

Prepared for
City of South Bend,
Indiana

CSO LTCP Reevaluation Advisory Committee Meeting 2

08 July 2015



MWH

BUILDING A BETTER WORLD

AMERICAN
STRUCTUREPOINT
INC.

 **emnet**

LimnoTech 

Agenda

- Welcome and Introductions
- Advisory Committee Mission and Structure
- LTCP Re-evaluation: Workplan and Status Update
- Triple-Bottom-Line (TBL) Evaluation
- Advisory Committee Questions and Discussion
- Follow-up Activities

Advisory Committee Mission

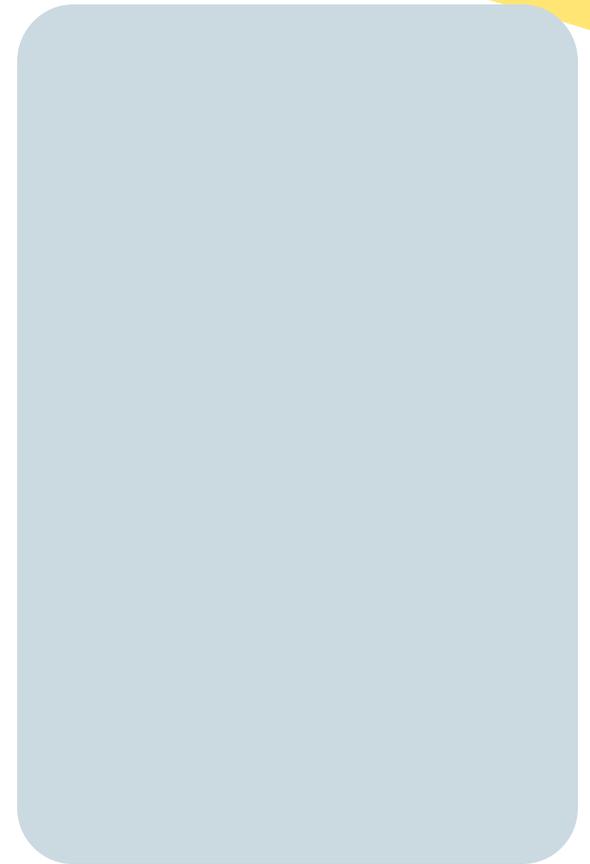
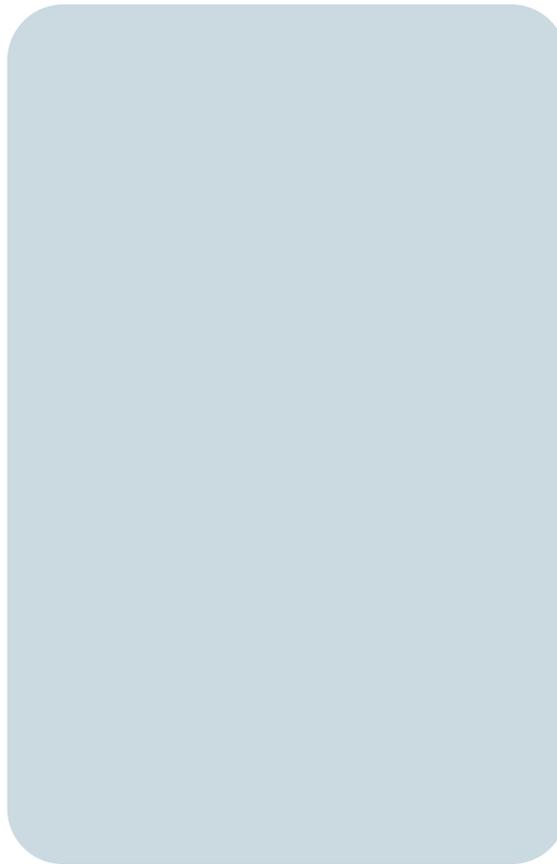
The South Bend Long-term Control Plan Advisory Committee will actively represent the interests of the community in discussions related to the re-evaluation of the City's long-term control plan and the formulation of a modified consent decree that is based on an affordable, effective, and sustainable plan for protecting the quality of the St. Joseph River and complying with requirements of the Clean Water Act.

LTCP Re-evaluation

Engineering Analysis

Improved
Technical
Solution

Reduce
overall cost of
compliance



LTCP Re-evaluation

Engineering Analysis

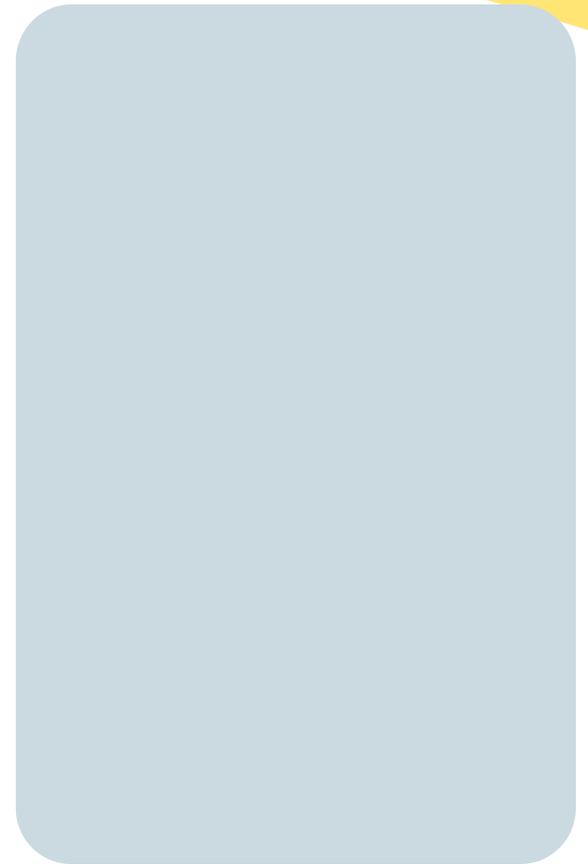
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Affordability Analysis

