



TBM

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# the economic case for green infrastructure

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# TRIPLE BOTTOM LINE ANALYSIS

Low-impact Design and  
Green Infrastructure Assets



T&E



## Social impacts

*Recreation opportunities*

*Education opportunities*

*Public health improvements*

*Property value uplift*

*Urban heat island effects*

## Financial impacts

*Life cycle cost analysis (LCCA)*

## Environmental impacts

*Carbon emissions & air pollution reduction from sequestration*

*Water quality improvements*

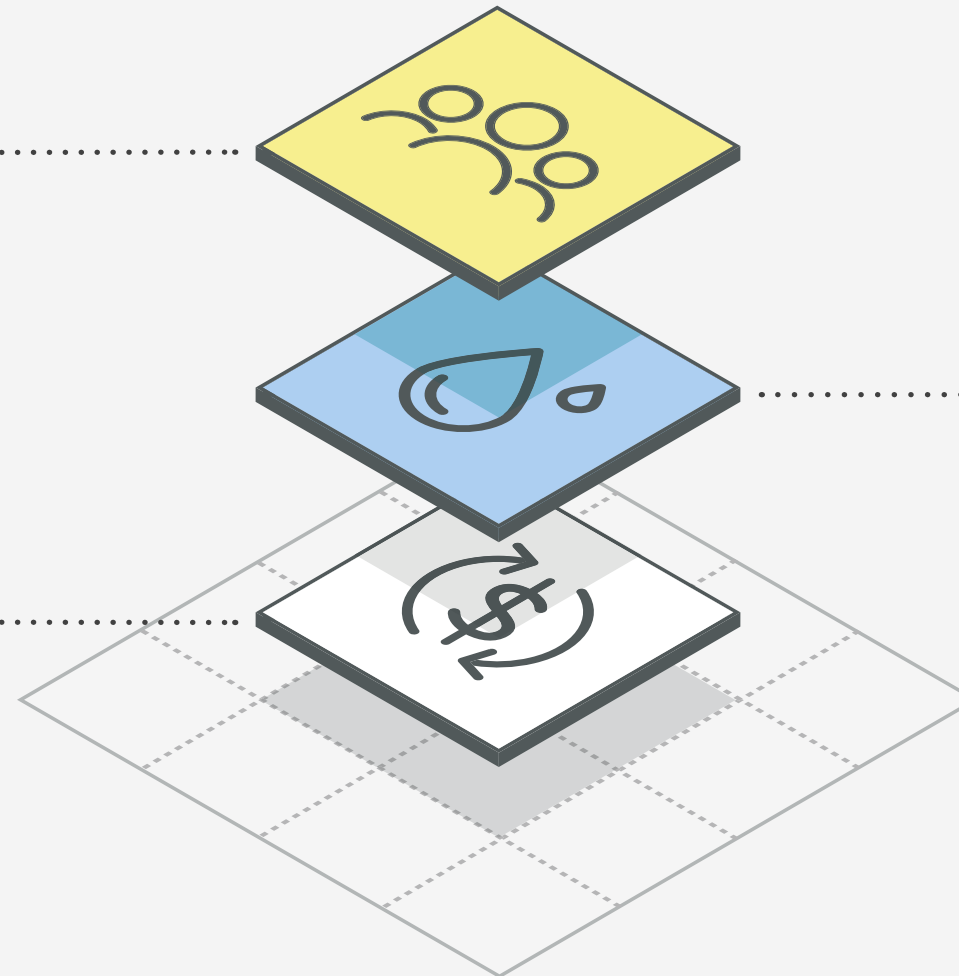
*Bacterial & trash removal from water sources*

*Biological value*

*Erosion control*

*Pollination Improvements*

*Account for forward looking climate change implications relating to rainfall & temperature*



