Sanitary Sewer Systems Work Group
DRAFT Meeting Agenda
Friday, March 8, 2013
2:15 pm to 3:00 pm
H-GAC Conference Room A, Second Floor

Call to Order/Welcome/Introductions

Notes from Last Year

Update on I-Plan Approval Process

- TCEQ approval: January 30, 2013
- Summary of changes to the relevant sections

Review Annual Report format

Review Implementation Progress--Items identified in the discussions will be included in the annual report.

Implementation Activity 2.1: Develop Utility Asset Management Programs for Sanitary Sewer Systems

- Activity Details
    - 2.1.1: Require a UAMP Plan as part of wastewater permits
    - 2.1.2: Develop a series of webcasts and meeting to provide introductory information about UAMPs
- Milestones
    - After five years, eight workshops held
    - After ten years, all WWTF have UAMP plans
- Progress
    - March 8, 2013—First annual Asset Management Workshop (CMOM) for Sanitary Sewer Systems in the greater Houston Region
    - SSOI participation

Implementation Activity 2.2: Address Fats, Oils, and Grease

- Milestones—Within five years,
    - Compile and share all existing regulations within project area
    - Each community shall examine their regulations and policies
    - One community shall adopt new regulation
    - Flyers or other collateral distributed
    - Website created and distributed
- Progress
    - Cease the Grease

Implementation Activity 2.3: Encourage Appropriate Mechanisms to Maintain Function at Lift Stations

- Milestones
    - Every five years, 10% of SSS shall be compliant with recommendations
- Progress
    - Chapter 217

Implementation Activity 2.4: Improve Reporting Requirements for Sanitary Sewer Overflows

- Activity Details
    - 2.4.1: Implement statewide database to record reported SSOs, allowing operators of sanitary ser systems to enter information directly into State of Texas Environmental Reporting System
    - 2.4.2: Develop ability for communities to use statewide database to record reported SSOs
    - 2.4.3: Require reporting of SSOs to local programs
- Milestones
    - Within five years, EPA/TCEQ will have developed appropriate database and technology for collecting and sharing information regarding SSOs
- Progress
    - TCEQ efforts
    - House Bill 824 / Senate Bill 584
    - Connected Texas

Implementation Activity 2.5: Strengthen Controls on Subscriber Systems

- Activity Details
    - 2.5.1: Identify subscriber systems
    - 2.5.2: Develop model contracts
    - 2.5.3: Provide a circuit rider program to work with the WWTF permittees and subscriber systems to strengthen subscriber contracts
- Milestones
    - By year three, develop model contract language
    - Within five years, develop a list of subscriber systems
    - As funds are available, initiate circuit rider program
    - 5 contract renewals incorporating model language each year starting in year five
- Progress
    - Updates?

Implementation Activity 2.6: Penalties for Violations

- Milestone
    - Within five years, have appropriate penalty structure revisions in place
- Progress
    - Updates?

Identify Activities on Which to Focus Efforts

Identify Possible Revisions to the I-Plan—The work group may choose to recommend changes to the I-Plan for consideration by the BIG at its annual meeting.

Confirm Recommendations to the BIG for Annual Report

The workgroup must make recommendations to the BIG regarding activities related to the work group. Using a sample form conceptually approved by the BIG, meeting participants will consider the following:

- Status of activities (not started/in progress/complete, ahead/on/behind schedule)
- Progress
- Achievements
- Focus
- Revisions

Adjourn

Coordination & Policy work group meeting: March 28, 2013, 10:00 AM

BIG Annual Meeting: Tuesday, May 14, 2013

Table of Attachments

Strategy Cover Sheets for 2013 Annual Report

Recent Research

Excerpts from Plan

Work Group Meeting Notes

Drafts for 2012 Annual Report
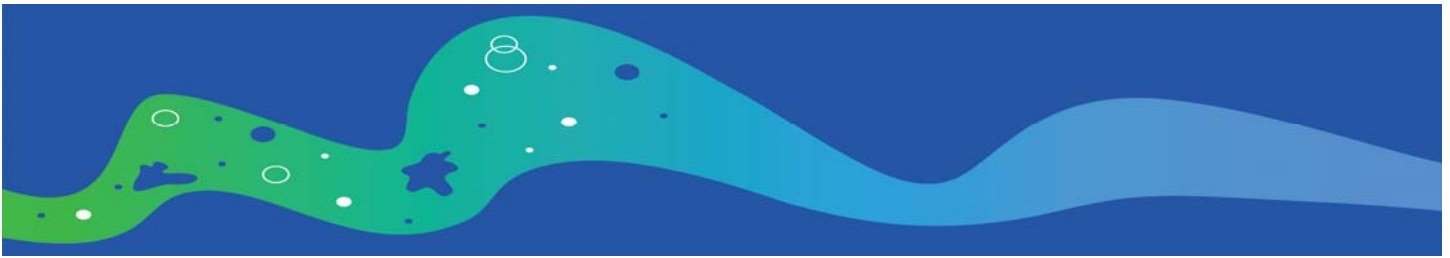
Implementation Strategy 2.0:
Sanitary Sewer Systems

#	Activity	Target/ Objective/ Milestone	Status
2.1	Develop Utility Asset Management Programs (UAMPs) for Sanitary Sewer Systems	-After five years, eight workshops held -After ten years, all WWTF have UAMP plans	In progress, On schedule
2.2	Address Fats, Oils, and Grease	Within five years: -Compile and share all existing regulations within project area -Each community shall examine their regulations and policies -One community shall adopt new regulation -Flyers or other collateral material distributed -Website created and distributed	In progress, On schedule
2.3	Encourage Appropriate Mechanisms to Maintain Function at Lift Stations	Every five years, 10% of SSS shall be compliant with recomentations	No information
2.4	Improve Reporting Requirements for SSOs	Within five years, EPA/TCEQ will have developed appropriate database and technology for collecting and sharing information regarding SSOs	In progress, On schedule
2.5	Strengthen Controls on Subscriber Systems	-By year three, develop model contract language -Within five years, develop list of subscriber systems -As funds are available, initiate circuit rider program	Not started, On schedule
2.6	Penalties for Violations	-Within five years, have appropriate penalty policy in place	Completed, Ahead of schedule
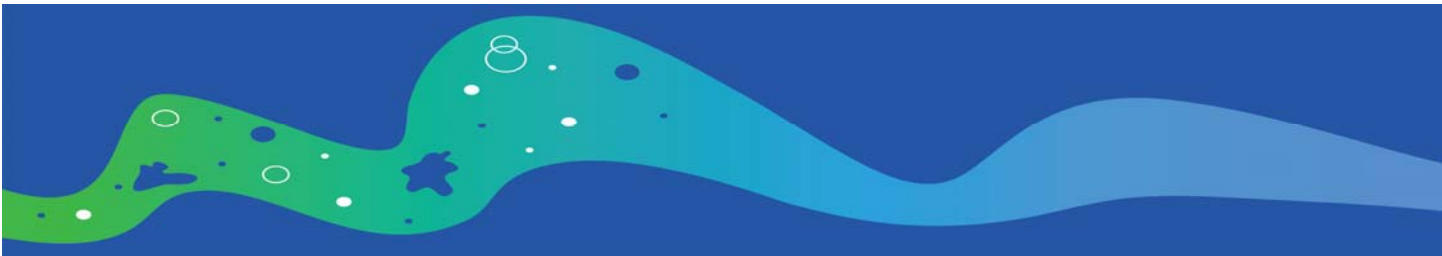
Implementation Strategy 2.0:
Sanitary Sewer Systems

Continued

Work Group Recommendations

Meeting March 8, 2013. XX attendees, including X BIG members and X alternates.