Affordability
Level
Established

Define
sustainable
budget



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Affordability Analysis

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Define
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budget

Integrated Planning

Overall
CIP/O&M
Needs

Prioritize/
Schedule
Improvements

Engineering Analysis

- Updated Modeling
 - Hydrologic and Hydraulic Collection System Modeling
 - Hydraulic and Process Treatment Plant Modeling
 - Water Quality Modeling
- Comprehensive Analysis of Practical Green Stormwater Infrastructure
 - Public and private opportunities
 - Implementation and operating/maintenance costs
- Real Time System Control
 - Focus on use of system controls to reduce overflows
 - Enhanced calibration and validation of models

Affordability Analysis

- Residential Indicator
 - Cost per Household
 - Median Household Income
 - Water Quality Modeling
- Financial Capability Indicator
 - Economic Conditions
 - Ability to Borrow
 - Ability to Fund
- LTCP Costs
 - Capital Costs
 - Operating and Maintenance Costs

Integrated Planning Overview

Integrated Planning Overview

- Evaluates your entire portfolio of investments across asset classes
- Determines a project implementation schedule that is affordable and maximizes benefits for the investment
- Introduced by EPA in draft language in 2012
- Determines project benefits across a triple-bottom-line of environmental, social, and economic criteria

Simplified Process Overview

Current Project
Portfolio and
Schedule

Problems:

- High Cost
- Does not consider innovative approaches, e.g. green infrastructure
- High regulatory burden reduces funding available for other important projects

Simplified Process Overview

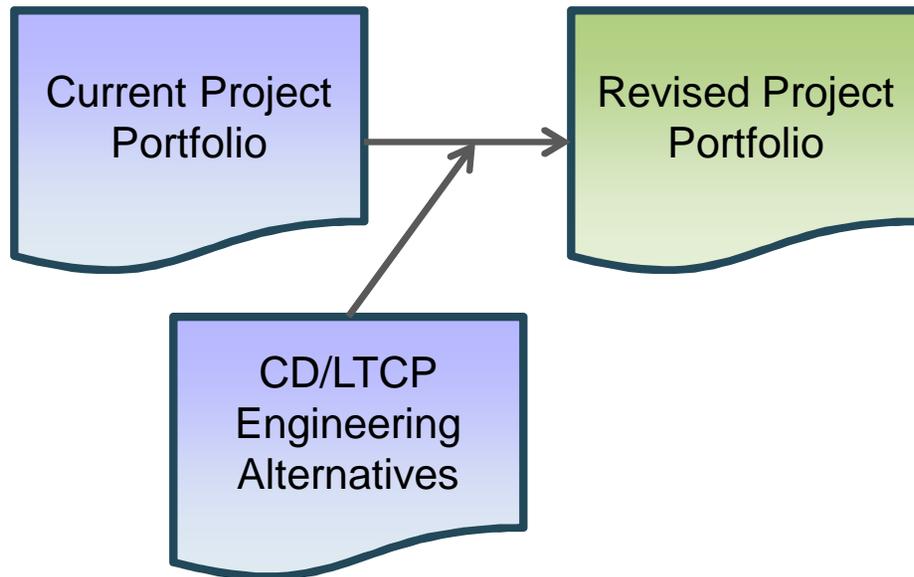
Current Project
Portfolio

CD/LTCP
Engineering
Alternatives

Develops alternative project approaches that:

- Address regulatory concerns
- Are more affordable
- Consider green and grey infrastructure

