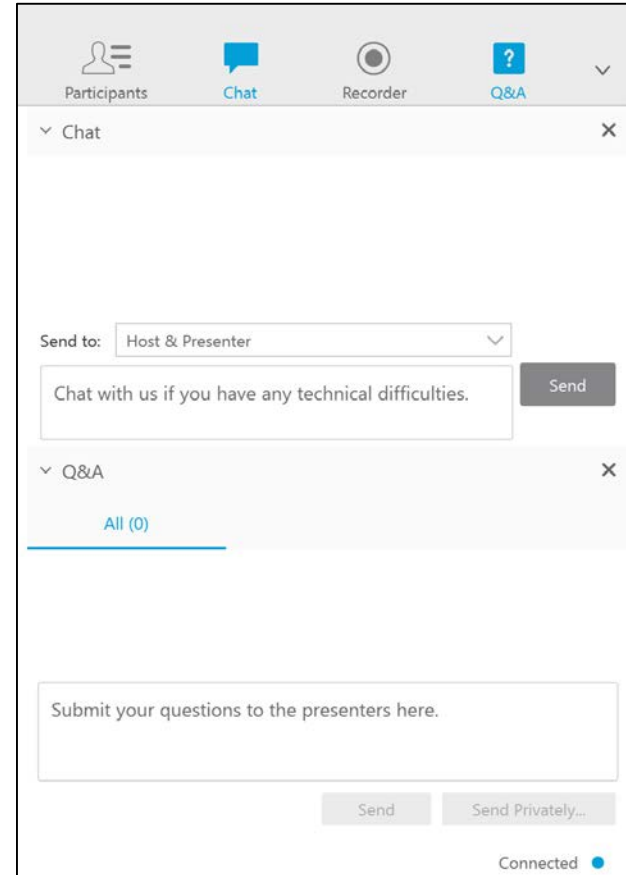


**HOW TO SURVIVE
THE "FORGOTTEN"
INFRASTRUCTURE CRISIS**

Housekeeping

- Today's webinar will be recorded and posted to our website.
- All participants were automatically muted upon entering the webinar.
- If you have **technical problems**, please notify us via the **Chat panel**.
- Please submit your **questions** to the panelists via the **Q/A panel**.
- We will pause for questions in the middle and at the end of the presentation.
- **Stay tuned** for your chance to receive **complimentary consulting** with our stormwater asset management team!



Today's Panelists



Tari Price

Host and Moderator



Hal Clarkson
PE, CFM, IAM

Stormwater Professional



Ed Singer
PE, MIAM

Asset Management
Professional

Agenda

- How Did We Get Here?
- The Emerging Crisis
- What Do We Do Now?
- Break/Questions
- The Better Way: Asset Management
- Conclusion/Questions



How Did We Get Here?

ASCE 2017 Infrastructure Report Card

- **National Overall** D+
- Dams D
- Inland Waterways D
- Levees D
- Drinking Water D
- Wastewater D+

What's Missing?

Stormwater, aka the “forgotten” infrastructure



2017
INFRASTRUCTURE
REPORT CARD

ASCE
American Society of Civil Engineers

www.infrastructurereportcard.org

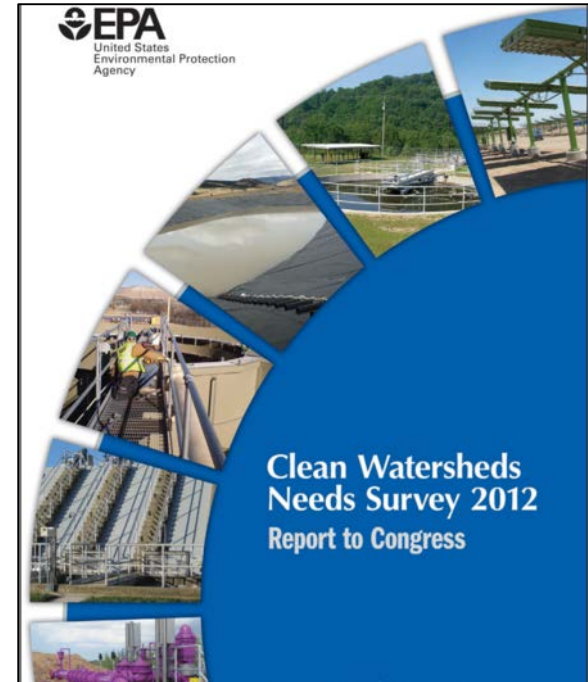
How Did We Get Here?

