Getting Started with Asset Management

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Office of Ground Water and Drinking Water
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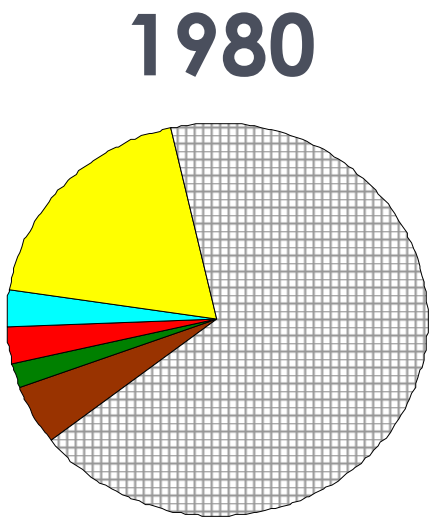
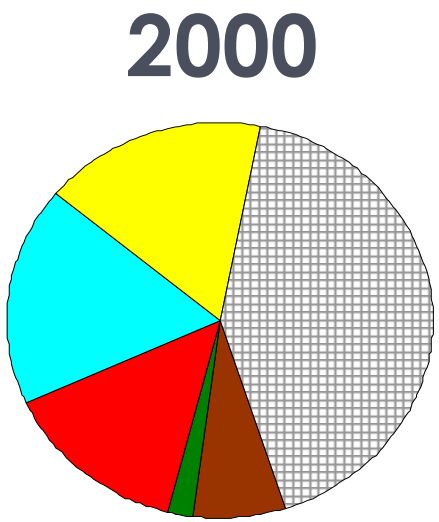
Assets are…

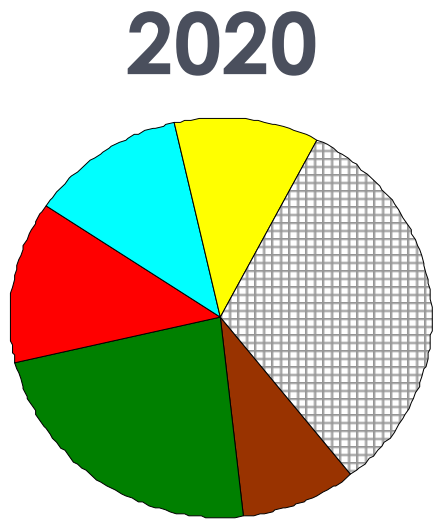
All the equipment, buildings, land, people, and other components needed to deliver safe and clean water

- Large, expensive, long-lived, and often buried
- Essential to protect public health

Asset Condition Over Time





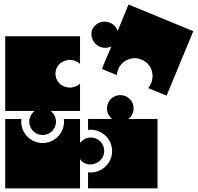


This example is drawn from w/w pipes, but the same general patterns applies to all urban systems

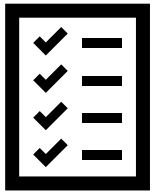
Asset Management is…

"A process for maintaining a desired level of customer service at the best appropriate cost."

Asset Management includes…



Building an inventory of your assets



Scheduling and tracking maintenance tasks through work orders

Managing your budgeted and actual annual expenses and revenue

Asset Management will…

Give systems a documented understanding of

- the assets they have
- how long they are going to last
- how much it's going to cost to repair, rehabilitate, or replace them

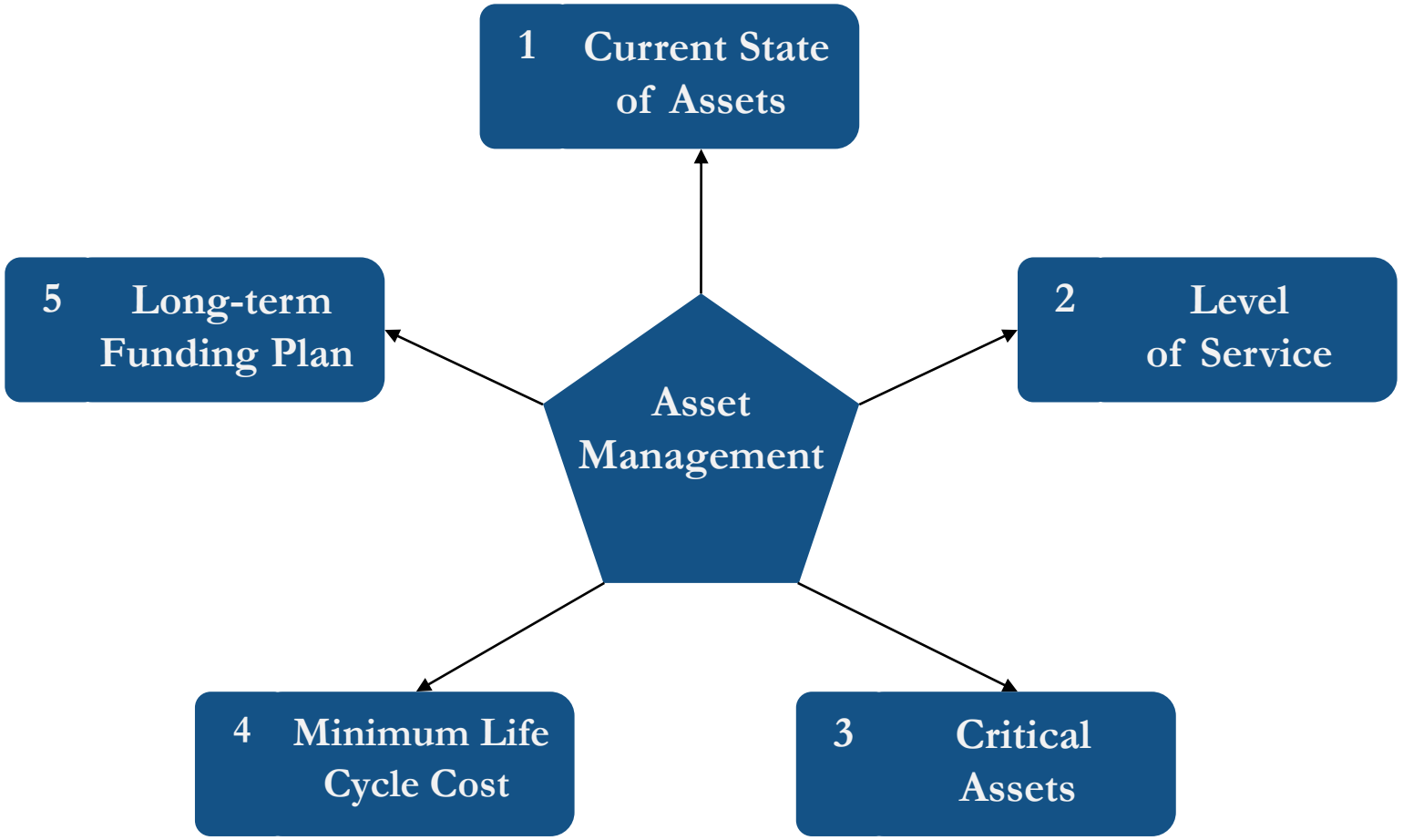
Provides financial projections and allows the utility to see if rates and other revenue generating mechanisms are enough to stay in the business of safely providing drinking or clean water to customers.

Give you the basis to make good decisions

In other words…

The 5 Core Questions

An Asset Management Framework



1) What Is The Current State Of The Utility's Assets?

- What does the utility own?
- Where is it?
- What is its condition?
- What is its remaining value?
- What is its remaining useful life?

Ruptured Wooden Water Tower, March 1999

Credit: Charles Myers, Rolla, MO

Generating an Asset Inventory

Retrospective	*Prospective*
What we already have	*What we are about to acquire*
• Critical first • Use existing crews as they respond to Work Orders	• Tie to commissioning or handover process • Use contract retainage to ensure control
	

Best Practice

- ✓ Asset inventory
- ✓ System maps
- ✓ Condition assessment and rating system
- ✓ Useful life assessment
- ✓ Asset values determination

2) What Is The Utility's Required Sustained Level Of Service (LOS)?

Rusted iron water pipe

Credit: Timothy Ford, Montana State University

- What do the regulators require?
- What are the utility's performance goals?
- What LOS do the utility's customers demand?
- What are the physical capabilities of the utility's assets?

Best Practice

- ✓ Analyze customer demand and satisfaction
- ✓ Understand regulatory requirements
- ✓ Communicate to the public a level of service "agreement"
  - Make your service objectives meaningful to the customers
- ✓ Use level of service standards

3) Which Assets Are Critical To Sustained Performance?

- How can assets fail?
- How do assets fail?
- What are the likelihoods and consequences of asset failure?
- What does it cost to repair the asset?
- What are other costs that are associated with asset failure?

Leaking valve

Credit: Rural Community Assistance Corporation

Best Practice

- ✓ List assets based on criticality
- ✓ Conduct a failure analysis
- ✓ Determine probability of failure
- ✓ Analyze failure risk and consequences

4) What Are The Utility's Best CIP and O&M Strategies?

WHAT ALTERNATIVE MANAGEMENT STRATEGIES EXIST?

WHAT STRATEGIES ARE THE MOST FEASIBLE FOR MY ORGANIZATION?

Best Practice

- ✓ Move from reactive to proactive maintenance
- ✓ Know the costs and benefits of rehabilitation vs replacement
- ✓ Look at lifecycle costs for critical assets
- ✓ Deploy resources based on asset conditions
- ✓ Develop and validate CIP

5) What Is The Utility's Best Long-Term Financing Strategy?

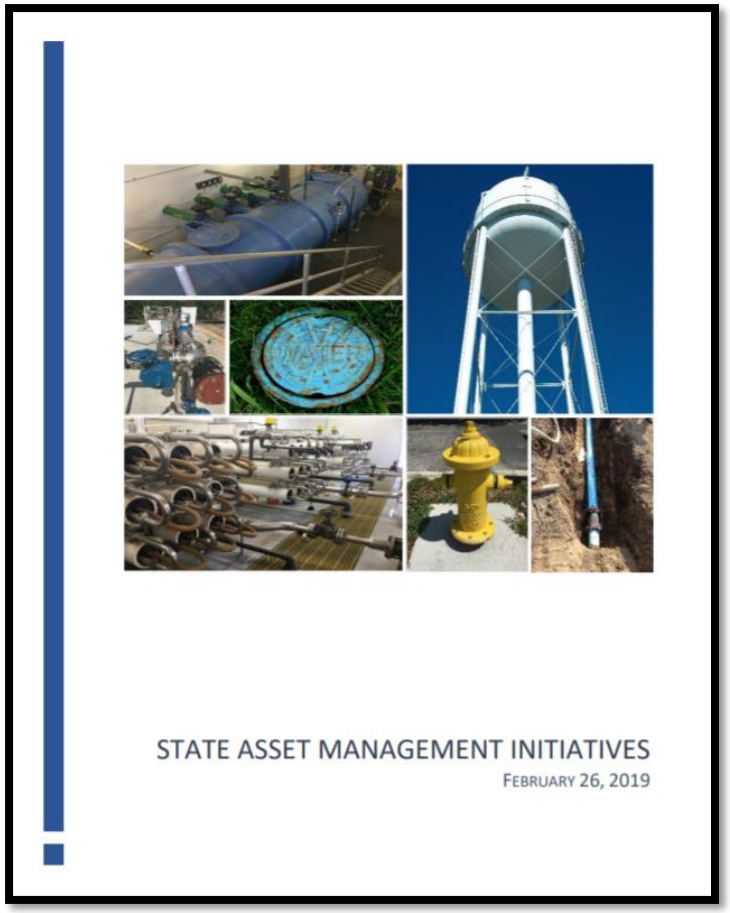
- Do we have enough funding to maintain our assets for our required level of service?
- Is our rate structure sustainable for our system's long-term needs?

Best Practice

- ✓ Routinely review and revise the rate structure
- ✓ Fund a dedicated reserve from current revenues
- ✓ Finance asset renewal and replacement through borrowing

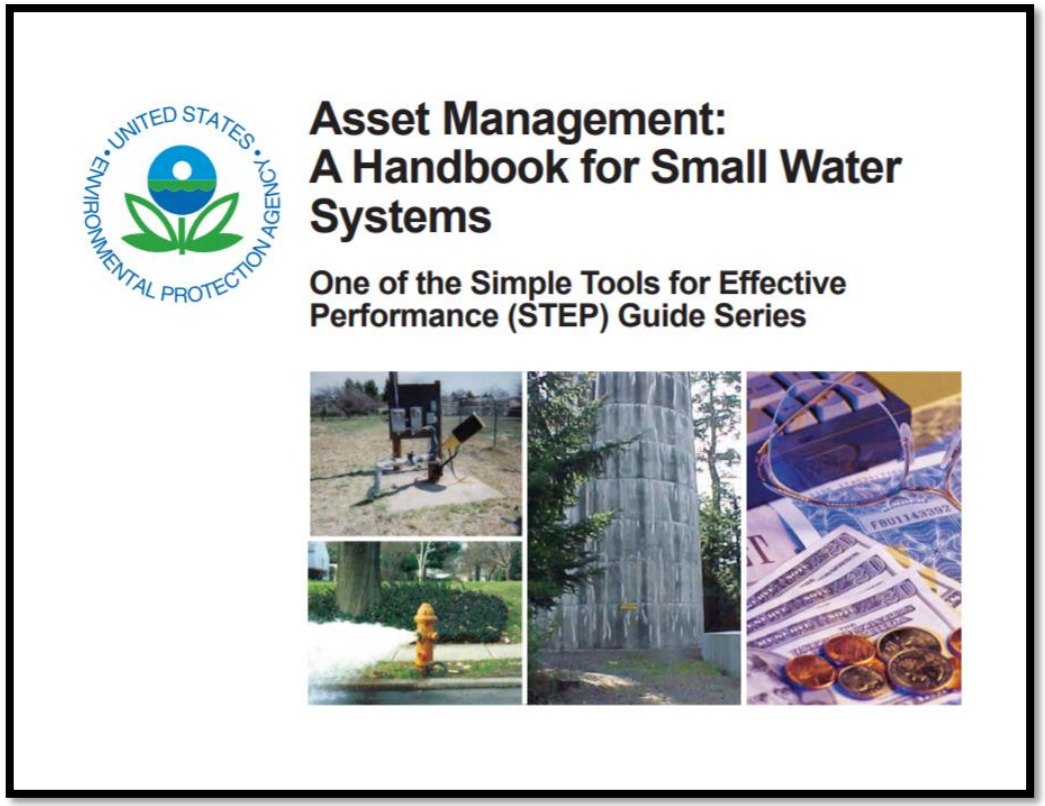
2018 State Asset Management Initiatives Document

An updated document that includes funding, regulatory, assistance, and internal activities that States are undertaking involving the promotion of asset management



Asset Management: A Handbook for Small Water Systems (STEP Guide)

This guide for owners and operators of small community water systems (CWSs) to understand the basic concepts of asset management and provides the tools to develop an asset management plan.



