



Houston-Galveston Area Council

December 20, 2018

Ms. Earlene Lambeth (MC 203)
TMDL Project Manager
Water Quality Division
Texas Commission on Environmental Quality
12100 Park 35 Circle, Bldg. F
Austin, Texas 78753

RE: December 2018 Progress Report Houston Region TMDL Public Outreach Contract No. 582-18-91222, Work Order 01.

Dear Ms. Lambeth:

Enclosed is one (1) copy of the FY 2019 1st Progress Report for Contract No. 582-18-81222-01. It covers all deliverable activities for the project period September 1, 2018 through November 30, 2018. Financial Statements, HUB report and Voucher will be submitted separately.

Included in this Report are:

1. One copy of the quarterly progress report for September 1, 2018 thru November 30, 2018.
2. Copies of meeting summaries and other pertinent materials from project related meetings.
3. Copy of H-GAC newsletters, related water quality meetings, workshops, seminars, and training.

We hope you find the quarterly report satisfactory. Any comments you have will be appreciated. If you have any questions, please contact me by phone (713-993-4549) or E-mail (todd.running@h-gac.com).

Sincerely,

Todd Running
Water Resources Program Manager
Community & Environmental Planning Dept.

Cc: Jason Leifester
Chris Loft

TR/stj
Enclosures

**TMDL Program
FY 2019 Progress Report #1**

Date: December 20, 2018

Time Period Covered: 9/01/2018 – 11/30/2018

Name of Project: Houston-Galveston Area TMDL Public Participation Project

Contract No./Work Order 582-18-81222-01

TASK #1 PROJECT ADMINISTRATION

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
PRs (Task 1.1)	December 15, 2018	Completed on December 20, 2018.
Weekly E-mail Updates (Task 1.2)	Weekly	Provided hard copies with report.
FSRs (Task 1.3)	December 15, 2018	Provided as a separate report.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

Work performed for this task during this period included writing and assembling the monthly report. Copies of weekly emails are attached.

TASK #2 PUBLIC OUTREACH AND SUPPORT FOR THE BIG AND RELATED IMPLEMENTATION ACITIVITIES

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Meetings, workshops, or outreach activities to discuss and monitor I-plan for the BIG (Task 2.1)	Up to four public meetings, workshops, or other outreach activities and up to ten associated work group meetings.	<u>BIG Fall Meeting</u> : the fall meeting was held on October 23, 2018 during this project quarter. <u>Coordination and Policy Work Group</u> : met on October 15, 2018.
Draft meeting or event agenda and materials (Task 2.2)	Two (2) weeks prior to meeting	The BIG Fall meeting agenda and presentation provided to TCEQ on 10/17/2018.
Draft meeting or event summary (Task 2.3)	Within two (2) weeks following completion of meeting	A brief BIG Fall meeting summary was provided with weekly report.
Final agenda and meeting or event summary, list of attendees and contact information, and copies of any printed materials (Task 2.4)	Within thirty (30) days of the completion of the meeting	Final agenda, meeting materials, presentation and list of attendees provided with the 1 st Quarter Progress Report.
Implementation Summary Report (Task 2.5)	August 31, 2018	Not started.

Digital link to regional implementation database (Task 2.6)	August 31, 2018	Not due. Updated throughout the year.
---	-----------------	---------------------------------------

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

BIG Fall Meeting: Most of the work completed in the first quarter was in preparation and execution of the BIG Fall meeting, held on October 23, 2018. This preparation included hosting the BIG Coordination and Policy Workgroup; scheduling the meeting; announcing the meeting through newsletters, public engagement services (Constant Contact), and personal email; agenda, and presentation and meeting packet preparation. A draft meeting summary, meeting agenda, presentations and handouts are attached to this report.

The Fall meeting was held October 23, 2018 – 48 stakeholders attended the BIG Fall meeting. The BIG made quorum and approved new members and the spring meeting summary. The BIG was provided copies of the draft 2018 Annual Report. The BIG gave comments and edit suggestions. Members requested an updated version to approve. H-GAC staff agreed to provide a new version over the next week and members will be asked to approve the document. The BIG heard from the TMDL program on TMDL project updates. The BIG heard the report from the Coordination and Policy work group covering the response to the TCEQ letter. Finally, the BIG heard from H-GAC staff on four projects: West Fork of the San Jacinto WPP, WISE awards, OSSF SEP and Basin 11 and 13 TMDL projects.

Coordination and Policy Work Group: The work group met on October 15, 2018 – 11 stakeholders were in attendance. The work group reviewed the Fall meeting agenda. The group did not have any suggested changes. The group was provided the draft 2018 Annual Report. The changes to the document, including the new format (slimmed down) and revised status scoring were discussed. The work group provided comments and suggested edits. The work group also discussed how best to proceed with any follow up to the response letter submitted by TCEQ. The group decided to allow for follow up discussion with the TCEQ TMDL and reaching out TCEQ Region 12. Following the results of that outreach, the work group then would work on developing a Freedom of Information Act request. A draft meeting summary and meeting agenda are attached to this report.

Staff also participated in workshops, outreach, and regional meetings in relation to this task. Those meetings are listed below under the heading Additional Related Meetings, Training, Events and Conferences.

TASK #3 PUBLIC OUTREACH SUPPORT FOR THE UPPER OYSTER CREEK COORDINATING COMMITTEE AND RELATED IMPLEMENTATION ACTIVITIES

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Meetings or events for Upper Oyster Creek (Task 3.1)	One public meeting and up to two events.	No meetings or activities carried out during the quarter.
Draft meeting or event agenda and materials (Task 3.2)	Two (2) weeks prior to meeting	No meetings or activities carried out during the quarter.
Draft meeting or event summary (Task 3.3)	Within two (2) weeks following completion of meeting	No meetings or activities carried out during the quarter.

Final agenda and meeting or event summary, list of attendees and contact information, and copies of any printed materials (Task 3.4)	Within thirty (30) days of the completion of the meeting	No meetings or activities carried out during the quarter.
Upper Oyster Creek annual report	With final PR	Not started.

Work Performed This Period

No meetings or work related to Task 3 were carried out during the quarter.

TASK #4 PUBLIC OUTREACH SUPPORT AND IMPLEMENTATION PLAN DEVELOPMENT FOR CHOCOLATE BAYOU

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Draft I-Plan for Chocolate Bayou (Task 4.1)	December 15, 2018.	Watershed boundary revised for Chocolate Bayou. The map set has been updated and LDC have been rerun. Revision to TMDL calculations in process.
Final I-Plan for Chocolate Bayou (Task 4.2)	May 15, 2019	
Meetings or events for Chocolate Bayou (Task 4.3)	Up to two public meetings or events	No meetings or activities carried out during the quarter.
Draft meeting or event agenda and materials (Task 4.4)	Two weeks prior to meeting or event	No meetings or activities carried out during the quarter.
Draft meeting or event summary (Task 4.5)	Within two weeks following completion of meeting or event	No meetings or activities carried out during the quarter.
Final agenda and meeting or event summary, list of attendees, and contact information, and copies of any printed materials (Task 4.6)	Within 30 days of the completion of the meeting or event.	No meetings or activities carried out during the quarter.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

The watershed boundary had to be redrawn using NHDplus. The change in the boundary required source data to be reviewed and updated as needed. All maps were updated using the new boundary and the LDCs were revised. The TMDL calculation will be recalculated in December. All changes will be reflected in the TSD, TMDL document and in the draft I-Plan. New priority source maps were developed for the draft I-Plan. The maps are included with the report. The revised LDCs are included with the report.

TASK #5 PUBLIC OUTREACH SUPPORT FOR OTHER TMDL PROJECTS IN THE HOUSTON REGION

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Support for other TMDL public outreach activities, as needed (Task 5.1)	As requested and scheduled.	No meetings or activities carried out during the quarter.
Draft meeting or event agenda and materials (Task 5.2)	Two (2) weeks prior to meeting	No meetings or activities carried out during the quarter.
Draft meeting or event summary (Task 5.3)	Within two (2) weeks following completion of meeting	No meetings or activities carried out during the quarter.
Final agenda and meeting summary, list of attendees and contact information, and copies of any printed materials (Task 5.4)	Within thirty (30) days of the completion of the meeting	No meetings or activities carried out during the quarter.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

No work was carried out for Task 5.

ADDITIONAL RELATED MEETINGS, TRAINING, EVENTS, AND CONFERENCES

- 1) Presentations:
 - a. October 11, 2018 – staff presented at the TCEQ Autumn Environmental Conference and Expo. Presentation attached.
 - b. November 29, 2018 – Staff presented to Woodland GREEN on water quality in the West Fork of the San Jacinto River. Presentation attached.
- 2) Meetings, Events and Conferences:
 - a. October 10-11, 2018 – staff attended and presented at the TCEQ Autumn Environmental Conference and Expo.
 - b. October 18, 2018 – staff attended and hosted a water quality information table at the BPA Symposium, Houston, TX.
 - c. November 7, 2018 – staff attended the Regional Stormwater Quality Education Workgroup.
 - d. November 7, 2018 – staff attended a Low Impact Development Workshop.
 - e. November 14, 2018 – staff attended the GBF Boater Waste Meeting.
 - f. November 30, 2018 – staff met with TX AgriLife to discuss potential LID workshops.
- 3) Associated Implementation Projects and Programs
 - a. LID Project – staff completed the GBEP funded project coordinated with the cities of Pearland and Mont Belvieu. H-GAC worked with the cities to evaluate current ordinance and codes to develop recommendation to encourage the use of LID and green infrastructure practices. H-GAC hosted a project wrap up LID workshop on November 7, 2018. 25 stakeholders, including numerous staff from local governments were in attendance. Final deliverables, including the ordinance and maintenance report will

be posted by the end of 2018 to the LID website: <http://h-gac.com/community/low-impact-development/default.aspx>.

- b. West Fork of the San Jacinto River Watershed Protection Plan – The draft WPP has been submitted to the TCEQ and EPA for final review and approval. The draft plan can be accessed at: <https://westfork.weebly.com/>. H-GAC will be receiving funding to draft a WPP for Cypress Creek. A proposal has been submitted to TCEQ for a WPP on Spring Creek.
 - c. OSSF SEP – H-GAC has an ongoing SEP project and has received funding through the state and from Harris County District Attorney’s Office to repair and replace failing systems. H-GAC is targeting OSSFs in areas with watershed-based plans, including the BIG project area. For more information on the program: <http://h-gac.com/community/water/ossf.aspx>.
- 4) Associated Partner Activities
- a. LID Workshops – TX AgriLife has received funding from GLO’s CMP program and TCEQ’s NPS program to conduct LID workshops along the coast and in urban settings. H-GAC is coordinating with TX AgriLife to capitalize on our implementation funding.

BRIEF DESCRIPTION OF OVERALL FINDINGS:

Work during this quarter focused on securing final approval of the 2018 Annual Report and beginning to gather information and data for the 2019 Annual Report. The BIG met and requested minor revisions to the annual report. The members requested additional time to review the final document once the requested changes were made. The final report was submitted to members of the BIG for review and final approval was requested at the end of the quarter. Work on Task 4 got underway. The watershed boundary used to delineate Chocolate Bayou was updated using NHDplus. This new version required altering all the maps, changes to the load duration curves and revisions to TMDL calculations used in the Chocolate Bayou Technical Support Document and TMDL document. This was in process at the end of the quarter. Those revisions will be used in the draft I-Plan which will be delivered in December 2018.

Significant Problems (describe any scheduling shortfalls, detail significant problems and how these problems were resolved, etc.):

No problems were encountered this quarter.

Johnston, Steven

From: Johnston, Steven
Sent: Tuesday, October 2, 2018 8:13 AM
To: Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)
Cc: Jazmyn Milford; Jason Leifester (Jason.leifester@tceq.texas.gov); Chris Loft
Subject: FY19 WO #1 Weekly Reports (Sept 3 - Sept 7; Sept 10 - Sept 14; Sept 17 - Sept 21; and Sept 24 - Sept 28)

Good Morning, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. This year, I will provide the updates for each work order, individually. There are just too many tasks to report all of the work orders together. I hope that this will also make it easier to deliver them on time going forward. I will get caught up with this one. Please let me know if you have any questions.

Sept. 3 – Sept. 7th:

Task 1 Project Administration

- ***Anticipate Spend Down August 2019?:*** Yes.
- ***Is spending by categories going as expected?:*** Yes at this time.
- ***Last Invoice:*** N/A.
- ***Original Budget Amount:*** \$110,000
- ***Total Spent to Date ():*** \$ ***Remaining Budget Amount:*** \$110,000

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Staff working on updates to the implementation database
- Drafting 2018 summary report
- Drafting 2018 BIG annual report for Fall meeting
- Fall meeting scheduled for October 23, 2018
- Preparing a presentation for the TCEQ Expo

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan
- Staff scheduling the Public meeting date

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Sept. 10 – Sept. 14th:

Task 1 Project Administration

- ***Anticipate Spend Down August 2019?:*** Yes.
- ***Is spending by categories going as expected?:*** Yes at this time.
- ***Last Invoice:*** N/A.
- ***Original Budget Amount:*** \$110,000
- ***Total Spent to Date ():*** \$ ***Remaining Budget Amount:*** \$110,000

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Staff working on updates to the implementation database
- Drafting 2018 summary report
- Drafting 2018 BIG annual report for Fall meeting
- Fall meeting scheduled for October 23, 2018
- Completed presentation for the TCEQ Expo

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan
- Staff scheduling the Public meeting date

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Sept. 17 – Sept. 21st:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date ():** \$ **Remaining Budget Amount:** \$110,000

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Staff working on updates to the implementation database
- Drafting 2018 summary report
- Drafting 2018 BIG annual report for Fall meeting
- Fall meeting scheduled for October 23, 2018
- Submitted presentation to TCEQ Expo

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan
- Staff scheduling the Public meeting date – selected November 14, 2018 as a potential public meeting date.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Sept. 24 – Sept. 28th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date ():** \$ **Remaining Budget Amount:** \$110,000

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Staff working on updates to the implementation database
- Drafting 2018 summary report
- Drafting 2018 BIG annual report for Fall meeting
- Fall meeting scheduled for October 23, 2018
- Scheduling a Coordination and Policy meeting

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan
- Staff scheduling the Public meeting date – selected November 14 as a potential public meeting date

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Steven Johnston

Senior Planner

Community & Environmental Department | Houston-Galveston Area Council

3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com

832.681.2579 | 713.627.3200 | fax: 713.993.4503

steven.johnston@h-gac.com

<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Sunday, October 14, 2018 6:09 PM
To: Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)
Cc: 'Jazmyn Milford'; Jason Leifester (Jason.leifester@tceq.texas.gov); Chris Loft
Subject: FY19 WO #1 Weekly Reports (Oct 1 - Oct 5 and Oct 8 - Oct 12)

Good Afternoon, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Oct. 1st – Oct. 5th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date ():** \$ **Remaining Budget Amount:** \$110,000

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Staff working on updates to the implementation database
- Drafting 2018 summary report
- Drafting 2018 BIG annual report for Fall meeting
- Fall meeting scheduled for October 23, 2018
- Coordination and Policy meeting set for October 15, 2018

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan
- Staff scheduling the Public meeting date – selected November 14 as a potential public meeting date

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Oct. 8th – Oct. 12th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date ():** \$ **Remaining Budget Amount:** \$110,000

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Staff attended the TCEQ's Autumn Environmental Conference. Staff presented at conference.
- Staff working on updates to the implementation database
- Drafting 2018 summary report

- Completed the draft 2018 BIG annual report for Fall meeting
- Fall meeting scheduled for October 23, 2018 – draft Agenda attached to this email.
- Coordination and Policy meeting set for October 15, 2018 – Prepared materials for meeting.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan
- Staff scheduling the Public meeting date – selected November 14 as a potential public meeting date

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

No activities to report

Steven Johnston

Senior Planner

Community & Environmental Department | Houston-Galveston Area Council

3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com

832.681.2579 | 713.627.3200 | fax: 713.993.4503

steven.johnston@h-gac.com

<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Friday, October 26, 2018 4:03 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (Oct 15 - Oct 19)

Good Afternoon, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Oct. 15th – Oct. 19th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date ():** \$ **Remaining Budget Amount:** \$110,000
- Will update financials with next week's report.

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Staff working on updates to the implementation database
- Drafting 2018 summary report
- Fall meeting scheduled for October 23, 2018 – Prepared meeting materials. Provided draft meeting presentation to TCEQ PM for review. Revised draft 2018 Annual Report based on comments received from the Coordination and Policy work group. Sent out meeting materials to the BIG for review along with meeting reminder.
- Coordination and Policy meeting held on October 15, 2018 – 11 stakeholders were in attendance. The work group reviewed the Fall meeting agenda. The group did not have any suggested changes. The group was provided the draft 2018 Annual Report. The changes to the document, including the new format (slimmed down) and revised status scoring were discussed. The work group provided comments and suggested edits. The work group also discussed how best to proceed with any follow up to the response letter submitted by TCEQ. The group decided to allow for follow up discussion with the TCEQ TMDL and reaching out TCEQ Region 12. Following the results of that outreach, the work group then would work on developing a Freedom of Information Act request.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan. Working on identified sources load reduction calculations and reduction priority area strategy maps.
- Staff scheduling the Public meeting date – selected November 14 as a potential public meeting date. Meeting date has been canceled due to shifting timeline for I-Plan.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Steven Johnston
Senior Planner

Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Monday, October 29, 2018 4:27 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (Oct 22 - Oct 26)

Good Afternoon, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Oct. 22nd – Oct. 26th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (\$8,801.96) Remaining Budget Amount: \$101,198.04**

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Staff working on updates to the implementation database
- Drafting 2018 summary report
- Fall meeting was held October 23, 2018 – 48 stakeholders attended the BIG Fall meeting. The BIG made quorum and approved new members and the spring meeting summary. The BIG was provided copies of the draft 2018 Annual Report. The BIG gave comments and edit suggestions. Members requested an updated version to approve. H-GAC staff agreed to provide a new version over the next week and members will be asked to approve the document. The BIG heard from the TMDL program on TMDL project updates. The BIG heard the report from the Coordination and Policy work group covering the response to the TCEQ letter. Finally the BIG heard from H-GAC staff on four projects: West Fork of the San Jacinto WPP, WISE awards, OSSF SEP and Basin 11 and 13 TMDL projects.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan. Working on identified sources load reduction calculations and reduction priority area strategy maps.
- Staff met to discuss developing source bacteria load reduction estimates, particularly for the LA load allocation.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Steven Johnston

Senior Planner

Community & Environmental Department | Houston-Galveston Area Council

3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com

832.681.2579 | 713.627.3200 | fax: 713.993.4503

steven.johnston@h-gac.com

<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Tuesday, November 6, 2018 5:30 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: RE: FY19 WO #1 Weekly Report (Oct 29 - Nov 2)

Good Afternoon, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Oct. 29th – Nov. 2nd:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (Sept. 30, 2018):** \$8,801.96 **Remaining Budget Amount:** \$101,198.04

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Staff working on updates to the implementation database
- Drafting 2018 summary report
- Addressed stakeholder comments to the draft 2018 Annual Report. Will send final draft to the BIG for final review the week of November 5th and final acceptance the week of November 12th.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan. Working on identified sources load reduction calculations and reduction priority area strategy maps.
- Updated watershed boundary and development of subwatersheds to assist with developing priority areas. Submitted watershed to TCEQ PMs for review and additional comments.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Monday, November 12, 2018 5:00 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (Nov 5 - Nov 9)

Good Afternoon, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Nov. 5th – Nov. 9th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (Sept. 30, 2018):** \$8,801.96 **Remaining Budget Amount:** \$101,198.04
- Will update spend down with next report.

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Staff working on updates to the implementation database
- Drafting 2018 summary report
- Annual Report sent via email to the BIG for final review during the week of November 5th. The BIG will be sent an email to provide their approval the week of November 12th.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan. Working on identified sources load reduction calculations and reduction priority area strategy maps.
- TCEQ PMs approved the watershed boundary. Maps are being revised based on new watershed boundary.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Wednesday, November 28, 2018 5:47 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (Nov 12 - Nov 16)

Good Evening, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Nov. 12th – Nov. 16th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (Sept. 30, 2018):** \$21,565.92 **Remaining Budget Amount:** \$88,434.08

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Staff working on updates to the implementation database
- Draft 2018 summary report completed and being reviewed
- BIG sent draft annual report for approval.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan. Identified source load reduction calculations and reduction priority area strategy maps are nearly complete.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Wednesday, November 28, 2018 6:11 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (Nov 19 - Nov 23)

Good Evening, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Nov. 19th – Nov. 23rd: (Please note, there are no changes reported this week as staff were out)

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (Oct. 30, 2018):** \$21,565.92 **Remaining Budget Amount:** \$88,434.08

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Staff working on updates to the implementation database
- Draft 2018 summary report completed and being reviewed
- BIG sent draft annual report for approval.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan. Identified source load reduction calculations and reduction priority area strategy maps are nearly complete.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Wednesday, December 12, 2018 5:05 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Reports (Nov 26 - Nov 30) and (Dec 3 - Dec 7)

Good Afternoon, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Nov. 26th – Nov. 30th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (Oct. 31, 2018):** \$21,565.92 **Remaining Budget Amount:** \$88,434.08

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Draft 2018 summary report submitted to TCEQ PM.
- BIG sent draft annual report for approval. Received initial approvals from a few members. A second email sent to seek additional approvals to make quorum.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan. Identified source load reduction calculations and reduction priority area strategy maps are nearly complete.
- TMDL and TSD being revised to address changes to watershed boundary. This is source material for I-Plan.
- Stakeholder meeting being planned for February.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Dec. 3rd – Dec. 7th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (Nov. 30, 2018):** \$25,949.74 **Remaining Budget Amount:** \$84,050.26

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- BIG sent draft annual report for approval. Received initial approvals from a few members. A second email sent to seek additional approvals to make quorum.

- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan. Identified source load reduction calculations and reduction priority area strategy maps are nearly complete.
- TMDL and TSD being revised to address changes to watershed boundary. This is source material for I-Plan.
- Stakeholder meeting being planned for February.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>



Houston-Galveston Area Council



About the BIG

The Bacteria Implementation Group (BIG) is a thirty-one-member committee that has developed and is overseeing implementation of a plan, or I-Plan, to remedy high levels of bacteria in waterways identified in Total Maximum Daily Load projects in the Houston Region. Activities of the BIG are open to all interested parties, and people are encouraged to attend meetings and participate in the various water quality issues pertinent to the I-Plan. The I-Plan is a common-sense approach for reducing bacteria levels in our waterways and providing better services to citizens. However, for the plan to work, we need your help. With everyone pitching in together, we will reduce bacteria levels in our waterways.

Contact Info

Steven Johnston

steven.johnston@h-gac.com

832-681-2579

Resources

[Water Quality Data](#)

[Water Pollution Complaints](#)

[Publications and Resources](#)

[Water Resources Information Map](#)

Interactive BIG Report

Bacteria Implementation Group   

[About BIG](#) [Progress](#) [Monitoring Stations](#) [Wastewater](#)



In August 2016, the East and West Fork of the San Jacinto River TMDL and plan for implementation was approved by the TCEQ Commissioners. Stakeholders for the San Jacinto River watershed recommended the watershed join the BIG project area and stakeholders begin to implement the BIG I-Plan. The BIG had approved this decision in May 2016. The 2017 Annual Report reflects the addition of the East and West Forks of the San Jacinto River to the BIG project area. The I-Plan was initially written for 72 TMDLs. With additional TMDLs completed within the BIG project area and the inclusion of Armand Bayou and the East and West Forks of the San Jacinto River, the I-Plan now covers 102 TMDLs.

For more information: [TCEQ Total Maximum Daily Load Program \(TMDL\) and H-GAC's Bacteria Implementation Group](#)

BIG Project Area





BIG Reports

The BIG I-Plan

On January 30, 2013, the Texas Commission on Environmental Quality (TCEQ) formally approved the BIG's Implementation Plan (I-Plan), titled "Implementation Plan for Seventy-Two Total Maximum Daily Loads for Bacteria in the Houston-Galveston Region". Over 100 organizations representing local governments, business, and environmental interests passed resolutions in support of the I-Plan.

[Implementation Plan for Seventy-Two Total Maximum Daily Loads for Bacteria in the Houston-Galveston Region](#) 

The I-Plan is divided into eleven strategy areas. Each strategy area is further broken into implementation activities. There are thirty-eight implementation activities spread out among the eleven strategies. The BIG will revise the I-Plan over time. Rather than make edits to the original document, updates to the I-Plan will be carried out through addendums to the plan.

[BIG I-Plan Full Document](#)

[BIG I-Plan Excerpts](#)

[BIG I-Plan Four-Page Summary](#)

[Addendum One](#)

[Addendum Two](#)

[Addendum Three](#)

[Addendum Four](#)

[BIG I-Plan TCEQ Project Page](#)

[Annual Reports](#) 

Success for the BIG will be achieved when the waters assessed by the state are no longer considered impaired, meaning they meet state water quality standards. Achieving that goal requires annually assessing progress to determine what is working and what is not working, looking critically at what each of the BIG partners is doing, and sharing information and coordinating future implementation activities. This Annual Report is meant to be that mechanism for annual assessment, encouraging efforts that appear to be working and redirecting implementation that seems to be falling short. It is also an opportunity to look at the I-Plan to see if expectations are being met or if some of the activities need further refinement.

Please contact us to request printed copies.

[2018 Draft Annual Report](#)

[2017 Report \(PDF 5 MB\)](#)

[2016 Report \(PDF 13 MB\)](#)

[2015 Report](#)

[2014 Report](#)

[2013 Report](#)

BIG's Top Five Most and Top Five Least Impaired Water Bodies



The BIG's Top Five Most and Top Five Least Impaired Waterbodies Project was developed by H-GAC's BIG in 2016 to address waterways that did not meet the state water quality standard for bacteria. Bacteria sources are investigated by H-GAC staff and reported to local jurisdictions for further action. The ultimate goal is to eliminate sources and potentially remove streams from the state's list of bacteria-impaired waterways. The project is funded through grants from the U.S. Environmental Protection Agency through the Texas Commission on Environmental Quality's (TCEQ) Galveston Bay Estuary Program (GBEP).

[Preliminary Action Report](#)

[Bacteria Source Identification Report](#)

[Final Report](#)

BIG Ideas for Cleaner Water 2017: Local Government Strategies for Improving Water Quality 1



BIG Ideas for Cleaner Water 2017: Local Government Strategies for Improving Water Quality



BIG Meeting Materials

Find all meeting materials for the current and past Bacteria Implementation Group (BIG) meetings, which are held twice a year with a Fall meeting typically in October and a Spring Meeting usually in May. Expand each meeting listing to find all available meeting materials.

2018 Fall Meeting - October 23, 2018 8



Houston-Galveston Area Council

2nd Floor Conference Rm B&C, 1:00 PM - 3:30 PM

3555 Timmons Lane, Houston, TX 77027

Meeting Agenda

Draft 2018 Annual Report

MeetingPresentation

TMDL Presentation

West Fork San Jacinto WPP

WISE Awards

OSSF SEP Presentation

TMDL Basin Project Presentation

2018 Spring Meeting - June 5, 2018 7



2017 Fall Meeting - October 31, 2017 2



2017 Spring Meeting - May 23, 2017 6



2016 Fall Meeting - October 25, 2016 2



2016 Spring Meeting - May 24, 2016 3



- 2015 Fall Meeting - November 2, 2015 4 
- 2015 Annual Meeting - June 22, 2015 6 
- 2014 Mid-Year Meeting - October 21, 2014 4 
- 2014 Annual Meeting - May 27, 2014 9 
- 2013 Mid-Year Meeting - October 15, 2013 6 
- 2013 Annual Meeting - May 14, 2013 4 
- 2012 Mid-Year Meeting - October 16, 2012 7 
- 2012 Annual Meeting - May 22, 2012 10 

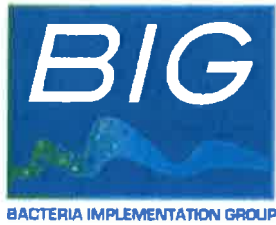


BIG Membership Directory

Name	Representing	Organization	Alternate 1	Alternate 2
Michael Bloom	Business/Industry	RG Miller Engineers, Greater Houston Partnership	Jason Maldonado	
Danielle Cioce	County	Harris County	Camila Biaggi	Nick Russo
Marilyn Christian	County	Harris County Public Health & Environmental Services	Jennifer Wheeler	Jerry Caraviotis
Greg Hall	Small City	City of Conroe		
Andrew Isbell	Rural County	County		
Catherine Elliott	County	Harris County Flood Control District	Robert Snoza	Roberto Vega
Anne Olson	Conservation	Buffalo Bayou Partnership	Jessalyn Giacona	Linda Shead
Richard Chapin	Large City	City of Houston	Zafar Ahmed	Kathlie Bulloch
Teague Harris	Utility District	IDS Engineering		
Linda Shead	Conservation	Bayou Preservation Association		
Vacant	Business/Industry (Boater)			

Name	Representing	Organization	Alternate 1	Alternate 2
Carol LaBreche	Large City	City of Houston	Carol LaBreche	Richard Chapin
Tom Ivy	Conservation	Texas Stream Team	Jim Williams	
David Parkhill	Business/Industry	San Jacinto River Authority		
Helen Lane	Conservation	Houston Audubon Society	Bethany Foshee	
Mike Lindsey	Rural County	Montgomery County	Frank Green	Reuben Martinez
Craig Maske	Business/Industry	IDS Engineering	Scott Saenger	
Cathy McCoy	Agriculture	Harris County Soil & Water Conservation District #442		
Hannah Cruce	Agriculture	Texas Forest Service	Hughes Simpson	
Becky Olive	Business/Industry	AECOM	Karen Kottke	Patty Matthews
Mitchell Page	Utility Dirstrict	Schwartz, Page, & Harding, LLP		
Raymond Pavlovich	Utility District	Nottingham Country Municipal Utility District	Michael Thornhill	Matt Carpenter
Linda Pechacek	Public	Citizen, Civil Engineer	Rachel Powers	
Ron Pinheiro	Large City	City of Houston		
Denise Ehrlich	Business/Industry	Gulf Coast Waste Disposal Authority	Shaun Austin	

Name	Representing	Organization	Alternate 1	Alternate 2
Jim Robertson	Conservation	Cypress Creek Flood Control Coalition	Richard Smith	
Linda Shead	Conservation	Texas Coastal Partners	Mary Ellen Whitworth	
Brian Shmaefsky	Resource Agency/Academia	Lone Star College, Kingwood	Jon Connolly	
Sarah Gossett	Conservation	Galveston Bay Foundation	Scott Jones	
David Brown	Resource Agency/Academia	US Geological Survey	Michael Lee	
Jack Murphy	Small City	City of League City	Susie Blake	Jody Hooks
Mayor Leah Tarrant	Rural Small City	City of Patton Village		
Rep. Ernest Bailes IV	Agriculture (County)	San Jacinto County	Dale Everitt	



**FALL MEETING
Agenda**

**Tuesday, October 23, 2018
1:00 pm to 3:00 pm
H-GAC Conference Room B, Second Floor
3555 Timmons Lane**

Call to Order/Welcome/Introductions

Welcome by H-GAC

Introductions of BIG members & staff

Review Agenda. Each agenda item shall provide time for discussion by the BIG followed by comments from the audience.

Certification of Quorum

Approval of the Proposed Members & Alternates

BIG members will review the Bacteria Implementation Group Roster and approve as appropriate.

Approval of the June 5, 2017 Meeting Summary

BIG members will review, comment and approve as appropriate.

Public Comment

The public may sign up at the beginning of the meeting to make an informal comment of no more than three minutes.

Item One: Review 2018 Annual Report

Staff shall lead the BIG in review of the 2018 draft Annual Report. BIG members comment and approve as appropriate.

Item Two: TCEQ TMDL Program Update

TCEQ TMDL Program staff will update the BIG on TMDLs and other matters that potentially affect the BIG.

Item Three: Response to the TCEQ Letter

The BIG will discuss a response to the TCEQ Implementation Letter.

Item Four: H-GAC Program Reports

- **West Fork of the San Jacinto River Watershed Protection Plan**
- **WISE Awards Program Developments**
- **H-GAC OSSF SEP Program**
- **TMDL Basin 11 and 13 Project Updates**

Item Five: Other Business/Roundtable

As time permits, H-GAC, BIG members, and stakeholders are encouraged to discuss implementation activities, related projects, and announcements.

Next Meeting Date

June 4, 2019

Adjourn

BIG Meeting instructions for Conference Line:

You will also be instructed to call in to the meeting:

To call in, dial 713-481-0090 (or 800-240-3895). You will be asked to enter your pass code, followed by the # sign. The pass code is 1084242. If you dial in before H-GAC, you will hear "music on hold". Once H-GAC dials in, the music will cease, and the conference call will begin. Remember--if you do press hold, everyone will hear your hold music.

In compliance with the Americans with Disabilities Act, H-GAC provides for reasonable accommodation for persons attending H-GAC functions. Requests should be received by H-GAC 24 hours prior to the function.

H-GAC encourages meeting attendees to bring their own mug or cup to all meetings.

BACTERIA IMPLEMENTATION GROUP ROSTER (10-17-18)

Last	First	Representing	Organization	Alternate1	Alternate 2
Bailes IV	Rep. Ernest	Agriculture (County)	San Jacinto County	Dale Everitt	
Bernhardt*	Sarah	Conservation	Bayou Preservation Association	James "Ty" Kelly	
Bloom	Michael	Business / Industry	RG Miller Engineers	Jason Maldonado	
Brown	David	Resource Agency / Academia	US Geological Survey	Michael Lee	
Chapin	Richard	Large City	City of Houston	Zafar Ahmed	
Christian	Marilyn	Urban County	Harris County Public Health & Environmental Services	Jerry Caraviotis	
Cioce	Danielle	Urban County	Harris County	Camila Biaggi	Nick Russo
Ehrlich	Denise	Business / Industry	Gulf Coast Authority	Shaun Austin	
Elliott	Catherine	Urban County	Harris County Flood Control District	Robert Snoza	Roberto Vega
Hall	Greg	Small City	City of Conroe		
Harris	Teague	Utility District	IDS Engineering		
La Breche	Carol	Large City	City of Houston	Richard Chapin	
Isbell	Andrew	Rural County	Walker County		
Ivy	Tom	Conservation	Texas Stream Team	Jim Williams	
Gossett	Sarah	Conservation	Galveston Bay Foundation	Scott Jones	
Lane	Helen	Conservation	Houston Audubon Society	Bethany Foshee	
Lindsey	Mike	Rural County	Montgomery County	Frank Green	Scott Nichols Reuben Martinez
Maske	Craig	Business / Industry	IDS Engineering	Scott Saenger	
McCoy	Cathy	Agriculture	Harris County SWCDistrict #442		
Murphy	Jack	Small City	City of League City	Susie Blake	Jody Hooks
Olive	Becky	Business / Industry	AECOM	Karen Kottke	Patty Matthews
Olson	Anne	Conservation	Buffalo Bayou Partnership	Jessalyn Giacona	Linda Shead
Page	Mitchell	Utility District	Schwartz, Page, & Harding, LLP		
Parkhill	David	Business / Industry	San Jacinto River Authority		
Pechacek	Linda	Public	Citizen, Civil Engineer	Rachel Powers	
Pinheiro	Rod	Large City	City of Houston		
Robertson	Jim	Conservation	Cypress Creek Flood Control Coalition	Richard Smith	
Shead	Linda	Conservation	Texas Coastal Partners	Mary Ellen Whitworth	
Shmaefsky	Brian	Resource Agency / Academia	Lone Star College, Kingwood	Jon Connolly	
Singhania*	Monica	Agriculture	Texas Forest Service	Hughes Simpson	
Tarrant	Mayor Leah	Rural Small City	City of Patton Village		
Thornhill	Michael	Utility District	SI Environmental	Matt Carpenter	
Tuma	Scott	Business / Industry (Boating)	Boater	Sarah Gossett	

**Approval of BIG Required



**SPRING MEETING
Summary**

**Tuesday, June 5, 2018
1:00 pm to 3:00 pm
H-GAC Conference Room B, Second Floor
3555 Timmons Lane**

Members Present

Richard Chapin, Marilyn Christian, Danielle Cioce, Hannah Cruce, Denise Ehrlich, Catherine Elliott, Teague Harris (Phone), Carole LaBreche, Sarah Gossett, Jack Murphy, David Parkhill, Linda Pechacek, Linda Shead, Brian Shmaefsky

Becky Olive was represented by Karen Kottke
Anne Olson was represented by Linda Shead

Members Absent

Ernest Bailes IV, Michael Bloom, David Brown, Greg Hall, Andrew Isbell, Tom Ivy, Helen Lane, Mike Lindsey, Craig Maske, Cathy McCoy, Mitchell Page, Rod Pinheiro, Jim Robertson, Leah Tarrant

Guests Present

Jazmin Avellaneda, Stephanie Brady, Ralph Calvino, Jerry Caraviotis, Nugent Cotton, Amy Dinn, Tom Douglas, Rick Felan, Sarah Gunter, Trevir Haechten, Amin Kiaghadi, Robert Kidd, Karen Kottke, Jason Leifester, Lisa Marshall, Jimmy Millican, Maria Modelska, Tina Peters, Rachel Powers, Robert Snoza, Liz Stone, Yu-Chun Su, Sheeba Thomas, Scott Tuma, Kyle Wright

H-GAC Staff Present

Becki Begley, Steven Johnston, Todd Running, Brian Sims

Call to Order/Welcome/Introductions

Mr. Steven Johnston, H-GAC, welcomed those in attendance. Members of the BIG and guests were asked to introduce themselves. The agenda was reviewed and the BIG was provided an opportunity to discuss.

The BIG provided a Moment of Silence to honor the memory of Ray Pavlovich, a member of the BIG.

Certification of Quorum

A quorum was certified during the meeting.

Item One: Approval of Proposed Members and Alternates

The following changes were approved by the BIG:

- Michael Thornhill was approved to represent Utility Districts on the BIG;
- Scott Tuma was approved to represent Boaters on the BIG; and
- Sarah Gossett was approved as an alternate for Scott Tuma.

