



**Stormwater and Land Development Workgroup  
Meeting Agenda  
Thursday, February 20, 2014  
10:00 AM to 12:00 PM  
H-GAC Conference Room B, Second Floor**

**Call to Order/Welcome/Introductions**

**Review Notes from Last Year's Meeting**

**Discussion: Preparing BIG 2014 Annual Report – I-Plan Strategy 4.0 Stormwater and Land Development Sources**

Workgroup will review data source availability and past year BIG implementation activities related to I-Plan Strategy 4.0:

- Implementation Activity 4.1: Continue Existing Programs
- Implementation Activity 4.2: Model Best Practices
  - Sub-activity 4.2.1: Create and maintain an online library of best practices
  - Sub-activity 4.2.2: Coordinate networking meetings
- Implementation Activity 4.3: Encourage Expansion of Storm Water Management Programs
  - Sub-activity 4.3.1: Encourage permitted MS4 communities to voluntarily expand and refine elements of their storm water programs that address bacteria
  - Sub-activity 4.3.2: Encourage local governments without MS4 permits to voluntarily develop and implement a storm water management program to address bacteria loading
  - Sub-activity 4.3.3: If voluntary measures are not implemented or bacteria reduction is not being achieved, petition the TCEQ to mandate storm water program development
- Implementation Activity 4.4: Promote Recognition Programs for Developments that Voluntarily Incorporate Bacteria Reduction Measures
  - Sub-activity 4.4.1: Encourage voluntary participation in existing recognition programs
  - Sub-activity 4.4.2: Develop a recognition program specific to storm water and land development in the BIG area
- Implementation Activity 4.5: Provide a Circuit Rider Program
- Implementation Activity 4.6: Petition the TCEQ to Facilitate Reimbursement of Bacteria Reduction Measures

**Discussion: Review I-Plan Strategy 4.0 Stormwater and Land Development Language**

Workgroup will review approved I-Plan wording. Workgroup will discuss potential editorial changes. Workgroup will agree on any updates and develop recommendations that will be presented at the annual BIG meeting for approval.

**Adjourn**

## **Upcoming Meeting Schedule**

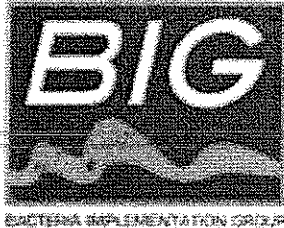
**May 27, 2014:** BIG Annual Meeting

**February 20, 2014:** Stormwater Land Development | Construction

**March 11, 2014:** Watershed Outreach

**March 20, 2014:** Monitoring and Plan Revision | Research

**March 25, 2014:** Coordination and Policy



**Stormwater & Land Development and Construction Work Groups  
DRAFT Meeting Notes  
Thursday, February 21, 2013  
2:00 pm to 4:00 pm  
H-GAC Conference Room A, Second Floor**

**Attendees**

Bill Carter on phone (TCEQ), Richard Chapin (City of Houston), Lawrence Childress (City of Houston), Danielle Cioce (Harris County), John Conciencie (Caroll & Blackman, Inc.), Justin Cox on phone (Storm Water Solutions), Adrian Gengo (Caroll & Blackman, Inc.), Teague Harris (HCMUD 22), Bruce Heiberg (Bayou Preservation Association), Jonathan Holley (Harris County FCD), Craig Maske (Dodson/WPM), Rick Masters (Caroll & Blackman, Inc.), Alisa Max (Harris County), John Moss (Eco Services), Rachel Powers (H-GAC), Mary Purzer (AECOM), Jim Robertson on phone (Cypress Creek Flood Control Coalition),

**Call to Order/Welcome/Introductions**

Rachel called the meeting to order and initiated self-introductions.

**Presentation (by phone) by TCEQ on status of construction and MS4 general permit renewals**—Rebecca Villalba, Stormwater and Pretreatment team leader, and Hanna Neilsen, stormwater permit writer

Notable highlights from their presentation:

- Construction General Permit
  - The Construction General Permit was adopted February 13, 2013, and will become effective March 5, 2013. The permit includes narrative limits for turbidity, but does not include a numerical limit.
  - Notice will be sent to all entities with authorization with instructions on how to submit an NOI. In general, once the permit is approved, there is a 90-day limit to submit an NOI or no termination. Electronic NOIs are being encouraged.
- MS4 General Permit (TXR040000)
  - The MS4 General Permit has been administratively continued.
  - TCEQ responded to 267 comments during the comment period in early fall. They have sent the revised draft to EPA. EPA review could take another 30 days.
  - Most significant issues to be resolved have to do with impaired waterbodies, TMDLs, and I-Plans. Other discussion points include rearranging some sections, adding definitions, and adding examples.
  - Louisiana recently issued their permit, which is similar to what the Texas permit may look like.  
[\[http://www.deq.louisiana.gov/portal/Portals/0/permits/lpdes/pdf/LAR04\\_2012\\_FI\\_NAL.pdf\]](http://www.deq.louisiana.gov/portal/Portals/0/permits/lpdes/pdf/LAR04_2012_FI_NAL.pdf)
  - Until the MS4 permit is renewed, new MS4s cannot be added to the permit. Currently there are about 500 permit holders. Based on an analysis of 2010

census data, they have identified 200 entities that may need to become covered under the permit. The EPA sent TCEQ a list of 172 entities that may be need to become covered under the permit. TCEQ intends to send notices to the entities that they anticipate will need coverage. TCEQ staff recommended viewing the EPA Webinar once it has been archived.

