

Regional Conservation Framework

March 16, 2021



Houston-Galveston
Area Council



From the mixed pine-hardwood forests of the Sam Houston National Forest to the coastal plains of Matagorda Bay, the Houston-Galveston region has an unparalleled natural heritage. Visitors to natural areas and open spaces like these are the tourism industry's fastest growing sector.¹ Hikers, anglers, hunters, and birders flock to our abundant forests, native prairies, and over 16,000 miles of bayous, rivers, and coastline to appreciate the beauty and bounty within the region.

Conserving these resources as we add an expected 4 million more residents over the next 25 years will be a challenge.² We anticipate this growth will add over 120 square miles of development to our landscape. Without a strategy to deal with the impacts of this growth, the Houston-Galveston region could experience increased flooding, worsening air quality, and a loss of open space, fundamentally altering the character of our region.

The good news is that by working together now, we can expand the impact of voluntary local conservation efforts, big and small, to realize significant regional benefits.



Photo: Justin Bower

¹Galveston Bay Estuary Program. (2018). The Galveston Bay Plan, 2nd Edition. Retrieved from https://gbep.texas.gov/wp-content/uploads/2019/08/CCMP_2ndEdition_FINAL-TCEQ-Approved-DRAFT.pdf.

²Houston-Galveston Area Council. (2018). Regional Growth Forecast - Current Release: 2018. Retrieved from <https://www.h-gac.com/regional-growth-forecast>.

SECTION 1: BENEFITS OF A REGIONAL CONSERVATION FRAMEWORK

The Houston-Galveston Area Council (H-GAC) worked with local governments to develop this Regional Conservation Framework. Its aim is to support regional conservation projects and identify ways H-GAC can support local governments in their own conservation efforts.

WHAT IS CONSERVATION?

For the purpose of this framework, H-GAC defines conservation as: the protection of natural areas where human and environmental needs are considered and balanced. Within this broad definition, there are three main types of conservation practices:

PRESERVATION – Protecting areas in their natural state.

RESTORATION – Returning natural ecological elements to an area.

ENHANCEMENT – Creating or expanding natural elements within a developed area.

Natural areas and open spaces in the Houston-Galveston region include public and private land in urban, suburban, and rural settings. They may be specific places like parks, nature preserves, and working lands – such as farms and ranches or broader natural systems like the region’s tree canopy or the vegetated areas adjacent to waterways. Natural features and systems are also increasingly being incorporated into the built environment. One of these design techniques, known as “low impact development,” can be a cost-effective alternative to traditional infrastructure that also creates community amenities.

With such a broad spectrum of conservation opportunities, there is no “one size fits all” conservation solution for our region. Instead, the Regional Conservation Framework focuses on common needs shared by communities across the

Photo: Justin Bowyer

WHAT ARE ECOSYSTEM SERVICES?

Ecosystem services are community benefits supplied by nature. These services include cleaning the air, filtering water, storing nutrients, conserving and generating soils, pollinating crops and other plants, regulating climate, sequestering carbon, protecting areas against storm and flood damage, and maintaining water supplies.³ Learn more about specific ecosystem services and associated benefits on page 14.

region to magnify the impacts of the many local conservation efforts and produce benefits that can be reaped by all. These include:

FLOOD MITIGATION – Strategically conserving natural areas and open spaces can be a significant tool for mitigating the impact of flood events.

ECONOMIC BENEFITS – Natural areas and open spaces provide tangible economic benefits, such as tourism dollars, productive fisheries, and reduced air and water pollution. Learn more about these benefits on page 14.

QUALITY OF LIFE – Natural areas and open spaces make our communities more desirable places to live. These amenities are important assets in attracting residents and businesses to our region. In addition, time spent in natural areas and open spaces can help individuals fight against mental health issues like depression, anxiety, and stress.⁴

³The Conservation Fund. (2013). Houston-Galveston Green Infrastructure and Ecosystem Services Assessment. Retrieved from https://www.conservationfund.org/images/projects/files/Houston_Galveston_Report.pdf.

⁴National Recreation and Park Association. (2020). Parks and Improved Mental Health and Quality of Life. Retrieved from <https://www.nrpa.org/our-work/Three-Pillars/health-wellness/ParksandHealth/fact-sheets/parks-improved-mental-health-quality-life/>.