Item 2: Approval of the October 31, 2017 Meeting Summary

The BIG was provided the opportunity to review and give comment to the draft October meeting summary. No changes were requested and the item was approved.

Item 3: Public Comment

No public comments were made.

Item 4: Review and Approve Addendum Four

Mr. Johnston reviewed Addendum Four to the BIG I-Plan. Addendum Four documents the addition of the Jarbo Bayou TMDL, Assessment Unit (AU) 2425B_01, to the BIG project area bringing the total of AUs to 103 being addressed by the I-Plan. Stakeholders from the watershed met in 2014 and 2015 and decided to join their watershed to the BIG and implement the BIG I-Plan in Jarbo Bayou. TCEQ approved the TMDL and stakeholder decision in January 2018.

The BIG approved Addendum Four.

Item 5: TMDL Program Updates

Representatives from the Texas Institute for Applied Environmental Research (TIAER) and the University of Houston presented on the "Status of Additions to Indicator Bacteria TMDLs in the Lake Houston and Armand Bayou Watersheds," and "TMDL for Mary's Creek Bypass 1102F_01," respectively.

Mr. Jimmy Millican, TIAER, reviewed completed TMDLs that make up the BIG project area. In the San Jacinto River watershed, there are seven completed TMDLs: 1002_06, 1003_01,

1003_02, 1003_03, 1004_01, 1004_02 and 1004D. In the Armand Bayou watershed, there are six completed TMDLs: 1113_02, 1113A_01, 1113B_01, 1113C_01, 1113D_01 and 1113E_01.

Mound Creek, 1015A_01, is a new TMDL project underway in the West Fork of the San Jacinto River, near the City of Conroe. Mr. Millican reported that the geometric mean for 1015A_01 was 387 MPN/100mL and 334 MPN/100mL as listed in the 2014 TCEQ Integrated Report (IR) and 2016 draft IR, respectively. The contact recreation standard for *E. coli* is 126 MPN/100mL. Mr. Millican reviewed potential sources, noting the watershed has a low population density, few WWTF permits and limited MS4 permitted area coverage. This suggest the potential driver in elevated bacteria is from unpermitted non-point sources, agriculture, onsite sewage facilities (OSSF), feral hogs, and wildlife.

Mr. Millican stated TIAER was working on an Addendum to the six TMDLs in Armand Bayou that would add 1113_03 to the project. The geometric mean was reported as 48 MPN/100mL in the 2014 IR and 62 MPN/100mL in the 2016 IR. The contact recreation standard for Enterococcus is 35 MPN/100mL due to the tidal influence on the AU. Mr. Millican reported that almost all or 99.6% of the AU was covered by a stormwater permit. Mr. Millican reviewed a series of maps which showed that the Armand Bayou watershed, including this AU, had a fair amount of development with high and medium population density. The center of 1113_01 contained a sizable amount of pasture and hay production with some wood and wetland areas within the riparian zone of the waterbody. The AU contained only one OSSF.

Mr. Millican noted that the Technical Support Documents will be completed by the end of August 2018. TCEQ will use the documents to develop addenda to the state's Water Quality Management Plan (WQMP).

Mr. Amin Kiaghadi stated UH was working on a TMDL for Mary's Creek Bypass, 1102F_01. 1102F_01 is in the Clear Creek watershed in the cities of Pearland and Friendswood. The AU is mostly developed with medium density developments. The AU has a bacteria geometric mean of 159.39 MPN/100mL. The contact recreation standard for *E. coli* is 126 MPN/100mL. Almost 95% of the watershed is covered by a MS4 permit. While there are no WWTFs in the AU, most of the watershed is under a sanitary sewer service with only 82 OSSFs found.

Mr. Kiaghadi reported UH completed the TMDL calculation and that TCEQ will be updating the states WQMP with the TMDL.

Item 6: TCEQ Response to the BIG

Mr. Johnston provided the TCEQ response letter to the BIG. Mr. Johnston noted that the letter was provided at the Coordination and Policy work group meeting held on May 30, 2018. Mr. Johnston reported on what was discussed. The BIG discussed the need to write and submit a response letter to TCEQ. The BIG determined to meet in July in the Coordination and Policy work group to draft a response letter. The BIG also expressed the desire to more the process forward with some expediency.

Item 7: 2018 Annual Report Process

Mr. Johnston lead the review. The geometric mean graph for the BIG project area was presented. I was stated that while the graph appears to be flattening, of the 194 AUs in the BIG

project area 58 were improving, 131 presented no change and only 5 were considered deteriorating.

Mr. Johnston proceeded to review available WWTF, SSS, OSSF, ambient and implementation data. Key points made as that H-GAC was going to look at providing more localized assessments. While those assessments would be too many to include in an annual report, the focus will be to use the BIG Implementation website more. Mr. Johnston rounded out the presentation reviewing implementation carried out in 2017 from training and education to focused implementation projects like illicit discharge detection and elimination to OSSF repair and replacement.

Mr. Johnston presented the timeline for completing the 2018 Annual Report and process for updating the I-Plan. Mr. Johnston noted that several areas of the I-Plan were anticipated to be revised, including the addition of measures to address boater waste and silviculture. The BIG discussed whether to make the changes to the I-Plan using addendum or by a formal update to the document. Consensus was reached to make a formal update to the I-Plan. The annual report and I-Plan update will be finalized through additional work group meetings carried out over the summer.

Item 8: Presentation on the San Antonio River Authority Modeling and BMP Tool

Drs. Yu-Chun Su (LAN) and Sheeba M. Thomas (SARA) presented their work to develop modeling tools to assist SARA in implementing BMPs to address bacteria in the San Antonio River. The tools created would model the ability of a variety of BMPs dispersed across the watershed. Evaluation of model results would assist SARA in determining whether full implementation of BMPs would result in meeting state bacteria contact recreation standards.

The presenters noted that current watershed planning using best management practices entails mostly qualitative measures; reliance on ambient monitoring practices presenting temporal and spatial gaps; and a lack of rigorous modeling with a build first and evaluate results mentality. SARA sought a more cost-effective approach and sought to develop quantitative tools.

The SARA Modeling and BMP Tool was built by:

1. developing an HSPF model for existing process conditions,
2. adapting to future conditions by incorporating land use data,
3. creating a load reduction tool for sub-basins targets, and
4. building a BMP optimization tool to select BMPs, local knowledge and national BMP database, based on ability to reduce loads at flow and site condition through performance and cost.

Modeling results where BMPs have been optimized suggest that under wet conditions and without SSO contributions, the contact recreation standard is not attainable for all sub-basins. The best-case scenario happens three days after a rainfall event. With 100% BMP deployment and no SSOs then an estimated 95% of sub-basins will meet the standard. Using the three-day dry period with SSOs and no BMPs, the model results suggest 70% standard achievement.

The presenters concluded that the contact recreation under all flow conditions was not attainable for all waterbodies. It was also noted that it will be extremely costly to seek delisting. Conditions are also driven by high background bacteria levels due to humid, warm, and urban environments. SARA recommends the need for more epidemiological studies to better understand the health risks. In addition, the standards should accommodate the use of sub-basin specific goals where criteria are set based on flow conditions, %time meeting criteria and/or conditional attainment goals with a %deployment of BMPs established.

Item 9: "Fight the Bite – Applying Remote Sensing Technology to Detect Mosquito Breeding Habitats"

Dr. Sarah M. Gunter presented on a new project starting in the region. Mosquitos kill on average 725,000 humans each year due to disease transmission by three species, *Aedes spp.*, *Anopheles* and *Culex*. This is more than any other animal, including humans, according to Dr. Gunter. This project will develop image analysis to identify mosquito breeding habitats, evaluate efficacy of model with validation at sites in Harris County, and determine public health impact with mosquito-borne disease surveillance.

Using Harris County health data, three sites were determined, 1) control site with few reported cases of West Nile, 2) area with high incident of West Nile transmission, and 3) mixed use area with a wide range of habitats and a modest level of West Nile transmission.

To develop the Image Analysis Model, satellite imaging will be analyzed following four breeding habitat identification pathways:

- 1) Visual Inspection
- 2) Color Band Ratios
- 3) Image Classification
- 4) Lidar

Different species of mosquito identify with different habitat types from drainage ditches and septic leaks to tires and industrial yards. Image identified locations will then be surveyed and mosquito traps installed. It is hoped that the predictive model using remote sensing can allow for better targeting of programs for mosquito abatement and habitat alteration.

Item 9: Other Business/Roundtable

No other business was discussed.

Next Meeting Date

May 23, 2016

H-GAC Conference Room B (2nd Floor)

Adjourn



**Coordination & Policy Work Group
Meeting Summary
Monday, July 30, 2018
1:00 PM to 3:00 PM
H-GAC Conference Rm. C**

Call to Order/Welcome/Introductions

Camila Biaggi (Harris Co.), Danielle Cioce (HCED), Denise Ehrlich (GCA), Sarah Gossett (GBF), David Parkhill (SJRA), Brian Shmaefsky (Lonestar College), Brian Sims (H-GAC), Robert Snoza (HCFCD).

TCEQ Implementation Letter

Work group was provided a copy of the TCEQ response letter. The letter was marked up to include initial comments provided during the 5/30/2018 Coordination and Policy meeting.

- 1) Activity 1.1: Impose More Rigorous Bacteria Monitoring Frequency.
Members would like to follow up with TCEQ regarding clause 4 of 30 TAC Sec. 319.9(b)
 - Ask TCEQ if a request for the Ex. Director to invoke the clause in the BIG project area due to human health and environmental issues due to elevated levels of bacteria, would be considered.
 - Also request clarification of the reasons behind TCEQ not willing to consider altering frequency.
 - In the absence of any change to the frequency, Coordination and Policy suggest the WWTF work group consider alternatives to increased monitoring – i.e. pilot project to target a watershed to encourage the collection of non-compliance monitoring (away from weir) to increase available data for smaller WWTFs.
- 2) Activity 1.3: Increase Compliance and Enforcement by the TCEQ.
 - Ask TCEQ if there is a database from which current WWTF inspections (compliance, enforcement, no-notice, focus sampling) are stored. If so, request number and type of inspection performed, location of inspection or permittee number, number of samples collected, and sample analysis results.
 - If a centralized database is not available, is there a means for gathering this information?

Coordination and Policy feels that there should be available data for review that can assist with determining status and potential future actions. Request is made for information starting January 1, 2013 to present and then to continue for future years of implementation.

- 3) Activity 2.5: Strengthen Controls on Subscriber Systems.
 - Ask TCEQ why subscriber systems are not tracked.
 - Request a copy of participants in the SSOI program beginning January 1, 2013.
 - Consider petition for TCEQ for rule making.
 - Check with Association of Water Board Directors to determine if a list could be generated.
- 4) Activity 4.6: Petition the TCEQ to Facilitate Reimbursement of Bacteria Reduction Measures.

- Attendees feel that TCEQ's approach is like Harris County's process for developers to proceed with applying LID. Attendees suggest referring the TCEQ response to those stakeholders whom a concern for this activity was voiced to better document why a different approach is needed.

Upcoming Meeting Schedule

10/23/2018 BIG Fall Meeting (1:00 PM – H-GAC)



**FALL MEETING
Summary**

**Tuesday, October 23, 2018
1:00 pm to 3:00 pm
H-GAC Conference Room B, Second Floor
3555 Timmons Lane**

Members Present

Sarah Bernhardt, Michael Bloom (phone), Richard Chapin, Danielle Cioce, Denise Ehrlich, Catherine Elliott, Teague Harris (Phone), Carole LaBreche, Sarah Gossett, Mitchell Page, Linda Pechacek, Jim Robertson, Linda Shead, Brian Shmaefsky (phone), Michael Thornhill

Marilyn Christian was represented by Jerry Caraviotis

Hannah Cruce was represented by Monica Singhania

Greg Hall was represented by Christine Cooper

Jack Murphy was represented by Susie Blake

Becky Olive was represented by Karen Kottke

Anne Olson was represented by Linda Shead

Scott Tuma was represented by Sarah Gossett

Members Absent

Ernest Bailes IV, David Brown, Andrew Isbell, Tom Ivy, Helen Lane, Mike Lindsey, Craig Maske, Cathy McCoy, David Parkhill, Rod Pinheiro, Leah Tarrant

Guests Present

Camila Biaggi, Tom Douglas, Sarah Eagle, Brian Eastham, Morris Fomba, Diane Humes, Shayna Johnson, Earlene Lambeth, Jason Leifester, Sonja Lewis, Lucia Loera, Lisa Marshall, Rick Masters, Carl Masterson, John Moss, Jazmyn Milford, Janice Noeldner, Rachel Powers, Kelly Rodibaugh, Chavonne Slovak, Dick Smith, Robert Snoza, Rose Sobel, Liz Stone

H-GAC Staff Present

Justin Bower, Becki Begley, Kathy Janhsen, Steven Johnston, Todd Running, Brian Sims, Jeff Taebel, Jean Wright

Call to Order/Welcome/Introductions

Mr. Steven Johnston, H-GAC, welcomed those in attendance. Members of the BIG and guests were asked to introduce themselves. The agenda was reviewed and the BIG was provided an opportunity to discuss.

Certification of Quorum

A quorum was certified during the meeting.

Approval of the Proposed Members & Alternates

The BIG approved the following changes to the roster:

- Sarah Bernhardt (BPA) was approved to represent Conservation Organizations
- Monica Singhanian (TX A&M Forest Service) was approved to represent Agriculture Interests
- Jerry Caravoitis (HC) was approved to represent Large County
- Aaron Schinderwolf (SJRA) was approved to represent Business and Industry Interests
- Christine Cooper (City of Conroe) was approved to represent Small Cities
- Greg Hall (City of Conroe) was approved to serve as Christine Cooper's Alternate

Approval of the June 5, 2017 Meeting Summary

BIG members reviewed the summary and provided no comments. The item was approved.

Public Comment

No public comments were made.

Item One: Review 2018 Annual Report

The 2018 draft Annual Report was provided to the BIG. H-GAC staff reviewed the changes made to the document and went through the content. The BIG provided editorial comments to the document and suggested additional content. Staff noted that the main difference from previous years was that the document was much slimmer. The fewer pages was the result of removing content that had been repeated in successive reports. Also included as a recommendation from 2017 was a discussion on Hurricane Harvey's effects.

A few questions were raised about the bacteria geometric mean trend line in comparison with a map of changes in bacteria concentrations at the assessment unit (AU) level. The background data was not available to address the concerns. Staff stated the issue would be reviewed to determine if the trend and map should appropriately be interpreted as representing the same. Staff would get back to the group on the issue. The BIG was also interested in the status of AUs and if any have been taken off the impaired list. Staff stated that they would investigate the issue and how an AU would be delisted.

Following review and discussion, staff asked attendees if they would consider approving the document should the suggested edits be made. The BIG discussed and suggested staff make the changes to the document and submit the revised document for approval through email. Staff agreed to make the changes and seek approval through email to the BIG.

Staff reviewed the implementation website with the BIG. Staff stated that the BIG will find the data, tables and graphs located on the website. Staff also reviewed the next steps to revise the implementation plan through the work groups with a draft presented at the Spring meeting.

Item Two: TCEQ TMDL Program Update

TCEQ TMDL Program staff provided an update to ongoing TMDL projects within the BIG project area:

- Mound Creek in the West Fork of the San Jacinto River watershed
- Armand Bayou
- Mary's Creek Bypass in the Clear Creek watershed

The Technical Documents have been completed and the TMDLs will be included in the Water Quality Management Plan update. The document will be provided for public comment on 11/9 through 12/11. After that, the document will be sent to the EPA for approval.

New TMDL projects have started on Brushy Creek and Spring Branch. Both are upstream of Lake Houston. Another potential TMDL revision is on Stewart's Creek. At the time of the original TMDL there was no WWTF discharging to the creek and future growth did not consider future discharges. The City of Conroe is building a 12 mgd WWTF now and an updated TMDL is needed.

Item Three: Response to the TCEQ Letter

H-GAC staff reviewed the results of the October 15, 2018 Coordination and Policy work group. The work group discussed how best to proceed with any follow up to the response letter submitted by TCEQ. The group decided to allow for follow up discussion with the TCEQ TMDL and reaching out TCEQ Region 12. Following the results of that outreach, the work group then would work on developing a Freedom of Information Act request. The BIG did not suggest any changes to this approach.

Item Four: H-GAC Program Reports

- **West Fork of the San Jacinto River Watershed Protection Plan (WPP)** – Mr. Justin Bower (H-GAC) provided an update on the WPP project. Mr. Bower reviewed the steps, including the development of a stakeholder group, to create a WPP. He noted the complimentary nature of the WPP with that of previous TMDL work in the watershed. Mr. Bower presented the impairments, sources and causes and the management steps recommended to address water quality issues found in the West Fork.
- **WISE Awards Program Developments** – Ms. Kathy Janhsen presented the status of the WISE awards program. She reviewed the purpose and expectations of the program. Ms.

Janhsen noted how the program supports the BIG in implementing portions of the stormwater actions contained in the BIG I-Plan. She closed with a review of the next steps to launching the program.

- **H-GAC OSSF SEP Program** – Mr. Brian Sims reviewed the OSSF SEP program. Mr. Sims noted that funding for the program comes through funds redirected from environmental fines, issued by the state, to the supplemental environmental project. H-GAC also received funding from the Harris County District Attorney’s office. Mr. Sims stated that there are restrictions placed on the funds which limit who can apply (i.e. income, residency, under enforcement) and that the sources have differ in the type of restrictions.
- **TMDL Basin 11 and 13 Project Updates** – Mr. Johnston provided an update of the two basin projects to address bacteria impairments. He provided a status update on the Chocolate Bayou TMDL project in Basin 11 noting that the Technical Support Document (TSD) and TMDL document have been completed. Staff are currently working on drafting the I-Plan following feedback from watershed stakeholders. Mr. Johnston reviewed progress with Oyster Creek’s TSD and noted plans to start the stakeholder process to develop a watershed-based plan. Like Oyster Creek, the Caney Creek project in Basin 13 has completed the TSD and the stakeholder process is just beginning. Back in Basin 11, Mr. Johnston said that H-GAC is beginning work in the Halls Bayou and Mustang Bayou watersheds.

Item Five: Other Business/Roundtable

As time permits, H-GAC, BIG members, and stakeholders are encouraged to discuss implementation activities, related projects, and announcements.

Next Meeting Date

June 4, 2019

Adjourn

BIG Meeting instructions for Conference Line:

You will also be instructed to call in to the meeting:

To call in, dial 713-481-0090 (or 800-240-3895). You will be asked to enter your pass code, followed by the # sign. The pass code is 1084242. If you dial in before H-GAC, you will hear "music on hold". Once H-GAC dials in, the music will cease, and the conference call will begin. Remember--if you do press hold, everyone will hear your hold music.


In compliance with the Americans with Disabilities Act, H-GAC provides for reasonable accommodation for persons attending H-GAC functions. Requests should be received by H-GAC 24 hours prior to the function.

H-GAC encourages meeting attendees to bring their own mug or cup to all meetings.




AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: Review 2018 Draft Annual Report
- Item Two: TMDL Program Updates
- Item Three: Response to TCEQ Letter
- Item Four: H-GAC Program Reports
- Item Five: Other Business
- Adjourn



AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: Review 2018 Draft Annual Report
- Item Two: TMDL Program Updates
- Item Three: Response to TCEQ Letter
- Item Four: H-GAC Program Reports
- Item Five: Other Business
- Adjourn




ROSTER DISCUSSION

- BIG Membership
 - Sarah Bernhardt (Bayou Preservation Association)
 - Monica Singhania (Texas Forest Service)
 - Jerry Caravalis (H-G PH&E)
 - Aaron Schindewolf (SJRA)
- Alternates
 - None




AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: Review 2018 Draft Annual Report
- Item Two: TMDL Program Updates
- Item Three: Response to TCEQ Letter
- Item Four: H-GAC Program Reports
- Item Five: Other Business
- Adjourn



AGENDA

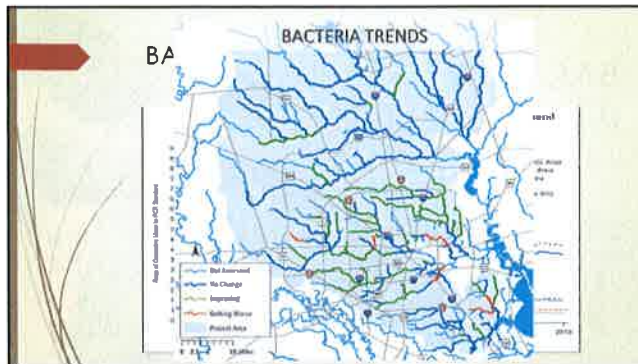
- Call to Order/Introductions
- Quorum Certification
- Review and Approve BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: Review 2018 Draft Annual Report
- Item Two: TMDL Program Updates
- Item Three: Response to TCEQ Letter
- Item Four: H-GAC Program Reports
- Item Five: Other Business
- Adjourn



2018 ANNUAL REPORT



- Met with Workgroups
 - Capitalization and Policy (2/23, 5/30, 7/30 and 10/15)
 - WWTF and SSS (3/20)
 - Stormwater (3/26)
 - Animals and Agriculture (4/26)
 - OS&F and Illicit Discharge (5/2)
 - Research and Monitoring (5/7)



FORMAT



- Slim down version
- Online Implementation Report
 - Recap Data and Information
- Major Elements Remain
 - Executive Summary
 - Trends
 - Success Stories
 - Progress
 - Tracking (2017 Implementation)

SUCCESS STORIES

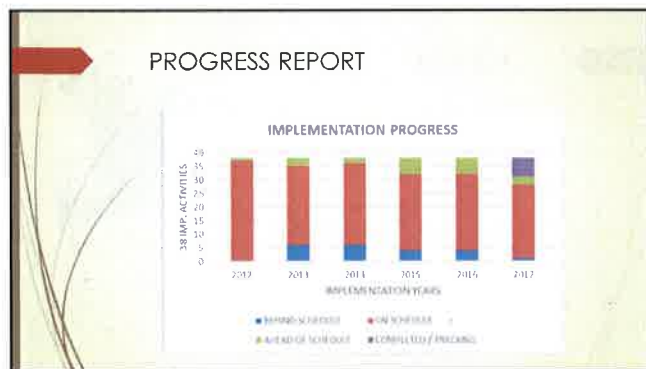
- Houston Health Department and Galveston Bay Foundation - Fats, Oils, and Grease Program
- Residential Waste Water Assistance Program for OS&F Repair / Replacement
- Top Five / Least Five Illicit Discharge Detection and Elimination Model Program



Help prevent plumbing blockages and sanitary sewer overflows

Apunta a prevenir obstrucciones de tuberías y las derrames en las alcantarillas con los siguientes consejos:

For further information, contact: Department of Public Works & Engineering, DPH 311



Activity	Advancement	Program	Notes
11. System Maintenance	Major asset condition assessment completed with 100% of the Plan Year work items up or completed on time. The 2017 maintenance plan which included 1,000 work items.	In Progress	On Schedule
12. Program Update	Major program update completed for wastewater permits. The 2017 program update includes 100% of the Plan Year work items up or completed on time. The 2017 program update includes 100% of the Plan Year work items up or completed on time.	In Progress	Ahead of Schedule
13. Program Update	The 2017 program update completed and 100% of the Plan Year work items up or completed on time. The 2017 program update includes 100% of the Plan Year work items up or completed on time.	In Progress	On Schedule
14. Program Update	The 2017 program update completed and 100% of the Plan Year work items up or completed on time. The 2017 program update includes 100% of the Plan Year work items up or completed on time.	In Progress	Ahead of Schedule
15. Program Update	The 2017 program update completed and 100% of the Plan Year work items up or completed on time. The 2017 program update includes 100% of the Plan Year work items up or completed on time.	In Progress	On Schedule
16. Program Update	The 2017 program update completed and 100% of the Plan Year work items up or completed on time. The 2017 program update includes 100% of the Plan Year work items up or completed on time.	In Progress	Ahead of Schedule

Activity/Event	Location	Date	Time	Notes
Board Meeting	10000	12/18/18	10:00 AM	Regular meeting of the Board of Directors
Board Meeting	10000	12/19/18	10:00 AM	Regular meeting of the Board of Directors
Board Meeting	10000	12/20/18	10:00 AM	Regular meeting of the Board of Directors
Board Meeting	10000	12/21/18	10:00 AM	Regular meeting of the Board of Directors
Board Meeting	10000	12/22/18	10:00 AM	Regular meeting of the Board of Directors
Board Meeting	10000	12/23/18	10:00 AM	Regular meeting of the Board of Directors
Board Meeting	10000	12/24/18	10:00 AM	Regular meeting of the Board of Directors
Board Meeting	10000	12/25/18	10:00 AM	Regular meeting of the Board of Directors
Board Meeting	10000	12/26/18	10:00 AM	Regular meeting of the Board of Directors
Board Meeting	10000	12/27/18	10:00 AM	Regular meeting of the Board of Directors
Board Meeting	10000	12/28/18	10:00 AM	Regular meeting of the Board of Directors
Board Meeting	10000	12/29/18	10:00 AM	Regular meeting of the Board of Directors
Board Meeting	10000	12/30/18	10:00 AM	Regular meeting of the Board of Directors
Board Meeting	10000	12/31/18	10:00 AM	Regular meeting of the Board of Directors

WHERE'S THE DATA / TABLES

- Data Reporting and Observations
 - TCEQ and EPA
 - WWT Facilities
- Building and Outreach
 - Professional Training
 - Residential Training
 - Citizen Outcasts
- Other Program Initiatives
 - TCEQ
 - UIC
 - CSF Approval Process
- **Subsistence/Resort**

Variable: Total Reported Incidents
 Mean: 4712
 Std Dev: 115
 Max: 6282

NEXT STEPS

- Approval 2018 report (Oct. 23, 2018?)
- Final Updates to Online Imp. Report (Nov. 30, 2018)
- Work Groups (Dec. – March) I-Plan Update
- BIG Spring Meeting (June 4, 2018)

AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: Review 2018 Draft Annual Report
- **Item Two: TMDL Program Updates**
- Item Three: Response to TCEQ Letter
- Item Four: H-GAC Program Reports
- Item Five: Other Business
- Adjourn

AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: Review 2018 Draft Annual Report
- Item Two: TMDL Program Updates
- **Item Three: Response to TCEQ Letter**
- Item Four: H-GAC Program Reports
- Item Five: Other Business
- Adjourn

AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: Review 2018 Draft Annual Report
- Item Two: TMDL Program Updates
- Item Three: Response to TCEQ Letter
- **Item Four: H-GAC Program Reports**
 - Wind Farm of the Sea, Inc. - 2018 WPP - Justin Bauer
 - WWT Assets - Betty Sarkis
 - H-GAC CSF SEP Program - Brian Sims
 - TMDL Basin 11 and 13 Project Updates - Steven Johnson
- **Item Five: Other Business**
- Adjourn

AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: Review 2018 Draft Annual Report
- Item Two: IADL Program Updates
- Item Three: Response to TCEQ Letter
- Item Four: H-GAC Program Reports
- **Item Five: Other Business**
- Adjourn





Up Coming Meetings

- 10/24 CWI - Recovery and Resiliency 2 - 4:00 PM (H GAC)
- 11/1 NKAC 1:30 - 3:30 PM (H GAC)
- 11/1 Caney Creek Public Meeting 4 - 6:00 PM (Bay City Community Center)
- 11/7 Coastal Communities Water Quality Outreach 10 - 12:00 PM (H-GAC)
- 11/7 **UD Maintenance Workshop** 1:30 - 3:30 PM (H GAC)
- 11/8 Oyster Creek Public Meeting 4 - 6:00 PM (Brazoria Co. Public Library Lake Jackson)

ADJOURN

- Next Meeting
 - June 4, 2019

Steven Johnston
Steven.Johnston@h-gac.com
281-681-2579



New and Ongoing TMDL Projects in the BIG Area

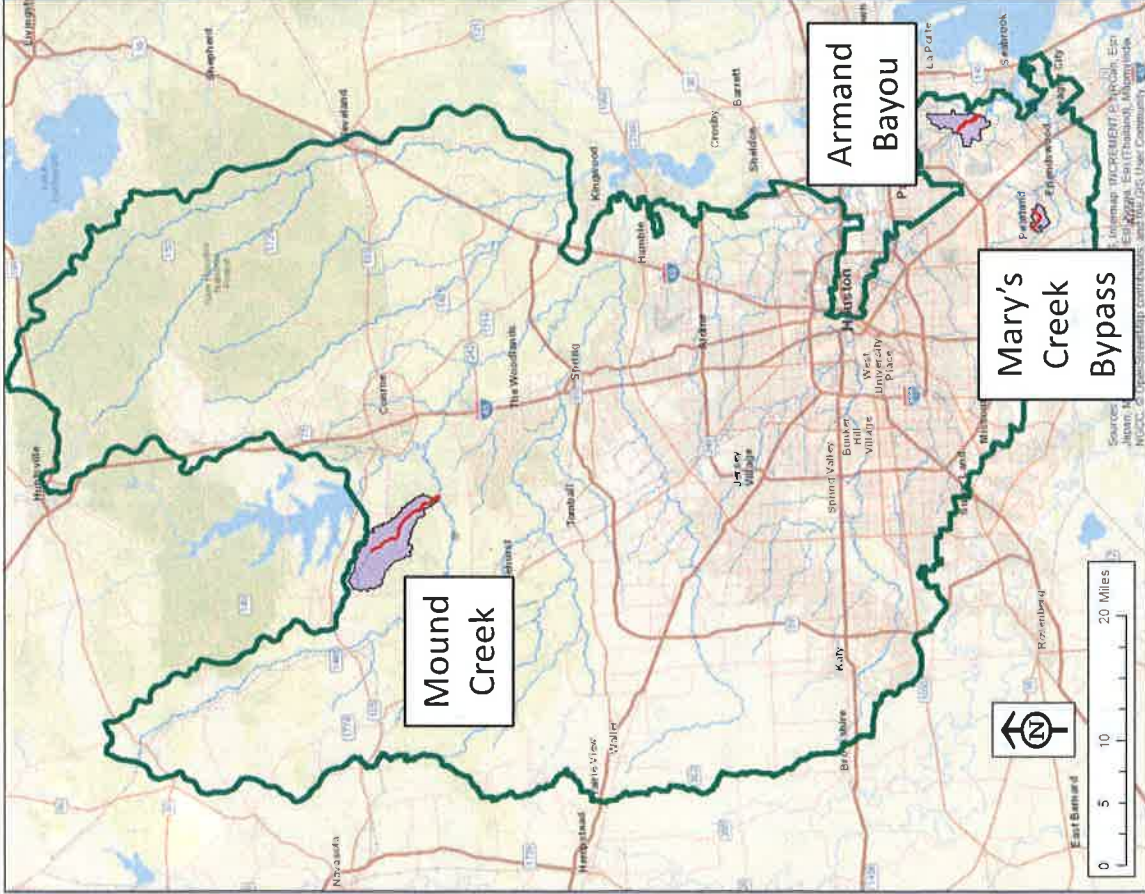
Jason Leifester
TCEQ
TMDL Program

October 23, 2018



Three Addenda – October WQMP Update

- Mound Creek – 1015A_01
- Mary's Creek Bypass – 1102F_01
- Armand Bayou Tidal – 1113_03
- Technical support documents are on the TCEQ web page now (links can be provided upon request).
- WQMP update with all three addenda will be posted:
 - https://www.tceq.texas.gov/permitting/wqmp/WQmanagement_comment.html
 - Comment period: November 9 – December 11



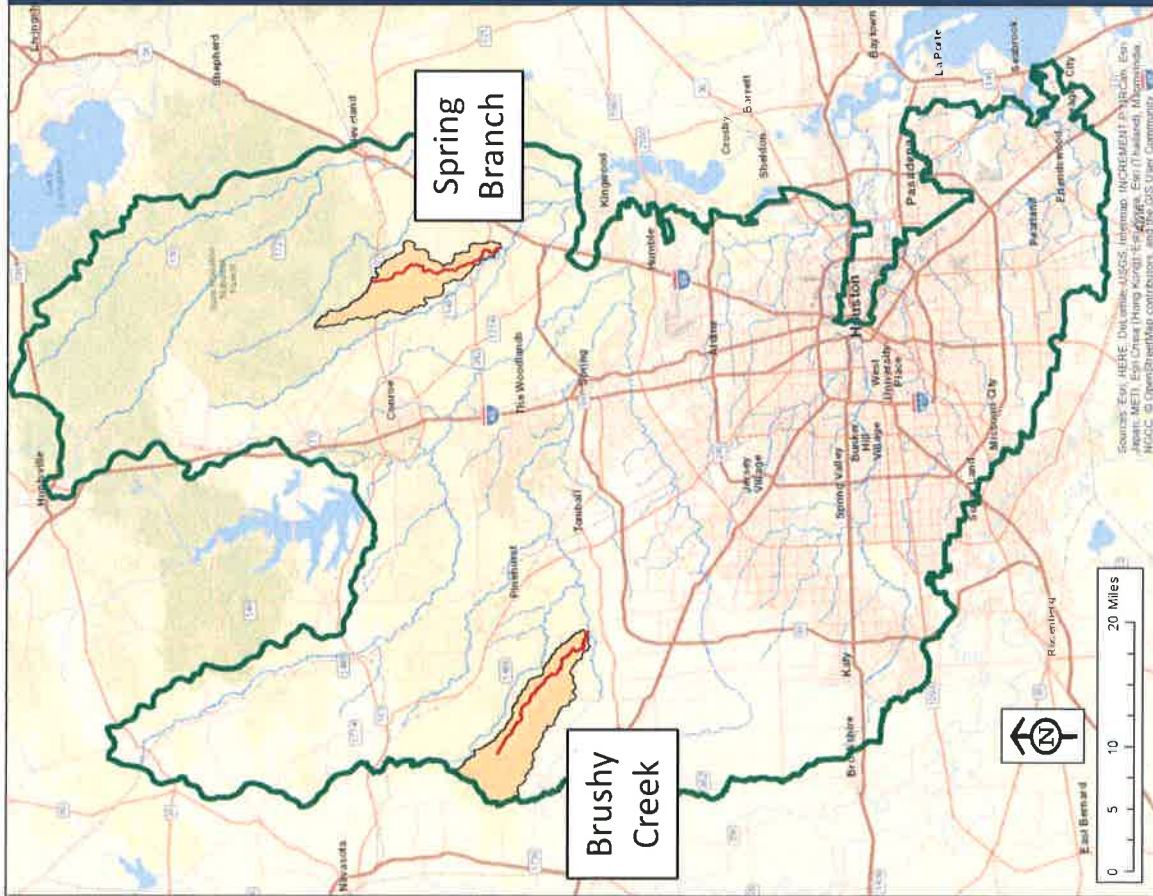
Legend

- BIG Project Area
- Addendum Subwatersheds
- Addendum AUs

New Addendum Project

- Brushy Creek – 1008J_01
- Spring Branch – 1010C_01

Technical work just getting underway by TIAER.

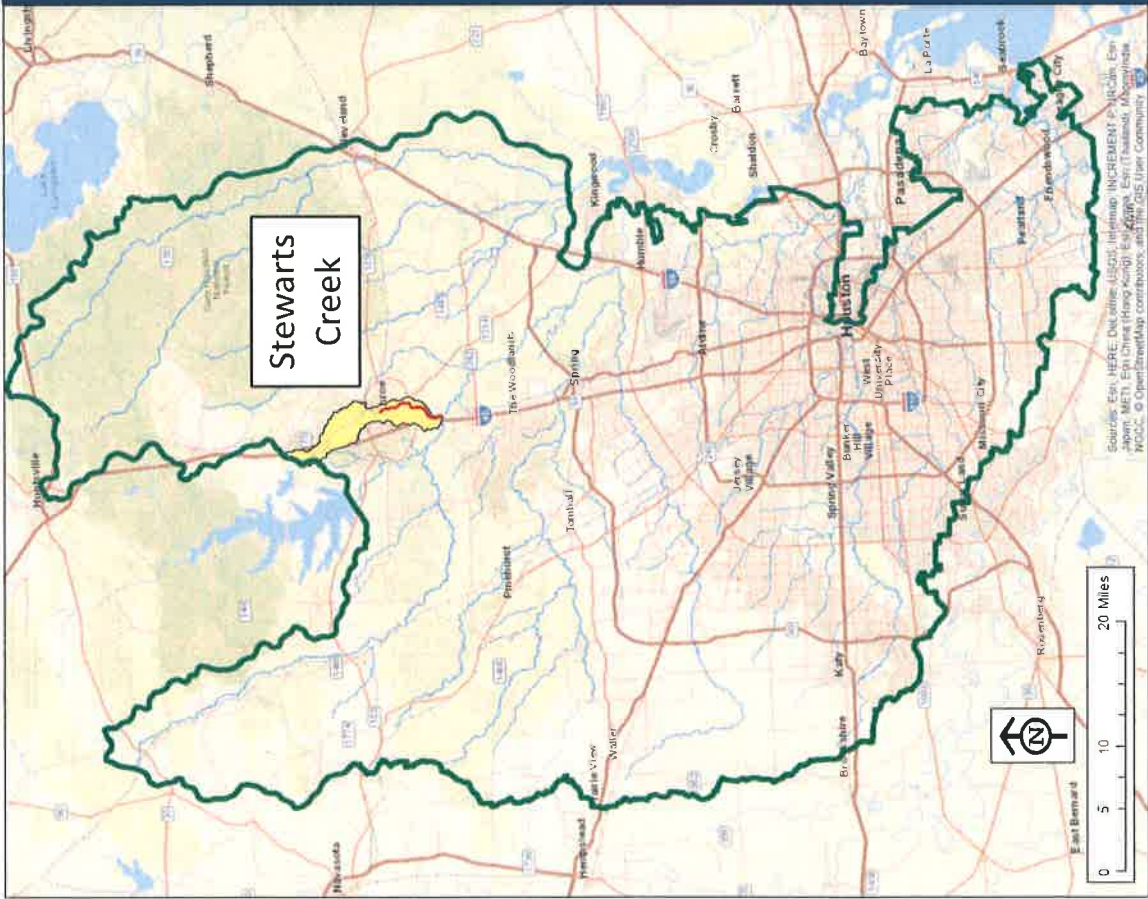


Legend

- BIG Project Area
- Future Addendum Subwatersheds
- Future Addendum AUs

Potential TMDL Update

- Stewarts Creek – 1004E_02
- Large (12.0 MGD) facility proposed within the subwatershed.
- Original TMDL had no future growth component.
- Working with EPA to determine best course of action.