permeable pavement



bioretention

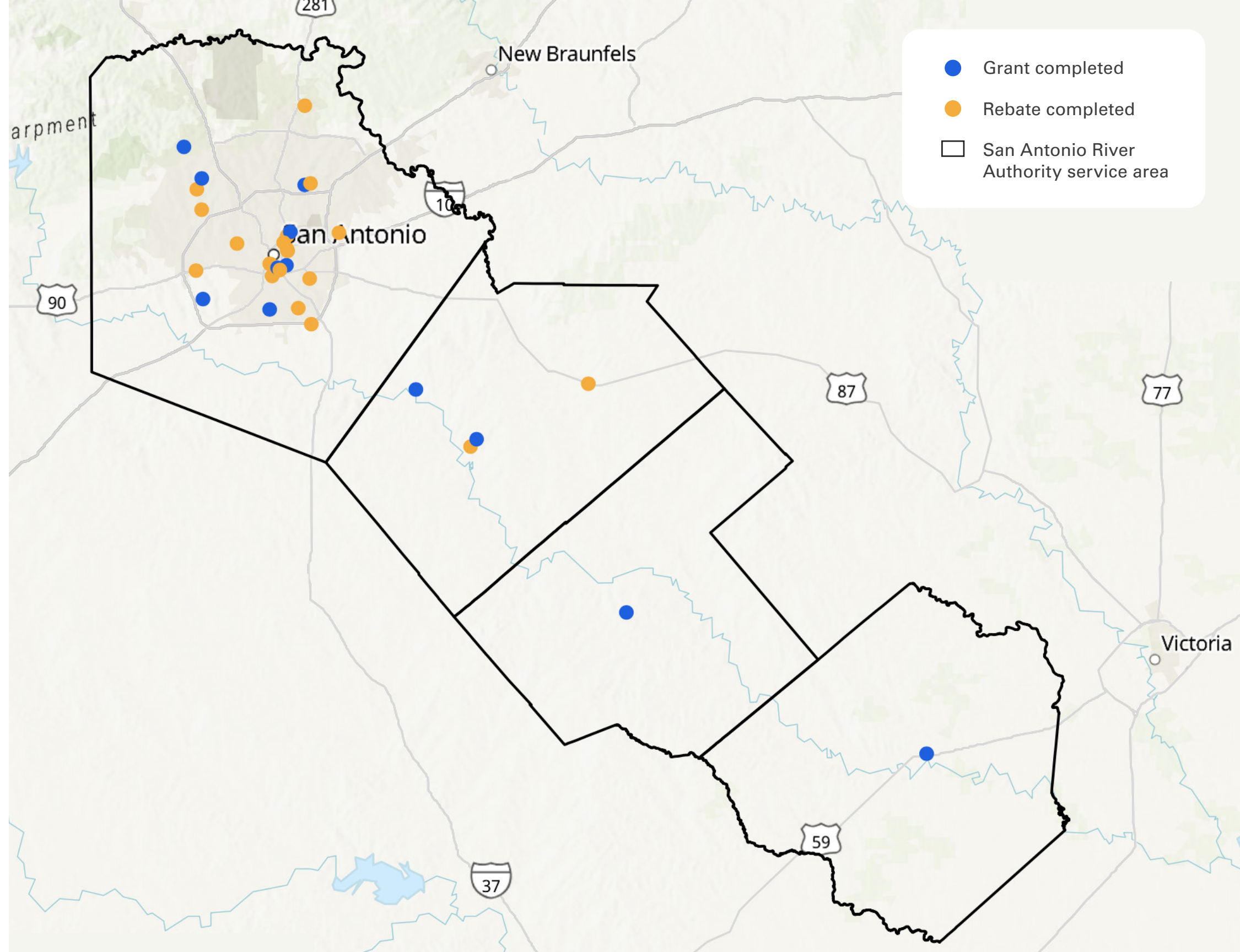


cisterns

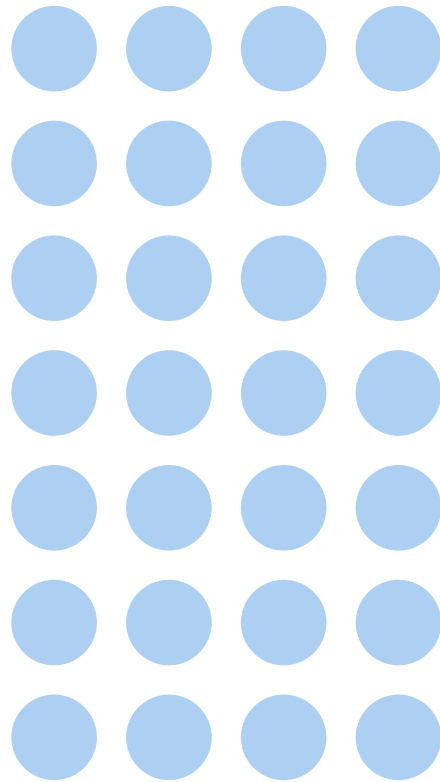


## 28 sites across four counties

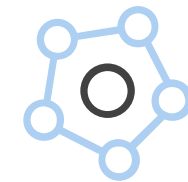
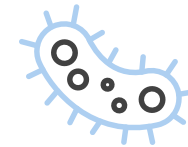
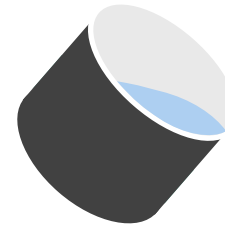
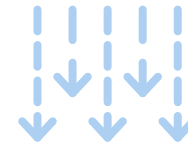