Photo: Cheryl Mergo

PROJECT SPOTLIGHT: PALACIOS PRAIRIE WETLANDS

LOCATION: City of Palacios

SIZE: 27 acres

FUNDING: Funded in part by the Trull Foundation and Matagorda County, with grant support from the U.S. Fish and Wildlife Service Coastal Impact Assistance Program.

NOTABLE FEATURES: Ecotourism; Community-driven



Photo: Cheryl Mergo

For several years, community members in Palacios talked about a parcel of property on the edge of town that held the potential to serve as a visual gateway to the city along Highway 35. In 2009, a group of citizens formed the Palacios Prairie Wetlands, Inc., a nonprofit organization, and negotiated with the owners to acquire the property. Using Coastal Impact Assistance Program funds provided by the U.S. Fish and Wildlife Service to Matagorda County, and with support from the Trull Foundation, Palacios Prairie Wetlands, Inc., was able to clean up the site. Today, the Palacios Prairie Wetlands is a 27-acre upland prairie and coastal marsh area with around 700 feet of trails, a pier with a kayak launch, and a bird watching tower just north of Trull Marsh. Palacios Prairie Wetlands, Inc., owns the property and manages all maintenance. Community members serving on the Palacios Prairie Wetlands Board work together on weekends to trim trees, record birds, identify plants, and otherwise care for the conserved area.

According to Erwin Janszen, chairman of the board, relationships with governmental entities at the city and county level have made this project a success. The Matagorda County Commissioners Court has been supportive of the project, and the County has stepped in to help haul away junk and tree limbs, as well as lend equipment, when necessary.

SECTION 2: LOCAL NEEDS, REGIONAL BENEFITS

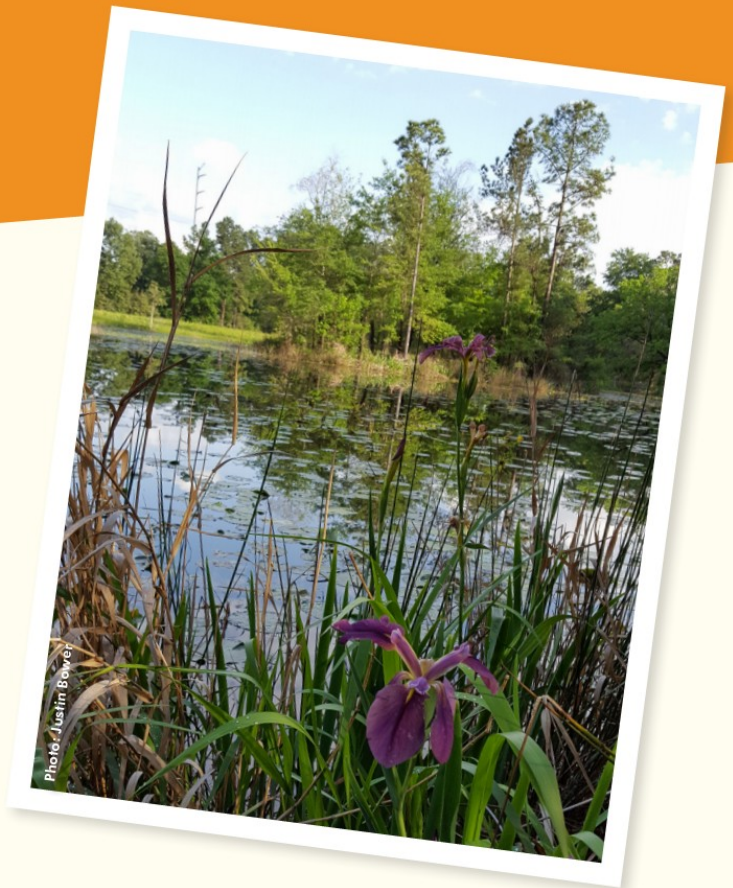
UNDERSTANDING LOCAL NEEDS

H-GAC engaged local governments, decision-makers, and resource agencies in a series of discussions on the topic of conservation. H-GAC also met with representatives from a wide spectrum of regional and local non-governmental conservation organizations, who provided valuable input and supporting information. Between June and September 2020, H-GAC conducted 11 listening sessions, where more than 100 participants detailed their conservation opportunities, needs, and challenges, as well as the public's views on conservation in their communities.

One key thing we learned was that, following the widespread flooding and economic impacts resulting from the Memorial Day Flood in 2015, the Tax Day Flood in 2016, and Hurricane Harvey in 2017, there has been heightened interest in strategically using natural areas and open spaces to reduce the impacts of severe weather events. This interest, coupled with the increased public use of these spaces during the COVID-19 pandemic, presents a major opportunity to scale up our region's conservation efforts.

