





Springfield – Greene County, Mo Integrated Plan for the Environment



Integrated Wastewater and Stormwater Planning *2018 MECC Conference* Trent Stober, PE



April 11, 2018

Communities Face Numerous Infrastructure Demands with Limited Resources



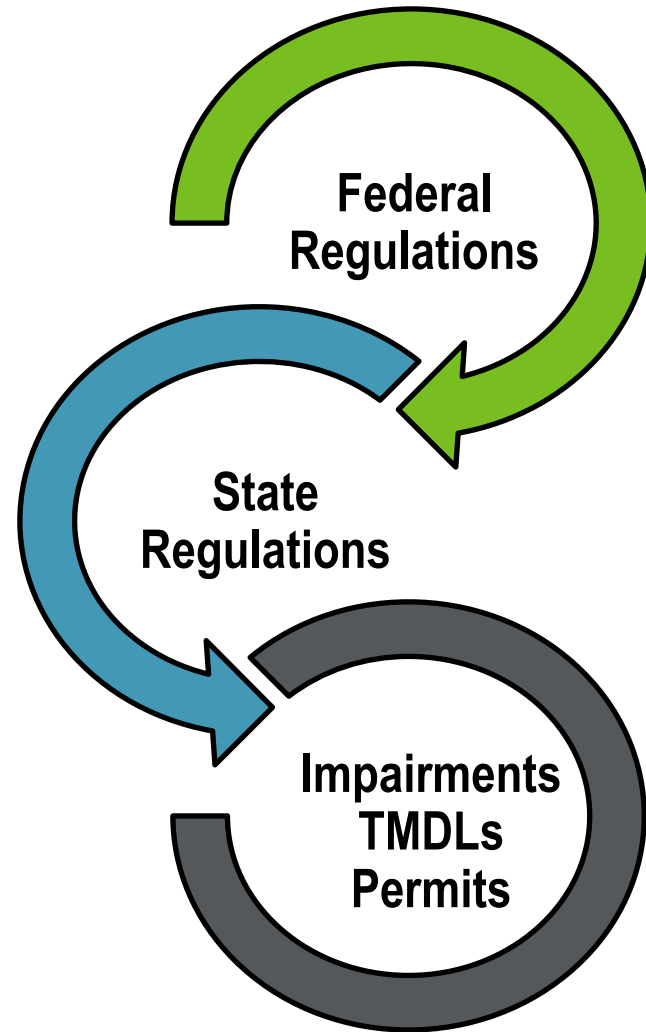
Community Drivers Require Long-Term Strategic Planning

- Operational Drivers
- Financial Drivers
- Regulatory Drivers



Regulatory Drivers

- **Federal Drivers**
 - Recreational Use Criteria
 - Stormwater Regulations
- **State Drivers**
 - Water Quality Standards Reviews
 - Effluent Regulations
 - Nutrient Reduction Regulations
 - Ammonia Criteria
- **Local Drivers**
 - Impairments
 - Current & Future TMDLs
 - NPDES Permits



“Innovative” USEPA Flow-Based TMDL Approach

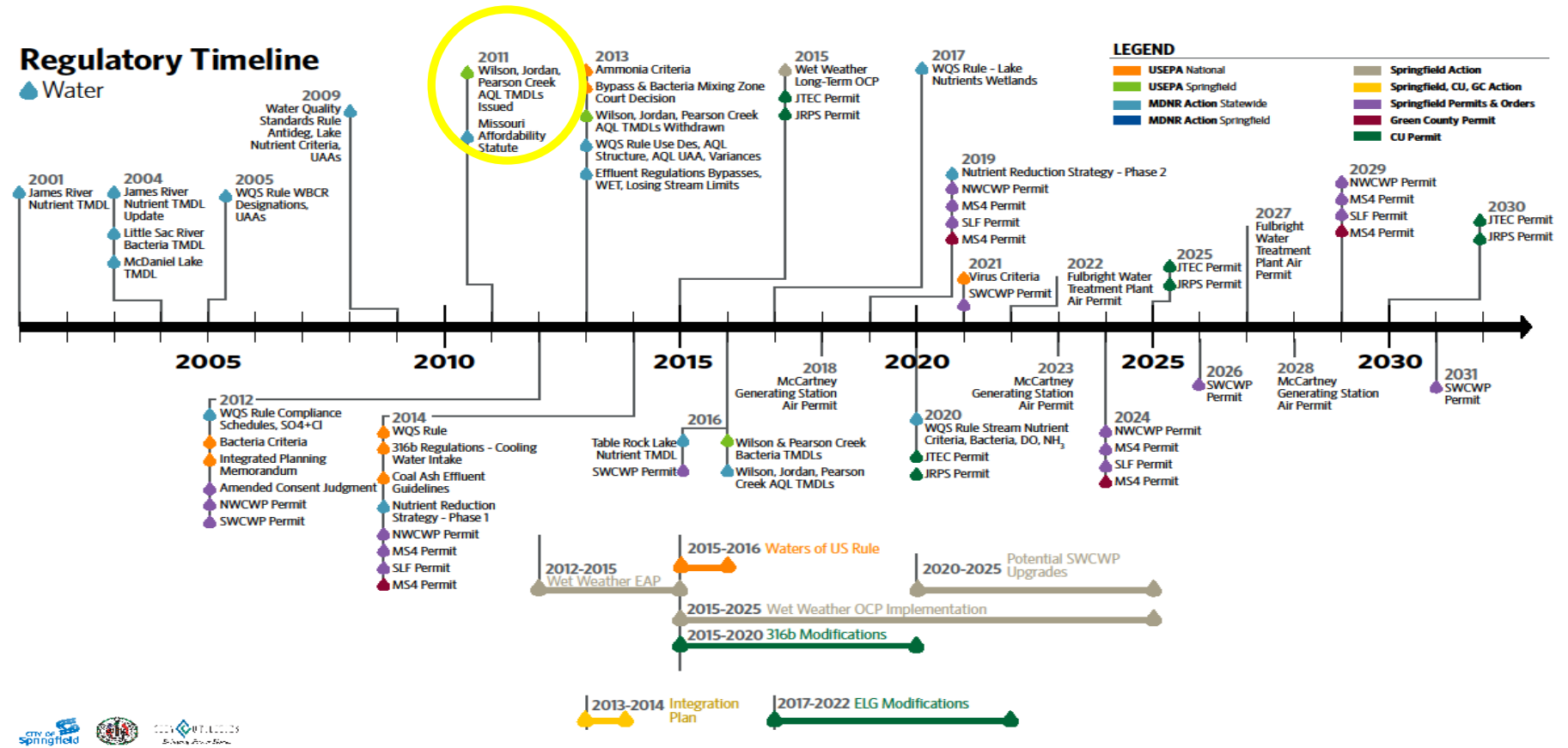
Significant Potential Impacts to Springfield’s MS4 Program



