

#	Achievements	Status
STRATEGY 4: STORMWATER AND LAND DEVELOPMENT (CONT.)		
4.6	Petition the TCEQ to Facilitate Reimbursement of Bacteria Reduction Measures. Within three years, BIG stakeholders aim to receive a letter of commitment or similar support from the TCEQ.	<input type="checkbox"/> In Progress <input type="checkbox"/> On Schedule
STRATEGY 5: CONSTRUCTION		
5.1	Increase Compliance with and Enforcement of Stormwater Management Permits. MS4 operators have begun evaluating and making changes to their construction inspection programs. H-GAC continued to gather examples of existing educational material. The TCEQ, Harris County, City of Houston, and Construction EcoServices distributed educational material.	<input type="checkbox"/> In Progress <input type="checkbox"/> On Schedule
STRATEGY 6: ILLICIT DISCHARGES AND DUMPING		
6.1	Detect and Eliminate Illicit Discharges. Analysis of MS4 annual reports indicated that most MS4 operators have regulatory mechanisms in place and procedures for detecting illicit discharges.	<input type="checkbox"/> Initiated <input type="checkbox"/> On Schedule
6.2	Improve Regulation and Enforcement of Illicit Discharges. Many MS4 Phase II operators have implemented new regulations as a permit requirement. H-GAC has not finished compiling all existing regulations or tracking whether those regulations have been revised.	<input type="checkbox"/> Initiated <input type="checkbox"/> On Schedule
6.3	Monitor and Control Waste Hauler Activities. No progress reported.	<input type="checkbox"/> Initiated <input type="checkbox"/> On Schedule
STRATEGY 7: ANIMALS AND AGRICULTURE		
7.1	Promote Increased Participation in Existing Programs for Erosion Control Nutrient Reduction and Livestock Management. H-GAC collected and distributed information about the NRCS' EQIP program. As part of the Lone Star Healthy Steams Program, the Texas Water Resources Institute created a series of publications designed to reduce bacterial contamination of waterways through better management of beef cattle, horses, feral hogs, and more.	<input type="checkbox"/> Initiated <input type="checkbox"/> On Schedule
7.2	Promote the Management of Feral Hog Populations. The Texas State Soil and Water Conservation Board funded statewide technical assistance for managing feral hogs in priority watersheds. Harris County Precinct 3 received a \$300,000 Coastal Impact Assistance Program grant to help build pens in the Addicks and Barker reservoirs and to pay for processing.	<input type="checkbox"/> Initiated <input type="checkbox"/> On Schedule
STRATEGY 8: RESIDENTIAL		
8.1.1	Continue or Begin a Homeowner Education Program Based on Existing Models. The TCEQ started the "Don't Mess With Texas Water" sign program. H-GAC continued work in the Texas Stream Team volunteer monitoring program and its "Pet Waste Pollutes" campaign. The annual River, Lakes, Bays and Bayous Trash Bash® event also continued at sites throughout the BIG project area with over 2,500 volunteers picking up over 20 tons of trash.	<input type="checkbox"/> In Progress <input type="checkbox"/> On Schedule

8.1.2 Conduct Pilot Studies to Evaluate Results of Education Efforts. H-GAC conducted pre- and post-implementation community outreach impact assessments as part of the Westfield Estates Watershed Protection Plan. The Galveston Bay Estuary Program conducted a pilot study to assess the effectiveness of the "Back the Bay" Campaign.

- In Progress
- On Schedule

STRATEGY 9: MONITORING AND I-PLAN REVISION

9.1 Continue to Utilize Ambient Water Quality Monitoring and Data Analysis. H-GAC and its local partners continued to conduct ambient water quality monitoring and assessments of water quality at over 370 monitoring stations. In September 2012, H-GAC and local partners began recording evidence of contact recreation as part of their regular monitoring programs.

- In Progress
- On Schedule

9.2 Conduct and Coordinate Non-Ambient Water Quality Monitoring. H-GAC submitted a draft non-ambient Quality Assurance Project Plan to the TCEQ. The Harris County Flood Control District (HCFCD) developed a Regional Best Management Practice (BMP) Database which will house monitoring information for stormwater BMP projects developed by HCFCD and other entities.

- In Progress
- On Schedule

9.3 Create and Maintain a Regional Implementation Activity Database. H-GAC developed a preliminary regional implementation activity database.

