

**Waste Water Treatment Facility Workgroup  
Meeting Agenda  
Thursday, January 16, 2014  
1:00 PM to 3:00 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 1.0 WWTF**

Workgroup will review data source availability and past year BIG implementation activities related to I-Plan Strategy 1.0:

Implementation Activity 1.1: Impose More Rigorous Bacteria Monitoring Requirements

Implementation Activity 1.2: Impose Stricter Bacteria Limits for WWTF Effluent

Implementation Activity 1.3: Increase Compliance and Enforcement by the TCEQ

- 1.3.1 – Allow unannounced inspections and focused investigations on all facilities, including sampling-only investigations
- 1.3.2 – Consider increasing TCE staff or contract with local programs to increase inspections and reviews

Implementation Activity 1.4: Improve Design and Operation Criteria for New Plants

Implementation Activity 1.5: Upgrade Facilities

Implementation Activity 1.6: Use Treated Effluent for Facility Irrigation

**Discussion: Review I-Plan Strategy 1.0 WWTF 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

**January 23, 2014:** Sanitary Sewer Systems

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

**February 11, 2014:** Residential & Outreach

**February 13, 2014:** Illicit Discharges & Dumping

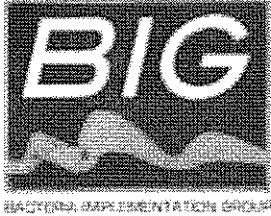
**February 11, 2014:** Animals & Agriculture

**February 13, 2014:** Onsite Sanitary Sewage Facilities

**March 11, 2014:** Watershed Outreach

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

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



**Wastewater Treatment Facility Work Group  
DRAFT Meeting Notes  
Thursday, February 28, 2013  
10:00 AM to noon  
H-GAC Conference Room C, Second Floor**

### **Attendees**

Frank Green (Montgomery County), Jonathan Holley (Harris County FCD), Steve Hupp (Bayou Preservation Association), Tom Ivy (Texas Stream Team), Carol Labreche on phone (City of Houston), Alisa Max (Harris County), Scott Nichols (Montgomery County), Ray Pavlovich (Nottingham Country MUD), Rachel Powers (H-GAC), Mary Purzer (AECOM), Kathy Richolson (Gulf Coast Waste Disposal Authority),

### **Call to Order/Welcome/Introductions**

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

### **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 1.0: Wastewater Treatment Facilities

- 1.1: Impose More Rigorous Bacteria Monitoring Requirements—Interim Milestones: Within five years, all of the permits should have had renewals initiated.
  - H-GAC will review permits after January 30, 2013, and DMR reports to confirm implementation.
  - The TCEQ tries to renew permits within a basin on the same five-year schedule. The following is a list of the schedule. We are already through many of these, although the West Fork and Clear Creek are both coming up soon. Basin Permitting Schedule (TAC Title 30 §305.71) expiration dates:
    - March 1, 2012: 1017 White Oak Bayou above tidal
    - May 1, 2012: 1014 Buffalo Bayou above tidal
    - June 1, 2012: 1010 Caney Creek, 1011 Peach Creek, 1013 Buffalo Bayou tidal
    - September 1, 2012: 1007 (Brays, Sims, Hunting, metro)
    - March 1, 2012: 1016 Greens Bayou above tidal
    - February 1, 2013: 1009 Cypress Creek
    - March 1, 2013: 1008 Spring Creek
    - May 1, 2013: 1006 (inc. Halls Bayou)
    - July 1, 2013: 1004 West Fork
    - September 1, 2013: 1100 Clear Creek
- 1.2: Impose Stricter Bacteria Limits for WWTF Effluent —Interim Milestones: Within five years, all of the permits should have had renewals initiated.
  - Rachel reported that H-GAC has done some preliminary analysis of DMR data. Some highlights of the preliminary studies include the following:
    - There are very few reported values for enterococci.
    - Exceedances at small plants was statistically correlated with the percentage of permitted flow—the higher the flow relative to permitted capacity, the more likely an exceedance. This did not apply to medium and large plants.
    - Based on reported flow and bacteria levels in DMRs, the largest loads come from large facilities.
    - H-GAC identified flaws in some of the data that need to be addressed, and so Rachel did not hand out copies of the preliminary analysis.
  - Participants asked that H-GAC look at the following:
    - the age of the plant to see if there was a correlation with exceedances (or bacteria levels in general)
    - Correlation to rainfall events
    - Difference between UV and Chlorination disinfection
  - H-GAC will continue to review permits in the BIG project area for implementation. Up to this point, H-GAC has been doing a consistent job of including bacteria limits in domestic permits at the appropriate limit.
  - H-GAC will review permits after January 30, 2013, for compliance in Clear Creek watershed, which did not include the reduced limits since the TMDL was approved prior to the TCEQ decision to include bacteria limits.
  - H-GAC will continue to analyze DMR data to confirm implementation.

