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# **Flood Mitigation and the Great Springs Project**

**May 17, 2025**

**Bill Barker, FAICP, FITE**

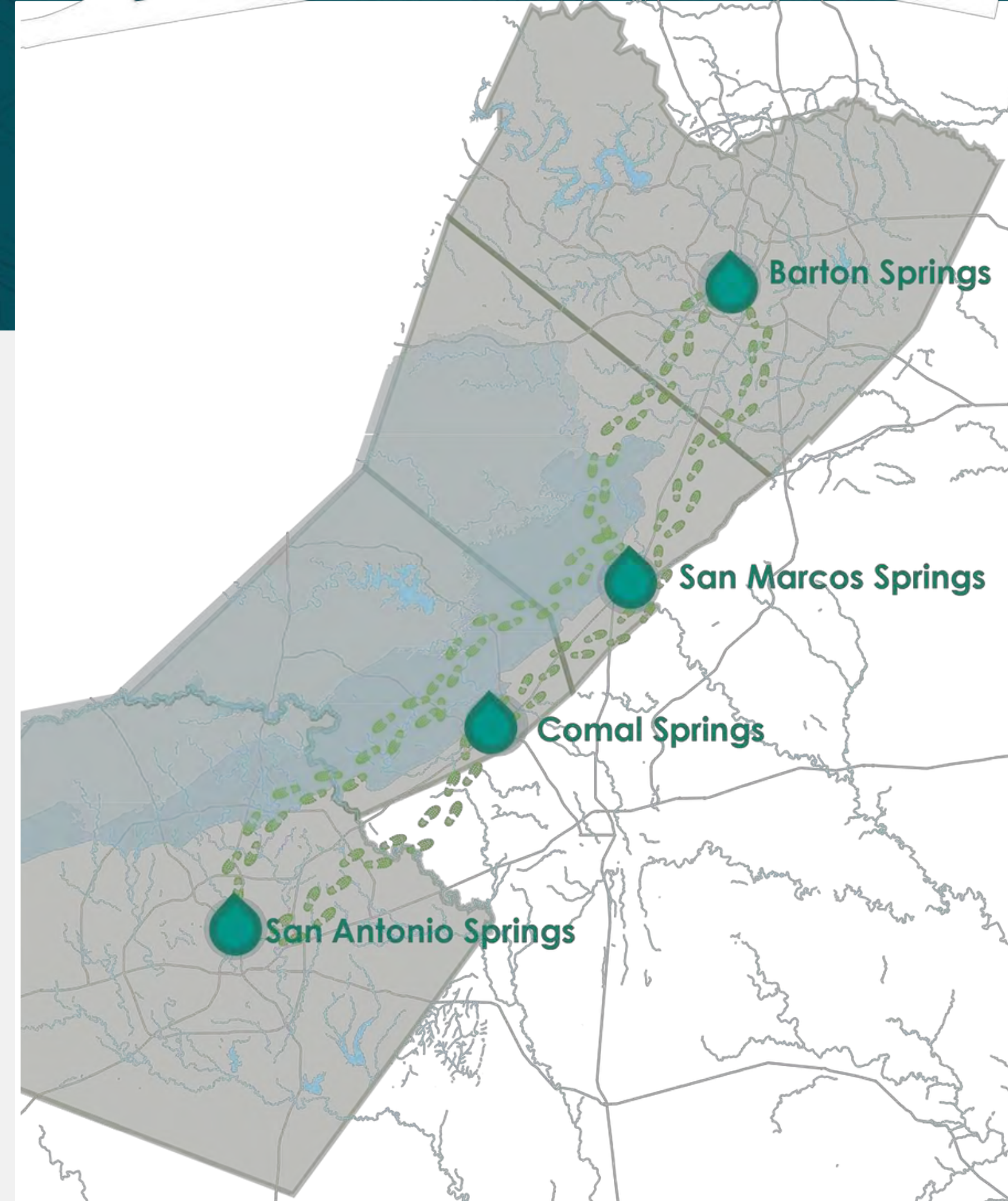




# MISSION: CONNECTING FOUR GREAT SPRINGS

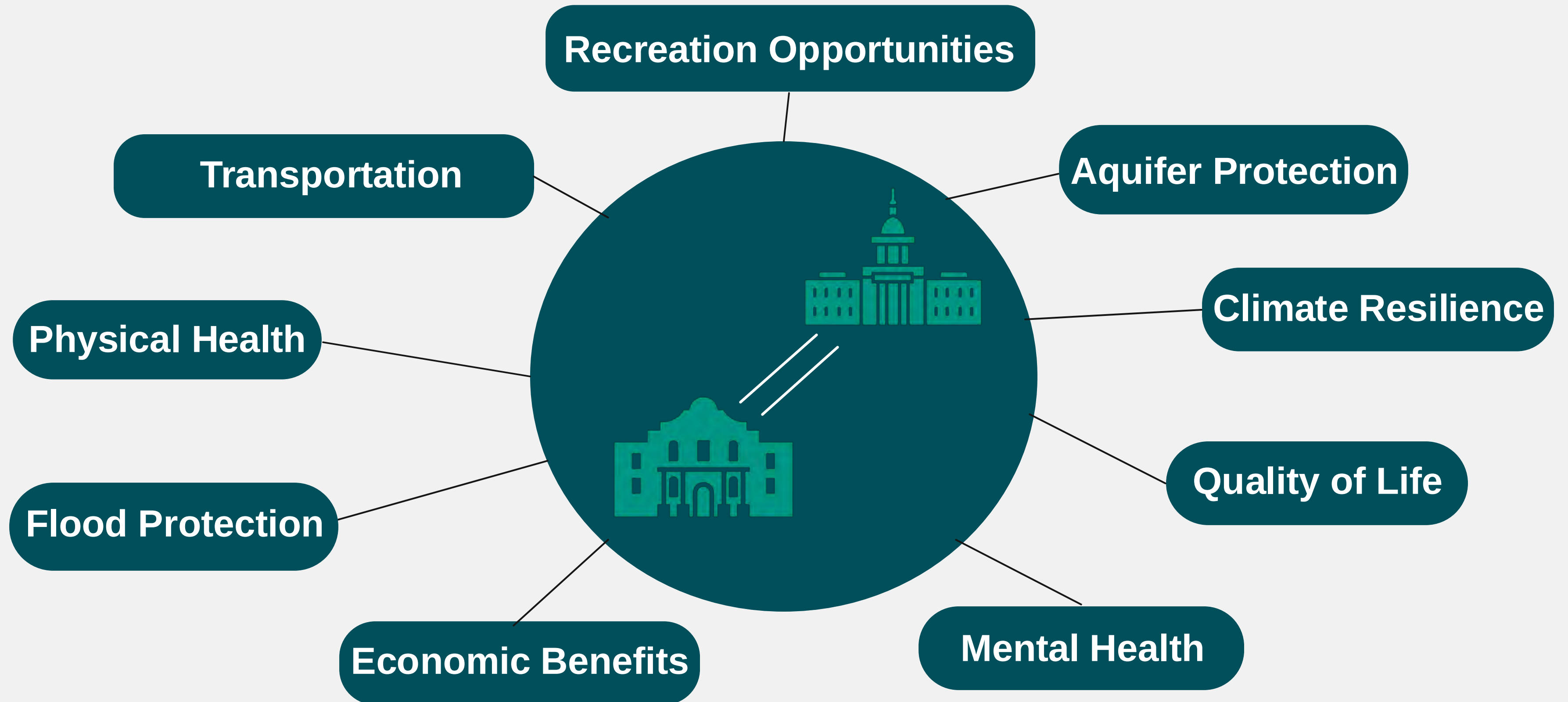
**A national park-sized  
corridor of protected lands  
