Implementation Strategy 6.0: Illicit Discharges and Dumping

Illicit discharges and dumping illegally introduce contaminants into waterways. Sources include illicit discharges and connections to storm sewers, as well as direct discharges and dumping to the water body itself. While a wide variety of sources may introduce contaminants to a water body, the following implementation activities specifically address bacterial contamination, both mobile and stationary.

Many of the TMDLs in the BIG region indicate that illicit discharges and dumping account for significant dry-weather bacteria loadings. Outfalls in Buffalo and Whiteoak Bayous TMDL have bacterial *E. coli* loads ranging from 7.43 X 10^5 to 2.21 X 10^{11} MPN/day.[87] In Whiteoak Bayou, these discharges represented the largest source of indicator bacteria loading.[88] Similarly, in Clear Creek, estimates indicate that between a quarter and a third of all outfalls have illicit dry-weather discharges, and that more than 20 percent of these had *E. coli* concentrations of over 1000 cfu/mL, more than eight times the in-stream standard.[89]

Stakeholders have expressed concern that mobile waste haulers may contribute bacteria directly to area bayous. Waste from septic systems, grease traps, and grit traps is hauled from its originating point. While regulations dictate this waste be properly transported and recorded on a manifest, anecdotal evidence raises suspicion that this waste may not always be properly disposed in a treatment facility.

Given the transitory nature of these discharges, there are no flow-adjusted estimates for their contributions. They have been a widely cited potential source among the project stakeholders. Sampling data, such as unexplained spikes in bacteria levels with no corresponding permitted outfalls or sources nearby, may help identify illicit discharge sources.

Programs to detect and eliminate these illegal discharges are an integral part of TPDES Phase I and II storm water permits. As such, the activities discussed in this section may also be considered as part of Implementation Strategy 4.0. While all communities and jurisdictions will participate in implementation efforts, the extent to which these activities are applied may vary by individual need and ability.

Implementation Activity 6.1: Detect and Eliminate Illicit Discharges

Jurisdictions shall devise and implement a program, as they deem practicable, to detect and eliminate illicit discharges that assist them in identifying sources for further enforcement action. This implementation activity is similar to the programs required under storm water permits, but with a

[87] (TCEQ 2009a)

[88] (TCEQ 2009a)

[89] (TCEQ 2008b)

specific focus on direct, bacteria-laden discharges. Existing illicit discharge programs can be modified to focus on bacteria.

Elements of the detection portion of the program may consist of:

- Conducting field surveys of waterways and associated drainage channels,
- Reviewing existing spatial data (geographic information system, engineering drawings, etc) with on-site visual inspections of water body channels,
- Producing or revising a storm sewer map of all outfalls and the names and locations of all waters of the state that receive discharges from the outfalls,
- Producing or revising, to the level of detail that meets the specific need of the government entity, an initial record of located discharges for comparison against permitted discharges (storm water outfalls, permitted industrial outfalls, etc), and
- Reviewing, verifying, and updating the program and data on a regular basis.

Sampling data, where available, may help predict where unidentified illicit point sources may be located (such as unexplained spikes in bacteria levels with no corresponding permitted outfalls or sources nearby). Publicity and outreach efforts regarding these actions, indicating enforcement is imminent, will help promote self-enforcement by current or potential point source dischargers.

Next, the program will seek to eliminate illicit discharges to the extent allowable under state and local law and as resources allow. Entities will pursue elimination through their established methods. If the existing abilities to eliminate these discharges are deemed insufficient, the local entity shall expand their program as detailed in Implementation Activity 6.2, as appropriate. Several illicit discharge detection programs already exist and may be used as guides by stakeholders for developing or altering their approach.[90]

At least annually, local governments shall provide reports of how many illicit discharges have been found and how many have been eliminated. Provision of this information in a copy of an existing report is sufficient.

Implementation Activity 6.2: Improve Regulation and Enforcement of Illicit Discharges

To the extent allowable under state and local laws, an ordinance or other regulatory mechanism must be utilized to prohibit and eliminate illicit discharges. Each jurisdiction must also establish guidelines for enforcement for removing the source of an illicit discharge.

[90] An example, *A Guidance Manual for Identifying and Eliminating Illicit Connections Municipal Separate Storm Sewer Systems (MS4)*, is available online. (Galveston County Health District 2002)

Stakeholders are concerned current regulations and penalties often fail to act as deterrents, especially given a perceived low level of standardization and enforcement. Jurisdictions shall review and enforce existing regulations, or, as appropriate, develop or improve regulations relating to illicit discharges.