- 1.3: Increase Compliance and Enforcement by the TCEQ—Interim Milestones: An increase each year in:
  - The number of unannounced inspections conducted each year
  - The number of focused sampling investigations each year
  - The percentage of plans and specifications reviewed
  - The percent of DMRs reviewed
  - The number of other investigations conducted
  - The ability of TCEQ to conduct focused sampling investigations
  - Sources of data:
    - TCEQ's Annual Enforcement Report
    - TCEQ Regional Office data
  - Rachel reported that she had not had the opportunity to dig into this information for this year.
- 1.4: Improve Design and Operation Criteria for New Plants—Interim Milestone: Every five years, 20% of local governments will have considered whether to adopt stricter requirements. Note: the plan indicates that the revision process should start in year six of the plan (2018).
  - Harris County described their new program to review select plans for WWTF in Harris County. When a construction permit is submitted to Harris County for a WWTF, the permit will need to be accompanied by an information sheet about the facility. Based on information on the sheets (and possibly knowledge of the facility, engineer, or operator), a percentage of those plans will be reviewed by Harris County or a contractor to confirm compliance with state and local requirements for WWTF. This will only apply to some domestic WWTF and only in some situations. This program will probably start June 1, 2013.
  - TCEQ Chapter 217 is still open for input, and it still does not reference the old "grandfather" chapter 317. Stakeholders are encouraged to provide input during the process.
- 1.5: Upgrade Facilities—Over 25 years, all facilities requiring upgrades in order to meet bacteria limits in their permits will have been upgraded.
  - Stakeholders suggested that H-GAC track permit amendments to determine if upgrades were made to address bacteria. Harris County Pollution Control enforcement (Denise Hall) may be able to provide assistance.
- 1.6: Consider Regionalization of WWTFs—Interim Milestone: Develop a process of targeting WWTFs that are chronically non-compliant
  - No progress was reported.
- 1.7: Use Treated Effluent for Facility Irrigation—Interim Milestone: One WWTF shall install and use a new irrigation system utilizing treated effluent every five years.
  - Rachel reported that H-GAC had been examining *Chapter 210: Use of Reclaimed Water* to identify ways to identify facilities that are reusing water.

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

The work group reviewed the draft Implementation Strategy Cover Sheet for the Animal & Agriculture Strategy.

There were 10 attendees including 4 BIG members and 6 alternates.

The group proposed the following changes to the draft At-a-glance table:

- For IA 1.4, change status to "No information."
- For IA 1.6, change status to green, and to read, "Started, On schedule."

The proposed wording for Progress was appropriate.

The group proposed the following changes to the draft Achievements section:

- Add the number and percentage of facilities that are sampling for bacteria.

The group proposed the following changes to the draft Focus section:

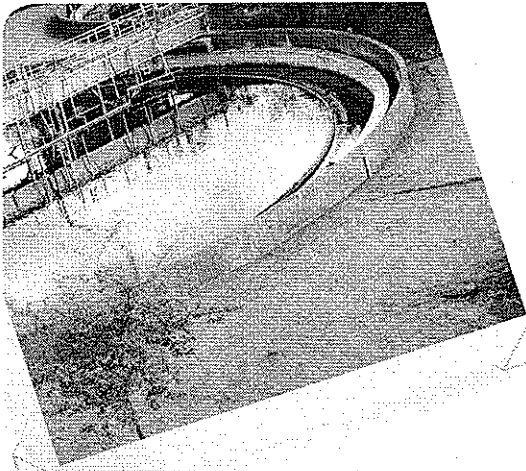
- Provide more training for operators.
- The Harris County plan review initiative.

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

### **Adjourn**

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

**Proposed WWTF Work Group Meeting: February 14, 2014, at the City of Houston's 69<sup>th</sup> Street Plant.**



# WASTEWATER TREATMENT FACILITIES

## 1

### Main Summary

Regulation and monitoring of wastewater treatment facilities (WWTFs) directly influences bacterial levels in area waterways. This is significant as most of the region's waterways have minimal natural flows and consist primarily of wastewater effluent, except during storm events. Until recently, the level of bacteria loading from WWTFs has been largely unknown because state permitting processes did not require bacterial testing (except in specific circumstances). Results from limited monitoring in the BIG project area suggest that three percent of all results reported exceed the geometric mean or grab sample limit. This is typically the result of insufficiently treated effluent and unauthorized or accidental discharge.

BIG stakeholders have focused implementation strategies on permitting, Texas Commission on Environmental Quality (TCEQ) compliance and enforcement, facility design and upgrades, "regionalization" of WWTFs (i.e., consolidation of multiple smaller plants into larger facilities that serve broader areas), and re-use of effluent to reduce the volume discharged into waterways. Recent efforts have involved examining permit limits, effluent data, compliance, and enforcement.