[\[http://cfpub1.epa.gov/npdes/courses.cfm?program\\_id=0&outreach\\_id=670&otype=1\]](http://cfpub1.epa.gov/npdes/courses.cfm?program_id=0&outreach_id=670&otype=1)

- o In the event that the permit is not renewed by August, MS4 operators may need to submit an annual report based on the extended permit and SWMP.
- o The draft for public notice from fall 2012 is the most recent version that is publicly available.  
([http://www.tceq.texas.gov/permitting/stormwater/WQ\\_ms4\\_small\\_TXRO4.html](http://www.tceq.texas.gov/permitting/stormwater/WQ_ms4_small_TXRO4.html))

### **Review Notes from Last Year**

Rachel provided the notes from last year in case they were needed for reference.

### **Update on I-Plan Approval Process**

The TCEQ unanimously approved the BIG I-Plan on January 30, 2013. The approved version included the changes to the I-Plan that had been discussed at previous BIG meetings. None of the changes were in the references sections.

### **Review Annual Report format**

Rachel explained that the conceptual format for the annual report was developed in collaboration by the BIG and agreed to at the BIG mid-year meeting in October 2012. The report will consist of three main components:

- 1) At-a-Glance: The At-a-Glance section will be one 11x17 paper that includes cover page with a photo; a table of implementation activities, proposed milestones, and an evaluation of progress; and a sheet with background information, a map, and high-level review of progress overall.
- 2) A printed report: In addition to a narrative overview, the printed report will include information about progress and goals for each of the strategies in the plan. Each strategy will be described by a narrative description preceded by a tabular summary sheet, which will include recommendations from the workgroup to the BIG regarding progress, achievements, focus for the coming year, and revisions to the I-Plan.
- 3) Web-based support documents: If additional information, such as lengthy tables, are necessary, these will be provided in an on-line format.

**Review Implementation Progress**-- The workgroup reviewed progress for each of the implementation activities, as follows.

#### **Implementation Strategy 4.0: Stormwater and Land Development**

- 4.1: Continue Existing Programs—Interim Milestones: 80 programs will continue

- 80 programs have been administratively continued.
- 4.2: Model Best Practices—Interim Milestones: Five local programs highlighted on H-GAC or other appropriate website each year; four to six networking meetings each year:
  - H-GAC has posted MS4 Phase II annual reports on its website: <http://www.h-gac.com/community/water/stormwater.aspx>.
    - 23 MS4 communities have provided their 2011 Year 4 annual reports, all posted on H-GAC website. The following are in the BIG project area and provided their year 4 reports:
      - City of Bunker Hill Village
      - City of Humble
      - City of League City
      - City of Missouri City (represents multiple MS4s)
      - City of Oak Ridge North
      - Montgomery County
      - Montgomery County Drainage District 6
      - North Mission Glen MUD
      - Rayford Road MUD
      - Southern Montgomery County MUD
      - Spring Creek Utility District
      - West Keegans Bayou Improvement District
      - The Woodlands JPA
      - [The JTF, not a Phase II MS4, has continued its program and provides annual reports.]
    - 5 MS4 communities have provided their 2012 Year 5 annual reports, all posted on H-GAC website. Deer Park, Kemah, and UTMB are all outside of the BIG project area. These MS4s provided their annual reports in addition to the year 4 reports that H-GAC requested.
      - City of Deer Park
      - City of League City
      - North Mission Glen MUD
      - UTMB
      - West Keegans Bayou Improvement District
      - [City of Kemah year 5 report was received after the meeting]
  - H-GAC has continued its annual series of workshops focusing on the six minimum control measures. The series also included a “Welcome to the MS4 Program” workshop in November 2012.
  - Successful MS4 program elements are being identified by looking at annual reports. Representatives from these MS4s are being asked to share information at the CWI workshops: [www.h-gac.com/cwi](http://www.h-gac.com/cwi).
- 4.3: Encourage Expansion of Storm Water Management Programs—Interim Milestones: By year five, all permit holders shall expand or focus their existing storm water programs as appropriate; by year five, 30 previously unpermitted entities shall develop new programs

- On May 22, 2012, about five months ahead of schedule, the Bureau of the Census released its maps of urban areas based on the 2010 Census. A preliminary review suggests that 13 cities and 124 special purpose districts may qualify for coverage as a result of the 2010 census, although many of these may qualify for waivers and not all are inside the BIG project area.
  - No other progress was reported by the group.
- 4.4: Promote Recognition Programs for Developments that Voluntarily Incorporate Bacteria Reduction Measures—Interim Milestones: Within five years, develop a recognition program; Upon completion of the program development, recognize at least one community each year for five years and an increasing number of communities/projects thereafter, or as specified as part of the program development process; Two communities each year analyze regulations and programs to accommodate participation in existing programs.
  - Green Built Gulf Coast: The Greater Houston Builders Association has developed a certification based on the National Green Building Standard ICC 700-2008, with specifications for the Gulf Coast's unique climate. Whether the program incorporates bacteria reduction is unclear.
  - H-GAC has received funding from the TCEQ to develop an awards program, and hopes to form an ad hoc group to develop the program. Harris County (Alisa Max) and City of Houston (Richard Chapin) both volunteered. The group recommended that BPA, AWBD, and GHBA be encouraged to participate.
- 4.5: Provide a Circuit Rider Program—Interim Measureable Milestones: Each year, contact 50 stakeholders and provide five in-depth community consultations.
  - H-GAC has received funding from TCEQ to compile and examine local codes that may present an impediment to implementing low impact development. Bill Carter recommended looking at the documents from the LID project undertaken by the National Wildflower Center:  
<http://www.tceq.texas.gov/waterquality/nonpoint-source/projects/statewide-low-impact-development-workshops>.
  - Note: North Central Texas COG was just beginning a peer-to-peer site visit and information exchange program.
- 4.6: Petition the TCEQ to Facilitate Reimbursement of Bacteria Reduction Measures—Interim Milestone: Letter of commitment (or similar) from TCEQ within three years.
  - Conversations with TCEQ have been ongoing and show progress. Various BIG stakeholders have been working with TCEQ to develop guidance for allowing water quality infrastructure.