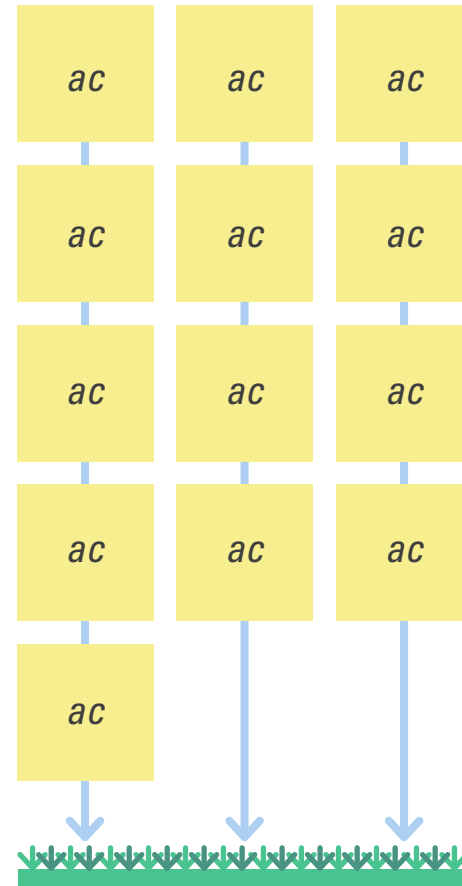
12 schools  
7 businesses  
4 parks  
3 governmental  
2 residential



28 projects



13 acres  
*impervious surface*



9.8 million gallons  
of stormwater runoff / yr.

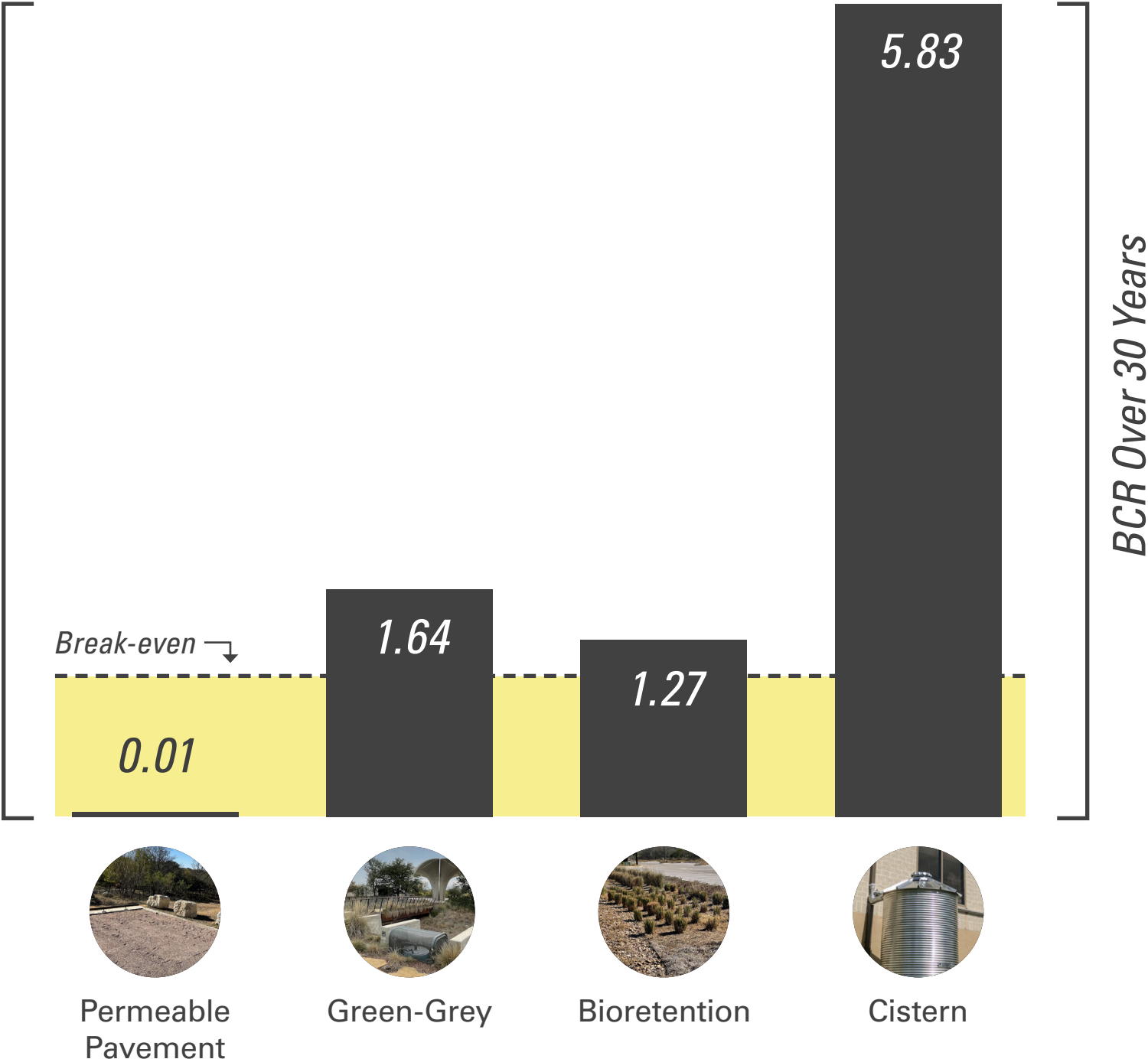
1.2 million gallons of  
potable water use reduced / yr.