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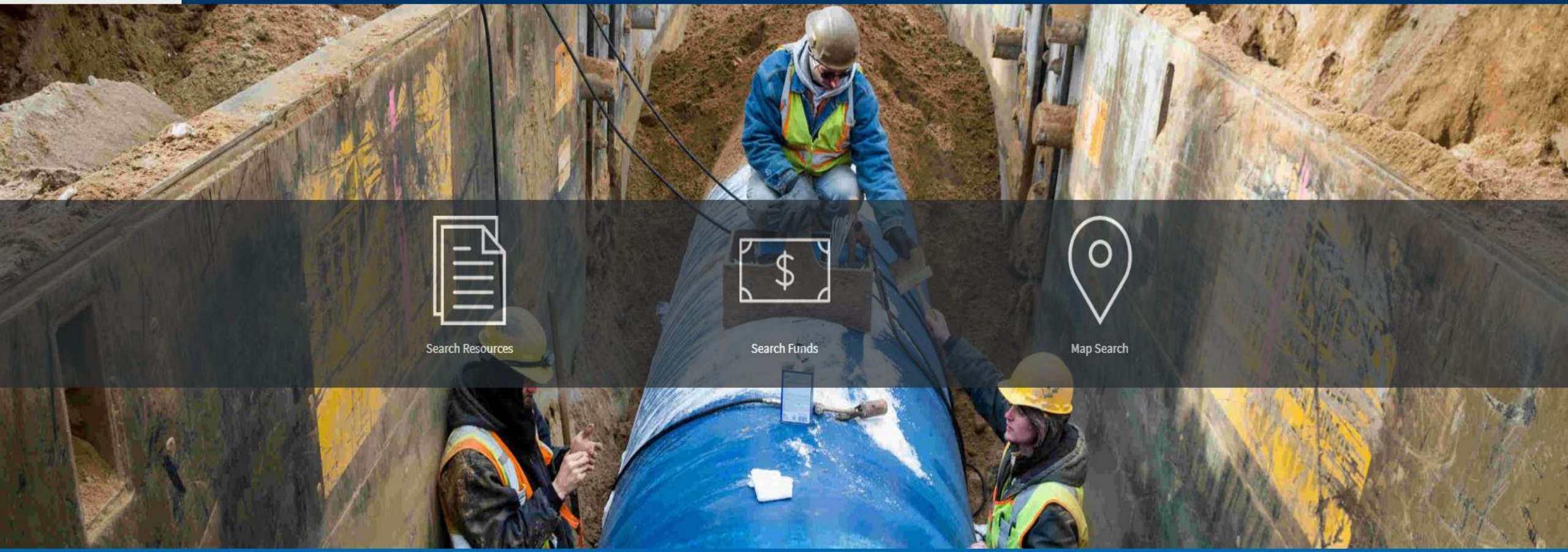

Quick Searches

- Stormwater
- Wastewater Treatment Technologies
- State Revolving Funds
- Case Studies
- Webinars and Videos
- Small Systems

Example

O'Connor's Wastewater Utility is in rural Texas, serving about 8,000 customers with an average income between $30,000-$35,000. They have been in operation for over 30 years without any serious non-compliance issues. After implementing new asset management strategies, they projected that they need major capital improvements in the next five years. They need financial assistance, but they prefer to research grant options before looking into loans.

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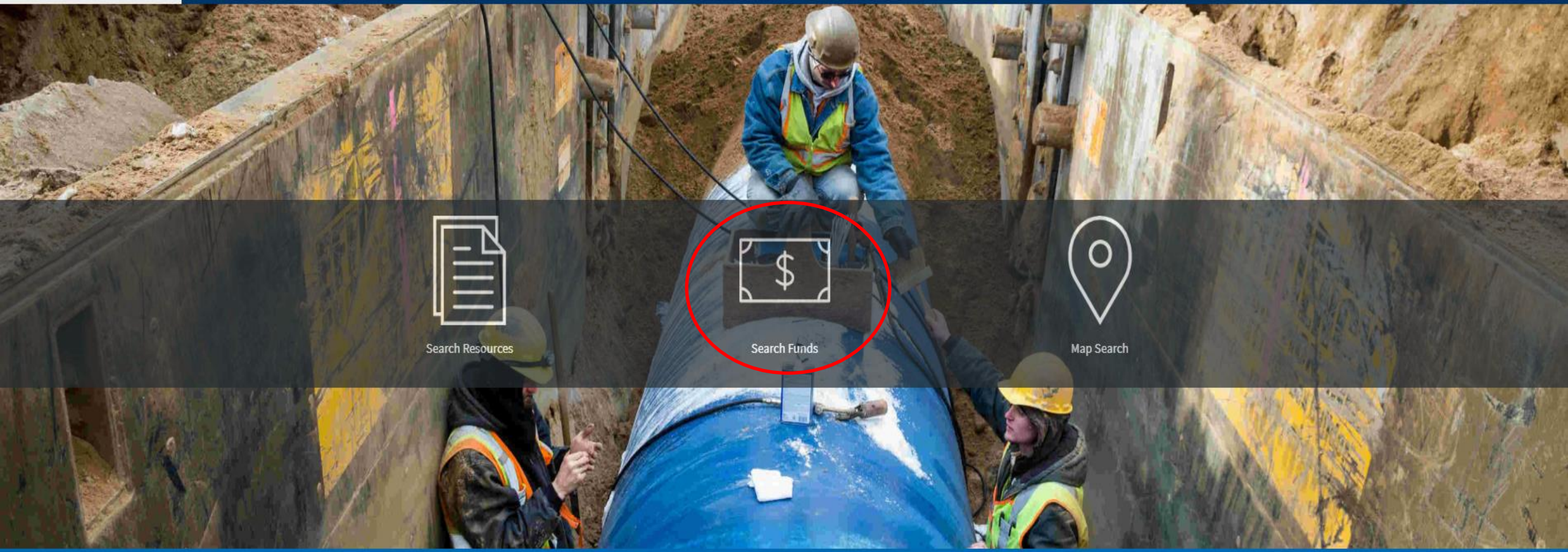

Quick Searches

- Stormwater
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- Webinars and Videos
- Small Systems

Funds Search Results: Apply search filters below to narrow your funding sources

Funding Sources | Sectors | Scope | Eligible Uses | Eligible Applicants

Search | Export Your Results

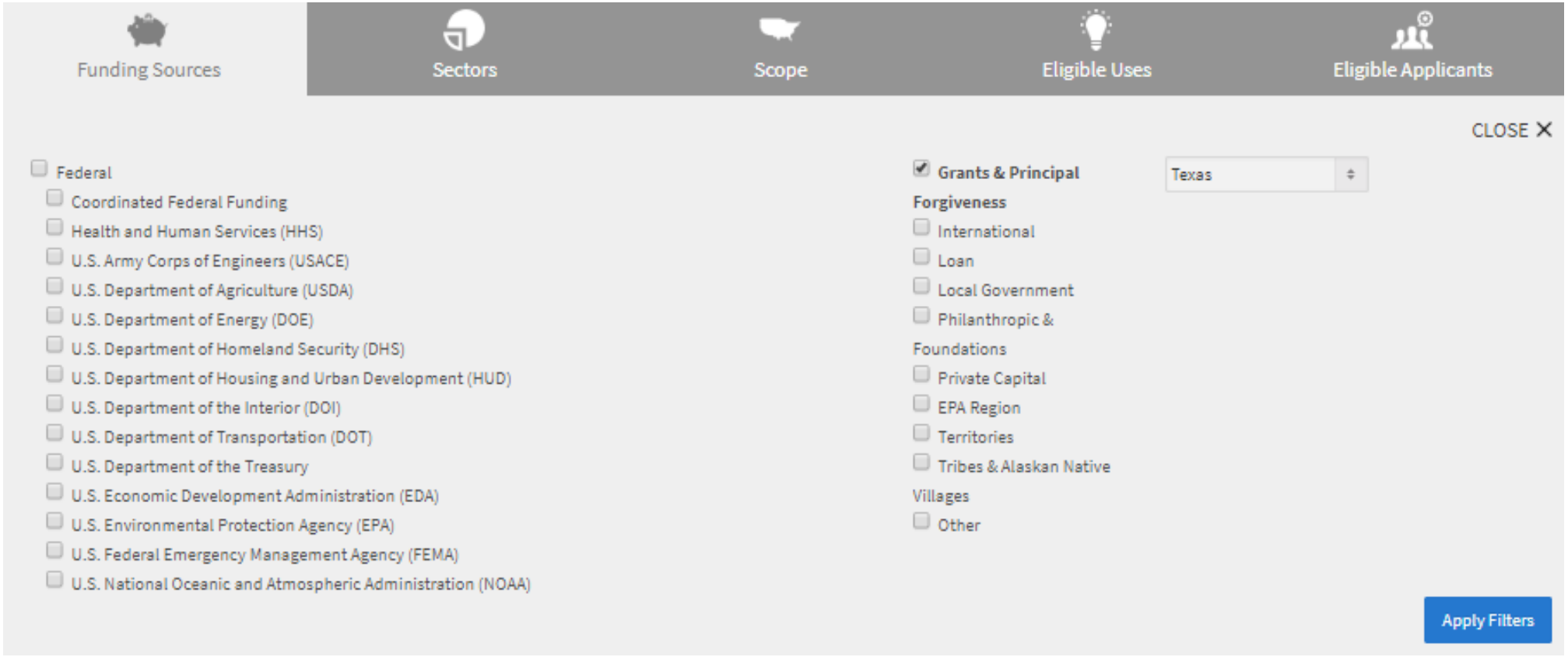
Rows All

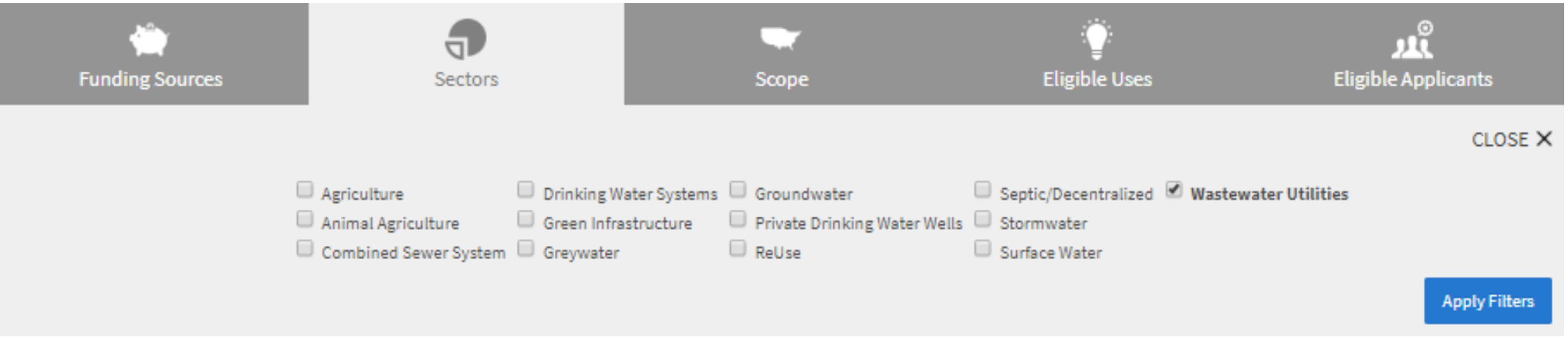
697 Potential Funds!