Progress	Progress has been adequate. Activity has begun and is ongoing for several implementation activities.
Achievements	H-GAC hosted the first annual Asset Management for Sanitary Sewer Systems , and planning has begun for the 2014 conference. Galveston Bay Foundation has been in talks with the City of Dallas's to share its award-winning Cease the Grease program.
Focus	Chapter 217 is "open" and the TCEQ is considering making changes to the Design Criteria for Domestic Wastewater Treatment Systems; stakeholders are encouraged to participate in the comment process. Stakeholders shall work with the TCEQ to develop the SSO reporting system. H-GAC shall work to identify appropriate contact information for tracking UAMP and identifying subscriber systems.
Revisions	The work group does not recommend changes to the I-Plan.

Implementation Strategy 2.0: Sanitary Sewer Systems

Bulleted Highlights

- Local initiatives
- State rulemaking
- EPA policy considerations
- Initial data collection

Main Summary

In general, implementation actions relating to sanitary sewer systems (SSSs) consist of encouraging improvements to SSSs, addressing lift station inadequacies, improving reporting of violations, strengthening controls on subscriber systems, and evaluating the penalty structure for sanitary sewer overflows (SSOs) and other sanitary sewer violations.

Efforts in the past year have focused on developing capacity—for both the provision of education and the collection of data in support of recommendations in the plan. Future efforts will focus on continued data collection and provision of educational opportunities.

Utility Asset Management Programs

The BIG has recommended the inclusion of utility asset management programs (UAMP) as a requirement in permits for wastewater treatment facilities. At this time, TCEQ has not chosen to include such a requirement in permits in the BIG project area. Nevertheless, activities in line with the recommendations are still occurring.

1) Within the BIG project area, the number of participants in the TCEQ's Sanitary Sewer Overflow Initiative (SSOI) has increased from three in 2008 to eight in 2011. (See chart #). While not a full UAMP, the plans developed in the voluntary SSOI program contain many of the elements of a UAMP.

2) The EPA has conducted listening sessions to seek stakeholder input to help the EPA determine whether and how to modify the National Pollutant Discharge Elimination System (NPDES) regulations as they apply to municipal sanitary sewer collection systems and SSOs. One possible recommendation the EPA has been considering is the inclusion

Total # SSOI Participants
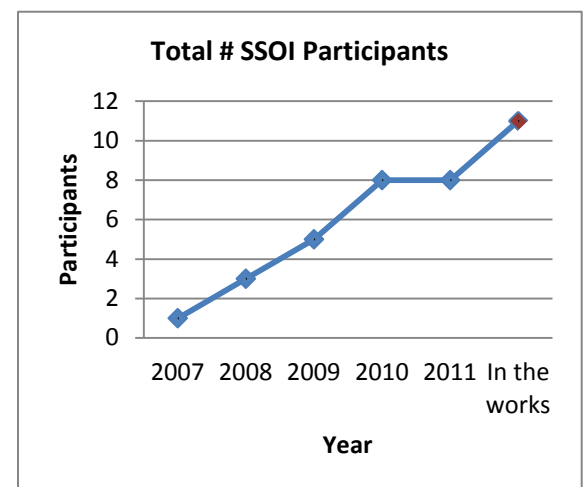
in WWTF permits of Capacity, Management, Operations, and Maintenance (CMOM) requirements, which are similar to elements of a UAMP. In general, commentary was supportive of CMOM although several comments indicated that states might do an adequate or better job than the EPA of implementing CMOM or similar requirements. No decision has been made.

3) At H-GAC on September 1, 2011, the Texas Section of the American Water Works Association offered a seminar on financial planning for water utilities. Elements in the workshop were similar to elements that might be in a UAMP plan and apply to wastewater as well as water utilities. This workshop was conducted in support of the BIG's goal of providing workshops and educational opportunities related to UAMP.

[Callout Box: CUPSS: EPA's voluntary Check Up Program for Small Systems. The EPA describes CUPSS as a free, easy-to-use, asset management tool for small drinking water and wastewater utilities. It has the potential to help utilities better identify needs and plan future investments, and maintain a desired level of customer service at the best appropriate cost. CUPSS has the potential to help reduce or eliminate SSOs and related sources of bacterial contamination of waterways. In addition to providing desktop software for managing assets, the CUPSS program offers a variety of free web-based, in-person, and self-paced training opportunities. More information is available at www.epa.gov/CUPSS.]

[Callout Box: City of Pasadena plans a CMOM Plan. The City of Pasadena began a program in 1985 to identify and correct infiltration/inflow (I/I) problems related to its sanitary sewer system and to eliminate sewage bypasses and overflows to various receiving waters during dry- and wet-weather conditions.

The City aggressively conducts television (TV) line inspections. The City responds to complaints from the MS4 Action Line to locate sanitary sewer leaks, cross connections to storm sewer systems, to rehabilitate the sanitary sewer system, and to construct major relief sewers to alleviate the sewage overflow problems. The City will continue its current plan to reduce I/I problems and plans to formalize these tasks in a Capacity, Management, Operations, and Maintenance (CMOM) plan. The City has prepared its own Sanitary Sewer Overflow Action Plan and is in the process of implementing it.

Between February 2010 and September 2011, the City replaced 2.44 miles of sanitary sewer main line (ML), installed/replaced 0.88 miles of sanitary sewer secondary line (SL), televised 4.73 miles of sanitary sewer ML, 2.1 miles of sanitary sewer SL, televised 2.31 miles of storm lines, smoke tested 2.69 miles of line, cleaned 30.44 miles of sanitary sewer ML, cleaned 0.53 miles sanitary sewer SL, and cleaned 9.95 miles storm lines.]

[Callout Box: EPA Sanitary Sewer Overflows and Peak Flows Listening Sessions. In 2010 and 2011, the EPA held several listening sessions to gather input on a variety of topics related to sanitary sewer systems. Several of the questions asked by the EPA are pertinent to reccommendations in the I-Plan.

- *Should EPA develop a standard permit condition with requirements for capacity, management, operations, and maintenance programs based on asset management principles?*
- *What are the costs and benefits of CMOM programs and asset management of sanitary sewers?*

- *Should EPA clarify its standard permit conditions for SSO reporting, recordkeeping and public notification?"*
- *Should EPA require permit coverage for municipal satellite collection systems? (A municipal satellite collection system is essentially equivalent to the term subscriber system.)*

H-GAC will monitor EPA actions relating to the listening sessions and possible rulemaking. Local stakeholders are encouraged to participate in the EPA process.]