Additionally, several other common themes emerged:

- The public places a higher value on conservation projects where additional benefits – including flood mitigation, recreation opportunities, maintaining rural character, beautification, increased values for adjacent properties, or other direct financial factors – can be demonstrated.
- Partnerships between public and nongovernmental organizations are one of the most efficient conservation vehicles for communities in our region.



- In addition to initial project costs, long-term maintenance and the potential loss of property tax revenue must be considered.
- Conservation investments should be coordinated with economic development opportunities to ensure local businesses and local governments benefit from increased visitation.
- Maintaining private property rights is a key priority in our region, so voluntary, "win-win" conservation efforts will be the most successful.
- Equitable access to natural areas and open spaces is also a guiding principle so that public investments in conservation can benefit all residents in the region.

Photo: Galveston Bay Foundation



PROJECT SPOTLIGHT: TURTLE BAYOU NATURE PRESERVE

LOCATION: Chambers County

SIZE: 514 acres

FUNDING: Original land acquisition funded through Coastal Impact Assistance Program. Remediation work funded through the Texas Railroad Commission’s Oil and Gas Regulation & Cleanup Fund and federal Brownfield Response Program. Additional enhancements funded through the Texas Parks and Wildlife Department National Recreational Trails Fund.

NOTABLE FEATURES: Remediation; Layered funding approach

The Turtle Bayou Nature Preserve, formerly the Turtle Bayou Oil Field, demonstrates how to convert a formerly contaminated site into a safe recreational amenity. In 2012, the Chambers-Liberty County Navigation District and Chambers County used Coastal Impact Assistance Program funding to acquire the Turtle Bayou Nature Preserve. The Galveston Bay Foundation holds a conservation easement on the property to ensure the preserve remains undeveloped. The conservation easement restricts the land use to activities beneficial to natural plant communities and wildlife, such as low-impact, public access infrastructure. The site was rehabilitated with funding from the Texas Railroad Commission Oil & Gas Regulation and Cleanup Fund and technical support for cleanup was provided by the Texas Railroad Commission Brownfield Response Program. In 2016, the preserve was opened to the public and has since become a popular birdwatching destination with the addition of a 2.2-mile trail, boardwalk, signage, and a trailhead kiosk, all funded by the Texas Parks and Wildlife Department’s National Recreational Trails Fund.



Photo: Galveston Bay Foundation

SECTION 3: VISION, GOALS, AND STRATEGIES

In addition to the numerous types of local conservation opportunities, listening session participants voiced support for several large-scale initiatives that could provide a long-range vision to unite the Houston-Galveston region. These initiatives include:

A FLOURISHING TREESCAPE

Whether in a forest, park, or as shading for our streets and neighborhoods, trees are essential to our region's quality of life. Trees generate \$109 worth of environmental benefits per person every year, including \$90 in annual household energy cost savings. Our region's trees remove more than 60,000 tons of air pollutants per year, as well as capturing carbon and absorbing stormwater.⁵

There is already significant momentum building toward large-scale tree plantings in the Houston urbanized area through a partnership of local government, industry, and nongovernmental organizations. H-GAC will seek to leverage these efforts by forging new and supporting existing connections between partners throughout the region, connecting local governments and professionals working in conservation with new tools and resources, and raising public awareness on the benefits provided by trees beyond the Houston urbanized area.

REGIONAL GREENWAY SYSTEM

The Houston-Galveston region is traversed by 16,000 miles of rivers, bayous, creeks, and streams. Mitigating flood risks and enhancing water quality in these waterways is a major priority in the region. The strategy for achieving these objectives – preserving natural, vegetated buffers along these waterways – provides us with an opportunity to develop a regional recreation system that is unparalleled in the United States.



This effort can be modeled on successful local initiatives, such as Harris County's *Bayou Greenways 2020* initiative. Once completed, *Bayou Greenways 2020* will establish 150 miles of trails that connect major bayous in and around the greater Houston area, improving access and safety between communities.⁶ Waller County also envisions creating parks and trails connections with its *Waller County Parks, Trails, and Open Space Master Plan*.

H-GAC will seek to build on these projects and expand them regionally by integrating greenway planning into existing and future project plans, conducting comprehensive project mapping and data sharing, and raising public awareness about the need for and benefits of a regional greenways system.