Simplified Process Overview



Engineering alternatives take the place of more expensive projects

Simplified Process Overview

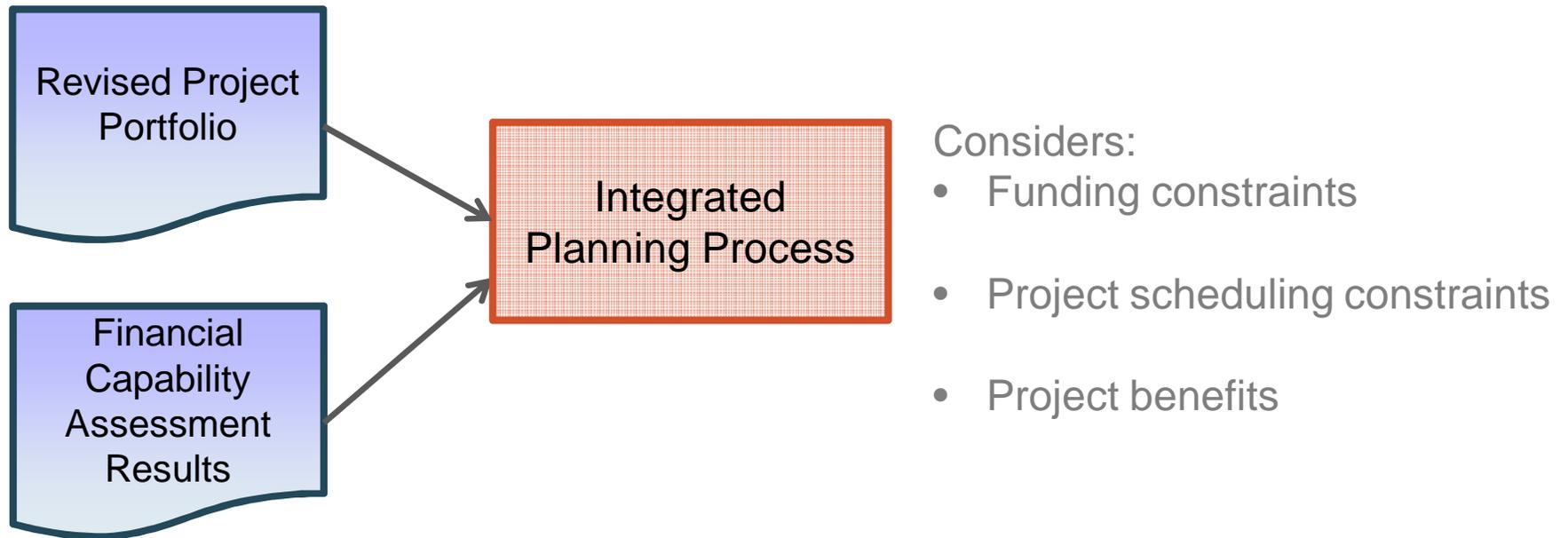
Revised Project
Portfolio

Financial
Capability
Assessment
Results

Determines:

- Ratepayer burden
- Total affordability limit

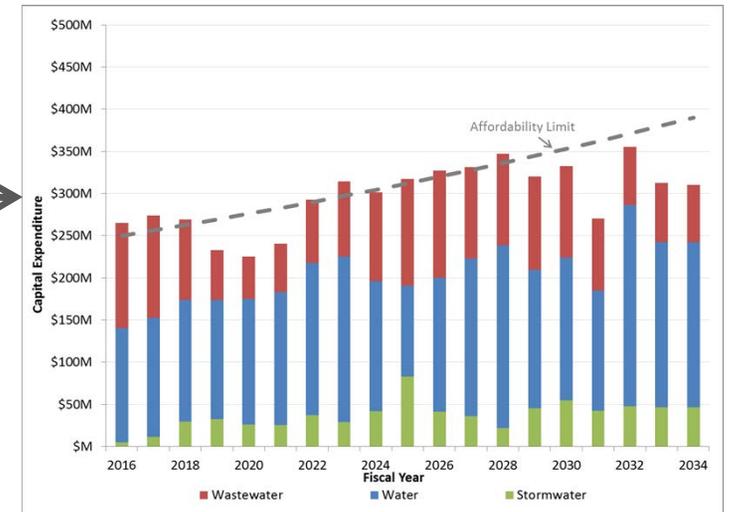
Simplified Process Overview



Simplified Process Overview

Integrated
Planning Process

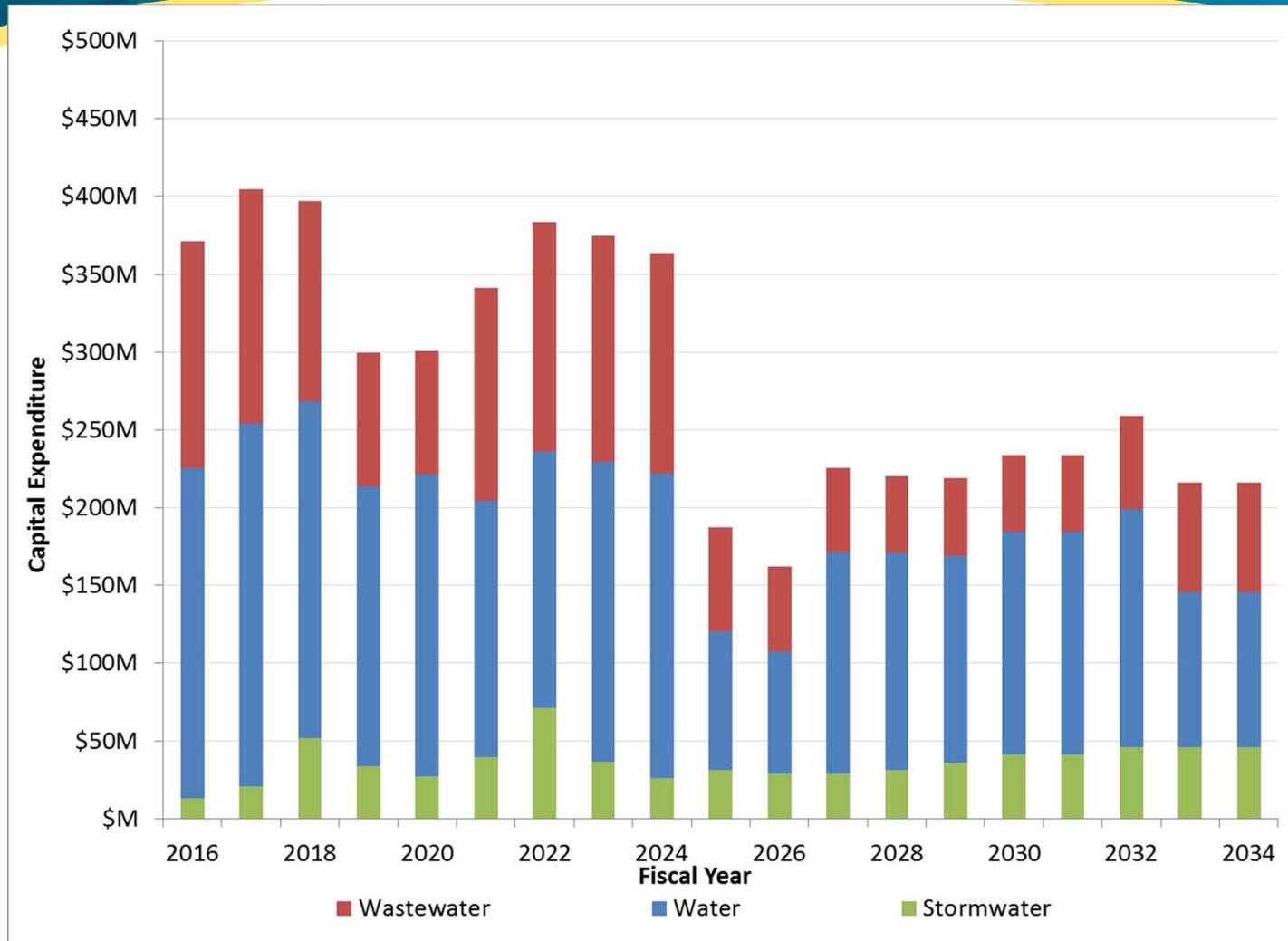
Output: Integrated Plan



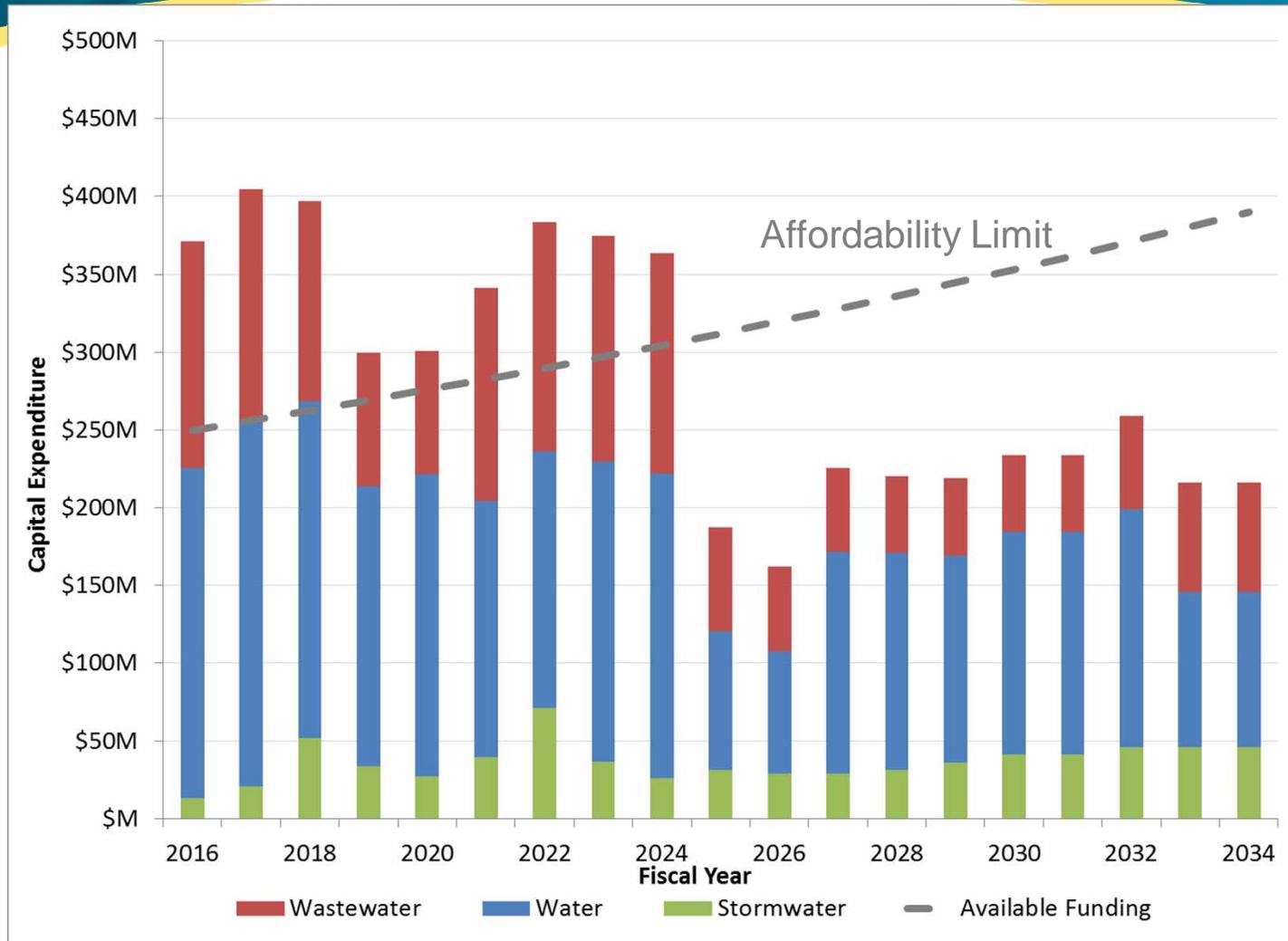
Revised Schedule:

- Affordable plan
- Extended CD Compliance deadline
- Investments where they have the most benefit to South Bend