Fats, Oils, and Grease

H-GAC has begun and will continue compiling information about local and exemplary fats, oils and grease (FOG) programs. Information is available on the BIG website. Once information is gathered, sample FOG regulations shall serve as models for possible model language for legal mechanisms, and example programs will serve as models for future program development.

Maintain Function at Lift Stations

After many lift stations lost power during Hurricane Ike, concerns were raised about the ability of those stations to maintain function during power outages and other events; these concerns are reflected in the BIG's recommendations regarding function at lift stations. Currently, the TCEQ is in the process of upgrading portions of Chapter 217 (previously Chapter 317), including Subchapter B, which addresses emergency power requirements. Stakeholders are encouraged to participate in the public participation opportunities presented by this process to ensure that the BIG's recommendations are considered.

The Texas Water/Wastewater Agency Response Network (TXWARN), a mutual aid program for utilities, has seen an increase in participation. The TXWARN website lists 237 participating entities, including public and private utilities and consultants, in the TCEQ Region 12 Area. Participation can greatly improve response and recovery times during emergencies. The ability of Galveston's utility to rapidly resume services after Ike is an example of how the program can help. (http://www.txwarn.org/.)

[Callout Box: Nottingham Country MUD Installs Generators. As part of its wastewater collection and treatment systems, Nottingham Country Municipal Utility Districts operates a wastewater treatment plant with treated wastewater. The treated effluent is discharged to Mason Creek and flows through George Bush and into Buffalo Bayou. Nottingham Country MUD also operates a lift station that is situated about midway in the District. In both cases, power interruption can result in contamination of Mason Creek, and in the case of the lift station, create an SSO into streets and neighborhoods that also affects Mason Creek and George Bush Park. In order to mitigate both situations, the MUD recently expended funds to provide emergency generators at both facilities. The MUD executes maintenance programs for both generators as well as for generators for water supply.]

Reporting Requirements

The BIG recommends improvements to reporting requirements for (SSOs). However, electronic infrastructure must be improved before such recommendations can be implemented. Three developments are underway that could result in sufficient electronic infrastructure to allow electronic reporting.

1) Broadband internet service is a precursor to the ability to provide electronic reporting of SSOs. The Texas Department of Agriculture, through Connected Texas, recently surveyed the availability of broadband internet service throughout Texas and is planning to extend the availability to underserved areas. Preliminary review indicates that the vast majority of the project area has some type of broadband internet service, often mobile wireless broadband. H-GAC will continue to analyze coverage in the BIG project area to determine availability of broadband internet service. It will then monitor opportunities for improving access in unserved or underserved areas.

2) TCEQ regularly applies to the EPA 2012 Information Exchange Grant Program (http://www.epa.gov/exchangenetwork/grants/index.html), which funds development of improved access to, and exchange of, high-quality environmental data from public and private sector sources through the National Environmental Information Exchange Network. An exchange grant might be an appropriate funding program to facilitate electronic reporting of SSOs by permittees and/or operators. (In the past, the program helped fund database integration between EPA and TCEQ for reporting discharge monitoring reports from WWTF.) At a request from H-GAC, TCEQ is considering applying for a grant to facilitate SSO reporting. H-GAC will continue to talk with TCEQ about the possibility.

3) EPA Updates Web Tool Providing Clean Water Violation Trends and State Enforcement Response (Press release: http://yosemite.epa.gov/opa/admpress.nsf/1e5ab1124055f3b28525781f0042ed40/8766584ebb314fea8525785d004de550!OpenDocument)

Subscriber Systems

H-GAC is planning to collect contact information for WWTF permit holders. This information will be used to contact permit holders and ask them about subscriber systems and to share information about training opportunities. H-GAC will work to acquire copies of example subscriber contracts for informational purposes.

Penalties for Violations

TCEQ, in response to House Bill 2694, TCEQ Sunset Legislation, updated its penalty policy for violations, effective September 1, 2011 (http://www.tceq.texas.gov/assets/public/comm_exec/pubs/rg/rg253/penaltypolicy2011.pdf). The changes largely have to do with raising maximum criminal penalties to match civil penalties for similar violations. Determination of penalties is dependent, in part, on compliance history. TCEQ is in the process of considering changes to its compliance history and enforcement policies, also

in response to House Bill 2694. Comments on these two policies were due on March 23, 2012, and May 14, 2012, respectively. Other than TCEQ's rulemaking, no action has been taken relating to this activity.

Sample Maps and Graphics

- SSOI Chart
- Percentage of BIG project area served by broadband
- Photo of Nottingham Country MUD's generator at a lift station
- Grease Buster logo
- Grease-blocked pipe
- Photo of rehab
- Photo of overflow
- Photo of location where subscriber flows into main system
- Manhole that says "Sanitary"
- Large CIP sewer rehab sign
- TV image of the inside of a sewer line
- Photo of smoke test
- Photo of dye test
- So many choices

Sanitary Sewer Systems Workgroup
Meeting Notes
January 26, 2012
1:30 p.m. to 3:30 p.m.
H-GAC Conference Room C, Second Floor

Attendees

Richard Chapin (City of Houston, on phone), Marilyn Christian (Harris County), Nyla Dalhaus (Montgomery County), Jennifer Elms (EHRA), Frank Green (Montgomery County), Anita Hunt (Hunt & Hunt Engineering Corp.), Kim Laird (TCEQ), Alisa Max (Harris County), Nwachukwu Sam Okonkwo (TCEQ), Rachel Powers (H-GAC), Mary Purzer (AECOM)

Discussion

Overview

The Implementation Plan was still undergoing internal review at TCEQ. TCEQ had not formally requested any changes to the document. Informally, TCEQ requested modification to the inside cover pages, which were made without changes to content.

The annual report will contain information about progress on activities identified in the Implementation Plan. The workgroup will be an important means for collecting information about implementation.

Review Progress. Items identified in the discussion will be included in the annual plan.

*Implementation Activity 2.1: Develop Utility Asset Management Programs for Sanitary Sewers*

2.1.1: Require a UAMP Plan as part of wastewater permits

2.1.2: Develop a series of webcasts and meetings to provide introductory information about UAMPs

- o Interim, measureable milestones:
    - o "After five years, eight workshops held"
    - o "After ten years, all WWTF have UAMP plans"

TCEQ has not begun requiring UAMP plans for sanitary sewer systems and is not expected to until the I-plan is approved by the TCEQ. However, participation in TCEQ's voluntary Sanitary Sewer Overflow Initiative (SSOI) has increased, more than doubling since implementation planning began in 2008. As of December 2011, eight SSOI agreements are in the BIG project area, while an additional two are pending.