Legend

BIG Project Area

Stewarts Creek Subwatershed

Stewarts Creek AU



Questions?

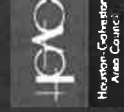
Jason.Leifester@tceq.texas.gov

(512) 239-6457



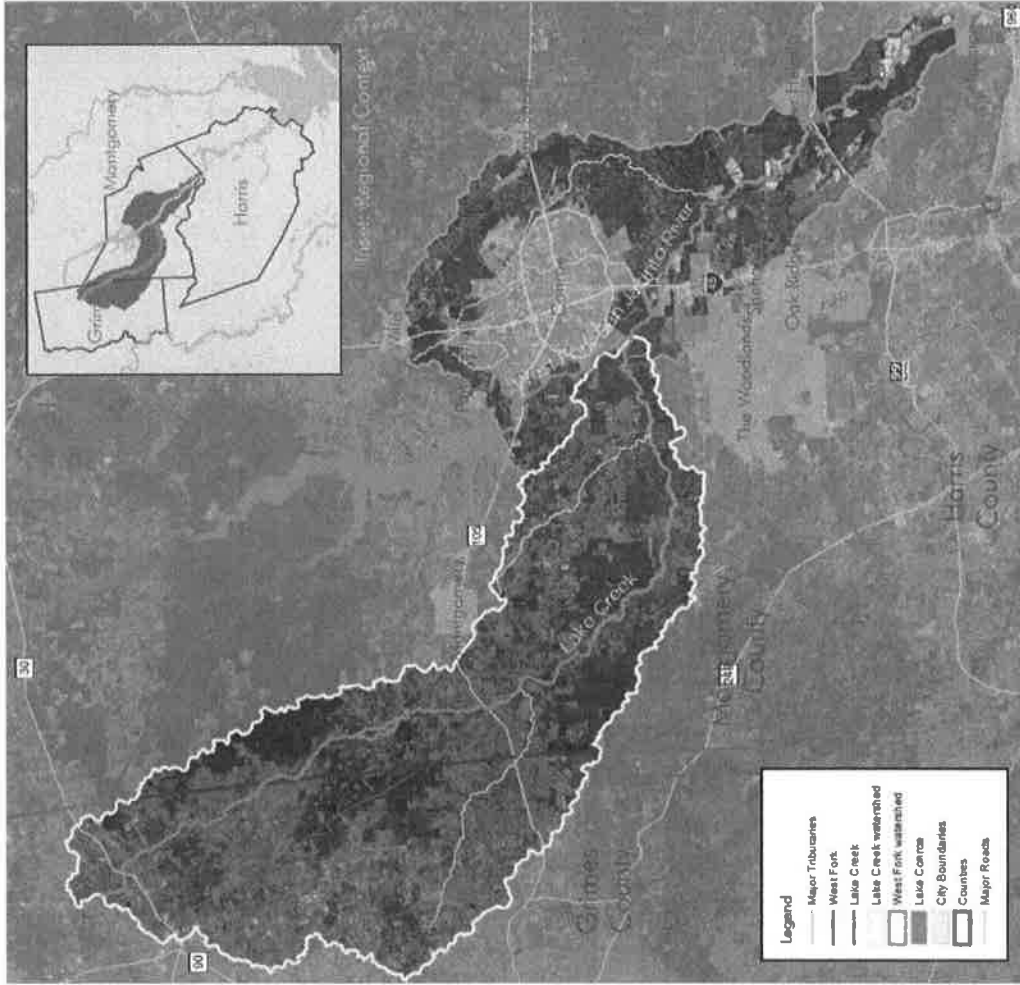
Developing a Watershed Protection Plan for the West Fork San Jacinto River and Lake Creek

BIG Annual Meeting
October 23, 2018



Background

- West Fork, Lake Creek
- Local interest, water quality issues
 - Fecal waste, nutrients, sediment, trash
- TCEQ/H-GAC project under CWA 319(h)
- Other projects in area





The Issues

- Mix of bacteria sources, no smoking gun (pets, ag, OSSFs, wildlife, etc.)
- Other concerns over sediment, mining, private property concerns
- Development rapid in area, sources increasing

 LOCAL
PEOPLE

 LOCAL
KNOWLEDGE

 LOCAL
SOLUTIONS

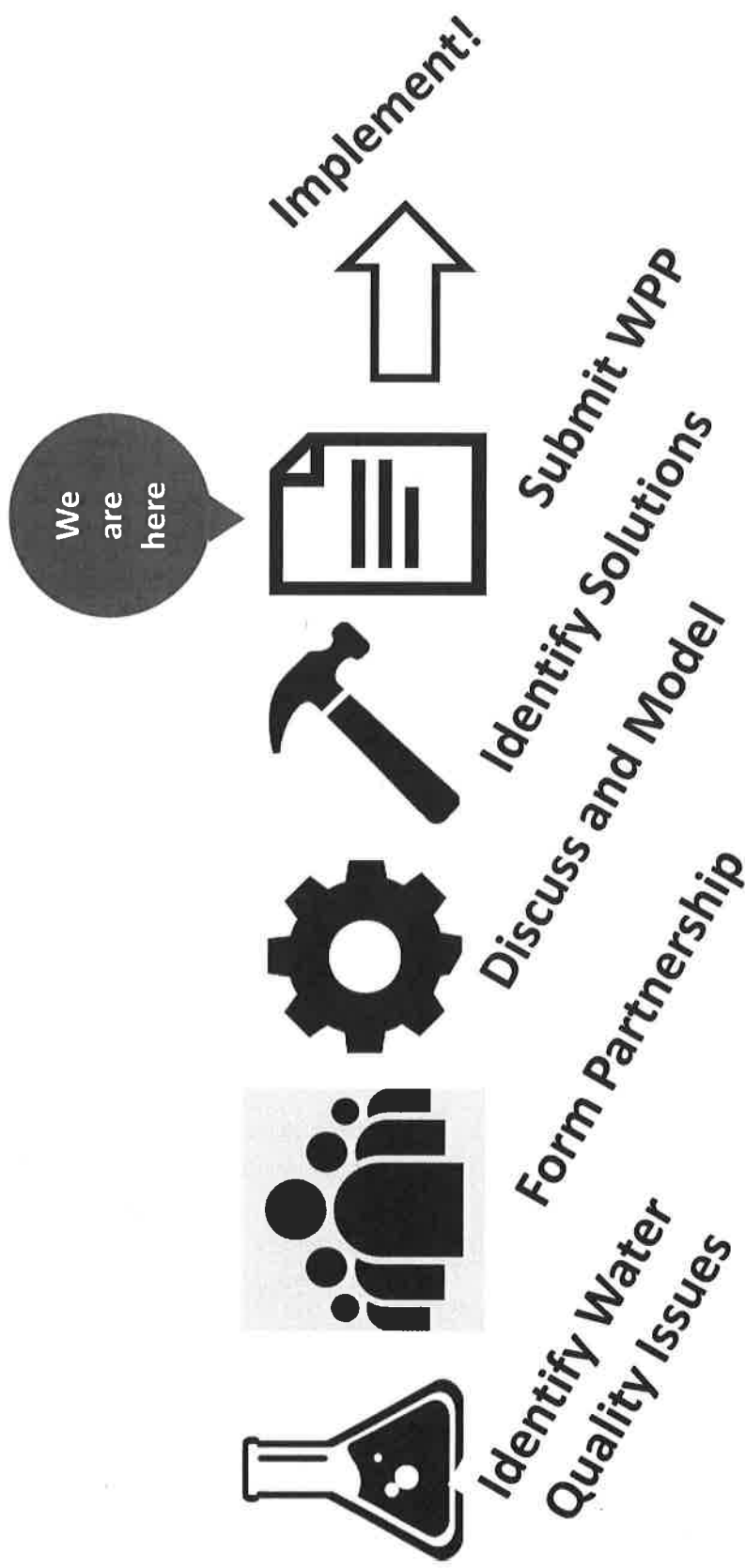
 The West Fork
Watersheds Partnership
www.cedarblayouwatershed.com

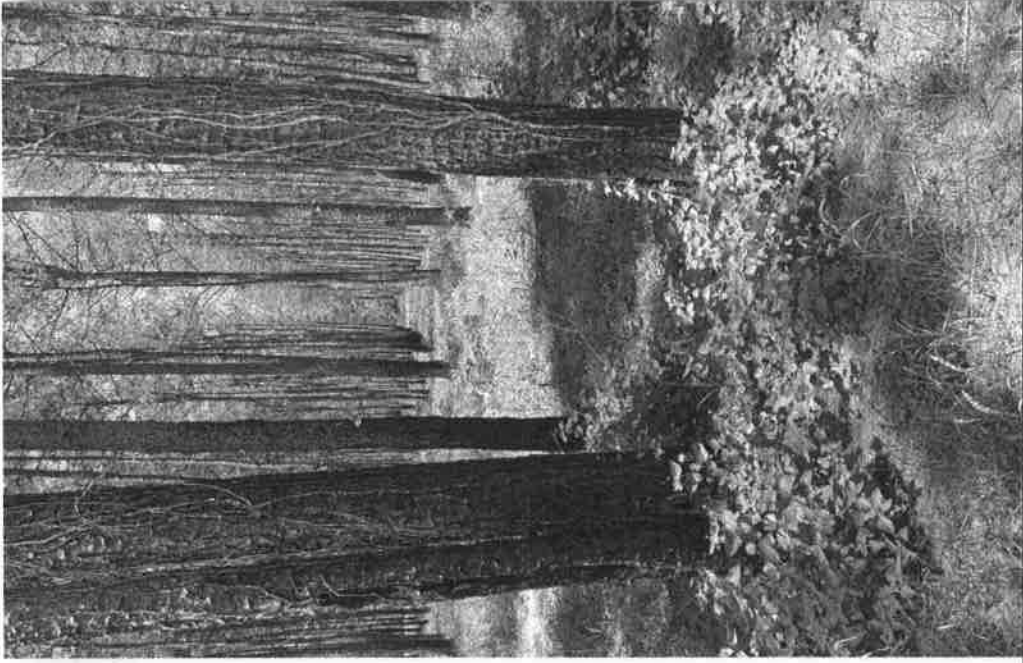
The WPP

- TCEQ/H-GAC 319 project
- Voluntary model
- More specific look at area, considers issues beyond TMDL
- Detailed modeling and ample stakeholder feedback



Project Progress





The Recommendations

- Human – OSSF remediation, stormwater programs, address SSOs
- Pets – Waste stations, spay/neuter programs, dog parks
- Ag – WQMPs, riparian buffers
- Feral Hogs – removal
- Misc – riparian buffers, education and outreach, LID, voluntary conservation



Next Steps

- EPA approval
- Implementation – Now!
- Continued monitoring
- Coordination with Lake Conroe WPP, TMDL, Spring/Cypress Creek WPPs, flood mitigation efforts

Any Questions?



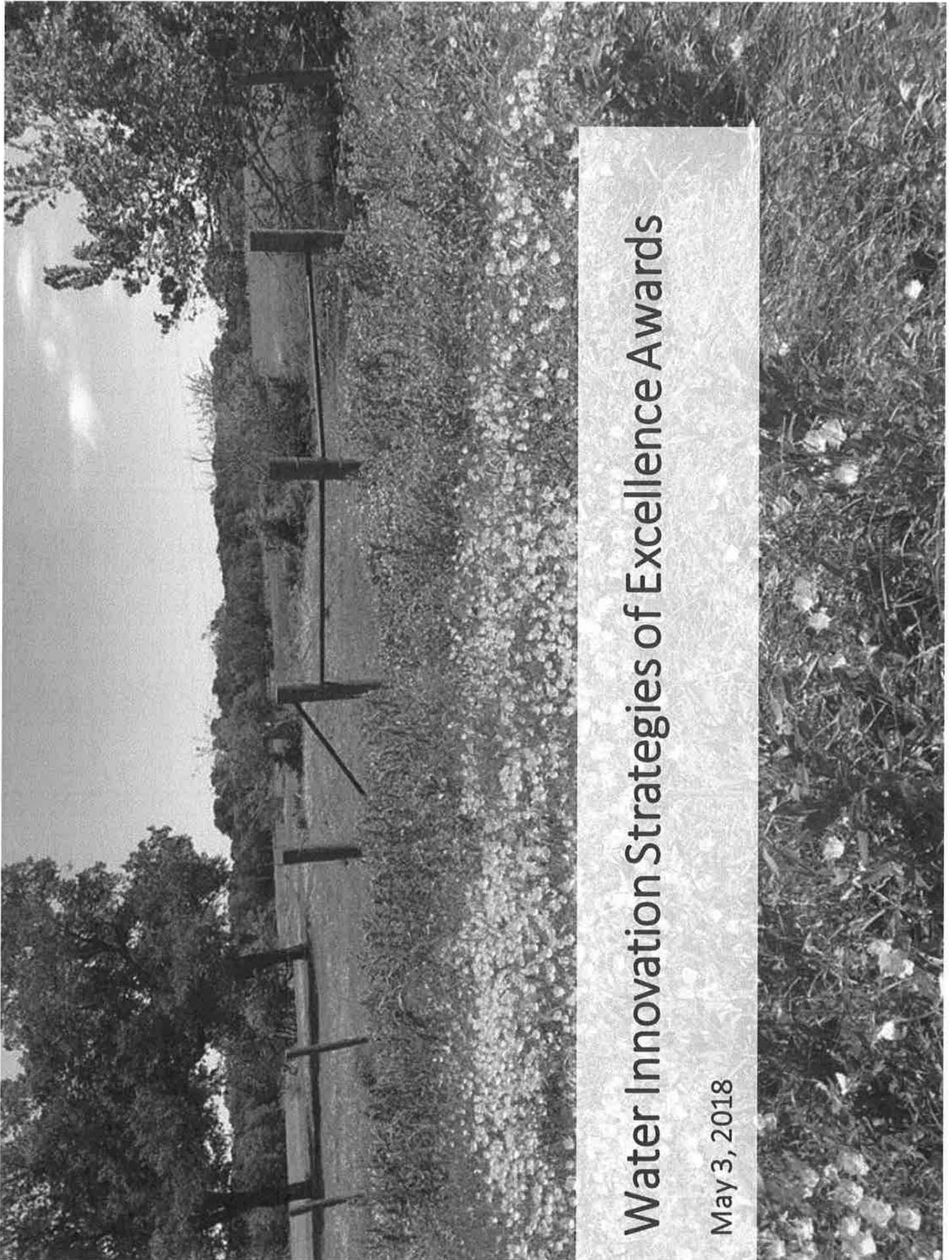
For more information,
contact:

Justin Bower
713-499-6653
justin.bower@h-gac.com

**3555 Timmons Lane, Suite
120, Houston, TX 77077**

www.westforkwpp.com





Water Innovation Strategies of Excellence Awards

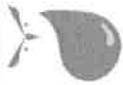
May 3, 2018

New Program: WISE Awards

Water Innovation Strategies of Excellence



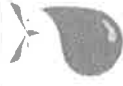
FOUR AWARD CATEGORIES.



PLANNING AND POLICY

The Planning and Policy category honors projects with potential to improve water quality through collaborative and strategic planning and policy creation.

Projects should highlight how entities effectively utilized planning tools, authored plans, or implemented policy, such as ordinances. Winning submissions will outline the process through which the project was developed and, if applicable, implemented.



EDUCATION AND PUBLIC AWARENESS

The Education and Public Awareness category honors projects with potential to improve water quality through public and stakeholder engagement.

Projects should bring to light how everyday activities impact water quality, creating a sense of personal investment and spurring positive behavioral changes. Winning submissions will detail innovative, successful engagement activities and will include metrics demonstrating how success was measured.



BUILT PROJECT (GREATER THAN \$500K)

The Built Project (greater than \$500k) category honors projects contributing positively toward improving water quality through built / installed infrastructure.

Projects include, but are not limited to, repair, maintenance or installation of new wastewater treatment facilities or on-site sewage systems, and installation of wetland detention basins, riparian buffers, low impact development / green infrastructure projects, or other vegetative areas with a water quality benefit. Winning submissions will identify how new or existing technologies were successfully incorporated into project infrastructure.



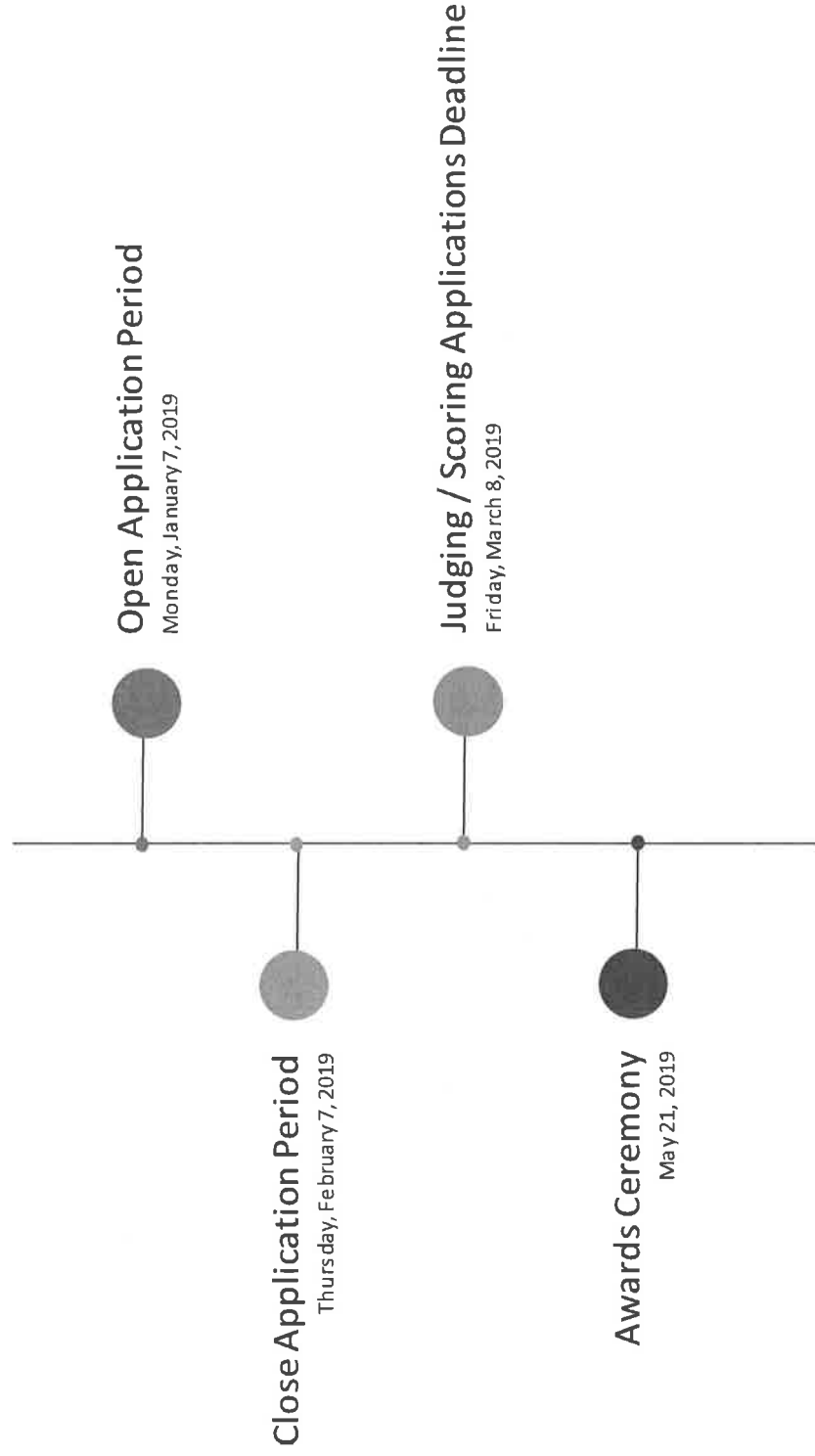
BUILT PROJECT (LESS THAN \$500K)

The Built Project (less than \$500k) category honors projects contributing positively toward improving water quality through built / installed infrastructure.

Projects include, but are not limited to, repair, maintenance or installation of new wastewater treatment facilities or on-site sewage systems, and installation of wetland detention basins, riparian buffers, low impact development / green infrastructure projects, or other vegetative areas with a water quality benefit. Winning submissions will identify how new or existing technologies were successfully incorporated into project infrastructure.

Anticipated Launch Timeline

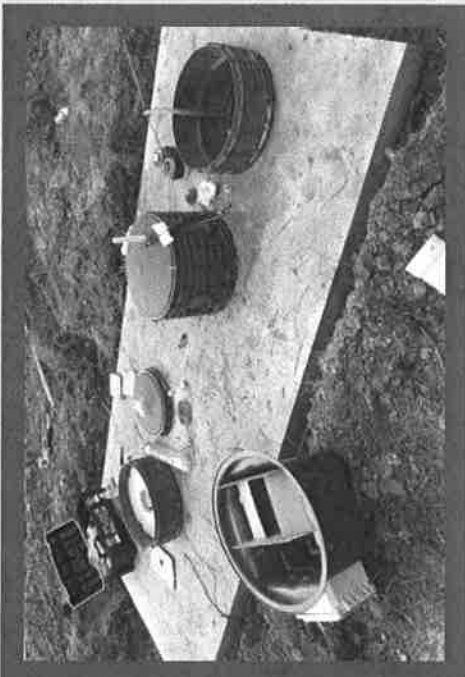
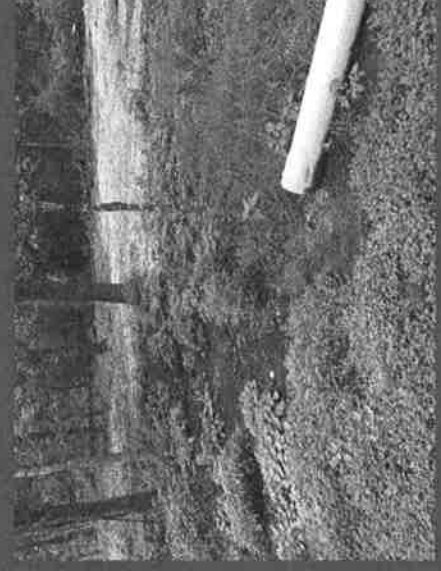
Pending Subcommittee approval.





Thank you!

E-mail Kathy.Janhnen@h-gac.com with questions.



Supplemental Environmental Project

Wastewater Treatment Assistance Program



Project Description

- ▶ H-GAC's Supplemental Environmental Project (SEP) provides assistance to low-income homeowners to repair or replace malfunctioning or failing on-site sewage facilities (OSSFs)
- ▶ Funding may also be used to provide extension of first-time sewer service, pump-out and sludge hauling, etc.
- ▶ Eligible homeowners are not charged for any portion of the cost of the project (no homeowner cost share)

Estimated Costs

Item	Approximate Cost
OSSF Installation	\$10,000 - \$14,000
Tie-In to Existing Sewer Service Lines	\$5,200
Pump-Out and Sludge Hauling	\$500 - \$700
Aerator or Effluent Pump Replacement	\$500
2-Year Maintenance Agreement	\$300 - \$500
OSSF Repairs	Varies

Applicant Qualifications

- ▶ In order to qualify, applicants must meet the following conditions:
 - ▶ The applicant must own and reside in the home
 - ▶ The applicant must reside in one of the eligible counties: Austin, Brazoria, Chambers, Colorado, Fort Bend, Galveston, Grime, Harris, Liberty, Matagorda, Montgomery, San Jacinto, Waller, Walker, or Wharton
 - ▶ The combined household income must not exceed 80% of the median income for the county
 - ▶ An inspection of the OSSF must be conducted to verify failure or malfunction of the system

Household Income Requirements

2018 HUD median income limits for Texas counties - 80%

<u>County Name</u>	<u>Area Income</u>	<u>1 Person</u>	<u>2 People</u>	<u>3 People</u>	<u>4 People</u>	<u>5 People</u>	<u>6 People</u>	<u>7 People</u>	<u>8 People</u>
Austin	72,400	40,550	46,350	52,150	57,900	62,550	67,200	71,800	76,450
Brazoria	91,100	50,350	57,550	64,750	71,900	77,700	83,450	89,200	94,950
Chambers	74,900	41,950	47,950	53,950	59,900	64,700	69,500	74,300	79,100
Colorado	59,900	33,550	38,350	43,150	47,900	51,750	55,600	59,400	63,250
Fort Bend	74,900	41,950	47,950	53,950	59,900	64,700	69,500	74,300	79,100
Galveston	74,900	41,950	47,950	53,950	59,900	64,700	69,500	74,300	79,100
Harris	74,900	41,950	47,950	53,950	59,900	64,700	69,500	74,300	79,100
Liberty	74,900	41,950	47,950	53,950	59,900	64,700	69,500	74,300	79,100
Matagorda	53,000	31,650	36,200	40,700	45,200	48,850	52,450	56,050	59,700
Montgomery	74,900	41,950	47,950	53,950	59,900	64,700	69,500	74,300	79,100
Walker	63,700	35,700	40,800	45,900	50,950	55,050	59,150	63,200	67,300
Waller	74,900	41,950	47,950	53,950	59,900	64,700	69,500	74,300	79,100
Wharton	56,000	31,650	36,200	40,700	45,200	48,850	52,450	56,050	59,700

Source of Funding

- ▶ Funding for this project is being provided by both TCEQ and Harris County

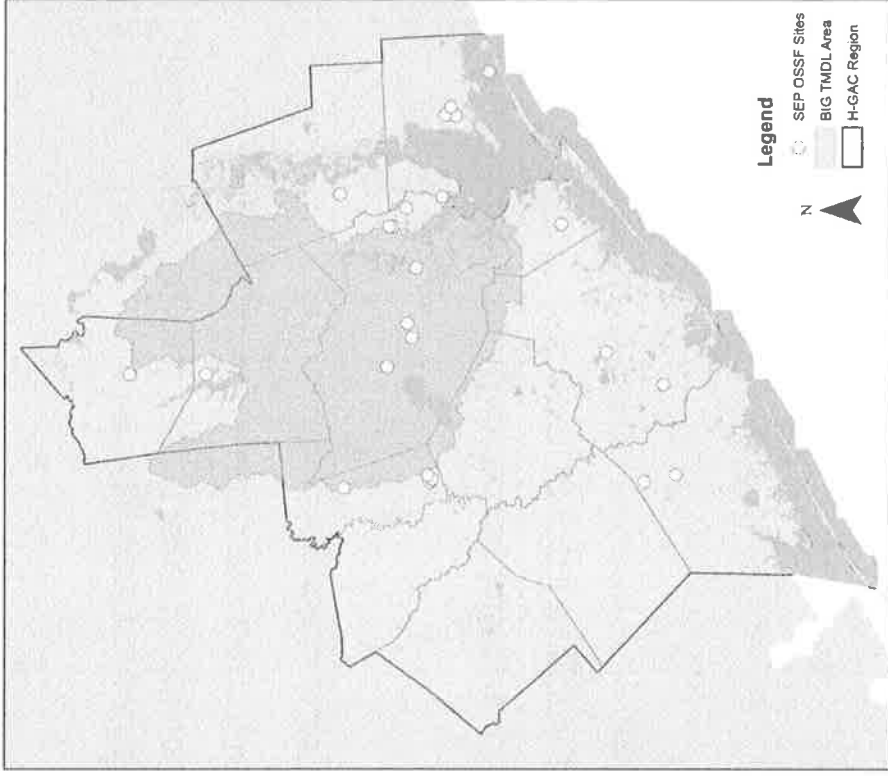
Funding Source	Amount
TCEQ	\$ 69,525.00
Harris County	\$161,950.00
TOTAL	\$231,475.00

- ▶ Candidates for TCEQ SEP funds must not be under enforcement
- ▶ Harris County funds do not have this restriction, and can be used outside of Harris County

Project Applicants

- 24 applicants have qualified for the program
- 3 OSSF installations have been completed
- 15 are ready to proceed
- 5 new OSSF installations awarded to vendors
- 1 pump-out and repair scheduled

H-GAC SEP OSSF Sites



Project Hurdles

- ▶ Limited number of vendors
 - ▶ Many have small service areas
 - ▶ Lack of adequate amount of liability insurance
 - ▶ Inability to work under Net30 payment terms due to high upfront costs
- ▶ Internal Purchasing/Procurement requirements
 - ▶ Not always able to receive required number of written quotes
 - ▶ Each system has to be individually quoted due to site conditions, system size, lot size, etc. (No general contracts)
- ▶ More vendors are being registered, so these issues are improving and we are now better able to expedite the work

Next Steps

- ▶ Continue marketing SEP program to potential contributors
- ▶ Continue seeking qualified applicants
 - ▶ Local Authorized Agents and Designated Representatives
 - ▶ Referrals from local governmental officials and agencies
 - ▶ Public Outreach events
 - ▶ Word-of-mouth from previous program recipients (including signage)

Program Signage

**SUPPLEMENTAL ENVIRONMENTAL
PROJECT FUNDING
for SEPTIC or AEROBIC SEWAGE
FACILITY REPAIR/REPLACEMENT**

**WORK PERFORMED WITH PENALTY MONIES FROM A
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
ENFORCEMENT ACTION**



**SUPPLEMENTAL ENVIRONMENTAL
PROJECT FUNDING
SEPTIC or AEROBIC SEWAGE
FACILITY REPAIR/REPLACEMENT
DONATED BY**



**HARRIS COUNTY DISTRICT ATTORNEY
KIM K. OGG**



FOR MORE INFORMATION

► For more information regarding H-GAC's SEP for Homeowner Wastewater Assistance, please contact:

Brian Sims



Senior Planner

Houston-Galveston Area Council

brian.sims@h-gac.com

713-993-2438

ADDRESSING BACTERIA IMPAIRMENTS IN BASINS 11 AND 13

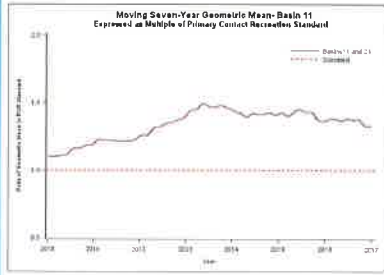


BASIN 11

Bacteria





Bacteria Trends



Year	Ratio of Geometric Mean to POC Standard
2012	1.0
2013	1.1
2014	1.4
2015	1.4
2016	1.4
2017	1.4



Basin 11 Watershed Planning



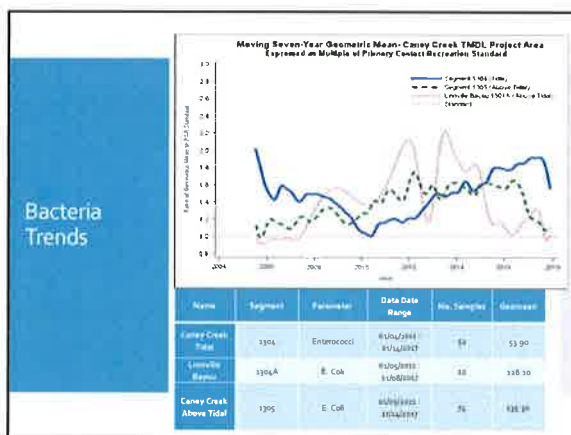
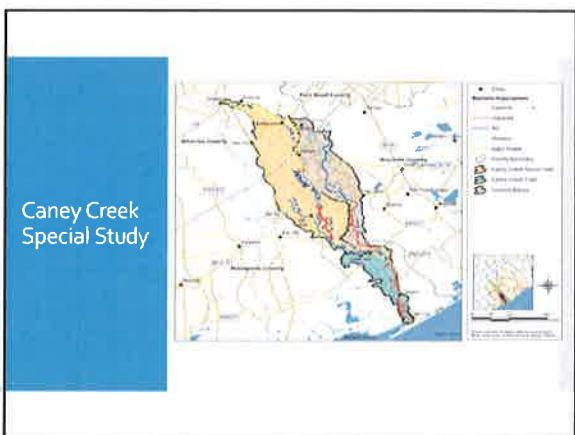
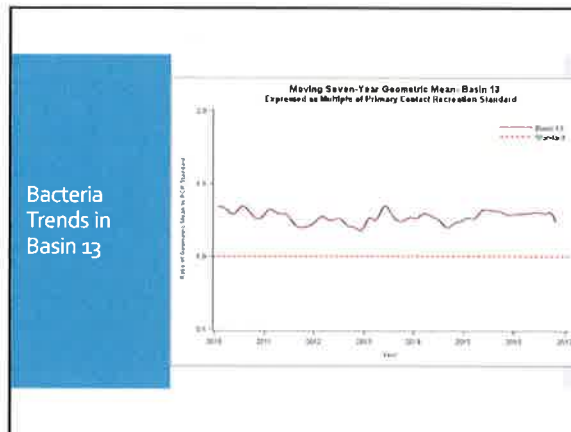
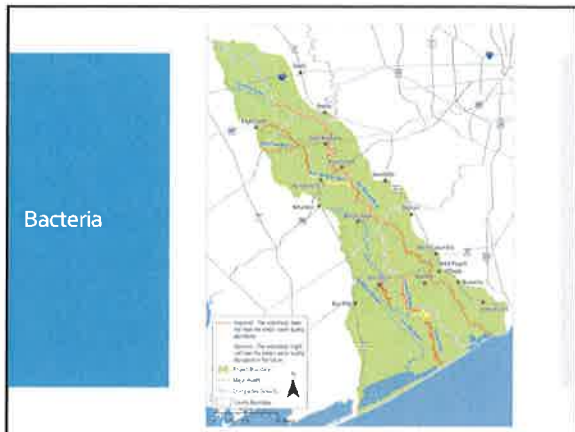
Chocolate Bayou Status

Technical Support Document for Total Maximum Daily Loads for Indicator Bacteria In the Chocolate Bayou Watershed

Segments: 1107 and 1108



July 2017



Implementation: Workshops and Training

Two photographs are shown. The top one shows two people standing on a wooden bridge over a stream, with the caption "Texas Stream Team Training - Spring 2017". The bottom one shows a group of people sitting at tables in a room, with the caption "Texas Watershed Stewards Training/July 11, 2017".

THANK YOU!

Steven Johnston
 H/SAC
 832.651.4579
 steven.johnston@h-gar.com

A photograph of a person wearing a hat and life jacket, paddling a red kayak on a river. The person is facing away from the camera, and the river is surrounded by greenery.

H/GAR ICGO

BIG Coordination and Policy Workgroup

Announcements

The Coordination and Policy work group met 10:00 AM October 15, 2018, H-GAC, Conference Rm A. For more information or to be added to the e-mail list, please contact Steven Johnston at steven.johnston@h-gac.com.

I-Plan

The Coordination & Policy Workgroup submitted the [Executive Summary and Introduction](#) to the I-Plan for consideration.

Meetings

October 15, 2018 1



Agenda

May 30, 2018 1



February 28, 2018 1



September 25, 2017 1



March 6, 2017 1



October 11, 2016 1



August 1, 2016



December 11, 2015



July 16, 2015



May 18, 2015



March 30, 2015



February 2, 2015



November 5, 2014



March 25, 2014



December 16, 2013



March 28, 2013





**Coordination & Policy Work Group
Meeting Agenda
Monday, October 15, 2018
10:00 AM to 12:00 PM
H-GAC Conference Rm. A**

Call to Order/Welcome/Introductions

Review: July Meeting

BIG Fall Meeting Agenda

Work group will review and comment on the meeting agenda.

2018 Draft Annual Report

Work group will receive a copy of the draft report and provide comments and edits as necessary.

Response to TCEQ Implementation Letter

Work group will receive an update on the response to TCEQ implementation letter effort.

Other Topics/Announcements/Adjourn

Upcoming Meeting Schedule

- 10/23/2018 BIG Fall Meeting (1:00 PM – H-GAC)
- 5/23/2019 BIG Spring Meeting (1:00 PM – H-GAC)
- 11/01/2018 Caney Creek Public meeting (4:00 PM – Bay City Community Center)
- 11/08/2018 Oyster Creek Public meeting (4:00 PM – Brazoria County Library Lake Jackson)

Instructions to call into BIG meetings:

To call in, dial 713-481-0090 (or 800-240-3895). You will be asked to enter your pass code, followed by the # sign. The pass code is 1084242. If you dial in before H-GAC, you will hear "music on hold". Once H-GAC dials in, the music will cease and the conference call will begin. During the conference, you may hear beeps. A single beep indicates someone has joined the conference call. A double beep indicates someone has left the conference call. Remember--if you do press hold, everyone will hear your hold music.



**Coordination & Policy Work Group
Meeting Summary
Monday, October 15, 2018
10:00 AM to 12:00 PM
H-GAC Conference Rm. A**

Call to Order/Welcome/Introductions

Camila Biaggi (HC), Richard Chapin (COH), Danielle Cioce (HC), Denise Ehrlich (GCA), Frank Green (Montgomery Co.), Jack Murphy (League City), Linda Pechacek (Public), Jim Robertson (CCFCC), Linda Shead (Shead Solutions), Brian Sims (H-GAC), Robert Snoza (HCFCD),

Review: July Meeting

Attendees reviewed the draft summary of the July 30, 2018 meeting summary.

BIG Fall Meeting Agenda

The work group reviewed and did not provide any comments to the meeting agenda.

2018 Draft Annual Report

The work group received a copy of the draft report. H-GAC staff reviewed the changes to the document, including the new format (slimmed down) and revised status scoring were discussed. The work group provided comments and suggested edits. H-GAC staff noted that the edits would be made prior to the Fall Meeting. Staff also stated that the document would be sent to the BIG before the meeting to initiate review and assist with discussion at the Fall Meeting.

