

Resiliency: Facing the Rising Tide of Age

Florida Stormwater Association



WOOLPERT

ARCHITECTURE | ENGINEERING | GEOSPATIAL

June 17, 2022

Learning Objectives



Understand the link
between infrastructure
condition and resiliency

1.

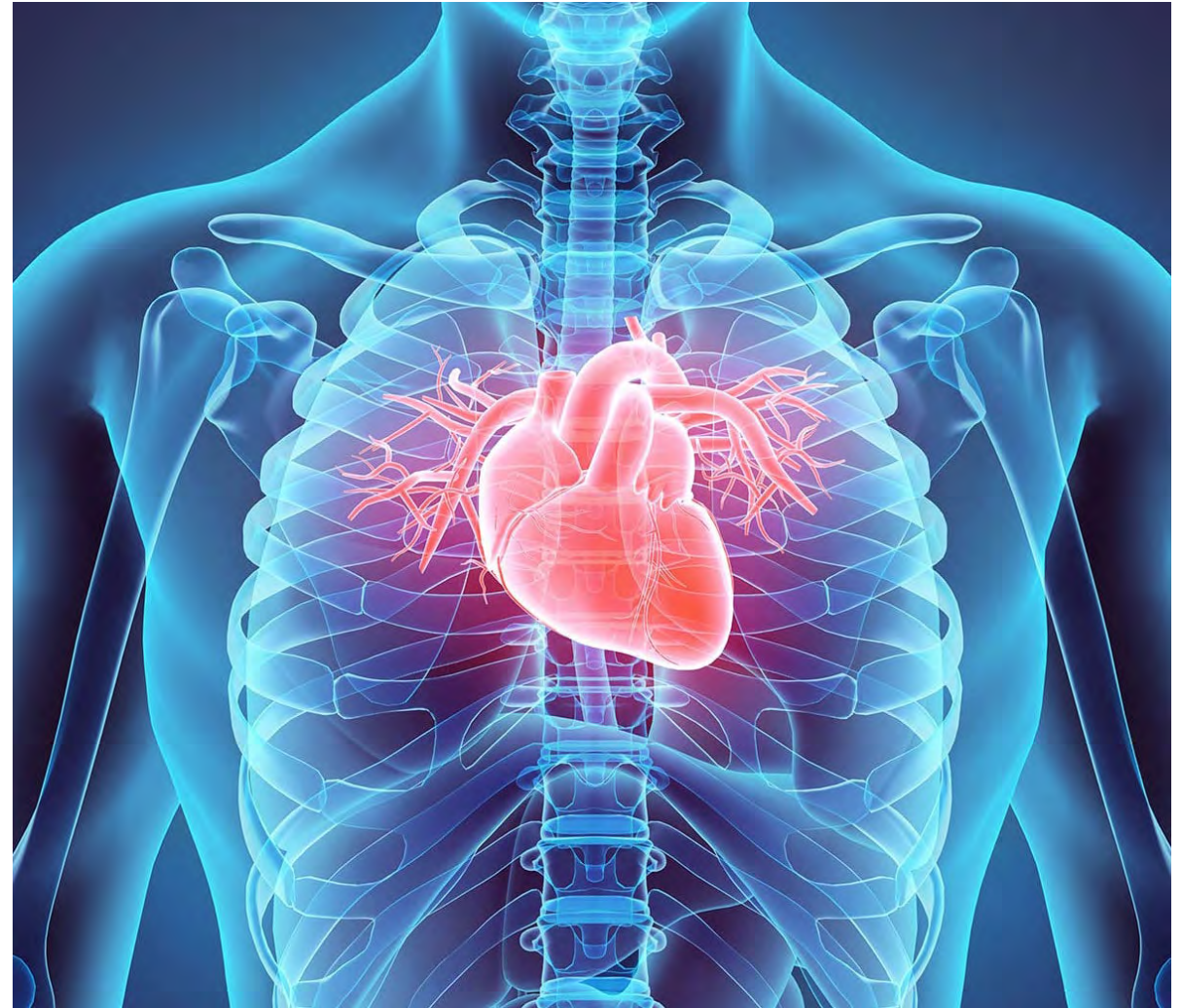
2.

Learn how to build resiliency
planning into asset
management and vice versa

Learn the critical elements
of asset management

3.

Real Life Lesson on Resiliency & Asset Management



Definitions

Resilience is the **ability to anticipate risk, limit impact, and bounce back rapidly** through survival, adaptability, evolution, and growth in the face of turbulent change.

