

BIG I-PLAN WORKING DRAFT

Implementation Strategy 4.0: Storm Water and Land Development

Over the last several decades, the project area has experienced rapid population growth resulting in increased land development, which in turn 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 storm water systems are designed to quickly and efficiently remove storm water from developments, storm water 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 exacerbate direct bacterial loading. The TMDLs for Buffalo and Whiteoak bayous indicate that storm water from permitted Municipal Separate Storm Sewer Systems (MS4s) is a significant source of bacteria loading¹.

Existing requirements of MS4 permits address some important elements of bacteria loading in storm water, offering an adaptive rather than prescriptive approach to bacteria reduction. Furthermore, many smaller cities and some unincorporated county areas are not subject to MS4 requirements at this time, 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 the MS4 Phase II permit requirements.

Implementation Activity 4.1: Continue Existing Programs

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

Examples of current programs are provided in Appendix [XX to be determined], along with a list of MS4 permits in the region.

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. Elements of the program could include the following:

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

¹ TCEQ. *Eighteen Total Maximum Daily Loads for Bacteria in Buffalo and Whiteoak Bayous and Tributaries*. April 8, 2009, p. 44

BIG I-PLAN WORKING DRAFT

and storm water controls. Particular attention should be paid to identifying best practices that involve the following:

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

4.2.2 *Coordinate networking meetings.* As resources allow, H-GAC or another appropriate entity will facilitate a series of meetings relating to storm water and land development BMPs and storm water controls. Each meeting will highlight BMPs and storm water controls implemented by MS4 permittees and focus on either a required element of an MS4 permit or BMPs and storm water controls that fall outside the scope of the permit. These meetings should lead to discussion of model BMPs, storm water 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, which will greatly improve land development and redevelopment practices in the region.

Implementation Activity 4.3: Encourage Expansion of Storm Water Quality Programs

Existing storm water quality programs shall be improved voluntarily, and the geographic application of storm water 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 storm water programs that address bacteria.* Local governments are encouraged to focus their MS4 programs on activities that are specific to bacteria reduction. The BIG encourages the TCEQ to consider bacteria loading when evaluating and approving MS4 permit renewals.

4.3.2 *Encourage local governments without MS4 permits to voluntarily develop and implement a storm water quality program to address bacteria loading using the six minimum control measures identified in the Phase II MS4 permit.* The BIG encourages local governments to develop storm water programs similar in structure and content to, or in conjunction with, MS4-permitted programs. A local government which does not require MS4 permit coverage should prepare, adopt, implement, and enforce a storm water quality management plan that meets the general requirements of the TCEQ's small MS4 general permit (TXR40000), as appropriate for their community.

BIG I-PLAN WORKING DRAFT

4.3.3 *If voluntary measures are not implemented or bacteria reduction is not being achieved, petition TCEQ to mandate storm water program development.* The BIG can petition 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 the BIG I-Plan, H-GAC shall, provided sufficient resources are available, evaluate communities to determine whether they have developed or improved a storm water program to reduce bacteria loading in waterways. Criteria that will be evaluated are: formal adoption of the storm water plan by elected officials of the local government, funding levels for the program, self-reports of storm water activities, and bacteria levels in local water bodies.

The H-GAC will provide a report to a stakeholder committee for evaluation. If local governments have not modified or created a storm water program by the end of year five after the adoption of the BIG I-Plan, the BIG shall recommend that 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 elements of action:

4.4.1 *Encourage voluntary participation in existing recognition programs.* Several voluntary programs that address land development and storm water have been developed or are being developed. Example programs include:

- LEED 2009 for Neighborhood Development Rating System. Created by the Congress for the New Urbanism, Natural Resources Defense Council, and the U.S. Green Building Council.
- International Green Construction Code. Being developed by the International Code Council, the American Institute of Architects, and ASTM International.
- National Green Building Standard. Created by the National Association of Homebuilders and the International Code Council.

While these programs do not focus on bacteria or the BIG area, 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. Moreover, local governments shall analyze their local regulations and programs in an effort to eliminate hurdles to the attainment of these standards.

4.4.2 *Develop a recognition program specific to storm water and land development in the BIG area.* As resources are available, H-GAC shall convene a committee and develop a voluntary certification or recognition program that will promote storm water and land development practices that are intended to reduce bacteria loading from storm water and

BIG I-PLAN WORKING DRAFT

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 storm water 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 that are implementing storm water 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 identified in “Implementation Activity 4.4: Promote Recognition Programs for Developments that Voluntarily Incorporate Bacteria Reduction Measures.” The circuit rider program shall also work towards the collaborative development and maintenance of regionally accepted codes, design criteria, structural BMP information, effectiveness monitoring and information, and guidelines, which will greatly improve land development and redevelopment practices in the region.

Implementation Activity 4.6: Petition 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 storm water 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.