# Springfield – Greene County, Mo

# Integrated Plan for the Environment

CITY OF Springfield

GREENE COUNTY MISSOURI 1833 SALUS POPULI SUPREMA LEX ESTO

City Utilities℠
Connecting Our Community

# About Springfield, Missouri

**THIRD**
**Largest**
City in MO

POPULATION:

**160,000**

**300,000**

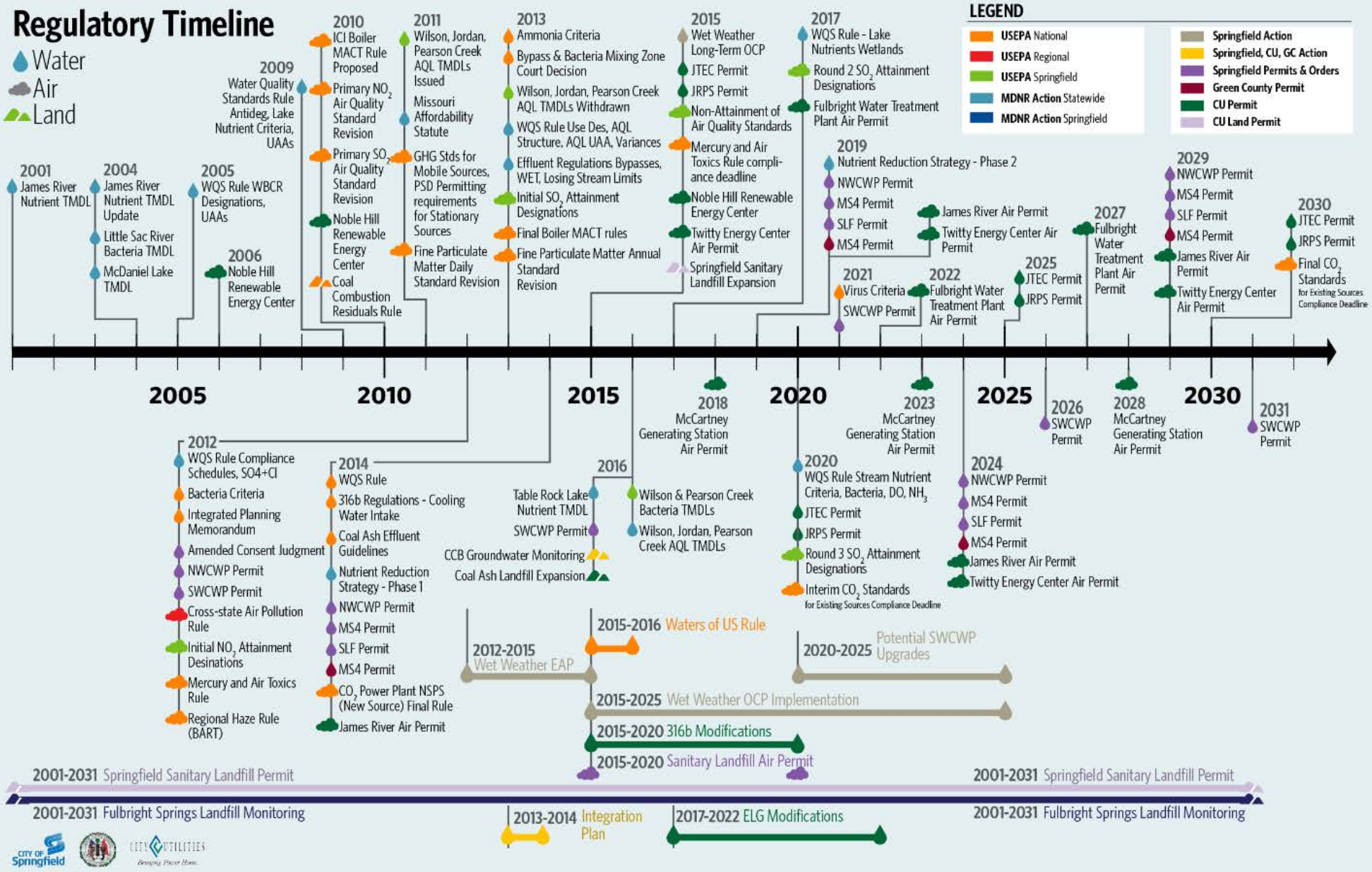
**1** of **5**
Cities to receive EPA grant

**HUD:** ***Severely Financially Distressed***

HOME TO
**2** Large Medical Systems

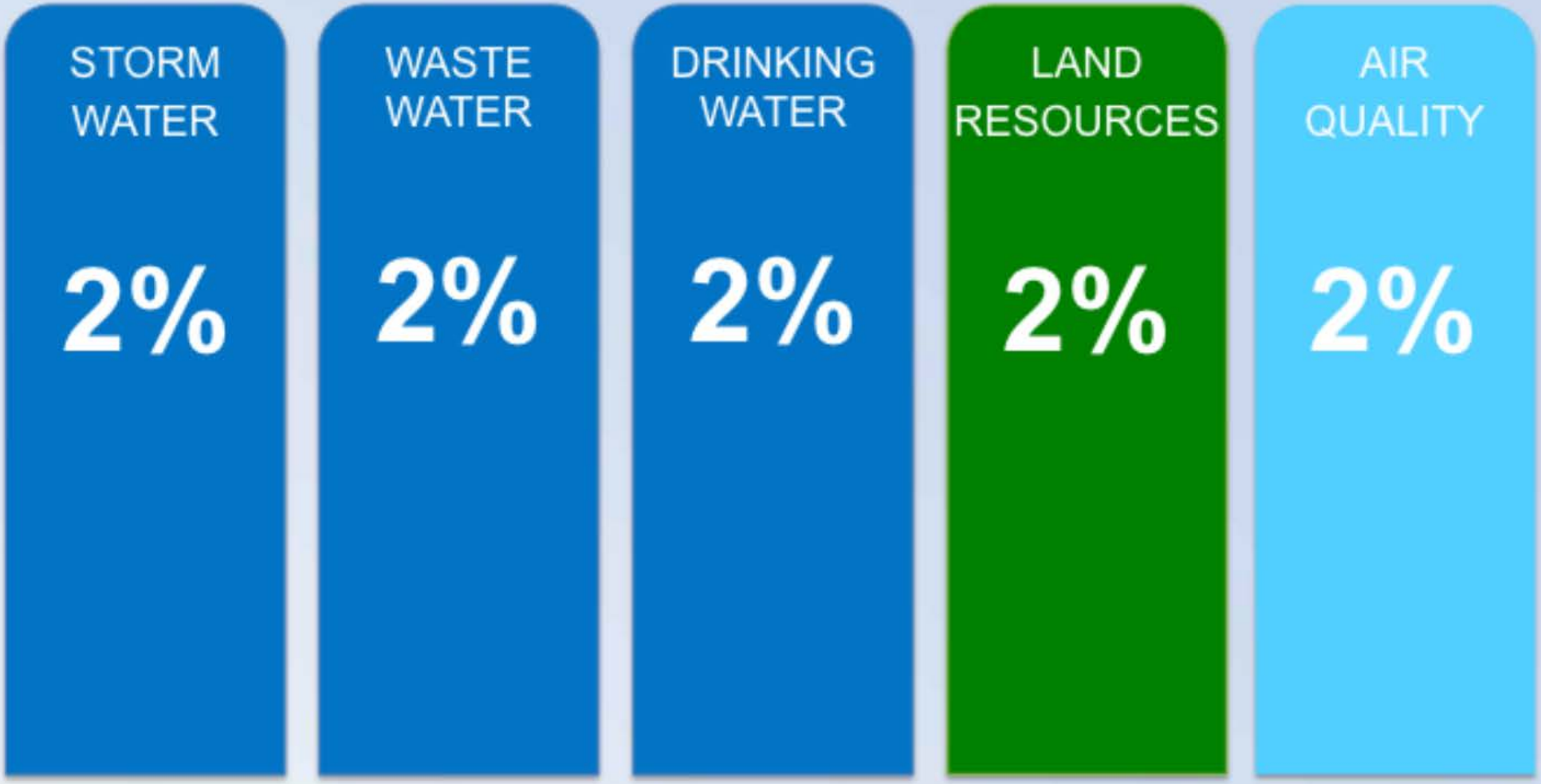
IN THE OZARKS:
**Environment**
**=**
**Economy**