### Work Group Activities

Meeting February 28, 2013. 10 attendees, including four BIG members and six alternates.

#### Progress

Progress has been adequate. Activity has begun and is ongoing for several implementation activities.

#### Achievements

- H-GAC and BIG stakeholders:
  - Implemented a system for checking new permits for conformity with BIG recommendations.
  - Identified data sources for tracking compliance and enforcement activities.
  - Began analysis of self-reported bacteria daily monitoring report (DMR) data.
- Harris County implemented strategies to conduct supplemental checks of WWTF plans.
- 271 facilities, representing 47 percent of facilities in the BIG, now have bacteria limits in their permits.

**Focus**

- H-GAC and BIG stakeholders aim to:
  - Participate in the comment process for Title 30, Chapter 217 of the Texas Administrative Code, which proposes changes to the Design Criteria for Domestic Wastewater Treatment Systems.
  - Work with the TCEQ on facilitating compliance and enforcement.
  - Continue checks of permits and analysis of DMR data.
  - Provide more training for operators.
- Harris County will continue development of a new program to review design plans for new and modified WWTFs.

**Revisions**

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

### Implementation Strategies

#### 1.1 Impose More Rigorous Bacteria Monitoring Requirements

- *Within five years, all of the WWTF permits should have had renewals initiated to include more rigorous monitoring requirements.*

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

WWTFs in the BIG project area must increase their monitoring frequencies. This chart shows the number of facilities (Y) that have increased frequencies in their permit or facilities (N) that do not have increased frequencies in their permit.

**Monitoring Frequencies**

Flow (mgd)	Y	N	Not Indicated in Database
0.0-0.1	1	55	18
0.1-0.5	3	67	8
0.5-1.0	0	45	11
1.0-5.0	0	35	19
5.0-10.0	0	3	2
>10.0	1	1	2
<b>Total</b>	<b>5</b>	<b>206</b>	<b>60</b>

## 1.2 Impose Stricter Bacteria Limits for WWTF Effluent

- *Within five years, all of the WWTF permits should have had renewals initiated to include more stringent limits for bacteria in effluent.*

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

**DMR Findings.** H-GAC analyzed DMR for WWTF permits in the project area. The following observations were made:

- There were very few reported values for *Enterococcus*.
- The largest bacterial loads came from large WWTFs.
- Exceedances at small WWTFs were proportionate with the percentage of permitted flow. Therefore, the higher the flow relative to permitted capacity, the more likely an exceedance. This correlation did not apply to medium and large facilities.
- H-GAC identified flaws in some of the data that needs to be addressed in the future.

**Future Research.** BIG stakeholders asked H-GAC to conduct further research on the following topics:

- Age of WWTFs to identify any potential correlations with exceedances (or bacteria levels in general);
- Correlation to rainfall events; and
- Differences between ultraviolet (UV) and chlorination disinfection.

## 1.3 Increase Compliance and Enforcement by the TCEQ

- *Each year, TCEQ can address low numbers of investigations and renewals by increasing:*
  - *The number of unannounced inspections conducted;*
  - *The number of focused sampling investigations;*
  - *The percent of plans and specifications reviewed;*
  - *The percent of DMRs reviewed;*
  - *The number of other investigations conducted; and*
  - *The ability of the TCEQ to conduct focused sampling investigations.*

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

**No Progress Reported.** BIG set a goal of inspecting facilities every two years. To meet the goal, the BIG recommended that the TCEQ might need to allow for less time-consuming inspections or to increase the number of staff conducting investigations. Information describing TCEQ enforcement activities is available through three sources: the local TCEQ office, the TCEQ's Annual Enforcement Report compiled in Austin, and the EPA's Integrated Compliance Information System. Recent data has not been compiled at the time of this report.



#### 1.4 Improved Design and Operation Criteria for New WWTFs

- Every five years, at least 20 percent of local governments should consider whether to adopt stricter requirements. Note: The I-Plan indicates the revision process should start in year six of implementation.

Not Started

Initiated

In Progress

Completed

Behind Schedule

On Schedule

Ahead of Schedule

**Harris County's New WWTF Program.** In 2013, Harris County will implement a new WWTF program that reviews select WWTF plans. When a WWTF construction permit is submitted to Harris County, a percentage of WWTF plans will be reviewed in detail to confirm compliance with state and local requirements.

**New State Design Criteria of Domestic WWTFs.** The TCEQ's proposed new Chapter 217 of the Texas Administrative Code is intended to update WWTF standards and criteria with modern-day engineering practices, and to reflect the current permitting practices of the TCEQ. Stakeholders are encouraged to provide input during the ongoing comment period.

#### 1.5 Upgrade Facilities

- WWTFs not meeting effluent limits should upgrade or repair their facilities to comply with individual permits.