EPA Clean Watersheds Needs Survey 2012

Nationally, four categories of needs were defined:

1. **\$8.7 billion:** *Conveyance* of stormwater via pipes, inlets, roadside ditches and other similar mechanisms (Category VI-A)
2. **\$6.1 billion:** *Treating* stormwater with wet ponds, dry ponds, manufactured devices or similar means (Category VI-B)
3. **\$2.8 billion:** *Low-impact development and green infrastructure* projects (Category VI-C)
4. **\$1.5 billion:** *General stormwater management activities*, such as street sweepers, vacuum trucks, education program startup costs, and mapping and tracking systems (Category VI-D)

A small amount of needs (\$5.9 million) is not subcategorized and is reported as Stormwater Management (Category VI).



www.epa.gov/cwns

The Emerging Crisis

Stormwater Program Drivers

- More frequent extreme events
- Increased regulations (NPDES and TMDLs)
- Higher citizen expectations
- More demand for tax dollars
- Increased development pressures



The Emerging Crisis

Philosophy: Run to Failure

- Routine nuisance flooding
- Road failures
- Structural damages
- Delays in emergency response
- Increased work disruptions
- Negative community perception
- Reduced confidence in community leadership
- Reduced business and commerce
- Non-compliance with regulatory requirements
- **Reactionary response mode**



The Emerging Crisis

Example Community

Community

- 700 square miles
- 410,000 people

Infrastructure

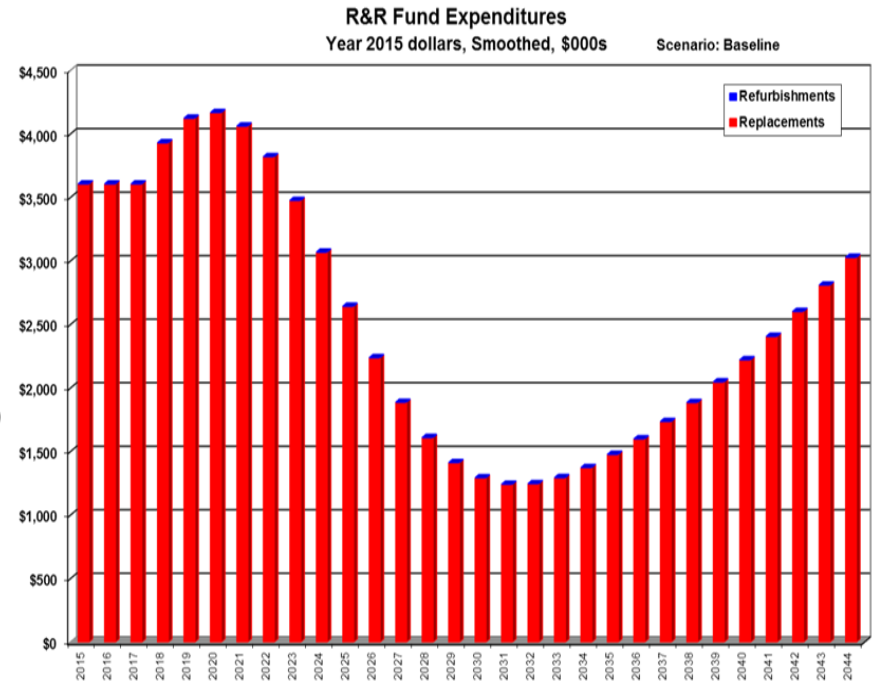
- 316 miles of pipe
- \$812M full replacement cost

Need

- \$85M R&R and CIP costs over next 25 years (\$3.4M/year)
- \$105M other program costs (\$4.2M/year)

Reality

- 2015 Revenue \$6.1M (\$1.9M for R&R/CIP)
- 2016 Revenue \$4.2M (\$0 for R&R/CIP)
- 2017 Revenue \$3.2M (\$1M short of program costs)



What Do We Do Now?

Survival Strategies: ASCE Recommendations

1. Investment

We can no longer afford to defer investment in our nation's critical infrastructure systems.

2. Leadership and Planning

Smart investment will only be possible with leadership, planning and a clear vision for our nation's infrastructure. (Educate)

3. Preparing for the Future

We have to utilize new approaches, materials and technologies to ensure our infrastructure is more resilient.