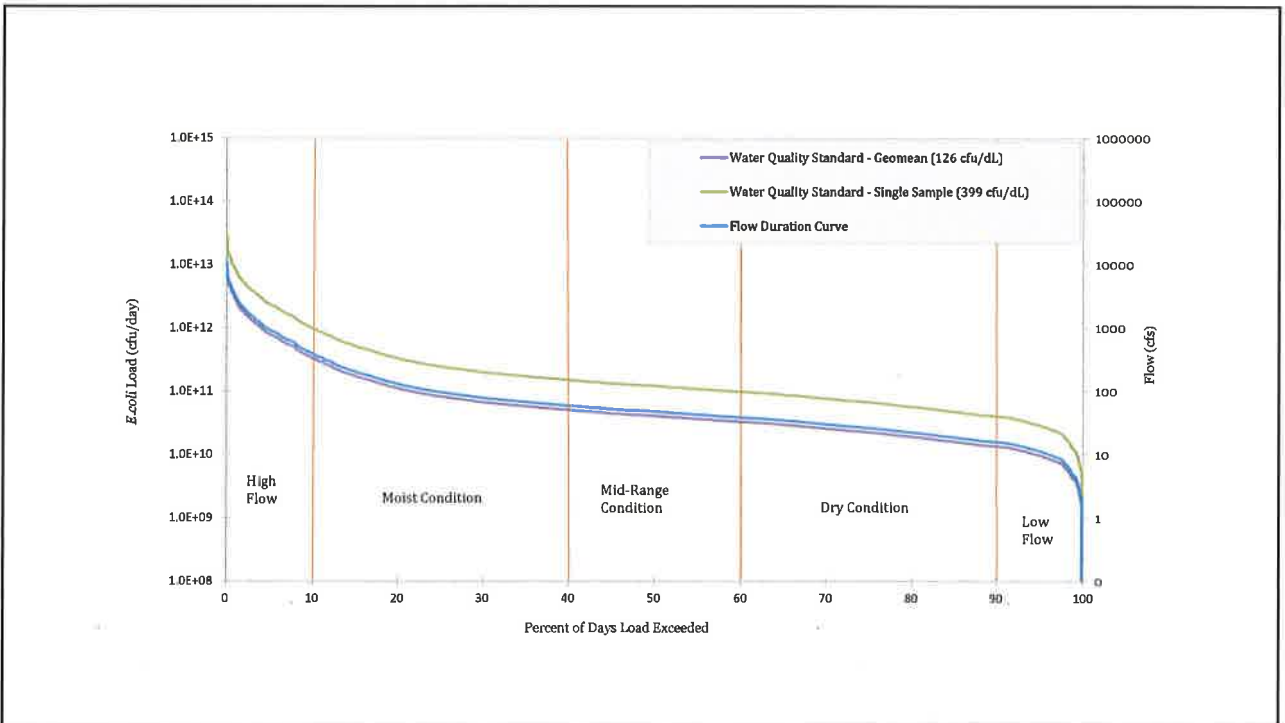
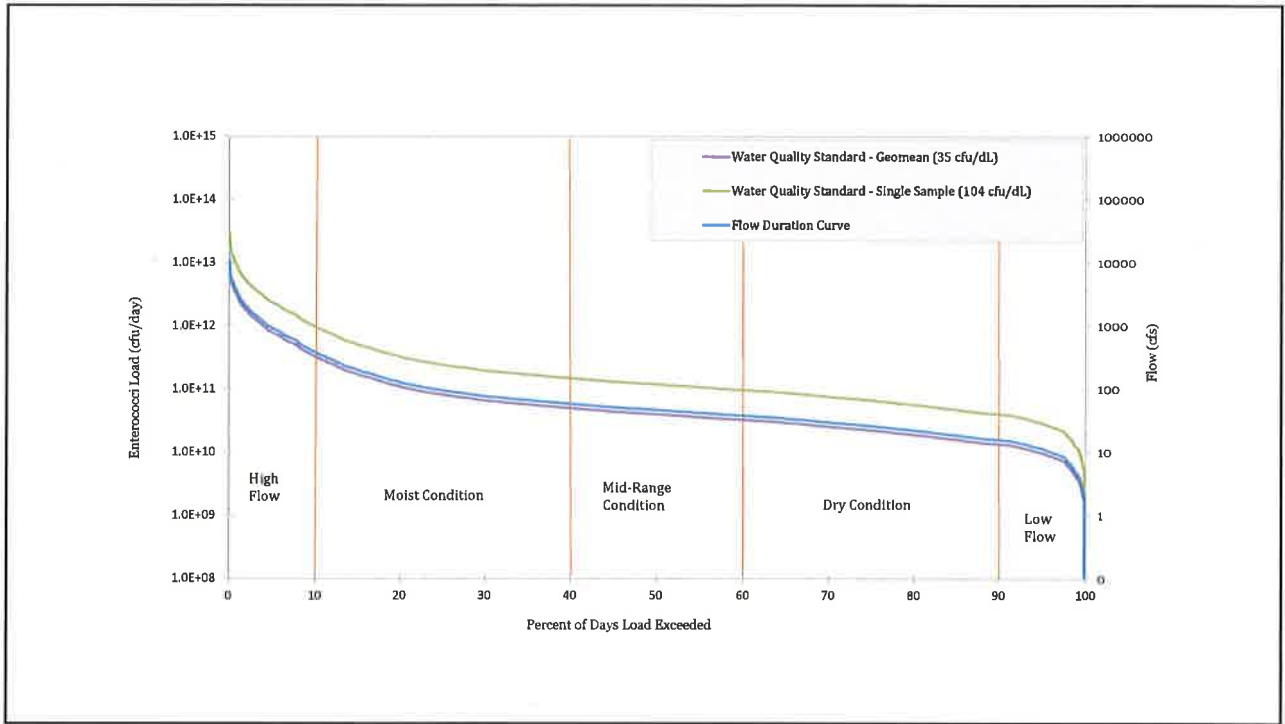
Response to TCEQ Implementation Letter

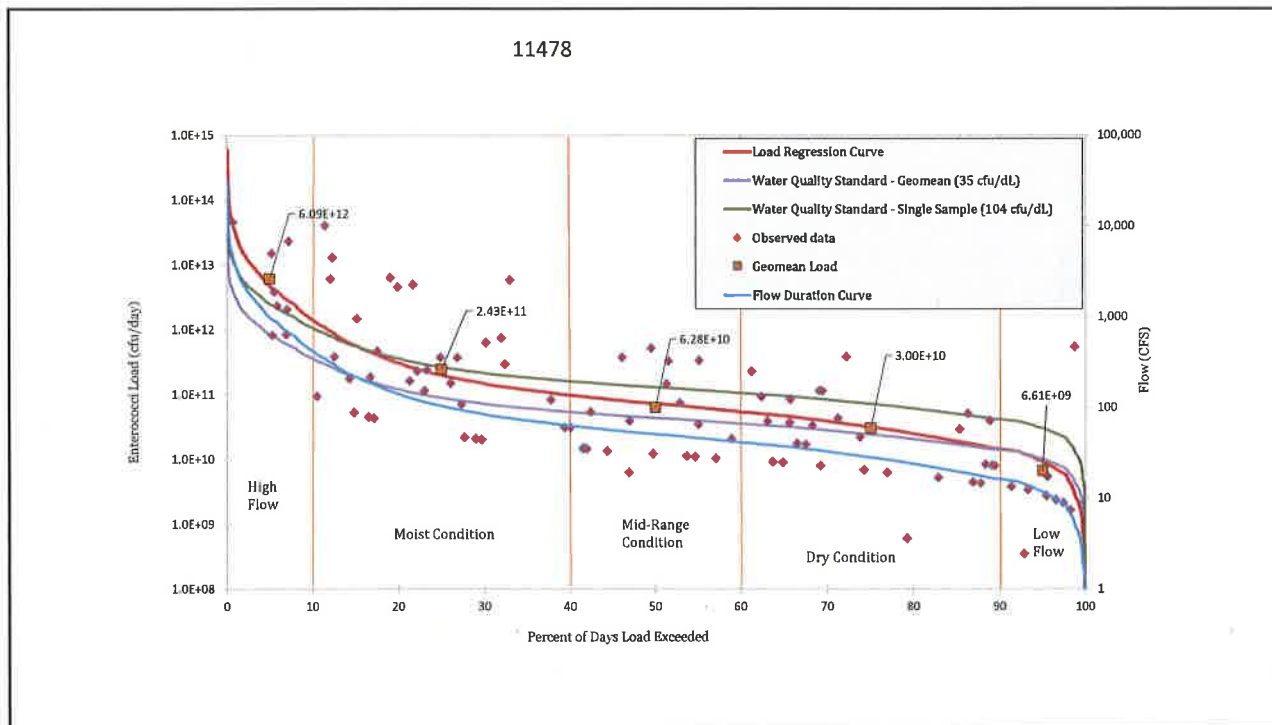
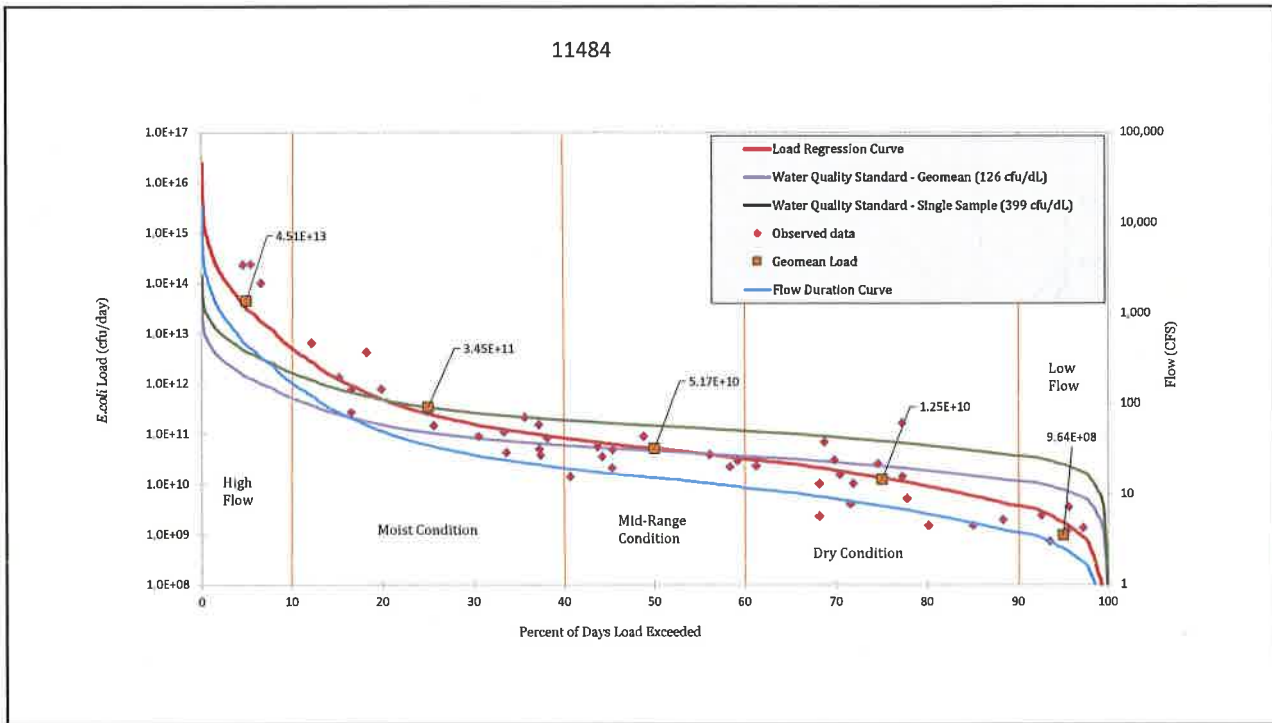
H-GAC provided an update on the response to TCEQ implementation letter effort since the July meeting. The work group also discussed how best to proceed with any follow up to the response letter submitted by TCEQ. The group decided to allow for follow up discussion with the TCEQ TMDL and reaching out TCEQ Region 12. Following the results of that outreach, the work group then would work on developing a Freedom of Information Act request.

Other Topics/Announcements/Adjourn

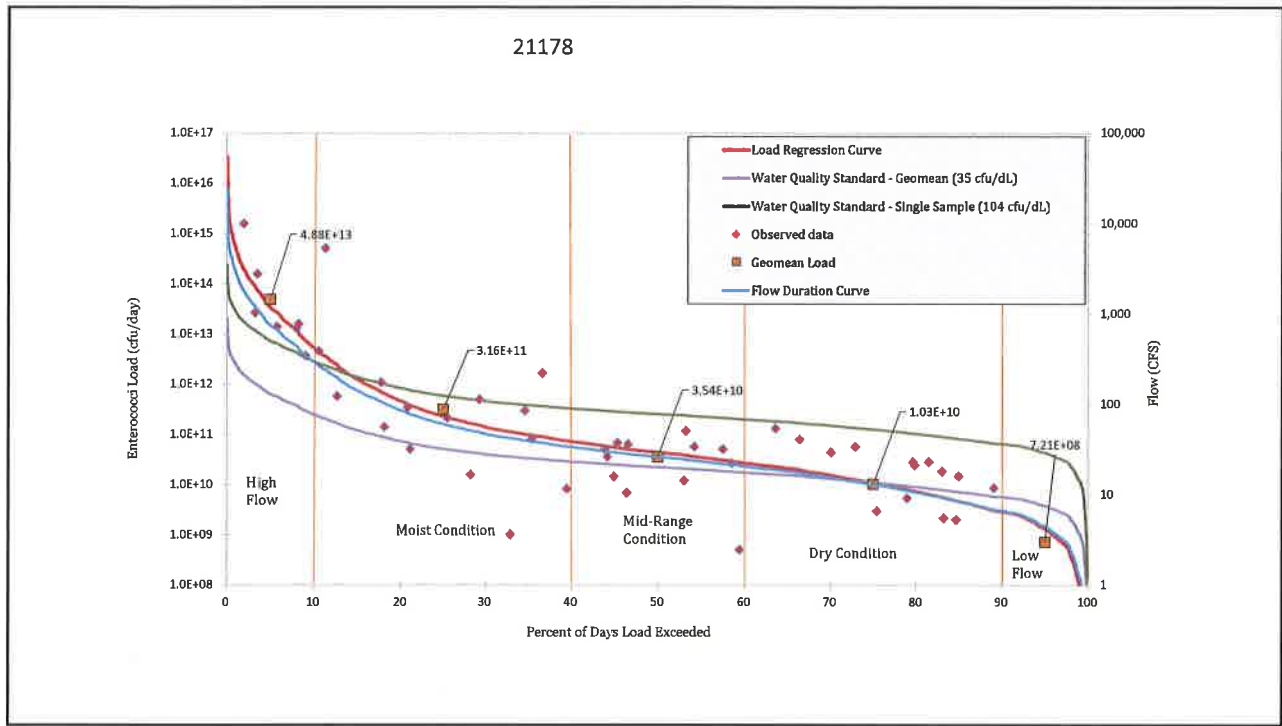
Upcoming Meeting Schedule

10/23/2018	BIG Fall Meeting (1:00 PM – H-GAC)
5/23/2019	BIG Spring Meeting (1:00 PM – H-GAC)
11/01/2018	Caney Creek Public meeting (4:00 PM – Bay City Community Center)
11/08/2018	Oyster Creek Public meeting (4:00 PM – Brazoria County Library Lake Jackson)

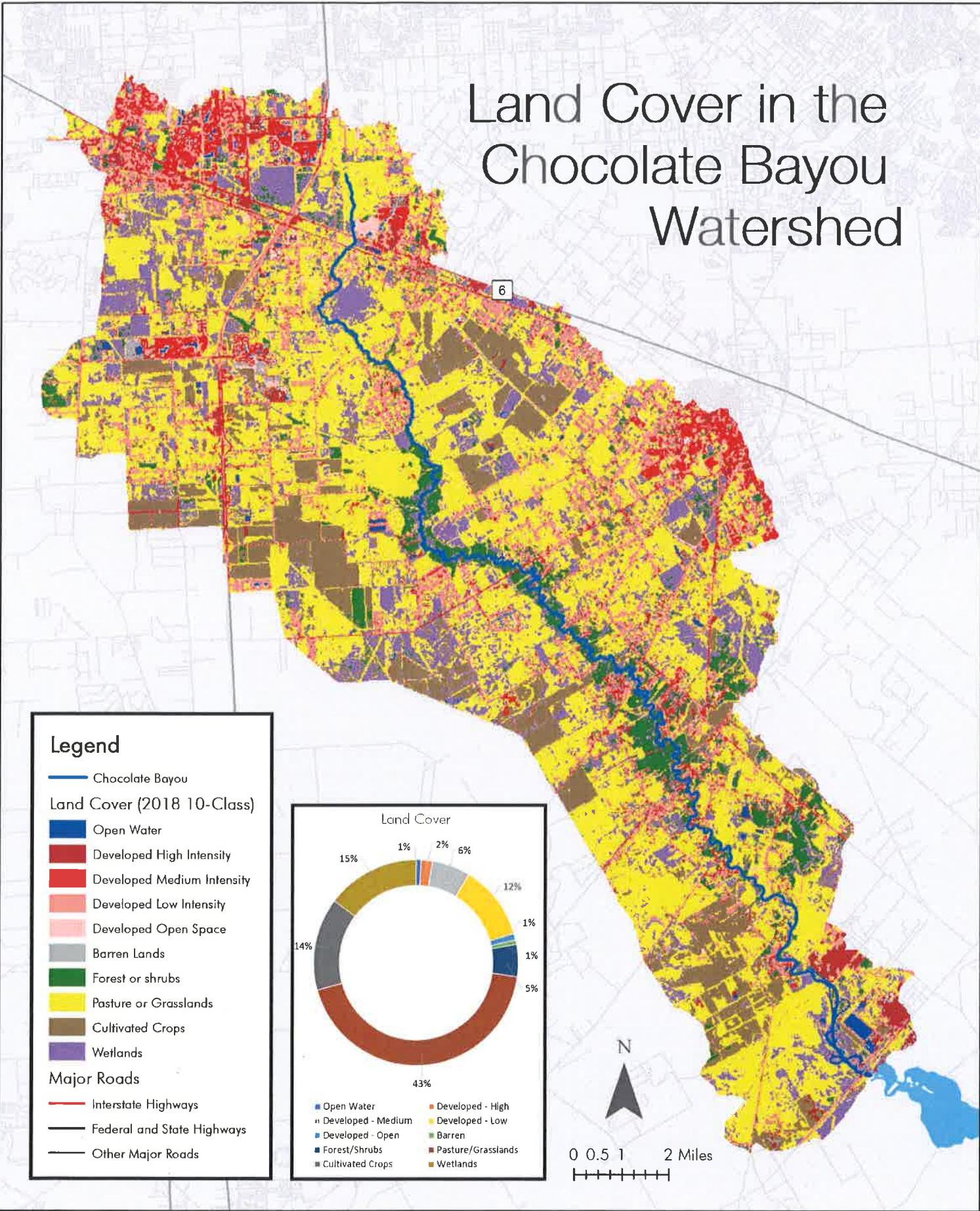




21178

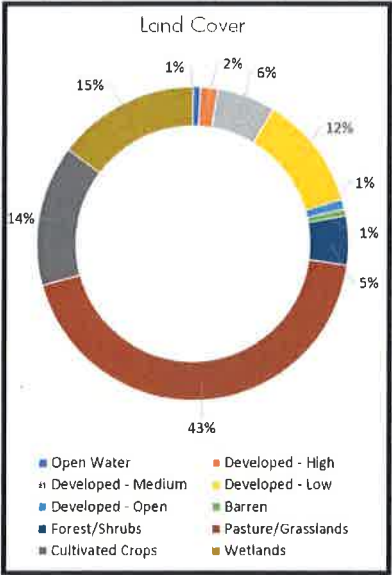


Land Cover in the Chocolate Bayou Watershed

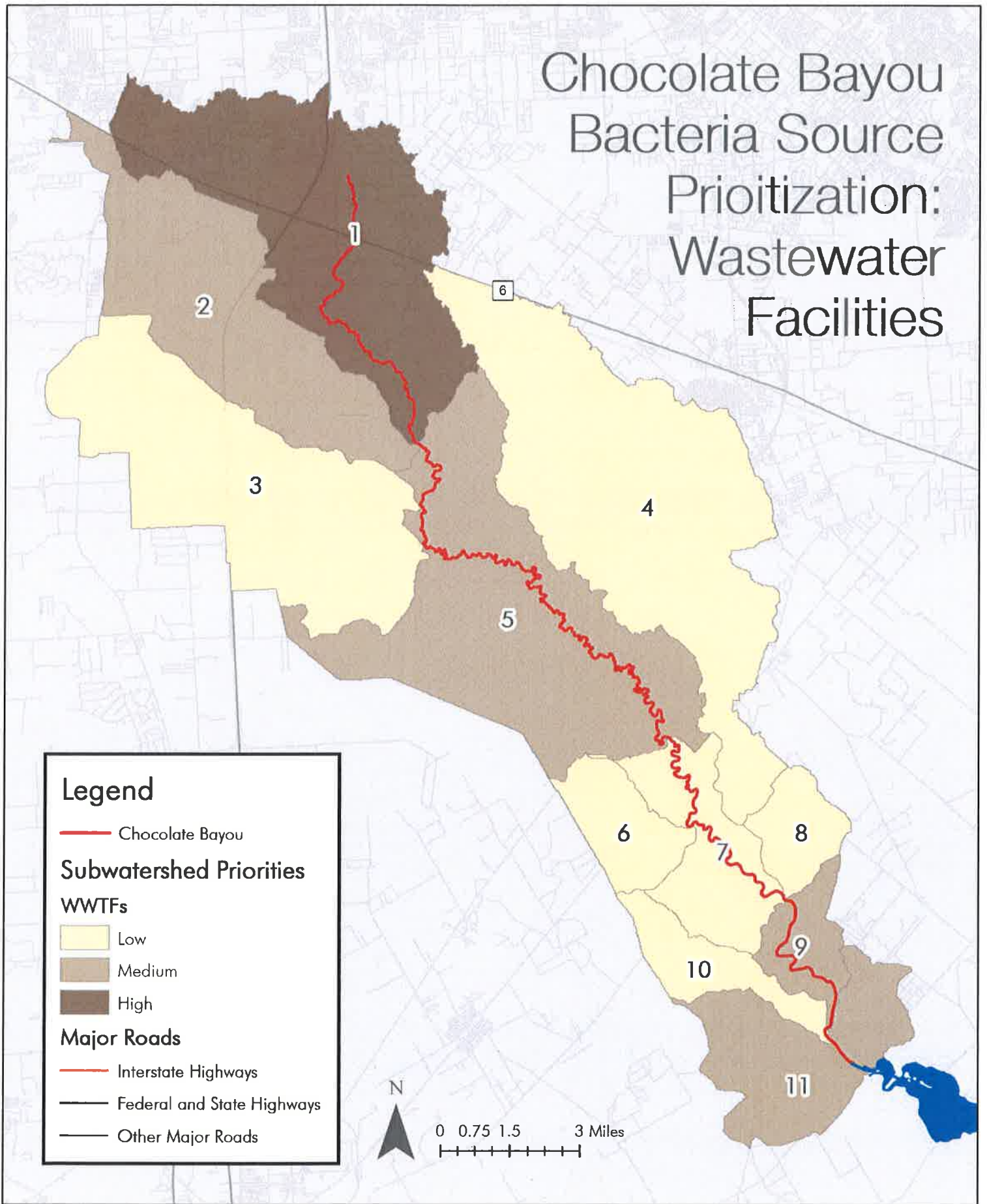


Legend

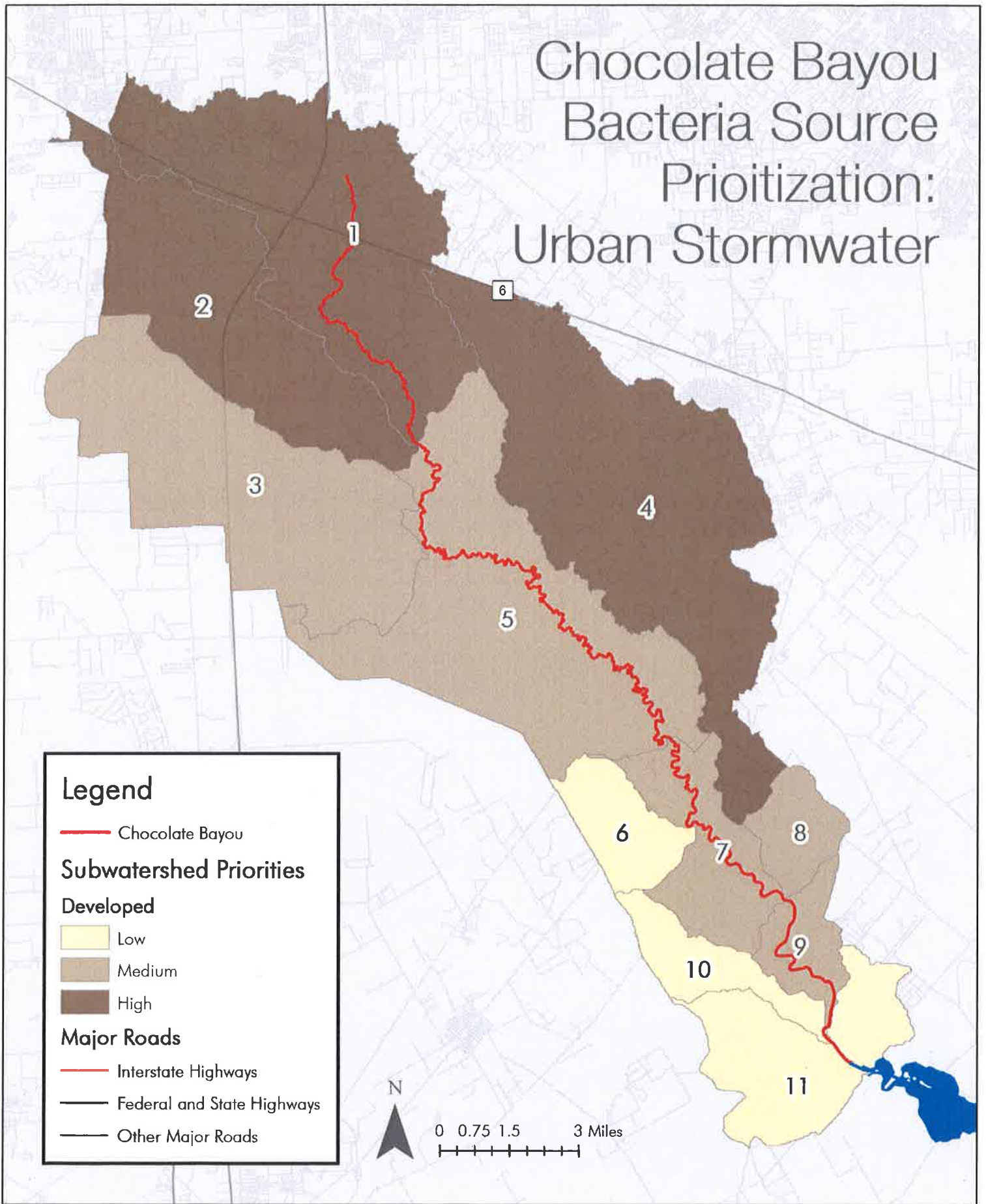
- Chocolate Bayou
- Land Cover (2018 10-Class)**
- Open Water
- Developed High Intensity
- Developed Medium Intensity
- Developed Low Intensity
- Developed Open Space
- Barren Lands
- Forest or shrubs
- Pasture or Grasslands
- Cultivated Crops
- Wetlands
- Major Roads**
- Interstate Highways
- Federal and State Highways
- Other Major Roads



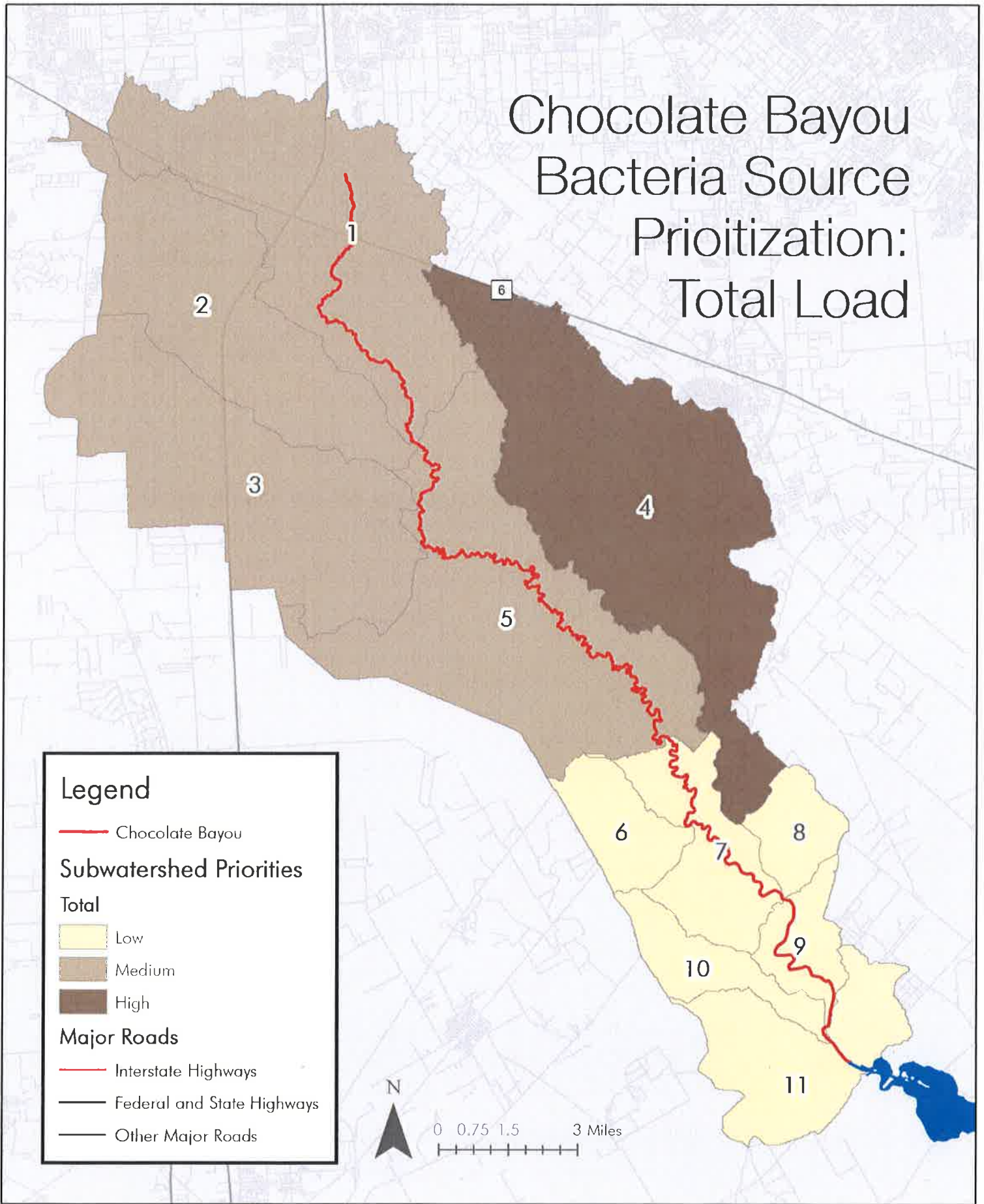
Chocolate Bayou Bacteria Source Prioritization: Wastewater Facilities



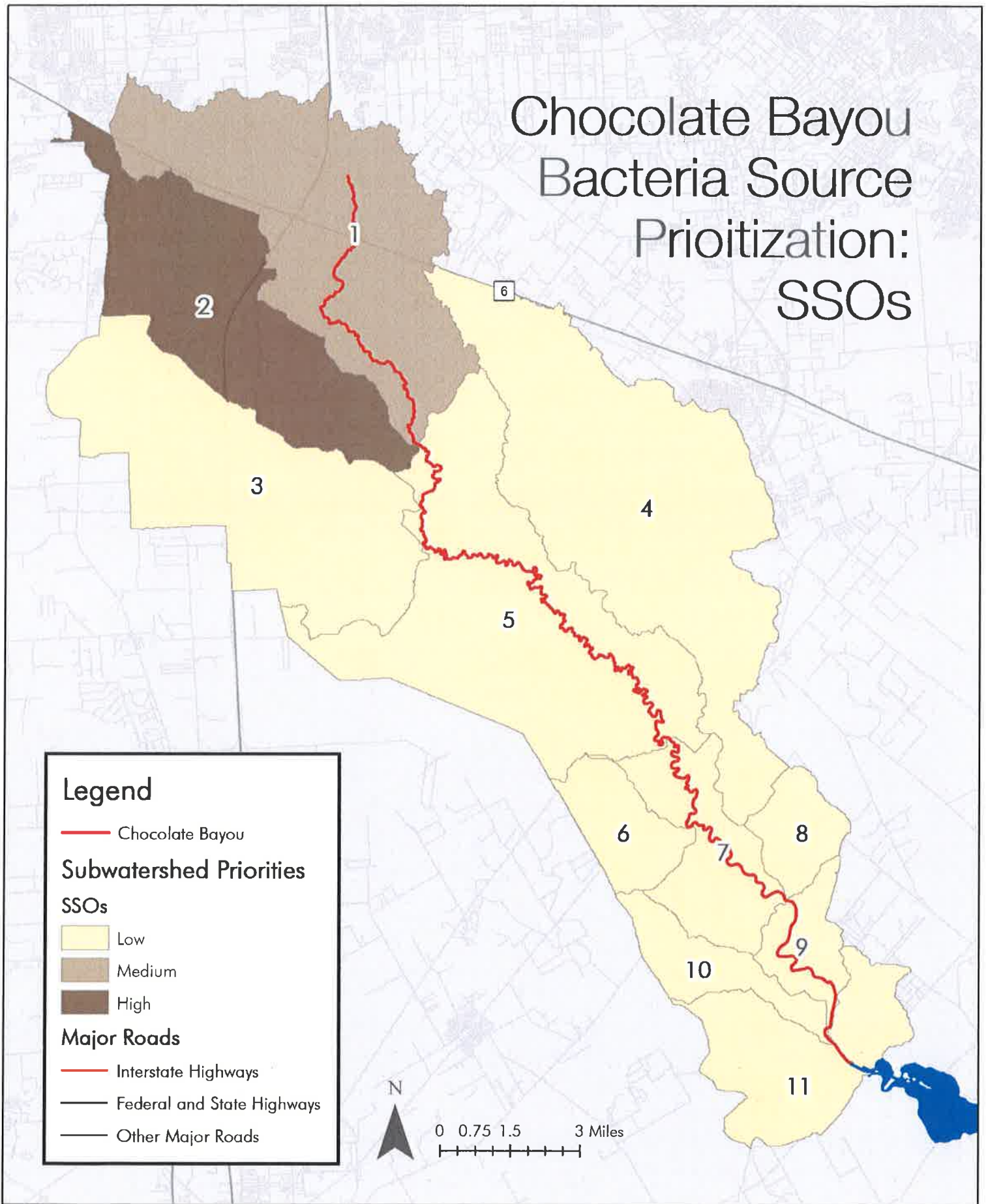
Chocolate Bayou Bacteria Source Prioitization: Urban Stormwater