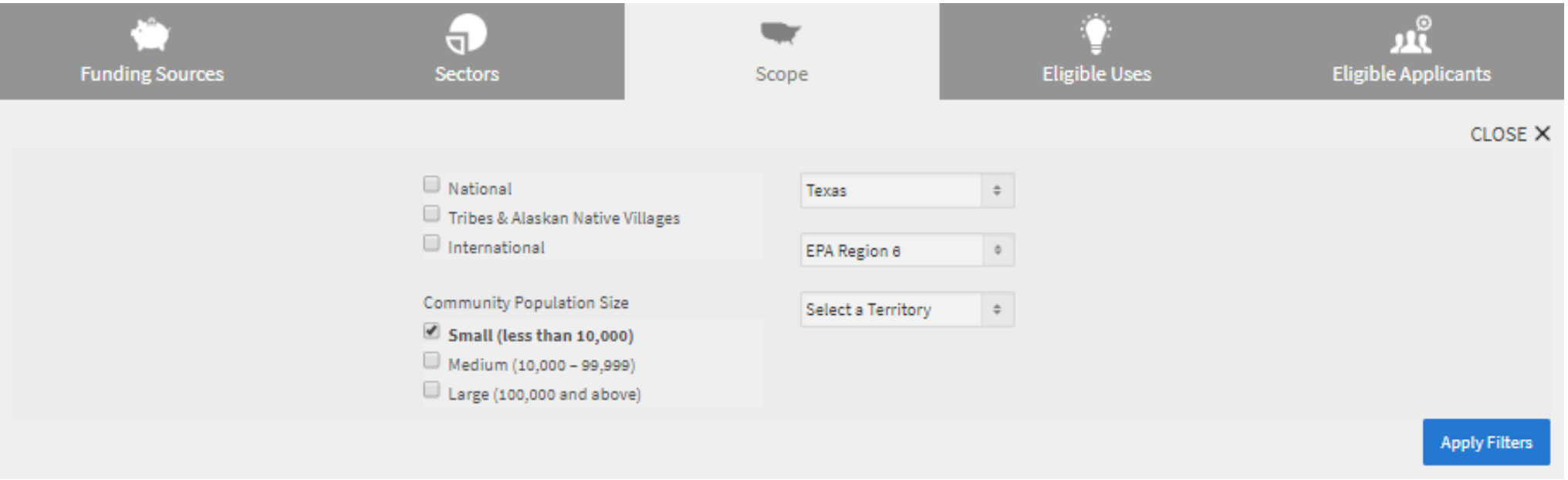
The following links exit the site EXIT

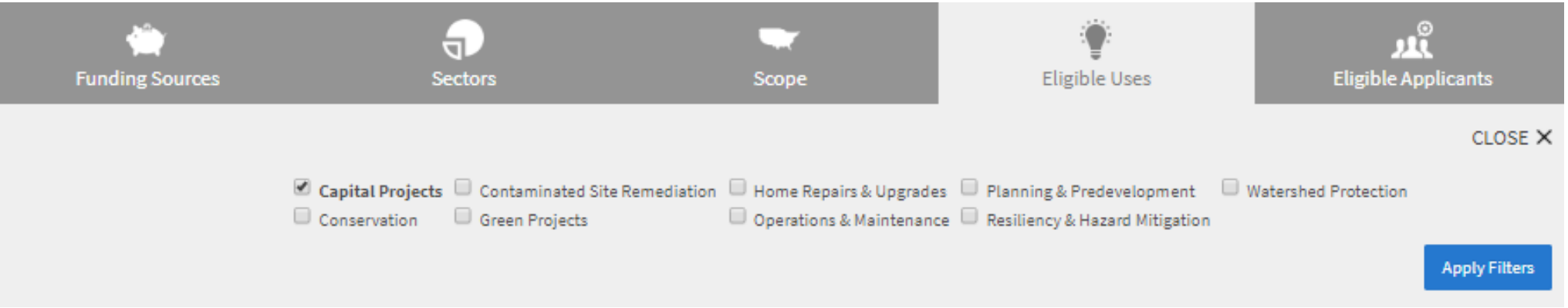
1 - 697 of 697

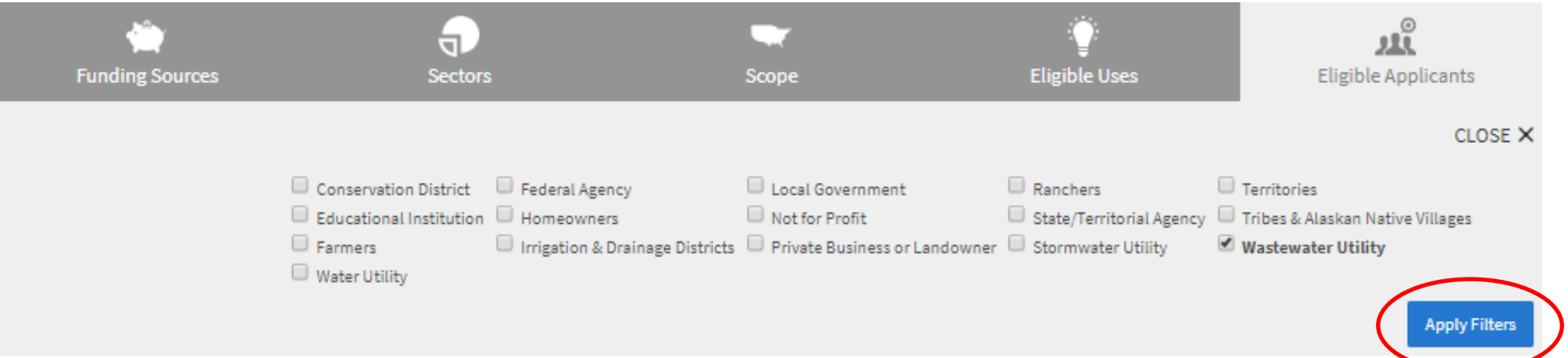
	Program Name	Source	Description	How To Apply	Current Funding Level	Contact
☆	Alabama Community Development Block Grant (CDBG) Program	Alabama Department of Economic and Community Affairs (ADECA)	CDBG funds may be utilized to address a wide variety of community needs, including construction or renovation of various infrastructure projects such as water, wastewater and solid waste facilities, streets, and flood control projects. The funds must be used for activities that either benefit low- and moderate-income persons or address community development needs that have a particular urgency.	Application procedure workshops begin in May. The program closes in April and the deadline for applications is July 1, 2016. Applications can be accessed through the website.		Shabbir Olia shabbir.olia@adeca.alabama.gov (334) 242-5468 Alabama Department of Economic and Community Affairs P.O. Box 5690 Montgomery, AL, 36103.0
☆	Appalachian Regional Commission (ARC) Area Development Fund	Alabama Department of Economic and Community Affairs (ADECA)	The Appalachian Regional Commission awards grants and contracts from funds appropriated to the Commission annually by Congress. Program grants are awarded to state and local agencies and governmental entities (such as economic development authorities), local governing boards (such as county councils), and nonprofit organizations (such as schools and organizations that build low-cost housing). ARC provides funds for basic infrastructure services, including water and sewer facilities, that enhance economic development opportunities or address serious health issues for residential customers.	Pre-applications are taken the entire month of August. Pre-application guidelines and other documents are available on the website.	The usual maximum ARC funding per project is $200,000.	Kelly Chasteen kelly.chasteen@adeca.alabama.gov 334-353-2909 Alabama Department of Economic and Community Affairs (ADECA) 401 Adams Avenue Suite 592 Montgomery, AL, 36103-5690
☆	Alabama Clean Water State Revolving Fund (CWSRF)	Alabama Department of Environmental Management (ADEM)	Alabama's Clean Water State Revolving Fund (CWSRF) is designed to be a perpetual source of low-cost financial assistance for the construction of public water supply facilities needed to meet compliance standards and clean water requirements.	The pre-application form is available online at http://www.adem.state.al.us/DeptForms/Form340.pdf. ADEM will evaluate the pre-applications according to the integrated priority system. All projects that score above the funding line will be invited to submit full applications. Upon final review and approval, loans will close typically within six months.	In FY18, ADEM plans to distribute $44.8 million in project assistance. The Fund may offer loans for up to 100 percent of allowable project costs for the construction of water treatment and distribution facilities and may offer a range of options regarding the term, interest rate and level of loan funding.	James Dailey jwd@adem.state.al.us 334-271-7913 Alabama Department of Environmental Management (ADEM) PO Box 301463 Montgomery, AL, 36130
☆	Alabama Drinking Water State Revolving Fund (DWSRF)	Alabama Department of Environmental Management (ADEM)	Alabama's Drinking Water State Revolving Fund (DWSRF) is designed to be a perpetual source of low-cost financial assistance for the construction of public water supply facilities needed to meet compliance standards and public health requirements.	The pre-application form is available online at http://www.adem.state.al.us/DeptForms/Form370.pdf. ADEM will evaluate the pre-applications according to the integrated priority system. All projects that score above the funding line will be invited to submit full applications. Upon final review and approval, loans will close typically within six months.	In FY18, ADEM plans to distribute $44.8 million in project assistance. The Fund may offer loans for up to 100 percent of allowable project costs for the construction of water treatment and distribution facilities and may offer a range of options regarding the term, interest rate and level of loan funding.	James Dailey jwd@adem.state.al.us 334-271-7913 Alabama Department of Environmental Management (ADEM) PO Box 301463 Montgomery, AL, 36130
☆	Alaska Community Development Block Grants (CDBG) Program	Alaska Department of Commerce, Community, and Economic Development - Division of	CDBG funds may be utilized to address a wide variety of community needs, including construction or renovation of various	Each applicant is expected to consult with CDBG Program staff about project eligibility and structure prior to submission of an application. Applicatio	CDBG competitive grants are single-purpose project grants; maximum of $85	Pauletta Bourne pauletta.bourne@alaska.gov


Funding Sources
Sectors
Scope
Eligible Uses
Eligible Applicants
CLOSE
Federal
Coordinated Federal Funding
Health and Human Services (HHS)
U.S. Army Corps of Engineers (USACE)
U.S. Department of Agriculture (USDA)
U.S. Department of Energy (DOE)
U.S. Department of Homeland Security (DHS)
U.S. Department of Housing and Urban Development (HUD)
U.S. Department of the Interior (DOI)
U.S. Department of Transportation (DOT)
U.S. Department of the Treasury
U.S. Economic Development Administration (EDA)
U.S. Environmental Protection Agency (EPA)
U.S. Federal Emergency Management Agency (FEMA)
U.S. National Oceanic and Atmospheric Administration (NOAA)
Grants & Principal Forgiveness
Texas
International
Loan
Local Government
Philanthropic & Foundations
Private Capital
EPA Region
Territories
Tribes & Alaskan Native Villages
Other
Apply Filters


Funding Sources
Sectors
Scope
Eligible Uses
Eligible Applicants
CLOSE
Agriculture
Animal Agriculture
Combined Sewer System
Drinking Water Systems
Green Infrastructure
Greywater
Groundwater
Private Drinking Water Wells
ReUse
Septic/Decentralized
Stormwater
Surface Water
Wastewater Utilities
Apply Filters


Funding Sources
Sectors
Scope
Eligible Uses
Eligible Applicants
CLOSE
National
Tribes & Alaskan Native Villages
International
Texas
EPA Region 6
Community Population Size
Select a Territory
Small (less than 10,000)
Medium (10,000 – 99,999)
Large (100,000 and above)
Apply Filters





Once finished, apply the filters.

Funds Search Results: There are 4 funds that have ALL selected filters applied

Filters: Grants & Principal Forgiveness X | Texas X | Wastewater Utilities X | Small X | EPA Region6 X | Texas X | Capital Projects X | Wastewater Utility X | Remove all Filters X

Notice all the filters. Can remove filters at any point or you can start over

Funding Sources | Sectors | Scope | Eligible Uses | Eligible Applicants

Search | Export Your Results | Rows 50

The following links exit the site EXIT

1 - 4 of 4

	Program Name	Source	Description	How To Apply	Current Funding Level	Contact
☆	Texas Community Development Block Grant (CDBG) Program - Small Cities	Texas Department of Agriculture (TDA)	CDBG funds may be utilized to address a wide variety of community needs, including construction or renovation of various infrastructure projects such as water, wastewater and solid waste facilities, streets, and flood control projects. The funds must be used for activities that either benefit low- and moderate-income persons or address community development needs that have a particular urgency.	Application and guidelines can be found online.	Funding ranges based on use. It ranges from $25,000-$800,000.	Suzanne Barnard Suzanne.Barnard@TexasAgriculture.gov (512) 463-6612 Texas Department of Agriculture, Office of Rural Affairs (TDA-RA) P.O. Box 12847 Trade and Business Development Austin, TX, 78711.0
☆	Texas Clean Water State Revolving Fund (CWSRF)	Texas Water Development Board	The Clean Water State Revolving Fund, authorized by the Clean Water Act, provides low-cost financial assistance for planning, acquisition, design, and construction of wastewater, reuse, and stormwater infrastructure.	CWSRF financing is available year round. In order to be invited to apply for funding, entities must submit a completed Project Information Form. Apply online.	Funding level determined by priority, number of applicants, and total CWSRF amount to loan. Total funds available is approximately $525,000,000	Issa McDaniel issa.mcdaniel@twdb.texas.gov 512-463-1706 Texas Water Development Board 1700 North Congress Avenue Austin, Texas, 78701
☆	Economically Distressed Areas Program (EDAP)	Texas Water Development Board (TWDB)	The Economically Distressed Areas Program (EDAP) provides financial assistance to provide water and wastewater services to economically distressed areas where services do not exist or systems do not meet minimum state standards.	Online Loan Application system: https://ola.twdb.texas.gov Download Paper Application: http://www.twdb.texas.gov/financial/applications/index.asp	EDAP funding capacity is considered biennially by State Legislature.	Contact Regional Implementation Team 512-463-7847 Texas Water Development Board 1700 North Congress Avenue Austin, TX, 78701
☆	Texas Hazard Mitigation Grant Program (HMGP)	U.S. Federal Emergency Management Agency (FEMA) Notice we have 1 Federal Source and 3 State Sources	The purpose of the HMGP program is to help communities implement hazard mitigation measures following a Presidential major disaster declaration. Hazard mitigation is any action taken to reduce or eliminate long term risk to people and property from natural hazards. Mitigation planning is a key process used to breaking the cycle of disaster damage, reconstruction, and repeated damage.	Sub-applicants apply to Texas for funding. Consult your State and FEMA website for application information (https://www.fema.gov/hazard-mitigation-grant-program-guide-state/local-governments). Contact your Local Mitigation Planner of State Hazard mitigation Officer (SHMO) (https://www.fema.gov/state-hazard-mitigation-officers) to learn more about the application process.	Depends on the federally recognized disaster and current appropriations.	Dave Jackson David.Jackson@dps.texas.gov (512) 424-5489 Texas Division of Emergency Management P.O. Box 4087 Austin, TX, 78773-0226

1 - 4 of 4

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Funding Sources | Sectors | Scope | Eligible Uses | Eligible Applicants

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1 - 4 of 4

?