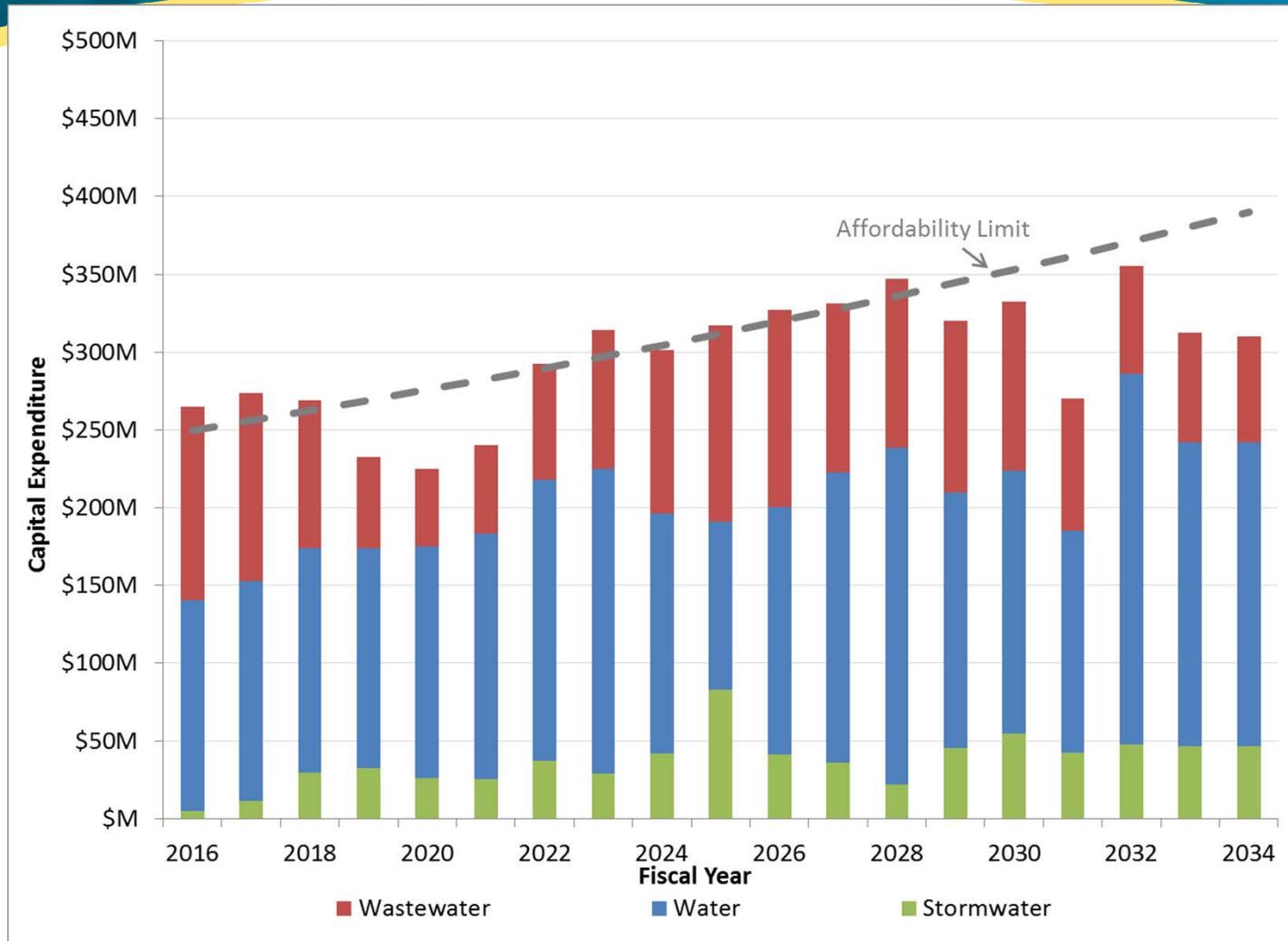
Example from a Major East Coast City



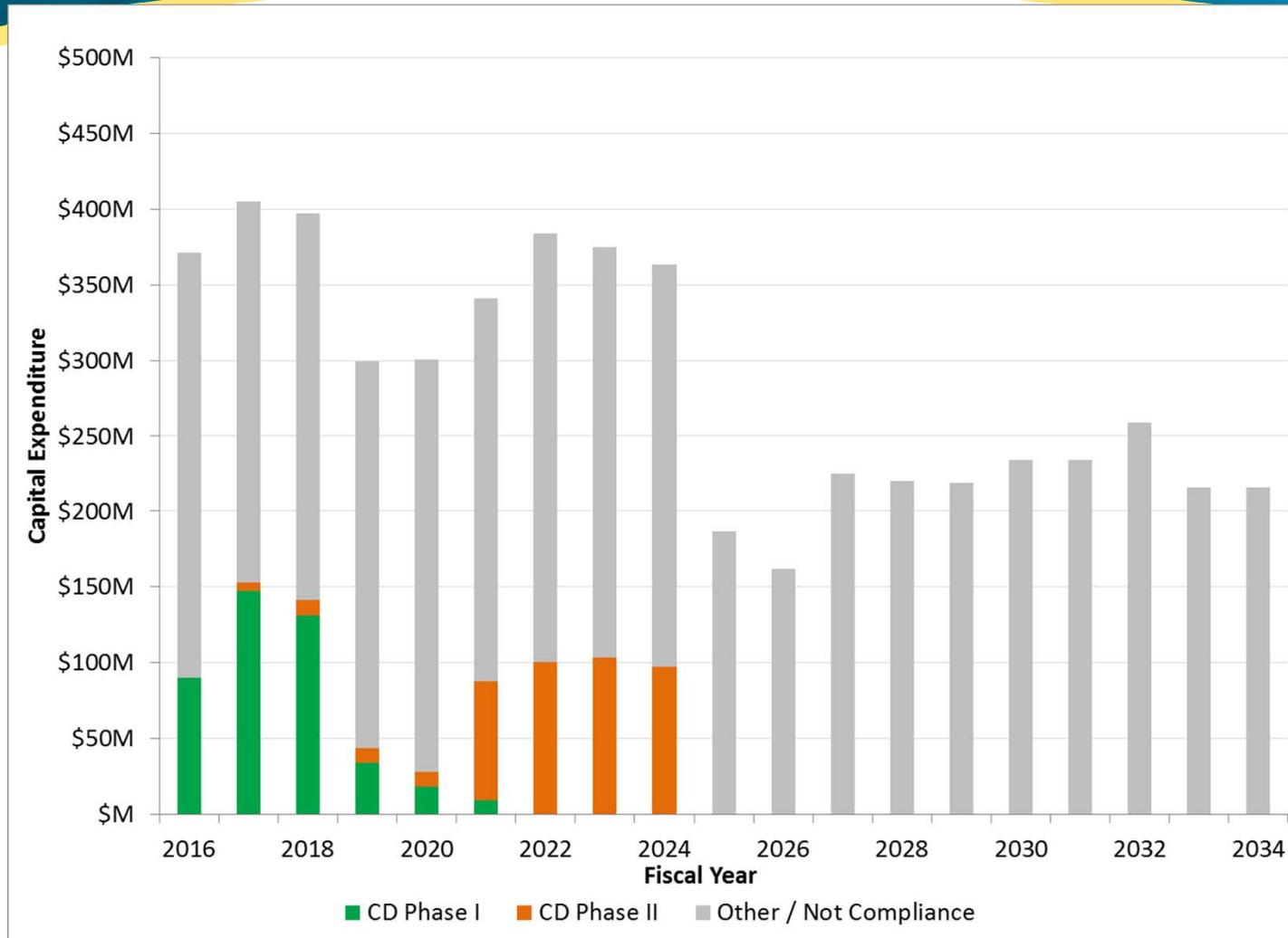