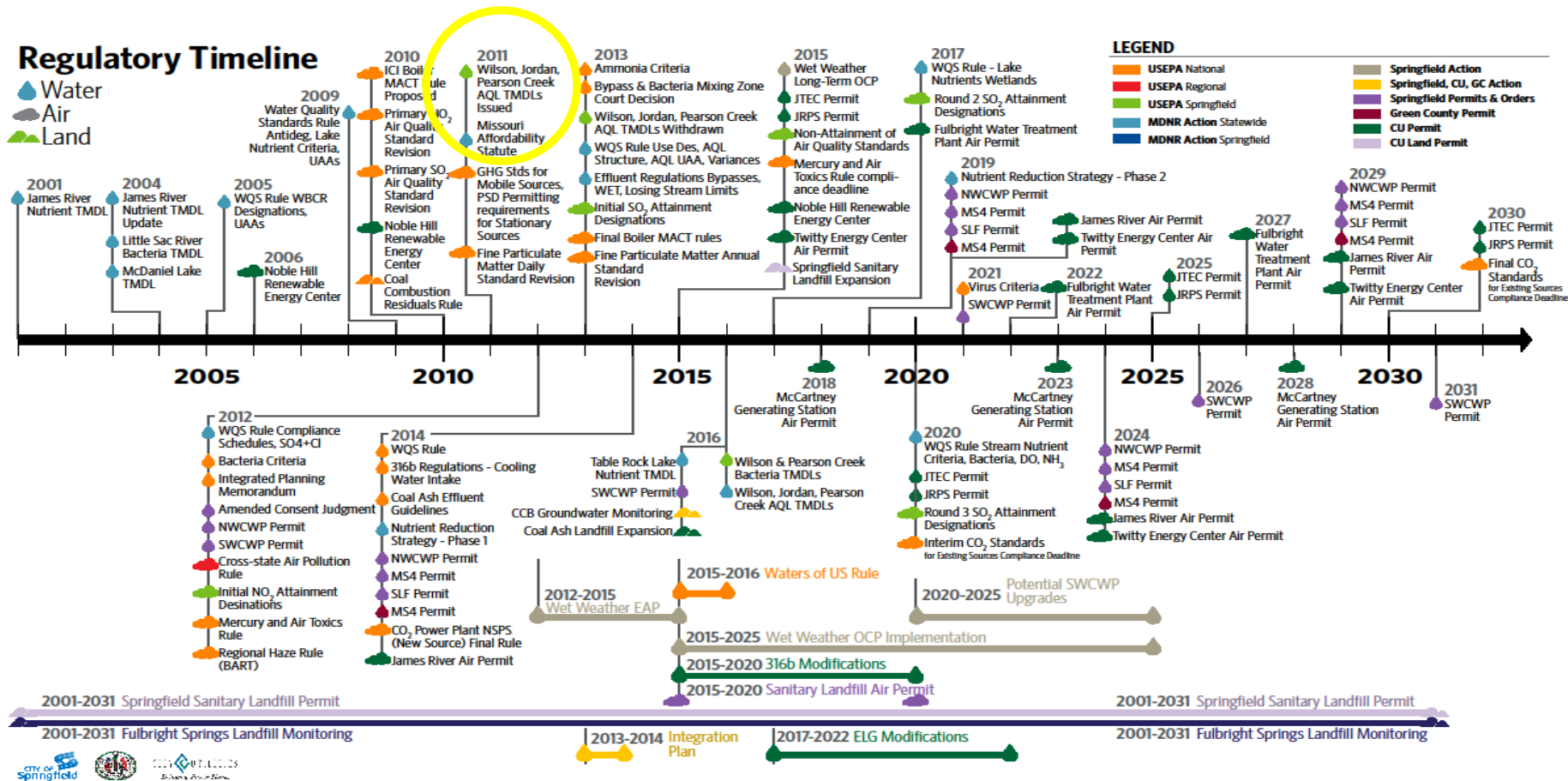
Table D.4. Estimates of TMDL Reduction Goals Derived from Weighted Land Use Runoff Coefficients

Percent Flow Exceedance	5	10	30	50	70	90	95
Reference Site Flow (cfs)	349.8	240.9	141.8	109.8	94.4	87.8	85.8
Wilson Creek Flow (cfs)	484.9	255.2	128.9	96.2	82.4	71.5	68.6
Difference in Flow (cfs)	135.1	14.3	-12.9	-13.6	-12.0	-16.3	-17.2
Percent increase / decrease in Flows	-28	-6	10	14	15	23	25
Portion Attributable to MS4 WLA, 75% (cfs)	101.6	10.8	-9.7	-10.3	-9.0	-12.3	-12.9
Portion Attributable to Other WLA Sources, 0.3% (cfs)	0.40	0.04	-0.04	-0.04	-0.04	-0.05	-0.05
Portion Attributable to LA, 24.5% (cfs)	33.03	3.50	-3.15	-3.34	-2.93	-4.00	-4.21
MS4 WLA % Reduction	40	9	An increase in moderate to low flows will occur if high flow targets are met.				
Other WLA % Reduction	41	10					
LA % Reduction	14	2					