Our example fits the description, and the fund is a grant program

Our example fits the description

However, we are currently look for a grant, not a loan.

Our example might not meet this criteria because we regularly meet the state standards of compliance.

Hazard mitigation and disasters is not applicable to our example

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Questions?

Alison Flenniken
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Flenniken.Alison@epa.gov

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Benefits of Asset Management: The More You Do, The More You Benefit

Presented by:
Heather Himmelberger, P.E.
Director,
Southwest Environmental Finance Center

Asset Management Requires Some Input of Resources…

…So, Why Would We Want To Do It?

We want benefits!!!

Who would we want to benefit?

Elected L… Body/Own… …ng

Customers …es

What Kind of Benefits Would We Want?

Triple Bottom Line

So, How Does Asset Management Lead to Benefits?

Asset Management Requires a Change in How You Think About Your Assets

Even Subtle Change Can Lead to Benefits

That Thinking Helps by…

Having You Ask Questions/Question Your Assumptions

Collecting Appropriate Data

Analyzing Appropriate Data

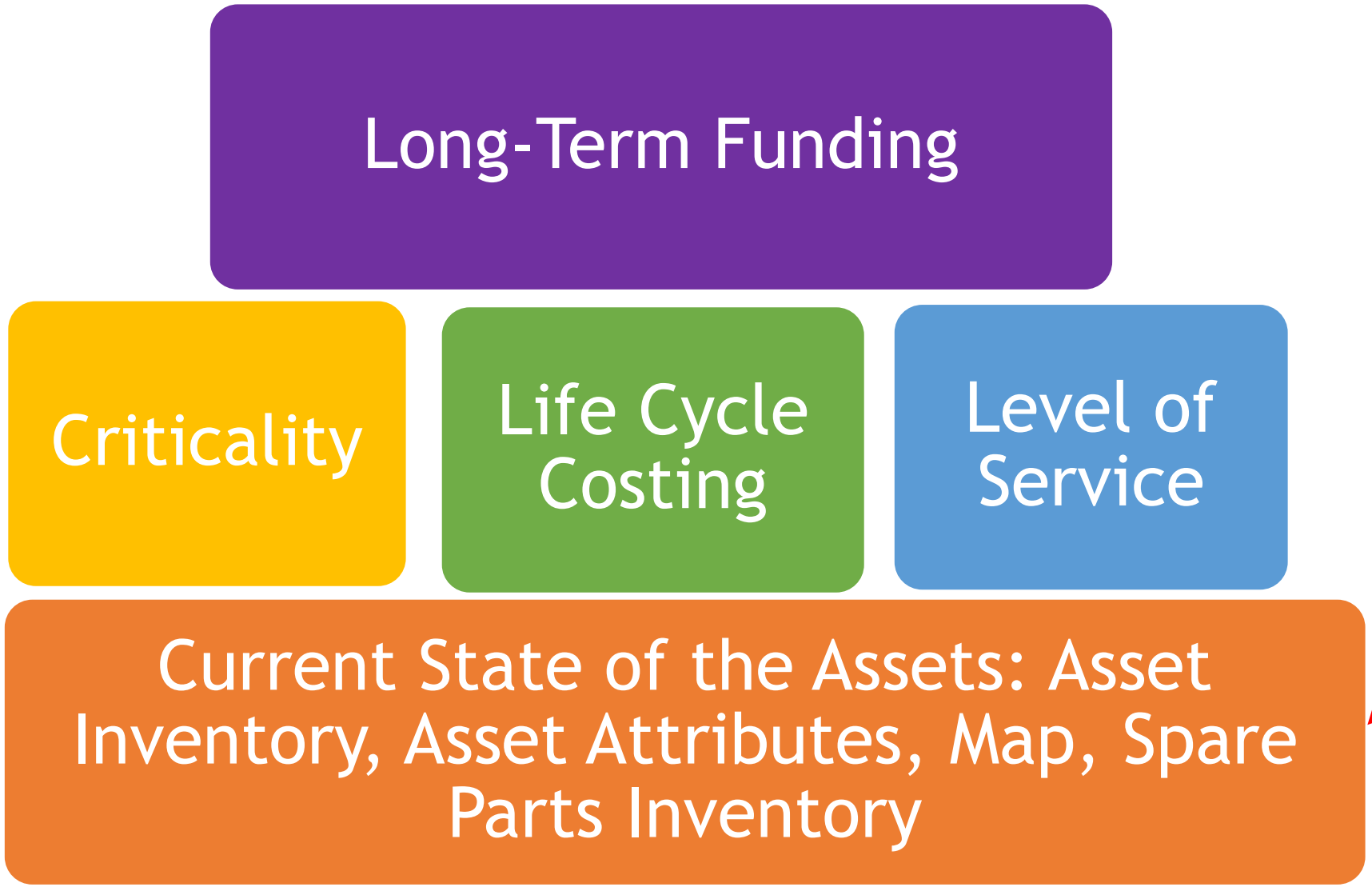
Setting LOS Goals & Measuring Against Them; Changing Actions to Address Cases Where Goals are Not Met

Involving all Staff in the Program & Asking For Their Input

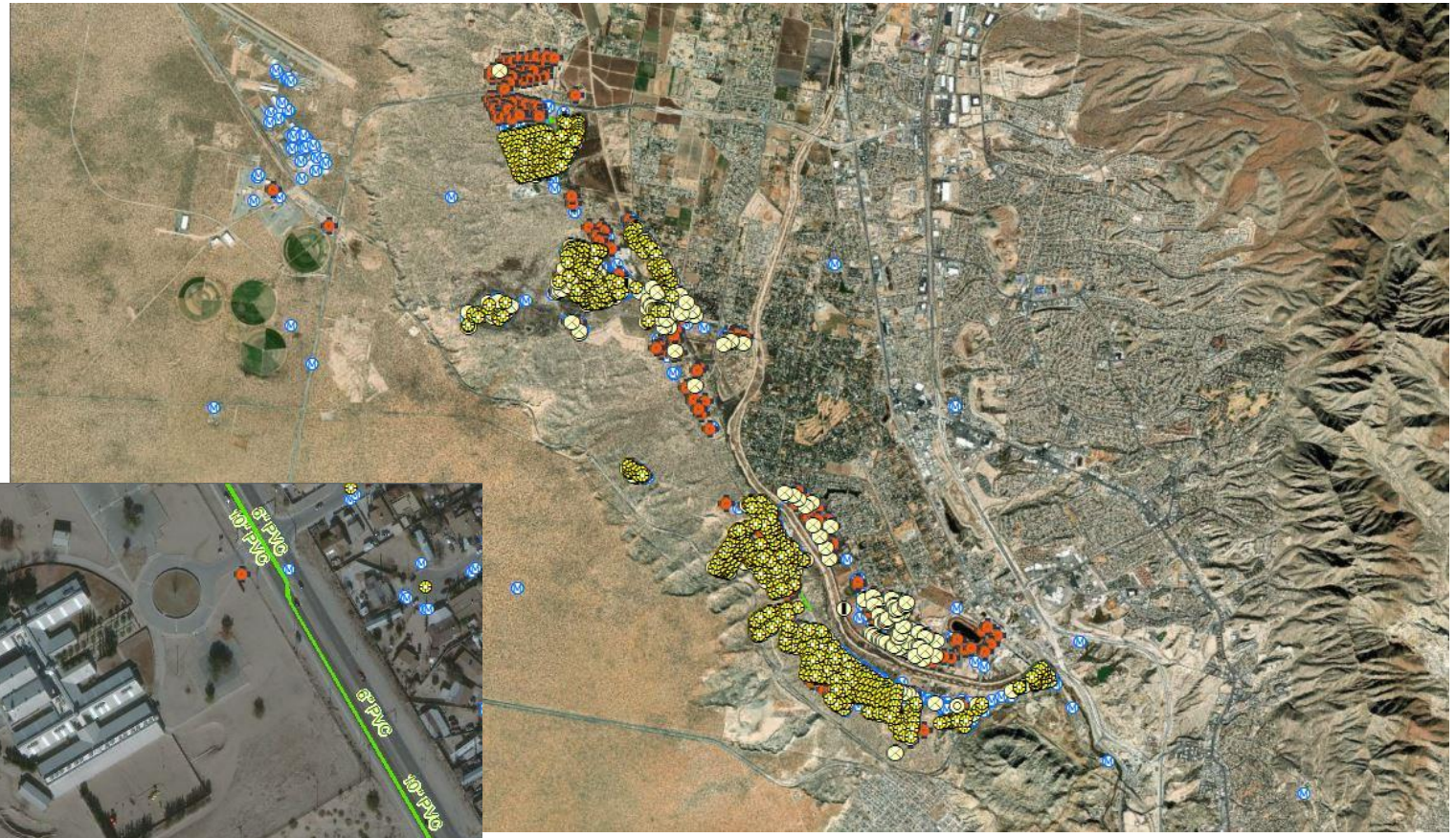
The Individual Components or Pieces of An Asset Management Program Can Provide You Benefits….

…..the More Pieces You Do, the More Benefits You Receive

Let's Start With a Foundational Element of Asset Management



Financial, Social & Environmental Benefits with A Robust Asset Inventory & Map



What could be the potenti
time savings in know
all your asset
to lookin

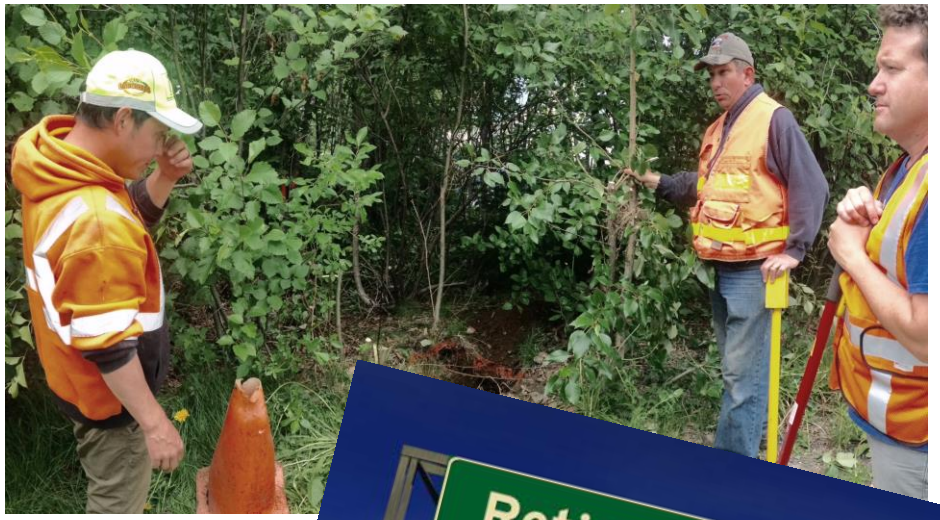
Could a g
allow you t
efficient use
day

What Would You Do With An Extra 100+ Hours Per Year? 500 Hours Per Year? An Extra $5,000 or $10,000?

Another Benefit for An Inventory a
Map: Creating a Legacy

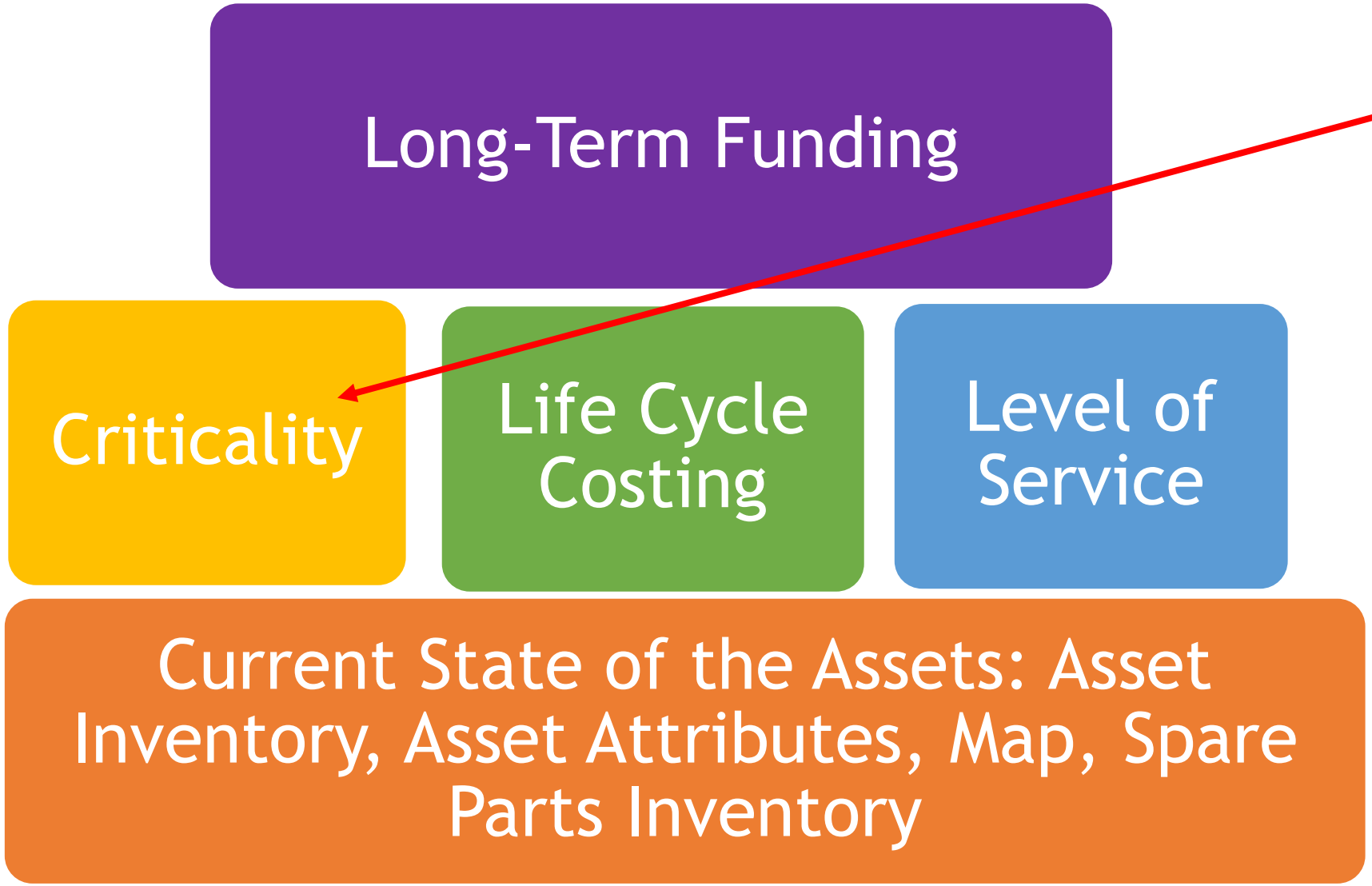
Sharing Hard Earned Experiences

Saving lots of time and heartache later



And, quieter retirement!!