between San Antonio and  
Austin over the Edwards  
Aquifer recharge zone**

- **100+ mile trail network**
- **50,000 additional acres  
of protected lands**



**“Connecting our Communities;  
Protecting our Springs”**

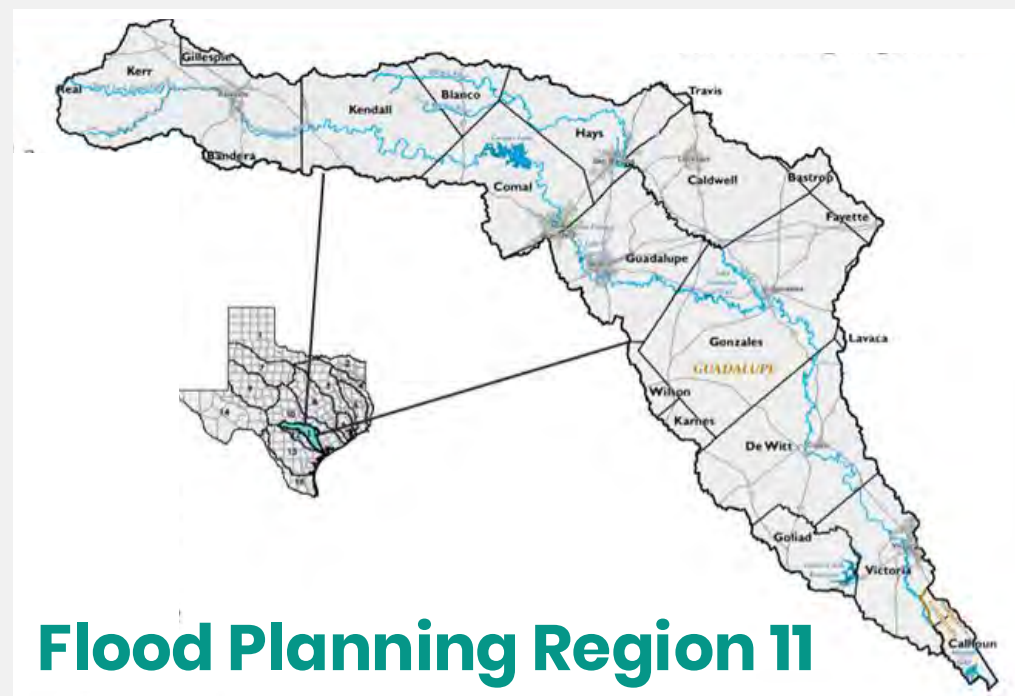
# WHY GREAT SPRINGS PROJECT?