Chocolate Bayou Bacteria Source Prioitization: Total Load



Chocolate Bayou Bacteria Source Prioritization: SSOs



Legend

— Chocolate Bayou

Subwatershed Priorities

SSOs

Low

Medium

High

Major Roads

— Interstate Highways

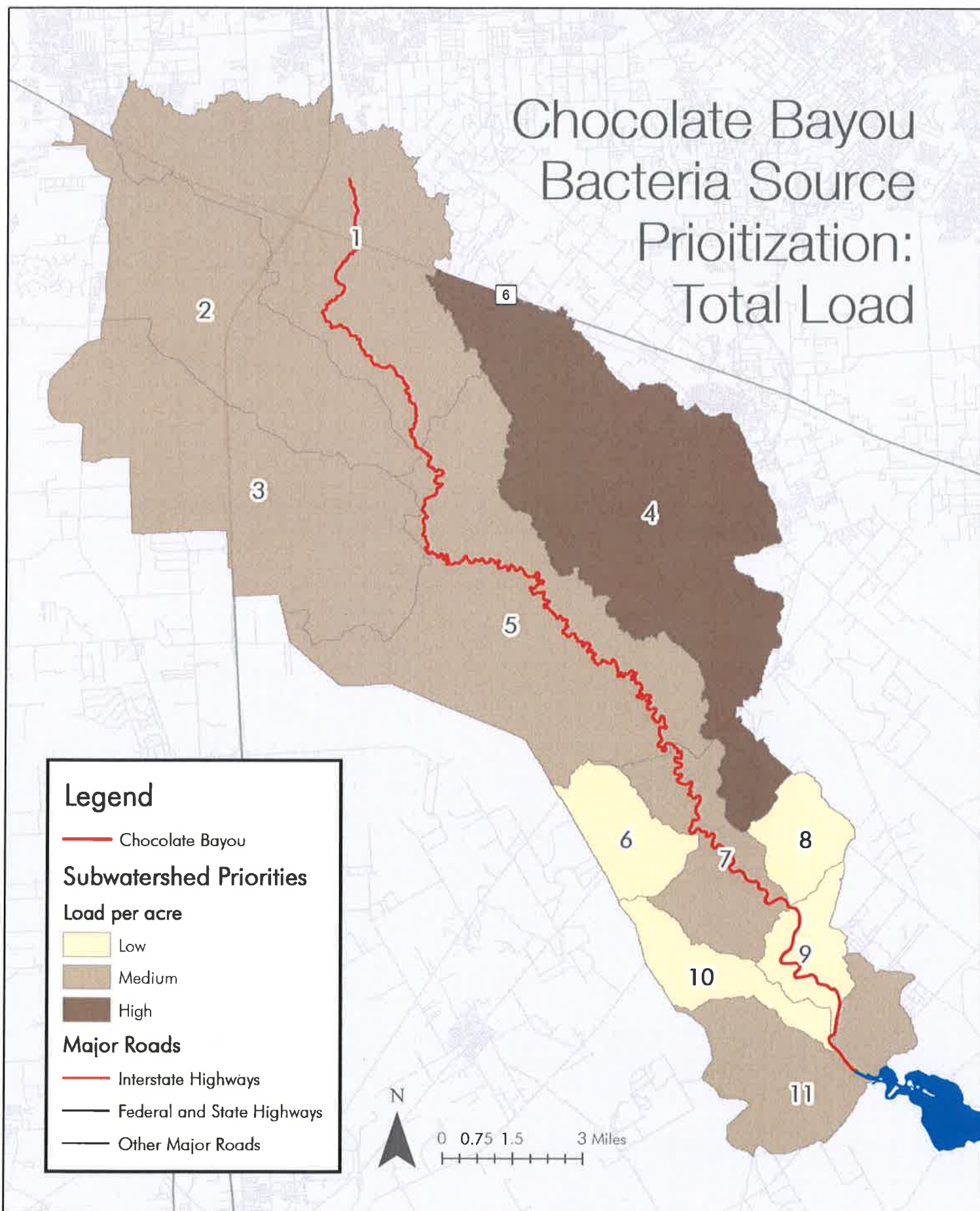
— Federal and State Highways

— Other Major Roads



0 0.75 1.5 3 Miles

Chocolate Bayou Bacteria Source Prioritization: Total Load



Legend

— Chocolate Bayou

Subwatershed Priorities

Load per acre

Low

Medium

High

Major Roads

— Interstate Highways

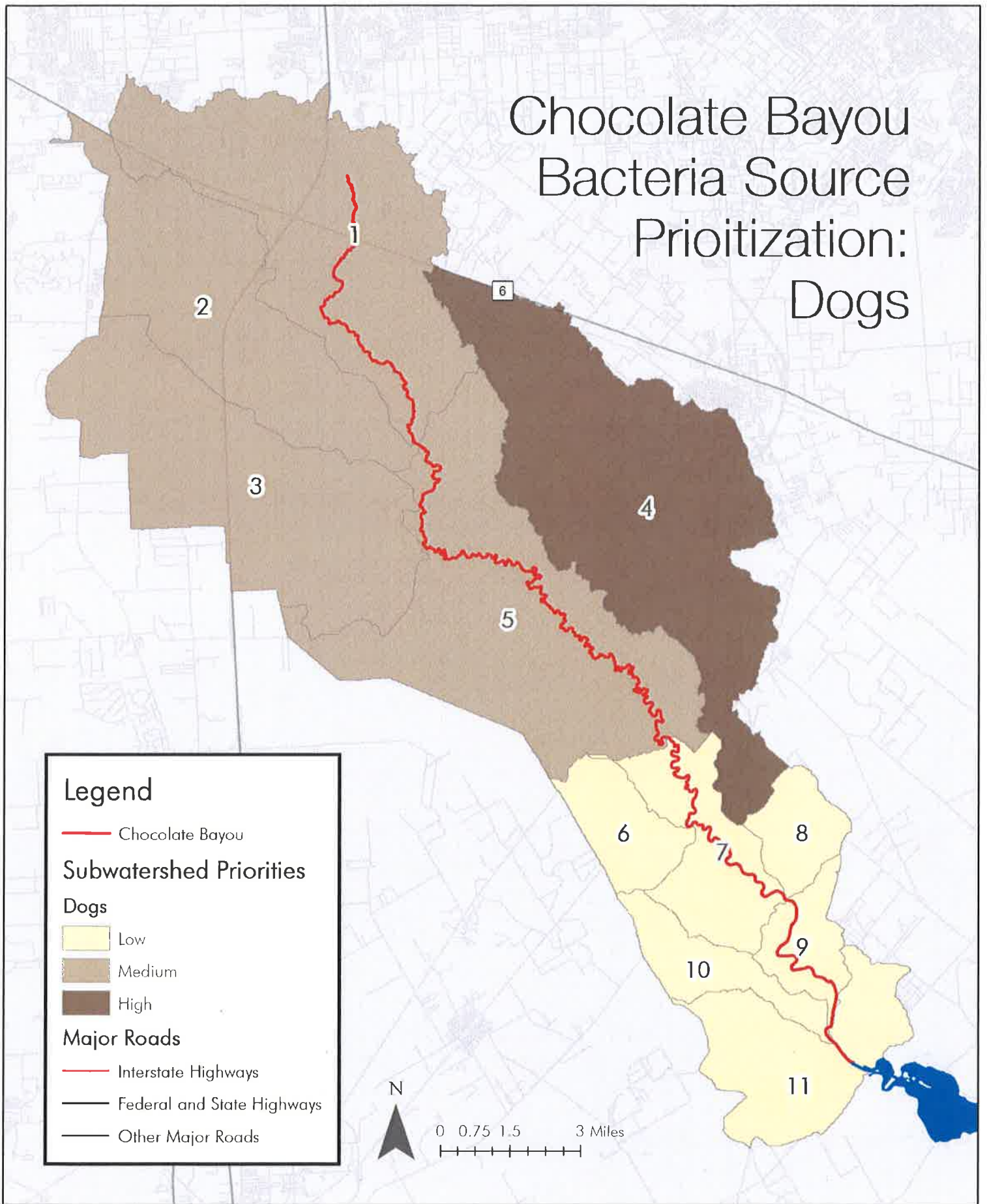
— Federal and State Highways

— Other Major Roads

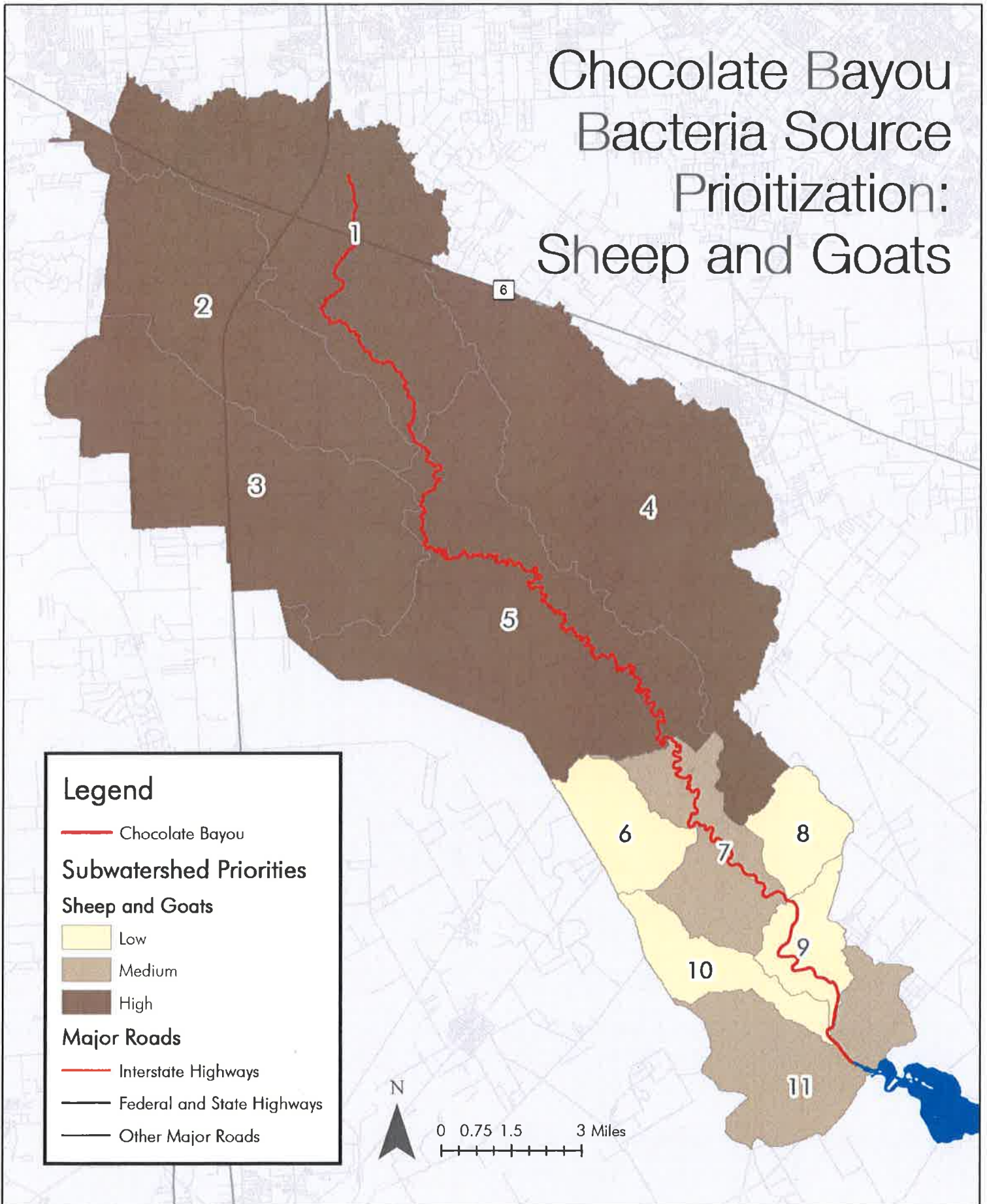


0 0.75 1.5 3 Miles

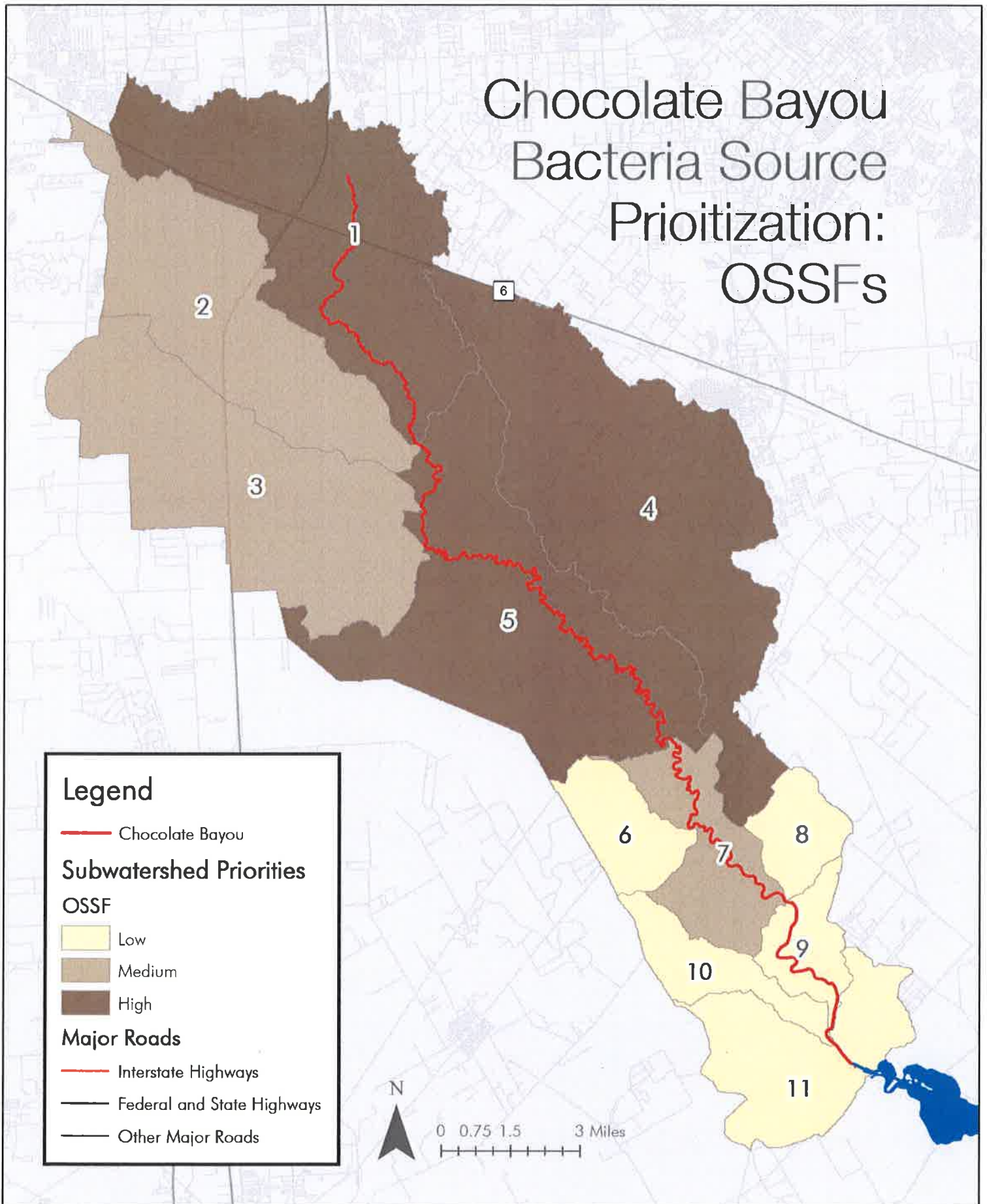
Chocolate Bayou Bacteria Source Prioritization: Dogs



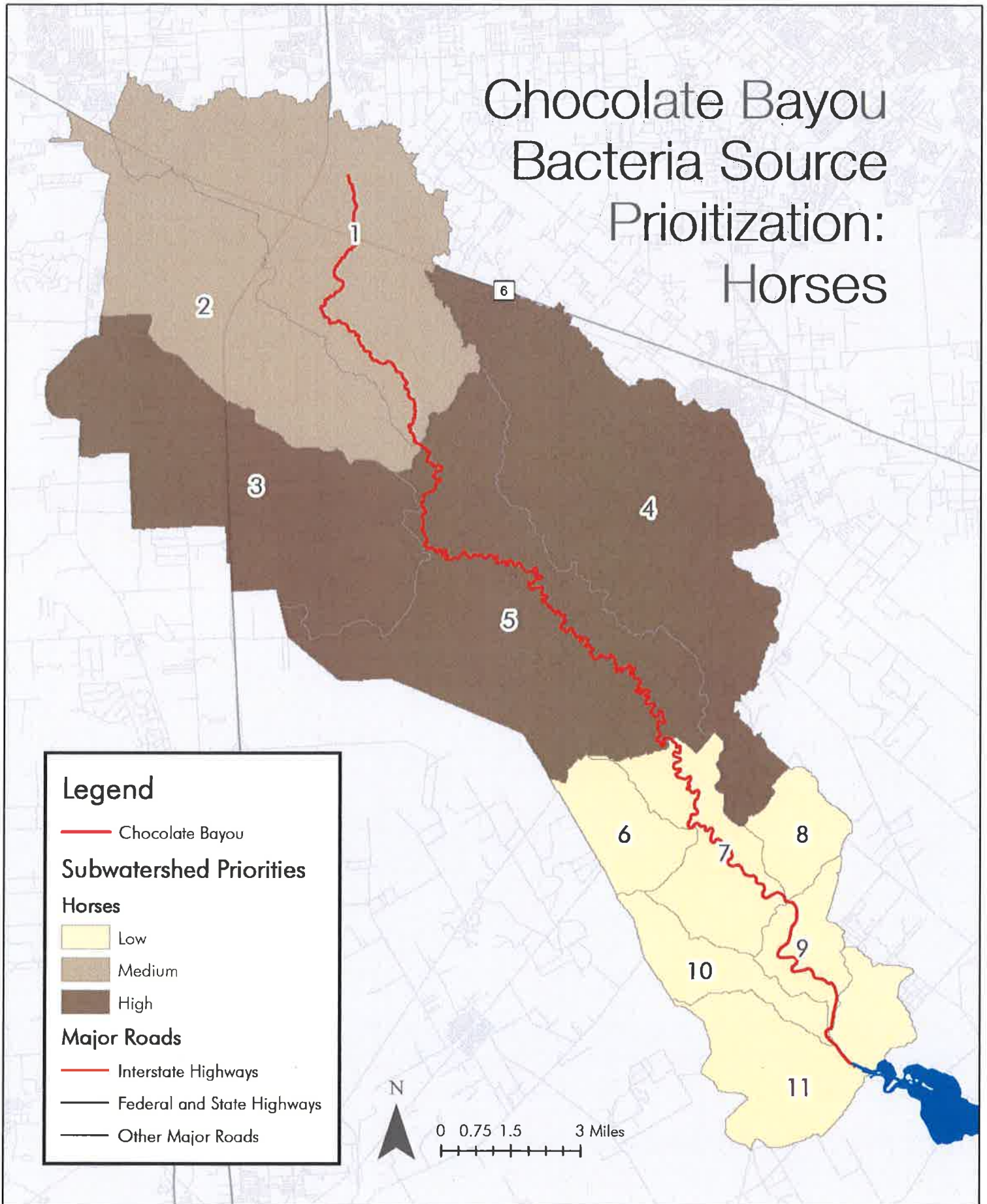
Chocolate Bayou Bacteria Source Prioritization: Sheep and Goats



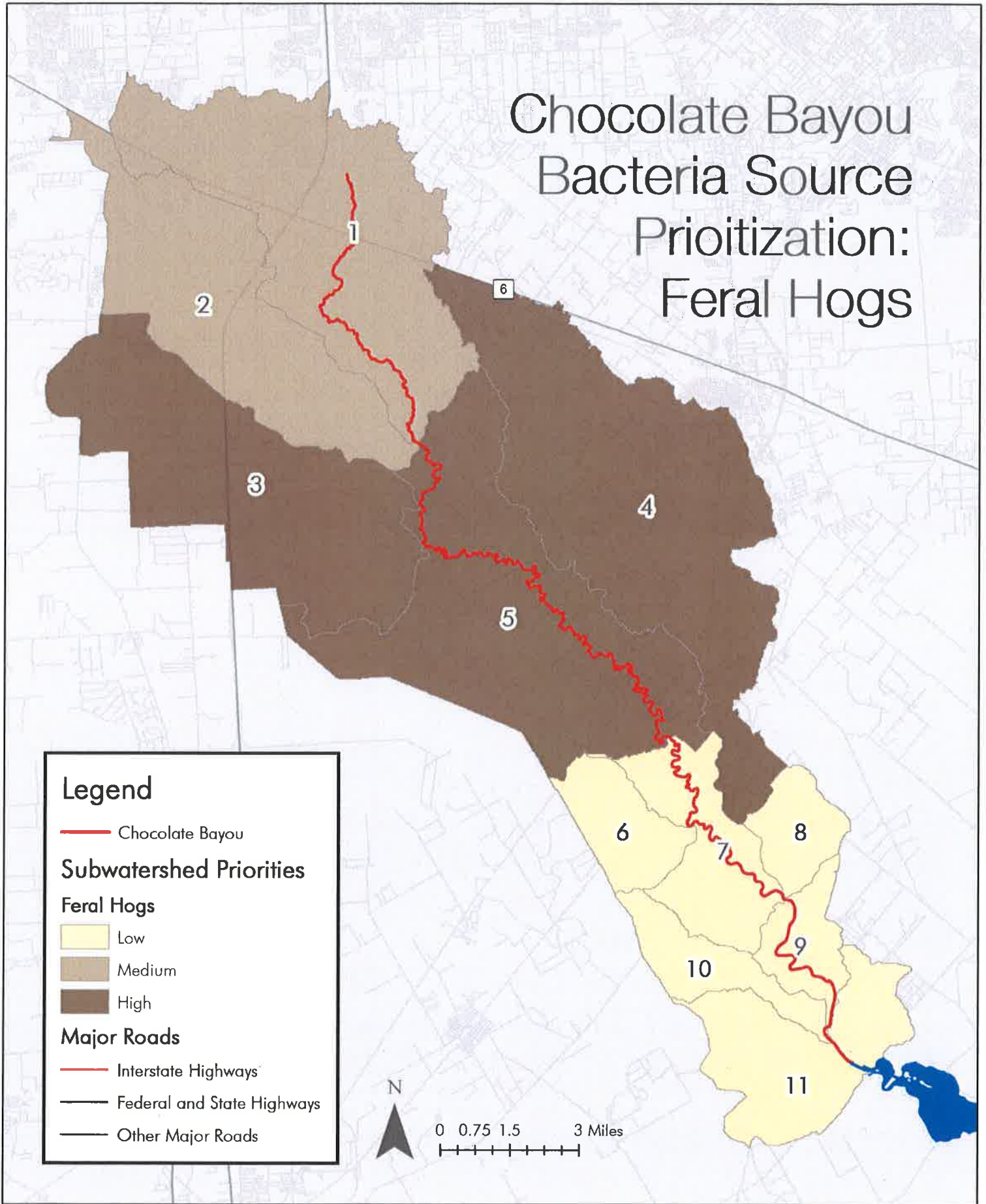
Chocolate Bayou Bacteria Source Prioitization: OSSFs



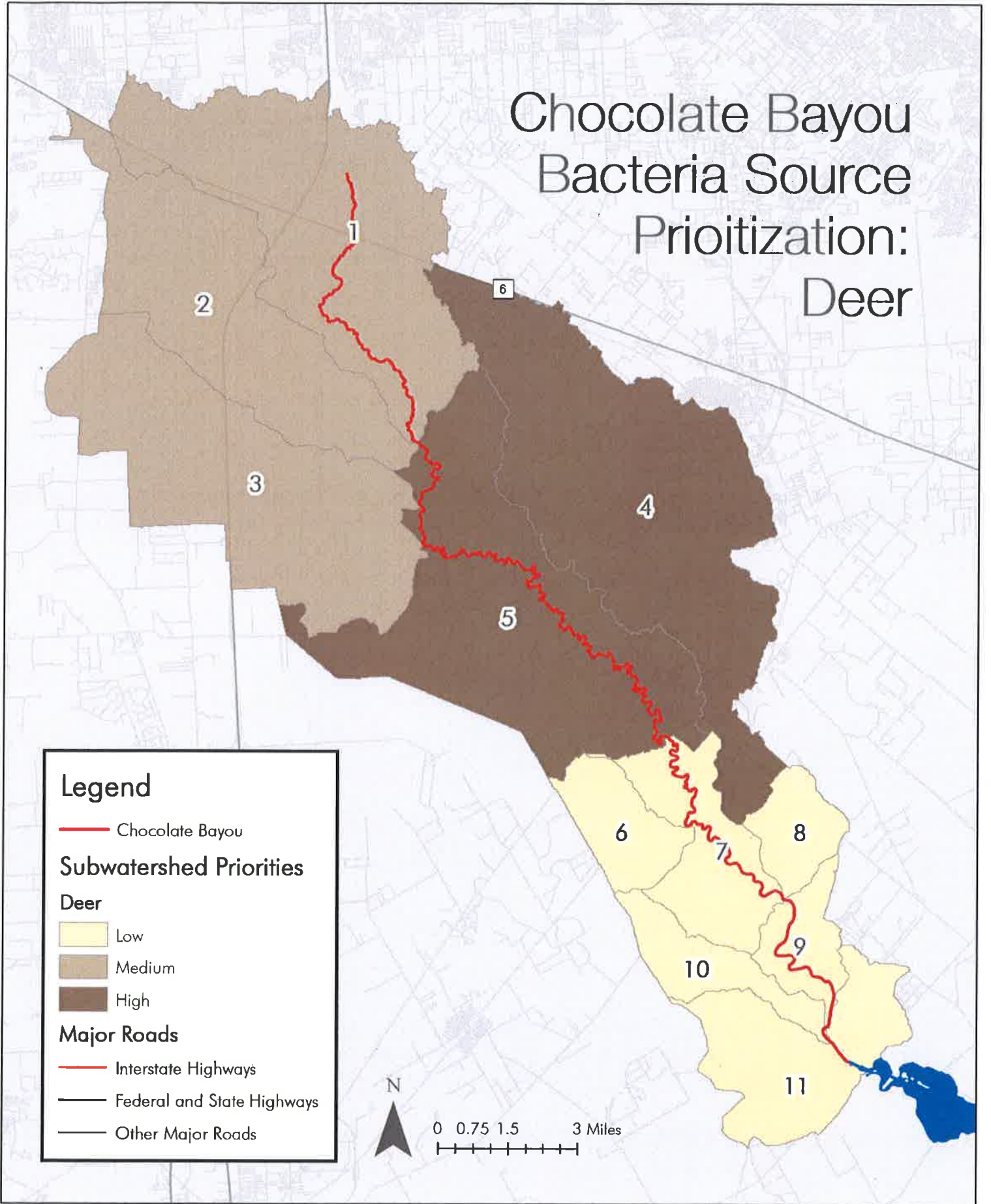
Chocolate Bayou Bacteria Source Prioritization: Horses



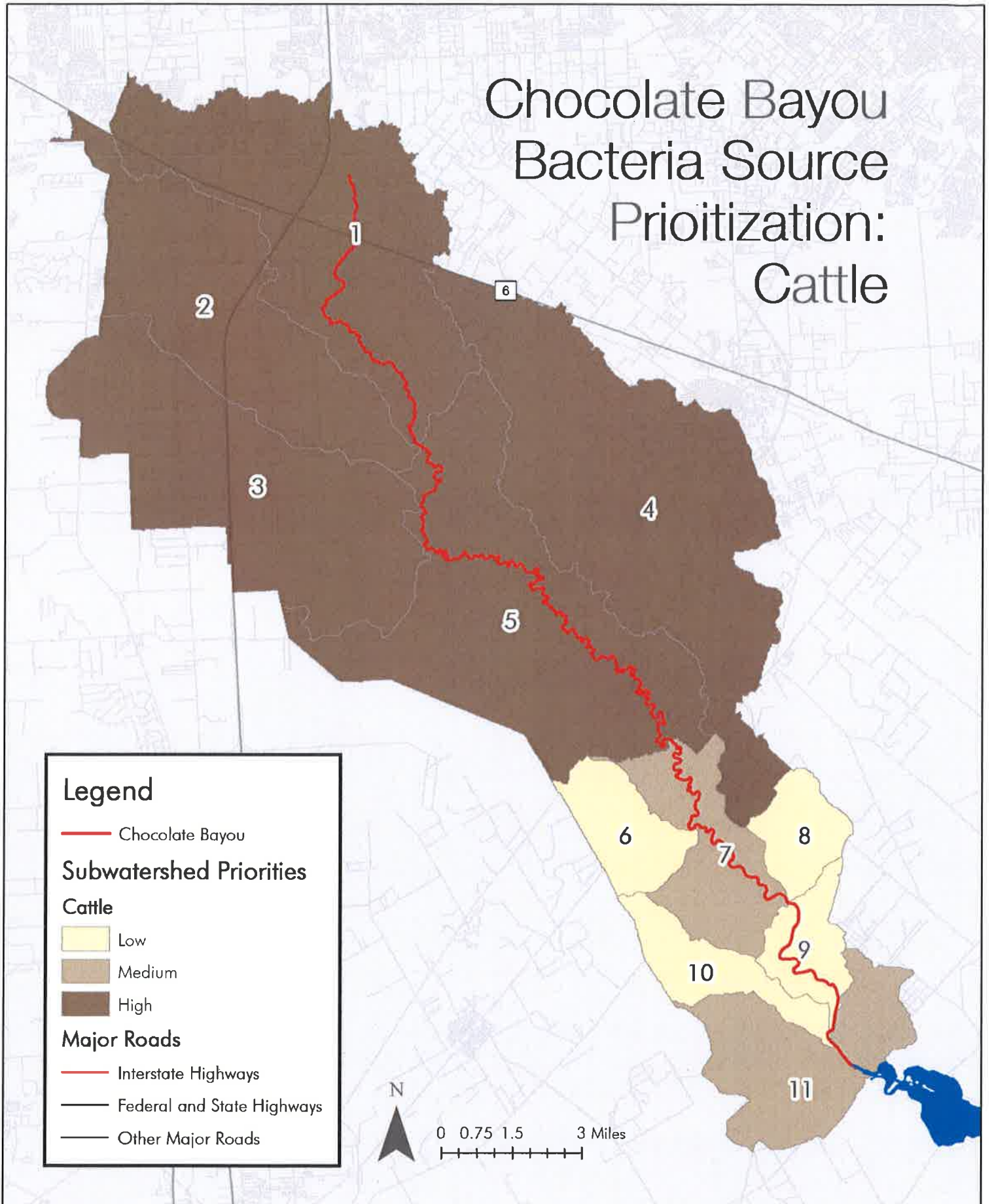
Chocolate Bayou Bacteria Source Prioritization: Feral Hogs



Chocolate Bayou Bacteria Source Prioritization: Deer

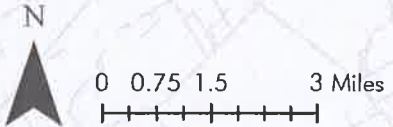


Chocolate Bayou Bacteria Source Prioritization: Cattle



Legend

- Chocolate Bayou
- Subwatershed Priorities**
- Cattle**
- Low
- Medium
- High
- Major Roads**
- Interstate Highways
- Federal and State Highways
- Other Major Roads




TCEQ Conference



I. The Bacteria Implementation Group

A LITTLE BACKGROUND ON THE BIG



- Convened in 2008
- Diverse stakeholders
 - Local Government
 - Business
 - Industry
 - Environmental
- I-Plan approved in 2013



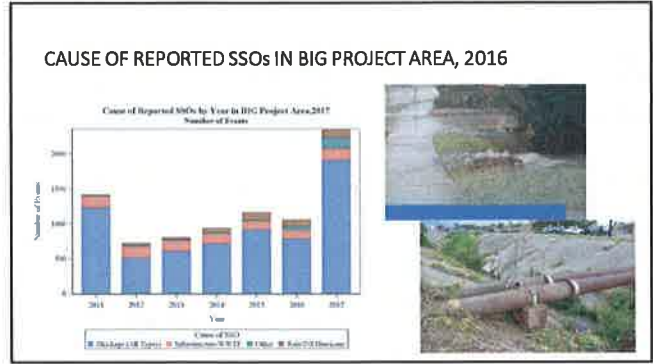
II. Implementation Plan

Implementation Plan
For the 2012-2015 Period
The 2012-2015 Period Goals for Bacteria in the Housatonic Catchment Region

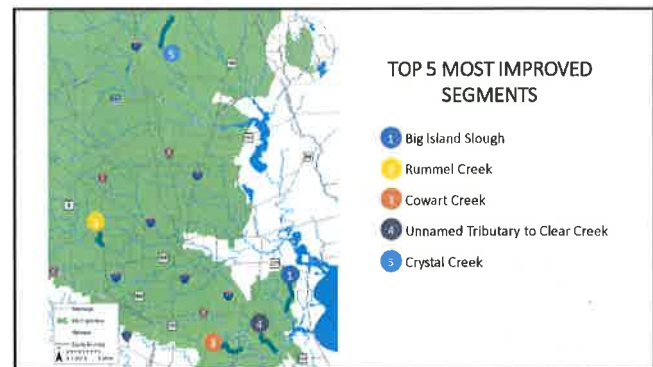
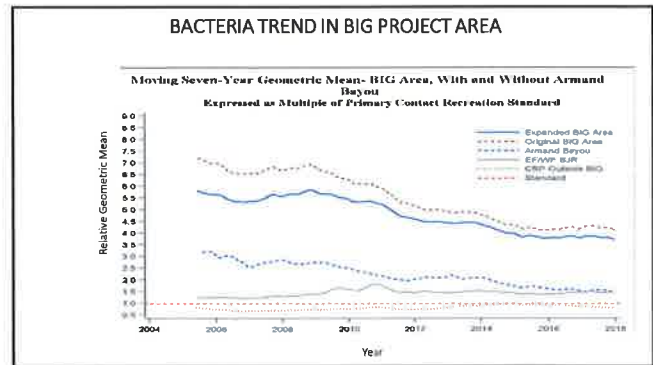
<http://www.h-gac.com/community/water/tmdl/BIG/reports.aspx>

BIG Bacteria Implementation Group
Online 2012

BIG 2017
ANNUAL REPORT



III. Gauging Success



QUICK START EFFORTS



NORMAL CONDITIONS



1 DAY POST-HARVEY



KEY ISSUES



SANITARY SEWER OVERFLOWS



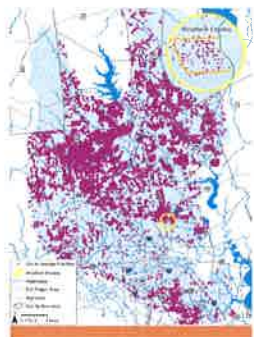
STORMWATER POLLUTION



FAILING ON-SITE SEWAGESYSTEMS

ON-SITE SEWAGE SYSTEM IMPROVEMENTS

- Aldine Westfield
- Comprehensive Database
- Workshops & Training
- H-GAC SEP
 - \$171,000 Available



ALDINE WESTFIELD: CASE STUDY

- Coordinated Partner Effort
 - Harris County
 - East Aldine Management District
- Monitoring Sites
 - Halls Bayou
 - Greens Bayou
- Reduced bacteria levels Downstream



OTHER HIGHLIGHTS



TARGETED BACTERIA REDUCTION



LOW IMPACT DEVELOPMENT



PUBLIC OUTREACH

TARGETED BACTERIA REDUCTION



<http://www.h-gac.com/community/water/tmdl/BIG/reports.aspx>

LOW IMPACT DEVELOPMENT



DESIGNING FOR IMPACT
A Regional Guide to Low Impact Development

<http://www.h-gac.com/community/low-impact-development/default.aspx>

PUBLIC OUTREACH – BEHAVIOR CHANGE CAMPAIGNS



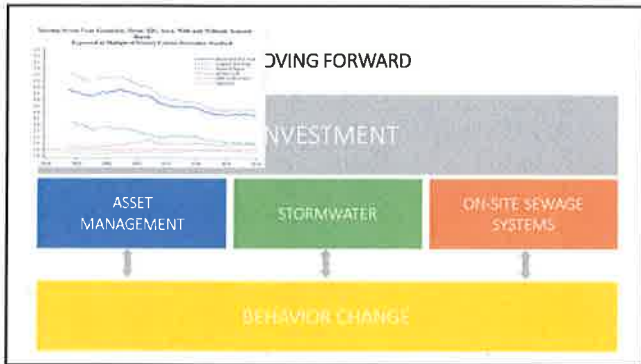
<https://coastalcommunitiestx.weebly.com/materials.html>

IV. NEXT STEPS

Interactive BIG Report

BIG
BACTERIA IMPLEMENTATION GROUP

<http://www.h-gac.com/community/interactive-web-applications/default.aspx>



Water Quality in the West Fork San Jacinto River Watersheds

Woodlands GREEN
11/29/18





Agenda

- Water quality status
- Ongoing projects
- West Fork Watersheds Partnership
- Taking action locally



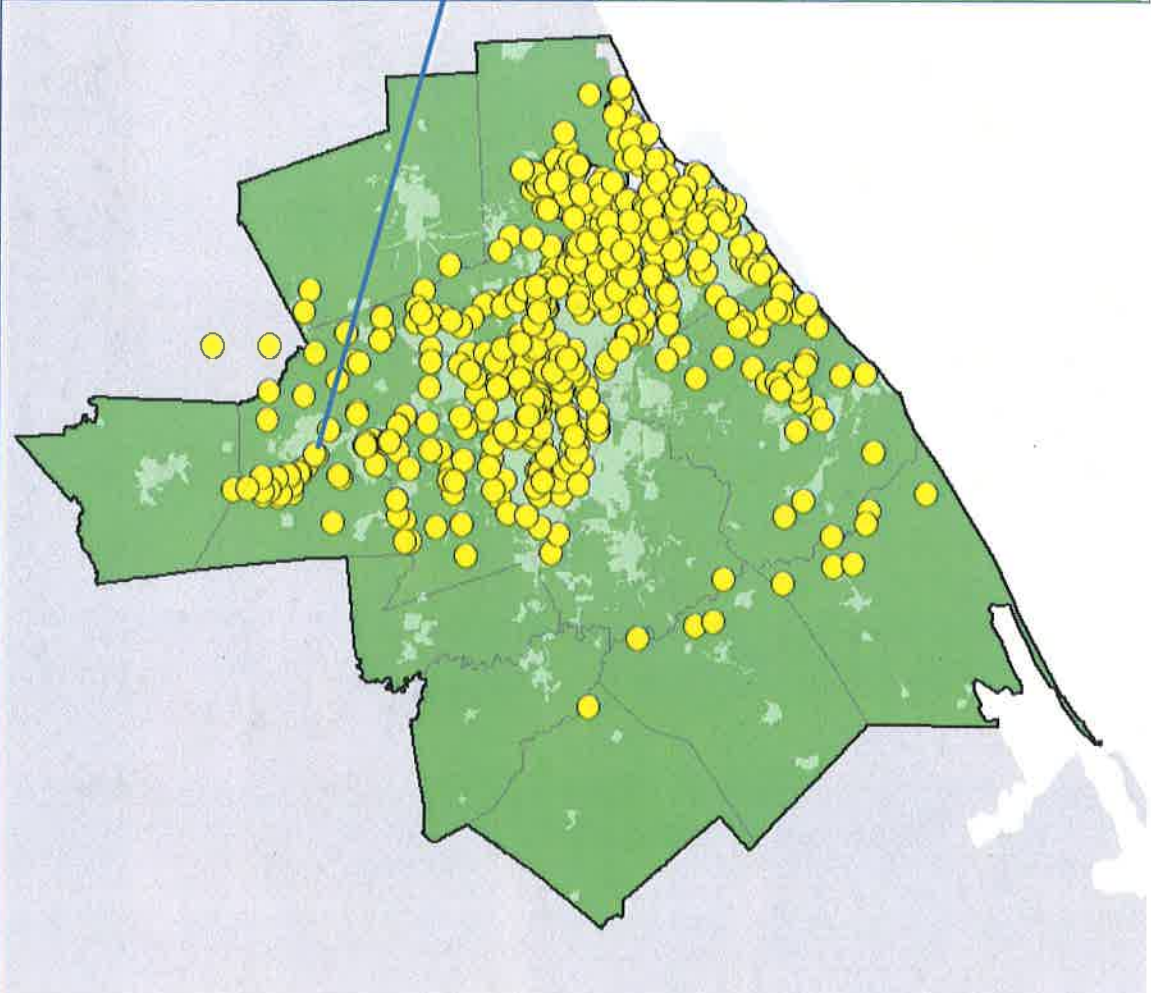
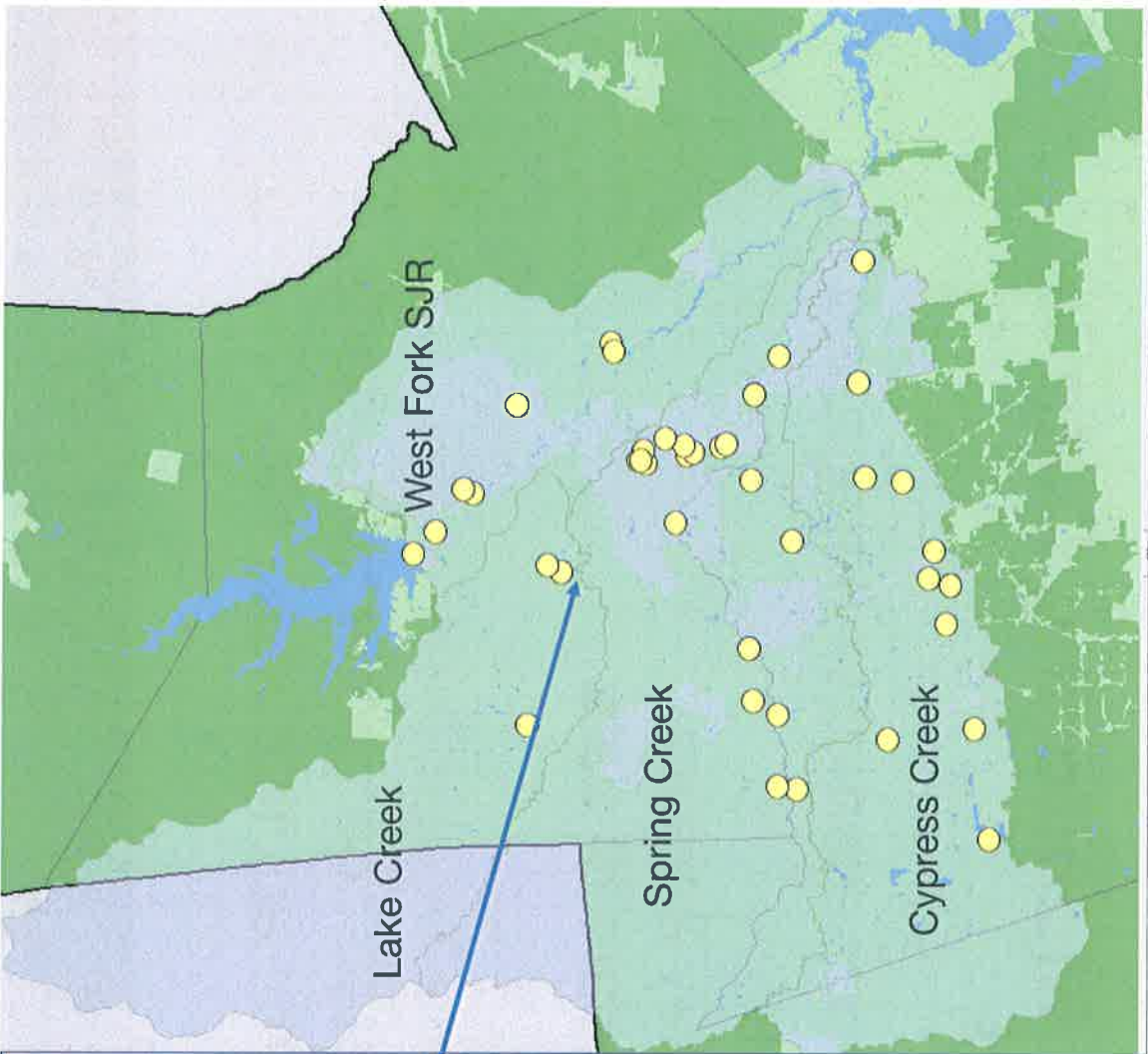
The Houston-Galveston Area Council

- Council of Governments, non-regulatory
- Regional planning (transportation, environmental, etc.)
- Water quality role



Water Quality Monitoring in the Houston Area

- Over 500 professional ambient monitoring sites just in CRP area
- Test for large number of parameters quarterly (includes bacteria, flow, field parameters, physical characteristics, DO, metals, etc.)
- Not drinking water (different testing)





How Monitoring Data is Used

- State assessments (Integrated Reports)
 - Every 2 years
 - 7 years of data
- Informs local efforts
 - Watershed protection efforts, permit applications, etc.