2017

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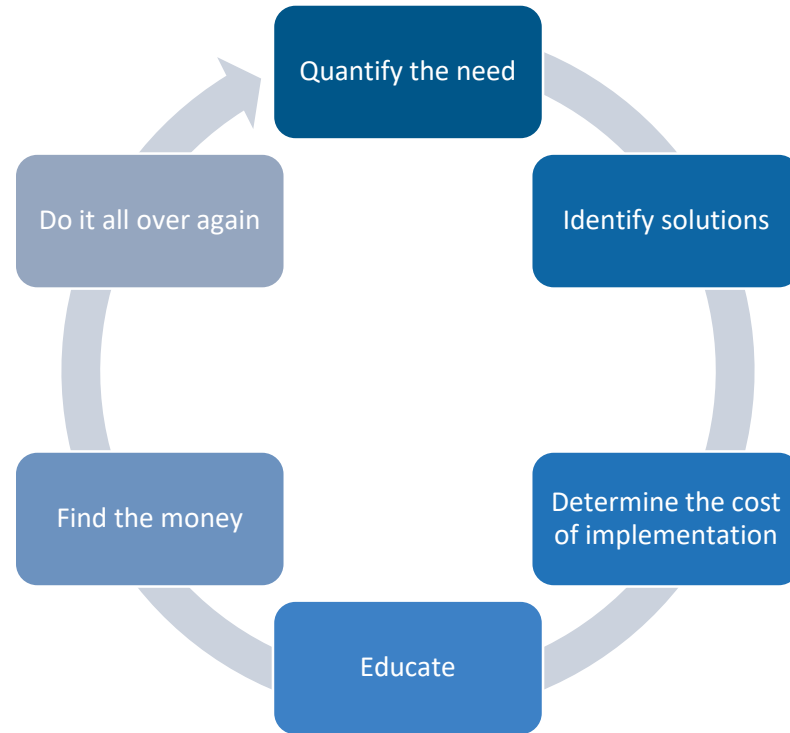
American Society of Civil Engineers

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What Do We Do Now?

Survival Strategies

1: Invest



What Do We Do Now?

Survival Strategies

2: Fund

Option 1: Taxes

- General tax revenue
- Exemptions for non-taxable entities
- Rate based on property value, not runoff
- Tax rates voted on by public
- No stormwater incentives
- Minimal operational costs (incidental to current tax process)

Option 2: Stormwater Utility Fees

- Dedicated, stable and equitable
- Rare exemptions
- Rate based on runoff
- Funding levels set by local government
- Incentive to reduce impervious surfaces
- Operational costs for set-up, maintenance and periodic updates

“The average quarterly fee for a single-family home is \$11 (\$3.67/month).”

- EPA Funding Stormwater Programs, 2009

What Do We Do Now?

Survival Strategies

3: Educate



What Do We Do Now?

Survival Strategies

4: Plan

Develop a stronger stormwater utility program

- Define goals and objectives based on your vision
- Embrace new approaches and technologies
- Develop a long-range strategy



What Do We Do Now?

- There is a stormwater infrastructure crisis approaching.
- We are currently underfunding stormwater infrastructure repair and replacement needs.
- We need additional investment, leadership and planning to address the problem.
- We need a better, more sustainable approach to managing our infrastructure.



Questions

- Submit your questions using the [Q&A panel](#).
- **Stay tuned** for your chance to receive **complimentary consulting** with our stormwater asset management team!

The Better Way: Asset Management



The Better Way: Asset Management

Fundamental Elements

- Asset management (AM) changes the organizational mindset from short-term to the longer view
- AM aligns business practices around levels of service, costs and risk profiles
- AM enables optimized total asset lifecycle management
- AM establishes a clear vision for how an organization manages its assets for “value”
- **AM provides a plan for doing the right things—
at the right times—for the right reasons**