EPA has held listening sessions to seek stakeholder input to help EPA determine whether and how to modify the
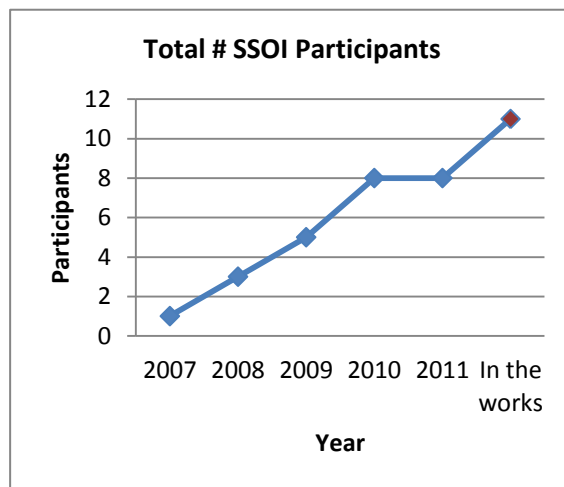
Total # SSOI Participants

National Pollutant Discharge Elimination System (NPDES) regulations as they apply to municipal sanitary sewer collection systems and sanitary sewer overflows (SSOs). One question raised by EPA was whether Capacity, Management, Operations, and Maintenance (CMOM) should be required by permit. (Link to more information: http://cfpub.epa.gov/npdes/sso/summary.cfm?program_id=4.) In general, commentary was supportive of CMOM although several comments indicated that States might do an adequate or better job than EPA of implementing CMOM or similar requirements.

EPA offers a voluntary program, called "Check Up Program for Small Systems" (CUPSS). Desktop computer programs and training modules are available for free download from the Internet. EPA is offering a train-the-trainer class on March 14, 21, and 28, 2012. Self-paced training is also available. (www.epa.gov/cupss)

On Sept. 1, 2011, H-GAC hosted "Financial Planning, A Seminar for Water Utilities," offered by the Texas Section of the American Water Works Association. While the workshop focused on financial planning, it included elements of a UAMP-type program.

Stakeholders did not report additional progress.

Implementation Activity 2.2: Address Fats, Oils, and Grease

- o Interim, measureable milestones:
  - o "Compile and share all existing regulations in the project area within five years
  - o "Each community shall examine their regulations and policies within five years
  - o "One community shall adopt new regulations every five years
  - o "Flyers or other collateral material distributed
  - o "Website created and distributed"

The City of Houston and Harris County both have programs that they are continuing to support. H-GAC will get updates from them and will query MS4 operators about regulations and programs.

Stakeholders recommended looking at the following entities for examples of FOG programs and resources:

- San Antonio Water System's Don't Feed the Grease Monster (http://www.saws.org/our_water/ResourceProtComp/FOG/index.shtml)

- Dallas's Cease the Grease program (http://dallascityhall.com/dwu/Pretreatment/grease_abatement.html)

- Charlene Bohanon with the Galveston Bay Foundation

Implementation Activity 2.3: Encourage Appropriate Mechanisms to Maintain Function at Lift Stations

- o Interim, measureable milestone: "10% of SSS shall be compliant with recommendations every five years for 25 years"

TCEQ is in the process of upgrading portions of Chapter 217 (previously Chapter 317), including Subchapter B, which addresses emergency power requirements. [TCEQ has announced that a public meeting will be held on March 6, 2012. Stakeholders are encouraged to participate.]

TCEQ, in its Annual Enforcement Report, Fiscal Year 2011
(http://www.tceq.texas.gov/compliance/enforcement/reports/AER/annenfreport.html),
reported that the number of enforcement actions relating to water increased because of an
initiative to ensure that facilities have emergency generators for a backup power source. To an
extent, this was in response to the widespread power outages after Ike.

Participants indicated that the Texas Water/Wastewater Agency Response Network (TXWARN),
a mutual aid program for utilities, has seen an increase in participation. [The TXWARN website
lists 237 participating entities, including public and private utilities and consultants, in the TCEQ
Region 12 Area.] Participation can greatly improve response and recovery times during
emergencies. The ability of Galveston's utility to resume services after Ike was cited as an
example of how the program can help. (http://www.txwarn.org/.)

Implementation Activity 2.4: Improve Reporting Requirements for Sanitary Sewer Overflows

> *2.4.1: Implement statewide database to record reported SSOs, allowing operators of
> sanitary sewer systems to enter information directly into State of Texas Environmental
> Electronic Reporting System*

> *2.4.2: Develop ability for communities to use statewide database to record reported SSOs*

> *2.4.3: Require reporting of SSOs to local programs*

> o Interim, measureable milestones:
>   o "Deployment of an appropriate database for tracking SSOs"
>   o "SSO reports available in five years from database."

Texas Department of Agriculture, through Connected Texas, has made draft survey data from
2010 available on http://connectedtx.org/ (updated October 2011). H-GAC will review the data
to determine what portion of the BIG project area is unserved by broadband Internet service.
Preliminary review indicates that the vast majority of the project area has some type of
broadband internet service, often mobile wireless broadband. H-GAC will analyze coverage in
the BIG project area in April, once final data is complete. It will then monitor opportunities for
improving access in unserved or underserved areas.

TCEQ regularly applies to the EPA 2012 Information Exchange Grant Program
(http://www.epa.gov/exchangenetwork/grants/index.html), which might be an appropriate
funding program to facilitate electronic reporting of SSOs by permittees and/or operators. (In
the past, the program helped fund the NetDMR database integration between EPA and TCEQ.)
H-GAC suggested to TCEQ that it consider applying for a grant for this purpose. H-GAC will
continue to talk with TCEQ about the possibility.

EPA Updates Web Tool Providing Clean Water Violation Trends and State Enforcement
Response (Press release:
http://yosemite.epa.gov/opa/admpress.nsf/1e5ab1124055f3b28525781f0042ed40/8766584eb
b314fea8525785d004de550!OpenDocument)

In its Sanitary Sewer Overflows and Peak Flows Listening Sessions, EPA raised the issue of
reporting SSOs. "Should EPA clarify its standard permit conditions for SSO reporting,

recordkeeping and public notification?" H-GAC will monitor EPA actions relating to the listening sessions and possible rulemaking. Local stakeholders are encouraged to participate in the EPA process.

Implementation Activity 2.5: Strengthen Controls on Subscriber Systems

> *2.5.1: Identify subscriber systems*

> *2.5.2: Develop model contracts*

> *2.5.3: Provide a circuit rider program to work with WWTF permittees and subscriber systems to strengthen subscription contracts*

> o Interim, measureable milestones:
>> o "List of subscriber systems
>> o "Model contract language developed
>> o "5 contract renewals incorporating model language each year starting in year five"

H-GAC has begun identifying contact information for WWTF permit holders. This information will then be used to contact the permit holders and ask them about subscriber systems and to inform them about training opportunities.

In its Sanitary Sewer Overflows and Peak Flows Listening Sessions, EPA raised the issue of subscriber systems, which EPA terms "municipal satellite collection systems." EPA asks, "Should EPA require permit coverage for municipal satellite collection systems?" H-GAC will monitor EPA actions relating to the listening sessions and possible rulemaking. Local stakeholders are encouraged to participate in the EPA process.

The group discussed the definition of a subscriber system, reiterating the concern that private laterals, for example, a homeowner's connection to a sewer system, should not be considered subscriber systems. H-GAC will work to acquire copies of example subscriber contracts for informational purposes.