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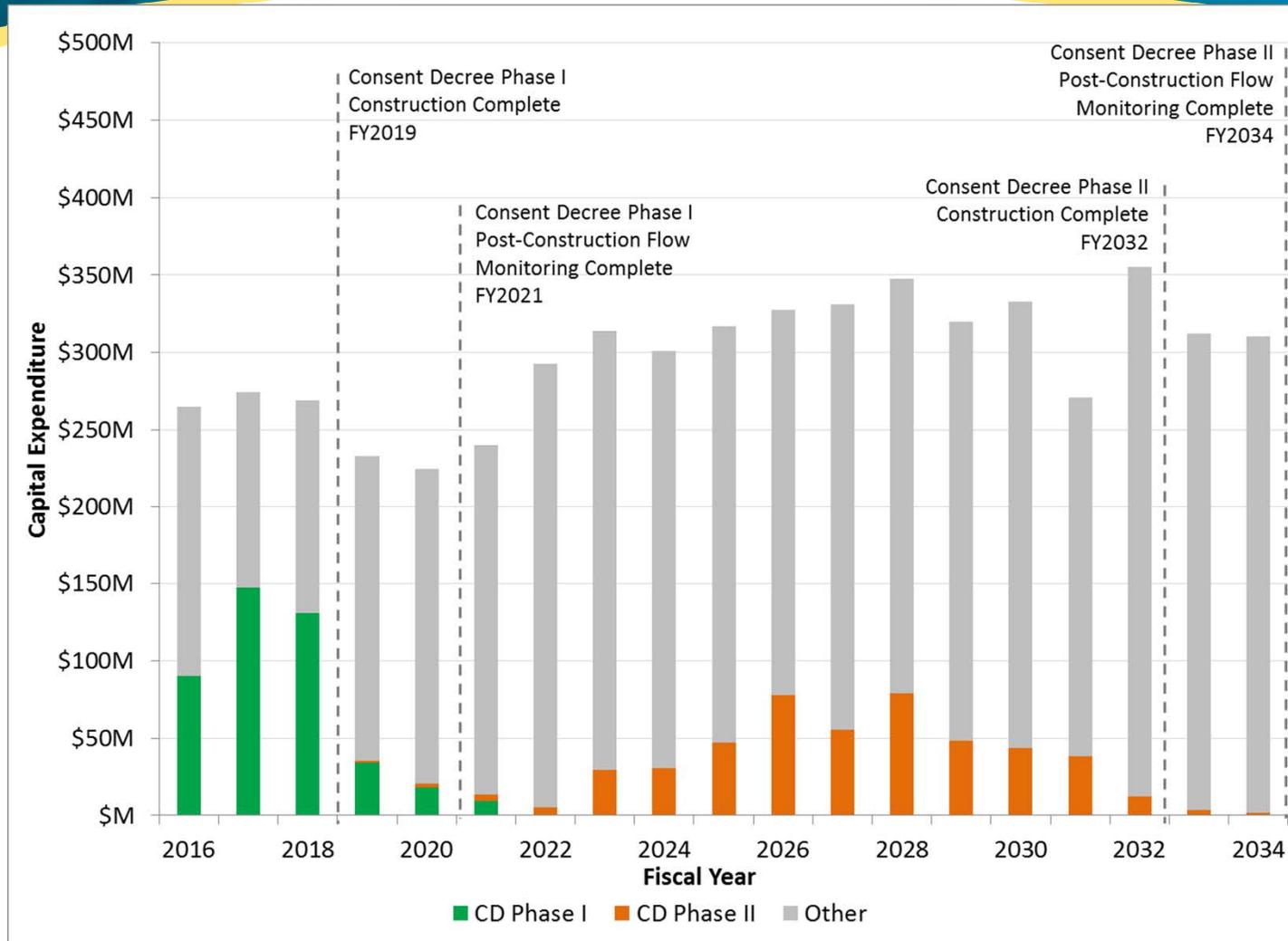
Example from a Major East Coast City