~Community and Regional Resilience Institute

Asset management is the activity of an organization to realize value from assets (by **balancing costs, risks, opportunities, and performance benefits**).

~ISO 55000

Resiliency Planning

1. Form a Collaborative Planning Team



2. Understand the Situation



3. Determine Goals and Objectives



4. Plan Development



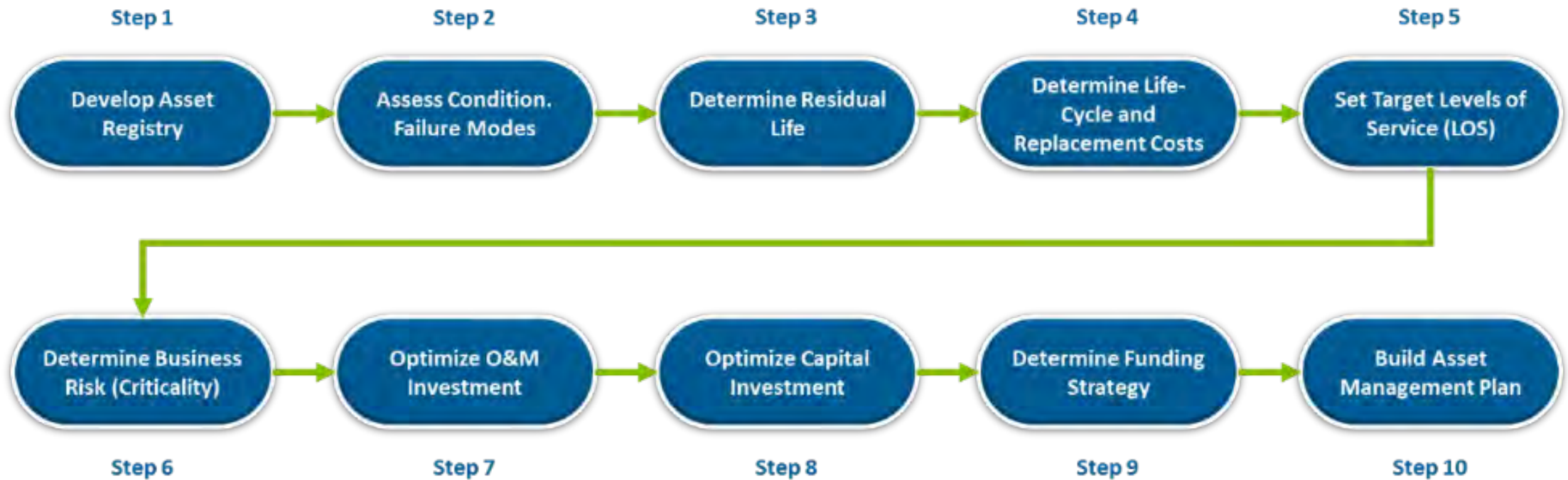
5. Plan Preparation, Review, & Approval



6. Plan Implementation and Maintenance



WERF 10 Step Planning Process



Resiliency and Asset Management Planning

Know the infrastructure framework around which you are building your resiliency plan.



How are Asset Management and Resiliency Related?

Both are systematic, proactive approaches to design, construction, operation and maintenance of infrastructure...

- Knowing where your system is located
- Understanding the **condition** of all assets, especially the critical ones
- Identifying the **risks** and life cycle costs to operate the system
- Creating **level of service** goals
- Developing decision-making tools based on the criticality and life cycle costs to achieve your level of service goals

Asset management provides a plan for doing the right things to the right assets—at the right times—for the right reasons and is the framework on which resiliency is built.





RETIREMENT

What does Asset Management provide to a Community?



Economic sustainability

Social equity

Increased resiliency

Higher levels of service

Reduced interference with commerce

“Managing Infrastructure Assets for Sustainable Development”,
United Nations



Common Ground

United Nations 10 Essentials for Resilient Communities	Asset Management Communities
1. Institutional Framework	Asset Management Strategies
2. Financing & Resources	Budget Planning and Funding
3. Risk Assessment	Condition Assessment and Failure Modes
4. Upgraded Infrastructure	Capacity for the Future
5. Protection of Critical Facilities	Criticality Analysis
6. Regulations and Planning	Asset Management Policies
7. Training, Education, & Public Awareness	Education of Leadership and the Public
8. Environmental Protection	Environmental Considerations
9. Preparedness, Early Warning, Response	Proactive and Predictive Management
10. Recovery and Rebuilding	Continual Improvement

What does Asset Management provide to Resiliency?