Identification of Regulatory Challenges Facing Springfield



Identification of Regulatory Challenges Facing Springfield



EPA's Integrated Planning (IP) Framework

History and Issues

- U.S. Conference of Mayors
- NACWA
- EPA Memo: *"Achieving Water Quality Through Municipal Stormwater and Wastewater Plans"* Oct 27, 2011
 - Facilitate use sustainable and comprehensive solutions, including green infrastructure to improve water quality





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN - 5 2012

MEMORANDUM

SUBJECT: Integrated Municipal Stormwater and Wastewater Planning Approach Framework

FROM: Nancy Stoner 
Acting Assistant Administrator
Office of Water

Cynthia Giles 
Assistant Administrator
Office of Enforcement and Compliance Assurance

TO: EPA Regional Administrators
Regional Permit and Enforcement Division Directors

In recent years, EPA has increasingly embraced integrated planning approaches to municipal wastewater and stormwater management. EPA further committed to work with states and communities to implement and utilize these approaches in its October 27, 2011 memorandum *"Achieving Water Quality Through Municipal Stormwater and Wastewater Plans."* Integrated planning will assist municipalities on their critical paths to achieving the human health and water quality objectives of the Clean Water Act by identifying efficiencies in implementing requirements that arise from distinct wastewater and stormwater programs, including how to best prioritize capital investments. Integrated planning can also facilitate the use of sustainable and comprehensive solutions, including green infrastructure, that protect human health, improve water quality, manage stormwater as a resource, and support other economic benefits and quality of life attributes that enhance the vitality of communities.

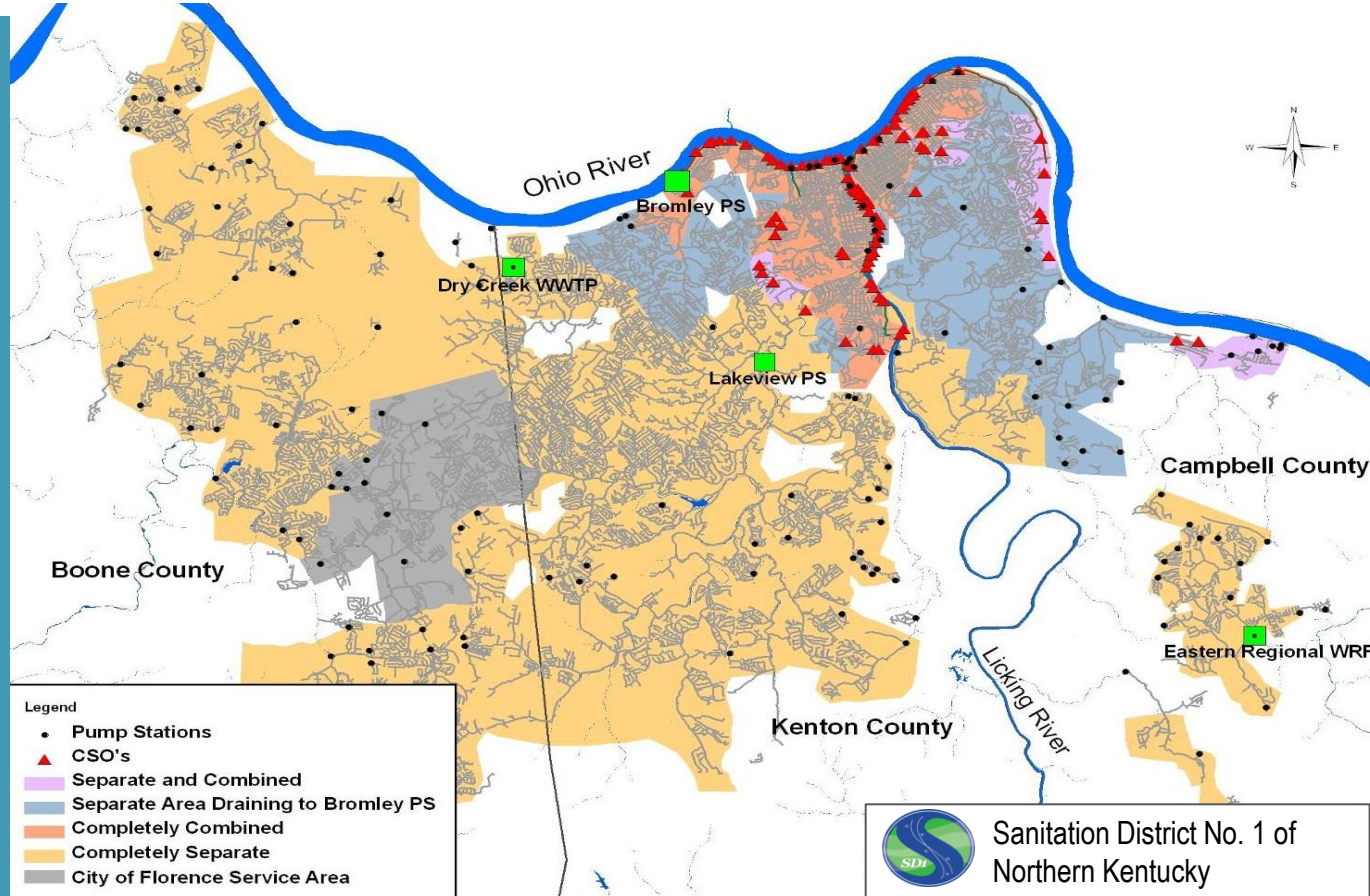
To provide further guidance on developing and implementing effective integrated plans under this approach, we have developed, with extensive public input, the attached Integrated Municipal Stormwater and Wastewater Planning Approach Framework document. We are posting the framework document on our website and, as they become available, will provide practical examples of how municipalities are implementing this approach. We would like to thank Regions 2, 4, 5, 7 and 10 for their assistance in conducting public workshops to gain input on the draft framework. We encourage all Regions to work with their States to identify