- Initiated
- On Schedule

9.4 Assess Monitoring Results and Modify I-Plan. H-GAC conducted analysis to determine the Top 10 "Most Wanted" Streams (worst bacteria levels) and the Top 10 "Most Likely to Succeed" Streams (only slightly impaired) in the BIG project area. H-GAC has also developed the BIG "Bacteria Trend Line," which shows the overall progress being made in bacteria reduction.

- Initiated
- On Schedule

STRATEGY 10: RESEARCH

10.1 Evaluate the Effectiveness of Stormwater Implementation Activities. No progress reported.

- Initiated
- On Schedule

10.2 Further Evaluate Bacteria Persistence and Regrowth. H-GAC sought grant funding to investigate naturalized populations of *E. coli* in local waterways.

- Initiated
- On Schedule

10.3 Determine Appropriate Indicators. No progress reported.

- Initiated
- On Schedule

10.4 Additional Research Topics. H-GAC staff prepared 29 article abstracts relating to BIG issues. BIG stakeholders identified new areas of research.

- Initiated
- On Schedule

STRATEGY 11: GEOGRAPHIC PRIORITY FRAMEWORK

11.1 Consider Recommended Criteria When Selecting Geographic Locations for Projects. H-GAC developed the Top 10 "Most Likely to Succeed" and "Most Wanted" Streams lists to help local stakeholders prioritize water quality improvements.

- In Progress
- On Schedule



The At-A-Glance Summary and Annual Report were financed in part through grants from the U.S. Environmental Protection Agency through the Texas Commission on Environmental Quality.





WHAT IS THE BIG I-PLAN?

Most water bodies in the Houston-Galveston region have bacteria levels that are higher than those deemed acceptable by the state. In 2008, a group of government, business, and community leaders formed the Bacteria Implementation Group (BIG) to combine resources and identify ways to correct this water quality and public health issue that occurs in many populated areas. The **Implementation Plan for Seventy-Two Total Maximum Daily Loads for Bacteria in the Houston-Galveston Region (I-Plan)** grew out of these efforts, offering a common-sense approach to reducing bacteria levels and providing better services to citizens. The Texas Commission on Environmental Quality (TCEQ) formally approved the I-Plan in January 2013. Almost 100 organizations representing local government, business, and environmental interests had passed resolutions in support of the document.

Who Implements the I-Plan?

We all implement the plan. In addition to individuals who live, work, and play in the project area, key stakeholders include local governments, industries, land owners, and residents. The *At-A-Glance Summary* and *Annual Report* highlight findings that are based on an analysis of existing reports, activities, and resources identified by the BIG's stakeholders. This information was derived from several work group meetings leading up to the BIG Annual Meeting in May 2013.

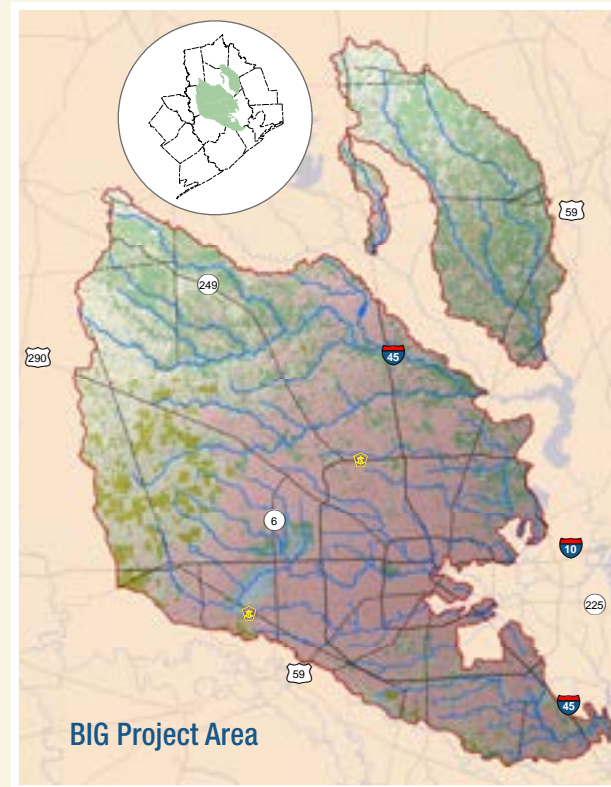
The *Annual Report* includes a list of contributing partners who provided information for this report. Next year, H-GAC will request reports and information from even more stakeholders, including the TCEQ, U.S. Environmental Protection Agency (EPA), counties, cities, wastewater permit holders, and municipal stormwater permit holders.

Get Involved!