- ✓ Increased system service levels that account for future growth and changing environmental conditions
- ✓ Defined, defensible, and reasonable budgets and CIP lists
- ✓ Risk based approach to system management (most critical first)
- ✓ Wholistic approach to system operations with an eye to the future



2021 ASCE Report Card

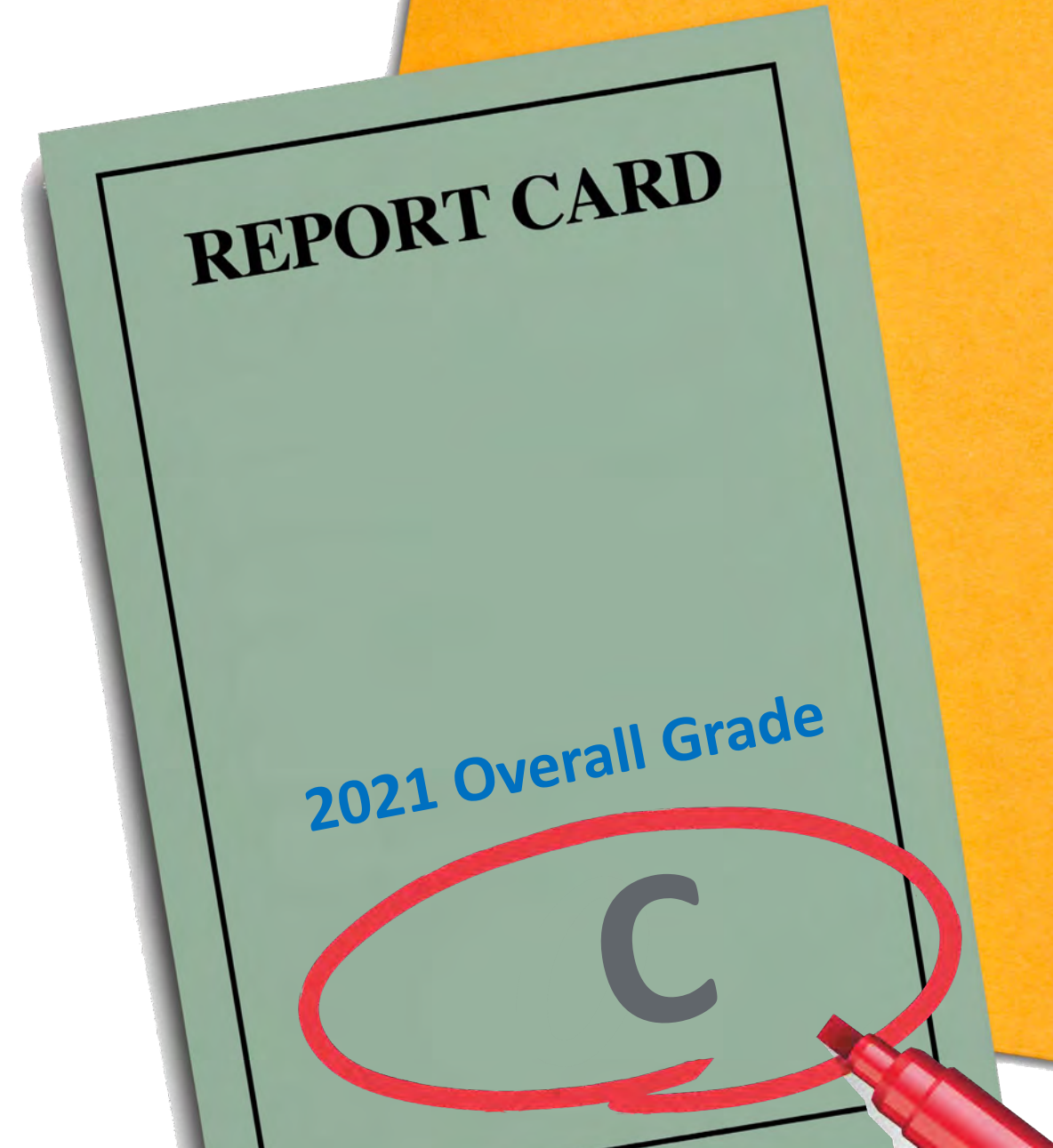


Florida Cumulative GPA:

C

2021 Florida Report Card

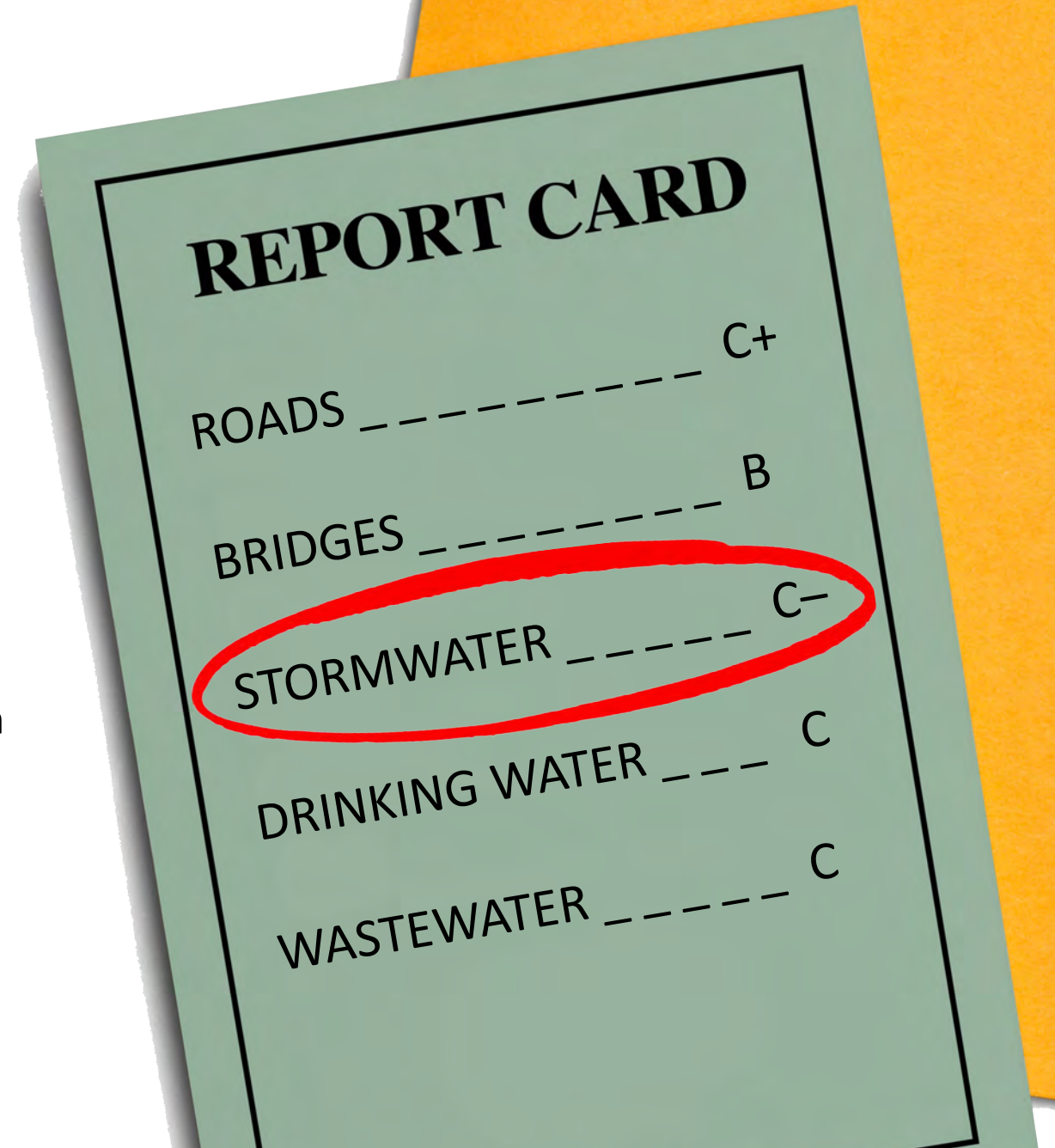
Infrastructure Type	Grade
Stormwater	C-
Wastewater	C
Drinking Water	C
Bridges	B
Roads	C+
Dams	D-
Ports	B
Aviation	C+
Energy	C+
Solid Waste	B+



Stormwater Grade: C-

Problems:

- 65% of localities do not have an enterprise fund for maintaining infrastructure
- ~\$14 million in total needs per locality by 2023
 - Average annual utility revenue ~\$3.63 million
 - 90% of SWUs cannot meet CIP needs



ASCE Infrastructure Individual Recommendations

Solutions:

- Increase funding
 - Senate Bill 1954 designated \$500 million for Statewide Flooding and Sea Level Rise Resilience Plan
- Increase public education
- Assess needs and operations of systems



Reality vs. Expectation

We are driving this..... But our customers expect this.