Not Started

Initiated

In Progress

Completed

Behind Schedule

On Schedule

Ahead of Schedule

**Permit Amendments.** BIG stakeholders recommended that H-GAC staff track permit amendments. This process could be used to determine if WWTF upgrades were made to address bacteria. Harris County Pollution Control enforcement may be able to provide assistance.

#### 1.6 Consider Regionalization of WWTFs

- Regulators should develop criteria for identifying chronically non-compliant WWTFs.
- Regulators should document the number of non-compliant WWTFs identified using said criteria.
- Regulators should document the number of chronically non-compliant WWTFs that have considered regionalization.

Not Started

Initiated

In Progress

Completed

Behind Schedule

On Schedule

Ahead of Schedule

**No Progress Reported.** If a WWTF continues violating bacteria limits set in its Texas Pollutant Discharge Elimination System (TPDES) permit, the BIG encourages the TCEQ or any local government with jurisdictional authority to require the WWTF to consider regionalization. This practice involves the consolidation of multiple smaller plants into larger facilities that serve broader areas.

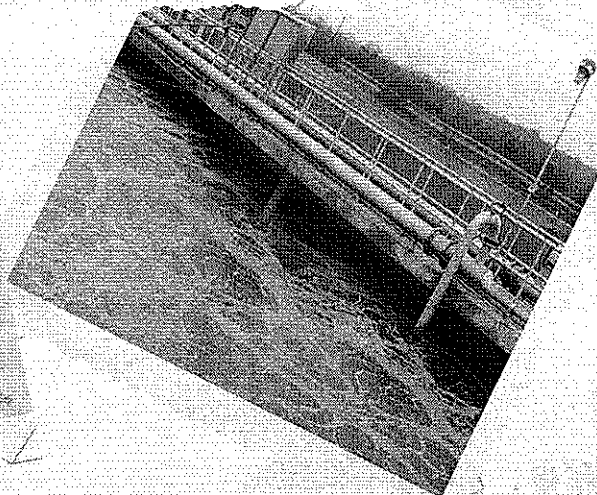
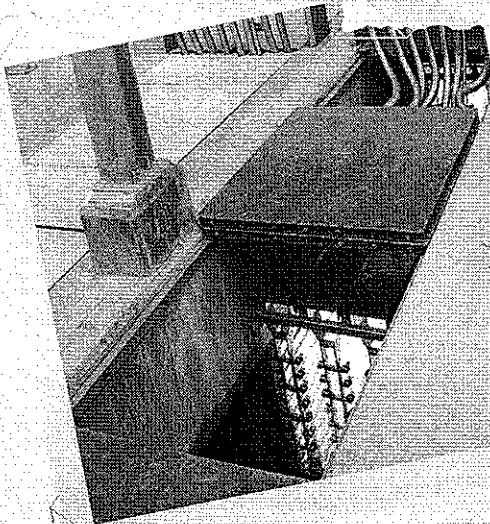
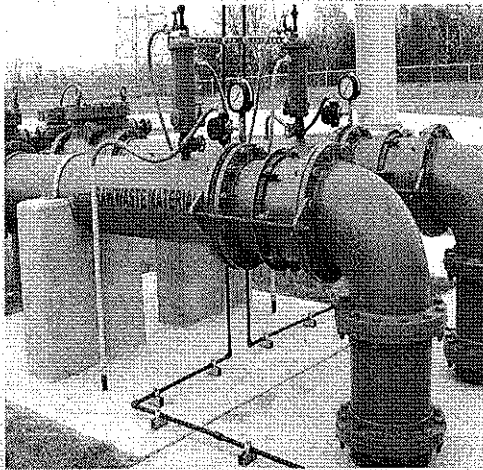
## 1.7 Use Treated Effluent for Facility Irrigation

- Every five years, one WWTF in the project area shall install a new irrigation system that uses treated effluent.

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

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

**Requirements for Reclaimed Water.** H-GAC staff examined Chapter 210 of the Texas Administrative Code to identify ways facilities are reusing water. The rules apply to producers, providers, and users of reclaimed water.



## Implementation Strategy 1.0: Wastewater Treatment Facilities

Although bacteria are found in fecal waste of all warm-blooded animals, it is the intent of the BIG to focus resources on bacteria from human sources.

In Texas, the level of bacteria loading from wastewater treatment facilities (WWTFs) is largely unknown because, until recently, their permits have not required them to test for bacteria, with the exception of facilities utilizing an ultraviolet disinfection system. However, non-compliant WWTFs were designated in the Clear Creek TMDL as one of the most probable sources of bacteria in the region's waterways.<sup>30</sup> Results from limited monitoring of bacteria in the BIG region suggests that while levels of indicator bacteria in effluent from individual WWTFs is typically low, at any given time approximately 5 percent to 10 percent of the facilities can be found to be exceeding the single-sample criterion for *E. coli*.<sup>31</sup>

As of October 1, 2010, the BIG region has 536 domestic WWTFs and 50 industrial WWTFs, most of which are permitted for less than 0.5 million gallons per day, or MGD. (See Table 4 and Figure 3.) When not dominated by stormwater, flow in many of the region's waterways is dominated by wastewater effluent. Possible sources of bacteria from WWTFs include insufficiently treated effluent and unauthorized/accidental discharge, including sludge.