#### Implementation Strategy 5.0: Construction

- 5.1: Increase Compliance with and Enforcement of Stormwater Management Plans—
  - Rachel indicated that she has looked at MS4 annual reports to determine what sort of activity MS4 phase II communities have undertaken relating to construction activities within the MS4. Even within the JTF report, the information is difficult to find and reported in different formats by the members of the JTF. The TCEQ annual report format makes it difficult to find such information. Rachel

indicated that the EPA's Small MS4 report form might make it easier to track construction activities by MS4 operators.

- The MS4 Phase II annual reports do include information about educational material. Rachel will try to pull this information together to post on the website.
- Recent training programs were offered by H-GAC (through the CWI workshops), the Houston Chapter of the Association of General Contractors. Stakeholders indicated that Larmin (?) and Half Moon (?) also provide training. Other appropriate venues/audiences might be the Houston Contractors Association, the American Subcontractors Association—Houston Chapter, and Associated Builders and Contractors—Greater Houston Chapter.
- Harris County indicated that the draft for last year's report contained an inaccuracy, and the following text should be deleted "the territory assigned to each inspector, thereby decreasing".

### **Confirm Recommendations to the BIG for Annual Report**

The work group reviewed the draft Implementation Strategy Cover Sheets for the two strategies: Stormwater & Land Development and Construction.

There were 16 attendees including 4 BIG members and 4 alternates.

#### *Stormwater & Land Development*

For the At-a-glance table, the group recommended that the yellow squares be changed to green, and changed to read "Started, on schedule."

The wording for Progress was appropriate.

For achievements, the group recommended adding the following:

- The first LID Roadways in the region were built.
- H-GAC has collected and shared annual reports on the website.
- TCEQ has been meeting with stakeholders regarding reimbursement.

For focus, the group recommended adding the following:

- Highlighting five local programs on website.
- Developing an awards program.
- Developing a more useful annual report form.
- Preparing the report on regulations that might prevent implementation of LID.

The group did not recommend revisions to the I-Plan.

#### *Construction*

For the At-a-glance table, the group did not recommend changes.

For progress, the group asked that the language for the stormwater and land development strategy be removed.

For achievements, the group recommended adding the following:

- H-GAC started looking at the annual reports and compiling the number of construction site actions reported in MS4 Phase II annual reports.
- The Construction General Permit was renewed.

For focus, the group recommended adding the following:

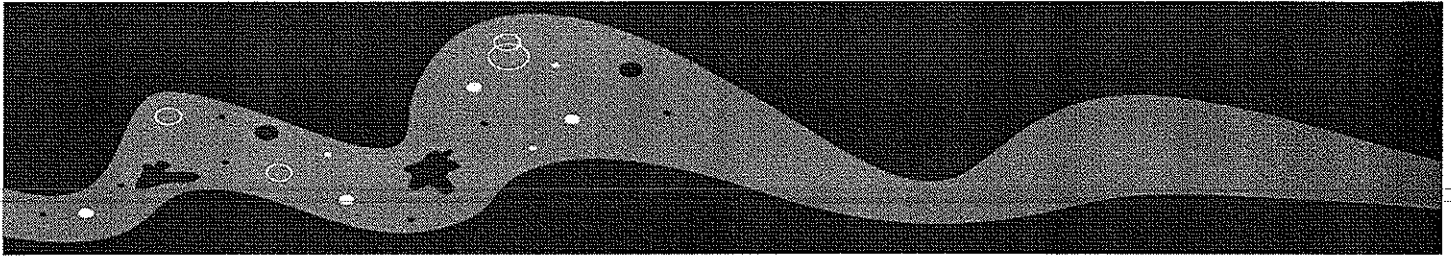
- Providing education to contractors.
- Quantifying inspections and enforcement reported in annual reports.

The group did not recommend revisions to the I-Plan.