⁵Houston-Galveston Area Council. (2020). Urban Forestry – Benefits of Trees. Retrieved from <https://www.h-gac.com/urban-forestry#:~:text=Urban%20Forestry%20in%20the%20H,trees%20in%20the%20urban%20setting>.



PROJECT SPOTLIGHT: BAYTOWN NATURE CENTER

LOCATION: Harris County

SIZE: 500 acres

FUNDING: The City of Baytown originally acquired the land with FEMA disaster relief funding in 1983. Funding from the French Limited Superfund Site, the Natural Resources Trustee Grant Program, and private donors, including Exxon Mobil and Chevron Phillips Chemical, has enabled subsequent restoration and enhanced amenities.

NOTABLE FEATURES: Remediation; Public-private partnership

The Baytown Nature Center consists of 500 acres of mixed hardwood forest, wetlands, and high-quality tidal marsh ecosystems, surrounded by Burnet, Crystal, and Scott bays. Previously a residential neighborhood built in the 1940s, a combination of land subsidence and the impacts of Hurricane Alicia led FEMA to condemn the land for human habitation in 1983. The City of Baytown and FEMA purchased the homes and land, which had been set aside for a nature preserve. The nature center was funded initially through the French Limited Superfund Site mitigation funds. An original master plan was written in 1997, and in 2002, the area was reopened to the public. In the past decade, the Baytown Nature Center has facilitated several wetland remediation projects. With grant funding from the Natural Resource Trustee Grant Program, the nature center created 20 acres of salt marsh and enhanced 15 existing acres. The City of Baytown has also worked with several private entities on wetlands conservation projects, including 3.4 acres of salt marsh in partnership with the Port of Houston and 11 acres of shoreline and internal marsh with the GB Biosciences Corporation. The Baytown Nature Center is operated and maintained by the City of Baytown and supported by the Friends of the Baytown Nature Center.

According to Tracey Prothro, superintendent of natural resources at the City of Baytown, the nature center has not been afraid to forge partnerships and think of new, creative ways to use the center, which has been key to their success.



Photo: Baytown Nature Center

SIGNATURE PROJECTS

The natural heritage of the Houston-Galveston region attracts visitors from all walks of life. From birding in coastal areas, to camping opportunities in our state parks and national lands, the range of recreational options in our region's natural areas and open spaces is vast. These spaces help define our region as a great place to live and visit and help put local communities on the map.

In addition to recreation and quality of life, signature projects can provide significant environmental and community benefits, as well as opportunities for local economic development and marketing of the region as a whole. There are numerous examples of such projects throughout our region, several of which are highlighted in the Project Spotlights provided throughout this document. H-GAC will work with local governments, state and federal agencies, and nonprofit organizations to realize the vision of each of the 13 counties in the region having at least one such signature project.

REGIONAL CONSERVATION STRATEGIES

Achieving the vision of the Regional Conservation Framework will require focused, consistent coordination and engagement with a variety of stakeholders, including local governments, developers, nongovernmental organizations, and private landowners.

H-GAC has developed three strategies to support conservation by local governments and other partners in our region. For a detailed list of recommended implementation actions, see Appendix A - Recommended Strategies and Actions on page 12.

STRATEGY 1: LEVERAGE

GOAL: Use existing H-GAC programs to integrate conservation more fully into planning and implementation activities.

H-GAC programs like Economic Development, Resiliency, Transportation, and Water Quality can have both direct and indirect impacts on natural areas and open spaces. H-GAC will identify opportunities to strengthen the conservation components of all these programs.

STRATEGY 2: SUPPORT

GOAL: Support and expand existing efforts in our region through partnerships and communication, data access, and unified messaging.

H-GAC is uniquely positioned to complement local conservation initiatives from a regional perspective – connecting people and organizations, sharing data and best practices, and amplifying success stories.

STRATEGY 3: FUND

GOAL: Aid local governments or regional partners in receiving new funding or finding projects to fit existing funding sources.

Funding initial project costs and long-term maintenance for conservation efforts are primary concerns for local governments. To execute both large-scale projects and smaller-scale conservation efforts, local governments can use a variety of funding tools. As a starting point, H-GAC's interactive, online Conservation Funding Guide⁷ catalogs federal and state or state-administered funding programs available to local entities in Texas.



⁶Houston Parks Board. (2020). Bayou Greenways 2020. Retrieved from <https://houstonparksboard.org/about/bayou-greenways-2020>.