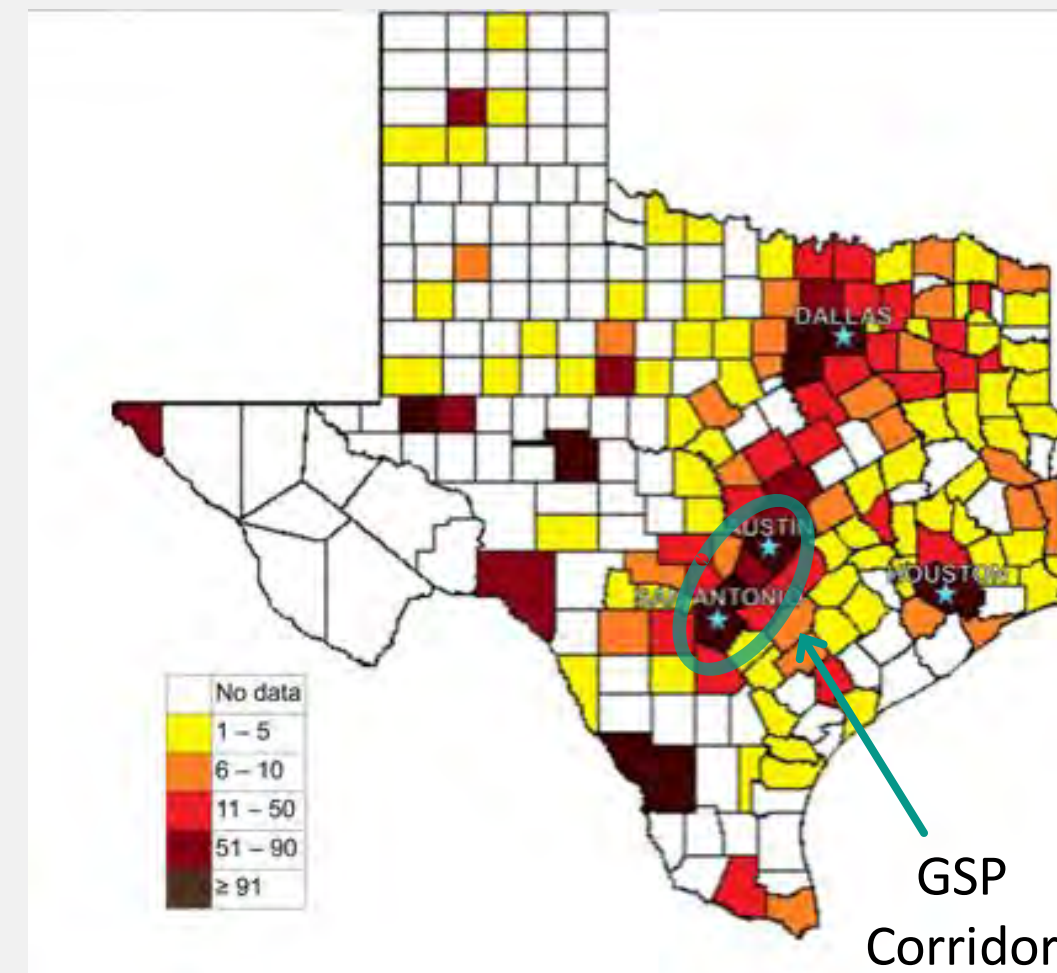


# TEXAS' FIRST STATEWIDE FLOOD PLAN

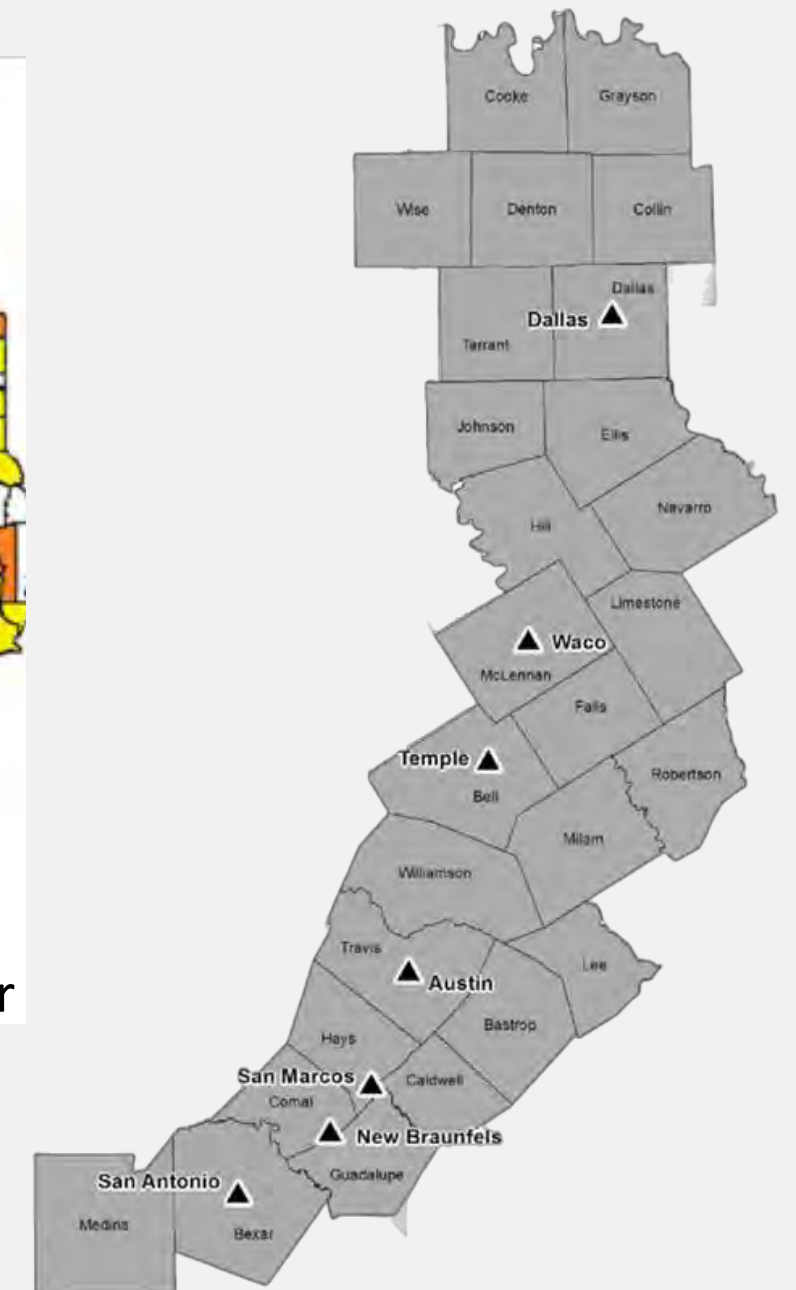
- Texas leads nation in flood fatalities, greatest in "Flash Flood Alley"
- Great Springs Project is part (FME #111000139) of the Region 11 Guadalupe Flood Plan
  - Authoritative recognition of GSP flood mitigation benefits
  - Multiple funding possibilities
  - Potential for new local partnerships