Standards Most Impaired in Our Region



- **Contact recreation standard**
- based on indicator bacteria (E. coli)
- Indicates fecal waste, potential health risk



- **Aquatic life standard** based on many components
- *DO, nutrients key here*



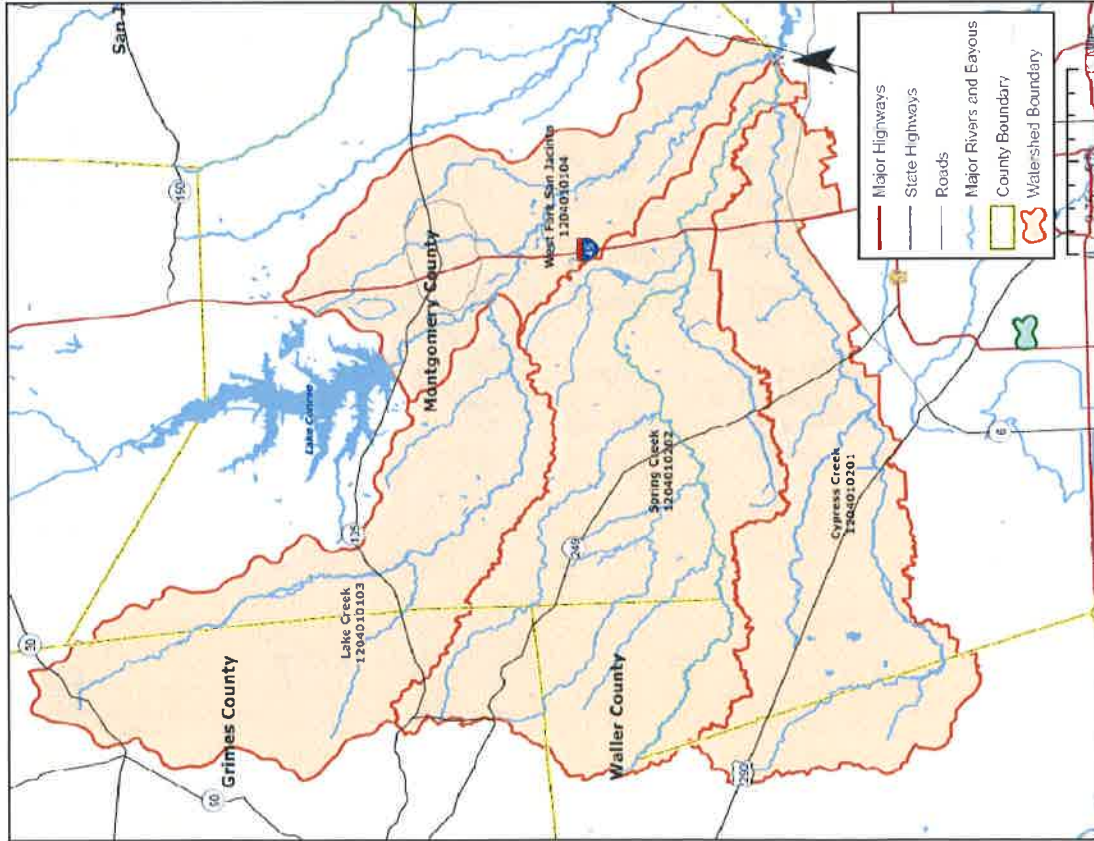
Why Does Bad Water Quality Matter?

- Impacts on community: public health, economy, environment
- Triggers need for action by TCEQ (TMDL/WPP/etc.)
- Our waterways, our communities



Water Quality in the West Fork Watersheds

CRP Watersheds of the San Jacinto River Basin, Below Lake Conroe



The West Fork San Jacinto River

- Lake Conroe to Lake Houston
- Three primary tributaries, Lake Creek, Spring Creek, Cypress Creek
- 1300 square miles of drainage, hundreds of miles of streams



Water Quality Overview

- Impacted by rapid growth in recent decades
- Declining water quality in most segments
- Primary issues fecal waste, dissolved oxygen, sediment

Sources of Pollution

Two primary categories:

- **Point source** – sources of (often permitted) waste from a discrete source (like a factory pipe)
- **Nonpoint Source** – sources (often unpermitted) from diffuse areas (like dog poop).





Sources of Pollution

- **Fecal Waste** – mix of human and animal sources, including OSSFs, pets, livestock, sewer overflows, wildlife.
- **Dissolved oxygen** – many factors, including temperature, nutrients from fertilizers and wastes, flow, aeration.
- **Sediment** – erosion, mining.

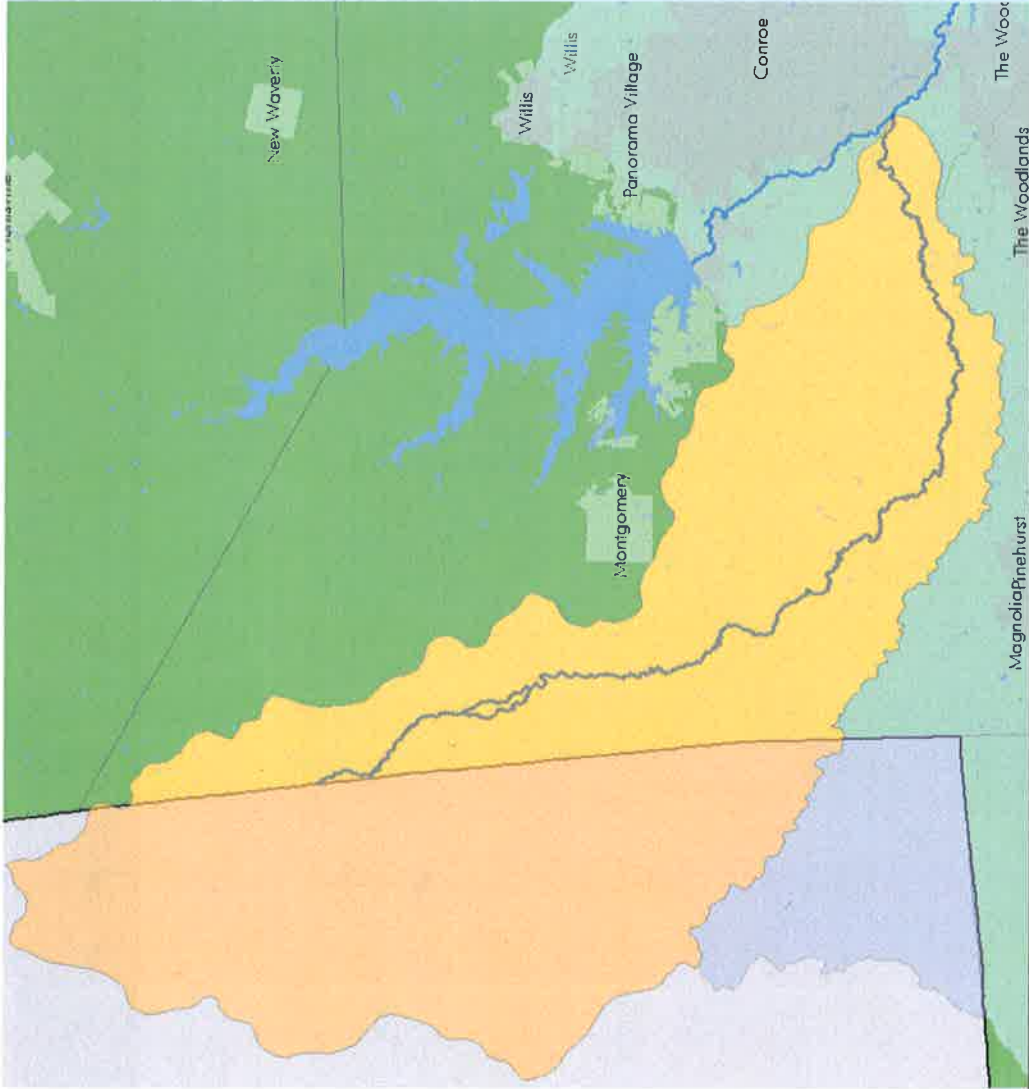


West Fork San Jacinto River

- Impairments
 - Fecal Bacteria
- Concerns
 - Nutrients
 - Macrobenthic Community
- Other Issues – Trash, Sediment, Flooding

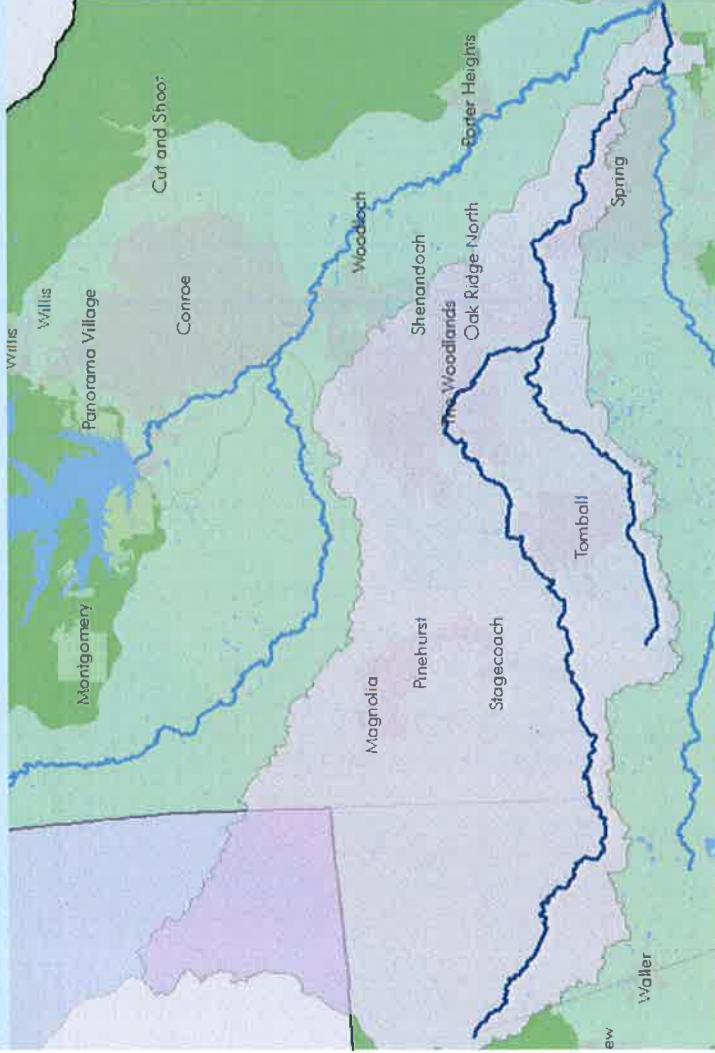
Lake Creek

- Impairments –
 - Fecal bacteria (Mound Creek)
- Concerns –
 - Macroinvertebrate community
 - DO



Spring Creek

- Impairments
 - Fecal Bacteria
 - Dissolved Oxygen
- Concerns
 - Fish communities
 - Nutrients
 - Cadmium (Panther)
 - Chlorophyll-a
- Other Concerns – Trash, sediment, flooding



Cypress Creek

- Impairments
 - Fecal Bacteria
- Concerns –
 - Nutrients
 - Habitat
 - Chlorophyll-a
 - DO (some)



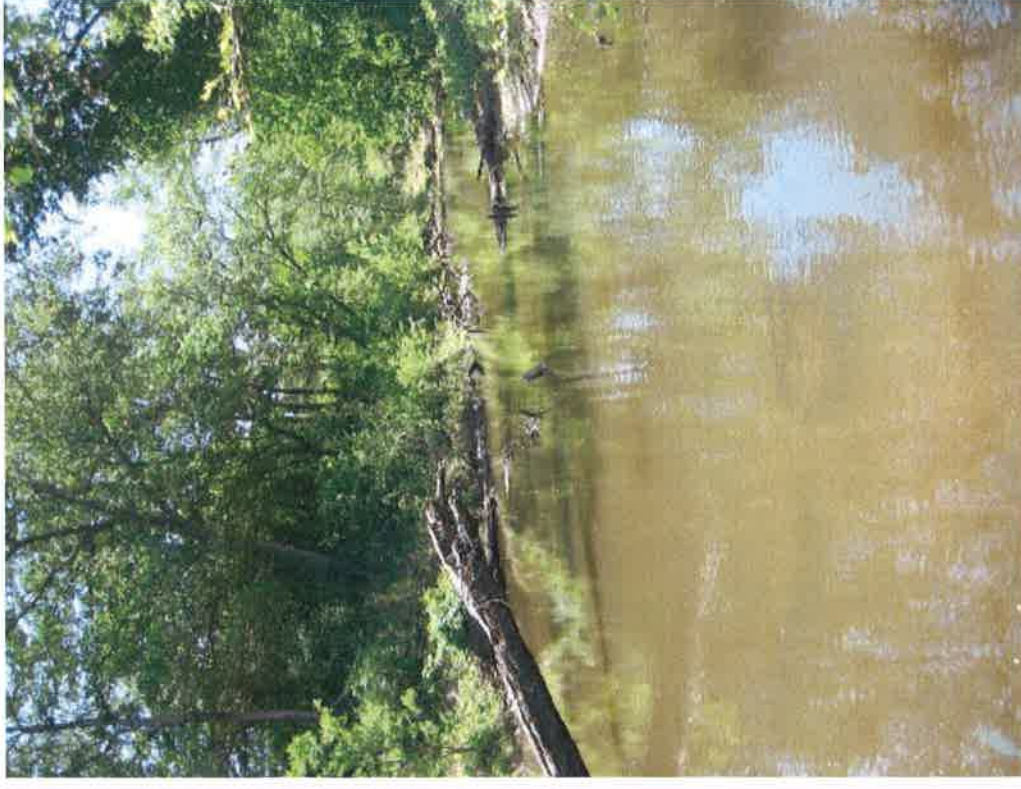


So What Now?

- **Regulatory Trigger**– Impairments mean TCEQ has to take planning action. Can be TMDL, WPP, etc.
- **Identify and Protect**– Identifying potential sources, engaging local stakeholders, implementing solutions
- **Watershed Focus** – Actions focus on whole watershed.



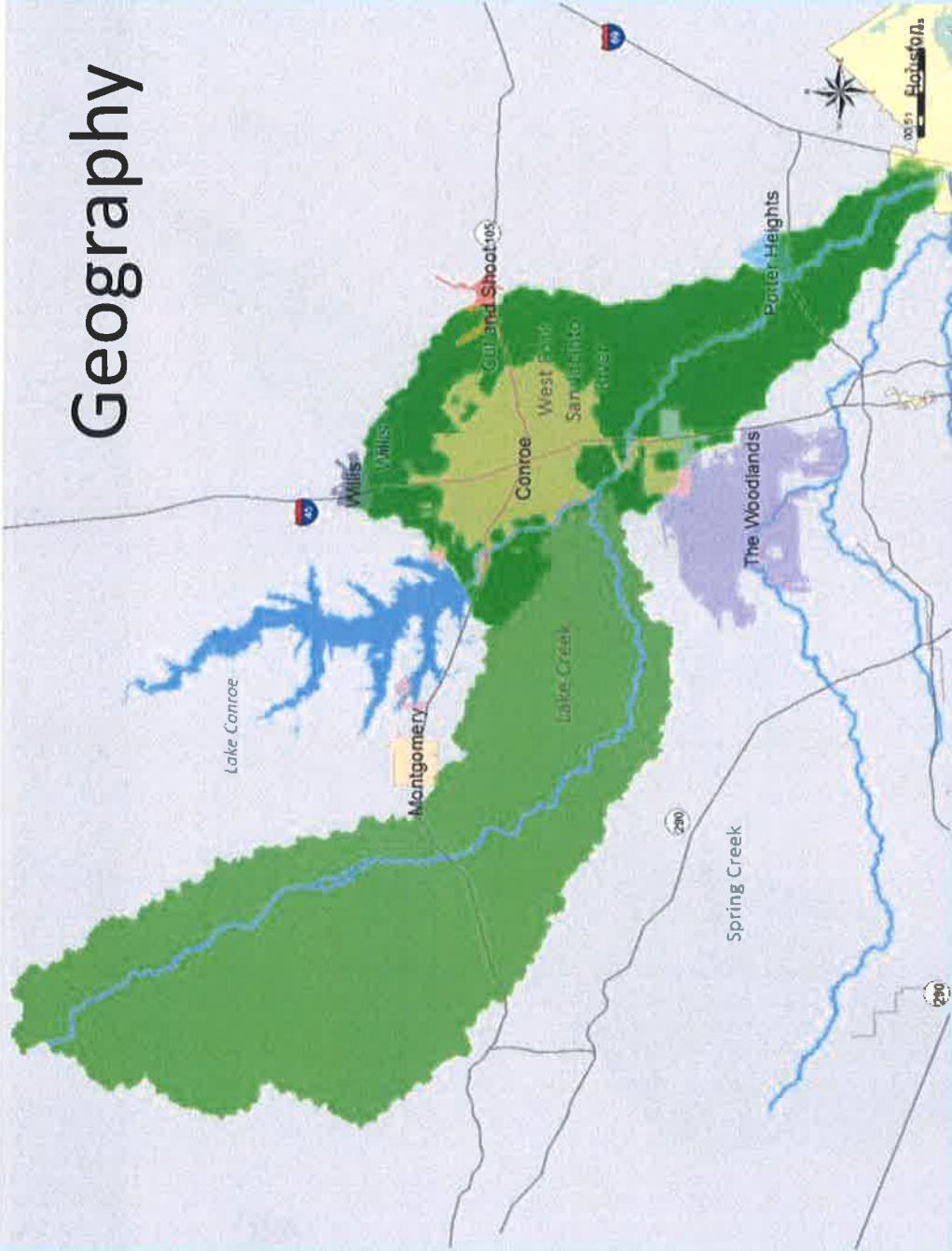
Watershed Protection Planning



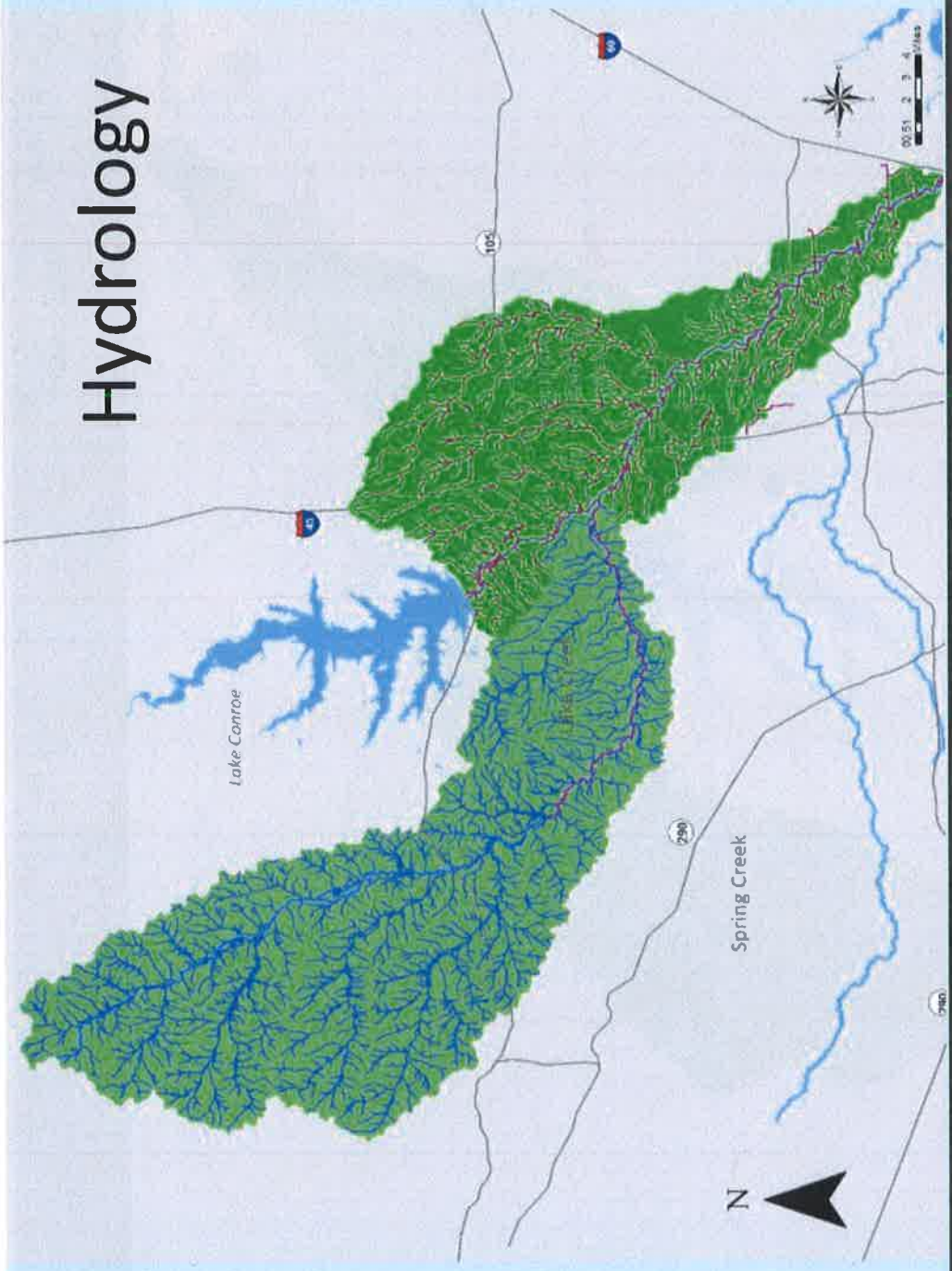
Watersheds and Water Quality

- Watershed – all that drains to a body of water
- Vary in size, river basin to small catchment
- Emphasize link between land/water

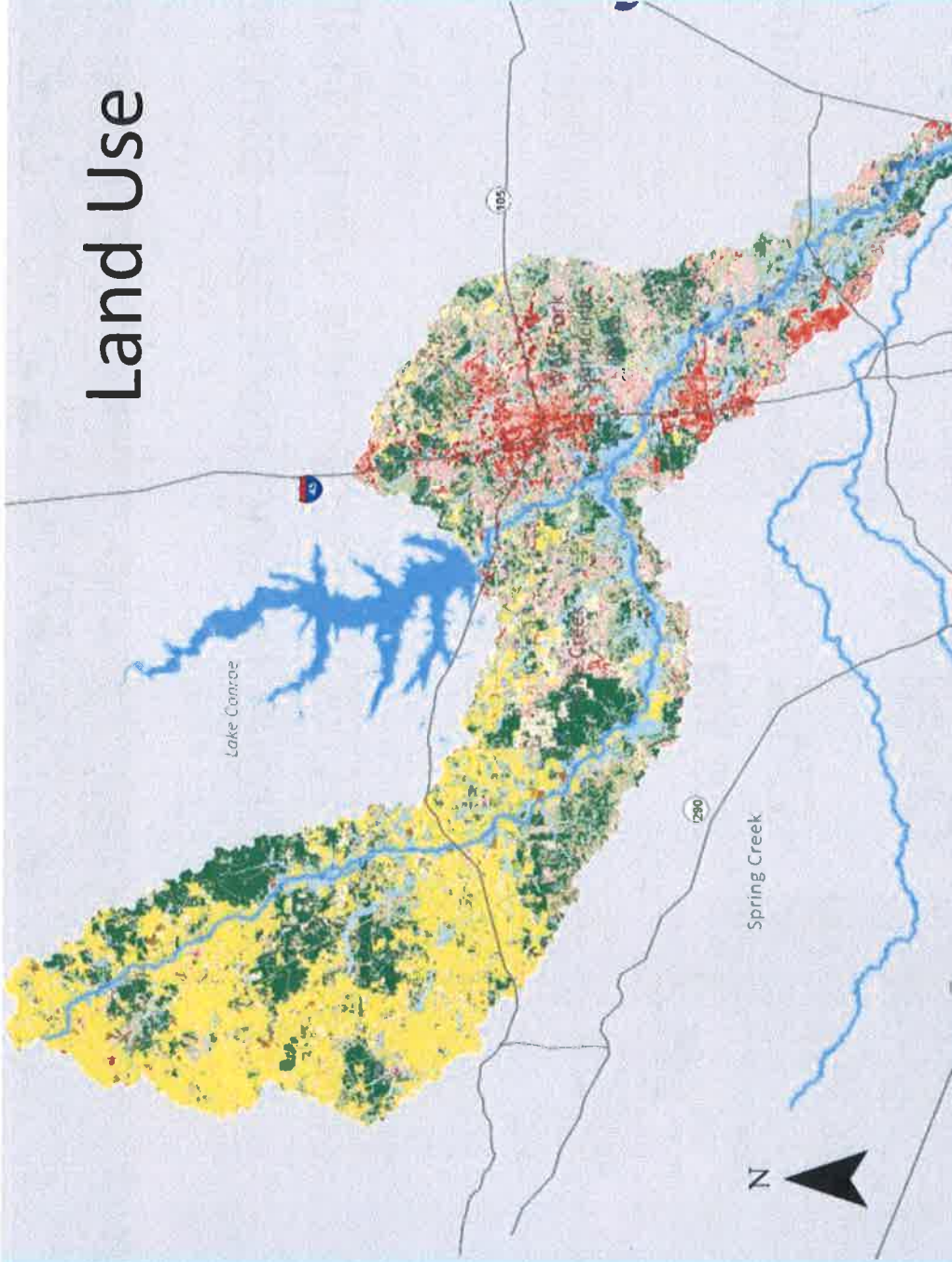
Geography



Hydrology



Land Use





Watersheds and Water Quality

- What happens on the land impacts the water
- Both natural and human activities matter
- TCEQ approaches using TMDL, WPP projects, and permits – similar focus



Watershed Protection Plans (WPPs)

- Voluntary, locally-led, represent all stakeholders
- Can incorporate other stakeholder concerns (related to water quality)
- Can be used to attract funding, help collaboration, get consensus
- Long range plans, “road maps”




What does it identify?

- Causes and sources of pollution
- Pollution reduction goals
- Voluntary solutions
 - Resources need to implement them
- Timelines for implementation
- Plan for evaluating progress


LOCAL
PEOPLE


LOCAL
KNOWLEDGE


LOCAL
SOLUTIONS


The West Fork
Watersheds Partnership

www.westforkkwpp.com

The West Fork Watersheds Partnership

- Voluntary group of residents, governments, businesses, ag producers, etc.
- Initiated in 2016 to develop WPP for West Fork/Lake Creek (completed 2018)
- Form basis for implementation
- Similar projects planned for Cypress (2018) and Spring (2019) Creeks.



Houston
Area Council

Acting Locally



Houston-Clearwater
Area Council



What Residents/ Landowners Can Do

- WPPs are high level plans, but action happens locally
- Residents and community groups are key to implementation
- Many ways and levels to make a difference!



Pets

- Pick up after yours
- “Better to pick it up than drink it!”
- Encourage neighborhoods/City to install pet waste stations, dog parks



Lawns

- Use fertilizer sparingly
- Water wisely to reduce runoff
- No lawn clippings down the drain
- Consider natives, rain gardens



Land Management

- Consider conservation easements or riparian buffers along waterways
- Work with AgriLife, Master Gardeners, Master Naturalists, or other groups to improve your property
- Financial assistance exists!



OSSFs

- Maintain it regularly, fix issues before they fix you
- Attend a workshop or use materials to identify warning signs
- Low income assistance from H-GAC is available!

General Household

- No grease or wipes down the pipes
- Nothing but rain down the drain
- No trash in the....(ok, we don't have a catchy rhyme for trash.)
Just keep trash from migrating.





Participate!

- Take part in the Partnership
- Engage your local decision-makers
- Volunteer for water quality efforts (see handouts)
- Spread the word



Any Questions?

For more information,
contact:

Justin Bower
713-499-6653

justin.bower@h-gac.com

**3555 Timmons Lane, Suite
120, Houston, TX 77077**

www.westforkwpp.com



PARTNERSHIP



Houston-Galveston
Area Council



Houston-Galveston Area Council

March 17, 2019

Ms. Earlene Lambeth (MC 203)
TMDL Project Manager
Water Quality Division
Texas Commission on Environmental Quality
12100 Park 35 Circle, Bldg. F
Austin, Texas 78753

RE: March 2019 Progress Report Houston Region TMDL Public Outreach Contract No. 582-18-91222, Work Order 01.

Dear Ms. Lambeth:

Enclosed is one (1) copy of the FY 2019 2nd Progress Report for Contract No. 582-18-81222-01. It covers all deliverable activities for the project period December 1, 2018 through February 28, 2019. Financial Statements, HUB report and Voucher will be submitted separately.

Included in this Report are:

1. One copy of the quarterly progress report for December 1, 2018 thru February 28, 2019.
2. Copies of meeting summaries and other pertinent materials from project related meetings.
3. Copy of H-GAC newsletters, related water quality meetings, workshops, seminars, and training.

We hope you find the quarterly report satisfactory. Any comments you have will be appreciated. If you have any questions, please contact me by phone (713-993-4549) or E-mail (todd.running@h-gac.com).

Sincerely,

Todd Running
Water Resources Program Manager
Community & Environmental Planning Dept.

Cc: Jason Leifester
Chris Loft

TR/srj
Enclosures

TMDL Program

Date: March 17, 2019

FY 2019 Progress Report #2**Time Period Covered: 12/01/2018 – 2/28/2019****Name of Project: Houston-Galveston Area TMDL Public Participation Project****Contract No./Work Order 582-18-81222-01****TASK #1 PROJECT ADMINISTRATION**

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
PRs (Task 1.1)	March 15, 2019	Completed on March 17, 2019.
Weekly E-mail Updates (Task 1.2)	Weekly	Provided hard copies with report.
FSRs (Task 1.3)	December 15, 2018	Provided as a separate report.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

Work performed for this task during this period included writing and assembling the monthly report. Worked with TCEQ PM and Team Leader to draft the FY 2020 WO and Budget. Copies of weekly emails are attached.

TASK #2 PUBLIC OUTREACH AND SUPPORT FOR THE BIG AND RELATED IMPLEMENTATION ACITIVITIES

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Meetings, workshops, or outreach activities to discuss and monitor I-plan for the BIG (Task 2.1)	Up to four public meetings, workshops, or other outreach activities and up to ten associated work group meetings.	<ul style="list-style-type: none"> • <u>BIG Fall Meeting</u>: the fall meeting was held on October 23, 2018 during this project quarter. • <u>Coordination and Policy Work Group</u>: met on October 15, 2018. • <u>Coordination and Policy Work Group</u>: is scheduled to meet on March 4, 2019.
Draft meeting or event agenda and materials (Task 2.2)	Two (2) weeks prior to meeting	No meetings were held this period.
Draft meeting or event summary (Task 2.3)	Within two (2) weeks following completion of meeting	No meetings were held this period.
Final agenda and meeting or event summary, list of attendees and contact information, and copies of any printed materials (Task 2.4)	Within thirty (30) days of the completion of the meeting	No meetings were held this period.
Implementation Summary Report (Task 2.5)	August 31, 2018	Not started.

Digital link to regional implementation database (Task 2.6)	August 31, 2018	Not due. Updated throughout the year.
---	-----------------	---------------------------------------

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

Work related to this task included finalizing the 2018 Annual Report in December and planning the 2019 work group schedule. The next Coordination and Policy work group meeting was set during the month of February for March 4, 2019. Staff began to gather data, SSO and Permit, to begin data analysis in preparation for the 2019 Annual Report.

Staff also participated in workshops, outreach, and regional meetings in relation to this task. Those meetings are listed below under the heading Additional Related Meetings, Training, Events and Conferences.

TASK #3 PUBLIC OUTREACH SUPPORT FOR THE UPPER OYSTER CREEK COORDINATING COMMITTEE AND RELATED IMPLEMENTATION ACTIVITIES

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Meetings or events for Upper Oyster Creek (Task 3.1)	One public meeting and up to two events.	No meetings or activities carried out during the quarter.
Draft meeting or event agenda and materials (Task 3.2)	Two (2) weeks prior to meeting	No meetings or activities carried out during the quarter.
Draft meeting or event summary (Task 3.3)	Within two (2) weeks following completion of meeting	No meetings or activities carried out during the quarter.
Final agenda and meeting or event summary, list of attendees and contact information, and copies of any printed materials (Task 3.4)	Within thirty (30) days of the completion of the meeting	No meetings or activities carried out during the quarter.
Upper Oyster Creek annual report	With final PR	Not started.

Work Performed This Period

Staff coordinated with the TCEQ PM to determine an appropriate meeting date. Staff also reach out to the City of Sugarland to reserve a meeting space. Staff will begin to pull implementation data together from stakeholders and online data sources to prepare for the meeting in March.

TASK #4 PUBLIC OUTREACH SUPPORT AND IMPLEMENTATION PLAN DEVELOPMENT FOR CHOCOLATE BAYOU

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Draft I-Plan for Chocolate Bayou (Task 4.1)	December 15, 2018.	Staff completed revisions to Chocolate Bayou flow based on a comment provided by TCEQ. These changes will be reflected in updated LDCs and TMDL calculations.
Final I-Plan for Chocolate Bayou (Task 4.2)	May 15, 2019	
Meetings or events for Chocolate Bayou (Task 4.3)	Up to two public meetings or events	No meetings or activities carried out during the quarter.
Draft meeting or event agenda and materials (Task 4.4)	Two weeks prior to meeting or event	No meetings or activities carried out during the quarter.
Draft meeting or event summary (Task 4.5)	Within two weeks following completion of meeting or event	No meetings or activities carried out during the quarter.
Final agenda and meeting or event summary, list of attendees, and contact information, and copies of any printed materials (Task 4.6)	Within 30 days of the completion of the meeting or event.	No meetings or activities carried out during the quarter.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

TCEQ provided a comment that H-GAC should review Chocolate Bayous flow Above Tidal to address flow contributions from waterbodies outside the watershed (irrigation and waste water). H-GAC reviewed TCEQ records and WWTF average flow to determine excess contributions. H-GAC removed the excess contributions to arrive at a better estimated “naturalized” flow value. This revision will be used to recalculate the TMDL for Above Tidal and Tidal AUs and update the LDCs. The TMDL document, TSD and draft I-Plan will include these new values and will be completed in March.