**Adjourn**

**BIG Annual Meeting: Tuesday, May 14, 2013**









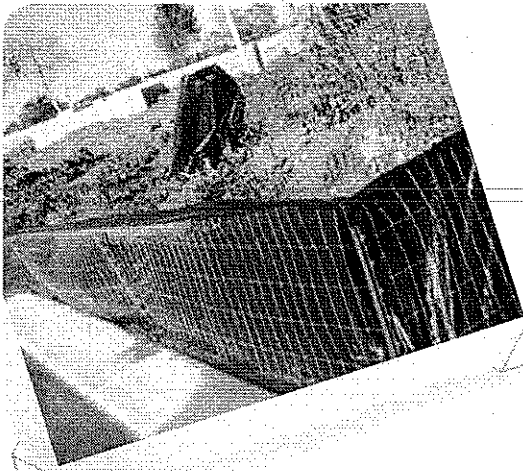
# Implementation Strategy 4.0: Storm Water & Land Development

#	Activity	Target/ Objective/ Milestone	Status
4.1	Continue Existing Programs	80 programs will continue	In progress, On schedule
4.2	Model Best Practices	Each year: -Four to six networking meetings -Five local programs highlighted	In progress, On schedule
4.3	Encourage Expansion of Stormwater Management Programs	Within five years: -All permit holders shall expand or focus their existing programs -30 previously unpermitted entities shall develop new programs	Started, On schedule
4.4	Promote Recognition Programs for Developments that Voluntarily Incorporate Bacteria Reduction Measures	-Within five years, develop a recognition program and subsequently recognize communities and participants -Each year, two communities analyze regulations and programs to accommodate participation in existing programs	Started, On schedule
4.5	Provide a Circuit Rider Program	-Each year, contact 50 stakeholders and provide five in-depth community consultations	Started, On schedule
4.6	Petition TCEQ to Facilitate Reimbursement of Bacteria Reduction Measures	-Within three years, letter of commitment or similar from TCEQ	Started, On schedule

## Work Group Recommendations

*Meeting February 21, 2013. 16 attendees, including 3 BIG members and 4 alternates.*

 <p><b>Progress</b></p>	<p>Progress has been adequate. MS4 Phase II permit renewal is in progress. Annual reports are on H-GAC website. Additional MS4 operators are expected based on 2010 Census data. Educational and networking meeting series has been established.</p>
 <p><b>Achievements</b></p>	<p>H-GAC has begun collecting and analyzing MS4 annual reports, which are available on the H-GAC website. MS4 annual reports are being used to identify speakers for the Clean Waters Initiative storm water workshop series. "Learning more with each workshop," wrote one participant. Stakeholders have made progress working with TCEQ to develop guidelines for facilitating reimbursement of water quality features. The first LID roadway projects were constructed this year.</p>
 <p><b>Focus</b></p>	<p>Focus in the coming year will be on tracking implementation by stakeholders and on involving new MS4 permittees, especially with the goal of expanding stormwater management programs. Working with stakeholders to develop a more uniform MS4 annual report format will facilitate this task. Focus will also include an examination of local regulations and how they might inhibit LID development, and the initial development of a recognition/awards program.</p>
 <p><b>Revisions</b></p>	<p>The work group does not recommend changes to the I-Plan.</p>



# STORMWATER AND LAND DEVELOPMENT

## 4

### Main Summary

Regional growth and development have increased the importance of stormwater management. Bacteria sources, such as waste from pets, wildlife, and even humans, can be washed into storm drains and then discharged into local waterways. Stormwater systems are designed to remove stormwater from developments quickly and efficiently. As a result, stormwater in urbanized areas often bypasses natural vegetative barriers. Without these filters, "sheet flow" (i.e., stormwater flowing across the landscape) tends to result in more concentrated bacteria loading to waterways.

In general, this strategy focuses on building upon existing programs by sharing knowledge and developing incentives to increase voluntary implementation. Individual stakeholders have continued existing programs and adapted their activities to better address bacteria. At the same time, H-GAC has compiled and shared information about activities undertaken by operators of municipal separate storm sewer systems (MS4s). These efforts will serve as a baseline for assessing future progress. Renewal of the Texas MS4 general permit in 2012 and expansion of the permitted area provided opportunities to evaluate, expand, and improve activities related to stormwater management.

### Work Group Activities

Meeting February 21, 2013. 16 attendees, including three BIG members and four alternates.

#### Progress

Progress has been adequate. MS4 Phase II permit renewal is in progress. Annual reports are on the H-GAC website. Additional MS4 operators are expected based on 2010 Census data. An educational and networking meeting series has been established.

#### Achievements

- H-GAC and BIG stakeholders:
  - Began collecting and analyzing MS4 annual reports, which are available on H-GAC's website at: <http://www.h-gac.com/community/water/MS4reports.aspx>.
  - Used MS4 annual reports to identify speakers for the Clean Waters Initiative (CWI) stormwater workshop series.
  - Continued implementation of workshops that received positive feedback.
  - Continued working with the Texas Commission on Environmental Quality (TCEQ) to develop guidelines for facilitating reimbursement of water quality features.
- Low impact development (LID) roadway projects were constructed this year.

## Focus

- H-GAC and BIG stakeholders aim to:
  - Track implementation by stakeholders and new MS4 permittees, especially with the goal of expanding stormwater management programs.
  - Work with stakeholders to develop a more uniform MS4 annual report format that will facilitate tracking.
  - Examine local regulations and how they might inhibit LID projects.
  - Make progress on a recognition or awards program.
  - Highlight five local programs on H-GAC's website.

## Revisions

The work group does not recommend changes to the I-Plan.

## Implementation Strategies

### 4.1 Continue Existing Programs

- 80 MS4 programs will be continued.

- Not Started
- Initiated
- **In Progress**
- Completed

- Behind Schedule
- **On Schedule**
- Ahead of Schedule

#### **Annual Progress and Applicable Programming:**

- **Continued Program Administration.** Eighty MS4 permit areas are located partially or fully within the BIG project area. These programs have been used to identify best practices and supported by educational opportunities.