## Number of Swift Water Rescues by County



## Counties in Flash Flood Alley



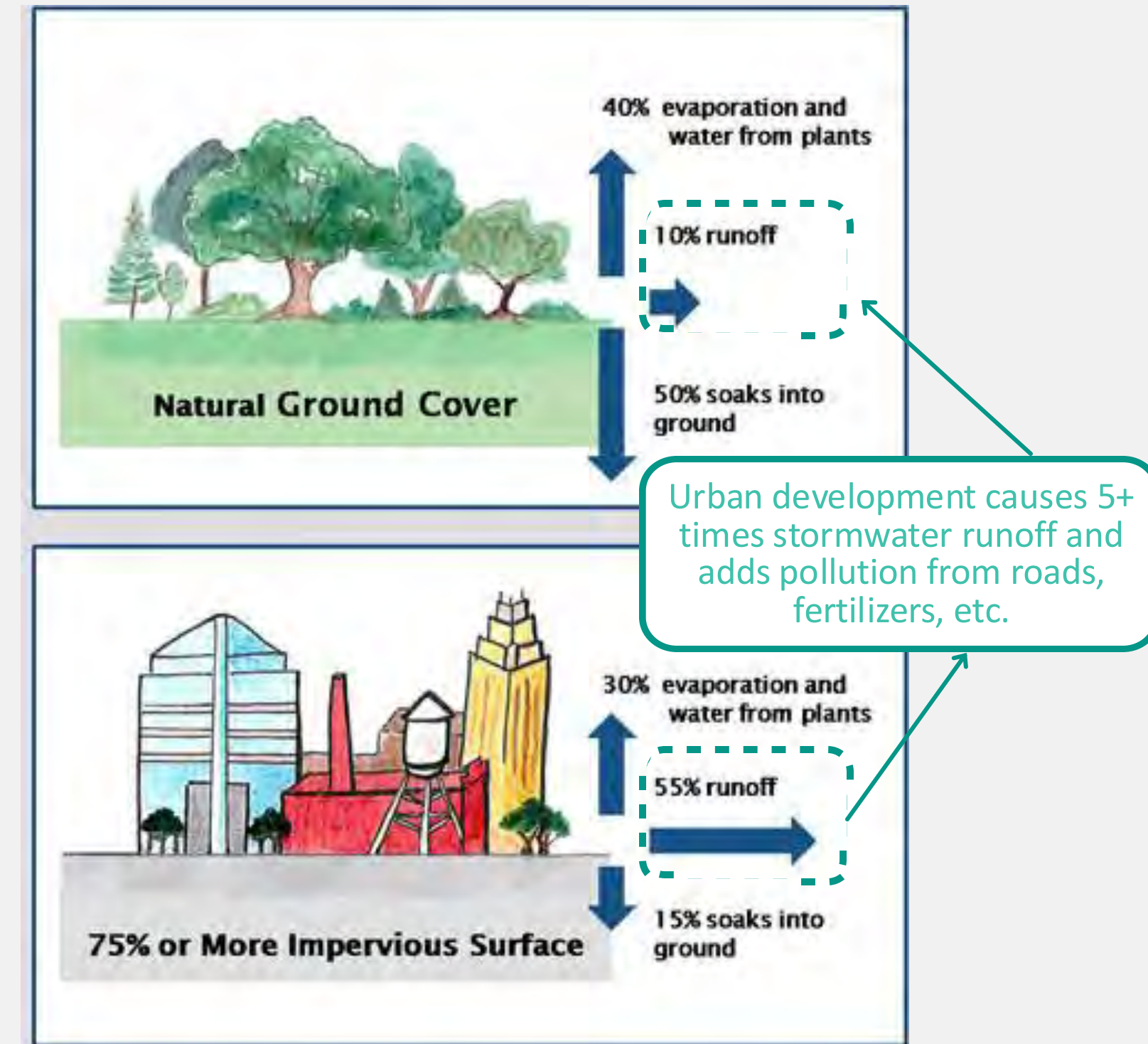
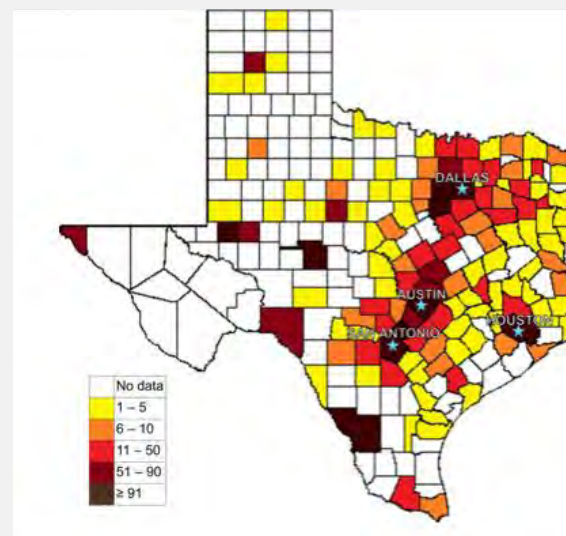


