to all local codes and regulation, policy makers and the public**
  - **Ability to negotiate and secure acceptable agreements with upstream suburban communities**
  - **Compatibility with ALCOSAN's wet weather plan**
  - **Affordability to the rate payers and within the ability of the Authority to finance the improvements**
    - **Include additional costs from ALCOSAN**

# How we got to this point

## Generalized Plan Development/Implementation Process

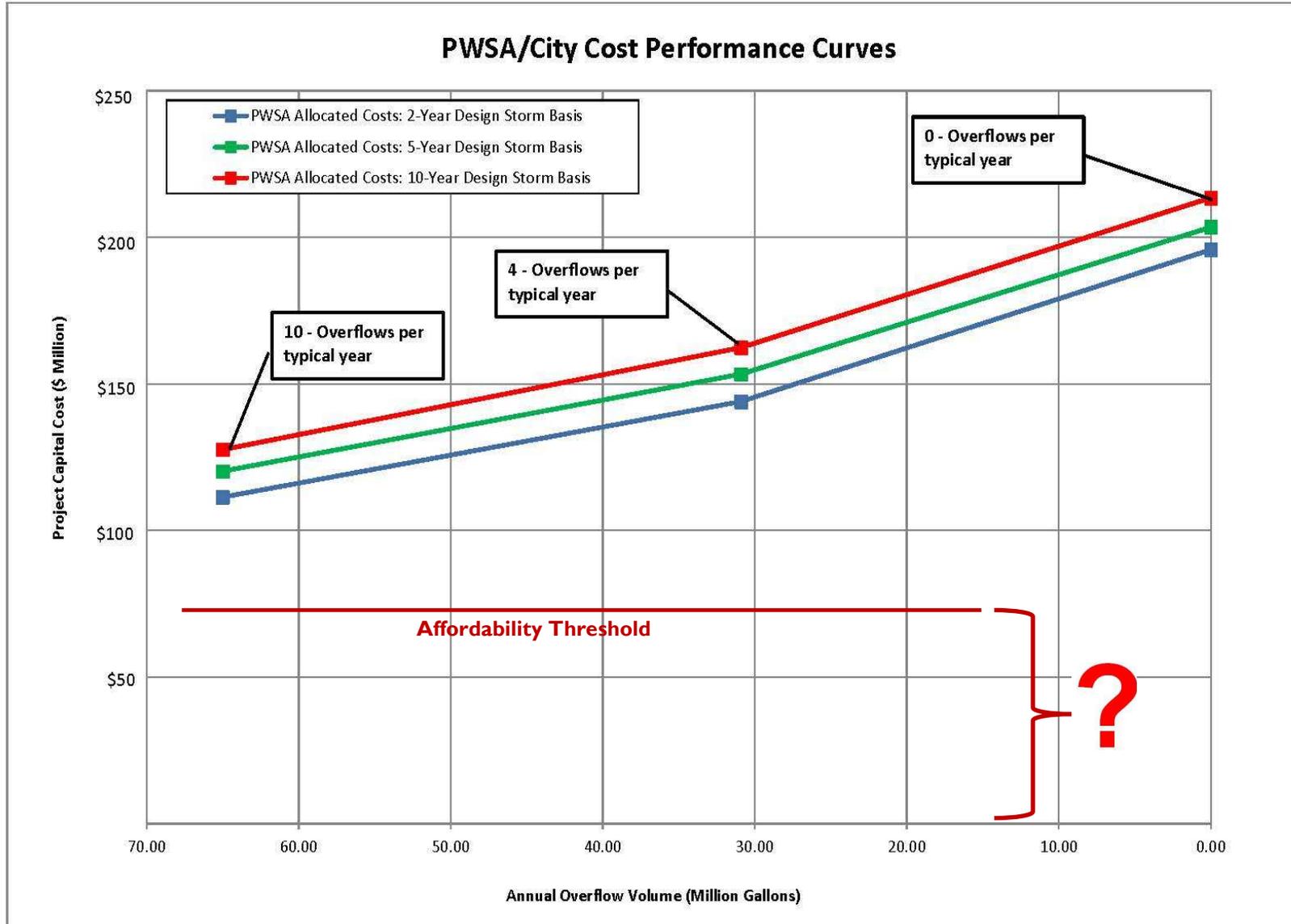


# Affordability Analysis



July 18, 2012

# Affordability Analysis



July 18, 2012

# Next Steps

July 2012

- PWSA submits draft feasibility study information to ALCOSAN by July 2012

July 2012 to  
July 2013

- PWSA/City coordinates findings with ALCOSAN's regional solutions
- PWSA/City concurrence on plan components is obtained
- New cost sharing and implementation agreements with suburban municipalities are negotiated by approximately March 2013
- Financial feasibility and affordability analyses are completed
- Proposed levels of control and design storms are selected

2014 (est.)

- PWSA's Feasibility Study is approved.

2015

- Facilities engineering design, construction and program financing activities commence.

2015-2026

The design and construction of recommended improvements are completed.

2026

All proposed facilities are in operation.

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# Questions / Discussion



July 18, 2012