Spare Parts Can Be a Huge Expense & Are Often Overlooked

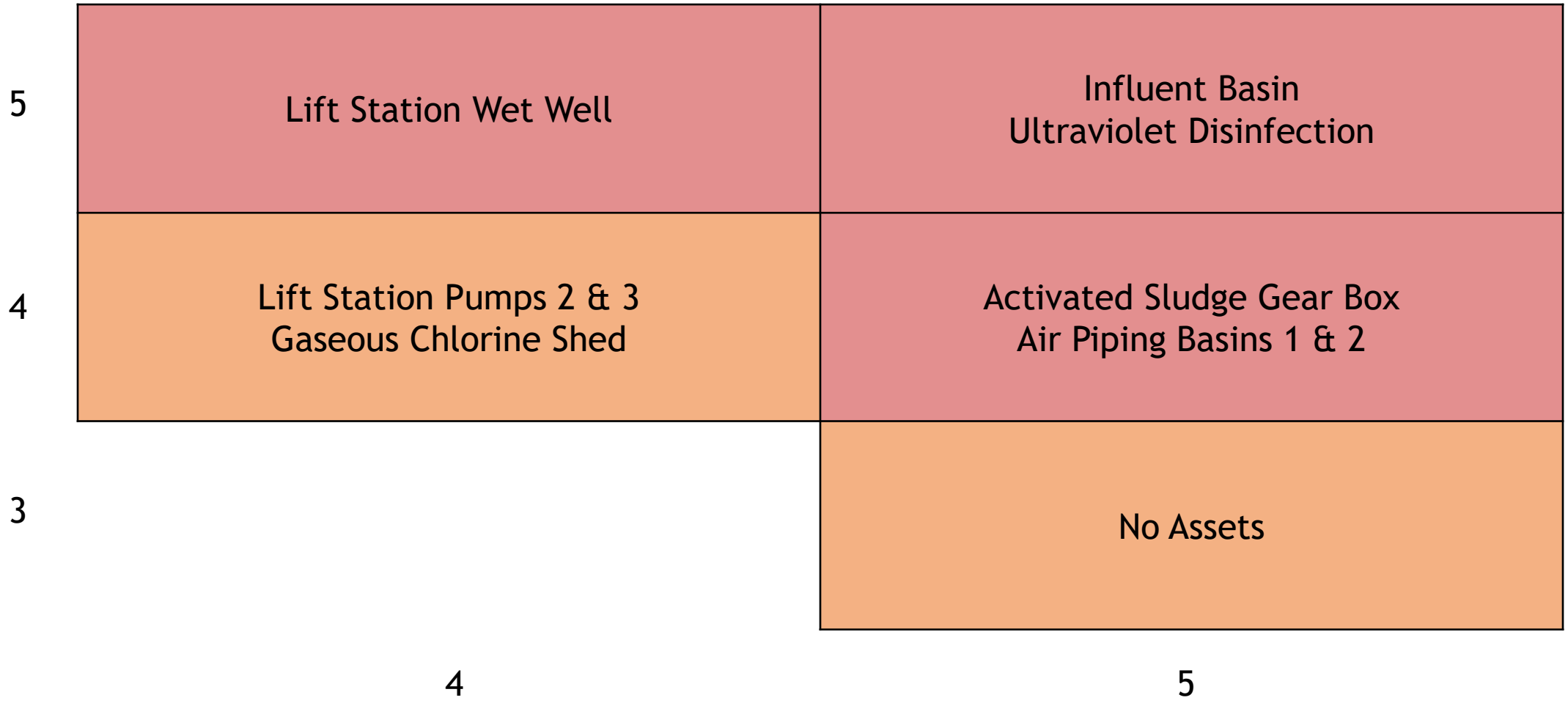


When we know what assets we have, we can examine the criticality of the assets

Criticality of Assets in WWTP

5	5	8	1	1	2
4	5	6	11	3	2
3	7	1	9	1	0
2	27	18	15	0	0
1	24	16	3	4	5
	1	2	3	4	5

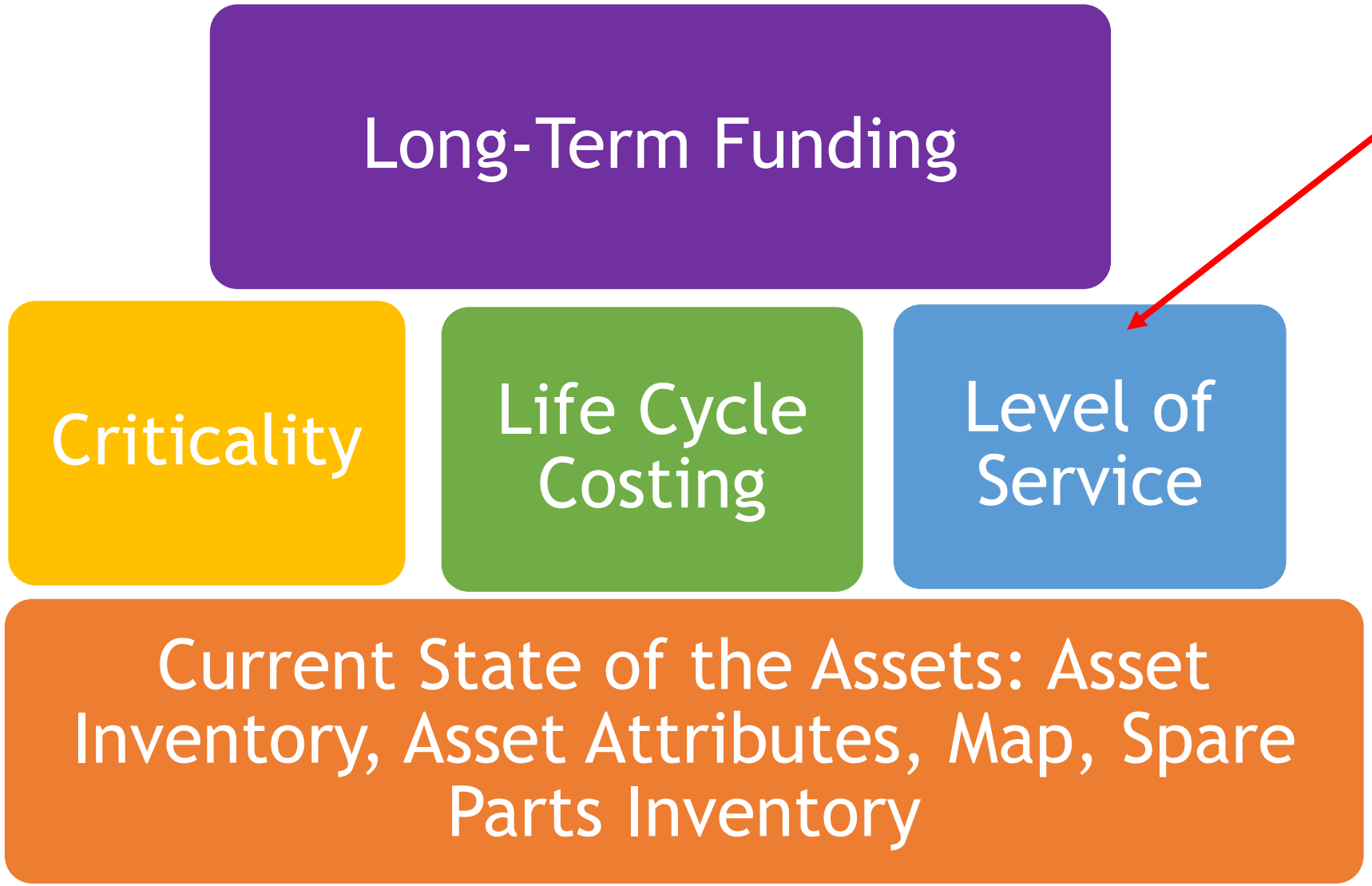
Criticality of Assets in WWTP



Criticality of Assets in WWTP

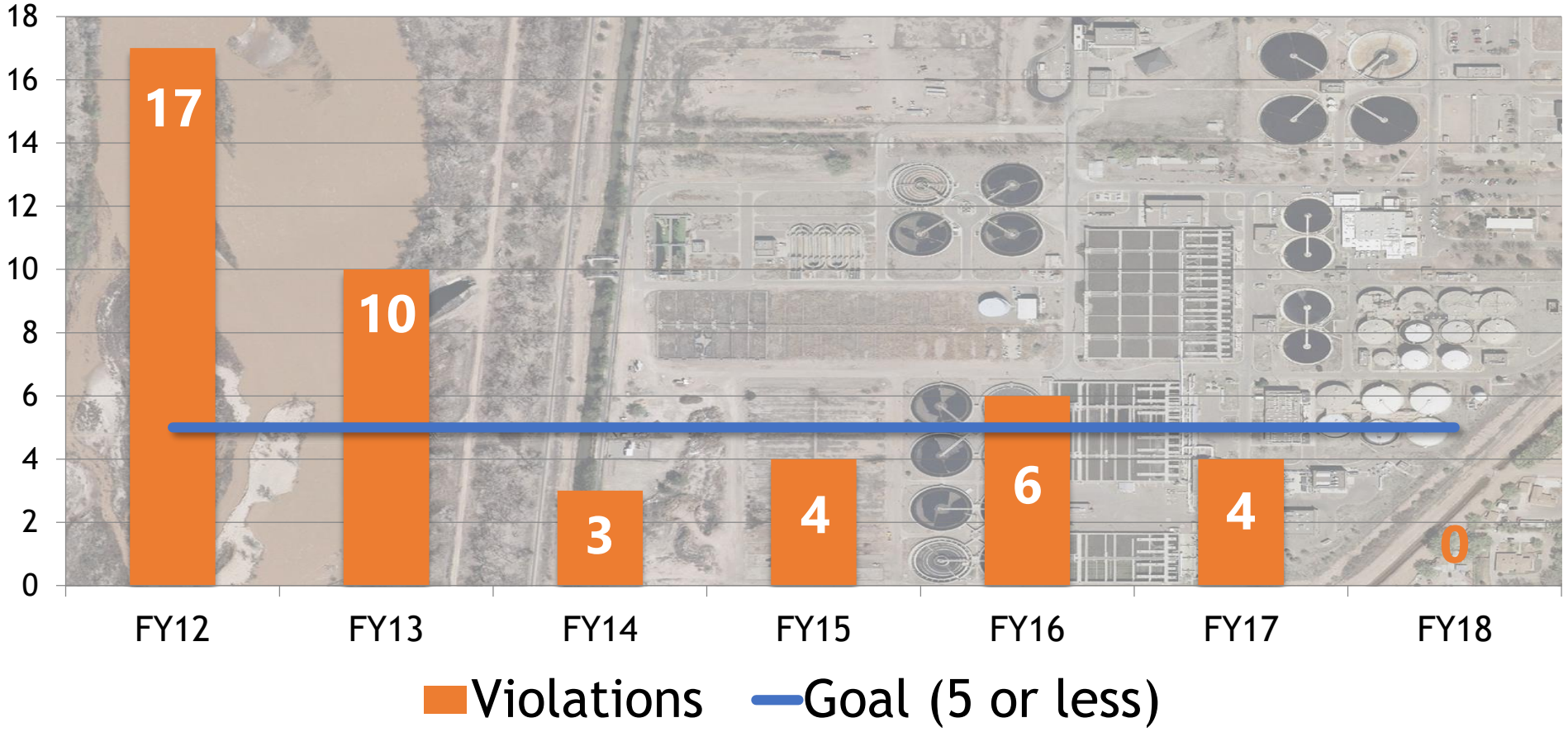
5	Lift Station Wet Well	Influent Basin Ultraviolet Disinfection
4	Lift Station Pumps 2 & 3 Gaseous Chlorine Shed	Activated Sludge Gear Box Air Piping Basins 1 & 2
		No Assets
		5

Knowing what assets need to be replaced, can focus expenditures & prevent costly catastrophic failures