### 4.2 Model Best Practices

- Each year, BIG stakeholders will hold four to six networking meetings and will highlight five local programs.

- Not Started
- Initiated
- **In Progress**
- Completed

- Behind Schedule
- **On Schedule**
- Ahead of Schedule

#### **Annual Progress and Applicable Programming:**

- **Analysis and Online Resources.** H-GAC continued to acquire copies of annual reports for MS4 operators in the H-GAC region, post these reports online, and cross-compare and analyze them. The reports helped to identify innovative practices, opportunities for collaboration, and suggestions for future workshop and educational content. Moreover, they included specific contact information for each MS4 operator that can be used to collect future data and coordinate regional opportunities.

- **H-GAC Workshops.** H-GAC continued to host its annual series of workshops focusing on the six minimum control measures: illicit discharge detection and elimination, construction site runoff control, post-construction runoff control, pollution prevention/good housekeeping, public education and outreach, and public participation/involvement. The series also included a "Welcome to the MS4 Program" workshop in November 2012. Workshop content is being refined by reviewing annual reports. MS4 representatives are being asked to share information at the CWI workshops.

#### 4.3 Encourage Expansion of Stormwater Management Programs

- Within the next five years:
  - All permit holders shall expand or focus their existing programs; and
  - 30 previously unpermitted entities shall develop new programs.

- Not Started
- Initiated
- In Progress
- Completed
- Behind Schedule
- On Schedule
- Ahead of Schedule

##### Annual Progress and Applicable Programming:

- New General Permit Eligibility.** In May 2012, the U.S. Census Bureau released new maps of urban areas based on the 2010 Census. A preliminary review indicated that 13 cities and 124 special purpose districts will be subjected to the MS4 Phase II General Permit for the first time. However, many of these jurisdictions may qualify for waivers and/or may not be located inside the BIG project area. H-GAC hosted a "Welcome to the MS4 Program" workshop in November 2012.

#### 4.4 Promote Recognition Programs for Developments that Voluntarily Incorporate Bacteria Reduction Measures

- Within five years, BIG stakeholders should develop a recognition program and subsequently recognize communities and participants.
- Each year, two communities will analyze regulations and programs to accommodate participation in existing programs.

- Not Started
- Initiated
- In Progress
- Completed
- Behind Schedule
- On Schedule
- Ahead of Schedule

##### Annual Progress and Applicable Programming:

- Program Funding.** H-GAC received funding from the TCEQ to develop an awards program. Representatives from Harris County and the City of Houston volunteered to lead program development. BIG stakeholders recommended that the Bayou Preservation Association (BPA), Association of Water Board Directors (AWBD), and Greater Houston Builders Association (GHBA) be encouraged to participate.
- Green Built Gulf Coast Program.** The GHBA developed a green building certification program based on the National Green Building Standard ICC 700-2008. The program specifications have been tailored for the Gulf Coast's unique climate.

#### 4.5 Provide a Circuit Rider Program

- Each year, H-GAC will contact 50 stakeholders and provide five in-depth community consultations.

- Not Started
- Initiated
- In Progress
- Completed
- Behind Schedule
- On Schedule
- Ahead of Schedule

##### Annual Progress and Applicable Programming:

- Low Impact Development.** H-GAC received TCEQ funding to compile and examine local codes that may present an impediment to implementing LID. This information will help to identify local agencies that could utilize the services of a circuit rider to develop better codes that will allow for LID. The National Wildflower Center's LID project was identified as a model.

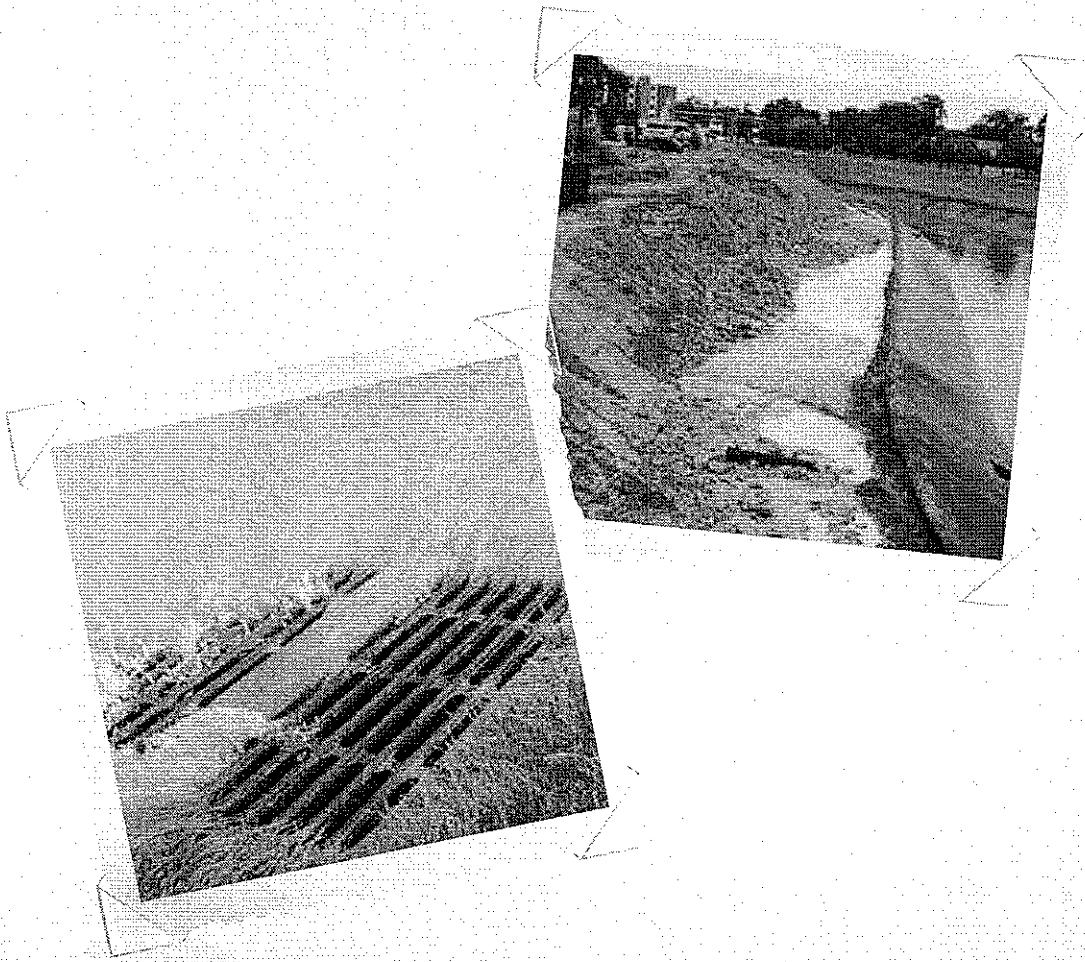
#### 4.6 Petition the TCEQ to Facilitate Reimbursement of Bacteria Reduction Measures