EPA Final Framework June 5, 2012

Northern Kentucky Sanitation District #1

First US Integrated Plan

- WW & SW Service to over 30 Local Governments
- Service area ~ 229 mi²
- CSO area 12 mi²
- >1,600 miles of sewers
- 134 pump stations
- 3 regional treatment facilities

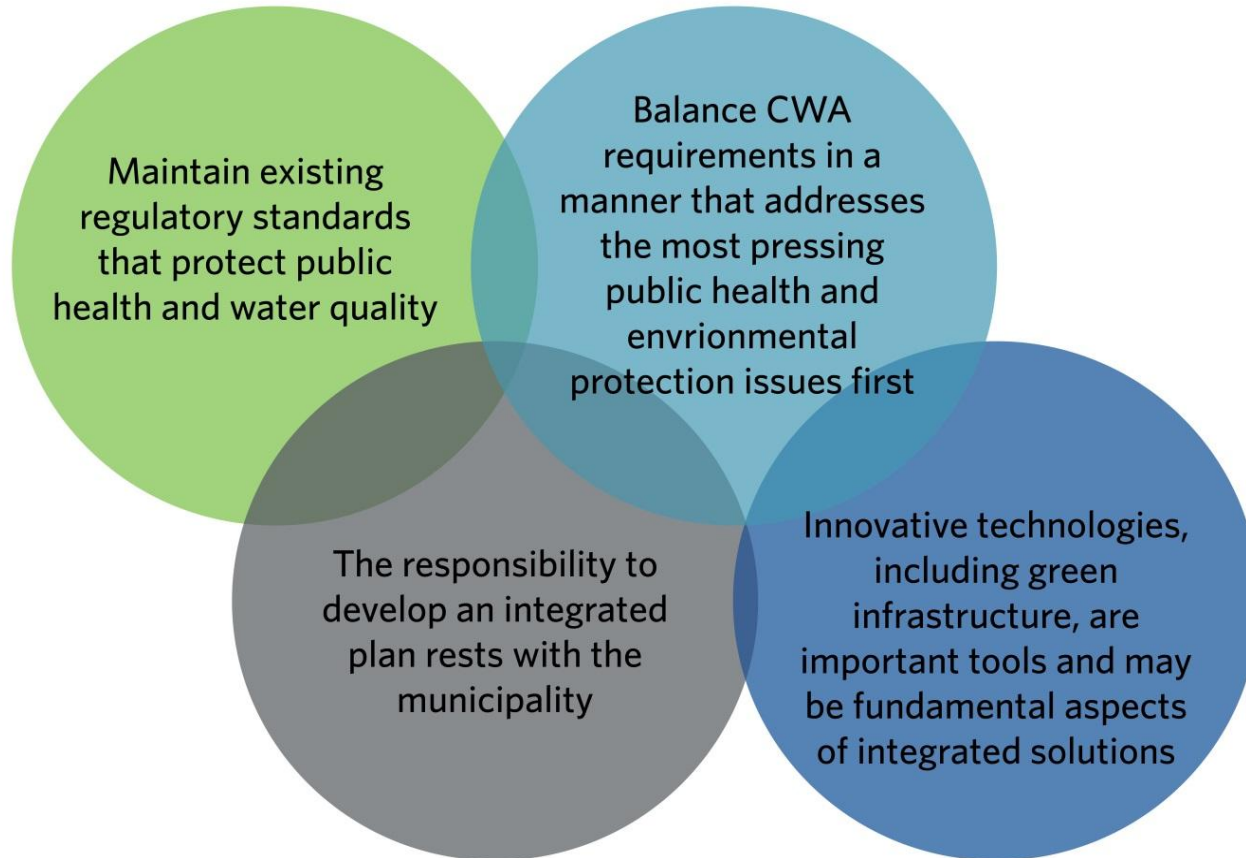


Sanitation District No. 1 of
Northern Kentucky

IP Approach Framework

“The integrated planning approach does not remove obligations to comply with the CWA, nor does it lower existing regulatory and permitting standards, but rather recognizes the **flexibilities** in the CWA for the **appropriate sequencing and scheduling of work.**”