**48,000**
students at 8 colleges & universities


Regulatory Timeline
Water
Air
Land
LEGEND
USEPA National
USEPA Regional
USEPA Springfield
MDNR Action Statewide
MDNR Action Springfield
Springfield Action
Springfield, CU, GC Action
Springfield Permits & Orders
Green County Permit
CU Permit
CU Land Permit
2001 James River Nutrient TMDL
2004 James River Nutrient TMDL Update
Little Sac River Bacteria TMDL
McDaniel Lake TMDL
2005 WQS Rule WBCR Designations, UAAs
2006 Noble Hill Renewable Energy Center
2009 Water Quality Standards Rule Antideg, Lake Nutrient Criteria, UAAs
2010 ICI Boiler MACT Rule Proposed
Primary NO2 Air Quality Standard Revision
Primary SO2 Air Quality Standard Revision
Noble Hill Renewable Energy Center
Coal Combustion Residuals Rule
2011 Wilson, Jordan, Pearson Creek AQL TMDLs Issued
Missouri Affordability Statute
GHG Stds for Mobile Sources, PSD Permitting requirements for Stationary Sources
Fine Particulate Matter Daily Standard Revision
2012 WQS Rule Compliance Schedules, SO4+Cl
Bacteria Criteria
Integrated Planning Memorandum
Amended Consent Judgment
NWCWP Permit
SWCWP Permit
Cross-state Air Pollution Rule
Initial NO2 Attainment Desinations
Mercury and Air Toxics Rule
Regional Haze Rule (BART)
2013 Ammonia Criteria
Bypass & Bacteria Mixing Zone Court Decision
Wilson, Jordan, Pearson Creek AQL TMDLs Withdrawn
WQS Rule Use Des, AQL Structure, AQL UAA, Variances
Effluent Regulations Bypasses, WET, Losing Stream Limits
Initial SO2 Attainment Designations
Final Boiler MACT rules
Fine Particulate Matter Annual Standard Revision
2014 WQS Rule
316b Regulations - Cooling Water Intake
Coal Ash Effluent Guidelines
Nutrient Reduction Strategy - Phase 1
NWCWP Permit
MS4 Permit
SLF Permit
MS4 Permit
CO2 Power Plant NSPS (New Source) Final Rule
James River Air Permit
2015 Wet Weather Long-Term OCP
JTEC Permit
JRPS Permit
Non-Attainment of Air Quality Standards
Mercury and Air Toxics Rule compliance deadline
Noble Hill Renewable Energy Center
Twitty Energy Center Air Permit
Springfield Sanitary Landfill Expansion
2016 Table Rock Lake Nutrient TMDL
SWCWP Permit
CCB Groundwater Monitoring
Coal Ash Landfill Expansion
Wilson & Pearson Creek Bacteria TMDLs
Wilson, Jordan, Pearson Creek AQL TMDLs
2017 WQS Rule - Lake Nutrients Wetlands
Round 2 SO2 Attainment Designations
Fulbright Water Treatment Plant Air Permit
2018 McCartney Generating Station Air Permit
2019 Nutrient Reduction Strategy - Phase 2
NWCWP Permit
MS4 Permit
SLF Permit
MS4 Permit
James River Air Permit
Twitty Energy Center Air Permit
2020 WQS Rule Stream Nutrient Criteria, Bacteria, DO, NH3
JTEC Permit
JRPS Permit
Round 3 SO2 Attainment Designations
Interim CO2 Standards for Existing Sources Compliance Deadline
2021 Virus Criteria
SWCWP Permit
2022 Fulbright Water Treatment Plant Air Permit
2023 McCartney Generating Station Air Permit
2024 NWCWP Permit
MS4 Permit
SLF Permit
MS4 Permit
James River Air Permit
Twitty Energy Center Air Permit
2025 JTEC Permit
JRPS Permit
2026 SWCWP Permit
2027 Fulbright Water Treatment Plant Air Permit
2028 McCartney Generating Station Air Permit
2029 NWCWP Permit
MS4 Permit
SLF Permit
MS4 Permit
James River Air Permit
Twitty Energy Center Air Permit
2030 JTEC Permit
JRPS Permit
Final CO2 Standards for Existing Sources Compliance Deadline
2031 SWCWP Permit
2005
2010
2015
2020
2025
2030
2012-2015 Wet Weather EAP
2015-2016 Waters of US Rule
2020-2025 Potential SWCWP Upgrades
2015-2025 Wet Weather OCP Implementation
2015-2020 316b Modifications
2015-2020 Sanitary Landfill Air Permit
2001-2031 Springfield Sanitary Landfill Permit
2001-2031 Fulbright Springs Landfill Monitoring
2013-2014 Integration Plan
2017-2022 ELG Modifications
2001-2031 Springfield Sanitary Landfill Permit
2001-2031 Fulbright Springs Landfill Monitoring
CITY OF Springfield
CITY UTILITIES

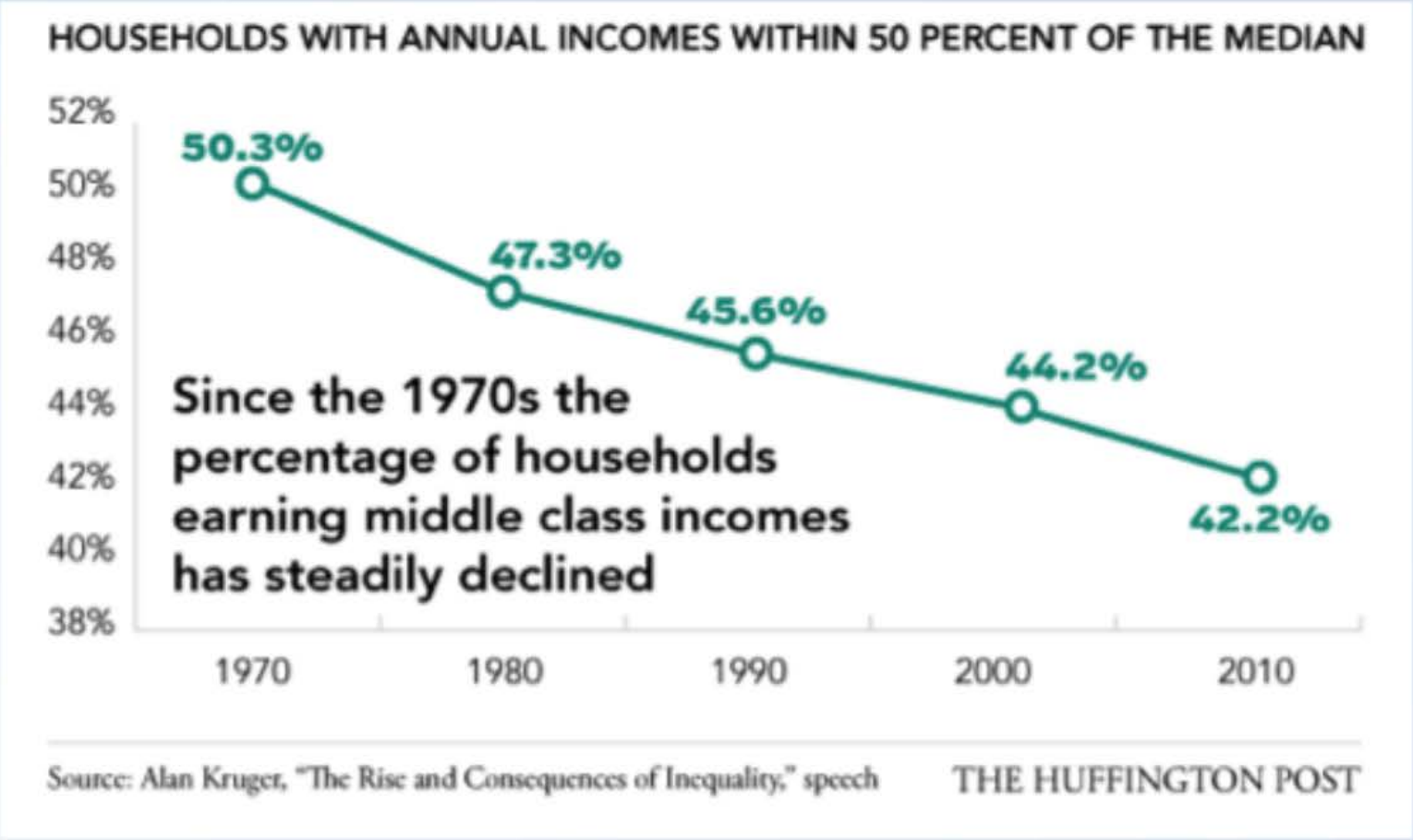
# Perceived Silo approach

*Is this where we're headed?*



# Growing & Changing Demographics

## Disappearance of the middle class



# Growing & Changing Demographics

**25%**

of Springfieldians live at or below the poverty line

# Competition for the Next Dollar

EDUCATION

TALENT ATTRACTION

FOOD

PUBLIC SAFETY

UTILITIES

HEALTH CARE

INFRASTRUCTURE

POVERTY

HOUSING

In 2012, the U.S. Environmental Protection Agency (EPA) released its **"Integrated Municipal Stormwater and Wastewater Planning Approach Framework"** which emphasized a commitment to work with states and communities to implement an integrated planning approach to address environmental objectives.