Example from a Major East Coast City

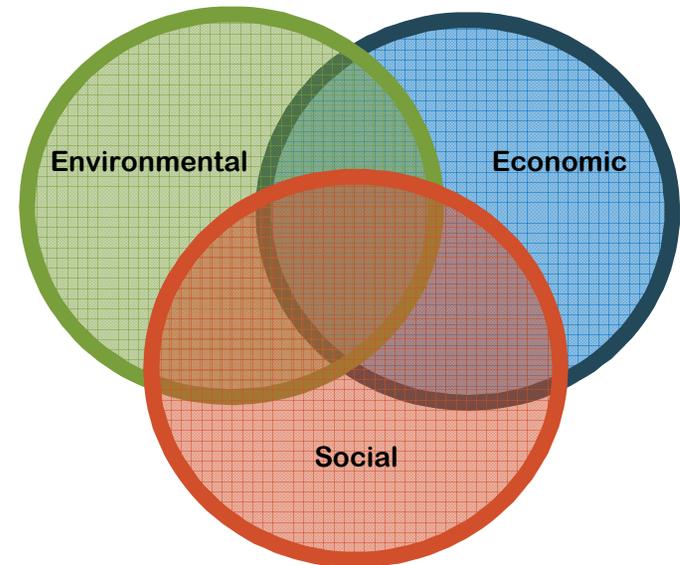


Example from a Major East Coast City



Project Costs and Benefits

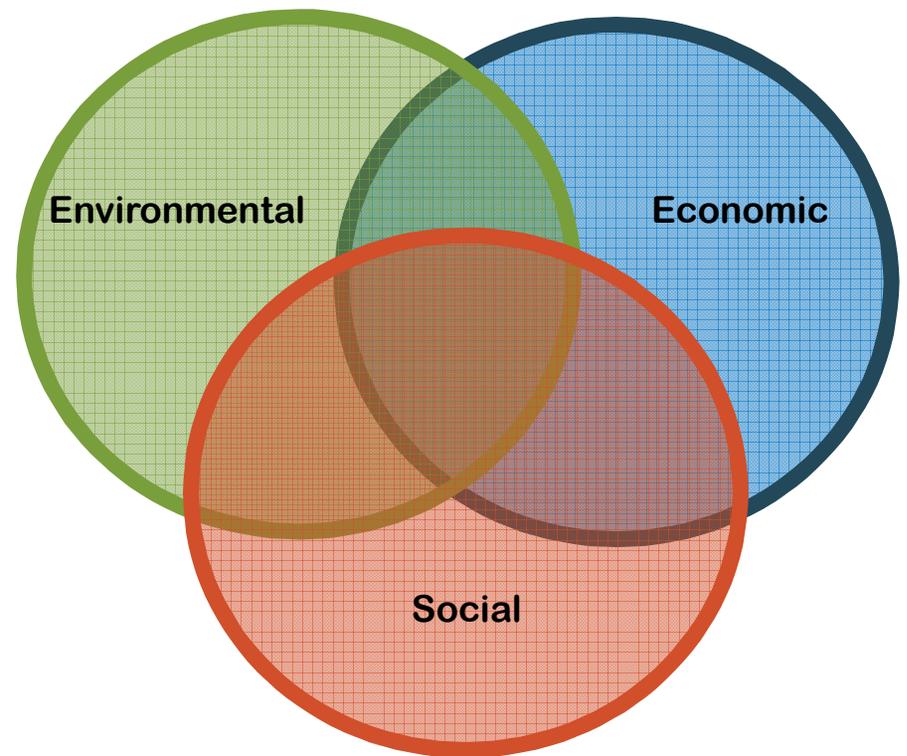
- Projects are scored against Triple-Bottom-Line (TBL) criteria to determine project benefits
- The TBL criteria are **only** used in the Integrated Plan (not in Engineering Alternatives analysis)
- Capital and O&M costs are considered separately



Triple-Bottom-Line Framework

Triple-Bottom-Line Framework

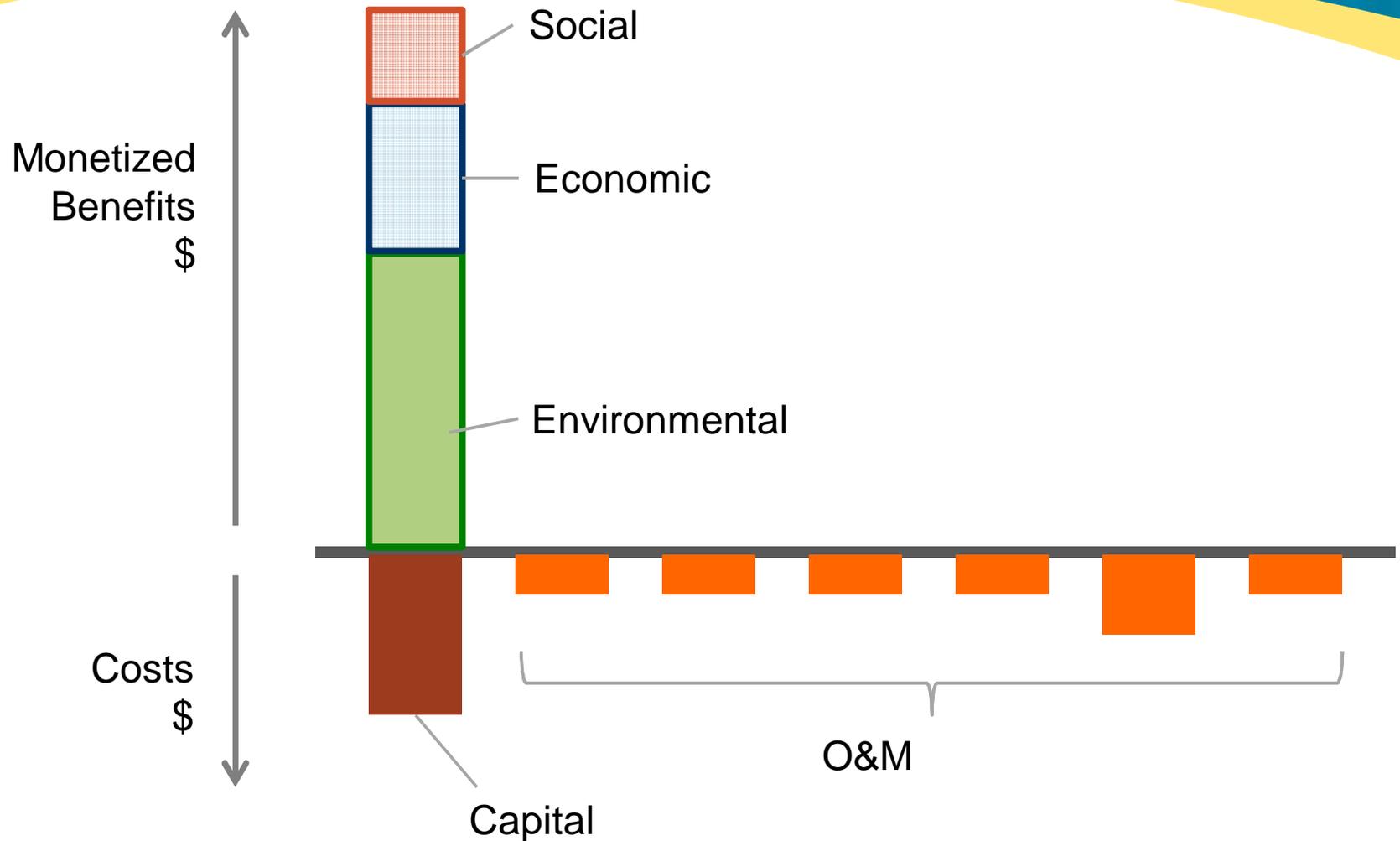
- A method for measuring comprehensive benefits to stakeholders
- Key concept in sustainability
- Applicable to many public and private industries