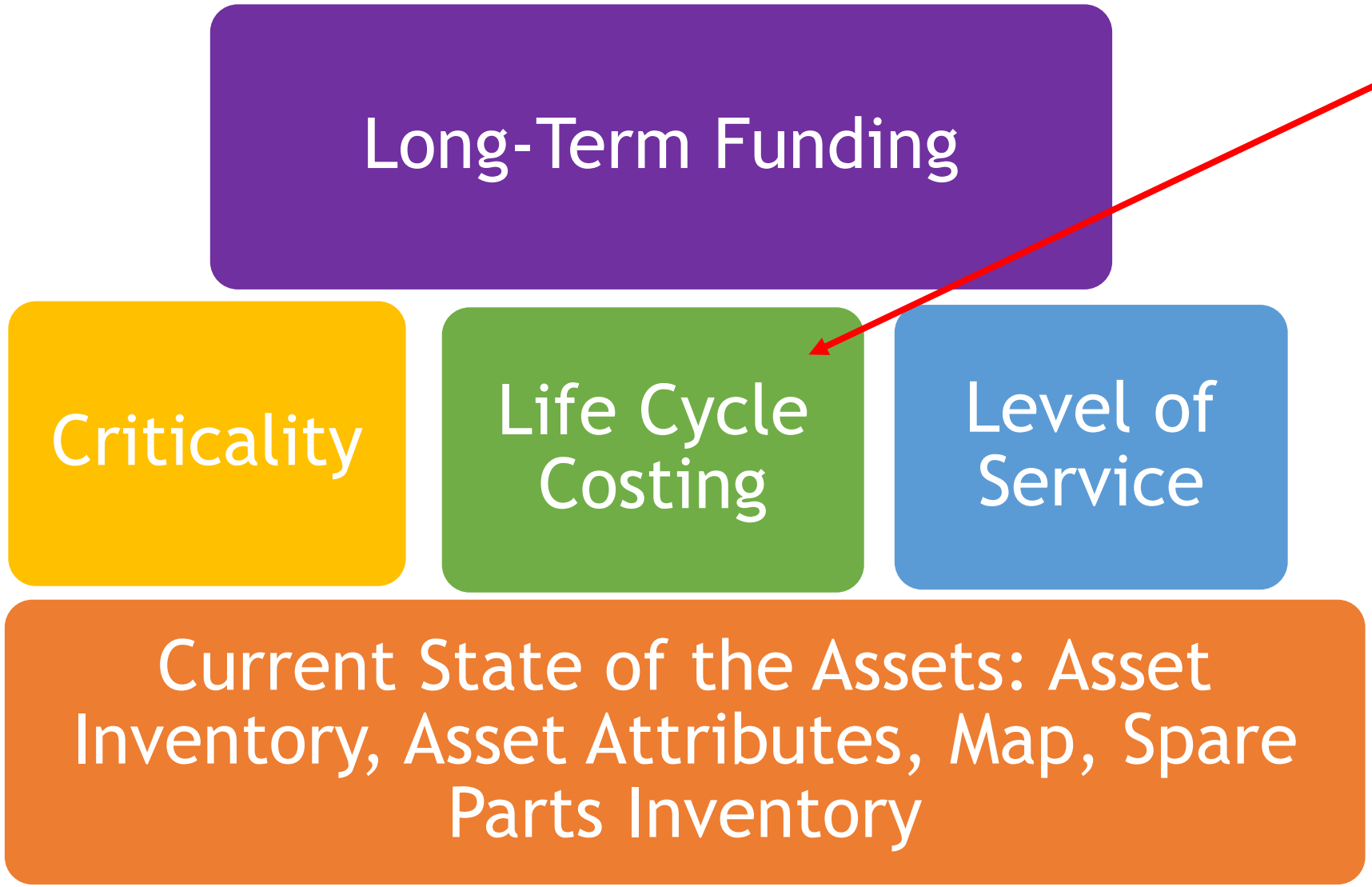
When we know what assets we have, we can also determine what we want those assets to do

Setting a Goal of <5 Discharge Permit Violations



What has to happen to achieve this result?

Note, sometimes it takes a while to get there, that's okay



Understanding the current state of the assets, criticality, and level of service, allows for a thorough look at life cycle costing

Operation & Maintenance

Performing routine O&M can keep assets in operation longer

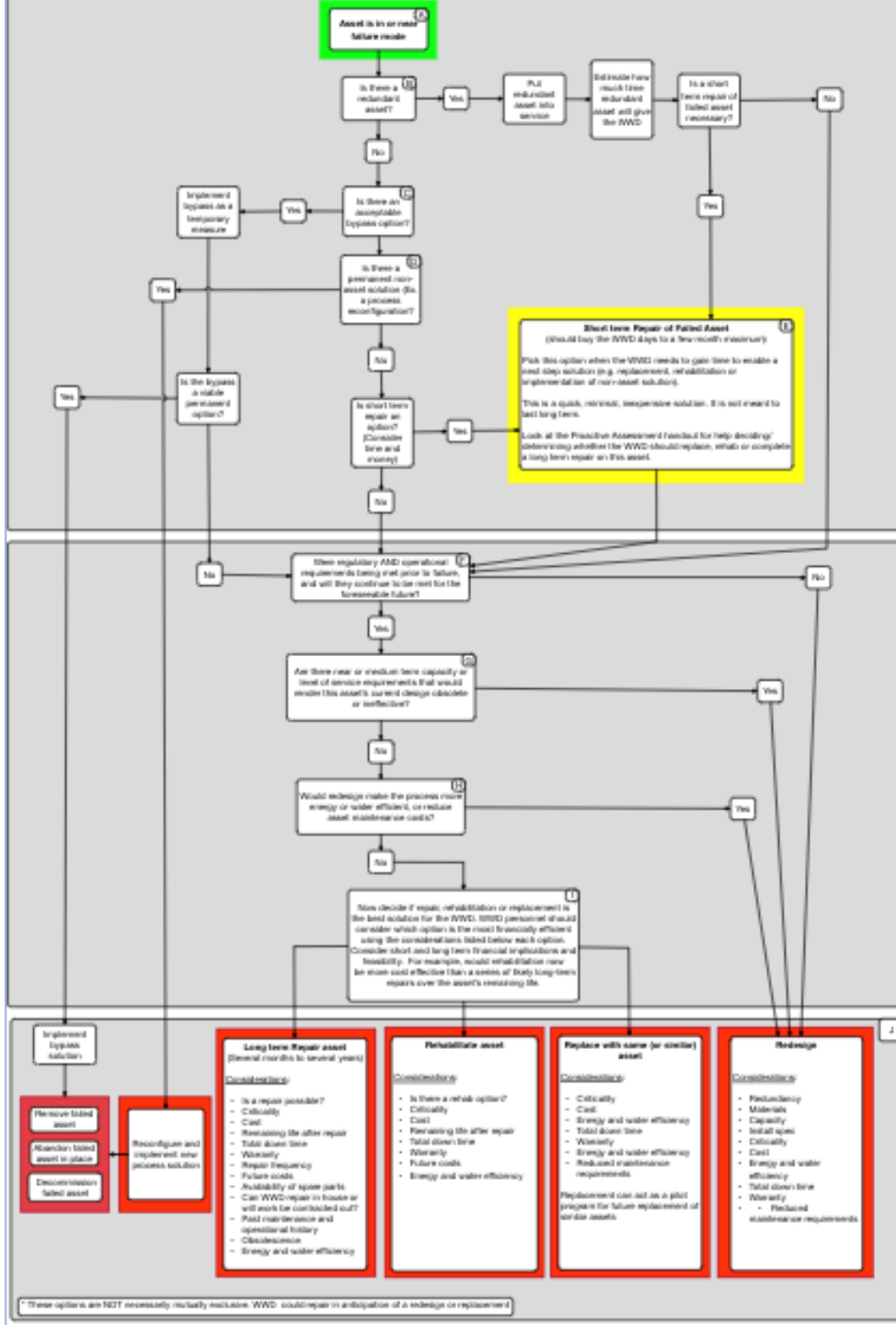
Performing preventative maintenance can prevent failures from occurring

Performing predictive maintenance can help predict when an asset might fail so there is time to intervene (replace, rehabilitate or repair prior to failure)

Keeping assets in place longer can save lots of money.

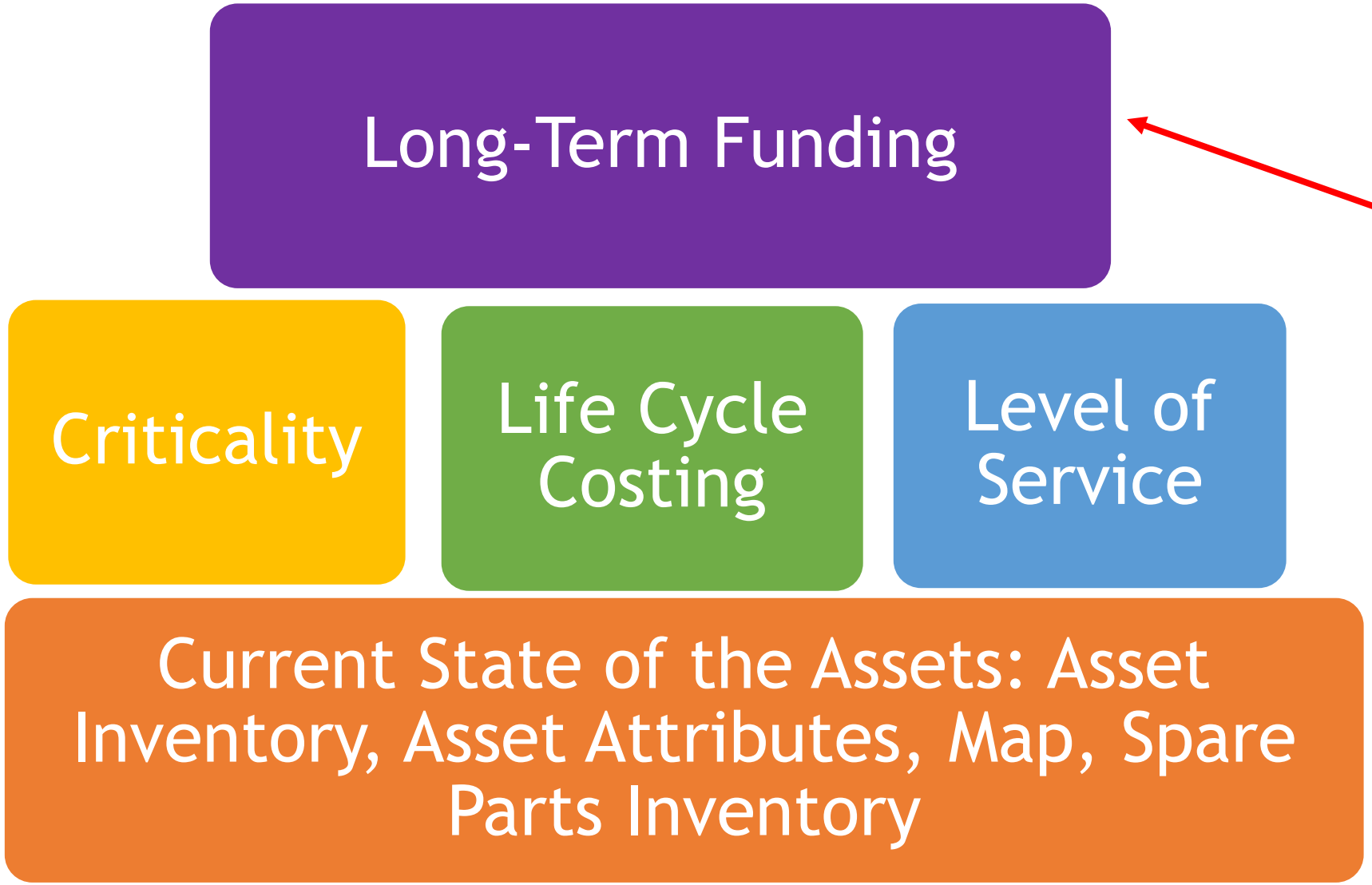
Repair, Rehabilitation, Replacement

There are lots of options when an asset fails. Thinking through the options in a life cycle optimized way has the potential to save lots of money.



A Wastewater Treatment Plant Assessment of Needed Replacements

Wastewater treatment plant using age and using operational judgement



In the end, we need to pay for it all, in a sustainable, equitable way

Communication & Funding

Communicating with elected leaders about the need for funding can help get the money you need

Getting customers to be supportive can help with rate increases. The more support, the more likely the rates can be successfully raised.

Wrap Up

Remember: The Individual Components or Pieces of An Asset Management Program Can Provide You Benefits….

…..the More Pieces You Do, the More Benefits You Receive

Achieving monetary benefits is about allowing you to spend the additional time or money on other important activities, not about cutting rates

There are always a lot of other activities that need to be done for which there are insufficient resources

Think about what are the activities you don’t get to do right now?

Think About Your Answer to the Question:

What would I do if I had an extra $1,000? $10,000? $100,000? $1,000,000?

Or: What would I do if I had an extra 2 hours per week? 500 hours per year? 1,000 hours per year?