**In response to this opportunity, leaders from the City of Springfield, Greene County and City Utilities developed a local approach to integrated planning.**

**This holistic approach will examine our environmental resources in regards to:**

**...and will seek to answer the question:**

# If we only had ONE DOLLAR to spend,

what is the most effective solution we could implement...

...to address the most pressing problem(s)?

...that matter most to our community?

...and would be affordable to our citizens?

# How do we PRIORITIZE?

# COMMUNITY PRIORITIES

## Environmental Priorities Task Force

**MISSION:**
**Define our community's environmental priorities**

- What are our most important resources?
- Where should we focus our efforts?

**If you had one dollar to protect the environment...**

**...How would you spend it?**

**...What matters most to you?**

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- What are our most important resources?
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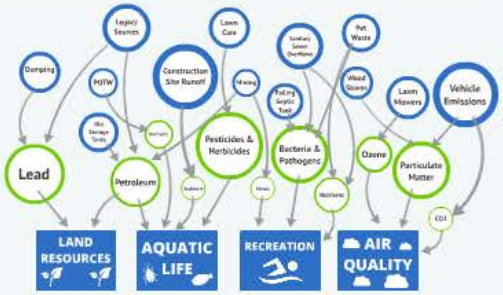
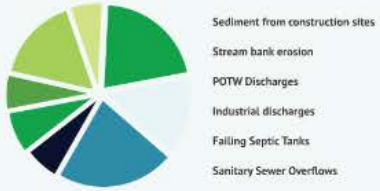
# PRIORITIZE SOURCES

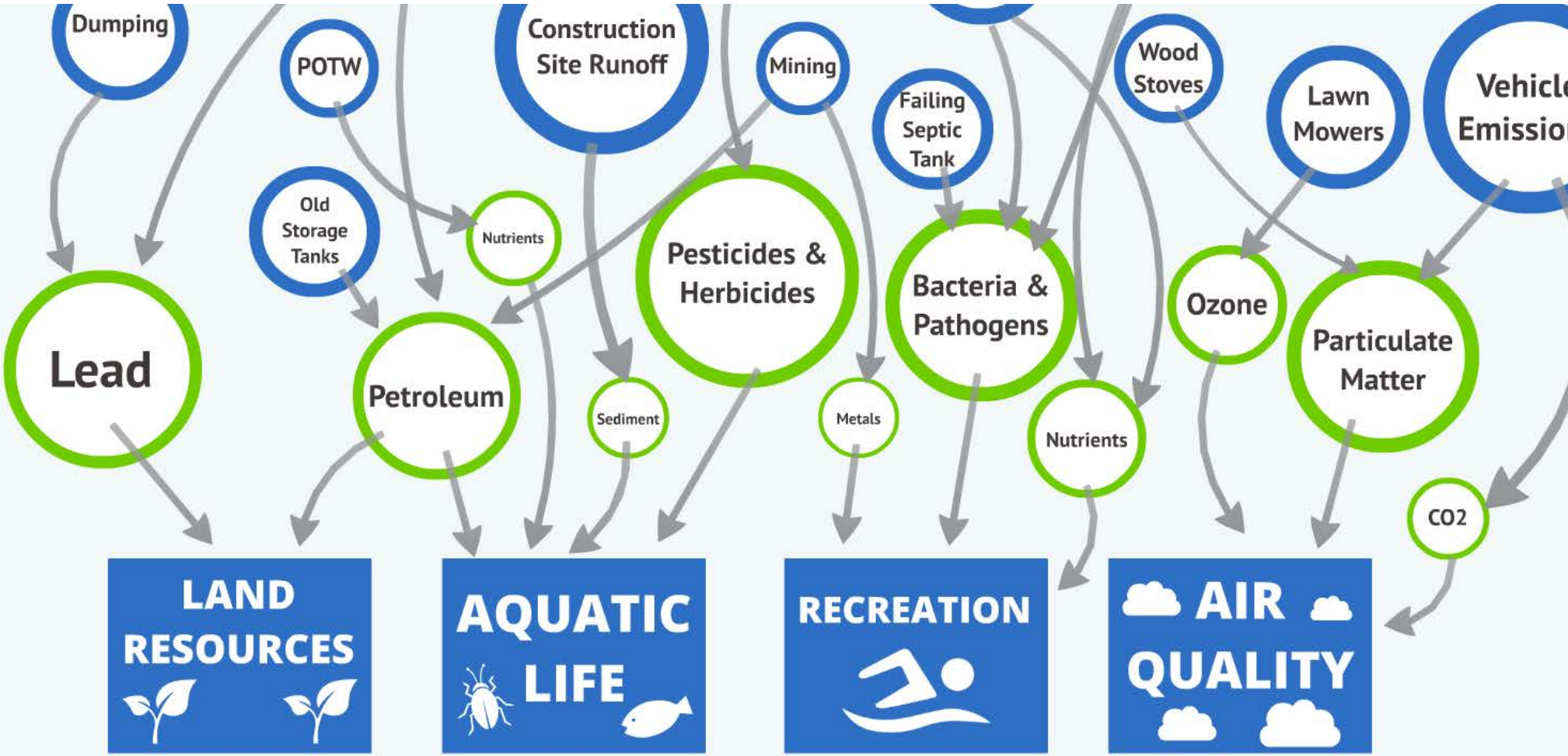
**Using a multiple-criteria decision analysis (MCDA) toolset, we can turn this...**