We need to explain
the value of this.



Driving the Maserati

Identify the need (CIP and O&M)

- Inspection and assessment costs

- System replacement value

- Remaining Useful Life of system

 - Inventory

 - Age & condition

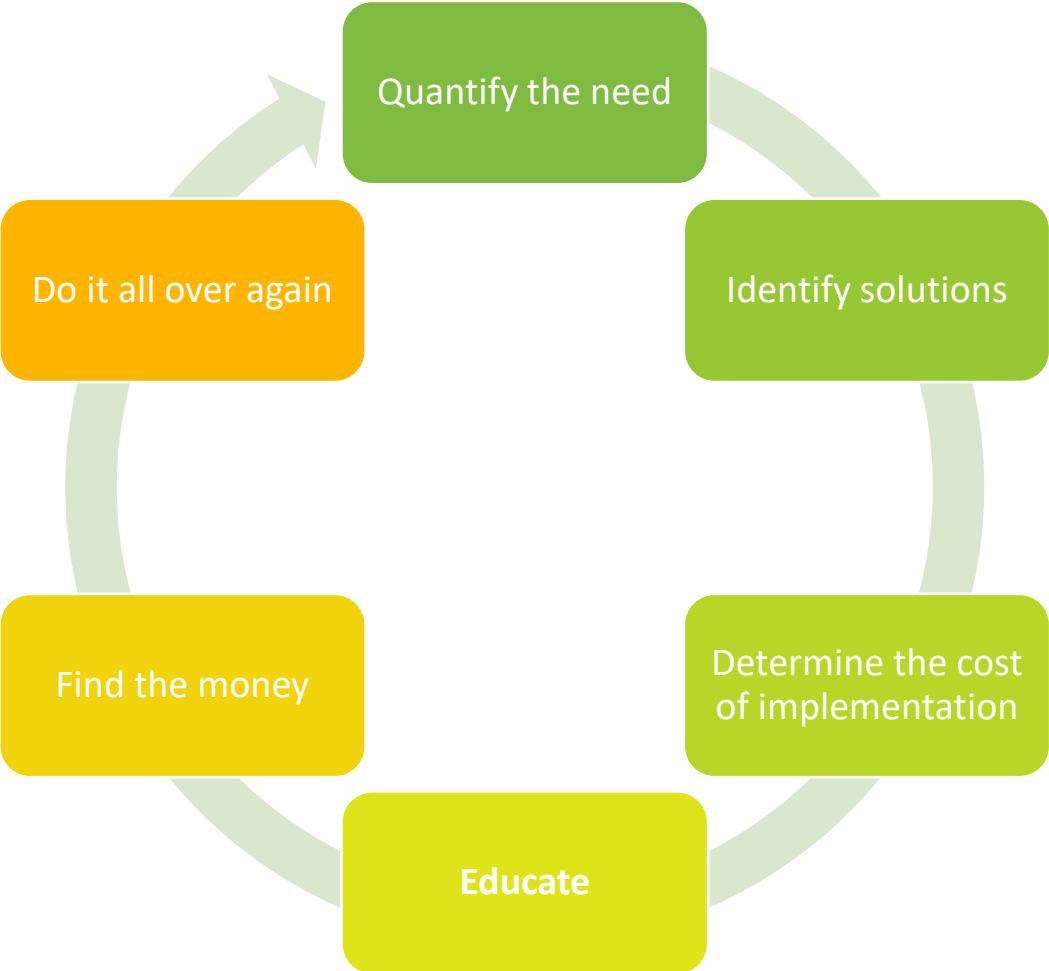
Educate on the real value of the service you provide