16.1 trillion  
bacteria colonies removed / yr.

1.7 tons of  
total suspended solids  
removed / yr.

# Benefit–cost ratio (BCR) by project type

- the present value of benefits divided by the present value of costs
- intended to illustrate the benefits that are achieved for every dollar invested.
- BCR of 1 = \$1 of benefit for every \$1 of costs

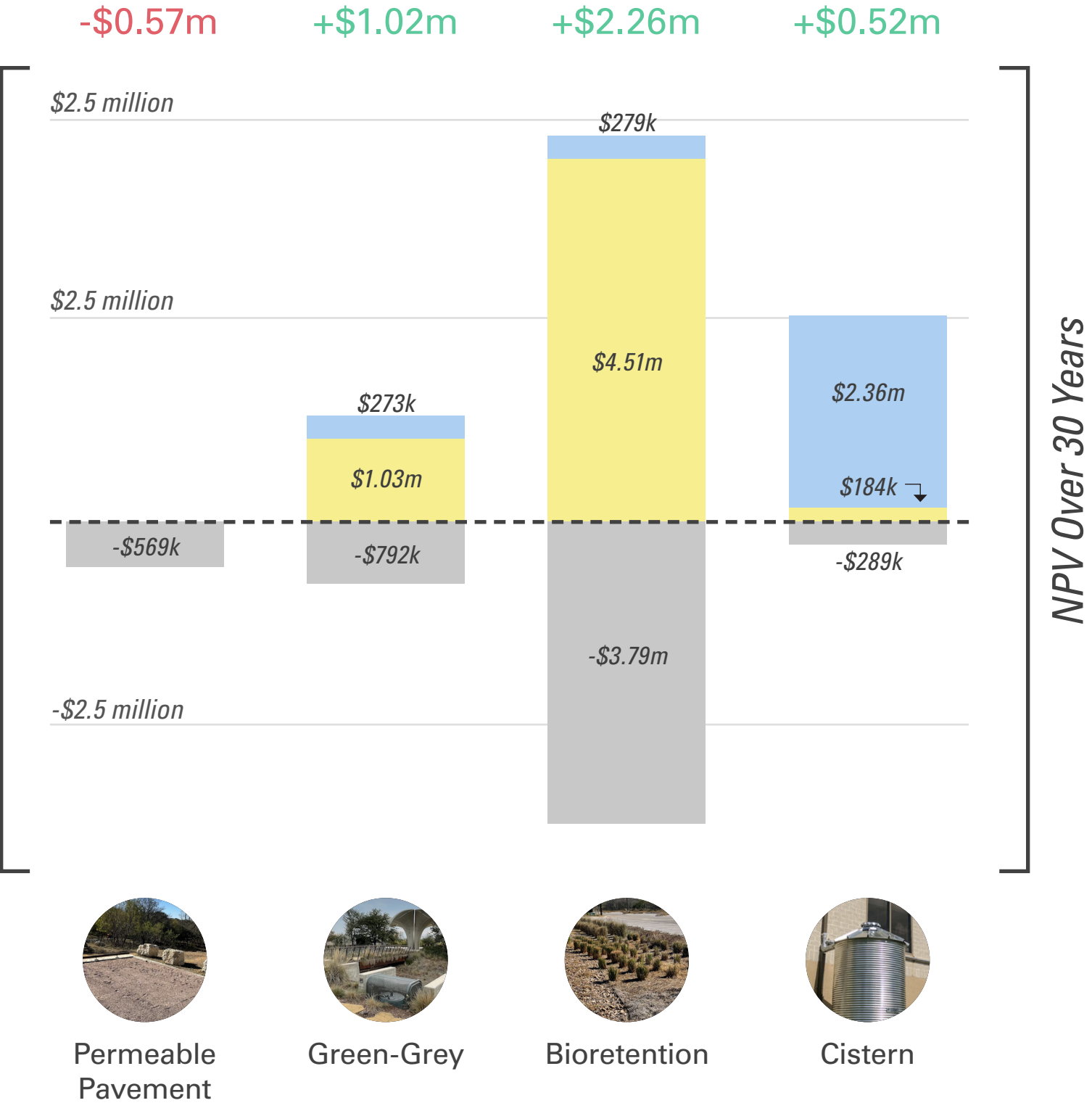




# Net present value (NPV) by project type

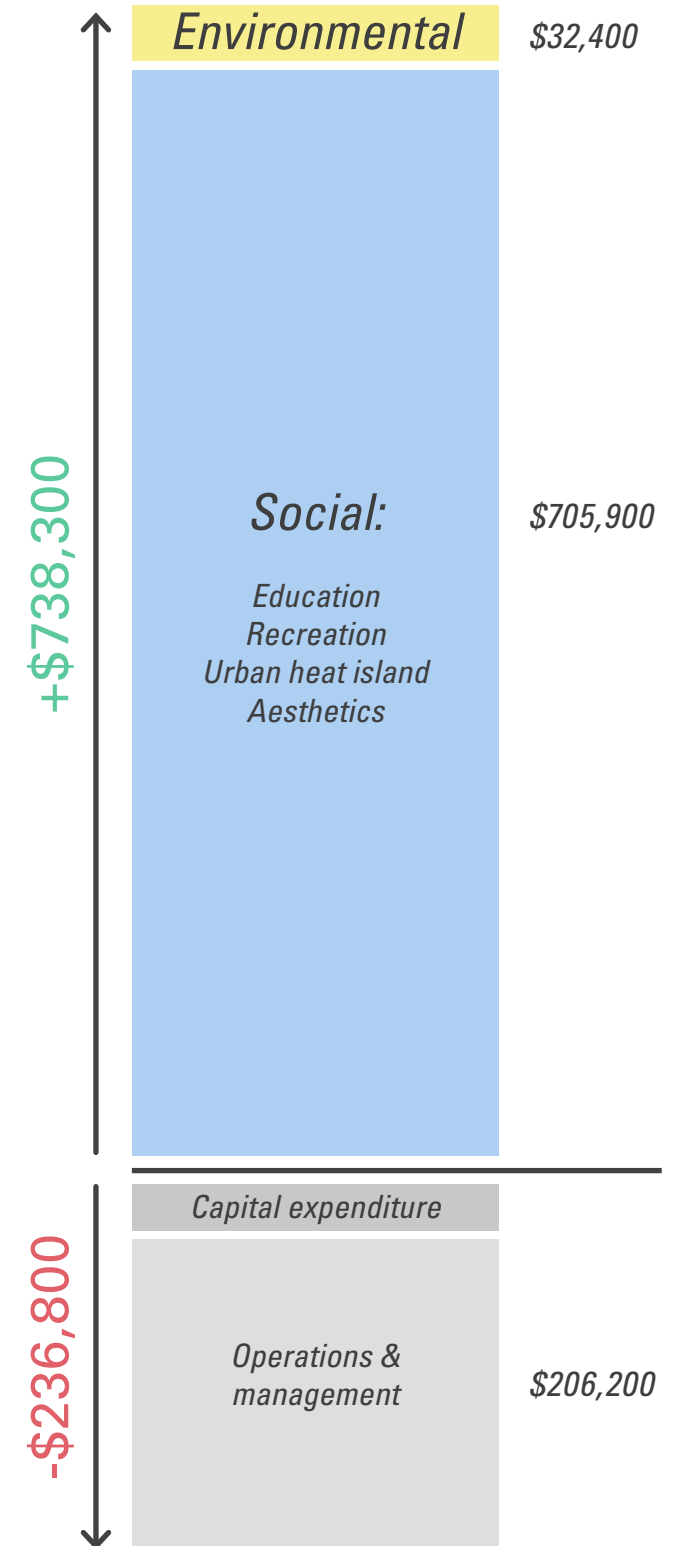
- considers the initial and ongoing financial costs combined with the environmental and social benefits over 30 years
- TBL-NPV larger than zero means benefits are larger than costs