- Within three years, BIG stakeholders should receive letters of commitment or similar support from the TCEQ.

- Not Started
- Initiated
- In Progress
- Completed
- Behind Schedule
- On Schedule
- Ahead of Schedule

#### Annual Progress and Applicable Programming:

- Developer Reimbursements.** Various stakeholders continued conversations with the TCEQ regarding financing for water quality infrastructure. The purpose of this coordination is to facilitate municipal utility district (MUD) reimbursement to developers for stormwater quality features (which may otherwise be considered part of a developer's amenity package and not subject to MUD reimbursement) in their plans for development.



## Implementation Strategy 4.0: Stormwater and Land Development

The BIG project area has experienced rapid population growth resulting in increased land development, which in turn has led to challenges in maintaining waterways as areas for recreation. These changes may also impact bacteria levels in the waterways.

Bacteria sources, such as wastes from pets, wildlife, and even humans, can be washed into storm drains and then discharged into local waterways. Because stormwater systems are designed to quickly and efficiently remove stormwater from developments, stormwater often bypasses the natural vegetative barriers that filter sheet flow over the land. Thus, bacteria loading may be more concentrated. Infrastructure, such as pipes, inlets, culverts, interceptors, basins, reservoirs, outfalls, and channelized waterways, can also increase direct bacterial loading. The TMDLs for Buffalo and Whiteoak bayous indicate that stormwater from permitted municipal separate storm sewer systems (MS4s) is a significant source of bacteria loading.<sup>71</sup>

Existing requirements of MS4 permits address some important elements of bacteria loading in stormwater, offering an adaptive rather than prescriptive approach to bacteria reduction. Furthermore, many smaller cities and some unincorporated county areas do not currently have stormwater permits, but may become designated as an MS4-permitted community in the future, possibly because of new census data. Some smaller cities and unincorporated areas should be encouraged to voluntarily adopt the six elements of MS4 Phase II permits.<sup>72</sup>

Structural BMPs, such as modifications to stormwater outfalls that may reduce bacteria through aeration, treatment by sunlight, or physical removal of contaminants, have the potential to reduce bacteria loading into waterways. Because there is limited data regarding how well such BMPs might reduce bacteria loading, the BIG has identified the evaluation of the effectiveness of stormwater implementation activities as one of the top research priorities. (See Research Priority 10.1.) Any research, particularly research relevant to the BIG area, should be reported and shared with BIG stakeholders, through Implementation Activities 4.2, 9.2, and 9.4.2, so that stakeholders can devise appropriate strategies for integrating structural stormwater BMPs into their activities.