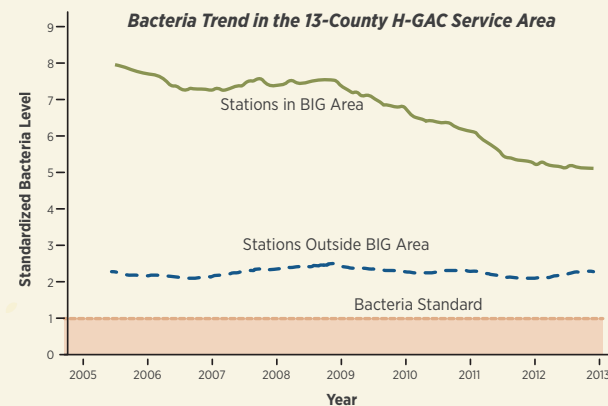
You can help reduce the amount of bacteria entering our waterways with simple changes to your daily routines, such as using appropriate lawn care practices, not putting cooking grease down sink drains, and picking up and properly disposing of pet waste. You can also help to monitor water quality as a Texas Stream Team volunteer. If you want to get more involved, join a work group and participate in the BIG meetings.

About the At-A-Glance Summary

This summary identifies the status and timing of proposed implementation strategies from the I-Plan. More information about the project, including the full *Annual Report*, can be found at: www.h-gac.com/BIG.



Since 2005, water quality in the BIG project area has improved. Bacteria levels in the waterways decreased from almost nine to just under five times the standard established by the Texas Commission on Environmental Quality.



Annual Progress

#	Achievements	Status
STRATEGY 1: WASTEWATER TREATMENT FACILITIES		
1.1	Impose More Rigorous Bacteria Monitoring Requirements. Stricter monitoring requirements have begun to show up in wastewater permits. Within five years, all permit renewals should have more rigorous monitoring requirements.	<input checked="" type="checkbox"/> In Progress <input checked="" type="checkbox"/> On Schedule
1.2	Impose Stricter Bacteria Limits for Wastewater Treatment Facility (WWTF) Effluent. More stringent limits have started appearing in wastewater permits. However, self-reported data for all permits is not yet available. Within five years, all permit renewals should have more stringent limits for bacteria.	<input checked="" type="checkbox"/> In Progress <input checked="" type="checkbox"/> On Schedule

#	Achievements	Status
STRATEGY 1: WASTEWATER TREATMENT FACILITIES (CONT.)		
1.3	Increase Compliance and Enforcement by the TCEQ. The TCEQ has begun to increase their compliance and enforcement capabilities within the BIG region.	<input checked="" type="checkbox"/> Initiated <input checked="" type="checkbox"/> On Schedule
1.4	Improved Design and Operation Criteria for New WWTFs. Harris County will start implementing a new WWTF program to review select WWTF plans in 2013. The TCEQ's proposed new Title 30, Chapter 217 of the Texas Administrative Code (TAC) is intended to update WWTF standards and criteria as well as to reflect current permitting practices of the TCEQ.	<input checked="" type="checkbox"/> Initiated <input checked="" type="checkbox"/> On Schedule
1.5	Upgrade Facilities. The information on the number of non-compliant WWTFs that have been upgraded was not available.	<input checked="" type="checkbox"/> Initiated <input checked="" type="checkbox"/> On Schedule
1.6	Consider Regionalization of WWTFs. No progress reported.	<input checked="" type="checkbox"/> Initiated <input checked="" type="checkbox"/> On Schedule
1.7	Use Treated Effluent for Facility Irrigation. Information on the number of WWTFs that installed new irrigation systems for their treated effluent was not available.	<input checked="" type="checkbox"/> Initiated <input checked="" type="checkbox"/> On Schedule