**Table 4: Domestic and Industrial WWTFs<sup>32</sup>**

Permitted Flow (MGD)	Number of Domestic WWTFs (% of Domestic Facilities)	Number of Industrial WWTFs (% of Industrial Facilities)
0 to less than 0.1	228 (43%)	43 (86%)
0.1 to less than 0.5	127 (24%)	4 (8%)
0.5 to less than 1	98 (18%)	1 (2%)
1 to less than 5	76 (14%)	2 (4%)
5 to less than 10	5 (1%)	0 (0%)
10 or greater	2 (0%)	0 (0%)

<sup>30</sup> (TCEQ 2008b)

<sup>31</sup> (TCEQ 2009a)

<sup>32</sup> These numbers were extracted from a database, maintained by H-GAC, of permitted WWTF in the thirteen-county region.

## Implementation Activity 1.1: Impose More Rigorous Bacteria Monitoring Requirements

Until recently, WWTFs in Texas were not required to monitor for bacteria, with the exception of facilities using an ultraviolet disinfection system. However, the TCEQ recently came to an agreement with the EPA and adopted a new rule requiring that all domestic wastewater draft permits, for which Notice of Application and Preliminary Decision is published on or after January 1, 2010, be updated to include monitoring requirements for bacteria at a specified frequency (See Table 5).<sup>33</sup> It will take five years or more for renewals to be initiated for all domestic wastewater permits.

In order to move toward compliance with contact recreation standards in the region's waterways, it is imperative to have more information about WWTFs' operations. As such, the BIG recommends that the frequency of monitoring be increased over what is currently required by the TCEQ.

According to current regulations, 228 domestic WWTFs in the BIG project area are required to monitor bacteria quarterly and 127 domestic WWTFs are required to monitor monthly. Under the recommendations of this I-Plan, domestic WWTFs in the BIG project area would be required to monitor bacteria on frequencies similar to those for other parameters of their Texas Pollutant Discharge Elimination System (TPDES) permits, up to five times per week. If a domestic permit does not specify a sampling frequency for bacteria, the permittee should follow the frequencies set forth in Table 6. As of August 2010, the cost to run a bacteria sample is approximately \$50.

Larger flows have more frequent sampling requirements than small flows, as reflected in the current requirements in Texas for domestic WWTFs. Current requirements are shown in Table 5. Table 6 shows proposed increases in sampling frequency for smaller flows to increase the operational database. Over time, the increased data will help operators understand the effects of variables such as rainfall and infiltration. In addition, the data could help improve load reduction because operators will have more information to use to adjust and control facilities to reduce bacteria levels. The additional data may also protect compliant WWTFs from more stringent regulations that could be imposed if receiving stream quality fails to improve. Frequencies shown in Table 6 could be increased, depending on WWTF performance, other site sampling frequencies, and the impairment of the receiving stream.

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<sup>33</sup> See 34 Tex. Reg. 3495 (2009), *adopted* 34 Tex. Reg. 8332 (2009) (codified as an amendment to 30 Tex. Admin. Code § 319.9(b))