The Better Way: Asset Management

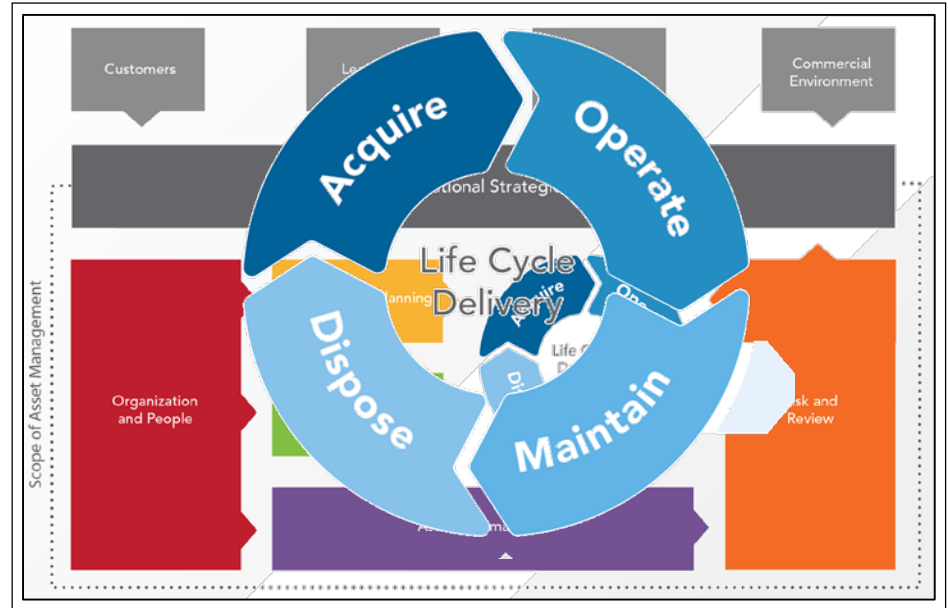
Managing Assets versus Asset Management

Managing Assets

- Things you do to assets
- Lifecycle delivery

Asset Management

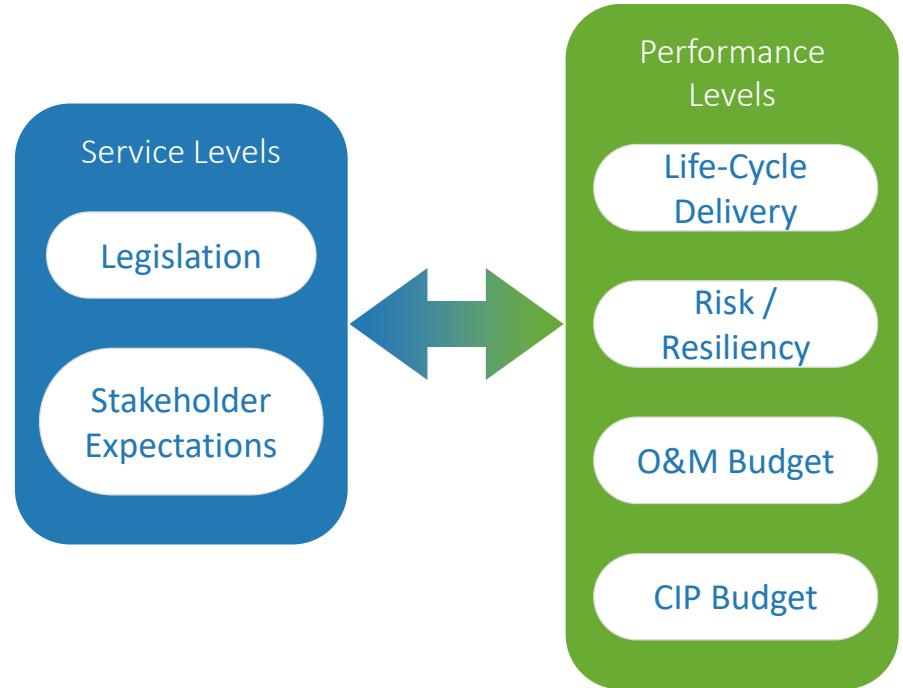
- Establishes alignment across the organization (line of sight)
- Focus on delivering value
- Manages risk and optimizes lifecycle delivery