Triple-Bottom-Line Framework

- Sometimes a quadruple bottom line (QBL) is used
- There is no single combination of criteria that work in every case
- TBL is meant to measure project benefits, not costs

TBL as Part of a Net-Present-Value Analysis



TBL Criteria Selection

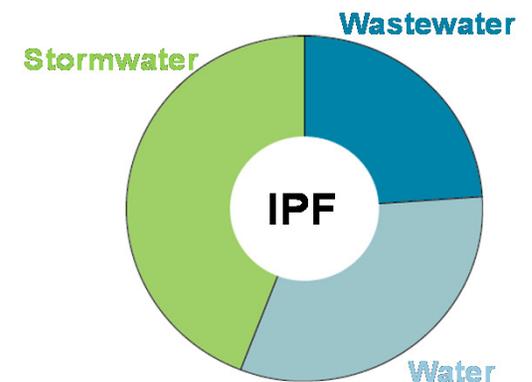
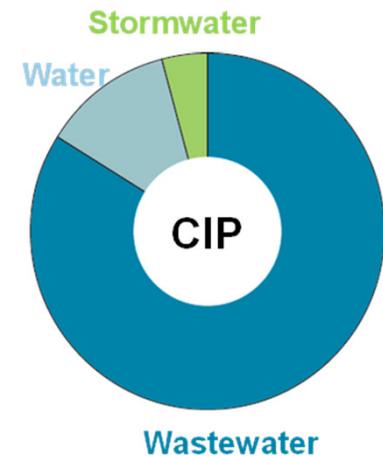
	Criteria	Description / Notes
Environmental	Reduces bacterial load to receiving waters	Reduces pathogen load (e. coli) to receiving waters, including through reduction of CSO and SSO events. Provides added emphasis on projects that reduce pathogens in the East Race.
	Reduces nutrient loadings to receiving waters	Reduces phosphorus and nitrogen loads to receiving waters
	Improves or protects habitats	Protects terrestrial or aquatic habitats. Additional emphasis goes to protecting biotic integrity.
	Provides slope stabilization	Provides soil retention, erosion protection, and additional vegetation through slope stabilization
Economic	Improves system performance	Improves system reliability and redundancy through new asset installation or maintenance of existing assets, maximizes use of existing assets, provides adaptability and operational flexibility.
	Supports economic development	Provides additional capacity to support planned development and redevelopment
	Provides long-term job growth	Creates long-term employment in the South Bend community
	Reduces energy consumption	Consumes less energy relative to alternatives, reducing energy expenditures
	Benefits real estate values	Expected to provide a positive impact on real estate values
Social	Protects human health and safety	Reduces risks to the public including basement backups and floods. Avoids high risk alternatives such as chlorination and dechlorination
	Provides/enhances neighborhood amenities	Provides sidewalks, curbs, trees, park land, bike paths, rain gardens, wetlands, and other amenities. Improves aesthetics.
	Benefits historically underserved communities	Provides services and amenities to historically underserved communities
	Provides opportunities for civic engagement and education	Provides opportunities for civic engagement and education either directly through meetings/workshops or indirectly by addressing the needs of key stakeholder agencies

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- Improves long-term capital planning:
 - Produce a more balanced and affordable plan
 - Follow a clear and documented process
 - Create a consensus across departments
 - Engage with external stakeholders



Integrated Planning Benefits

- Improve long-term capital planning:
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 - Target investments toward utility objectives
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 - Engage with external stakeholders
- Extends regulatory compliance deadlines

Integrated Planning Benefits

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 - Produce a more balanced investment plan
 - Target investments toward utility objectives
 - Follow a clear and documented process
 - Create a consensus across departments
 - Engage with external stakeholders
- Extend regulatory compliance deadlines
- Follows EPA draft guidance – opens the door for renegotiation