**Implementation Plan for TMDLs for Bacteria in the Houston-Galveston Region**

**Figure 3: Map of Wastewater Treatment Facility Outfalls**

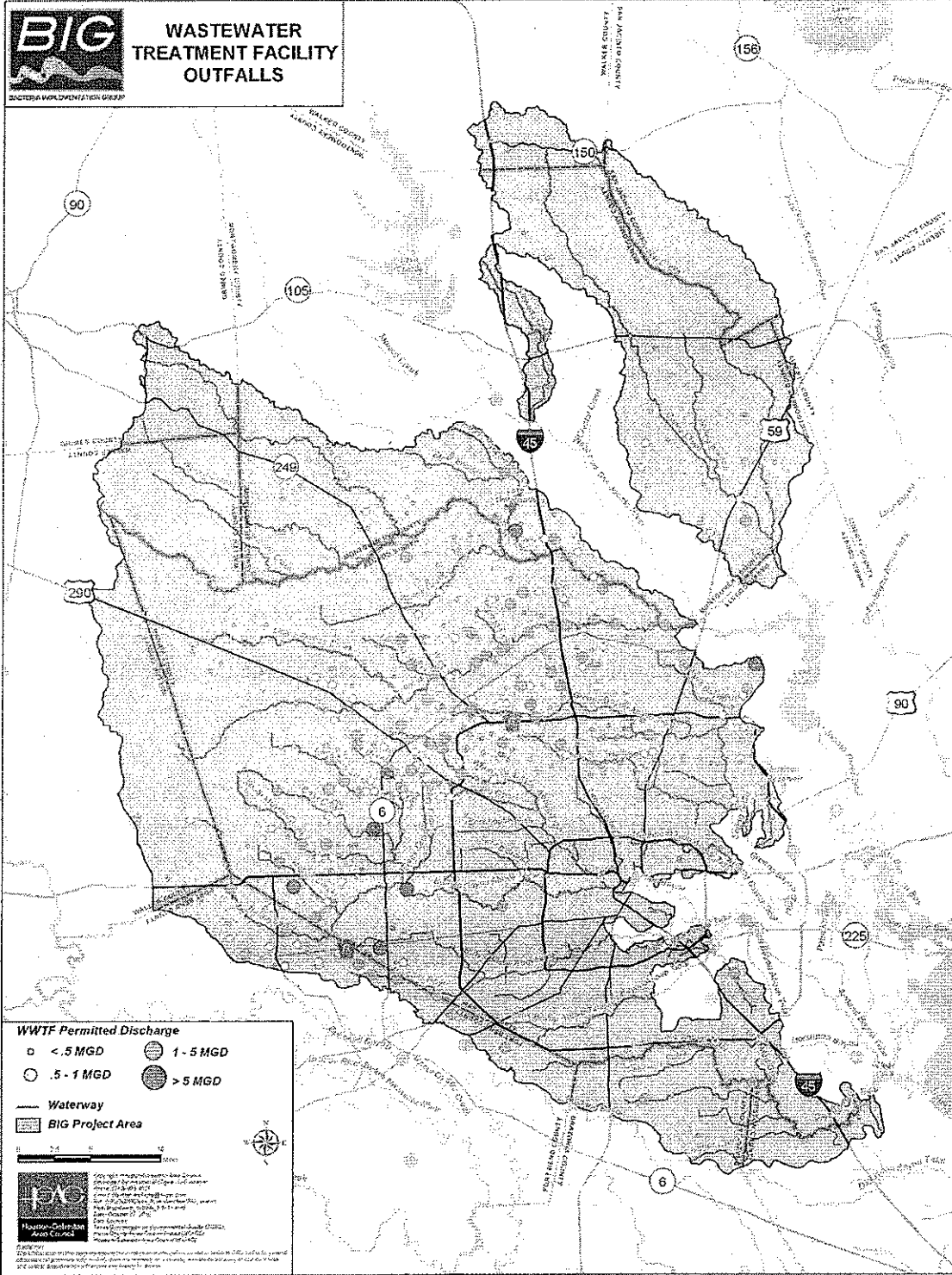


Table 5: Current requirements in Texas for domestic WWTFs<sup>34</sup>

Permitted Flow (MGD)	Chlorine systems	Ultraviolet systems	Natural systems
0 to less than 0.1	1/quarter	5/week	1/month
0.1 to less than 0.5	1/month	5/week	2/month
0.5 to less than 1	2/month	Daily	1/week
1 to less than 5	1/week	Daily	3/week
5 to less than 10	3/week	Daily	5/week
10 or greater	5/week	Daily	Daily

Table 6: Proposed requirements for domestic WWTFs in the BIG Project Area

Permitted Flow (MGD)	Chlorine systems	Ultraviolet systems	Natural systems
0 to less than 0.1	1/week*	5/week	3/week*
0.1 to less than 0.5	1/week*	5/week	3/week*
0.5 to less than 1	3/week*	Daily	3/week*
1 to less than 5	3/week*	Daily	3/week
5 to less than 10	5/week*	Daily	5/week
10 or greater	5/week	Daily	Daily

\*These proposed values differ from existing values.

According to new bacteria monitoring regulations, in 30 Tex. Admin. Code § 319.9(b), a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission of its compliance and request a less frequent measurement schedule. The same allowance and possible consequences for violation of the permit limit could apply in the project area.

TCEQ procedures specify that effluent limits and monitoring requirements for bacteria associated with industrial discharges will be determined on a case-by-case basis.<sup>35</sup> If the TCEQ elects to include bacteria limits or monitoring in a permit for an industrial facility, the BIG recommends that the TCEQ take into consideration the bacteria limits and monitoring guidelines specified by the BIG for domestic WWTF permits. The TCEQ shall also consider the characteristics of both the waste stream and the receiving water body, particularly when the stream is impaired for bacteria.