TASK #5 PUBLIC OUTREACH SUPPORT FOR OTHER TMDL PROJECTS IN THE HOUSTON REGION

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Support for other TMDL public outreach activities, as needed (Task 5.1)	As requested and scheduled.	No meetings or activities carried out during the quarter.
Draft meeting or event agenda and materials (Task 5.2)	Two (2) weeks prior to meeting	No meetings or activities carried out during the quarter.
Draft meeting or event summary (Task 5.3)	Within two (2) weeks following completion of meeting	No meetings or activities carried out during the quarter.
Final agenda and meeting summary, list of attendees and contact information, and copies of any printed materials (Task 5.4)	Within thirty (30) days of the completion of the meeting	No meetings or activities carried out during the quarter.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

No work was carried out for Task 5.

ADDITIONAL RELATED MEETINGS, TRAINING, EVENTS, AND CONFERENCES

- 1) Presentations:
 - a. February 21, 2019 – staff presented on TMDLs to watershed groups on the Texas Border, McAllen, TX.
- 2) Meetings, Events and Conferences:
 - a. December 6, 2018 – staff attended the GBEP WSQ meeting.
 - b. December 10, 2018 – staff attended the TCEQ RESTORE ACT funding meeting in Galveston, TX.
 - c. February 15, 2019 – TST training event, BPA.
 - d. February 21, 2019 – Environmental Enforcement workshop to address illegal dumping.
 - e. February 26, 2019 – Clean Waters Initiative workshop on funding infrastructure projects to improve water quality.
- 3) Associated Implementation Projects and Programs
 - a. Water Innovation Strategies of Excellence (WISE) Awards – the first awards were initiated in January. The awards program will focus on planning and implementing projects that address water quality in H-GAC’s region. The program will assist the BIG identify important projects and addresses an activity found in the I-Plan. The awards will be ceremonially delivered in May 2019.
 - b. H-GAC is working with the Bayou Preservation Association to continue to address illicit discharges. BPA received funding from GBEP to target waterbodies in the BIG area to identify and remove illicit discharges.
 - c. H-GAC is working to draft a WPP for Cypress Creek. A proposal has been submitted to TCEQ for a WPP on Spring Creek.
 - d. OSSF SEP – H-GAC has an ongoing SEP project and has received funding through the state and from Harris County District Attorney’s Office to repair and replace failing systems. H-GAC is targeting OSSFs

in areas with watershed-based plans, including the BIG project area. For more information on the program: <http://h-gac.com/community/water/ossf.aspx>.

4) Associated Partner Activities

- a. LID Workshops – TX AgriLife has received funding from GLO’s CMP program and TCEQ’s NPS program to conduct LID workshops along the coast and in urban settings. H-GAC is coordinating with TX AgriLife to capitalize on our implementation funding. A workshop will be held in Pearland on June 12, 2019.

BRIEF DESCRIPTION OF OVERALL FINDINGS:

Work during this period focused on completing the 2018 Annual Report approval process with members of the BIG. Staff addressed the BIG’s comments and coordinated final reviews and approval via email. Staff worked with Coordination and Policy work group members to select the next meeting date and began to prepare for the meeting. The date for Upper Oyster Creek Annual Meeting was selected for April 11, 2019. Staff began to plan for the meeting. Staff completed a revision to the Chocolate Bayou hydrologic flow to address the influence of additional flow from source water outside of the Chocolate Bayou watershed. The revision will require updates to the TMDL calculations and LDCs. The revision will take place in March 2019.

Significant Problems (describe any scheduling shortfalls, detail significant problems and how these problems were resolved, etc.):

No problems were encountered this quarter.

Johnston, Steven

From: Johnston, Steven
Sent: Wednesday, December 12, 2018 5:05 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Reports (Nov 26 - Nov 30) and (Dec 3 - Dec 7)

Good Afternoon, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Nov. 26th – Nov. 30th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (Oct. 31, 2018):** \$21,565.92 **Remaining Budget Amount:** \$88,434.08

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Draft 2018 summary report submitted to TCEQ PM.
- BIG sent draft annual report for approval. Received initial approvals from a few members. A second email sent to seek additional approvals to make quorum.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan. Identified source load reduction calculations and reduction priority area strategy maps are nearly complete.
- TMDL and TSD being revised to address changes to watershed boundary. This is source material for I-Plan.
- Stakeholder meeting being planned for February.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Dec. 3rd – Dec. 7th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (Nov. 30, 2018):** \$25,949.74 **Remaining Budget Amount:** \$84,050.26

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- BIG sent draft annual report for approval. Received initial approvals from a few members. A second email sent to seek additional approvals to make quorum.

- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan. Identified source load reduction calculations and reduction priority area strategy maps are nearly complete.
- TMDL and TSD being revised to address changes to watershed boundary. This is source material for I-Plan.
- Stakeholder meeting being planned for February.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Wednesday, December 19, 2018 4:46 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (Dec 10 - Dec 14)

Good Afternoon, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Dec. 10th – Dec. 14th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (Nov. 30, 2018):** \$25,949.74 **Remaining Budget Amount:** \$84,050.26
- Drafting Progress Report #1

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- BIG approved the annual report.
- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan. Identified source load reduction calculations and reduction priority area strategy maps are complete.
- TMDL and TSD being revised to address changes to watershed boundary. LDCs have been updated. This is source material for I-Plan.
- Stakeholder meeting being planned for February. Will be contacting permit holders to schedule meetings or phone conversations regarding the draft plan prior to meeting.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com

Johnston, Steven

From: Johnston, Steven
Sent: Wednesday, December 26, 2018 6:03 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (Dec 17 - Dec 21)

Good Afternoon, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Dec. 17th – Dec. 21st:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (Nov. 30, 2018):** \$25,949.74 **Remaining Budget Amount:** \$84,050.26
- Submitted Progress Report #1

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan. Identified source load reduction calculations and reduction priority area strategy maps are complete.
- TMDL and TSD being revised to address changes to watershed boundary. LDCs have been updated. This is source material for I-Plan.
- Stakeholder meeting being planned for February. Will be contacting permit holders to schedule meetings or phone conversations regarding the draft plan prior to meeting.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Monday, December 31, 2018 3:35 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (Dec 24 - Dec 28)

Good Afternoon, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions. I will be out of the office from 1/2/19 to 1/8/19. I will check my email sporadically.

Dec. 24th – Dec. 28th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (Nov. 30, 2018):** \$25,949.74 **Remaining Budget Amount:** \$84,050.26

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan.
- TMDL and TSD are being revised to address changes to watershed boundary. This is source material for I-Plan.
- Stakeholder meeting being planned for March. Will be contacting permit holders to schedule meetings or phone conversations regarding the draft plan prior to meeting.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Monday, January 14, 2019 4:52 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Reports (Dec 31 - Jan 4) and (Jan 7 - Jan 11)

Good Afternoon, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Dec. 31st – Jan. 4th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (Nov. 30, 2018):** \$25,949.74 **Remaining Budget Amount:** \$84,050.26

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs:
 - WWTFs
 - MS4s
 - OSSFs
 - Agriculture

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan.
- TMDL and TSD are being revised to address changes to watershed boundary. This is source material for I-Plan.
- Stakeholder meeting being planned for March 20th. Will be contacting permit holders to schedule meetings or phone conversations regarding the draft plan prior to meeting.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Jan. 7th – Jan. 11th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (Nov. 30, 2018):** \$25,949.74 **Remaining Budget Amount:** \$84,050.26

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Beginning work on draft language for the I-Plan update.

- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs:
 - WWTFs
 - MS4s
 - OSSFs
 - Agriculture

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan.
- TMDL and TSD are being revised to address changes to watershed boundary. This is source material for I-Plan.
- Stakeholder meeting being planned for March 20th. Will be contacting permit holders to schedule meetings or phone conversations regarding the draft plan prior to meeting.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Monday, February 4, 2019 5:38 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Reports (Jan 21 - Jan 25) and (Jan 28 - Feb 1)

Good Evening, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Jan. 21st – Jan. 25th:

Task 1 Project Administration

- ***Anticipate Spend Down August 2019?:*** Yes.
- ***Is spending by categories going as expected?:*** Yes at this time.
- ***Last Invoice:*** N/A.
- ***Original Budget Amount:*** \$110,000
- ***Total Spent to Date: (Dec. 31, 2018):*** \$34,663.17 ***Remaining Budget Amount:*** \$75,336.83

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Beginning work on draft language for the I-Plan update.
- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs:
 - WWTFs
 - MS4s
 - OSSFs
 - Agriculture

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Beginning to plan for annual meeting

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan.
- Stakeholder meeting being planned for April 10th. Will be contacting permit holders to schedule meetings or phone conversations regarding the draft plan prior to meeting.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Jan. 28th – Feb. 1st:

Task 1 Project Administration

- ***Anticipate Spend Down August 2019?:*** Yes.
- ***Is spending by categories going as expected?:*** Yes at this time.
- ***Last Invoice:*** N/A.
- ***Original Budget Amount:*** \$110,000
- ***Total Spent to Date: (Dec. 31, 2018):*** \$34,663.17 ***Remaining Budget Amount:*** \$75,336.83

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Beginning work on draft language for the I-Plan update.
- Planning for the next Coordination and Policy workgroup.
- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs:
 - WWTFs
 - MS4s
 - OSSFs
 - Agriculture

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Beginning to plan for annual meeting

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff nearing completion of the 1st draft of the I-Plan.
- Stakeholder meeting being planned for April 10th. Will be contacting permit holders to schedule meetings or phone conversations regarding the draft plan prior to meeting.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Monday, January 21, 2019 6:14 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: RE: FY19 WO #1 Weekly Report (Jan 14 - Jan 18)

Good Evening, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Jan. 14th – Jan. 18th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (Nov. 30, 2018):** \$25,949.74 **Remaining Budget Amount:** \$84,050.26
- Revised figures will be provided with next week's report

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Beginning work on draft language for the I-Plan update.
- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs:
 - WWTFs
 - MS4s
 - OSSFs
 - Agriculture

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No activities to report

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff drafting the I-Plan.
- Stakeholder meeting being planned for April 10th. Will be contacting permit holders to schedule meetings or phone conversations regarding the draft plan prior to meeting.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com

832.681.2579|713.627.3200|fax: 713.993.4503

steven.johnston@h-gac.com

<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Thursday, February 28, 2019 4:34 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Reports (Feb 4 - Feb 8), (Feb 11 - Feb 15) and (Feb 18 - Feb 22)

Good Afternoon, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Feb. 4th – Feb. 8th:

Task 1 Project Administration

- ***Anticipate Spend Down August 2019?:*** Yes.
- ***Is spending by categories going as expected?:*** Yes at this time.
- ***Last Invoice:*** N/A.
- ***Original Budget Amount:*** \$110,000
- ***Total Spent to Date: (January 31, 2019):*** \$41,916.44 ***Remaining Budget Amount:*** \$68,083.56
- **Worked with TCEQ PM to draft FY20 WO.**

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Working on draft language for the I-Plan update.
- Sent out doodle poll to Coordination and Policy members to identify the next meeting date.
- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs:
 - WWTFs
 - MS4s

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Discussed annual meeting dates with TCEQ PM.
- Reach out to the City of Sugarland to select a potential date in April.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Stakeholder meeting being planned for April 10th. Will be contacting permit holders to schedule meetings or phone conversations regarding the draft plan prior to meeting.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Feb. 11th – Feb. 15th:

Task 1 Project Administration

- ***Anticipate Spend Down August 2019?:*** Yes.
- ***Is spending by categories going as expected?:*** Yes at this time.
- ***Last Invoice:*** N/A.
- ***Original Budget Amount:*** \$110,000

- **Total Spent to Date: (January 31, 2019): \$41,916.44 Remaining Budget Amount: \$68,083.56**
- **Submitted draft FY20 WO/Budget to TCEQ.**

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Working on draft language for the I-Plan update.
- Selected date (3/4/19) for the next Coordination and Policy work group meeting. Sent email to members.
- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs:
 - WWTFs
 - MS4s
- Received SSO data from TCEQ. Began analysis.
- Beginning data gathering for 2019 Annual Report.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Selected April 11, 2019 for the annual meeting.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Stakeholder meeting being planned for April 10th. Will be contacting permit holders to schedule meetings or phone conversations regarding the draft plan prior to meeting.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Feb. 18th – Feb. 22nd:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (January 31, 2019): \$41,916.44 Remaining Budget Amount: \$68,083.56**
- **Assisted TCEQ PM with WO memo.**

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Working on draft language for the I-Plan update.
- Next Coordination and Policy work group meeting – 3/4/19. Preparing for meeting.
- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs:
 - WWTFs
 - MS4s
- Received SSO data from TCEQ. Began analysis.
- Beginning data gathering for 2019 Annual Report.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Selected April 11, 2019 for the annual meeting.
- Began planning meeting and gathering data.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Stakeholder meeting being planned for April 10th. Will be contacting permit holders to schedule meetings or phone conversations regarding the draft plan prior to meeting.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Tuesday, March 5, 2019 4:52 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Reports (Feb 25 - Mar 1)

Good Afternoon, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Feb. 25th – Mar. 1st:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (January 31, 2019):** \$41,916.44 **Remaining Budget Amount:** \$68,083.56

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Working on draft language for the I-Plan update.
- Next Coordination and Policy work group meeting – 3/4/19. Completed preparations for meeting.
- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs:
 - WWTFs
 - MS4s
- Found some concerns with the SSO data. Checking with TCEQ regarding potential missing records.
- Beginning data gathering for 2019 Annual Report.
- Staff had a table at Nature Fest at Jessie Jones Park, providing water quality information.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Selected April 11, 2019 for the annual meeting.
- Began planning meeting and gathering data.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Stakeholder meeting being planned for April 10th. Will be contacting permit holders to schedule meetings or phone conversations regarding the draft plan prior to meeting.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

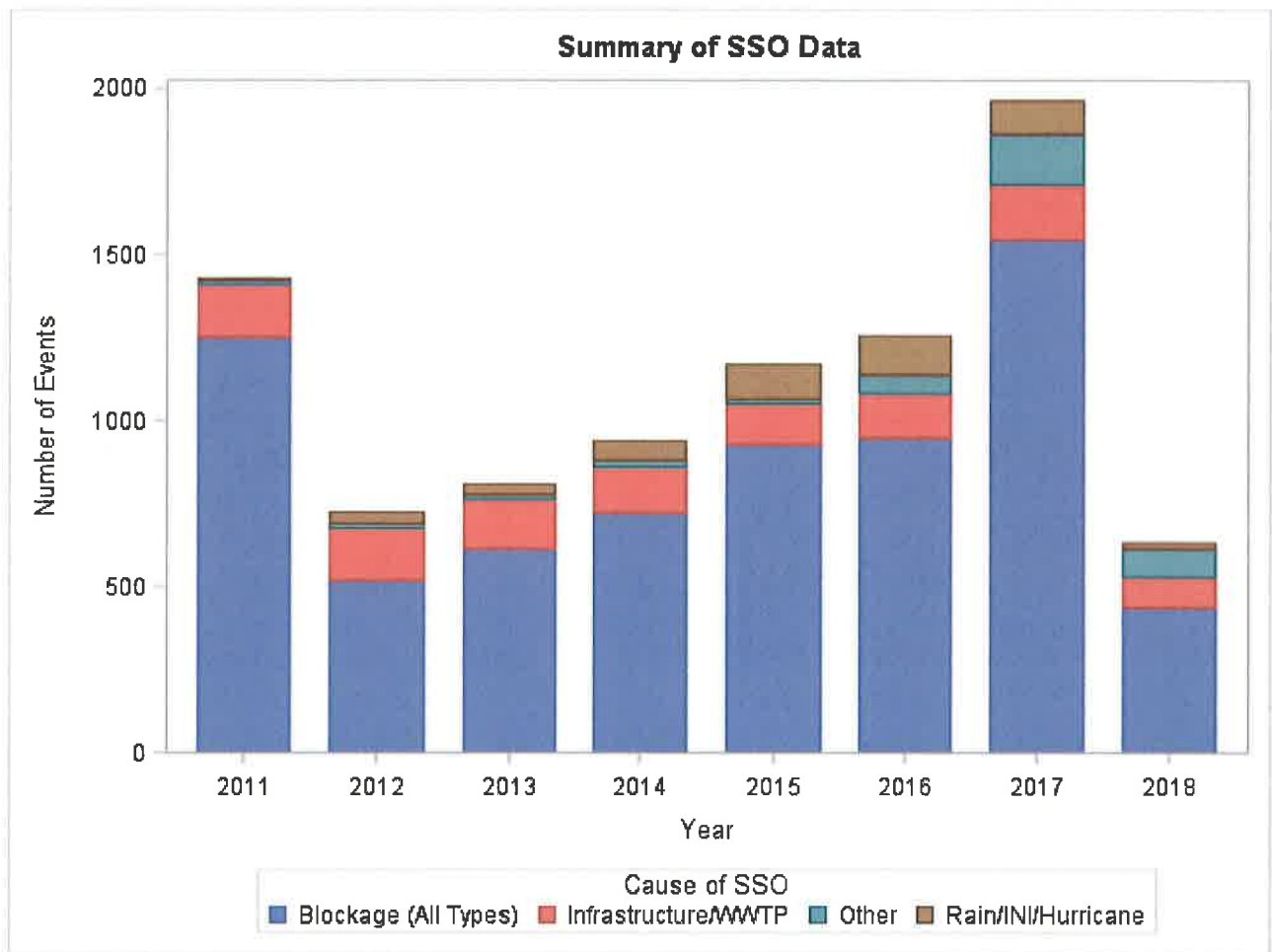
- No activities to report

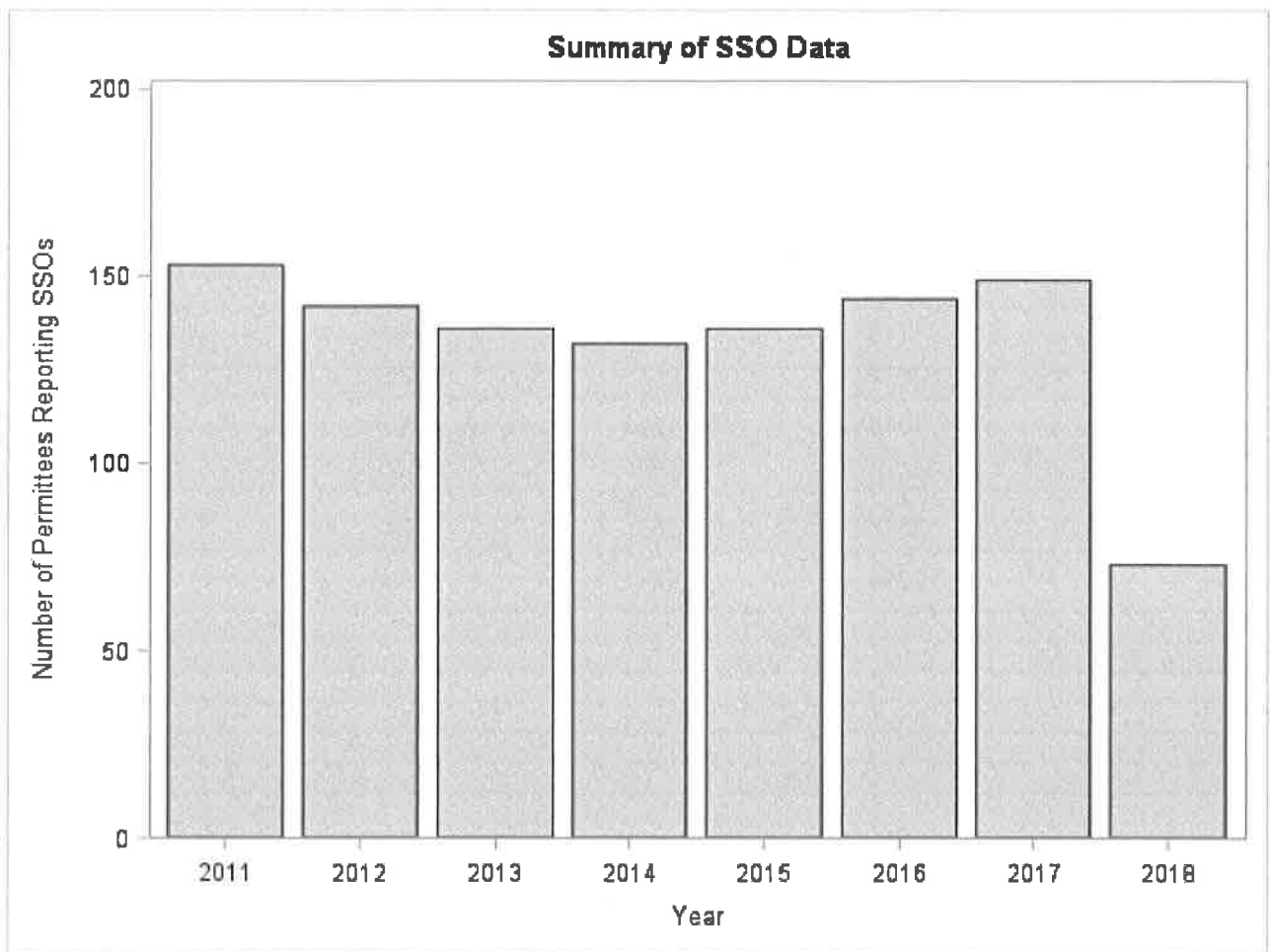
Thanks,

Steve

Steven Johnston

Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>





Summary of SSO Data

Year	Number of SSOs Reported	Estimated Volume (Thousand Gallons)
2011	1428	828
2012	724	1187
2013	810	1693
2014	941	2251
2015	1170	4297
2016	1256	3056
2017	1965	13618
2018	632	693



Houston-Galveston Area Council

June 20, 2019

Ms. Earlene Lambeth (MC 203)
TMDL Project Manager
Water Quality Division
Texas Commission on Environmental Quality
12100 Park 35 Circle, Bldg. F
Austin, Texas 78753

RE: June 2019 Progress Report Houston Region TMDL Public Outreach Contract No. 582-18-91222, Work Order 01.

Dear Ms. Lambeth:

Enclosed is one (1) copy of the FY 2019 3rd Progress Report for Contract No. 582-18-81222-01. It covers all deliverable activities for the project period March 1, 2019 through May 31, 2019. Financial Statements, HUB report and Voucher will be submitted separately.

Included in this Report are:

1. One copy of the quarterly progress report for March 1, 2019 thru May 31, 2019.
2. Copies of meeting summaries and other pertinent materials from project related meetings.
3. Copy of H-GAC newsletters, related water quality meetings, workshops, seminars, and training.

We hope you find the quarterly report satisfactory. Any comments you have will be appreciated. If you have any questions, please contact me by phone (713-993-4549) or E-mail (todd.running@h-gac.com).

Sincerely,

Todd Running
Water Resources Program Manager
Community & Environmental Planning Dept.

Cc: Jason Leifester
Chris Loft

TR/srj
Enclosures



TMDL Program

Date: June 20, 2019

FY 2019 Progress Report #3

Time Period Covered: 3/01/2019 – 5/31/2019

Name of Project: Houston-Galveston Area TMDL Public Participation Project

Contract No./Work Order 582-18-81222-01

TASK #1 PROJECT ADMINISTRATION

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
PRs (Task 1.1)	June 15, 2019	Completed on June 20, 2019.
Weekly E-mail Updates (Task 1.2)	Weekly	Provided hard copies with report.
FSRs (Task 1.3)	June 15, 2019	Provided as a separate report.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

Work performed for this task during this period included writing and assembling the monthly report.

TASK #2 PUBLIC OUTREACH AND SUPPORT FOR THE BIG AND RELATED IMPLEMENTATION ACITIVITIES

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Meetings, workshops, or outreach activities to discuss and monitor I-plan for the BIG (Task 2.1)	Up to four public meetings, workshops, or other outreach activities and up to ten associated work group meetings.	<ul style="list-style-type: none"> • <u>BIG Fall Meeting</u>: the fall meeting was held on October 23, 2018 during this project quarter. • <u>Coordination and Policy Work Group</u>: met on October 15, 2018. • <u>Coordination and Policy Work Group</u>: met on March 4, 2019. • <u>Coordination and Policy Work Group</u>: met on May 6, 2019. • <u>OSSF/Illicit Discharge Work Group</u>: met on May 6, 2019. • <u>Animals and Agriculture Work Group</u>: met on May 23, 2019.
Draft meeting or event agenda and materials (Task 2.2)	Two (2) weeks prior to meeting	No public meetings were held this period. Four work group meetings were held during the period. Meeting materials were shared with the TCEQ PM.
Draft meeting or event summary (Task 2.3)	Within two (2) weeks following completion of meeting	No public meetings were held this period. Four work group meetings were held. A meeting summary was included with the weekly reports.
Final agenda and meeting or event summary, list of attendees and contact information, and	Within thirty (30) days of the completion of the meeting	Final meeting summary and agenda for each meeting has been included with this report. Any meeting materials and presentations have also been provided.

copies of any printed materials (Task 2.4)		
Implementation Summary Report (Task 2.5)	August 31, 2018	Not started.
Digital link to regional implementation database (Task 2.6)	August 31, 2018	Not due. Updated throughout the year.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

Staff met with BIG members and project area stakeholders at four meetings during the project period. Work performed on this topic includes scheduling the meeting, identifying a meeting location, sending out meeting announcements and reminders, and preparing for the meeting, including developing meeting agendas and meeting materials.

- Coordination and Policy Work Group: met on March 4, 2019. Thirteen stakeholders attended the meeting. The group discussed the upcoming 2019 Annual Report and Implementation Plan update. The group also discussed the next steps to address the request for TCEQ implementation data.
- Coordination and Policy Work Group: met on May 6, 2019. Twelve stakeholders attended the meeting. The group reviewed the Spring meeting agenda and discussed vacancies and attendance. The group also discussed the data for the 2019 Annual Report. Example I-Plans and WPPs were provided to stimulate discussion on how to proceed with the I-Plan update.
- OSSF/Illicit Discharge Work Group: met on May 6, 2019. Eight stakeholders were in attendance. H-GAC staff provided a presentation on OSSF implementation. The work group reviewed other implementation in advance of the 2019 Annual Report. The work group reviewed relevant sections of the I-Plan and discussed the addition of boater wastes to section 6 of the document.
- Animals and Agriculture Work Group: met on May 23, 2019. Six stakeholders attended the meeting. The group reviewed implementation and discussed outreach efforts to improve contact with local land owners. A recent meeting, the Agriculture Landowner Workshop, was attended by only one landowner. The work group discussed the potential for legislative action to encourage the use of best practices. The action would include the ability for the landowner to stack a water quality exemption onto an ag exemption.

In addition to the four meetings held during the quarter, H-GAC prepared for the Spring meeting which was scheduled for June 4, 2019. Preparations included developing the agenda, contacting speakers, making meeting announcements and meeting reminders, and preparing the meeting presentation.

Staff also participated in workshops, outreach, and regional meetings in relation to this task. Those meetings are listed below under the heading Additional Related Meetings, Training, Events and Conferences.

TASK #3 PUBLIC OUTREACH SUPPORT FOR THE UPPER OYSTER CREEK COORDINATING COMMITTEE AND RELATED IMPLEMENTATION ACTIVITIES

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Meetings or events for Upper Oyster Creek (Task 3.1)	One public meeting and up to two events.	April 11, 2019 – the Upper Oyster Creek annual meeting was held.
Draft meeting or event agenda and materials (Task 3.2)	Two (2) weeks prior to meeting	Meeting preparations and presentation were discussed with the TCEQ PM.
Draft meeting or event summary (Task 3.3)	Within two (2) weeks following completion of meeting	A summary of the meeting was shared as part of the weekly project summary.
Final agenda and meeting or event summary, list of attendees and contact information, and copies of any printed materials (Task 3.4)	Within thirty (30) days of the completion of the meeting	The annual meeting was held. The meeting report will be submitted with the next progress report. A summary is provided below.
Upper Oyster Creek annual report	With final PR	Not started.

Work Performed This Period

Staff prepared for the Upper Oyster Creek meeting on April 11, 2019. Preparations included preparing and announcing the meeting, sending out meeting reminders, developing the agenda, developing the meeting presentation, and gathering water quality and implementation data.

Upper Oyster Creek Annual Meeting - was held on April 11, 2019 and seventeen stakeholders were in attendance. H-GAC presented on the Upper Oyster Creek project history, water quality status, implementation progress and plans for 2019/2020. H-GAC and stakeholders discussed a review of ambient data, the impairments, fecal bacteria and dissolved oxygen, and concerns for Chlorophyll-a and Nitrate in three of the assessment units and seven tributaries. Source causes and available data were discussed in context with implementation efforts. H-GAC led the discussion covering the management measures and seeking stakeholder input on implementation effort and progress for five key strategies: Monitoring and Research, Education and Outreach, Urban NPS, Agriculture, Invasive Species, and Wildlife and Human Wastes.

TASK #4 PUBLIC OUTREACH SUPPORT AND IMPLEMENTATION PLAN DEVELOPMENT FOR CHOCOLATE BAYOU

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Draft I-Plan for Chocolate Bayou (Task 4.1)	December 15, 2018.	The document has been delayed due to the requested revision to the flow and to update the watershed boundary. These changes required the TSD and TMDL to be revised. Document will be completed in June.
Final I-Plan for Chocolate Bayou (Task 4.2)	May 15, 2019	The document has been delayed due to the requested revision to the flow and to update the watershed boundary. These changes required the TSD and TMDL to be revised. Document will be completed in June.
Meetings or events for Chocolate Bayou (Task 4.3)	Up to two public meetings or events	A meeting was scheduled for June 13, 2019.
Draft meeting or event agenda and materials (Task 4.4)	Two weeks prior to meeting or event	A meeting was scheduled for June 13, 2019.
Draft meeting or event summary (Task 4.5)	Within two weeks following completion of meeting or event	A meeting was scheduled for June 13, 2019.
Final agenda and meeting or event summary, list of attendees, and contact information, and copies of any printed materials (Task 4.6)	Within 30 days of the completion of the meeting or event.	A meeting was scheduled for June 13, 2019.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

PR2 – “TCEQ provided a comment that H-GAC should review Chocolate Bayous flow Above Tidal to address flow contributions from waterbodies outside the watershed (irrigation and waste water). H-GAC reviewed TCEQ records and WWTF average flow to determine excess contributions. H-GAC removed the excess contributions to arrive at a better estimated “naturalized” flow value. This revision will be used to recalculate the TMDL for Above Tidal and Tidal AUs and update the LDCs. The TMDL document, TSD and draft I-Plan will include these new values and will be completed in March.”

It was estimated that the draft I-Plan would be delivered in March. H-GAC also changed the Chocolate Bayou watershed boundary. With this change, all the corresponding data and maps were revised, along with the LDCs and TMDL calculations. The revisions took longer to complete and were hindered by other GIS projects. The draft plan will be delivered in June and staff will work through July to address changes and coordinate with stakeholders to provide a review.

TASK #5 PUBLIC OUTREACH SUPPORT FOR OTHER TMDL PROJECTS IN THE HOUSTON REGION

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Support for other TMDL public outreach activities, as needed (Task 5.1)	As requested and scheduled.	No meetings or activities carried out during the quarter.
Draft meeting or event agenda and materials (Task 5.2)	Two (2) weeks prior to meeting	No meetings or activities carried out during the quarter.
Draft meeting or event summary (Task 5.3)	Within two (2) weeks following completion of meeting	No meetings or activities carried out during the quarter.
Final agenda and meeting summary, list of attendees and contact information, and copies of any printed materials (Task 5.4)	Within thirty (30) days of the completion of the meeting	No meetings or activities carried out during the quarter.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

No work was carried out for Task 5.

ADDITIONAL RELATED MEETINGS, TRAINING, EVENTS, AND CONFERENCES

- 1) Presentations:
 - a. No presentations given during the report period.
- 2) Meetings, Events and Conferences:
 - a. March 7, 2019 – Water and Sediment Quality Subcommittee – staff attended the meeting and provided updates to TMDLs in the region.
 - b. April 27, 2019 – City of Pearland Earth Day. Staff provided general water quality outreach, including pet waste, and FOG management measures.
 - c. April 27, 2019 – Kickerillo Preserve Nature Event. Staff provided general water quality outreach, including pet waste, and FOG management measures.
 - d. May 18, 2019 – Bay Day at Kemah Boardwalk. Staff provided general water quality outreach, including pet waste, and FOG management measures.
 - e. May 18, 2019 – Agriculture Landowner Workshop in Conroe. Staff with other ag. resource agencies hosted a workshop to collaborate with local landowners.
 - f. June 12, 2019 - Staff continue to meet with TX AgriLife collaborate on a green infrastructure workshop for Basin 11 in Pearland.
 - g. 2019 – Clean Waters Initiative workshop on funding infrastructure projects to improve water quality.
- 3) Associated Implementation Projects and Programs
 - a. March 30, 2019 – Rivers, Lakes, Bays, and Estuaries TrashBash©. Staff attended event locations across the project area. Provided general water quality outreach, including pet waste, FOG and low impact development management measures.
 - b. May 17, 2019 - Water Innovation Strategies of Excellence (WISE) Awards ceremony was held to award the first WISE awards. The awards program will focus on planning and implementing projects that

- address water quality in H-GAC's region. The program will assist the BIG identify important projects and addresses an activity found in the I-Plan.
- c. H-GAC is working with the Bayou Preservation Association to continue to address illicit discharges. BPA received funding from GBEP to target waterbodies in the BIG area to identify and remove illicit discharges.
 - d. H-GAC is working to draft WPP for Cypress Creek. A proposal has been accepted by TCEQ to develop a WPP on Spring Creek.
 - e. H-GAC is working to implement sections of the West Fork WPP.
 - f. OSSF SEP – H-GAC has an ongoing SEP project and has received funding through the state and from Harris County District Attorney's Office to repair and replace failing systems. H-GAC is targeting OSSFs in areas with watershed-based plans, including the BIG project area. For more information on the program: <http://h-gac.com/community/water/ossf.aspx>.
- 4) Associated Partner Activities
- a. LID Workshops – TX AgriLife has received funding from GLO's CMP program and TCEQ's NPS program to conduct LID workshops along the coast and in urban settings. H-GAC is coordinating with TX AgriLife to capitalize on our implementation funding. A workshop will be held in Pearland on June 12, 2019.

BRIEF DESCRIPTION OF OVERALL FINDINGS:

Much of the work focused on gathering implementation information to inform the 2019 annual reports – BIG and Upper Oyster Creek. The Upper Oyster Creek stakeholder met for their annual meeting to review water quality and discuss implementation. BIG work groups met to discuss implementation and to consider updates to the I-Plan. Work progress on addressing changes to the Chocolate Bayou TMDL document and TSD. The revisions were needed to address alterations to continuous flow and a change to the watershed boundary. These changes delayed the completion of the Chocolate Bayou I-Plan.

Significant Problems (describe any scheduling shortfalls, detail significant problems and how these problems were resolved, etc.):

The alter the continuous flow and the watershed boundary required extensive changes to the TMDL document and TSD. Those changes included revising all land cover derived data, maps, LDCs and TMDL calculations. This stressed the abilities of GIS staff. To work around this, new staff with a GIS background had been working to fill in and serve as a back-up. The TMDL document and TSD were delivered in May. The draft I-Plan will be delivered in June. Staff will work in July to address comments, provide copies to stakeholders and produce the final plan in August.

Johnston, Steven

From: Johnston, Steven
Sent: Tuesday, March 5, 2019 4:52 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Reports (Feb 25 - Mar 1)

Good Afternoon, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Feb. 25th – Mar. 1st:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (January 31, 2019):** \$41,916.44 **Remaining Budget Amount:** \$68,083.56

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Working on draft language for the I-Plan update.
- Next Coordination and Policy work group meeting – 3/4/19. Completed preparations for meeting.
- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs:
 - WWTFs
 - MS4s
- Found some concerns with the SSO data. Checking with TCEQ regarding potential missing records.
- Beginning data gathering for 2019 Annual Report.
- Staff had a table at Nature Fest at Jessie Jones Park, providing water quality information.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Selected April 11, 2019 for the annual meeting.
- Began planning meeting and gathering data.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Stakeholder meeting being planned for April 10th. Will be contacting permit holders to schedule meetings or phone conversations regarding the draft plan prior to meeting.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston

Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Sunday, March 17, 2019 6:23 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Reports (Mar 4 - Mar 8) and (Mar 11 - 15)
Attachments: PR2MAR2019.pdf

Good Evening, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. I have also attached the 2nd progress report. Please let me know if you have any questions.