Environmental NPV ●  
 Social NPV ●  
 Financial NPV ●



# Rudder Middle School

4 bioretentions



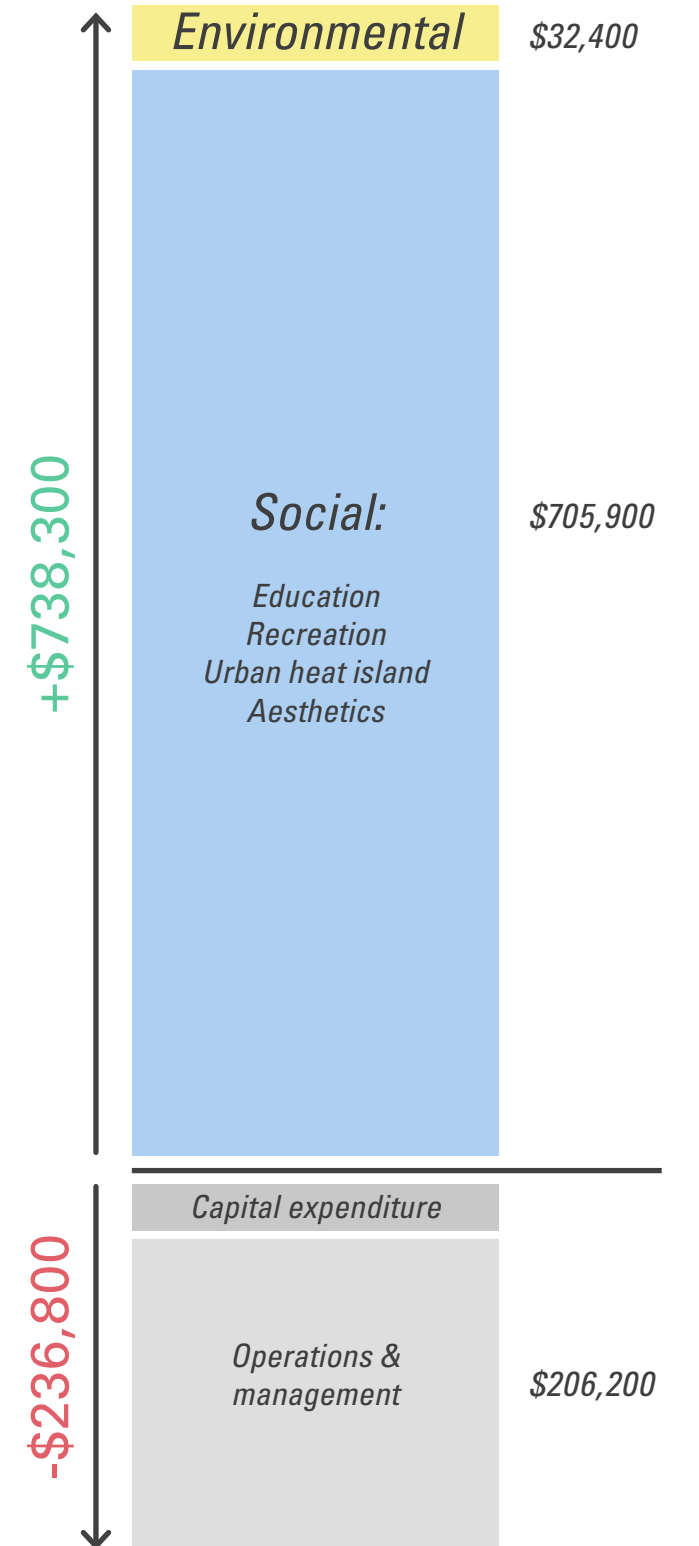
# Rudder Middle School

4 bioretentions



TBL Net Present Value:  
**\$501,500**

TBL Benefit-Cost Ratio:  
**3.12**



BE RIVER PROUD  
**Sustainability.**



The San Antonio River Basin Interactive Green Infrastructure Map provides a place to share Green Infrastructure projects funded by the San Antonio River Authority, access resources and learn how you can participate. Together, we are all making a difference.