As resources are available, H-GAC shall compile local regulations and make the information available for other communities to emulate as appropriate. H-GAC will also facilitate coordination of standardization, as resources are available, possibly as part of the circuit rider program described in Implementation Strategy 4.0.

Implementation Activity 6.3: Monitor and Control Waste Hauler Activities

Waste haulers routinely transport bacteria-laden materials, including septic, grease trap, and grit trap wastes. When this highly concentrated, untreated waste is discharged into waterways instead of being properly disposed of or treated, it may represent a significant local increase in bacterial loading. Under this implementation activity, bacteria control will occur through the development of monitoring and control programs by individual communities and by a pilot program to monitor waste hauler fleets.

6.3.1: Develop regulations pertaining to waste hauler activities

While many jurisdictions have some degree of regulation regarding waste hauler activities, some programs have had greater success than others. Jurisdictions will, according to their needs and as practicable, create or update a program designed to monitor and control waste hauler activities. This program should integrate inspection and enforcement capacities in order to ensure the ability to provide a strong disincentive for non-compliance. State law[91] allows counties and municipalities to permit and regulate the activities of septic, grease trap, and grit trap waste haulers, up to and including criminal penalties for non-compliance. As resources are available, H-GAC shall compile and make available information about the most effective waste hauler programs.

The City of Pasadena's program, for example, requires all waste haulers have a license or permit, know the nature of their cargo, and maintain a manifest. The program sets forth penalties for violations of these and other requirements, including revocation of permits and monetary fines for each day of non-compliance.[92] Stakeholders may choose to pursue a regional approach to better track haulers who may operate in numerous jurisdictions. A previous regional project, the Environmental Enforcement Database Application (maintained from 2003-2008 as a pilot project by the H-GAC) shared secure

[91] See Tex. Health & Safety Code Ann. § 368 (2011) (Subchapter A - Transporters of Grease Trap, Sand Trap, and Septic Waste)

[92] See City of Pasadena, Tex., Code of Ordinances, ch. 37 (Water, Sewers and Sewage Disposal, Article VIII - Liquid Waste Generators and Transporters)

information for local enforcement agencies regarding waste hauler violations. A similar project may help individual entities identify and curtail violators.

6.3.2: Waste Hauler Fleet Tracking Pilot Program

To promote accountability and compliance among waste haulers, the BIG will consider pursuing a grant to develop a pilot program to install global positioning transponders and/or other apparatus or technology on the vehicles of waste haulers who have violated regulations relating to waste transport and disposal. H-GAC, the TCEQ, local jurisdictions, and waste companies would have access to the transponder feed to determine whether individual haulers are making unscheduled stops that may correlate to illicit discharges. Potential funding sources include EPA Section 319(h) nonpoint source program funding (via the TCEQ or the Texas State Soil and Water Conservation Board), State Revolving Fund monies through the Texas Water Development Board, and private foundations.

Load Implementation Plan for Knox Creek and Pawpaw Creek,[150] indicates bacteria and sediment removal rates of up to 85 percent for erosion and sediment controls. If the rules, guidelines, and best management practices for our region are implemented, best professional judgment suggests that bacteria loads from construction sites will be substantially reduced.

Implementation Strategy 6.0: Illicit Discharges and Dumping (IS6)

5 percent reduction in loading from illicit discharges and dumping each year

The estimated load reduction from the three main activities within IS6 is 5 percent. Best professional judgment suggests that a slight to moderate decrease in loading may be accomplished.

Implementation Strategy 7.0: Agriculture and Animals (IS7)

10 percent reduction in loading from agriculture and animals each year

The estimated load reduction from the two main activities within IS7 is ten percent each year. Studies of animal-population-based estimates show up to a 65 percent reduction in loading per population addressed[151] This, combined with the assumption that a limited number of populations will be addressed each year, suggests only mild load reductions as a result of these activities.

Implementation Strategy 8.0: Residential (IS8)

2 percent reduction of load from residential sources each year

The estimated load reduction from the main activity within IS8 is 2 percent each year. Studies of public health campaigns suggest that advertising and marketing has a limited influence on behavior modification, although sustained efforts over multiple years can lead to improved results.[152] Best professional judgment suggests a slight decrease in loading may be accomplished.