Leverage alternative funding sources

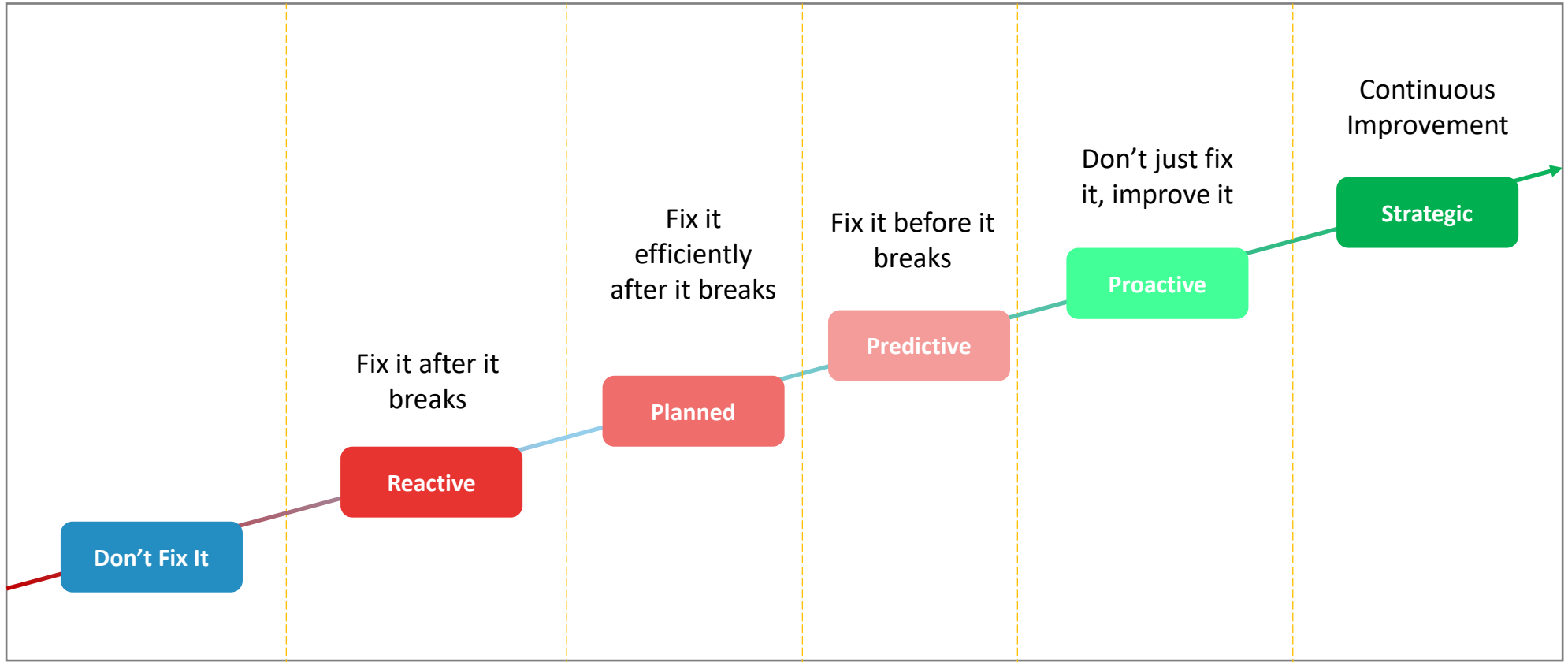
Create or update your stormwater utility revenue



We need to Invest in Infrastructure



Performance Measures



Rewards:

Short Term Savings	Overtime Heroes	No Surprises	Quality of Life	Best in Class
Meet Budget	Emergency Repairs	Avoid Failures	Functional	Growth
Decaying	Responding	Org. Discipline	Org. Learning	Innovation

Motivator:

Behavior:



Building Resiliency into Asset Management

Consider resiliency in asset management policies and strategies

Prepare an honest assessment of infrastructure condition

Consider future events when identifying critical infrastructure

Educate the public and leadership on resilient infrastructure needs

Build resiliency concerns into life cycle costs and budgets



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The Five-Minute College



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1. Understand the condition of your infrastructure



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2. Don't be resiliency poor, plan for today as well tomorrow



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3. Build resiliency planning into life cycle costs



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2. Don't be resiliency poor, plan for today as well tomorrow
3. Build resiliency planning into life cycle costs
4. Layer and leverage funding appropriately



The Five-Minute College

1. Understand the condition of your infrastructure
2. Don't be resiliency poor, plan for today as well tomorrow
3. Build resiliency planning into life cycle costs
4. Layer and leverage funding appropriately
5. Asset Management necessarily builds resiliency





Around which infrastructure framework do you want to build your resiliency plan?



Thank You



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