<sup>34</sup> See 30 Tex. Admin. Code § 319.9 (2011) (Table (b): Frequency of Bacteria Measurement)

<sup>35</sup> (TCEQ 2010g)

## Implementation Activity 1.2: Impose Stricter Bacteria Limits for WWTF Effluent

The TCEQ adopted a rule on November 4, 2009, requiring all TPDES domestic wastewater permits be updated to include bacteria limits for all WWTFs.<sup>36</sup> New regulations state that "by adopting bacteria limits, there will be a more direct and possibly more accurate measure of the level of disinfection achieved in domestic effluent discharged to both fresh and salt water."<sup>37</sup> Current regulations have set the monthly geometric mean bacteria effluent limit and the daily maximum bacteria effluent limit at the most stringent contact recreation category level.<sup>38</sup>

However, if waterways are to meet contact recreation standards, effluent limits should be made more stringent for WWTFs discharging into bacteria-impaired watersheds. In fact, the approved Buffalo and Whiteoak bayous TMDL<sup>39</sup> states, "if WWTFs were to discharge at the water quality criterion (126 MPN/100 mL), there would be no capacity to accommodate other loads and existing downstream discharges."<sup>40</sup> Therefore, for domestic facilities releasing effluent into freshwater, the BIG resolves and recommends to the TCEQ that bacteria limits in domestic WWTF permits throughout the BIG project area be set at 63 MPN/100 mL for the geometric mean of the monthly samples<sup>41</sup> of *E. coli* effluent, using any method approved under 40 C.F.R. § 136, and 197 MPN/100 mL for the daily maximum *E. coli* effluent limit. The authority to set these stricter limits was given explicitly in the rule itself,<sup>42</sup> where it states "the commission may impose more stringent requirements in permits than those specified...on a case-by-case basis, where appropriate to maintain desired water quality levels or protect human

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<sup>36</sup> See 34 Tex. Reg. 3495 (2009), adopted 34 Tex. Reg. 8332 (2009) (codified as an amendment to 30 Tex. Admin. Code § 319.9(b))

<sup>37</sup> (TCEQ 2009c)

<sup>38</sup> See 30 Tex. Admin. Code § 309.3(h)(2) (2011) (Application of Effluent Sets)

<sup>39</sup> (TCEQ 2009a)

<sup>40</sup> The Buffalo and Whiteoak Bayous TMDL and other TMDLs proposed and anticipated in the BIG region specify that *E. coli* limits for WWTF effluent be one half of the water quality criterion, currently 63 MPN/100 mL, in calculations of the WWTF Waste Load Allocation. More stringent limits for Enterococci were not specified by the TMDLs.

<sup>41</sup> After identifying and rejecting outliers, consistent with ASTM E 178-80, "Standard Practice for Dealing With Outlying Observations" (Section 14.02, General Methods and Instrumentation - General Test Methods; Forensic Sciences: Terminology; Conformity Assessment: Statistical Methods).

<sup>42</sup> See 30 Tex. Admin. Code § 309.3 (2011) (Application of Effluent Sets)

health.”<sup>43</sup> As allowed for in the Buffalo and Whiteoak bayous TMDL, the BIG resolves that the bacteria limit be set at a geometric mean of 126 MPN/100 mL for the monthly samples at a WWTF’s next permit renewal or major amendment and that the new limit be phased in, such that three years after the permit’s effective date the effluent limit shall be a geometric mean of 63 MPN/100 mL for the monthly samples.<sup>44</sup> This phased in approach would allow the WWTFs to implement *E. coli* monitoring while each plant plans and implements processes to address *E. coli* discharges.

The TCEQ has developed criteria for actual classified stream segment testing using *E. coli* as the indicator bacteria for freshwater and *Enterococci* for saltwater per Appendix A of 30 Tex. Admin. Code § 307.10 (1).<sup>45</sup> Fecal coliform can still be used as an alternative indicator during the transition to the new indicator bacteria, as specified in 30 Tex. Admin. Code § 307.7(b).<sup>46</sup> For domestic facilities where the TCEQ determines that *Enterococcus*, rather than *E. coli*, is the appropriate indicator bacteria, the BIG resolves that the *Enterococcus* effluent limit be set at 23 MPN/100 mL for the geometric mean of the monthly samples<sup>47</sup> and 57 MPN/100 mL for the daily maximum, using any method approved under 40 C.F.R. Part 136.

### **Implementation Activity 1.3: Increase Compliance and Enforcement by the TCEQ**

Stakeholders are concerned that there are insufficient quantities of investigations, reviews, and enforcement being performed by the TCEQ. The BIG recommends that the TCEQ conduct unannounced and focused inspections with a goal to have all facilities inspected every two years. There are multiple methods to address the low numbers of investigations and reviews performed. One method would be to increase the number of staff performing investigations, either through hiring additional TCEQ staff or through a contract with local programs. Another method would be to change TCEQ operating procedures.