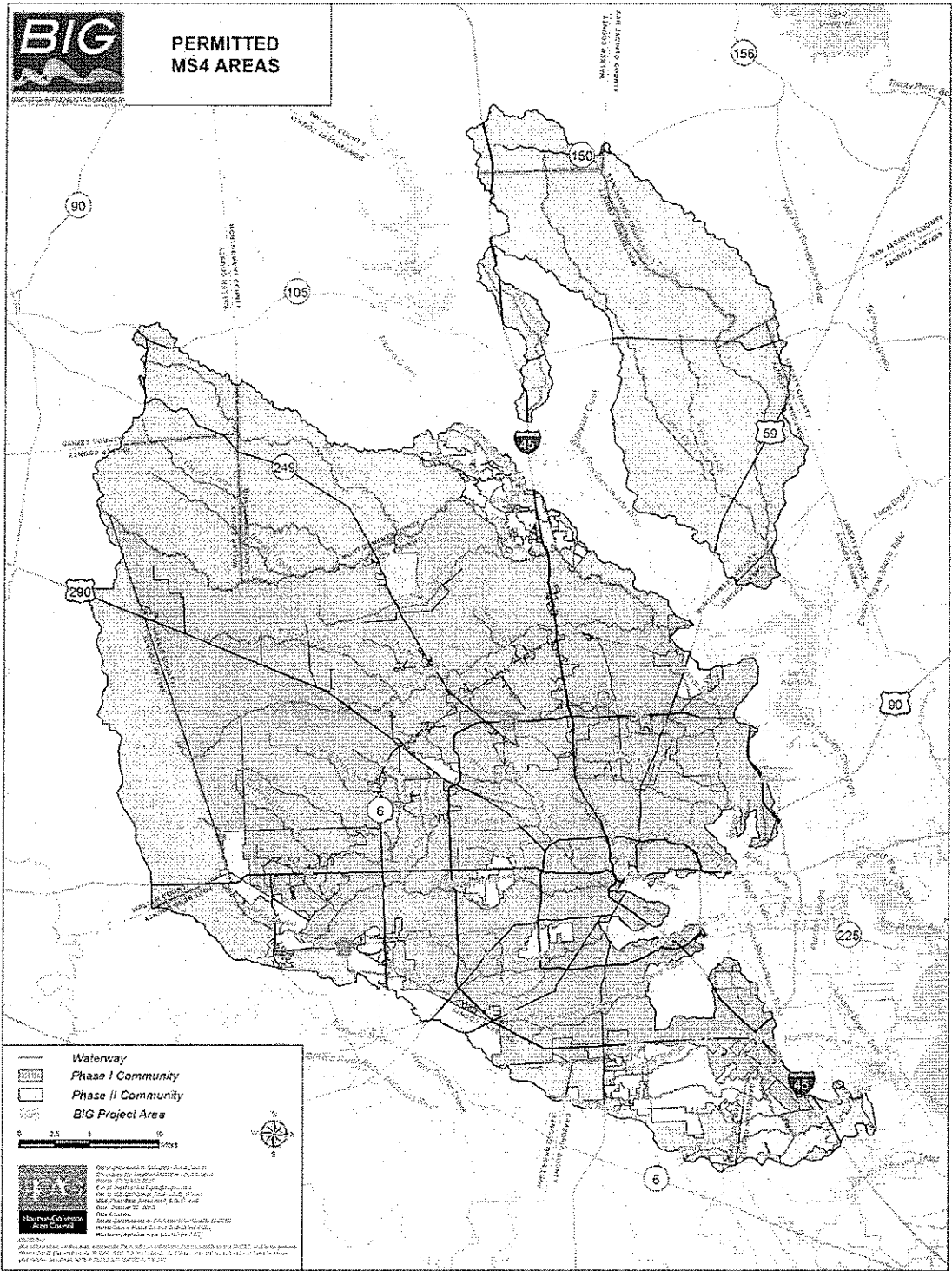
A map of MS4 areas in the region is shown in Figure 5. Examples of current programs are provided in Appendix F, along with a list of stormwater permits in the region provided in Appendix G.

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<sup>71</sup> (TCEQ 2009a, p. 44)

<sup>72</sup> (U.S. Environmental Protection Agency 2000)

**Figure 5: Map of Permitted MS4 Areas**



## Implementation Activity 4.1: Continue Existing Programs

Local governments, especially those with MS4 permits, already employ extensive and innovative stormwater and land development programs, some of which address other bacteria sources identified in this I-Plan. These programs shall be continued as deemed appropriate by the entities that manage them.

For both the library of best practices and the networking meetings, particular attention should be paid to identifying best practices that involve the following:

- How to implement structural BMPs and stormwater controls that address bacteria reduction,
- Opportunities for watershed-based policies and activities,
- Codes, design criteria, and other specifications that address stormwater bacteria loading,
- How to encourage the use of green infrastructure in street design, sidewalk design, and stormwater management programs,
- How to incorporate bacteria reduction elements into flood control features where practicable, and
- How impervious cover affects water quality and bacteria loading, and best practices to address potential negative influences of impervious cover.

## Implementation Activity 4.2: Model Best Practices

Existing programs can serve as models for other local governments and land developers in the project area. As resources allow, H-GAC shall provide forums for sharing information about existing programs and for coordinating collaboration.

### *4.2.1: Create and maintain an online library of best practices*

H-GAC or another appropriate entity will create and maintain an online library of stormwater and land development best management practices (BMPs) and stormwater controls specific to bacteria load reduction that have been implemented regionally. Local governments will provide information about their BMPs and stormwater controls, which may include ordinances, policies, and structural BMPs and stormwater controls.

### *4.2.2: Coordinate networking meetings*

As resources allow, H-GAC or another appropriate entity will facilitate a series of meetings relating to stormwater and land development BMPs and stormwater controls. Each meeting will highlight BMPs and stormwater controls implemented by MS4 permittees and focus on either a required element of an MS4 permit or BMPs and stormwater controls that fall outside the scope of the permit. These meetings should lead to discussion of model BMPs, stormwater controls, and other practices, including the identification of practical opportunities for collaboration at a watershed level. These meetings shall also



serve as a forum for collaborative development and maintenance of regionally accepted codes, design criteria, structural BMP information, effectiveness monitoring and information, and guidelines.

### **Implementation Activity 4.3: Encourage Expansion of Stormwater Management Programs**

Existing stormwater management programs shall be improved voluntarily, and the geographic application of stormwater programs shall be expanded voluntarily, unless EPA chooses to expand the definition of the area encompassed by an MS4. If, after five years, voluntary actions are not implemented, stakeholders shall consider mandatory expansion.