# GSP FLOOD MITIGATION STRATEGIES

- **Land conservation in the corridor:**
  - Protects and enhances flood plains/detention ponds which store/absorb rainfall
  - Displaces urban development reducing polluted stormwater runoff
  - Buyouts of flood-prone properties
- **Strategic trail placement/design:**
  - Slow stormwater flow with berms/swales to allow absorption
  - Stabilize banks of streams and rivers
  - Provide access to flood infrastructure and monitoring equipment
  - Increase non-flood benefits of land conservation

## Number of Swift Water Rescues by County

Source: Shah, Vaidehi, et al. "Flash flood swift water rescues, Texas, 2005–2014." *Climate Risk Management* 17 (2017): 11-20.



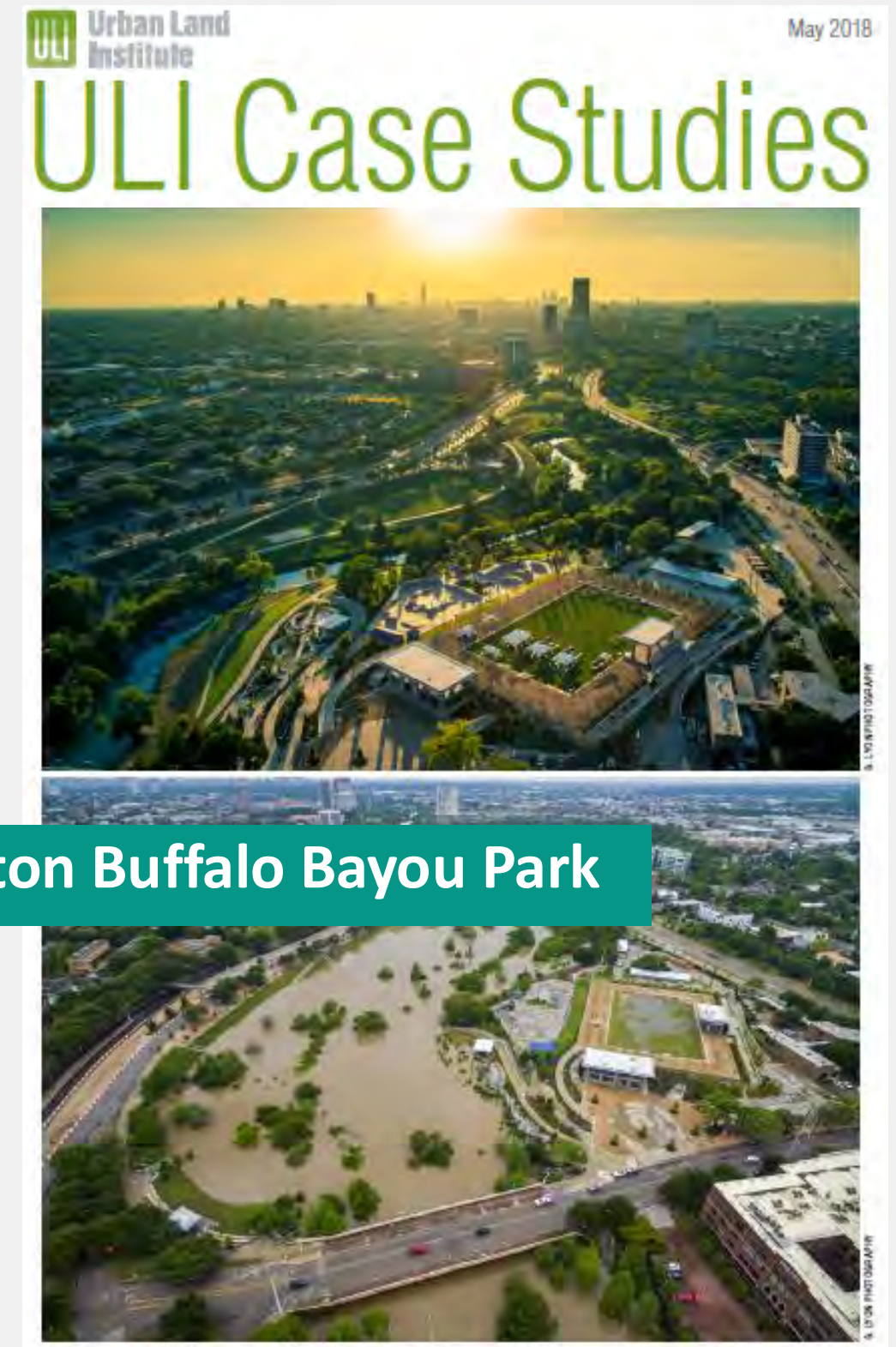
<https://www.durhamnc.gov/864/Impervious-Surface>