U.S. EPA Integrated Planning Overarching Principles



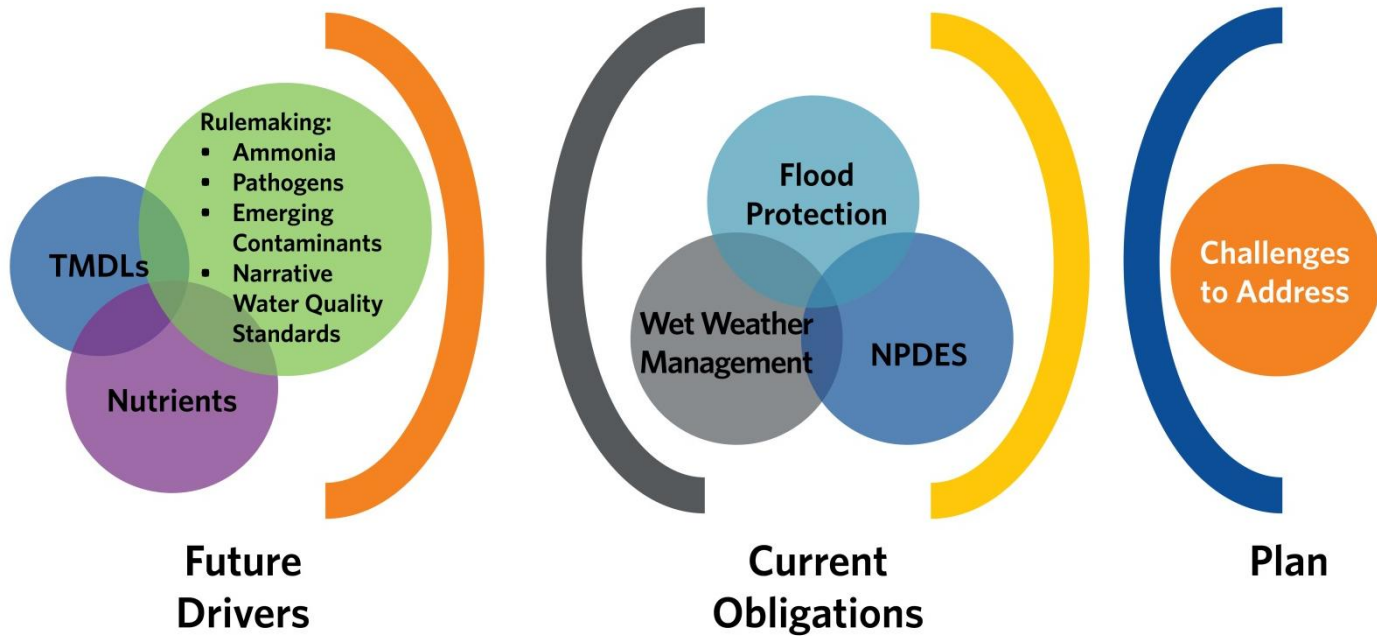
The Six Elements

Balanced
Prioritized
Affordable
Implementable



ELEMENT 1

Water Quality, Human Health, & Regulatory Issues



An assessment of existing and future projected challenges in meeting regulatory requirements

ELEMENT 2

Existing Systems & Current Performance

A description of existing systems under consideration and summary information describing the systems' current performance

- Existing Permit Compliance
- Consent Decree Requirement Compliance
- Receiving Water Quality
- Water Quality Impairments
- Infrastructure Replacement/Asset Management



ELEMENT 3

Community Involvement in Planning

Engage Community Stakeholders in Development & Implementation of Plan

- A compelling voice in priority setting dialog with regulators

Find a forum that works for Your Community:

- Stakeholder task forces
- Neighborhood associations
- Industrial task force
- Council briefings
- Legislative briefings
- Public hearings
- Websites & social media
- Public Service Announcements
- Academia involvement
- Special interest groups
- Public surveys
- Targeted interviews



ELEMENT 4

Alternative Selection & Scheduling



What is our priority?

- Results of Community Outreach
- Public Health & Water Quality

How do we decide?

- Structured Alternative Selection Process
- Triple Bottom Line

What can we afford?

- Financial Capability Assessment

When can we afford it?