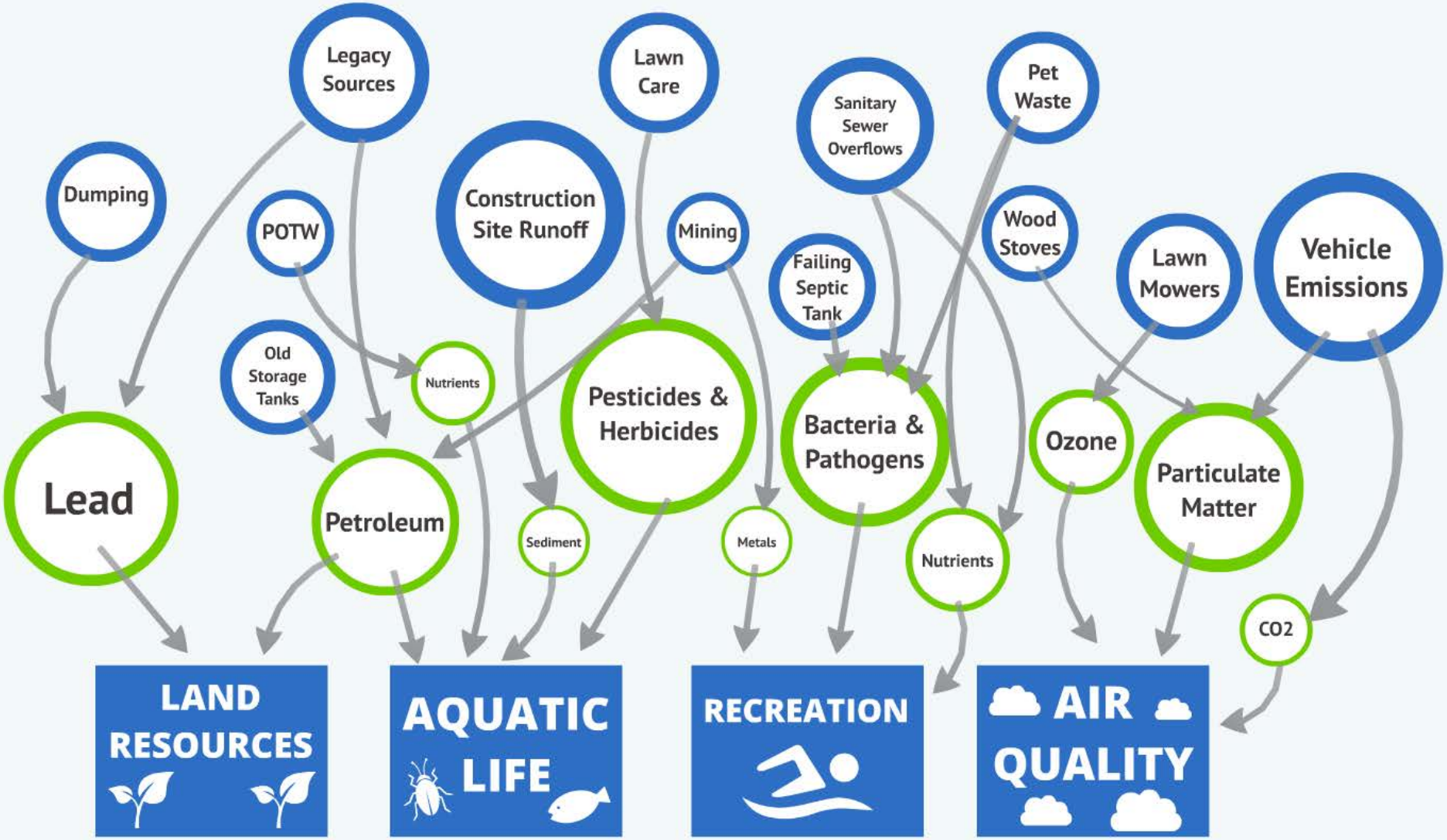

**...into this:**




**Our funding should be relative to the size of the pollution source.**


Dumping
POTW
Construction Site Runoff
Mining
Failing Septic Tank
Wood Stoves
Lawn Mowers
Vehicle Emissio
Old Storage Tanks
Nutrients
Pesticides & Herbicides
Bacteria & Pathogens
Ozone
Particulate Matter
Lead
Petroleum
Sediment
Metals
Nutrients
CO2
LAND RESOURCES
AQUATIC LIFE
RECREATION
AIR QUALITY

# Using a multiple-criteria decision analysis (MCDA) toolset, we can turn this...



# ...into this:

Sediment from construction sites

Stream bank erosion

POTW Discharges

Industrial discharges

Failing Septic Tanks

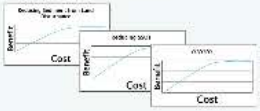
Sanitary Sewer Overflows

**Our funding should be relative to the size of the pollution source.**

# PRIORITIZE SOLUTIONS

**Finding the most effective Solutions:**

Determine the return on investment (ROI) for each solution




**Finding the most effective Solutions:**

Use a Sustainable Return On Investment (SROI) approach to capture the "triple bottom line"

**Ability to compare solutions:**

# Finding the most effective Solutions:

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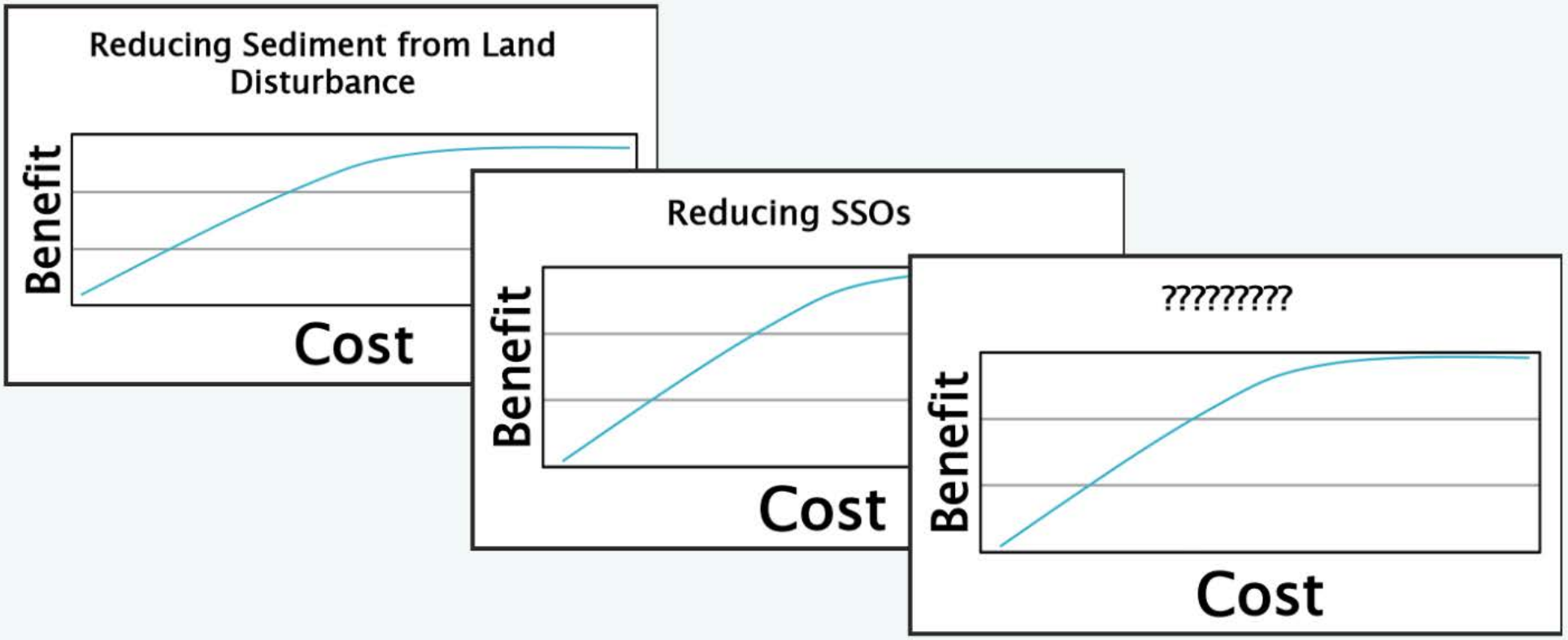