# EXPANDING FLOOD MITIGATING INFRASTRUCTURE

- **Bioswales and Rain Gardens Along Trails**
  - Slows down stormwater allowing on-site absorption
- **Detention Basins Integrated with Trails**
  - Temporarily stores floodwaters and releases them slowly
- **Greenways in Floodplains**
  - Prevents development in flood-prone areas
  - Allows rivers to access their natural floodplain, reducing peak flood levels downstream
- **Trail Underpasses Designed for Flooding**
  - Accepts temporary submersion as part of flood management
- **Increased Benefit-Cost Ratio**
  - Recreation, public health, education, active transportation, and economic development benefits
- **Multiple funding streams**







# EXPANDING FLOOD PLAINS



Westfield Road in Charlotte, North Carolina, during a flood on Aug. 4, 2011, left, and after Mecklenburg County's Floodplain Buyout Program bought and removed homes on the street and converted the land into greenspace, right, which helps absorb excess water and provides environmental and recreational co-benefits.

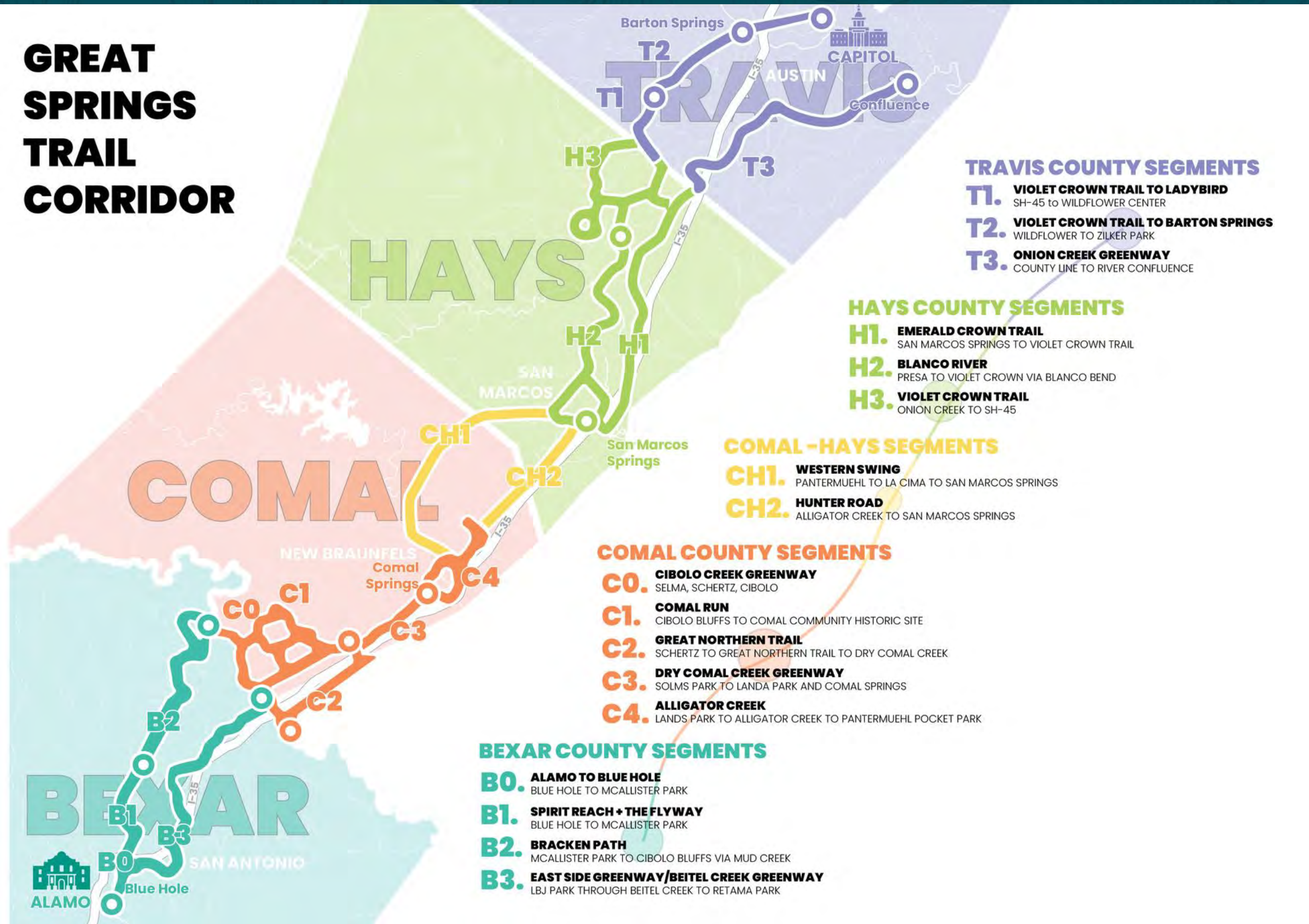
Charlotte-Mecklenburg Storm Water Services