⁷<https://www.h-gac.com/regional-conservation/funding-guide>



PROJECT SPOTLIGHT: SPRING CREEK GREENWAY

LOCATION: Harris and Montgomery counties (along Spring Creek)

SIZE: Approximately 7,000 acres

FUNDING: Initial land acquisition funded through Land and Water Conservation Fund; Continued land acquisition funded through county general funds, bonds, flood control bonds as available.

NOTABLE FEATURES: Multi-county cooperation; Flood protection; Recreational opportunities



Photo: Spring Creek Greenway

The Spring Creek Greenway connects and protects approximately 7,000 acres of forest in Harris and Montgomery counties along both sides of Spring Creek. In the late 1970s, Harris County began purchasing flood-prone property along Cypress Creek and then along Spring Creek using federal money from the Land and Water Conservation Fund. For the next 30 years, Harris and Montgomery counties continued the work, acquiring and protecting land along Spring Creek. Dennis Johnston, parks director for Harris County Precinct 4, sees this shared vision for a large-scale, conserved natural space and the foresight of elected leaders as the key to the greenway's continued success. Today, trails in the greenway stretch for nearly 20 miles, connecting small area preserves from State Highway 249 all the way to Interstate Highway 69. The Spring Creek Greenway Nature Center in Spring, Texas, is a hub for an array of educational and outdoor activities for all ages and levels of ability – from walking and biking along paved trails to kayaking and canoeing along stretches of Spring Creek. This conserved corridor of land along the creek also offers the dual benefits of flood protection and wildlife protection.

SECTION 4: NEXT STEPS

As the growing region seeks to accommodate residents and businesses, conservation can be difficult to balance.

Fortunately, we now have an opportunity to work together to expand voluntary local conservation efforts, big and small, to realize significant regional benefits.

We look forward to continuing to work with local governments and other conservation partners, encouraging collaborative, timely conservation to ensure the region becomes an even better place to live, work, and prosper than it is today.

To keep up to date on H-GAC's regional conservation efforts, email us at conservation@h-gac.com or visit h-gac.com/regional-conservation and learn how you can get involved.





Photo: Exploration Green

PROJECT SPOTLIGHT: EXPLORATION GREEN

LOCATION: Harris County

SIZE: 178 acres

FUNDING: Original land acquisition was funded through county bond election funds. Subsequent phases of work were funded through Texas Parks and Wildlife grants, Texas A&M AgriLife Extension - Community Watershed Program grants, Texas Coastal Management Program grants, and donations from Trees for Houston, Harris County - Precinct 2 Commissioners and private individuals.

NOTABLE FEATURES: Flood protection; Recreational opportunities; Site reuse

According to Exploration Green Conservancy Chair Frank Weary, it all started with the Clear Lake City Water Authority's vision for a stormwater detention site that was more than a hole in the ground. In 2011, the Clear Lake City Water Authority (CLCWA) purchased the old Clear Lake Golf Course using Harris County bond funds and hosted a series of town halls to collect community members' input on a multi-use stormwater detention project. A vision for a greenspace with trees, trails, and athletic fields emerged. The CLCWA hired a landscape architecture firm to prepare a master plan and set the project in motion. When fully built, Exploration Green's detention ponds will hold a combined 500 million gallons of stormwater, protecting an estimated 2,000 to 3,000 homes from flooding in 12 to 15 inches of rain. Exploration Green also serves as a nature preserve, with 6 miles of walking and biking trails, athletic fields available for local sports teams, and dedicated wetlands and native grassland areas. The Exploration Green Conservancy – a nonprofit organization formed by dedicated community members – coordinates volunteers and raises funds for all non-stormwater detention elements of the project. For many years, the conservancy has nurtured a group of volunteers to assist with planting and propagating trees and wetlands, applying for grant funding for new amenities, and coordinating events. Communication between the conservancy, the CLCWA, and the community has been critical to the project's success. After nearly 20 years of visioning, fundraising, and construction, the final phase of Exploration Green will be completed by 2023.



Photo: Exploration Green

SECTION 5: APPENDICES

APPENDIX A – RECOMMENDED STRATEGIES AND ACTIONS

The text below details the goal of and recommended actions for the three strategies detailed in the Regional Conservation Framework.

STRATEGY 1: LEVERAGE

GOAL: Use existing H-GAC programs, projects, and funding to integrate conservation more fully into planning and implementation activities.