Asset Management Resource Switchboard

https://swefcamswitchboard.unm.edu/

CONTACT INFORMATION

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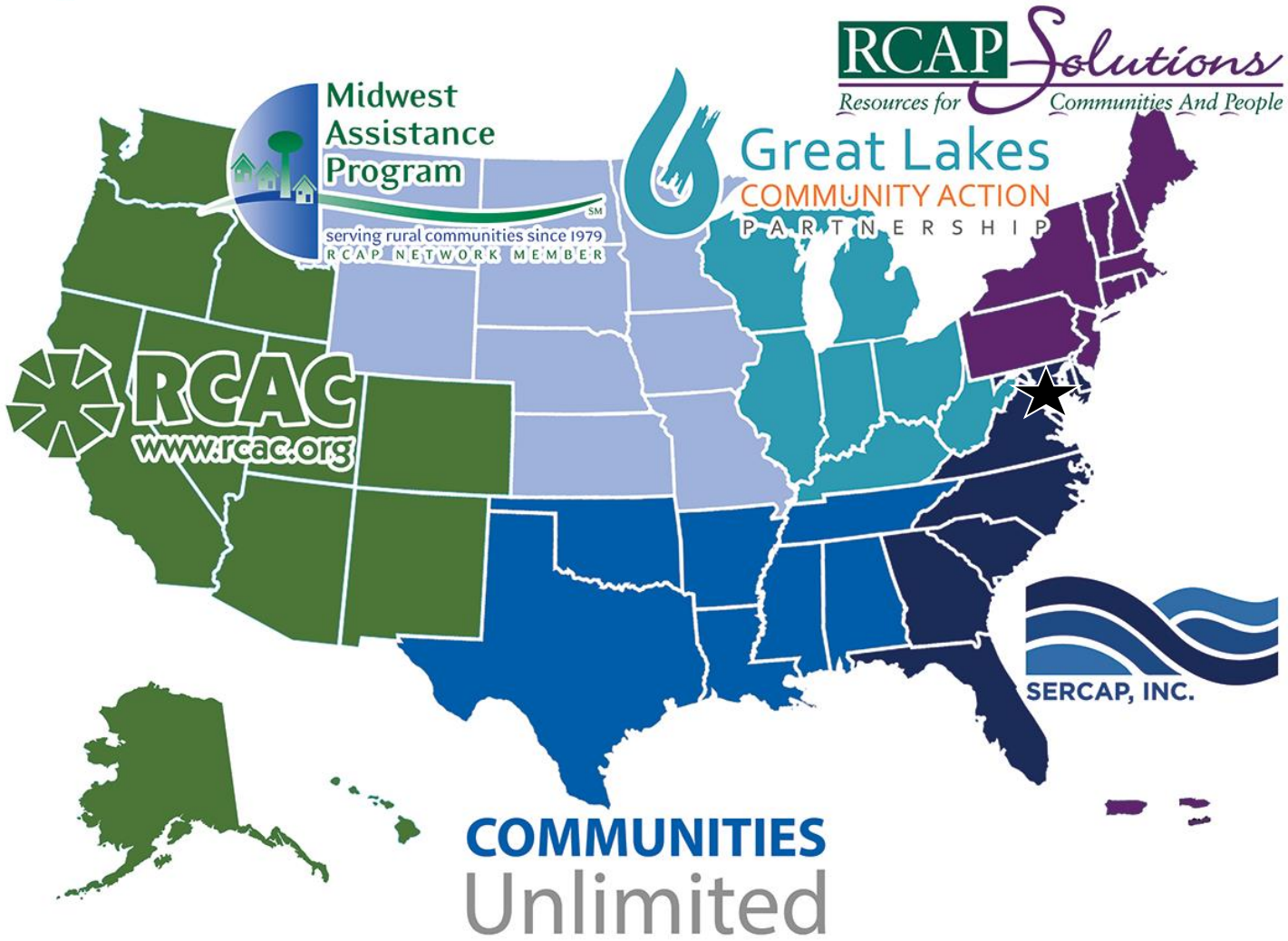
“Improving Rural Quality of Life”

Asset Management: Taking your Plan to the Finish Line

Sarah Buck, Director of Strategic Initiatives & Regional Collaboration
Rural Community Assistance Partnership (RCAP)

“Improving Rural Quality of Life”

RCAP
Rural Community Assistance Partnership



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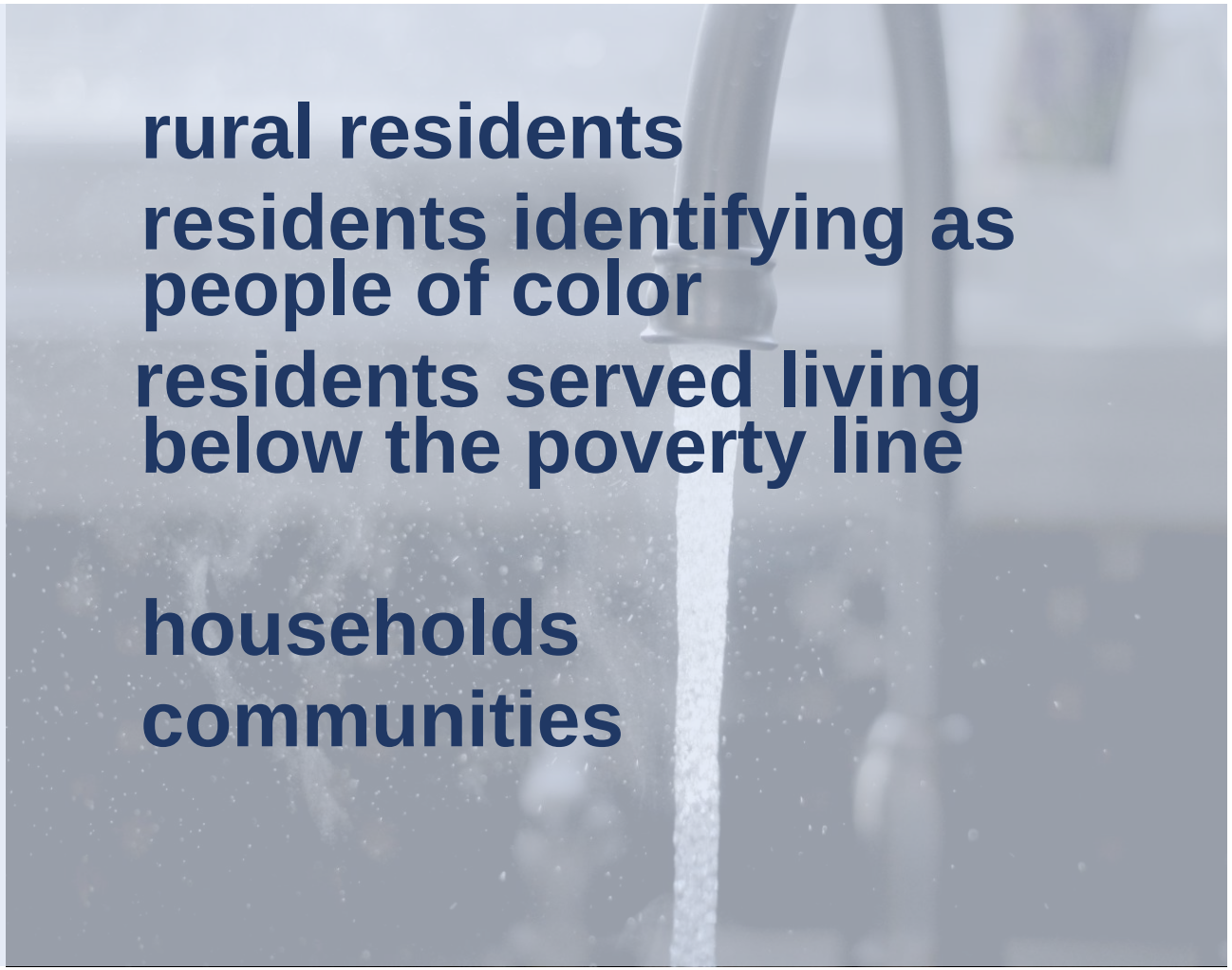
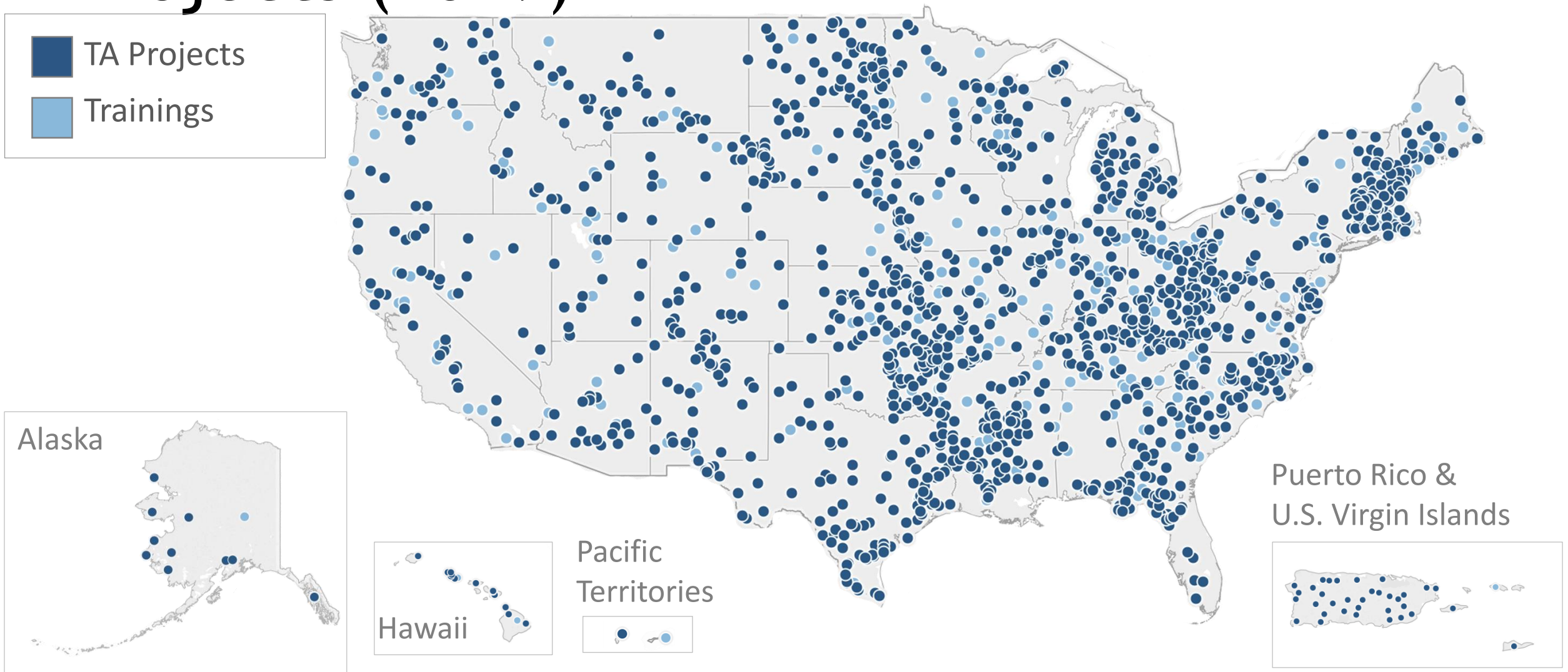
Impact

In Fiscal Year 2019, the RCAP Network served approximately:

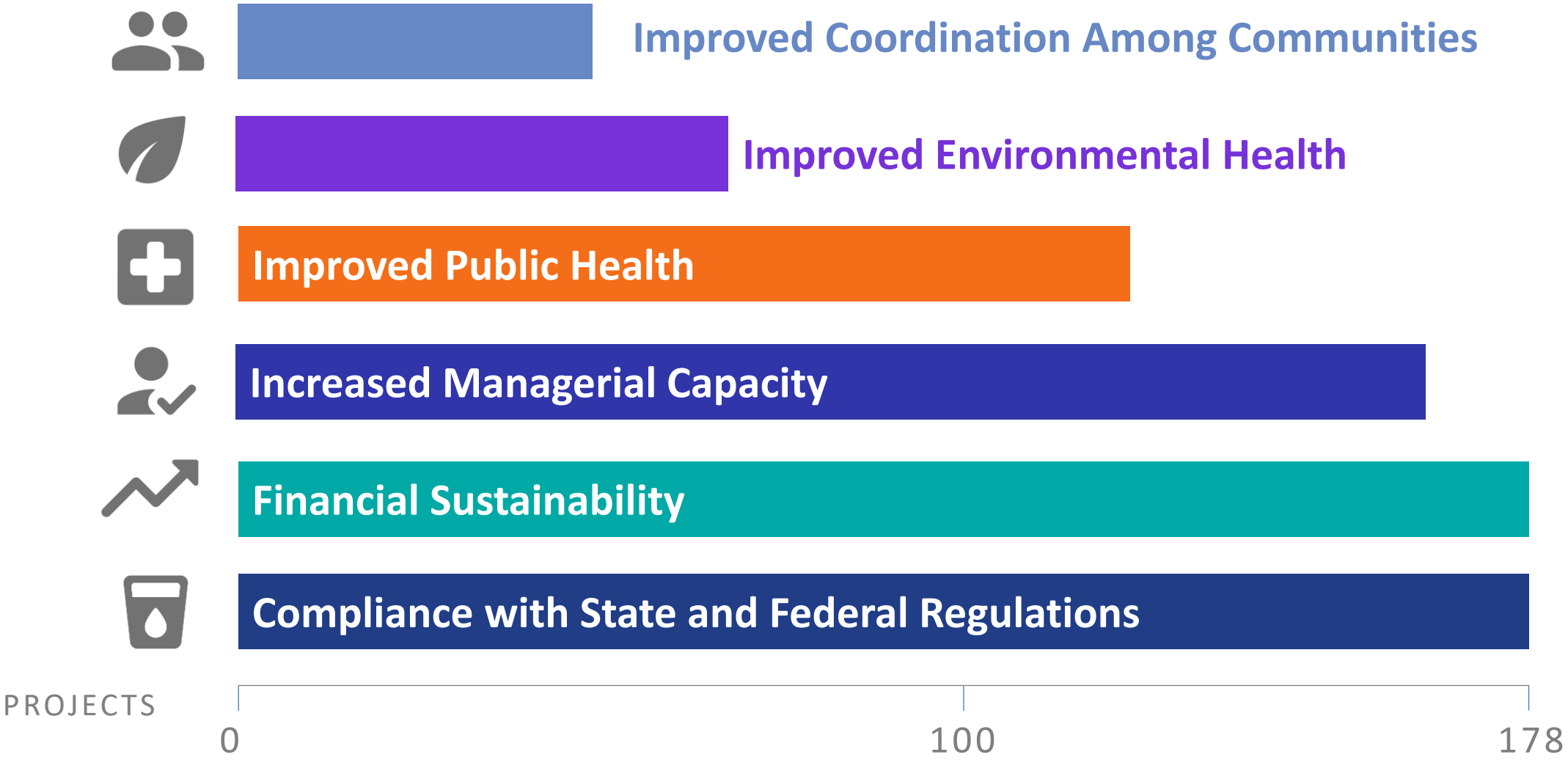
3.2 million:	**rural residents**
1 million +:	**residents identifying as people of color**
28 percent:	**residents served living below the poverty line**
1.2 million:	**households**
2,000:	**communities**