Implementation Activity 2.6: Restructure Penalties for Violations

> o Interim, measureable milestone: "Within five years, have appropriate penalty structure revisions in place"

TCEQ, in response to House Bill 2694, TCEQ Sunset Legislation, updated its penalty policy for violations, effective September 1, 2011 (http://www.tceq.texas.gov/assets/public/comm_exec/pubs/rg/rg253/penaltypolicy2011.pdf). The changes largely have to do with raising maximum criminal penalties to match civil penalties for similar violations. Determination of penalties is dependent, in part, on compliance history. On January 25, 2012, a proposed rule package was considered on the TCEQ Commissioners Agenda. [Comments are due by March 12, 2012. (http://www.tceq.texas.gov/assets/public/legal/rules/rule_lib/proposals/11032060_pex.pdf). Stakeholders are encouraged to make comments as appropriate.]

Other than TCEQ's rulemaking, no action has been taken relating to this activity.

HGAC

Identify Priorities

The workgroup did not identify any particular priorities, and indicated that it felt that H-GAC's approach to gathering and sharing information seemed appropriate.

Discuss potential additions to the annual report and modifications to the I-Plan

The workgroup did not identify modifications to the I-Plan that it wished to recommend at this time. They indicated concurrence with the intent to report on changes in water quality, identifying data for tracking progress against the milestones identified in the 9-elements table, and highlighting success stories.

<u>Wrap-up</u>

Rachel will provide notes for the meeting, including links to documents referenced in the discussion.

BIG Annual Meeting: May 22, 2012

<u>Adjourn</u>

Implementation Strategy 2.0: Sanitary Sewer Systems

This implementation strategy focuses on the underground infrastructure (pipes), ancillary support processes (lift stations), and the management of the network of infrastructure that is connected to the wastewater treatment facility itself. Activities to be implemented in the wastewater treatment facilities are discussed in the previous section.

Sanitary sewers can fail to function properly due to blockages, line breaks, defects that allow stormwater and groundwater to overload the system, lapses in operation, inadequate design and construction, power failures, and vandalism. The EPA has concluded that sanitary sewer overflows (SSOs) contribute to bacteria loading in almost all impaired streams, but may or may not be a primary source of loading. EPA acknowledges that SSO data is difficult to assess.[49]

In a Report to Congress, the EPA addressed the extent and possible solutions to human health and environmental impacts caused by SSOs.[50] In the Houston region, sanitary sewer systems are separate and not intentionally combined with stormwater sewer systems. SSOs are untreated or partially treated discharges from sanitary sewers. "SSOs can range in volume from one gallon to millions of gallons. The microbial pathogens and other pollutants present in SSOs can cause or contribute to water quality impairments, beach closures, shellfish bed closures, contamination of drinking water supplies, and other environmental and human health problems."[51]

Based on estimates presented in the TMDL reports or draft technical documents, an average of 77 overflows were reported each month, representing a monthly average of over 700,000 gallons. Overflows were reported in all but two watersheds.

In general, implementation actions consist of encouraging improvements to sanitary sewers; reducing the amount of fats, oils, and grease entering the systems; addressing lift station inadequacies; improving reporting of violations; strengthening controls on subscriber systems;[52] maintaining an accurate map of sanitary sewer coverage; and evaluating the penalty structure for SSOs and other sanitary sewer violations.

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[49] (U.S. Environmental Protection Agency 2004)

[50] (U.S. Environmental Protection Agency 2004)

[51] (U.S. Environmental Protection Agency 2004)

[52] A subscriber system is a sewer system that conveys flow to a wastewater treatment facility that is owned by a separate entity. The term is not intended to indicate individual private laterals, such as a homeowner's connection to a sewer system.

Implementation Activity 2.1: Develop Utility Asset Management Programs for Sanitary Sewer Systems

A utility asset management program (UAMP) is a common-sense, proactive approach to managing, maintaining, and operating a sanitary sewer system. The EPA's Capacity, Management, Operation, and Maintenance (CMOM) is probably the most well-known UAMP. This section uses CMOM as a guide for this implementation activity but these programs are intended to function independently of the EPA unless the system's owner or operator requests its technical or other assistance.

UAMPs provide a framework for self-evaluation and planning for the function, condition, and performance of a sanitary sewer system. Currently, UAMPs are voluntary in Texas, although the TCEQ or EPA can require them through a consent decree or administrative order. To facilitate the development and implementation of many elements of UAMPs, the TCEQ offers the Sanitary Sewer Overflow Initiative (SSOI), a voluntary program to improve a system's operation. Some operators have voluntarily implemented a program as a means to improve performance and reduce costs. It should be understood that UAMP elements will vary with requirements and circumstances of individual entities. For example, a small, well-run system with fewer than a dozen connections would have a simple program, possibly described in less than two pages. A large or problematic system would have a substantial UAMP, proportional to its size or problems. Therefore, the BIG does not recommend that the TCEQ, the EPA, or other regulators develop or use a 'standard format.'

2.1.1: Require a UAMP Plan as part of Wastewater permits

The BIG requests that all permits for new WWTFs discharging to a stream within the BIG project area include a UAMP plan for any sanitary system owned and operated by the new WWTF . The BIG also requests that, starting five years from the approval of the I-Plan, all permit renewals for WWTFs discharging to a stream within the BIG project area include a UAMP plan for any sanitary system owned and operated by the WWTF. As allowable by law, the UAMP plan should apply to any subscriber systems that contribute to the WWTF.[53]

The intent of the BIG is that all permits for WWTFs with authority over the collection system discharging to a stream within the BIG project area include requirements for UAMP plans. The BIG recognizes that valid constraints may prevent the TCEQ from including such requirements in all plans and that, in such situations, TCEQ may encourage those facilities to voluntarily develop such plans.

H-GAC or other appropriate entities shall, as resources are available, track the inclusion of UAMP plan requirements in WWTF permits and the voluntary development of UAMP plans by permitted facilities

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[53] See sample language in "Model NPDES Permit Language for Sanitary Sewer Overflows (draft)" (U.S. Environmental Protection Agency 2007)

not subject to permit requirements for UAMP plans. The BIG shall evaluate the adoption of UAMP plans and whether additional actions should be recommended.

These recommendations are intended to reduce bacteria loading by reducing the possibility of malfunctions such as blockages, line breaks, inflow and infiltration of stormwater and groundwater, lapses in operation, inadequate design and construction, power failures, and vandalism. By reducing the possibility of malfunction, the BIG intends that UAMP plans will reduce the possibility of discharges of untreated or partially treated sewage from a sanitary sewer system, at the same time they improve the services provided to customers.

Operators of existing systems are encouraged to develop a UAMP plan prior to the inclusion of these requirements in a permit. In general, components of the UAMP plan will include clearly stated goals, a description of the organization, the permittee's legal authority, an overflow emergency response plan, measures and activities, design and performance standards, a capacity assurance plan, provisions for self-audits, and a communication plan. Activities specified in the plan might include lift station maintenance, provision of alternative power sources such as generators for lift stations, periodic manhole surveys that include cover levels and wall condition, periodic line cleaning, and condition surveys. More details and resources for plan development are provided in Appendix D.