The Better Way: Asset Management

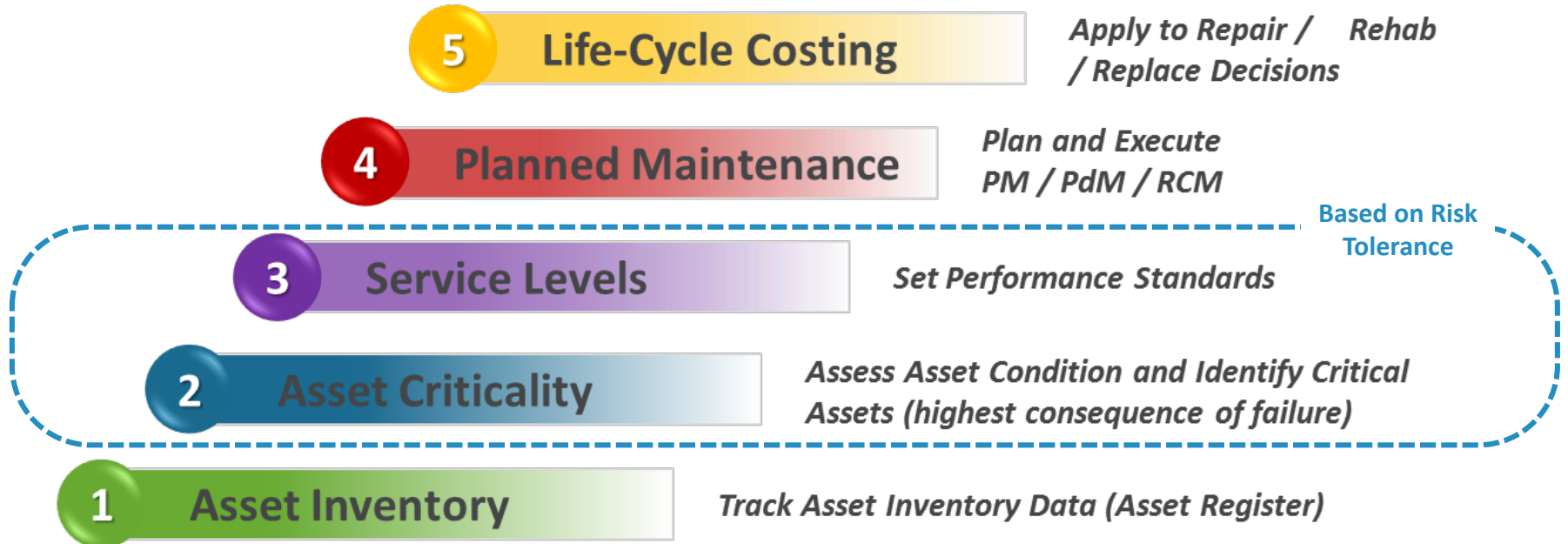
Achieving an Optimal Balance

- Well-defined stakeholder expectations
- Active engagement and dialog with stakeholders
- Transparency
- Well-understood operations and management (O&M) costs
- Realistic capital improvement planning (CIP) budgets