RCAP Trainings and Technical Assistance Projects (2019)



RCAP Outcomes Achieved Through Completed Projects



We want to hear about your biggest challenges for implementing AM…

After the Initial Asset Management Plan is Done:

- There is still lots more to do!
- Integration with Financial Planning:
  - Show me the money
  - Financial health of the system--reserves
  - Board member roadblocks
  - Opinions and resistance to rate increases
  - Loans/interest rates and financial impact

Getting Board Member Buy-in:

- Education and training for board members
- Superintendent/Manager and Board member support is critical for AM success
- Developing good relationships and communication between staff and system leadership is key
- Show the board the big picture gains and provide positive and negative outcome examples

AM Training in Maine: a 10-year Review

- 2006-2016 RCAP Solutions provided AM training to 38 utilities
- In 2017, RCAP completed a comprehensive historical assessment
- 18/38 systems had completed asset management plans

Asset Management Roadblocks:

- Small staff, limited capacity, large workload
- Leaving it all up to the contracted engineers and accountants
- In most states AM is not required—so when time is limited it becomes “nice” but not “necessary”
- Funding the plan

Elements for Successful Implementation:

- Phase 1:
  - Support and buy-in from operators and the manager/superintendent is essential—you need champions
  - Inventory, Inventory, Inventory
  - Attributing
  - Integration with GIS mapping of critical assets

- Phase 2:
  - Integration with financial planning
  - Board buy-in
  - Rate studies, income surveys and funding applications--$$$

WW Case Study—GIS and AMP Integration in Indiana

- Freelandville Regional Sewer District, IN
  - Utilize GPS to map assets
  - Download GPS Data into ArcGIS
    - Mapping assets and facility locations
    - Track system work orders
    - Track system data from lift stations and plant
  - Integrate mapping data into AMP process
    - Proved invaluable to optimizing system performance
  - AMP/GIS combo provides tools for decision makers to improve operations and make proactive decisions for future growth

THANK YOU!

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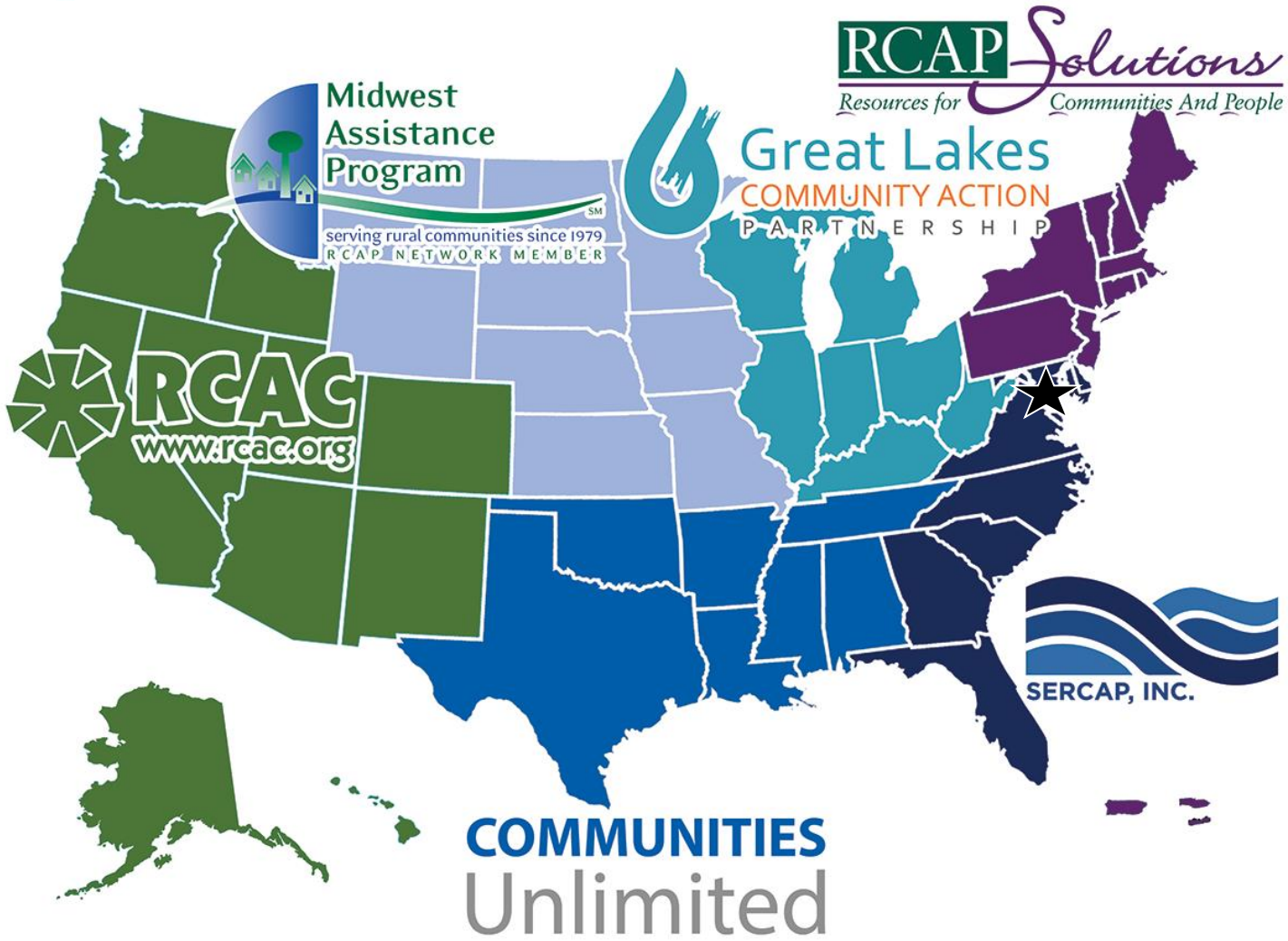

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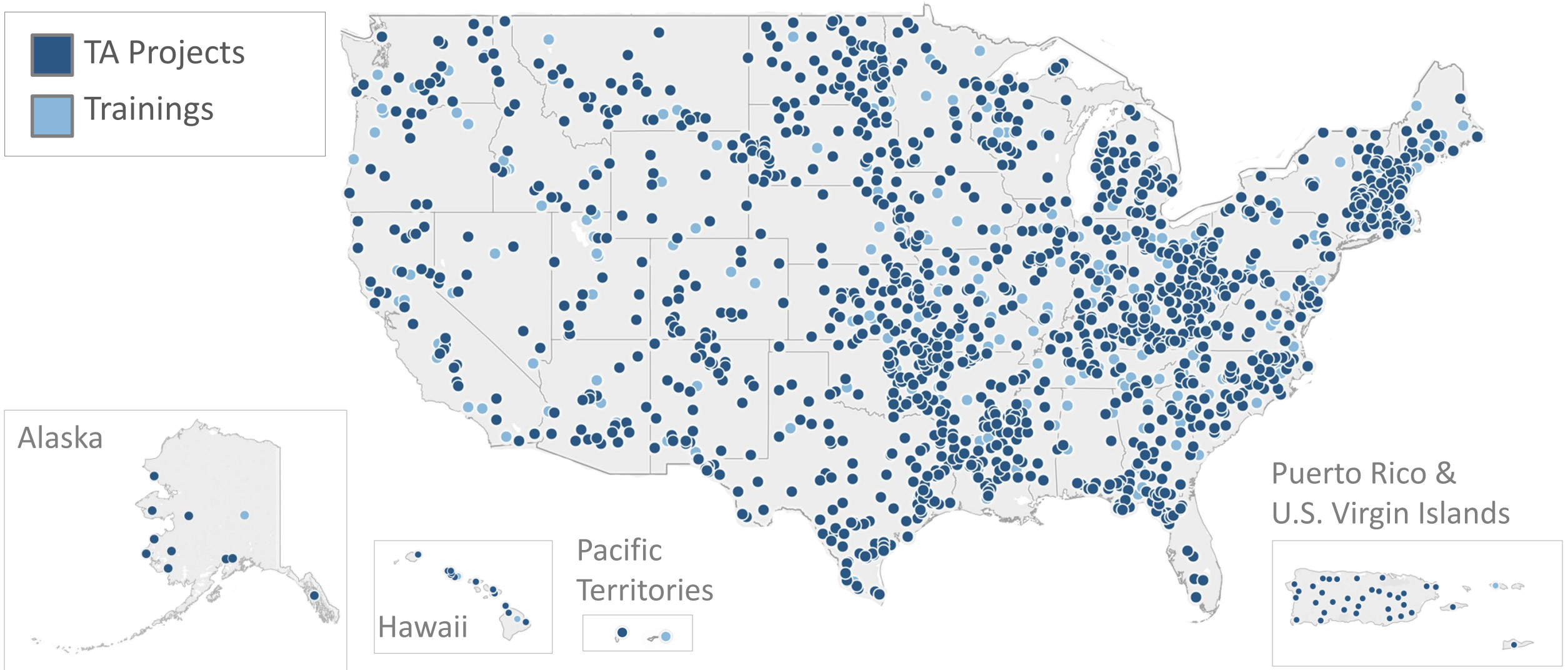

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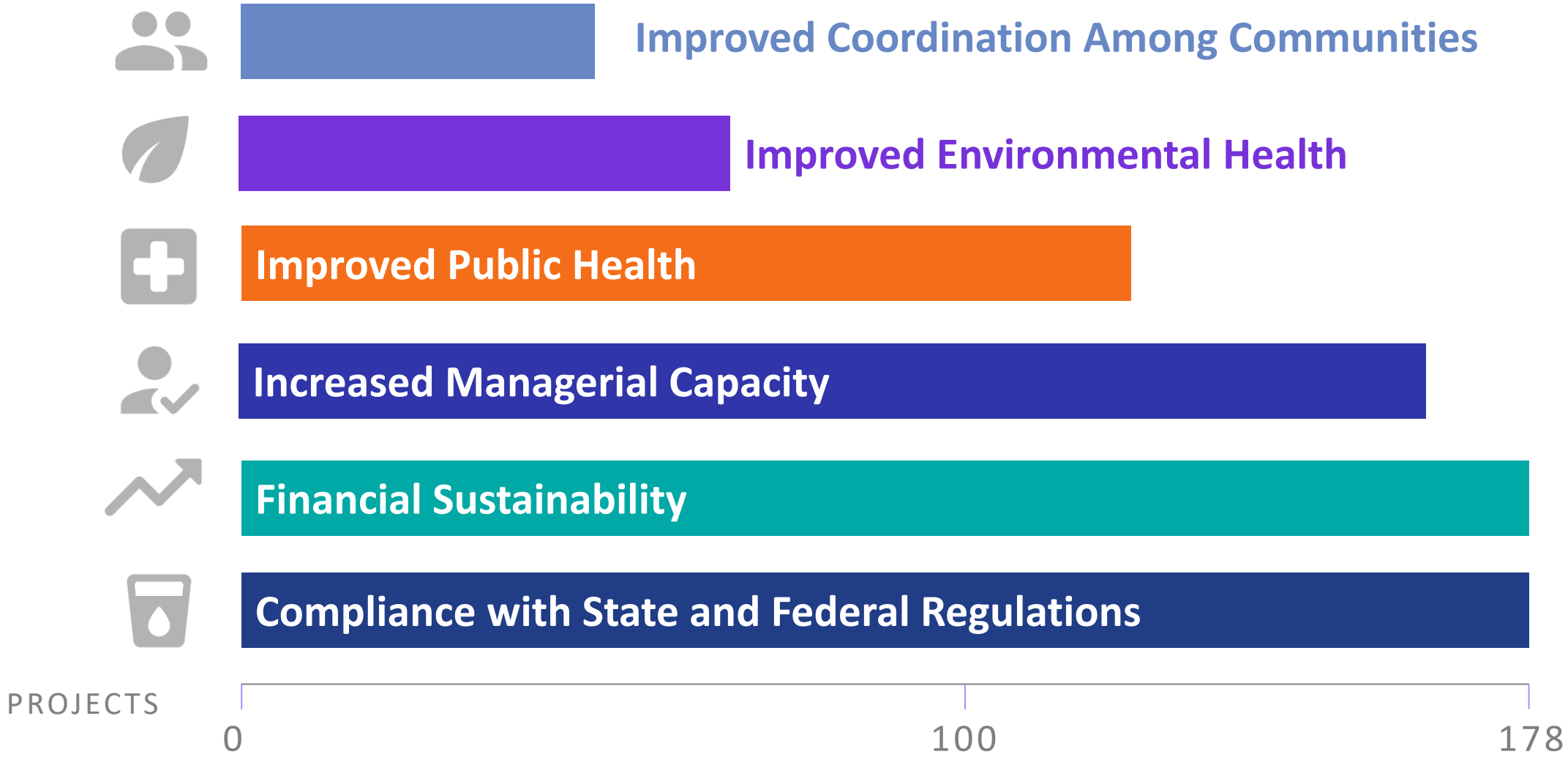

Poll:

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