Operators of sanitary sewer systems are encouraged to seek technical assistance from either the TCEQ or the EPA as appropriate, although the oversight of neither agency is a requirement of the program. Owners and operators are encouraged to consider participating in the TCEQ's voluntary SSOI program as a means to improve system performance and to facilitate development of an appropriate UAMP plan. The TCEQ's Small Business and Local Government Assistance program is also a source of technical assistance.[54] Minimum elements of the UAMP plan would include the provision of updated coverage maps, confirmation of subscriber system registration (see Implementation Activity 2.5), and improved reporting requirements (see Implementation Activity 2.4). As resources are available, H-GAC shall collect and make available copies of UAMP, CMOM, and SSOI plans for reference.

The TCEQ is encouraged to make facilities that do not have a UAMP plan, and facilities that are not implementing their UAMP plan, higher priorities for inspections and enforcement.

2.1.2: Develop a series of webcasts and meetings to provide introductory information about UAMPs

H-GAC, the TCEQ, or another appropriate entity shall offer a series of meetings geared toward local sanitary sewer owners, operators, and engineers, providing introductory information about UAMPs. Meeting topics may include a description of the problems presented by sanitary sewer systems, a

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[54] See also "Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems" (U.S. Evironmental Protection Agency 2005)

definition of CMOM, an outline of EPA guidelines, case studies, and a description of benefits such as cost savings, cost avoidances, and pollution reduction. In an effort to make the information accessible to an expanded audience, the meetings will be recorded and made available in a webcast format during the meeting and as an online archive. Potential development partners include the Water Environment Association of Texas, the TCEQ, the Water Environment Research Foundation, the EPA, the Texas Water Utility Association, the Texas Rural Water Association, and the Association of Water Board Directors – Texas. Continuing education credits should be given to operators for participation in training related to UAMP.

Implementation Activity 2.2: Address Fats, Oils, and Grease

Fats, oils, and grease are considered to be the leading cause of blockages in sanitary sewers, and the EPA estimates that blockages account for nearly 50 percent of all SSOs.[55] This implementation activity encourages local governmental entities to require owners of sanitary sewer systems to determine the proper size for grease traps, to inspect them, and to require grease traps be properly cleaned and otherwise maintained. H-GAC, in consultation with stakeholders and as resources allow, shall develop model language to facilitate the adoption of appropriate legal mechanisms.

The TCEQ developed a model ordinance in response to the Texas 78th State Legislature's amendment of the Texas Water Code, and created standards for managing grease stoppages in utilities' sanitary sewer lines.[56] The City of Houston incorporated elements of the model language into its Code of Ordinances in 2007.[57]

Possible topics for public education include efforts targeted at reducing fats, oils, and grease from residences and multi-family dwellings. Available resources include the *Can Your Fats*[58] brochure developed by Harris County and the City of Houston, the City of Houston's *Corral the Grease* program[59] and the TCEQ's *Let's Tackle the Grease in This Kitchen*[60] poster and video.

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[55] (U.S. Environmental Protection Agency 2004)

[56] See Tex. Water Code Ann. § 26.0491 (2010) (Model Standards to Prevent Discharge of Untreated Wastewater from Sanitary Sewers). (State of Texas 2004)

[57] See Houston, Tex., Code of Ordinances, Chapter 47, Article 7 (2008). (City of Houston 2008)

[58] (Harris County & City of Houston 2009)

[59] (City of Houston 2007)

[60] (TCEQ 2007)

Implementation Activity 2.3: Encourage Appropriate Mechanisms to Maintain Function at Lift Stations

Occasionally, lift stations may cease to function and may discharge sewage into waterways, as demonstrated during the extensive power outages following Hurricane Ike in 2008. Lift stations may also fail to function during circumstances other than power outages, such as mechanical failure or repair.

Lift station operators are encouraged to undertake appropriate actions to maintain function of lift stations during power outages and other situations. Operators shall develop a comprehensive plan, possibly part of the UAMP plan, to address such situations. Appropriate mechanisms for inclusion in the plan might include installing underground power lines to lift stations, negotiating with power providers to reclassify lift stations as a higher priority for service restoration, installing solar-powered generators, developing partnerships with transportation partners to allow hybrid vehicles to serve as mobile generators, installing quick-connects if the use of mobile generators is necessary, using by-pass pumps, or using a wireless remote system. Conventional generators, whether fueled by natural gas or diesel fuel, might also be appropriate. Owners and operators are strongly encouraged to install quick-connects at lift stations. Quick-connects allow the quick connection of lift stations to alternative power sources such as mobile generators without the need for time-consuming and expensive facility modifications during a post-storm or other failure.

Implementation Activity 2.4: Improve Reporting Requirements for Sanitary Sewer Overflows

Current EPA regulations specify reporting requirements for noncompliance, including SSOs, in 40 C.F.R. §§ 122.41(1) (6) and (7) (2011).

2.4.1: Implement statewide database to record reported SSOs, allowing operators of sanitary sewer systems to enter information directly into State of Texas Environmental Electronic Reporting System

The TCEQ should further develop its system to allow collection, analysis, and dissemination of this information. This action is not intended to increase the data-entry requirements for TCEQ staff; instead, it is intended to streamline reporting and analysis.

2.4.2: Develop ability for communities to use statewide database to record reported SSOs

The existing TCEQ database security features require a broadband Internet connection for access. Until all sanitary sewer operators have access to a broadband Internet connection, database reporting should not be required.

In 2009, using American Recovery and Reinvestment Act funds, the Texas Department of Agriculture began mapping the coverage of broadband Internet access in Texas.[61] Once areas without coverage have been identified, funds may be available to develop coverage in rural areas, including all of the non-urban areas of the BIG region.

Once a statewide database is available and all communities in the BIG project area have the ability to report electronically, operators' permits shall require them to utilize the database to report SSOs.

2.4.3: Require reporting of SSOs to local programs

EPA regulations allow WWTF permits to include requirements that SSOs be reported to local programs, such as those of cities and counties. The statewide database described in the preceding section should be developed to include reporting capabilities that would allow the program to automatically alert local governments about SSOs.

Implementation Activity 2.5: Strengthen Controls on Subscriber Systems

Subscriber systems are those systems that do not operate their own WWTFs or have their own permits, but instead enter into contracts with permitted WWTFs. (The term subscriber system is not intended to include private laterals such as those connecting a private residence to a sanitary sewer system.) While the exact linear footage of subscriber sanitary sewers in the project area is unknown, it is also unknown whether the contracts that WWTFs have with subscriber systems provide adequate controls and responsibility for operation, management, and maintenance of the subscriber system. Contracts could be developed to require appropriate controls.

2.5.1: Identify subscriber systems

Two approaches shall be taken to identify subscriber systems. First, as resources are available, H-GAC shall contact WWTF permittees and ask them to provide information regarding subscriber systems. Second, the BIG can petition the TCEQ for rulemaking to require registration of subscriber systems. As resources are available, H-GAC or another appropriate agency shall distribute information about subscriber systems. If stakeholder concerns regarding subscriber systems remain after five years, the BIG may consider consulting with the TCEQ to address subscriber systems or petitioning the TCEQ to require that subscriber systems have their own wastewater discharge permits.