- Review Impacts on Rates Over the Planning Period

ELEMENT 4

Establishing
Priorities and
Evaluating
Alternatives



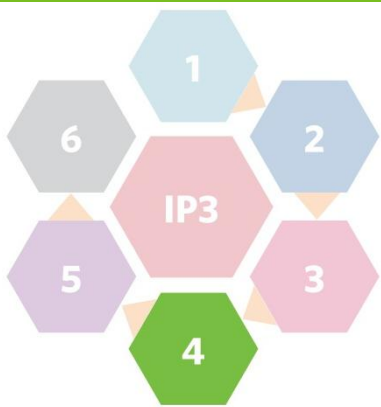
Wastewater

Stormwater/
Flood Protection

Water

ELEMENT 4

Affordability and
Financial
Capability
Determine the
Schedule &
Endpoint



10-15 Years

**Greatest Benefit
Alternatives**

25-35 Years

ELEMENT 4

Establishing Priorities and Evaluating Alternatives

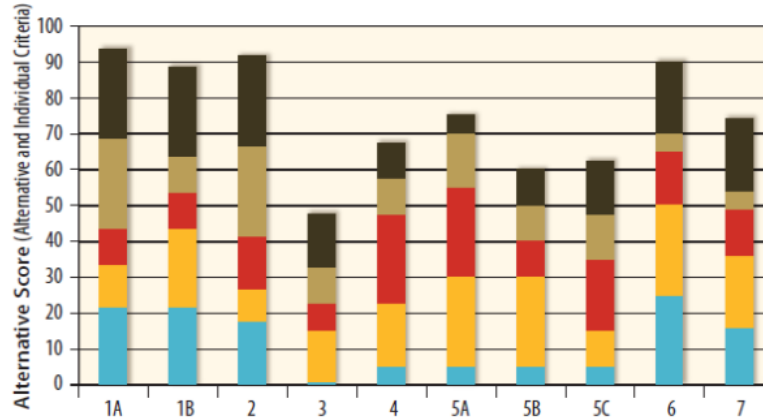
Envision Rating System



Sustainable Return on Investment



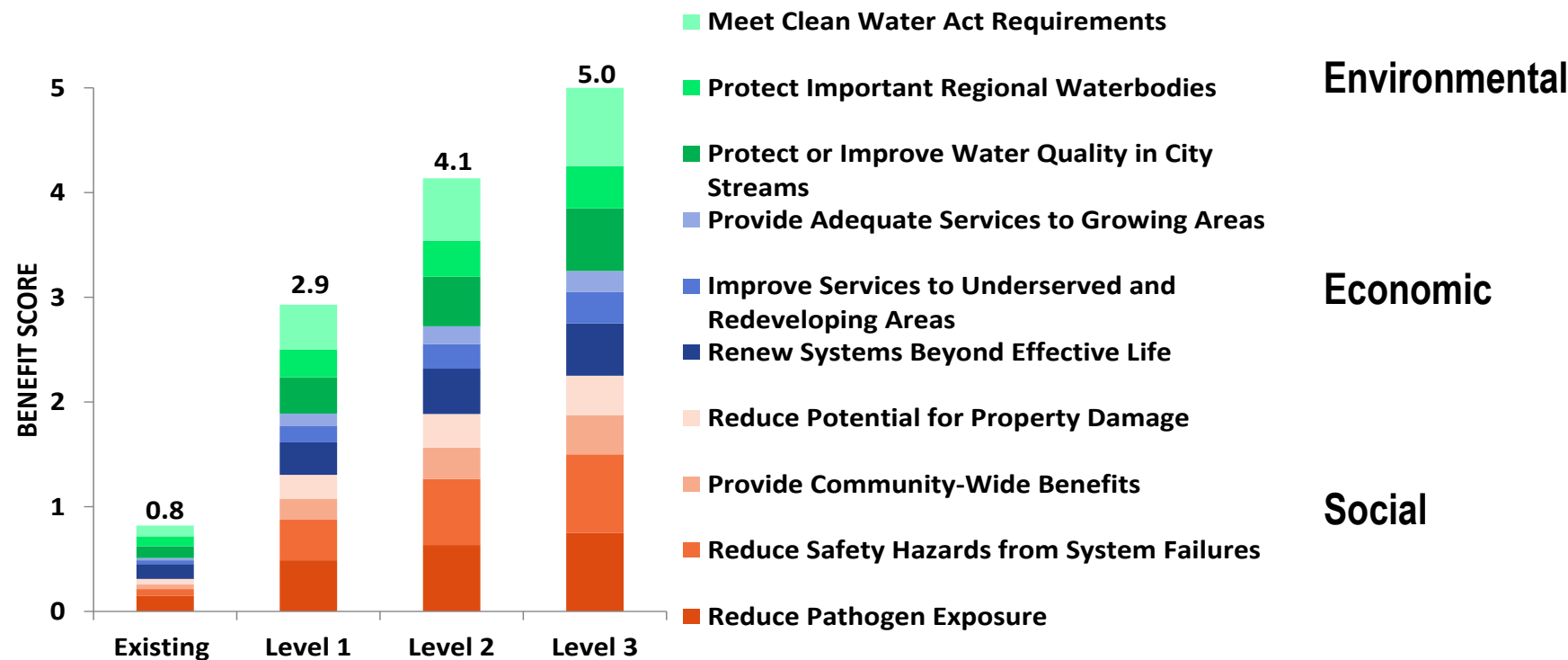
Triple Bottom Line or Multiple Criteria Decision Analysis



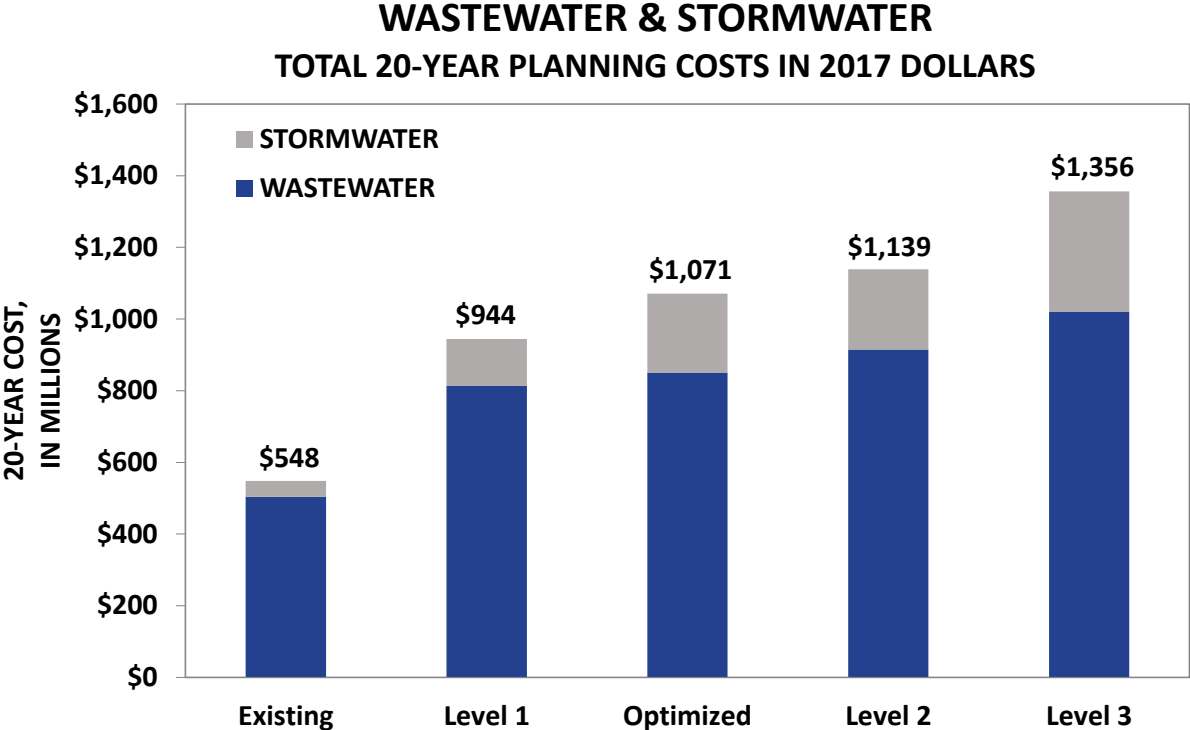
Columbia's Potential Funding Levels for Each Project Category