# GSP TRAIL SEGMENTS UNDER STUDY

## GREAT SPRINGS TRAIL CORRIDOR







# TRAILS WITH FLOOD MITIGATION FEATURES



City of Atlanta's Old Fourth Ward Park surrounds a retention pond constructed to alleviate urban flooding. The park has fostered redevelopment and hosts community events.

City of Sydney, Australia's Balfour Street Pocket Park includes a drainage swale with rich detail.







# TRAIL RIPARIAN BANK STABILIZATION



Shoal Creek Trail, Austin, TX



San Pedro Creek Culture Park,  
San Antonio, TX



Cherry Creek Trail, Denver, CO

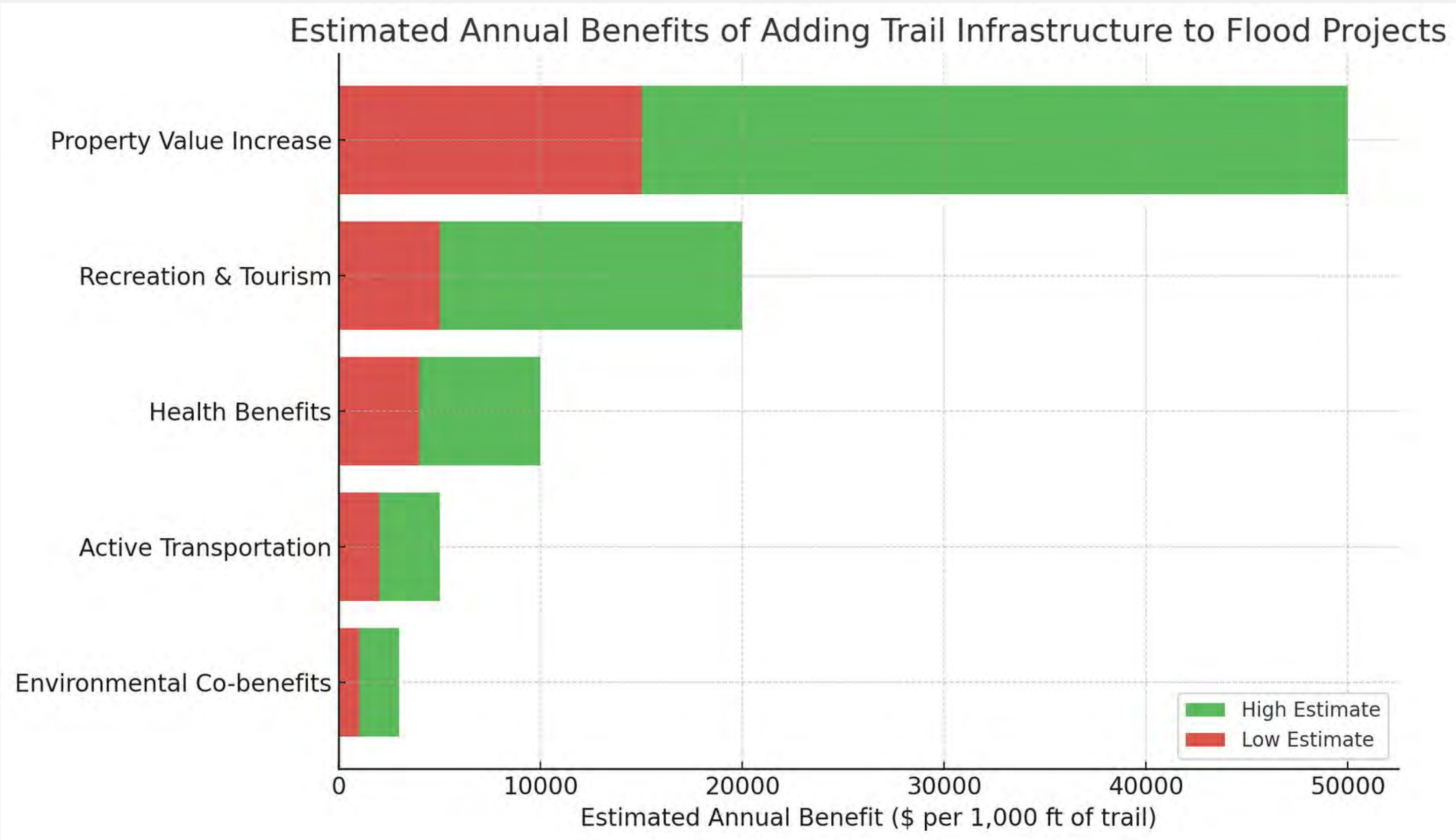


Indianapolis Cultural Trail, IN





# EXPECTED TRAIL BENEFITS







# ANNUAL BENEFITS PER 1,000 FT OF TRAIL

Benefit Category	Estimated Annual Value	Source(s)
Property Value Increase	\$15,000–\$50,000	[1], [2]
Recreation & Tourism	\$5,000–\$20,000	[3], [4]
Health Benefits	\$4,000–\$10,000	[5]
Active Transportation	\$2,000–\$5,000	[6], [7]
Environmental Co-benefits	\$1,000–\$3,000	[8], [9]
=====		
Total Annual Benefit	\$27,000–\$88,000	