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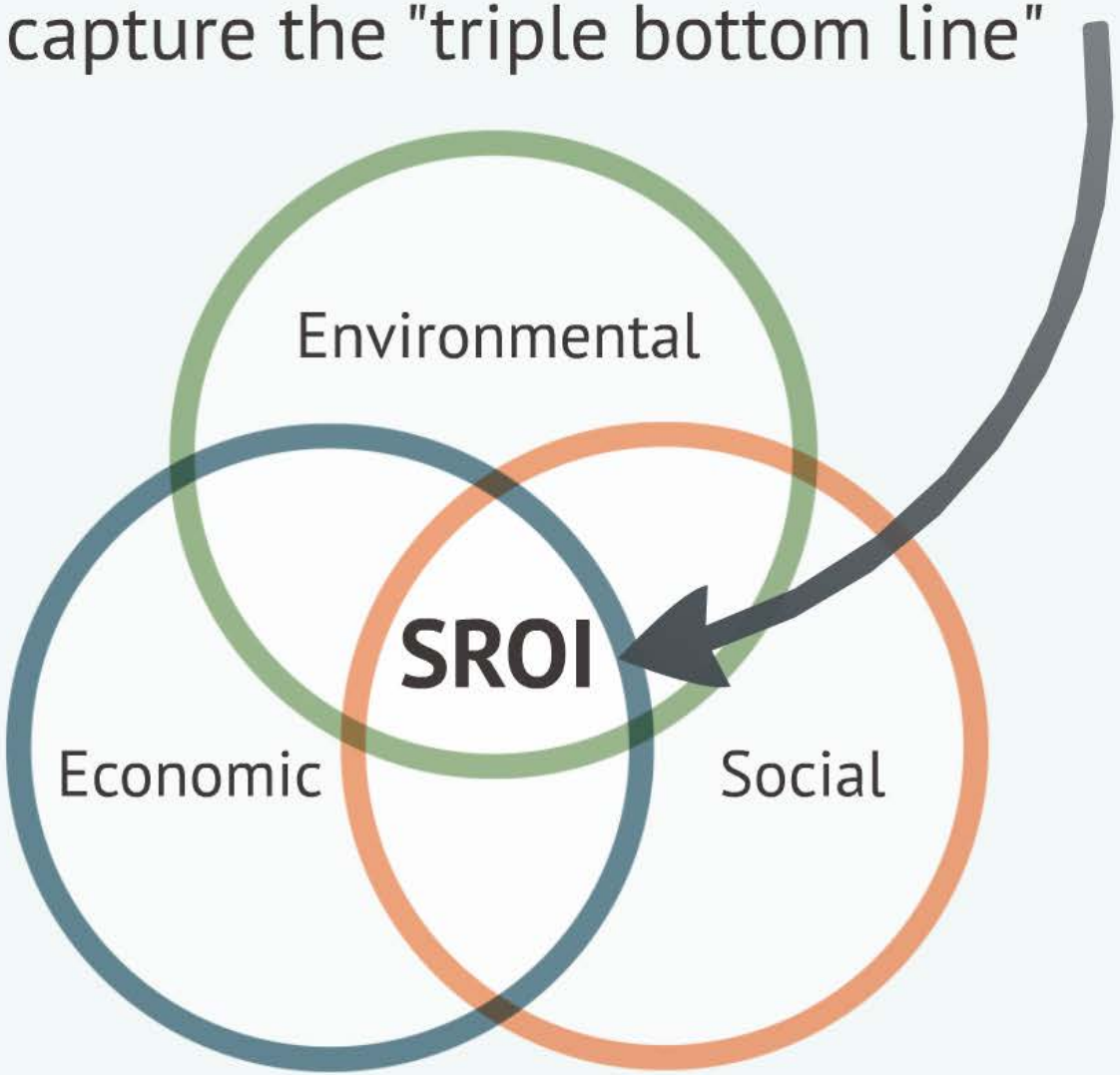


# Ability to compare solutions:

## Treatment Plant Improvements

**BENEFITS:**

Water Quality

**COSTS:**

Construction
Operation/Maint.
Energy Consumption

VS.

## Rain Garden

**BENEFITS:**

Water Quality
Air Quality
Property Values

**COSTS:**

Construction
Operation/Maint.

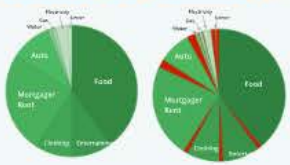
# FINANCIAL CAPABILITY

**Traditional Approach.....**

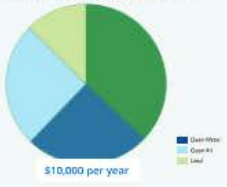
**2% of Median Household Income**

($42,000 for SS service area)

**Breakdown of Average Household Budget:**



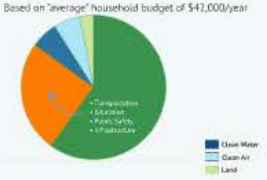

**Many of our citizens make LESS than the Median Income ($42K/year)**




$10,000 per year

**What do you pay toward Environmental Protection?**

Based on "average" household budget of $42,000/year




**How will our decisions impact:**

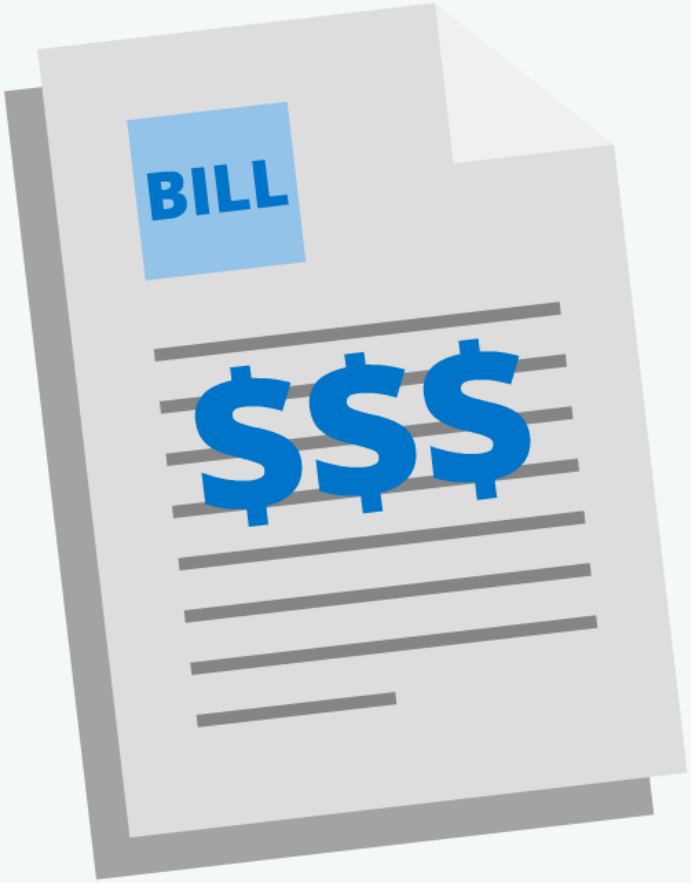
...low income families?

...our regions' ability to attract new businesses?

...our ability to fund other critical priorities?

**Our Integrated Plan ensures that the next 40 years will be a success.**

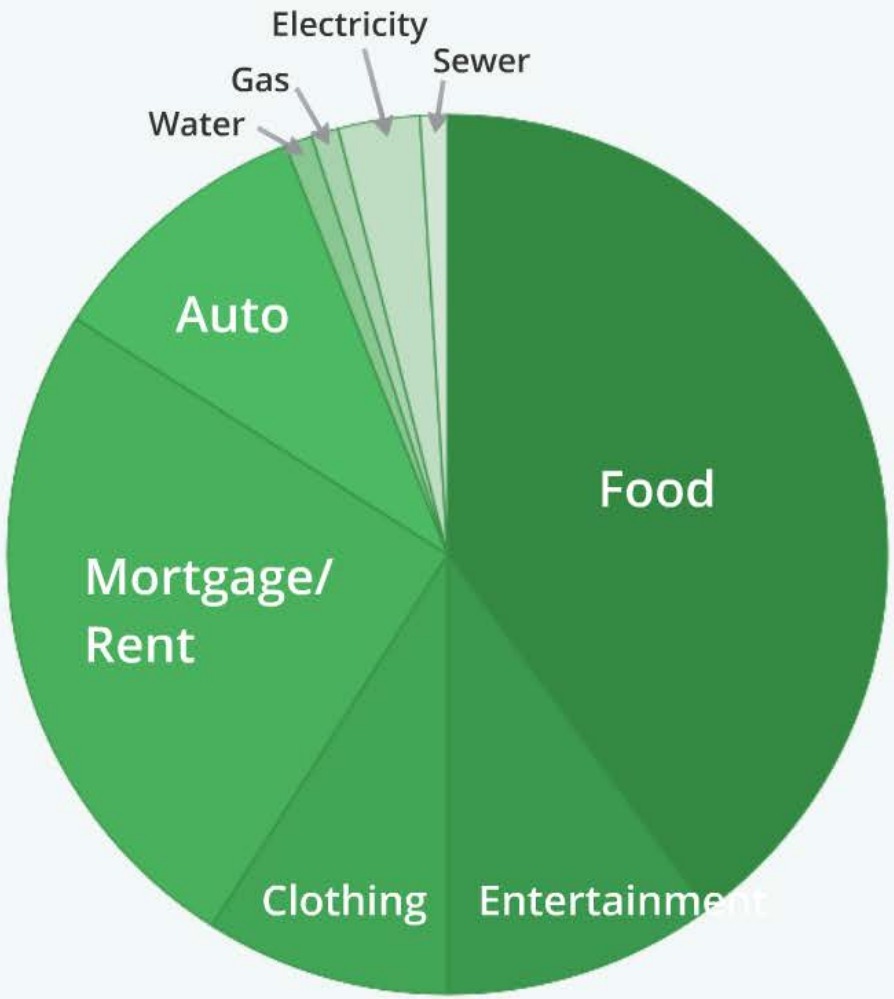
# Traditional Approach.....