- **Level 1 Funding** – Funding needed to meet minimum level of service based on community-wide expectations and meet existing regulatory requirements over 20-year planning period
- **Level 2 Funding** – Funding needed to exceed minimum level of service based upon community-wide expectations and more proactively meet existing regulatory requirements
- **Level 3 Funding** – Funding needed to address all forecasted infrastructure needs and evolving regulatory issues within 20-year planning period

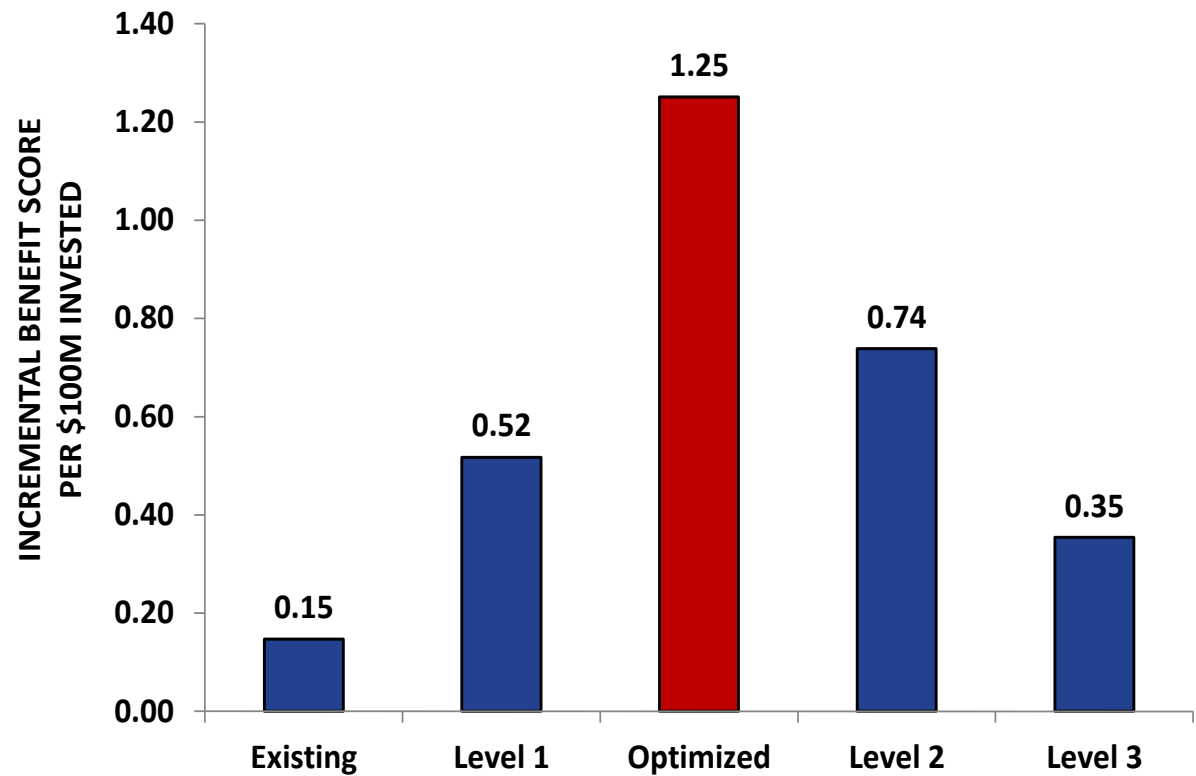
Community Benefits For Columbia's Investments



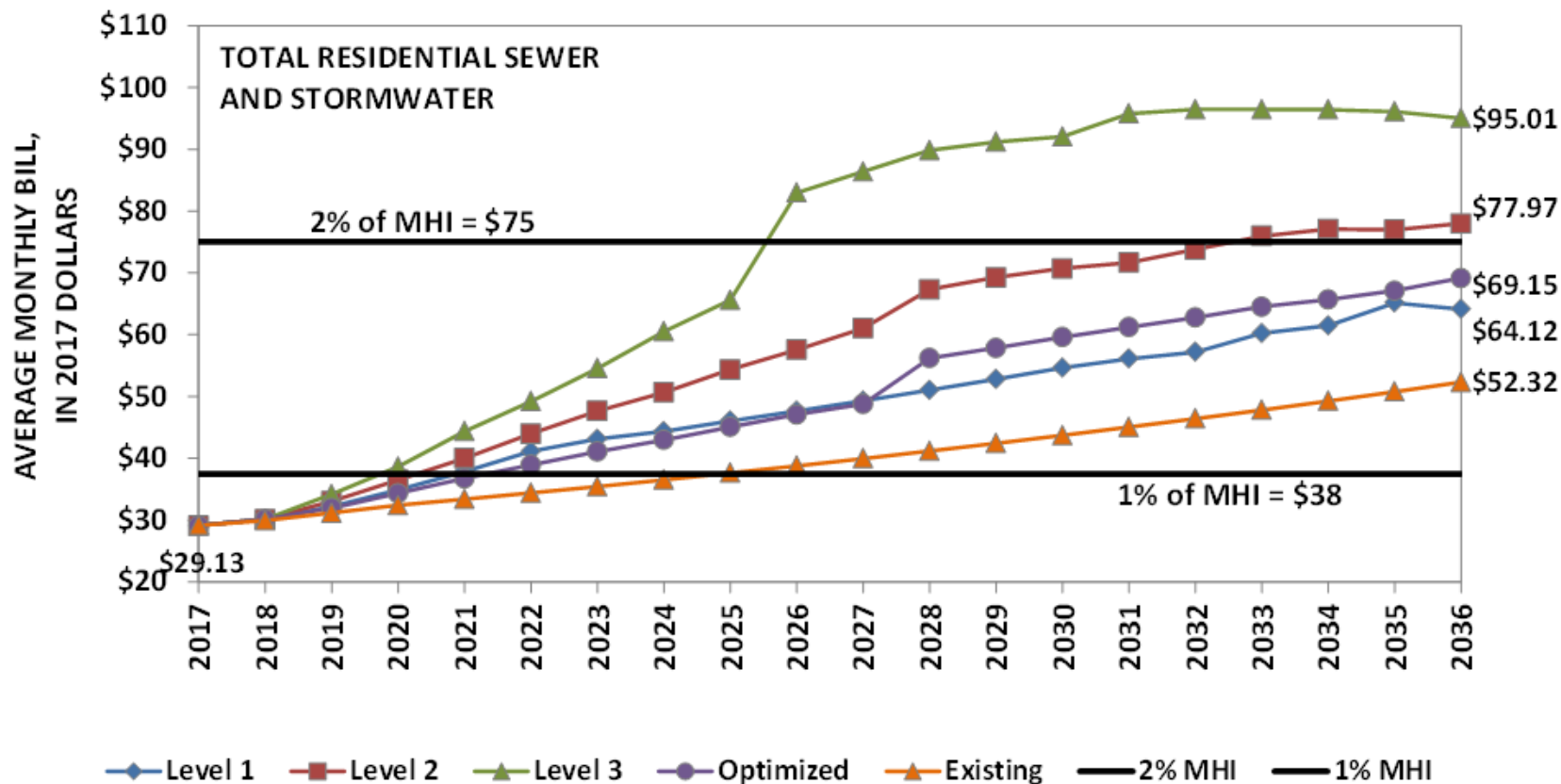
Optimized Wastewater And Stormwater Cost Estimates