# REFERENCES FOR QUANTIFYING TRAIL BENEFITS

1. Rails-to-Trails Conservancy – Economic Benefits of Trails and Greenways  
<https://www.railstotrails.org/resource-library/resources/economic-benefits-of-trails/>
2. National Association of Realtors – Impact of Parks and Trails on Property Values  
<https://www.nar.realtor/>
3. Georgia Institute of Technology – Atlanta BeltLine Economic Impact Study  
Showed 17–30% increases in adjacent property values.
4. Indianapolis Cultural Trail Study – \$1B property value growth over 5 years  
<https://www.pps.org/article/the-indianapolis-cultural-trail-a-bold-vision>
5. Active Living Research – Cost savings in health per trail user per year  
<https://activelivingresearch.org/>
6. Transportation Research Board – NCHRP Report 552: Guidelines for Benefit-Cost Analysis of Bicycle Facilities  
<https://www.trb.org/Main/Blurbs/158365.aspx>
7. U.S. DOT TIGER Grant Benefit-Cost Guidance – Assigns dollar values to miles walked/biked.  
<https://www.transportation.gov/>
8. EPA Green Infrastructure Guide – Cost savings from permeable surfaces and bioswales  
<https://www.epa.gov/green-infrastructure>
9. Urban Land Institute – The Value of Green Infrastructure  
<https://uli.org/>





# \$55,920,000

TOTAL ANNUAL BENEFITS

ECONOMIC \$ \$23,370,000

LAND & WATER 💧 \$19,240,000

TRANSPORTATION 🚶 \$11,440,000

HEALTH ❤️ \$1,870,000



“Great Springs Project is the perfect way to connect Texans both with nature, as well as with economic development. From Austin to San Marcos, to San Antonio, establishing this green protected corridor will preserve the greatness of Texas’ natural resources.”

– Governor Greg Abbott





**Mikey Goralnik, PLA, AICP**  
**Trails & Transportation Planner**  
**[mikey@greatspringsproject.org](mailto:mikey@greatspringsproject.org)**  
**314.749.9471**



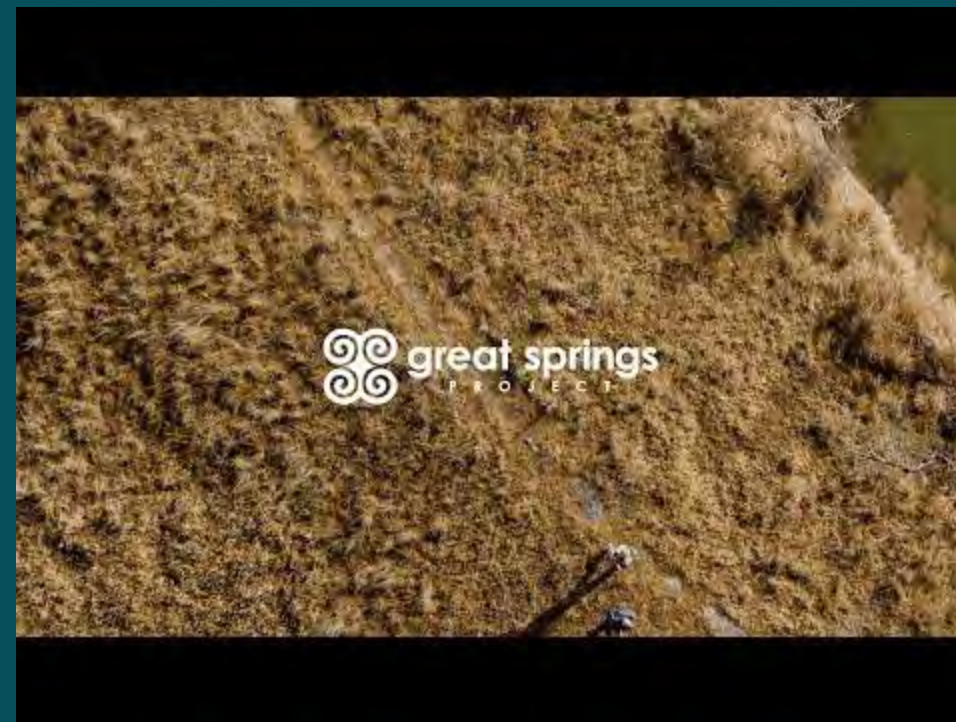
**Bill Barker, FAICP, FITE**  
**Regional Transportation Planning**  
**Director**  
**[barker@greatspringsproject.org](mailto:barker@greatspringsproject.org)**  
**210.376.0776**

## Contact

### Mailing Address

**PO Box 12331**  
**Austin, TX 78711**

[greatspringsproject.org](http://greatspringsproject.org)



## Resources

[Trails Plan](#)

[Economic Benefits Report](#)

[Press Flipbook](#)

[Website](#)

[2022 Annual Report](#)

# Thank You