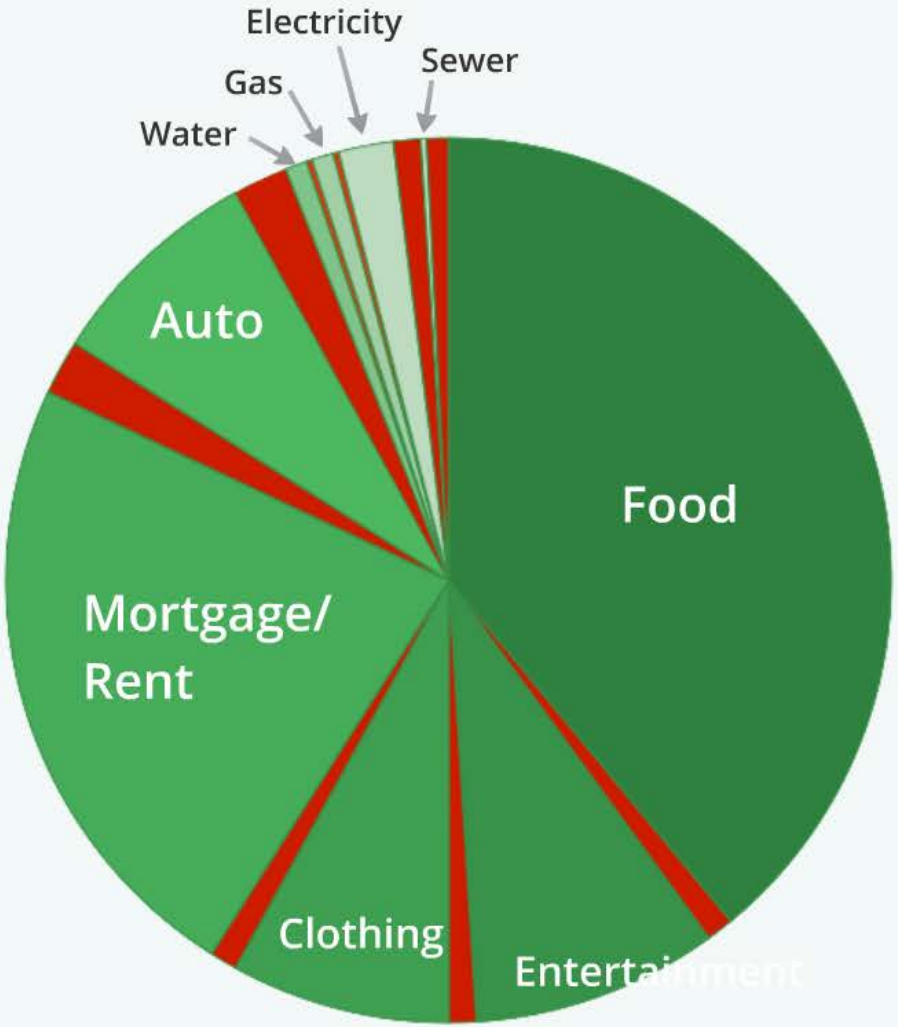



**< 2% of Median Household Income**

($42,000 for SS service area)

# Breakdown of Average Household Budget:



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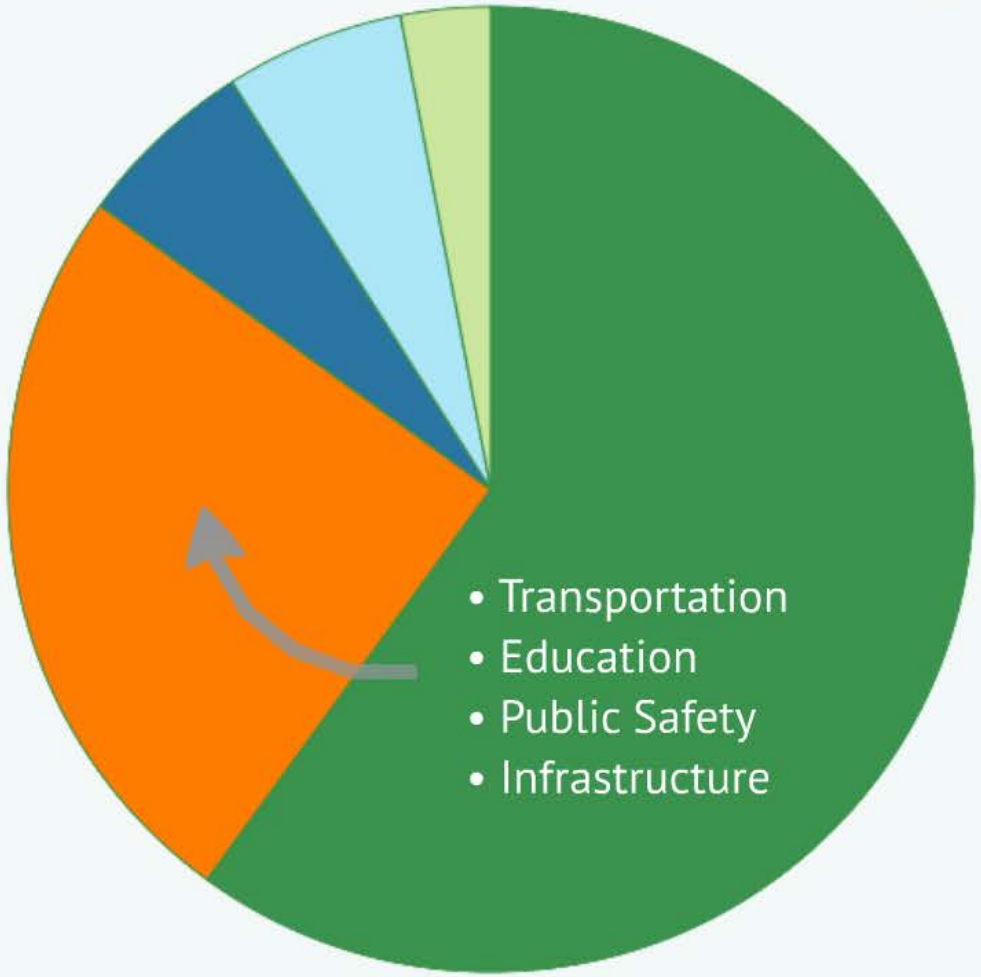
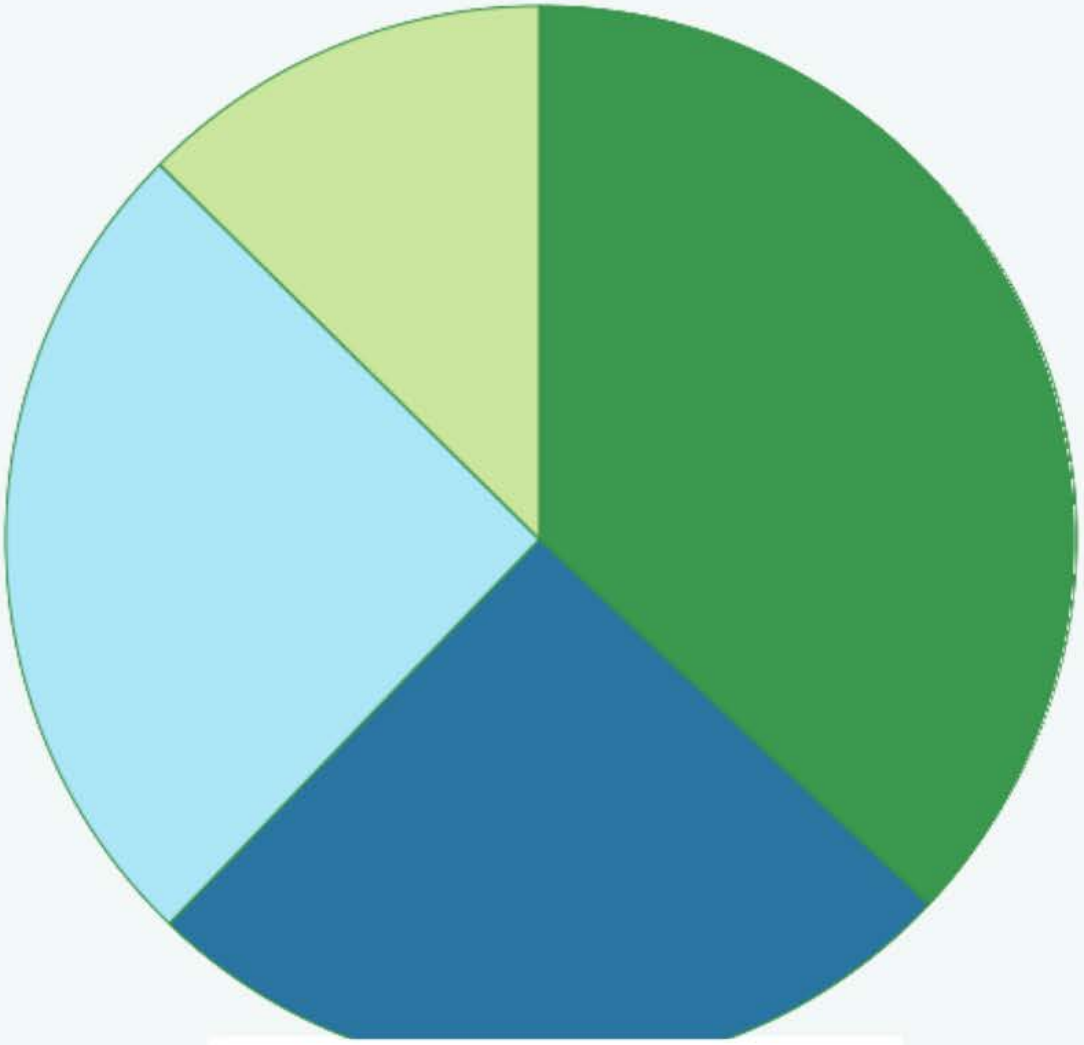