Optimized Portfolio Balances Program Costs with Community Benefits



Optimized Wastewater And Stormwater Bill Projections Today's Dollars

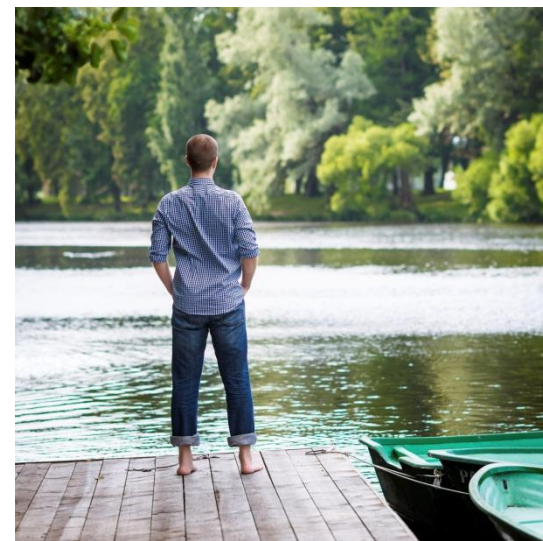
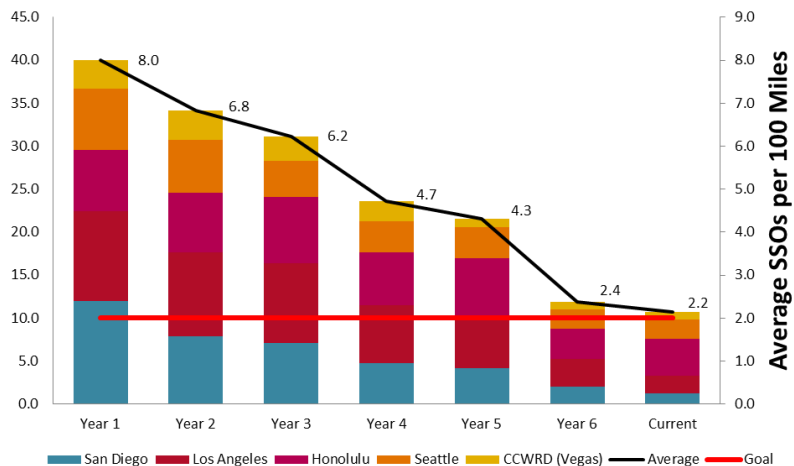


ELEMENT 5

Demonstrate Success



A process for evaluating the performance of projects identified in a plan



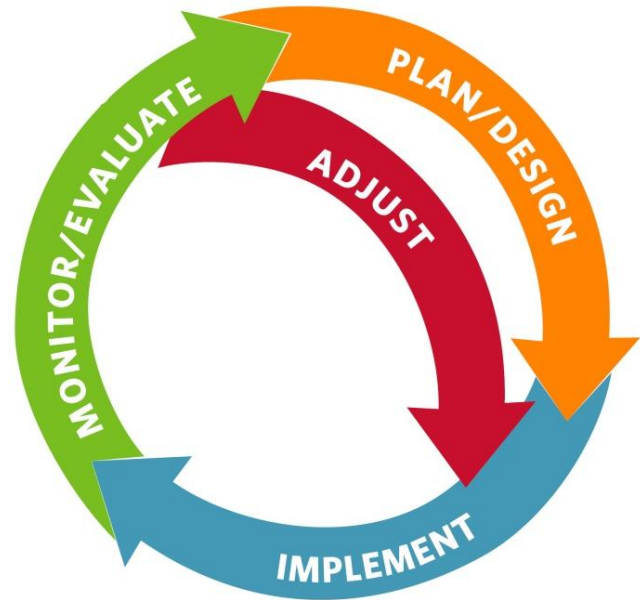
ELEMENT 6

Improvements
to the Plan



Adaptive Management...

A process for identifying, evaluating and selecting proposed new projects or modifications to ongoing or planned projects and implementation schedules based on changing circumstances...



What are the Benefits of Integrated Planning?

- Integrates planning for regulatory obligations into a **unified plan** so that they can be **prioritized**
- Emphasis on empowering **local** stakeholders to set priorities
- Highlights the issue of **affordability** (Financial Capability)
- Offers a bridge to **implementation**





“The best way to predict your future is to create it!”

- Abraham Lincoln



Questions?