ACTION 1: Working with community and economic development organizations to broaden access to natural areas and open space throughout the region and create opportunities for local businesses.

ACTION 2: Convening a Regional Forestry Work Group composed of local government stakeholders to coordinate with other organizations on large-scale initiatives to enhance the region's treescape.

ACTION 3: Expanding and updating H-GAC's online Forestry Tool,⁸ which enables users to take a detailed look at the tree canopy, down to the street tree level.

ACTION 4: Integrating conservation planning metrics into the following H-GAC-led planning initiatives:

- Comprehensive Economic Development Strategy
- Regional Transportation Plan
- H-GAC-led Watershed Protection Plans
- H-GAC-led regional and watershed-level flood mitigation projects

ACTION 5: Working with local partners, including nurseries, to increase the supply of native tree species available for tree planting initiatives.

⁸<https://datalab.h-gac.com/urbanforestry>



STRATEGY 2: SUPPORT

GOAL: Support and expand existing efforts in the region through partnerships and communication, data access, and unified messaging.

ACTION 1: Compiling data on existing best practices and policy options, including relevant ordinances, and sharing with local governments.

ACTION 2: Developing and maintaining customizable public awareness materials for communities to use on social media and in press releases, posters, and flyers to build support for conservation initiatives.

ACTION 3: Engaging with decision-makers in the region to discuss the economic benefits of specific conservation strategies.

ACTION 4: Establishing and convening a conservation peer exchange forum, composed of local governments and professionals working on conservation issues across the region.

ACTION 5: Expanding and updating the economic valuation data presented in The Conservation Fund's Houston-Galveston Green Infrastructure and Ecosystem Services Assessment,⁹ exploring the benefit-relevant indicators for specific conservation practices and sharing those data with local governments and professionals.

ACTION 6: Working with local governments and private sector organizations to encourage conservation strategies – such as tree protection, low impact development, and connecting to existing greenways – being incorporated in community design early on.

ACTION 7: Providing support to local governments on data analysis and mapping, integrating factors such as existing land type and socio-economic data.

STRATEGY 3: FUND

GOAL: Aid local governments or regional partners in receiving new funding or finding projects to fit existing funding sources.

ACTION 1: Connecting local governments with nongovernmental organizations working toward similar goals or project outcomes.

ACTION 2: Developing funding partnerships that support land acquisition, development, management, and promotion.

ACTION 3: Establishing and maintaining a list of priority conservation projects for the region.

ACTION 4: Maintaining and expanding the online Conservation Funding Guide and promoting the tool with local governments.

ACTION 5: Providing support to requesting local governments in accessing grant funding to support conservation initiatives.

ACTION 6: Researching and distributing information on non-grant finance tools, such as bonds, donations from landowners, property tax dedications, and the establishment of a Regional Conservation District.

⁹https://www.conservationfund.org/images/projects/files/Houston_Galveston_Report.pdf



Photo: Justin Bower

APPENDIX B ECOSYSTEM SERVICES - BENEFIT BY ECOLOGICAL ASSET TYPE

The chart below details potential benefits supported by specific ecological asset types.

ECOSYSTEM SERVICE BENEFITS (P = Primary Benefit, S= Secondary Benefit)							
Ecological Assets	Flood and Disaster Mitigation	Economy	Carbon, Energy or Heat	Quality of Life/ Health	Environmental Quality	Recreation	Habitat
Undeveloped Forests	P		P	S	P	S	P
Urban Tree Canopy	P	S	P	P	P	S	S
Wetlands	P	S	S	S	P	S	P
Prairie and Grasslands	P	S	S	S	P	S	P
Working Lands	S	P		S	S		
Urban Open Space	S	S	S	P	S	P	S
Healthy Waterways	S	S		S	P	S	P
Clean Air		S	P	P	P		





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This project was generously funded by a grant from the Houston Endowment Inc. H-GAC would also like to acknowledge Houston Wilderness, Land/Water Associates, and many other local organizations whose contributions made this project possible.

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WHAT IS H-GAC? H-GAC is the regional organization through which local governments consider issues and cooperate in solving area wide problems. Through H-GAC, local governments also initiate efforts in anticipating and preventing problems, saving public funds. The 13-county H-GAC service region is growing, becoming more diverse, and constantly changing. In order to address the needs of citizens and businesses, local governments are providing leadership to guide regional development wisely and manage change constructively.