**Clean Water**

**Clean Air**

**Land**

# Many of our citizens make LESS than the Median Income ($42K/year)

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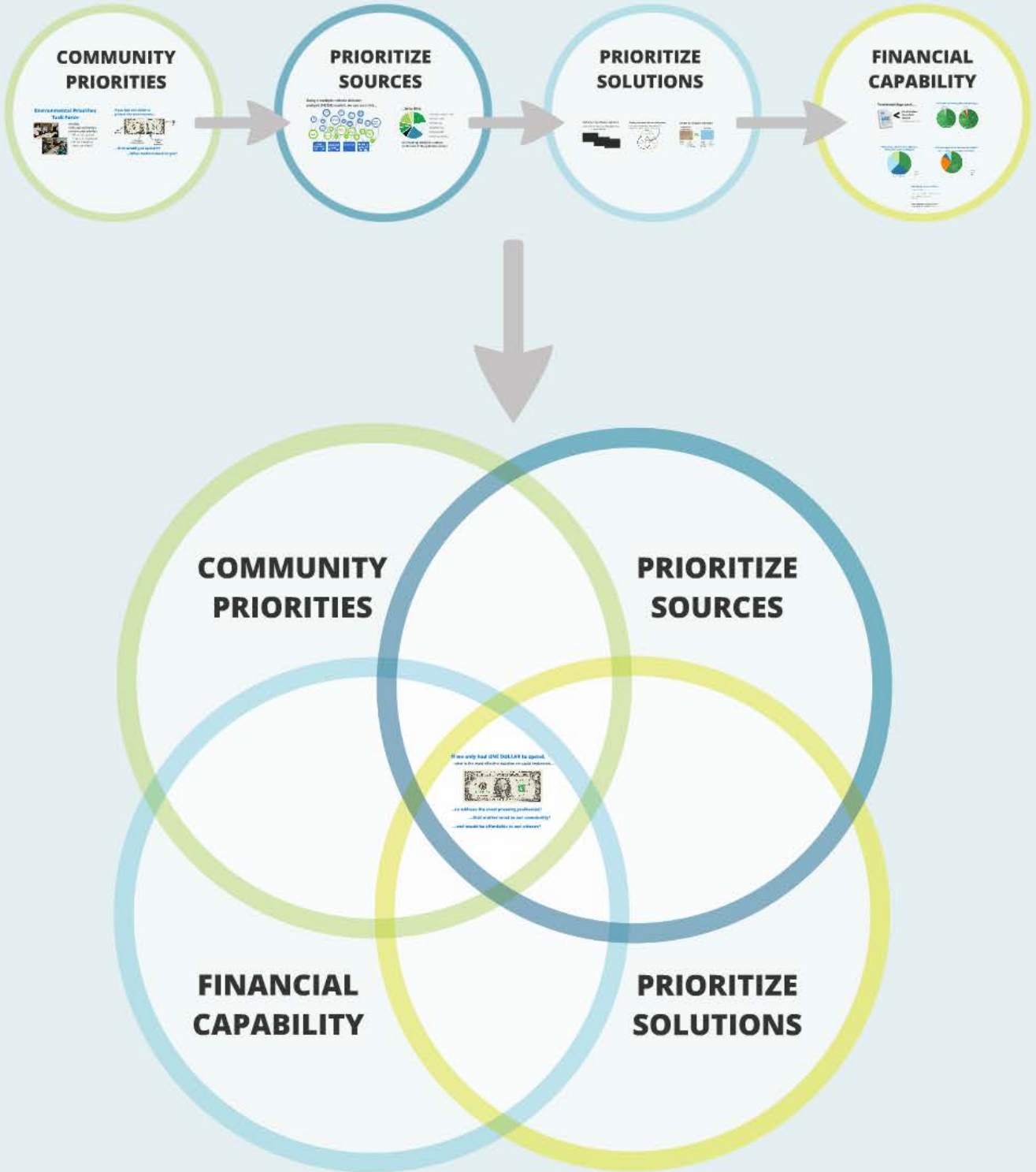
# How do we PRIORITIZE?


COMMUNITY PRIORITIES
PRIORITIZE SOURCES
PRIORITIZE SOLUTIONS
FINANCIAL CAPABILITY
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PRIORITIZE SOURCES
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FINANCIAL CAPABILITY
PRIORITIZE SOLUTIONS