2.5.2: Develop model contracts

As resources are available, H-GAC shall work with attorneys for WWTFs, municipal utility districts (MUDs), and other stakeholders to develop model contract documents. Contracts might address operation or maintenance requirements, rights to inspect or repair, flow reduction incentives, flow

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[61] See Connected Texas website(Connected Texas 2010)

metering, and the ability to pass on fines or other financial burdens resulting from violations of permit requirements and for unauthorized discharges.

2.5.3: Provide a circuit rider program to work with WWTF permittees and subscriber systems to strengthen subscription contracts

As resources are available, H-GAC shall provide a circuit rider program to review and evaluate subscription contracts and implement terms identified in this section. This program would proceed on a voluntary basis by watershed, using the geographic prioritization framework recommended by the BIG and described later in this I-Plan. As part of the program, education on UAMP, metering, and UAMP development assistance could be provided. Appropriate WWTFs, MUDs, and their attorneys and accountants would be expected to participate.

Implementation Activity 2.6: Penalties for Violations

The TCEQ recently revised its Penalty Policy #3 to address concerns raised during its most recent Sunset review. The legislature added Texas Water Code Section 7.067 to allow the TCEQ discretion to approve a Supplemental Environmental Project (SEP) that would assist local governments that are respondents in enforcement actions to come into compliance with environmental laws or to remediate the harm caused by those violations. The Statute requires the TCEQ to review the penalty policy regularly.

Appendix D: Utility Asset Management Program Resources and Examples

Utility Asset Management Program Resources

The EPA

The EPA's website for Sanitary Sewer Overflows and Peak Flows provides useful information regarding Utility Asset Management Programs (UAMPs), particularly capacity, management, operation, and maintenance (CMOM) programs:

- EPA's Sanitary Sewer Overflows and Peak Flows website[116]
  http://cfpub1.epa.gov/npdes/home.cfm?program_id=4
- "Model NPDES Permit Language for Sanitary Sewer Overflows"[117]
  http://www.epa.gov/npdes/pubs/sso_model_permit_conditions.pdf
- Report to Congress : Impacts and Control of CSOs and SSOs[118]
  http://cfpub1.epa.gov/npdes/cso/cpolicy_report2004.cfm
- Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) programs at Sanitary Sewer Collection Systems[119]
  http://www.epa.gov/npdes/pubs/cmom_guide_for_collection_systems.pdf
- Self-Assessment Checklist[120]
  http://www.epa.gov/npdes/pubs/cmomselfreview.pdf

EPA Region 4

EPA Region 4 has been instrumental in the development of EPA's CMOM plan:

- EPA Region 4 Management, Operations, and Maintenance (MOM) Program Web page[121]
  http://www.epa.gov/region4/water/wpeb/momproject/index.html
- EPA Region 4 MOM Checklist[122]
  http://www.neiwpcc.org/neiwpcc_docs/WEBOM&R.AppendixE.pdf

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[116] (U.S. Environmental Protection Agency 2010d)

[117] (U.S. Environmental Protection Agency 2007)

[118] (U.S. Environmental Protection Agency 2004)

[119] (U.S. Evironmental Protection Agency 2005)

[120] (U.S. Environmental Protection Agency 2003)

[121] (U.S. Environmental Protection Agency 2009b)

[122] (New England Interstate Water Pollution Control Commission 2003)

EPA Region 6

EPA's Region 6, in association with the TCEQ, the Water Environment Association of Texas, and the City of Austin Water Utility, hosts an annual conference on CMOM. Information is available at http://www.weat.org.

The TCEQ

The TCEQ offers resources for managing and improving sanitary sewer systems:

- Sanitary Sewer Overflow (SSO) Initiative: Information for Prospective Participants[123]
  http://www.tceq.state.tx.us/comm_exec/forms_pubs/pubs/gi/gi-389.html/at_download/file
- Water Quality Noncompliance notification[124]
  http://www.tceq.state.tx.us/assets/public/compliance/enforcement/forms/00501.pdf
- Additional information is available from the Water Program Liaison, Program Support Section of the Field Operations Division.

New England Interstate Water Pollution Control Commission

New England Interstate Water Pollution Control Commission (NEIWPCC) has assembled excellent resources regarding collection system management:

- NEIWPCC Wastewater and Onsite Systems—Collection Systems website[125]
  http://www.neiwpcc.org/collectionsystems/
- Optimizing Operation, Maintenance, and Rehabilitation of Sanitary Sewer Collection Systems[126]
  http://www.neiwpcc.org/collectionsystems/OMR.asp

Water Environmental Federation's CMOM.net

CMOM.net is a reliable source of information about the EPA's CMOM regulations. It is maintained by members of the Collection Systems Committee of the Water Environment Federation (WEF).

- CMOM.net[127]
  http://www.cmom.net/

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[123] (TCEQ 2008c)

[124] (TCEQ 2010k)

[125] (New England Interstate Water Pollution Control Commission 2010)

[126] (New England Interstate Water Pollution Control Commission 2003)

[127] (Collection Systems Committee of the Water Environment Federation (WEF) 2009)

H-GAC Website

H-GAC maintains a Web page containing these and additional references. This page is available at www.h-gac.com/BIG.

Examples

A variety of websites contain case studies and examples:

- EPA's Featured Case Studies, Fact Sheets, and Other Information website[128]
  http://cfpub1.epa.gov/npdes/sso/featuredinfo.cfm?program_id=4
- NEIWPCC Capacity, Management, Operation, and Maintenance (CMOM) website[129]
  http://www.neiwpcc.org/collectionsystems/CMOM.asp
- H-GAC's Clean Waters Initiative CMOM workshop
  http://www.h-gac.com/community/water/cwi/cwi_past_workshops.aspx

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[128] (U.S. Environmental Protection Agency 2007)

[129] (New England Interstate Water Pollution Control Commission 2009)

Implementation Strategy 2.0: Sanitary Sewer Systems (IS2)

75 percent reduction of calculated load from reported SSOs

The estimated load reduction for the six main activities within IS2 range from zero to 75 percent of the load from reported SSOs. Based on staff estimates, UAMP may substantially reduce the number of SSOs and the causes of those violations. Reported SSOs represent only a portion of the loading from sanitary sewer systems, however it should be possible to address most SSOs.

Implementation Strategy 3.0: On-Site Sewage Facilities (IS3)

75 percent reduction of current load from OSSF

The estimated load reduction from the three main activities within IS3 is a 75 percent reduction of the current load from OSSFs over 25 years. The TMDL projects identify approximately 2,100 failing OSSFs in the BIG region. Replacing or repairing 100 failing systems each year over 25 years is possible. Other measures should compensate for the expected increase in the number of systems that fail within the next 25 years. Of particular note is a Galveston County study that indicated that 20-46 percent of surveyed participants changed their behavior based on educational material.[148]

Implementation Strategy 4.0: Stormwater and Land Development (IS4)

20 percent reduction in loading from stormwater each year, compounded

The estimated annual load reduction from the six main activities within IS4 is 20 percent. Studies indicate that individual activities can range from increasing bacterial loads to a 99 percent reduction. In the absence of better data, analogous studies pertaining to other constituents in large scale development, as documented in *The Practice of Low Impact Development* sponsored by the U.S. Department of Housing and Urban Development, suggest a range of values in various situations, but can be conservatively be averaged to be about 20 percent.[149] Implementation activities related to stormwater are expected to reduce bacteria loading from stormwater and land development by up to 20 percent over the entire implementation process.