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<sup>43</sup> (State of Texas 2009)

<sup>44</sup> After identifying and rejecting outliers, consistent with ASTM E 178-80, "Standard Practice for Dealing With Outlying Observations" (Section 14.02, General Methods and Instrumentation - General Test Methods; Forensic Sciences: Terminology; Conformity Assessment: Statistical Methods)

<sup>45</sup> See Appendix A of 30 Tex. Admin. Code § 307.10 (1) (2011) (Site-specific Uses and Criteria for Classified Segments)

<sup>46</sup> See 30 Tex. Admin. Code § 307.7(b) (2011) (Appropriate uses and criteria for site-specific standards)

<sup>47</sup> After identifying and rejecting outliers, consistent with ASTM E 178-80, "Standard Practice for Dealing With Outlying Observations" (Section 14.02, General Methods and Instrumentation - General Test Methods; Forensic Sciences: Terminology; Conformity Assessment: Statistical Methods)



***1.3.1: Allow unannounced inspections and focused investigations on all facilities, including sampling-only investigations***

Currently, unannounced inspections can be performed at WWTFs that have been designated as poor performers or in response to complaints and other similar situations. In the BIG region only one facility has been so designated. Unannounced inspections have been shown to increase compliance.<sup>48</sup> The BIG assumes that unannounced WWTF inspections would yield similar results.

In addition to the restrictions on whether inspections must be announced, there are restrictions on the types of investigations that may be performed. For example, Comprehensive Compliance Inspections are required for inspections of mandatory facilities and can take days to complete. This severely limits the number of inspections that can be performed. The TCEQ should allow for and conduct focused investigations including inspections that just collect samples at all facilities. An investigator could then conduct numerous inspections in a single day. Currently, focused investigations are permitted only at discretionary minor facilities, which, for the most part, have permitted discharge of less than one MGD.

For facilities that are not currently staffed, the BIG recommends that the TCEQ develop a procedure to facilitate these inspections and investigations. For example, the TCEQ could require access within a defined, restricted period of time after providing notice by telephone to a posted number.

***1.3.2: Consider increasing TCEQ staff or contract with local programs to increase inspections and reviews***

The TCEQ should perform a workload analysis to correlate recent increases in wastewater fees from the regulated community to the allocation of staff for inspections and enforcement. If that analysis concludes that more staff is necessary, the TCEQ should hire additional employees. An alternative to hiring additional TCEQ employees would be for the TCEQ to consider contracting with a local program, as is done by the TCEQ for its air quality and waste management programs. Increasing the TCEQ staff or contracting with local programs would help ensure all plans and specifications are reviewed, a greater number of WWTFs are inspected each year, and Discharge Monitoring Reports are reviewed on a more frequent basis for effluent violations, non-submittal, and other issues.

**Implementation Activity 1.4: Improved Design and Operation Criteria for New Plants**

Much of the existing design and operation criteria for WWTFs was improved in 2008 when 30 Tex. Admin. Code § 217 (2011) (Design Criteria for Domestic Wastewater Systems) (formerly § 317) was adopted. As a greater understanding of how plant design impacts bacteria outputs from plants is

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<sup>48</sup> (Texas Department of State Health Services 2007)

achieved, the BIG recommends local governments reopen discussion of design criteria in the near future and consider whether adopting stricter requirements within their jurisdiction would be appropriate.

### **Implementation Activity 1.5: Upgrade Facilities**

Bacteria monitoring may reveal WWTFs that are not meeting effluent limits. Upgrades or repairs, as appropriate, will be the responsibility of each individual facility in order to comply with individual permits. Some types of facilities may have more trouble than others in meeting bacteria standards. These facilities may need to undertake an intensive redesign. Grants, although generally not great in size, may be available. Possible sources of funding include:

- EPA via the Texas Water Development Board, Clean Water State Revolving Fund Program
- U.S. Department of Commerce, Economic Development Grants for Public Works and Development Facilities
- U.S. Department of Agriculture, Rural Utilities Service Water and Waste Disposal Program
- U.S. Department of Housing and Urban Development, State Community Development Block Grant Program

### **Implementation Activity 1.6: Consider Regionalization of WWTFs**

Notwithstanding TCEQ and local enforcement authority, WWTFs that are chronically or severely out of compliance with the bacteria limits set in their TPDES permit shall be encouraged to address the problems through operational improvements and/or capital improvements. If the facility continues violating bacteria limits set in their TPDES permit, the BIG encourages the TCEQ or any local government with jurisdictional authority to require the WWTF to evaluate facility regionalization and implement as appropriate. If regionalization is not a viable alternative, the facility should be required to be modified to meet higher design and monitoring standards.

### **Implementation Activity 1.7: Use Treated Effluent for Facility Irrigation**

Many domestic WWTFs currently do not use their effluent for purposes of irrigation of facility grounds. Using effluent for facility irrigation will allow the water to trickle through the grass and soil, filtering out additional pollutants. Each domestic WWTF is required to consider the use of treated effluent for facility irrigation purposes and is encouraged to incorporate its use as appropriate prior to the next renewal of its permit.