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COMMUNITY PRIORITIES
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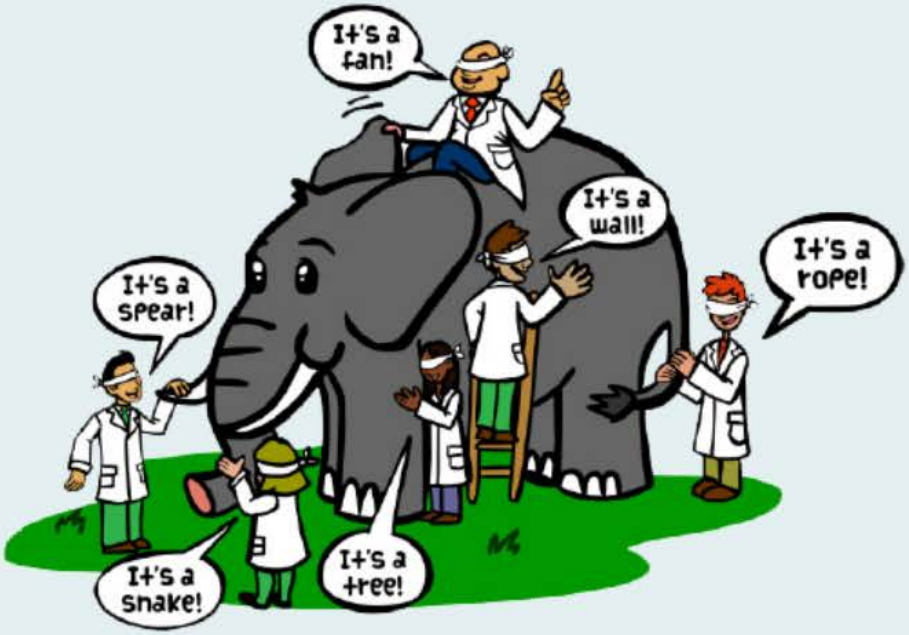
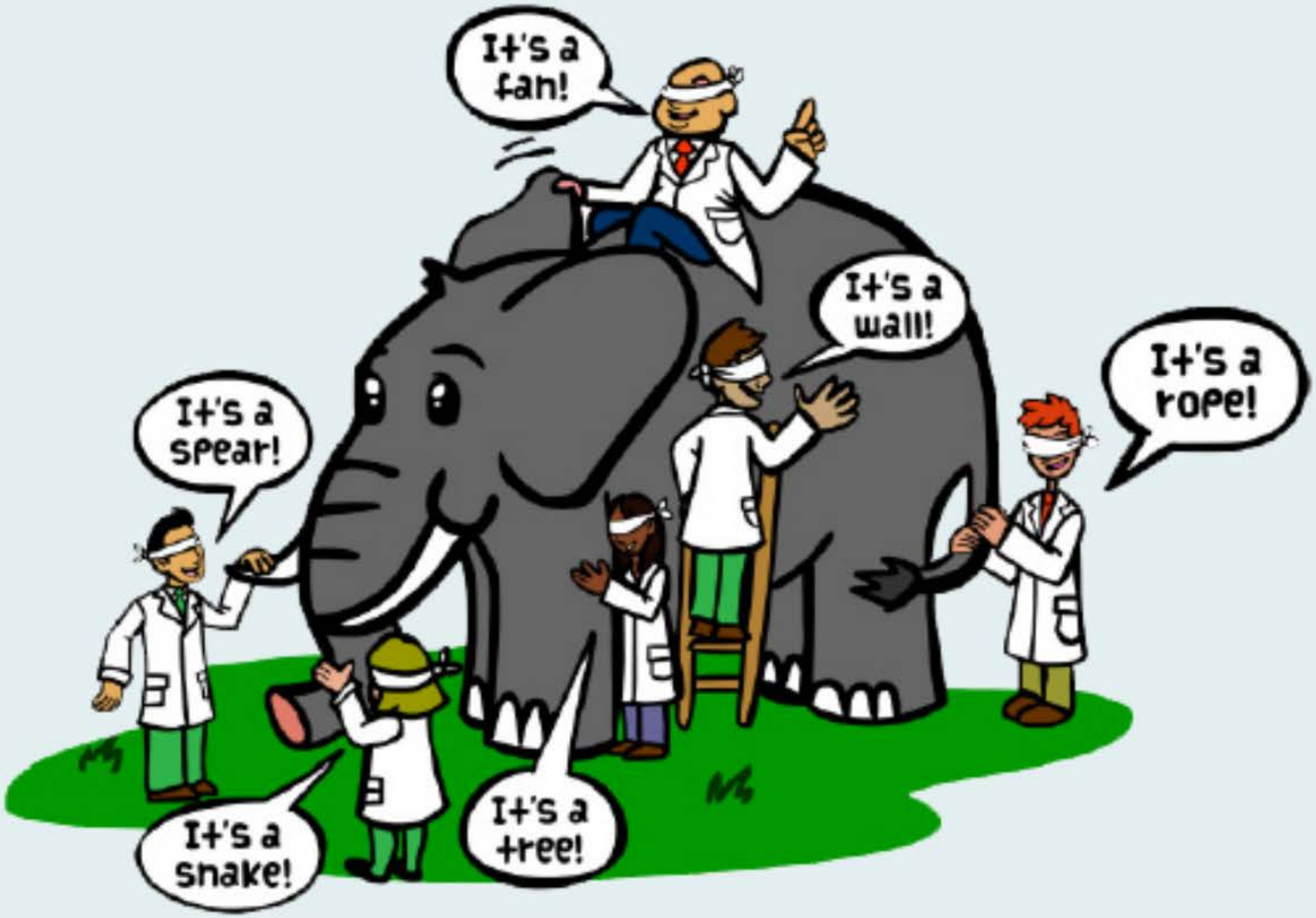
FINANCIAL CAPABILITY
PRIORITIZE SOLUTIONS

# COLLABORATION is Key

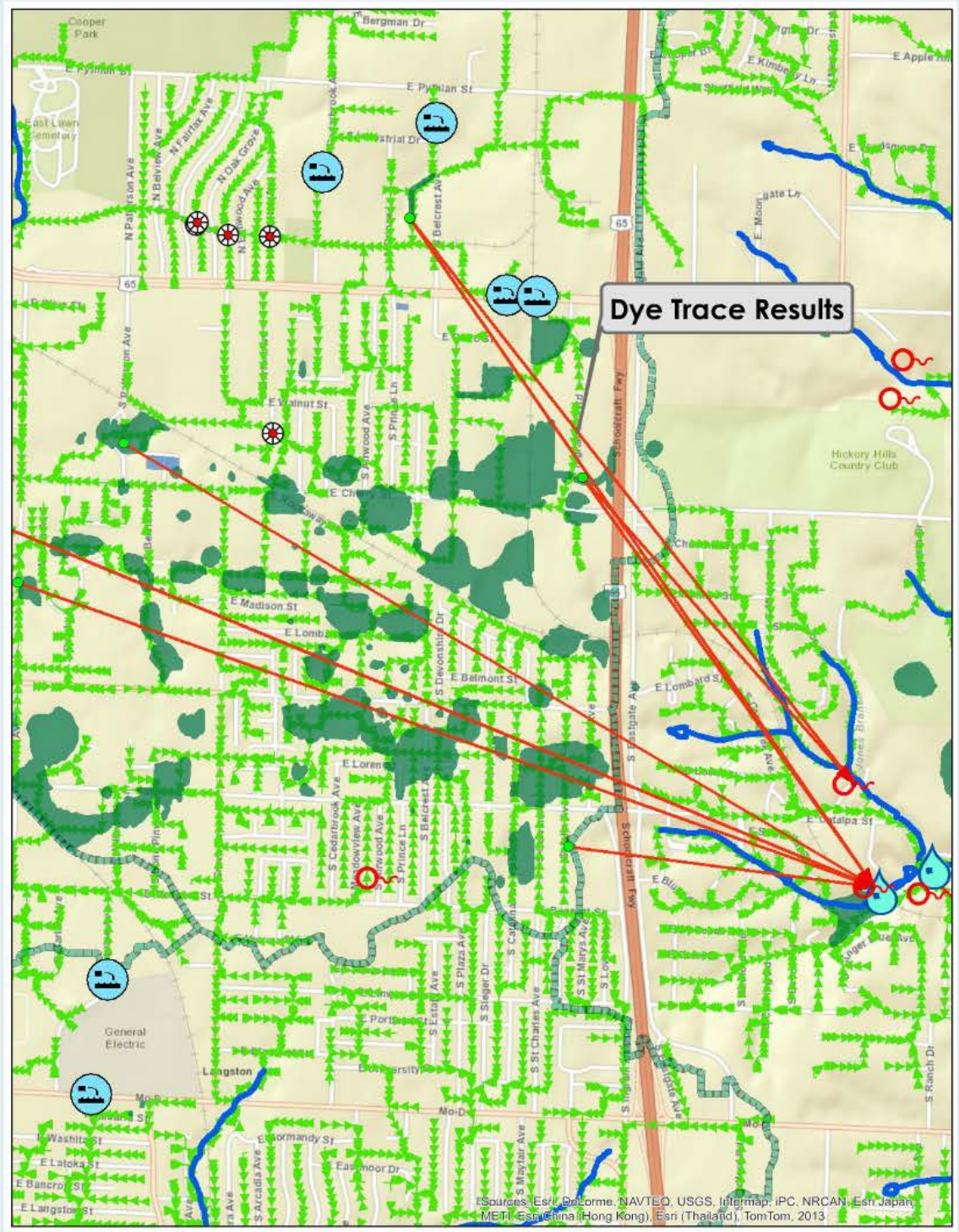
**The silo approach to problem solving:**



# The silo approach to problem solving:



# In the Environmental Resources World...


Dye Trace Results
Cooper Park
Bergman Dr
E Pythian St
East Lawn Cemetery
N Fairfax Ave
N Oak Grove
N Patterson Ave
N Belview Ave
Belcrest Ave
E Walnut St
S Prince Ln
S Devonshire Dr
E Madison St
E Belmont St
E Lombard St
E Catalpa St
Schoolcraft Fwy
Hickory Hills Country Club
S Cedarbrook Ave
S Prince Ln
S Belcrest Ave
S Plaza Ave
S Sleger Dr
S St Charles Ave
S St Marys Ave
S Maytair Ave
S Arcadia Ave
E Normandy St
Easmoor Dr
General Electric
Langston
E Washita St
E Latoka St
E Bancroft St
E Langston St
S Ranch Dr
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

# Questions?

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ekemper@springfieldmo.gov

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Department of Environmental Services
City of Springfield