#	Achievements	Status
STRATEGY 2: SANITARY SEWER SYSTEMS		
2.1	Develop Utility Asset Management Programs (UAMPs) for Sanitary Sewer Systems (SSS). TCEQ's voluntary sanitary sewer overflow (SSO) initiative has doubled its program participation since 2008. The EPA has conducted listening sessions with stakeholders to determine how to modify National Pollutant Discharge Elimination System (NPDES) regulations. The EPA has also made the Check Up Program for Small Systems (CUPSS) asset management tool available for free download on the Internet.	<input checked="" type="checkbox"/> In Progress <input checked="" type="checkbox"/> On Schedule
2.2	Address Fats, Oils, and Grease (FOG). Several model FOG programs are available from the cities of San Antonio, Dallas, and Houston.	<input checked="" type="checkbox"/> In Progress <input checked="" type="checkbox"/> On Schedule
2.3	Encourage Appropriate Mechanisms to Maintain Function at Lift Stations. The TCEQ is in the process of upgrading portions of Title 30, Chapter 217 of the TAC, which addresses emergency power requirements.	<input checked="" type="checkbox"/> Initiated <input checked="" type="checkbox"/> On Schedule
2.4	Improve Reporting Requirements for SSOs. H-GAC and BIG stakeholders have been tracking House and Senate bills that would limit SSO reporting requirements to spills involving 1,500 gallons or more. Connected Texas completed a statewide inventory of broadband Internet connections which will help facilitate electronic reporting of SSOs.	<input checked="" type="checkbox"/> In Progress <input checked="" type="checkbox"/> On Schedule
2.5	Strengthen Controls on Subscriber Systems. H-GAC continued to identify contact information for WWTF permit holders. The information will be used to collect data about individual subscriber system contracts.	<input checked="" type="checkbox"/> In Progress <input checked="" type="checkbox"/> On Schedule
2.6	Penalties for Violations. The TCEQ released a revised version of its "Enforcement Initiation Criteria." TCEQ inspectors now have the ability to conduct focused SSO investigations during	<input checked="" type="checkbox"/> Completed <input checked="" type="checkbox"/> Ahead of Schedule

rain events even if the SSS facility has never reported an SSO.

#	Achievements	Status
STRATEGY 3: ON-SITE SEWAGE FACILITIES		
3.1	Identify and Address Failing Systems. H-GAC continued to develop an OSSF permit database that shows permits by age, authorized agent, and OSSFs per square mile. It also allows for analysis of suspected areas having an old or otherwise unpermitted system. Future efforts will focus on the collection of complaint and violation data.	<input checked="" type="checkbox"/> In Progress <input checked="" type="checkbox"/> On Schedule
3.2	Address Inadequate Maintenance of OSSFs. H-GAC continues to compile model OSSF regulations and policies and has made them available on-line. H-GAC created a website for homeowners, home buyers, local governments, and real estate professionals. H-GAC continued to identify education campaigns encouraging homeowners and maintenance providers to keep repair and pumpout logs.	<input checked="" type="checkbox"/> In Progress <input checked="" type="checkbox"/> On Schedule
3.3	Legislation and Other Regulatory Actions. Harris County hosted its Second Annual Wastewater Seminar. The day-long event presented new innovations, best practices, and rules and enforcement updates.	<input checked="" type="checkbox"/> In Progress <input checked="" type="checkbox"/> On Schedule

#	Achievements	Status
STRATEGY 4: STORMWATER AND LAND DEVELOPMENT		
4.1	Continue Existing Programs. Eighty municipal separate storm sewer systems (MS4s) permit areas are located partially or fully in the BIG project area. These programs have been used to identify best practices and have been supported by educational opportunities.	<input checked="" type="checkbox"/> In Progress <input checked="" type="checkbox"/> On Schedule
4.2	Model Best Practices. H-GAC continued to acquire copies of MS4 annual reports and conduct analysis. Information was used to develop educational content for future workshops and help coordinate regional opportunities. H-GAC also continued hosting its series of workshops that focused on the six minimum control measures required in an MS4 permit.	<input checked="" type="checkbox"/> In Progress <input checked="" type="checkbox"/> On Schedule
4.3	Encourage Expansion of Stormwater Management Programs. H-GAC hosted a "Welcome to the MS4 Program" workshop for new permittees. A preliminary review indicated that 13 cities and 124 special purpose districts will be subjected to the MS4 Phase II General Permit. Many of these jurisdictions may be eligible for waivers.	<input checked="" type="checkbox"/> Initiated <input checked="" type="checkbox"/> On Schedule
4.4	Promote Recognition Programs for Developments that Voluntarily Incorporate Bacteria Reduction Measures. H-GAC has received funding to develop an awards program. Harris County and the City of Houston will help to lead program development. The Bayou Preservation Association, Association of Water Board Directors, and Greater Houston Builders Association will be encouraged to participate.	<input checked="" type="checkbox"/> Initiated <input checked="" type="checkbox"/> On Schedule
4.5	Provide a Circuit Rider Program. H-GAC has received funding to compile and examine local codes that may present an impediment to implementing low impact development.	<input checked="" type="checkbox"/> Initiated <input checked="" type="checkbox"/> On Schedule