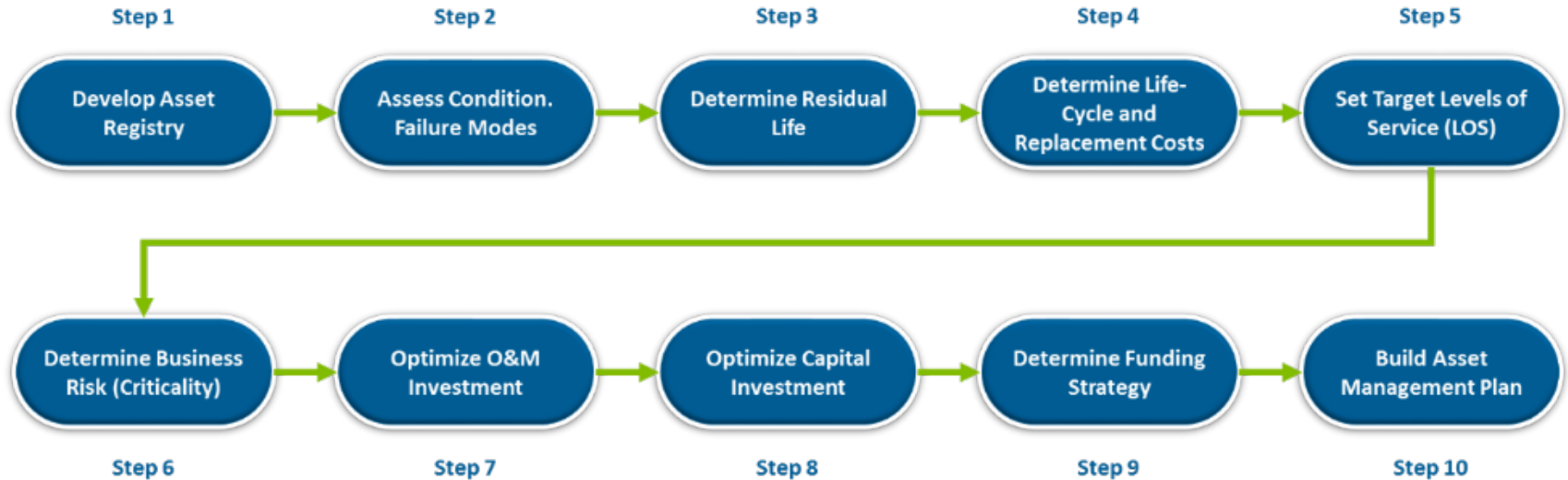
The Better Way: Asset Management

Asset Management Planning



The Better Way: Asset Management

Developing an Asset Management Plan

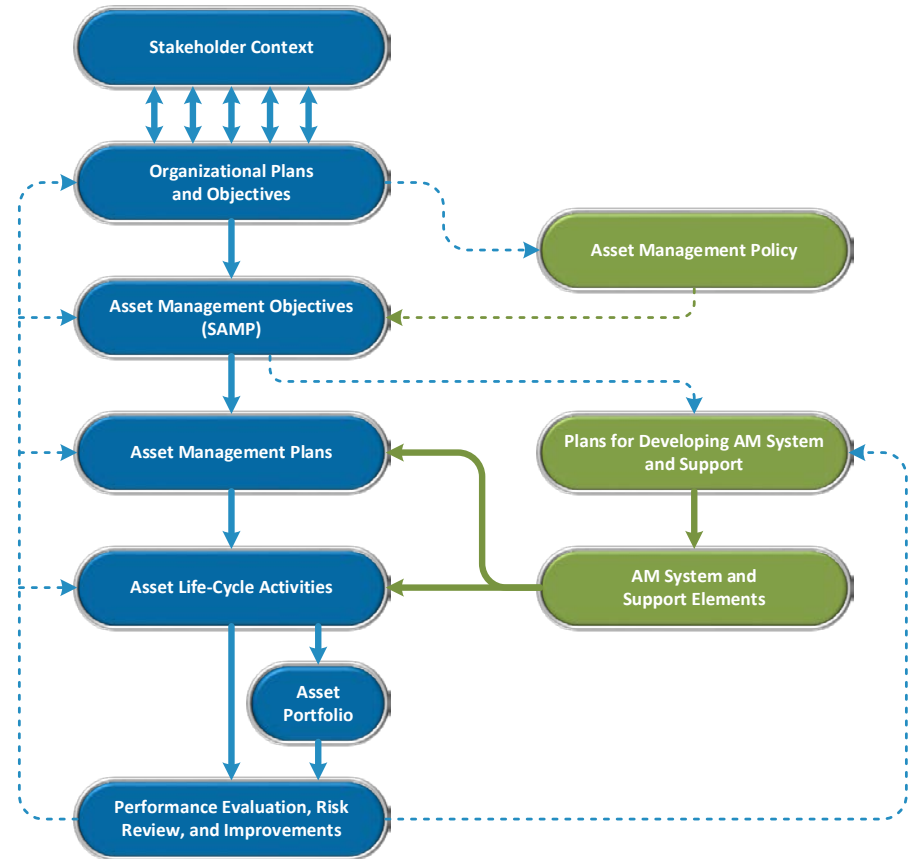


*Ten Core Steps to Developing an Asset Management Plan -
WERF SIMPLE*

Tying it Together

A good asset management program should:

- Align strategically with the organization's underlying strategy and objectives
- Be enterprise-wide, avoiding silos
- Apply to asset owners, managers, contractors, suppliers, customers and regulators
- Balance cost, risk and performance on varying time scales
- Apply to both tangible (physical) and intangible (i.e. public perception) assets



Conclusion

Stormwater Infrastructure

- The stormwater infrastructure crisis is ours to deal with—we can wait no longer.
- We need a different approach; one that is sustainable and effective.
- We need to match our fees to the services we provide.
- We must educate our citizens and community leaders on the value of the service we provide.

Asset Management

- Managing assets is not enough.
- We must align levels of service and funding requirements with long-term, risk-based management plans.
- Success is dependent upon a top-down **and** bottom-up approach.
- It is critical to align the cost of service with the value delivered.
- Success is seen by maximizing the value obtained from your stormwater assets.

Questions??

Please enter your questions into the Q/A panel.

Contact Us



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