**MORE ABOUT SUSTAINABILITY**

- REBATES
- GREEN INFRASTRUCTURE MASTER PLAN
- GUENTHER AND EUCLID RETROFIT
- HOW TO BUILD YOUR OWN RESIDENTIAL RAIN GARDEN
- STREAM RESTORATION

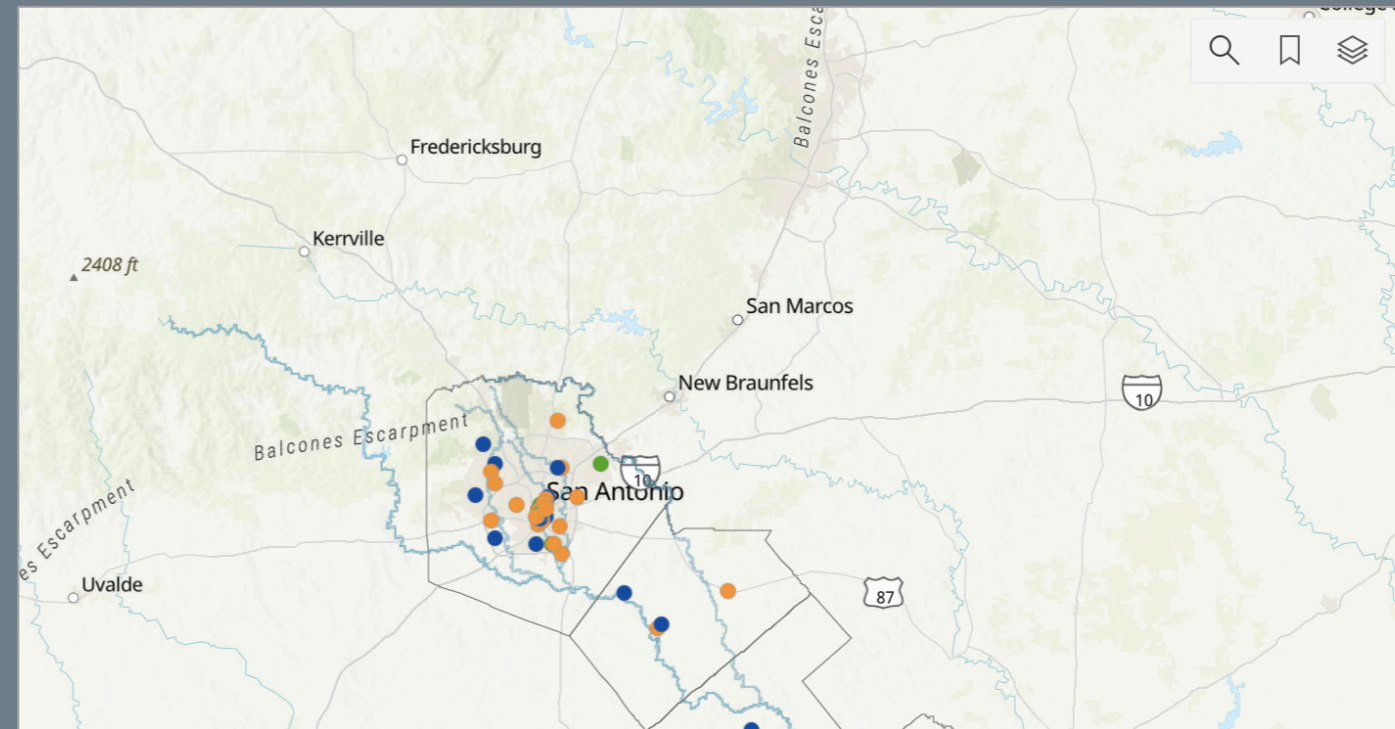
Total Projects\*

# 41

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**GSI Projects**

- Rebate (23)
- Grant (14)
- SA River Authority



Volume Treated

# 1,907,128.305

cubic ft/year

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Sediment Removed

# 5,019

lb/year