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[148] (Galveston County Health District 1998)

[149] (NAHB Research Center, Inc. 2003)

Table 22: Implementation Strategy 2.0: Sanitary Sewer Systems (SSS)

(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
Sanitary Sewer System (SSS) failures.	Implementation Activity 2.1 (IA 2.1): Develop Utility Asset Management Programs (UAMPs) for SSS	IAs 2.1 to 2.6, combined, over 25 years, may result in a 50% reduction in calculated bacteria loading from SSSs as identified in the TMDL projects.	Technical- Assistance from EPA, TCEQ, WEAT, and private consultants may be necessary to develop UAMP plans for individual systems. Technical assistance for EPA's CMOM program and TCEQ's SSOI program may be helpful. Financial- existing local funding and grant funding when available	Workshops presented by TCEQ, WEAT, H-GAC, and other entities Existing resources Occasional e-mails between stakeholders	Year One: Begin developing UAMP plans for individual SSS; begin developing workshops Year Two: TCEQ to begin adding UAMP requirements to new WWTF permits Year Six: TCEQ to begin adding UAMP requirements to all WWTF permits being renewed Continuing, as permits are renewed: updates to UAMP plans, implementation of UAMP plans	After five years, eight workshops held After ten years, all WWTF have UAMP plans	Reports provided by stakeholders to the BIG regarding progress	H-GAC will collect reports from SSS owners/ operators and TCEQ.	SSS owners/ operators: develop UAMP plan; report progress to BIG H-GAC: collect and share information on the progress made each year; facilitate workshops BIG: Evaluate progress TCEQ: Add UAMP provisions to TPDES permits for WWTF as described, provide technical assistance
Sanitary Sewer System (SSS) failures.	Implementation Activity 2.2 (IA 2.2): Address fats, oils, and grease	IAs 2.1 to 2.6, combined, over 25 year, may result in a 50% reduction in calculated bacteria loading from SSSs as identified in the TMDL projects.	Technical- regulations, ordinances, and orders of other communities, as collected and shared by H-GAC and/or TCEQ, may serve as models. Legal assistance may be necessary for individual communities EPA, TCEQ, WEAT, and other agencies offer some technical resources. Financial- existing local funding and grant funding as available	Provision of example and model language provided on website Jurisdictions who choose to change or add regulations will need to offer public comment and participation as appropriate. Distribution of website and collateral educational material related to fats, oils, and grease.	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 regulation every five years Flyers or other collateral material distributed Website created and distributed	Information included in annual reports to the BIG Number of new regulations Number of flyers or other collateral material distributed Number of website visits	H-GAC will collect reports from stakeholders	Cities, counties, special purpose districts, and TCEQ: 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
Sanitary Sewer System (SSS) failures.	Implementation Activity 2.3 (IA 2.3): Encourage appropriate mechanisms to maintain function at lift stations	IAs 2.1 to 2.6, combined, over 25 year, may result in a 50% reduction in calculated bacteria loading from SSSs as identified in the TMDL projects.	Technical- Assistance from private consultants, EPA, TCEQ, and other entities may be necessary to develop appropriate mechanisms for individual lift stations Financial- existing local funding and grant funding as available	Educational components for this activity will be conducted as part of IA 2.1	As resources are available, implementation of this activity will begin immediately and will continue for the entire implementation process.	10% of SSS shall be compliant with recommendations every five years for 25 years	Information included in annual reports to the BIG Number of systems in compliance with recommendations	H-GAC will collect reports from stakeholders	Cities, counties, special purpose districts, and TCEQ: develop and deploy appropriate mechanisms; report progress to BIG H-GAC: collect and share information on the progress made each year BIG: Evaluate progress
Sanitary Sewer System (SSS) failures.	Implementation Activity 2.4 (IA 2.4): Improve reporting requirements for SSOs	IAs 2.1 to 2.6, combined, over 25 year, may result in a 50% reduction in calculated bacteria loading from SSSs as identified in the TMDL projects.	Technical- EPA and TCEQ will require technical assistance to develop appropriate database and reporting technologies SSS owners/operators may need broadband internet access or equivalent Financial- existing local funding and grant funding as available	TCEQ/EPA shall provide appropriate instructions to SSS operators for using statewide database	As resources are available, implementation of this activity will begin immediately and will continue for the entire implementation process. Within five years, EPA/TCEQ will have developed appropriate database and technology for collecting and sharing information regarding SSOs Following the deployment of the database, SSS owner/operators shall begin using the database	Deployment of an appropriate database for tracking SSOs SSO reports available in five years from database	Creation of database Number of reports in the database Number of SSS owner/operators reporting SSOs	H-GAC will collect information from TCEQ	EPA/TCEQ: develop and deploy database; report progress to BIG SSS owner/operators: report SSOs as appropriate H-GAC: 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
Sanitary Sewer System (SSS) failures.	Implementation Activity 2.5 (IA 2.5): Strengthen controls on subscriber systems	IAs 2.1 to 2.6, combined, may result in a 50% reduction in calculated bacteria loading from SSSs as identified in the TMDL projects is expected over 25 years.	Technical- TCEQ will need to be able to develop a registry of subscriber systems SSS owners/operators will need legal and technical assistance to review and improve contracts with subscribers Financial- existing local funding and grant funding as available	Circuit rider program to inform and assist SSO owners/ operators	As resources are available, implementation of this activity will begin immediately and will continue for the entire implementation process. By year three: Develop model contract language Within three years: As resources are available, H-GAC shall begin offering a circuit rider program; begin contract reviews and modifications Within five years, TCEQ/H-GAC shall have a list of subscriber systems in the project area	List of subscriber systems Model contract language developed 5 contract renewals incorporating model language each year starting in year five	Information included in annual reports to the BIG Creation of subscriber registry Number of subscribers in registry Number of contract renewals incorporating model language each year starting in year five	H-GAC will collect reports from stakeholders	TCEQ: develop and deploy registry; report progress to BIG SSS/WWTF owner/operators: report any improvements to contracts; provide information regarding subscribers H-GAC: collect and share information on the progress made each year; manage circuit rider program BIG: Evaluate progress
Sanitary Sewer System (SSS) failures.	Implementation Activity 2.6 (IA 2.6): Restructure penalties for SSS violations	IAs 2.1 to 2.6, combined, may result in a 50% reduction in calculated bacteria loading from SSSs as identified in the TMDL projects is expected over 25 years.	Technical- Legal assistance may be necessary Financial- existing local funding and grant funding as available	TCEQ shall offer a public participation process as appropriate	Within five years, have appropriate penalty structure revisions in place	Within five years, have appropriate penalty structure revisions in place	Revised penalty structure for SSS violations	H-GAC will collect reports from stakeholders, including TCEQ	TCEQ: revise penalty structure H-GAC: collect and share information on the progress made each year BIG: Evaluate progress