[150] (Map Tech, Inc. and New River-Highlands RC & D 2008)

[151] (Wagner, et al. 2008)

[152] (Abroms and Maibach 2008)

Table 26: Implementation Strategy 6.0: Illicit Discharges and Dumping

(a) Causes/ Sources	(b) Implementation Activities and Targeted Critical Areas	(c) Estimated Potential Load Reduction	(d) Technical and Financial Assistance Needed for Each Activity	(e) Education Component for Each Activity	(f) Schedule of Implementation for Each Activity	(g) Interim, Measureable Milestones for Each Activity	(h) Indicators to Measure Progress	(i) Monitoring Component	(j) Responsible Entity
Illicit Discharges and Dumping	Implementation Activity 6.1 (IA 6.1): Detect and eliminate illicit discharges	In conjunction with IAs 6.2 and 6.3, a 5% reduction in indicator bacteria loading from illicit discharges and dumping is expected over 25 years.	Technical- several illicit discharge detection programs already exist and may be used as guides, including publications by EPA and TCEQ and H-GAC's publication "NPS Guide to Identifying Illicit Connections." Engineering or other specialized technical help may be necessary in some communities Financial- existing local funding and grant funding when available	Collaborative workshops, offered as an implementation activity for storm water, will address detection and elimination of illicit discharges.	As resources are available, implementation of this activity will begin immediately and will continue for the entire implementation process. Initial surveys/maps shall be completed within ten years.	Initial surveys shall be completed within ten years.	Information included in annual reports to the BIG Number of illicit discharges resolved each year Number of surveys completed Number of illicit discharges identified each year	H-GAC will collect reports, which may be in the form of existing reports, from jurisdictions such as counties and cities.	MS4 Permit holders and the state: identify and eliminate illicit discharges, map system, report progress Individual violators: eliminate illicit discharges H-GAC: collect and share information on the progress made each year BIG: Evaluate progress
Illicit Discharges and Dumping	Implementation Activity 6.2 (IA 6.2): Improve regulation and enforcement of illicit discharges	In conjunction with IAs 6.1 and 6.3, a 5% reduction in bacteria loading from illicit discharges and dumping is expected over 25 years.	Technical- regulations, ordinances, and orders of other communities, as collected and shared by HGAC, may serve as models. Legal assistance may be necessary. Financial- existing local funding and grant funding as available	Collaborative workshops, offered as an implementation activity for storm water, will address detection and elimination of illicit discharges. Provision of example regulations provided on website As resources are available, a circuit rider will provide information and assistance Jurisdictions who choose to change or add regulations will need to offer public comment and participation as appropriate.	As resources are available, implementation of this activity will begin immediately and will continue for the entire implementation process.	Compile and share all existing regulations in project area within five years Each community shall examine their regulations and policies within five years One community shall adopt new or revised regulations every five years	Information included in annual reports to the BIG Number of new or revised regulations	H-GAC will collect reports, which may be in the form of existing reports, from jurisdictions such as counties and cities.	MS4 Permit holders and the state: Examine relevant regulations and make changes as appropriate; report progress H-GAC: collect and share information about communities' regulations; collect and share information on the progress made each year BIG: Evaluate progress

(a) Causes/ Sources	(b) Implementation Activities and Targeted Critical Areas	(c) Estimated Potential Load Reduction	(d) Technical and Financial Assistance Needed for Each Activity	(e) Education Component for Each Activity	(f) Schedule of Implementation for Each Activity	(g) Interim, Measureable Milestones for Each Activity	(h) Indicators to Measure Progress	(i) Monitoring Component	(j) Responsible Entity
Dumping by waste haulers	Implementation 6.3 (IA 6.3): Monitor and control waste hauler activities.	In conjunction with IAs 6.1 and 6.2, a 5% reduction in bacteria loading from illicit discharges and dumping is expected over 25 years.	Technical- regulations, ordinances, and orders of other communities, as collected and shared by H-GAC, may serve as models. Legal assistance may be necessary. H-GAC's solid waste program may be able to provide assistance. Financial- existing local funding and grant funding as available	Collaborative workshops, offered as an implementation activity for storm water, will address detection and elimination of illicit discharges. Provision of example waste hauler programs provided on website Jurisdictions who choose to change or add regulations will need to offer public comment and participation as appropriate.	As resources are available, implementation of this activity will begin immediately and will continue for the entire implementation process.	Compile and share all existing regulations in project area within five years Each community shall examine their regulations and policies within five years One community shall adopt new or revised regulations every five years One waste hauler fleet tracking pilot program shall be started within five years	Information included in annual reports to the BIG Number of new and revised regulations Number of new programs	H-GAC will collect reports, which may be in the form of existing reports, from jurisdictions such as counties and cities.	MS4 Permit holders and the state: Examine relevant regulations, make changes as appropriate; report progress H-GAC: collect and share information about communities' regulations; collect & share information about progress annually Funding recipient for waste hauler fleet tracking pilot program: manage program, provide reports BIG: Evaluate progress