#### ***4.3.1: Encourage permitted MS4 communities to voluntarily expand and refine elements of their stormwater programs that address bacteria***

Local governments are encouraged to focus their existing programs on activities that are specific to bacteria reduction. The BIG encourages the TCEQ to consider bacteria when evaluating and approving MS4 permit renewals within the BIG project area.

#### ***4.3.2: Encourage local governments without MS4 permits to voluntarily develop and implement a stormwater management program to address bacteria loading***

Stormwater programs similar in structure and content to, or in conjunction with, MS4-permitted programs should be considered. A local government which does not require a stormwater permit should prepare, adopt, implement, and enforce as appropriate a stormwater management plan that meets the general requirements of the TCEQ's small MS4 general permit (TXR040000),<sup>73</sup> as suitable for their community. Elements of such a plan might include activities related to the six minimum control measures identified in a small MS4 general permit.<sup>74</sup>

#### ***4.3.3: If voluntary measures are not implemented or bacteria reduction is not being achieved, petition the TCEQ to mandate stormwater program development***

The BIG can petition the TCEQ to require activities that are bacteria-specific in MS4 permits or to designate communities that do not already have an MS4 permit. Starting in year four after the adoption of this I-Plan, H-GAC shall, provided sufficient resources are available, evaluate communities to determine whether they have developed or improved a stormwater program to reduce bacteria loading in waterways. Criteria that will be evaluated are formal adoption of the stormwater plan by elected

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<sup>73</sup> General Permit TXR040000 for Phase II (Small) MS4s (TCEQ 2007)

<sup>74</sup> For more information, see the EPA's Fact Sheet 2.0: Small MS4 Stormwater Program Overview (U.S. Environmental Protection Agency 2005)

officials of the local government, funding levels for the program, self-reports of stormwater activities, and bacteria levels in local water bodies.

The H-GAC will provide a report to the BIG for evaluation. If local governments have not modified or created a stormwater program by the end of year five after the adoption of the I-Plan, the BIG shall recommend that the TCEQ consider additional permit requirements for those communities.

#### **Implementation Activity 4.4: Promote Recognition Programs for Developments that Voluntarily Incorporate Bacteria Reduction Measures**

Several recognition programs already exist or are being developed that address land development and infrastructure. Many of these programs are high-profile, comprehensive programs that could have a positive effect on bacteria loading from these sources. However, the programs are not specific to either bacteria or the BIG region. For this reason, the BIG proposes two complementary elements of action, participating in existing recognition programs and develop a recognition program specific to stormwater for the region.

##### ***4.4.1: Encourage voluntary participation in existing recognition programs***

Several voluntary programs that address land development and stormwater have been developed or are being developed, including:

- *Leadership for Energy & Environmental Design 2009 for Neighborhood Development Rating System*<sup>75</sup>
- *International Green Construction Code*<sup>76</sup>
- *National Green Building Standard*<sup>77</sup>

Although these programs focus specifically on neither bacteria reduction nor this region, they do contain elements that may help reduce bacteria loading. The BIG encourages local governments, land developers, and stakeholders to promote these programs and similar programs as appropriate. Local governments shall analyze their local regulations and programs in an effort to eliminate hurdles to the attainment of the requirements in these programs.

##### ***4.4.2: Develop a recognition program specific to stormwater and land development in the BIG area***

As resources are available, H-GAC shall convene a committee and work with existing local groups to develop a voluntary certification or recognition program that will promote stormwater and land

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<sup>75</sup> (Congress for the New Urbanism, Natural Resources Defense Council, and the U.S. Green Building Council 2009)

<sup>76</sup> (International Code Council 2010)

<sup>77</sup> (National Association of Home Builders and the International Code Council n.d.)

development practices that are intended to reduce bacteria loading from stormwater and land development. The program may apply to developments, builders, developers, local governments, drainage districts, and others. The committee will consider, among other things:

- Criteria for development and redevelopment,
- Criteria for stormwater infrastructure,
- Integration with existing programs,
- Funding, and
- Scope of the program.

#### **Implementation Activity 4.5: Provide a Circuit Rider Program**

As resources are available, H-GAC shall manage a circuit-rider program to provide evaluation and technical assistance to communities implementing stormwater programs. In particular, the circuit rider can provide assistance in identifying and adapting model program elements for specific communities, identifying partnership opportunities, identifying funding mechanisms, and evaluating local regulations that might present obstacles to pursuing recognition programs outlined in this section. The circuit rider program shall also work toward the collaborative development and maintenance of regionally-accepted codes, design criteria, structural BMP information, effectiveness monitoring and information, and guidelines, which may improve consistency in land development and redevelopment practices.

#### **Implementation Activity 4.6: Petition the TCEQ to Facilitate Reimbursement of Bacteria Reduction Measures**

The BIG will work with TCEQ staff to interpret existing policies to facilitate MUD reimbursement to developers for stormwater quality features (which may otherwise be considered part of a developer's amenity package and not subject to MUD reimbursement) in their plans for development. As part of this discussion, the parties, including the engineering and development communities, will work to develop criteria which can be used to determine the eligibility of a water-quality feature for reimbursement. If necessary, the BIG shall write a letter to the TCEQ encouraging the adoption of policies.