Mar. 4th – Mar. 8th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (January 31, 2019):** \$41,916.44 **Remaining Budget Amount:** \$68,083.56

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Working on draft language for the I-Plan update.
- Coordination and Policy work group met – 3/4/19. Fifteen stakeholders attended the meeting. H-GAC and the work group discussed the planning schedule for delivering implementation data for use in the 2019 Annual Report. The group also discussed developing implementation workshops to expand the number of participants in the BIG. The group also reviewed the email sent to TCEQ in response to the letter and how to update the I-Plan should areas specifically mentioning TCEQ efforts need revisions.
- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs:
 - WWTFs
 - MS4s
- Found some concerns with the SSO data. Checking with TCEQ regarding potential missing records.
- Beginning data gathering for 2019 Annual Report.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Selected April 11, 2019 for the annual meeting.
- Began planning meeting and gathering data.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Staff revised the flow for Chocolate Bayou to remove flow contributions (WWTF, irrigation) from waterbodies outside of Chocolate Bayou. Staff will be revising the TMDL calculations and LDCs. The new information will be placed in the draft I-Plan.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Mar. 4th – Mar. 8th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (January 31, 2019):** \$41,916.44 **Remaining Budget Amount:** \$68,083.56
- **Completed and submitted the 2nd progress report.**

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Working on draft language for the I-Plan update.
- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs:
 - WWTFs
 - MS4s
- Found some concerns with the SSO data. Checking with TCEQ regarding potential missing records.
- Beginning data gathering for 2019 Annual Report.
- H-GAC is coordinating with TX Agrilife on a green infrastructure workshop. Workshop will be on June 12, 2019 in Pearland.
- BIG Spring meeting – June 4, 2019.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Selected April 11, 2019 for the annual meeting.
- Began planning meeting and gathering data.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Staff revised the flow for Chocolate Bayou to remove flow contributions (WWTF, irrigation) from waterbodies outside of Chocolate Bayou. Staff will be revising the TMDL calculations and LDCs. The new information will be placed in the draft I-Plan.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Sunday, March 31, 2019 5:21 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (Mar 18 thru Mar 22)

Good Evening, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Mar. 18th – Mar. 22nd:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (January 31, 2019):** \$50,626.45 **Remaining Budget Amount:** \$59,373.55

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Working on draft language for the I-Plan update.
- Planning stakeholder approach with a goal of reaching new organizations. Looking at topical workshops and offering CEUs:
 - WWTFs
 - MS4s
- Found some concerns with the SSO data. Checking with TCEQ regarding potential missing records.
- Beginning data gathering for 2019 Annual Report.
- H-GAC is coordinating with TX Agrilife on a green infrastructure workshop. Workshop will be on June 12, 2019 in Pearland.
- BIG Spring meeting – June 4, 2019.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Annual meeting - April 11, 2019
- Planning meeting and gathering data

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Staff revised the flow for Chocolate Bayou to remove flow contributions (WWTF, irrigation) from waterbodies outside of Chocolate Bayou. Staff revised the TMDL calculations and LDCs. The new information is being placed in the draft I-Plan.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments. Meeting will be in May.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Tuesday, April 23, 2019 3:31 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (Mar 25 thru Mar 29) and (Apr 1 thru April 5)

Good Afternoon, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Mar. 25th – Mar. 29th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (January 31, 2019):** \$50,626.45 **Remaining Budget Amount:** \$59,373.55

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Working on draft language for the I-Plan update.
- Continuing data gathering for 2019 Annual Report in preparation for June 4th BIG meeting.
- June 4, 2019 BIG Spring Meeting. Beginning planning for meeting.
- June 12, 2019 LID workshop in Pearland. H-GAC is coordinating with TX Agrilife on a green infrastructure workshop.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Annual meeting - April 11, 2019
- Planning meeting and gathering data

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Staff revised the flow for Chocolate Bayou to remove flow contributions (WWTF, irrigation) from waterbodies outside of Chocolate Bayou. Staff revised the TMDL calculations and LDCs. The new information is being placed in the draft I-Plan.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments. Meeting will be in May.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Apr. 1st – Apr. 5th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (March 31, 2019):** \$61,904.96 **Remaining Budget Amount:** \$48,095.04

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Began to schedule work group meetings.
- Working on draft language for the I-Plan update.
- Continuing data gathering for 2019 Annual Report in preparation for June 4th BIG meeting.
- April 6, 2019, Staff manned a booth at the Sam Houston Area Council Scout Fair. Delivered water quality and pet waste messaging.
- June 4, 2019 BIG Spring Meeting. Beginning planning for meeting.
- June 12, 2019 LID workshop in Pearland. H-GAC is coordinating with TX Agrilife on a green infrastructure workshop.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Annual meeting - April 11, 2019
- Completed final meeting preparations.
- Meeting reminder sent out.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Staff revised the flow for Chocolate Bayou to remove flow contributions (WWTF, irrigation) from waterbodies outside of Chocolate Bayou. Staff revised the TMDL calculations and LDCs. The new information is being placed in the draft I-Plan.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments. Meeting will be in May.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Sunday, May 5, 2019 3:27 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: RE: FY19 WO #1 Weekly Report (Apr 8 thru April 12) and (Apr 15 - Apr 19)

Good Afternoon, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Apr. 8th – Apr. 12th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (March 31, 2019):** \$61,904.96 **Remaining Budget Amount:** \$48,095.04

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Selected BIG work group meeting dates and sent announcements:
 - Coordination and Policy – May 6, 2019
 - OSSF/Illicit Discharge – May 6, 2019
- Working on draft language for the I-Plan update.
- Continuing data gathering for 2019 Annual Report in preparation for June 4th BIG meeting.
- June 4, 2019 BIG Spring Meeting. Beginning planning for meeting.
- June 12, 2019 LID workshop in Pearland. H-GAC is coordinating with TX Agrilife on a green infrastructure workshop.
- Public Outreach Events:
 - April 27, 2019 – Kickerillo Preserve Nature Event
 - April 27, 2019 – Pearland Earth Day Event
 - May 17, 2019 – WISE Awards Ceremony
 - May 18, 2019 – Bay Day at Kemah Boardwalk

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- April 11, 2019 – Annual meeting held in Sugarland. Seventeen stakeholders were in attendance. The group reviewed the latest bacteria and dissolved oxygen data and discussed implementation efforts carried out in 2018.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Staff revised the flow for Chocolate Bayou to remove flow contributions (WWTF, irrigation) from waterbodies outside of Chocolate Bayou. Staff revised the TMDL calculations and LDCs. The new information is being placed in the draft I-Plan.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments. Meeting will be in May.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Apr. 8th – Apr. 12th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (March 31, 2019):** \$61,904.96 **Remaining Budget Amount:** \$48,095.04

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - Coordination and Policy – May 6, 2019
 - OSSF/Illicit Discharge – May 6, 2019
 - Animals and Agriculture – May 23, 2019, meeting announcement sent out.
- Continuing to working on draft language for the I-Plan update.
- Continuing to gather data for 2019 Annual Report in preparation for June 4th BIG meeting.
- June 4, 2019 BIG Spring Meeting. Beginning planning for meeting.
- June 12, 2019 LID workshop in Pearland. H-GAC is coordinating with TX Agrilife on a green infrastructure workshop.
- Public Outreach Events:
 - April 27, 2019 – Kickerillo Preserve Nature Event
 - April 27, 2019 – Pearland Earth Day Event
 - May 17, 2019 – WISE Awards Ceremony
 - May 18, 2019 – Bay Day at Kemah Boardwalk

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No Updates.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments. Meeting will be in June 13, 2019 (revised from May).

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Sunday, May 12, 2019 5:32 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (Apr 22 thru April 26) and (Apr 29 - May 3)

Good Afternoon, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Apr. 22nd – Apr. 26th:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (March 31, 2019):** \$61,904.96 **Remaining Budget Amount:** \$48,095.04

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - Coordination and Policy – May 6, 2019, preparing for meeting and sent out meeting reminders.
 - OSSF/Illicit Discharge – May 6, 2019, preparing for meeting and sent out meeting reminders.
 - Animals and Agriculture – May 23, 2019, meeting reminder and meeting preparation will be completed the week of May 13th.
- Continued working on draft language for the I-Plan update.
- Continued to gather data for 2019 Annual Report in preparation for June 4th BIG meeting.
- June 4, 2019 BIG Spring Meeting. Planning and preparing for meeting. A draft agenda has been created. Meeting announcements have been developed for newsletters and for email.
- June 12, 2019 LID workshop in Pearland. H-GAC is coordinating with TX Agrilife on a green infrastructure workshop.
- Public Outreach Events:
 - April 27, 2019 – Kickerillo Preserve Nature Event
 - April 27, 2019 – Pearland Earth Day Event
 - May 17, 2019 – WISE Awards Ceremony
 - May 18, 2019 – Bay Day at Kemah Boardwalk

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No Updates.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments. Meeting will be in June 13, 2019 (revised from May).

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Apr. 29th – May 3rd:

Task 1 Project Administration

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (March 31, 2019):** \$61,904.96 **Remaining Budget Amount:** \$48,095.04

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- **Work group meetings:**
 - Coordination and Policy – May 6, 2019, preparations for the meeting were completed.
 - OSSF/Illicit Discharge – May 6, 2019, preparations for the meeting were completed.
 - Animals and Agriculture – May 23, 2019, meeting reminder and meeting preparation will be completed the week of May 13th.
 - East and West Fork San Jacinto – June 11, 2019.
- Continued working on draft language for the I-Plan update.
- Continued to gather data for 2019 Annual Report in preparation for June 4th BIG meeting.
- June 4, 2019 BIG Spring Meeting. Planning and preparing for meeting. A draft agenda has been created. Meeting announcements have been developed for newsletters and for email.
- **Public Outreach Events:**
 - May 17, 2019 – WISE Awards Ceremony
 - May 18, 2019 – Bay Day at Kemah Boardwalk
 - May 18, 2019 – Agriculture and Landowner Resources Workshop
 - May 21, 2019 – Harris County OSSF Seminar for Water Professionals
 - May 22, 2019 – CWI Workshop on OSSF bacteria reduction efforts
 - June 12, 2019 - LID workshop in Pearland

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No Updates.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments. Meeting will be in June 13, 2019 (revised from May).

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Monday, May 20, 2019 11:33 AM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (May 6 thru May 10) and (May 13 - May 17)

Good Morning, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

May 6th – May 10th:

Task 1 Project Administration – Discussed with TCEQ PM the need to address funding and SOW changes for FY 2020.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (March 31, 2019):** \$61,904.96 **Remaining Budget Amount:** \$48,095.04

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - Coordination and Policy – May 6, 2019. Twelve stakeholders were in attendance. Group reviewed draft Spring BIG meeting, discussed the 2019 Annual Report and process to update the I-Plan.
 - OSSF/Illicit Discharge – May 6, 2019. Twelve stakeholders attended the meeting. The attendees reviewed the H-GAC OSSF implementation activities, discussed the 2019 Annual Report preparation and considered changes to the I-Plan, including draft changes to Illicit Discharges. Changes reflect boater wastes.
 - Animals and Agriculture – May 23, 2019, meeting reminder and meeting preparation will be completed the week of May 13th.
 - East and West Fork San Jacinto – June 11, 2019.
- Continued working on draft language for the I-Plan update.
- Continued to gather data for 2019 Annual Report in preparation for June 4th BIG meeting.
- June 4, 2019 BIG Spring Meeting. Planning and preparing for meeting. A draft agenda has been created and was shared with the Coordination and Policy work group. Meeting announcements were made and the announcement went out in newsletters and with email.
- Public Outreach Events:
 - May 17, 2019 – WISE Awards Ceremony
 - May 18, 2019 – Bay Day at Kemah Boardwalk
 - May 18, 2019 – Agriculture and Landowner Resources Workshop
 - May 21, 2019 – Harris County OSSF Seminar for Water Professionals
 - May 22, 2019 – CWI Workshop on OSSF bacteria reduction efforts
 - June 12, 2019 - LID workshop in Pearland

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No Updates.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments. Meeting will be on June 13, 2019 (revised from May).

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

May 13th – May 17th:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (March 31, 2019):** \$61,904.96 **Remaining Budget Amount:** \$48,095.04

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - Animals and Agriculture – May 23, 2019, meeting reminder went out the week of May 13th. Finishing meeting preparations.
 - East and West Fork San Jacinto – June 11, 2019. Meeting notice was sent out.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look. More will be discussed at the next Coordination and Policy meeting.
- Finished data gathering for 2019 Annual Report in preparation for June 4th BIG meeting.
- June 4, 2019 BIG Spring Meeting. Planning and preparing for meeting. A draft agenda was created and shared with the Coordination and Policy work group. Discussed with TWRI their presentation on bacteria source tracking.
- Public Outreach Events:
 - May 17, 2019 – WISE Awards Ceremony was held with four winners for this inaugural event: 1) Built Project less than \$500,000 – HCFCB Bioswale Demonstration Project; 2) Built Project greater than \$500,000 – Harris County Pct. 4 Service Center; 3) Planning and Policy – Houston Parks Riparian Restoration Plan; 4) Education and Awareness – Galveston Bay Foundation GBAN reporting tool.
 - May 18, 2019 – Bay Day at Kemah Boardwalk. Staff has a table and provided information on Pet Wastes and FOG and Wipes.
 - May 18, 2019 – Agriculture and Landowner Resources Workshop West Fork San Jacinto River Watershed. One stakeholder attended. TSSWCB, TX AgriLife and H-GAC discussed better ways to reach this target group.
 - May 21, 2019 – Harris County OSSF Seminar for Water Professionals
 - May 22, 2019 – CWI Workshop on OSSF bacteria reduction efforts
 - June 12, 2019 - LID workshop in Pearland

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No Updates.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- Developing a new outreach plan to encourage local governments and permit holders with a venue for providing comments. Meeting will be on June 13, 2019 (revised from May).

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Wednesday, June 12, 2019 10:38 AM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (May 20 thru May 24) and (May 27 - May 31)

Good Morning, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

May 20th – May 24th:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (April 30, 2019):** \$69,953.62 **Remaining Budget Amount:** \$40,046.38

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - Animals and Agriculture – May 23, 2019. Six stakeholders attended the meeting at the Houston Advanced Research Center. The stakeholders discussed 2018 implementation efforts and considered draft changes to the I-Plan, including the addition of Silviculture and Texas Forest Service information. The group were interested in seeking future legislative approval to stack water quality management plans (TSSWCB Plans) or other conservation plans as a property tax abatement on to a property owners ag exemption.
 - East and West Fork San Jacinto – June 11, 2019. Began preparing for the meeting.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look. More will be discussed at the next Coordination and Policy meeting.
- June 4, 2019 BIG Spring Meeting. Planning and preparing for meeting.
- Public Outreach Events:
 - May 21, 2019 – Harris County hosted an OSSF Seminar for Water Professionals. H-GAC staff provided an update on the OSSF SEP to the group.
 - May 22, 2019 – H-GAC hosted a CWI Workshop on OSSF bacteria reduction efforts. H-GAC staff presented on the OSSF SEP. 27 stakeholders attended.
 - June 12, 2019 - LID workshop in Pearland. Staff will be presenting.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No Updates.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan.
- June 13, 2019 – Basin 11 elected officials, local government staff and water quality permittees will meet to discuss I-Plan and other water quality planning in the area.
- June 13, 2019 - Chocolate Bayou CC will meet at the Brazoria County Public Library in Alvin to hear an update to the draft I-Plan.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

May 27th – May 31st:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (April 30, 2019):** \$69,953.62 **Remaining Budget Amount:** \$40,046.38

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - East and West Fork San Jacinto – June 11, 2019. Began preparing for the meeting.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look. More will be discussed at the next Coordination and Policy meeting.
- June 4, 2019 BIG Spring Meeting. Planning and preparing for meeting. Meeting Agenda and presentation shared with TCEQ PM.
- Public Outreach Events:
 - June 12, 2019 - LID workshop in Pearland. Staff will be presenting.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- No Updates.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan. **Anticipate delivery the third week of June.**
- June 13, 2019 – Basin 11 elected officials, local government staff and water quality permittees will meet to discuss I-Plan and other water quality planning in the area.
- June 13, 2019 - Chocolate Bayou CC will meet at the Brazoria County Public Library in Alvin to hear an update to the draft I-Plan..

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>



[Search H-GAC](#)

[Search](#)

Total Maximum Daily Loads and Implementation Plans (TMDL)

About the TMDL

Total Maximum Daily Load (TMDL) is like a budget for pollution. The Clean Water Act and the EPA require that all states identify water bodies that do not meet, or are not expected to meet, applicable water quality standards for designated uses. These water bodies are listed and prioritized in order to schedule TMDL development. A TMDL study is a technical analysis that determines maximum loadings of a pollutant of concern that a water body can receive and still meet water quality standards and allocates this allowable loading to point and nonpoint pollutant sources in the watershed. Visit the Texas Commission on Environmental Quality (TMDL) website to learn more about TMDLs.

Bacterial Implementation Group (BIG)

Frequently Asked Questions

Brazos Colorado Coastal Basin TMDL and Implementation Plan

East and West Forks of the San Jacinto River TMDL and Implementation Plan

Houston Ship Channel and Galveston Bay TMDL and Implementation Plan

San Jacinto Brazos Coastal Basin Meeting Information

Upper Oyster Creek TMDL and Implementation Plan

Contact Info

Steven Johnston

steven.johnston@h-gac.com

832-681-2579

Newsletter

Signup for the [BIG newsletter!](#)

Links

[Clean Rivers Program](#)

[On-Site Sewage Facilities](#)

[Upcoming Water Resources Workshops](#)

[Water Resources Information Map](#)

[Water Resources Publications](#)

Resources

[TCEQ's Dioxin TMDL Web Page](#)

[TCEQ's PCB TMDL Web Page](#)

[Seafood Advisory Brochure English](#)

[Seafood Advisory Brochure Spanish](#)

[Brochure "Dioxin for Dinner?"](#)

[Brochure "¿Dioxin para la cena?"](#)

[TxDSHS Fish Consumption Advisories](#)

[EPA San Jacinto River Waste Pits](#)

[Careers](#)

[Legal Disclaimer](#)

[Privacy Policy](#)

[Site Feedback](#)

[Intranet](#)



[Search H-GAC](#)

[Search](#)



About the BIG

The Bacteria Implementation Group (BIG) is a thirty-one-member committee that has developed and is overseeing implementation of a plan, or I-Plan, to remedy high levels of bacteria in waterways identified in Total Maximum Daily Load projects in the Houston Region. Activities of the BIG are open to all interested parties, and people are encouraged to attend meetings and participate in the various water quality issues pertinent to the I-Plan. The I-Plan is a common-sense approach for reducing bacteria levels in our waterways and providing better services to citizens. However, for the plan to work, we need your help. With everyone pitching in together, we will reduce bacteria levels in our waterways.

[Interactive BIG Report](#)

[Total Maximum Daily Loads \(TMDL\) and Implementation Plans](#)

[Meeting Materials](#)

[Member Directory](#)

[Reports](#)

[Resources and Information](#)

[Total Maximum Daily Loads \(TMDL\) Studies](#)

[Workgroups](#)

Contact Info

Steven Johnston

steven.johnston@h-gac.com

832-681-2579

Resources

[Water Quality Data](#)

[Water Pollution Complaints](#)

[Publications and Resources](#)

[Water Resources Information Map](#)

[Careers](#)

[Legal Disclaimer](#)

[Privacy Policy](#)

[Site Feedback](#)

[Intranet](#)

©2019 Houston-Galveston Area Council

[Search H-GAC](#)[Search](#)

Bacteria Implementation Group (BIG) Workgroups

About the BIG Workgroups

The BIG established workgroups to address specific water quality issues pertinent to the I-Plan and the strategy areas contained within. The workgroups assess progress on implementation and recommend changes to the I-Plan for possible action by the BIG. All interested parties are welcome and encouraged to participate in one or more workgroups. Notes from past meetings can be found on each workgroup page.

[Total Maximum Daily Loads and Implementation Plans](#)

[Bacteria Implementation Group \(BIG\)](#)

[BIG Animals and Agriculture Workgroup](#)

BIG Coordination and Policy Workgroup

BIG Illicit Discharges and Dumping Workgroup

BIG Monitoring and Plan Revision Workgroup

BIG On-Site Sewage Facilities (OSSF) Workgroup

BIG Research Workgroup

BIG Residential Workgroup

BIG Stormwater System Workgroup

BIG Wastewater Sanitary Sewer Systems Workgroup

BIG Wastewater Treatment Facilities Workgroup

BIG Watershed Outreach Workgroup

Contact Info

[Careers](#)

[Legal Disclaimer](#)

[Privacy Policy](#)

[Site Feedback](#)

[Intranet](#)

©2019 Houston-Galveston Area Council



Search H-GAC

Search

BIG Coordination and Policy Workgroup


Announcements

The Coordination and Policy work group met 1:00 PM May 6, 2019, H-GAC, Conference Rm A. For more information or to be added to the e-mail list, please contact Steven Johnston at steven.johnston@h-gac.com.

I-Plan

The Coordination & Policy Workgroup submitted the [Executive Summary and Introduction](#) to the I-Plan for consideration.

Meetings

- May 6, 2019 
- Marh 4, 2019 
- October 15, 2018 
- May 30, 2018 
- February 28, 2018 
- September 25, 2017 
- March 6, 2017 

- October 11, 2016 
- August 1, 2016 
- December 11, 2015 
- July 16, 2015 
- May 18, 2015 
- March 30, 2015 
- February 2, 2015 
- November 5, 2014 
- March 25, 2014 
- December 16, 2013 
- March 28, 2013 

Bacteria Implementation Group (BIG) Workgroups

BIG Animals and Agriculture Work Group

BIG Coordination and Policy Workgroup

BIG Illicit Discharges and Dumping Work Group

BIG Monitoring Plan Revision Work Group

BIG On-Site Sewage Facilities (OSSF) Work Group

BIG Research Work Group

BIG Stormwater and Land Development Work Group

BIG Sanitary Sewer Systems Workgroup

BIG Wastewater Treatment Facilities Workgroup

BIG Watershed Outreach Workgroup

BIG Residential Workgroup

Contact Us

Steven Johnston

Senior Planner

(832) 681-2579

steven.johnston@h-gac.com

H-GAC News & Events

There are no news items at this time.

[Careers](#)

[Legal Disclaimer](#)

[Privacy Policy](#)

[Site Feedback](#)

[Intranet](#)

©2019 Houston-Galveston Area Council



Search H-GAC

Search

BIG On-Site Sewage Facilities (OSSF) Work Group

Announcements

The next meeting of the OSSF Work Group is scheduled for 10:00 AM May 6, 2019, at H-GAC 2nd Floor. For more information or to be added to the e-mail list, please contact Steven Johnston at steven.johnston@h-gac.com.

I-Plan

The **Implementation Strategy 3.0: Onsite Sewage Facilities** includes three implementation activities:

- Implementation Activity 3.1: Identify and Adress Failing Systems
- Implementation Activity 3.2: Address Inadequate Maintenance of OSSF
- Implementation Activity 3.3: Legislation and Other Regulatory Actions

More information about the status of the I-Plan, including a link to the full document, can be found on the **BIG page**.

Meetings

May 6, 2019



May 2, 2018



March 23, 2017



December 17, 2015



November 10, 2014



February 13, 2014



November 14, 2012



Resources

Links



Bacteria Implementation Group (BIG) Workgroups

BIG Animals and Agriculture Work Group

BIG Coordination and Policy Workgroup

BIG Illicit Discharges and Dumping Work Group

BIG Monitoring Plan Revision Work Group

BIG On-Site Sewage Facilities (OSSF) Work Group

BIG Research Work Group

BIG Stormwater and Land Development Work Group

BIG Sanitary Sewer Systems Workgroup

BIG Wastewater Treatment Facilities Workgroup

BIG Watershed Outreach Workgroup

BIG Residential Workgroup

Contact Us

Steven Johnston

Senior Planner

(832) 681-2579

steven.johnston@h-gac.com

H-GAC News & Events

There are no news items at this time.

[Careers](#)

[Legal Disclaimer](#)

[Privacy Policy](#)

[Site Feedback](#)

[Intranet](#)

©2019 Houston-Galveston Area Council

Search H-GAC

Search

BIG Animals and Agriculture Work Group

Announcements

The next meeting of the Animals & Agriculture Work Group is scheduled at 9:00 AM May 23, 2019 at the Houston Advance Research Center. For more information or to be added to the e-mail list, please contact Steven Johnston at steven.johnston@h-gac.com.

I-Plan

The Animals & Agriculture Workgroup's [Implementation Strategy 7.0: Agriculture and Animal](#) included two implementation activities for the I-Plan submitted to TCEQ in August 2012

- Implementation Activity 7.1: Promote Increased Participation in Existing Programs for Erosion Control, Nutrient Reducation, and Livestock Management
- Implementation Activity 7.2: Promote the Management of Feral Hog Populations

Information about the status of the Plan, including a link to the full document, can be found on the [BIG page](#).

Meetings

May 23, 2019



April 26, 2018



April 18, 2017



January 20, 2016



December 09, 2014



February 11, 2014



December 18, 2012



Resources

Texas State Soil and Water Conservation Board



Soil and Water Conservation Districts



USDA Natural Resources Conservation Service



Texas Agrilife Extension Service



Texas Forest Service



Other Links



Bacteria Implementation Group (BIG) Workgroups

BIG Animals and Agriculture Work Group

BIG Coordination and Policy Workgroup

BIG Illicit Discharges and Dumping Work Group

BIG Monitoring Plan Revision Work Group

BIG On-Site Sewage Facilities (OSSF) Work Group

BIG Research Work Group

BIG Stormwater and Land Development Work Group

BIG Sanitary Sewer Systems Workgroup

BIG Wastewater Treatment Facilities Workgroup

BIG Watershed Outreach Workgroup

BIG Residential Workgroup

Contact Us

Steven Johnston

Senior Planner

(832) 681-2579

steven.johnston@h-gac.com

H-GAC News & Events

There are no news items at this time.

[Careers](#)

[Legal Disclaimer](#)

[Privacy Policy](#)

[Site Feedback](#)

[Intranet](#)

©2019 Houston-Galveston Area Council



BACTERIA IMPLEMENTATION GROUP

**Coordination & Policy Work Group
Meeting Agenda
Monday, March 4, 2019
1:00 PM to 3:00 PM
H-GAC Conference Rm. A**

Call to Order/Welcome/Introductions

Item 1: Review: October 15, 2018 Meeting Summary

Item 2: 2019 Annual Report Survey

Review with attendees, calendar year 2018 implementation and data submission timeline.
Discuss workgroup process.

Item 3: Implementation Plan Update

Discuss changes to the I-Plan and process.

Item 4: Follow up on request to TCEQ

Update to group on actions taken since the fall meeting.

Other Topics/Announcements/Adjourn

Upcoming Meeting Schedule

3/12/2019 Oyster Creek CC meeting (2:00 PM – Brazoria County Library Lake Jackson)
3/21/2019 Basin 13 Leadership Forum (10:00 AM – Wharton Public Library, Wharton, TX)
6/4/2019 BIG Spring Meeting (1:00 PM – H-GAC)

Instructions to call into BIG meetings:

To call in, dial 713-481-0090 (or 800-240-3895). You will be asked to enter your pass code, followed by the # sign. The pass code is 1084242. If you dial in before H-GAC, you will hear "music on hold". Once H-GAC dials in, the music will cease and the conference call will begin. During the conference, you may hear beeps. A single beep indicates someone has joined the conference call. A double beep indicates someone has left the conference call. Remember--if you do press hold, everyone will hear your hold music.



**Coordination & Policy Work Group
Meeting Summary
Monday, March 4, 2019
1:00 PM to 3:00 PM
H-GAC Conference Rm. A**

Call to Order/Welcome/Introductions

Stephen Benigno (HCFCD), Camila Biaggi (HC), Jerry Caraviotis (HC), Denise Ehrlich (GCA), Catherine Elliott (HCFCD), Sarah Gossett (GBF), Carol LaBreche (Houston), Jack Murphy (League City), Linda Pechacek (Public), Aaron Schindewolf (SJRA), Linda Shead (TX Coastal Partners), Robert Snoza (HCFCD), Mike Thornhill (SI Environmental)

Item 1: Review: October 15, 2018 Meeting Summary

Attendees reviewed the summary and did not request any changes.

Item 2: 2019 Annual Report Survey

H-GAC staff provided copies of the 2018 Annual Report. Staff sought input on the 2019 Annual Report process, discussed the timeline, and asked for any feed back on the revised layout. Staff noted that likely not all work groups would meet this year and the submissions of implementation content was being requested at this time for sections that implementing partners traditionally provide information.

Item 3: Implementation Plan Update

The attendees discussed the results of the BIG Fall meeting which found consensus among the members for the implementation plan to be revised fully. Staff asked if any attendees would be willing to serve on an editorial committee to compete the revisions. It was determined that staff would revise the document and provide content to the Coordination and Policy work group for comments and changes.

Item 4: Follow up on request to TCEQ

Staff provided copies of an email submitted to TCEQ seeking implementation actions carried out by TCEQ on behalf of the BIG I-Plan. Staff reported that the TCEQ TMDL Program Manager reported that the document was still under review and that the agency was working on a response.

Other Topics/Announcements/Adjourn

Upcoming Meeting Schedule

- 3/12/2019 Oyster Creek CC meeting (2:00 PM – Brazoria County Library Lake Jackson)
- 3/21/2019 Basin 13 Leadership Forum (10:00 AM – Wharton Public Library, Wharton, TX)
- 6/4/2019 BIG Spring Meeting (1:00 PM – H-GAC)



**Coordination & Policy Work Group
Meeting Agenda
Monday, May 6, 2019
1:00 PM to 3:00 PM
H-GAC Conference Rm. B**

Call to Order/Welcome/Introductions

Item 1: Review: March 4, 2019 Meeting Summary

Item 2: Review Preparations for Spring Meeting

Review draft meeting Agenda, BIG roster and suggest any changes.

Item 3: 2019 Annual Report Survey

Review with attendees, calendar year 2018 implementation and data submission timeline.
Discuss workgroup process.

Item 4: Implementation Plan Update

Discuss changes to the I-Plan and process.

Item 5: Follow up on request to TCEQ

Update to group on actions taken since the fall meeting.

Other Topics/Announcements/Adjourn

Upcoming Meeting Schedule

5/9/2019 Caney Creek CC meeting - (5:30 PM, Caney Creek Chapel, Sargent, TX)
5/23/2019 Animals and Agriculture Work Group – (9:00 AM, HARC, The Woodlands)
5/23/2019 Oyster Creek CC meeting (3:00 PM – Angleton County Library Lake Jackson)
6/4/2019 BIG Spring Meeting (1:00 PM – H-GAC)
6/11/2019 East and West Fork San Jacinto River Work Group – (HARC, The Woodlands)
6/12/2019 Basin 11 Leadership Forum – (10:00 AM, ACC, Alvin)

Instructions to call into BIG meetings:

To call in, dial 713-481-0090 (or 800-240-3895). You will be asked to enter your pass code, followed by the # sign. The pass code is 1084242. If you dial in before H-GAC, you will hear "music on hold". Once H-GAC dials in, the music will cease and the conference call will begin. During the conference, you may hear beeps. A single beep indicates someone has joined the conference call. A double beep indicates someone has left the conference call. Remember--if you do press hold, everyone will hear your hold music.



**Coordination & Policy Work Group
Meeting Agenda
Monday, May 6, 2019
1:00 PM to 3:00 PM
H-GAC Conference Rm. B**

Call to Order/Welcome/Introductions

Camila Biaggi (HC), Jerry Caraviotis (HC), Danielle Cioce (HC), Denise Ehrlich (GCA), Catherine Elliott (HCFCD), Pete Miles (Montgomery Co.), Jack Murphy (League City), Aaron Schindewolf (SJRA), Linda Shead (TX Coastal Partners), Brian Sims (H-GAC), Robert Snoza (HCFCD)

Item 1: Review: March 4, 2019 Meeting Summary

Work group reviewed the meeting summary and made not changes.

Item 2: Review Preparations for Spring Meeting

Attendees reviewed the draft Spring meeting agenda and did not make any changes or requests. The roster was reviewed, and the group discussed current openings, member attendance and potential replacement options.

Item 3: 2019 Annual Report Survey

The work group was handed copies of the 2018 Annual Report. H-GAC staff reviewed data collected in advance of the report, including geometric means, WWTF DMR data, SSO data, and AU results from the 2016 Integrated Report. Discussed how to treat “successful” bacteria reductions for AUs that meet the standard. The group discussed the report timeline and was asked to submit any implementation data to be reflected in the report.

Item 4: Implementation Plan Update

H-GAC staff presented the update timeline. The work group discussed options for how to proceed with the update. Examples of recent I-Plans and WPPs were provided to add to the discussion. Staff asked the work group if they wanted to see the I-Plan update only be to data and actions that have changed or been added or if they wish for a change to the design elements of the document. It was decided to proceed with a minimal change to the document while members consider if some changes to design elements are warranted.

Item 5: Follow up on request to TCEQ

Staff reported that the request was still outstanding and that no new information had been provided by TCEQ.

Other Topics/Announcements/Adjourn

Upcoming Meeting Schedule

- 5/9/2019 Caney Creek CC meeting - (5:30 PM, Caney Creek Chapel, Sargent, TX)
- 5/23/2019 Animals and Agriculture Work Group – (9:00 AM, HARC, The Woodlands)
- 5/23/2019 Oyster Creek CC meeting (3:00 PM – Angleton County Library Lake Jackson)

6/4/2019 BIG Spring Meeting (1:00 PM – H-GAC)
6/11/2019 East and West Fork San Jacinto River Work Group – (HARC, The Woodlands)
6/12/2019 Basin 11 Leadership Forum – (10:00 AM, ACC, Alvin)

Instructions to call into BIG meetings:

To call in, dial 713-481-0090 (or 800-240-3895). You will be asked to enter your pass code, followed by the # sign. The pass code is 1084242. If you dial in before H-GAC, you will hear "music on hold". Once H-GAC dials in, the music will cease and the conference call will begin. During the conference, you may hear beeps. A single beep indicates someone has joined the conference call. A double beep indicates someone has left the conference call. Remember--if you do press hold, everyone will hear your hold music.

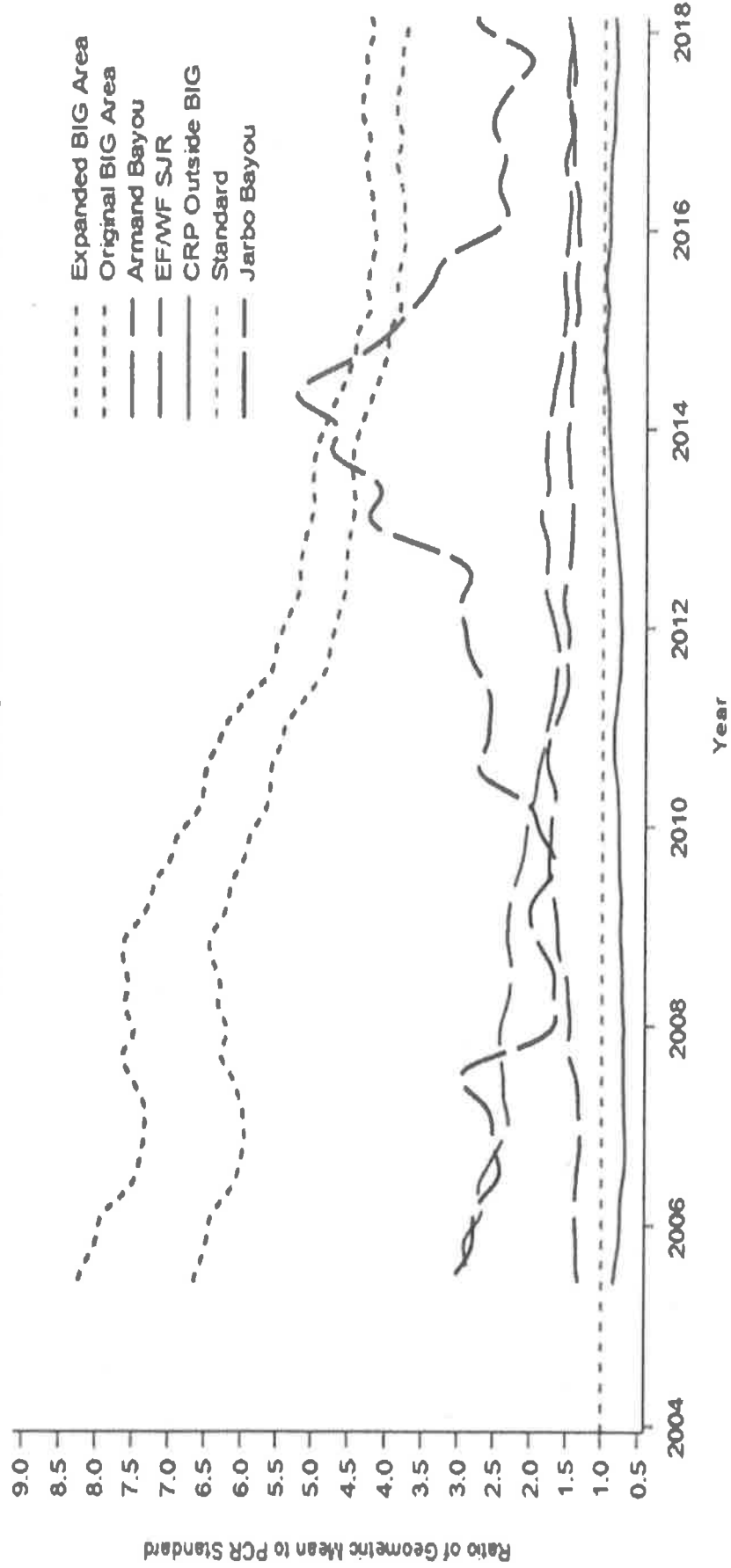
BACTERIA IMPLEMENTATION GROUP ROSTER (3-5-19)

Last	First	Representing	Organization	Alternate1	Alternate 2
Bailes IV	Rep. Ernest	Agriculture (County)	San Jacinto County	Dale Everitt	
Bernhardt	Sarah	Conservation	Bayou Preservation Association	James "Ty" Kelly	
Bloom	Michael	Business / Industry	RG Miller Engineers	Jason Maldonado	
Brown	David	Resource Agency / Academia	US Geological Survey	Michael Lee	
Chapin	Richard	Large City	City of Houston	Zafar Ahmed	
Caraviotis	Jerry	Urban County	Harris County Public Health & Environmental Services		
Cioce	Danielle	Urban County	Harris County	Camila Biaggi	Nick Russo
Ehrlich	Denise	Business / Industry	Gulf Coast Authority	Shaun Austin	
Elliott	Catherine	Urban County	Harris County Flood Control District	Robert Snoza	Roberto Vega
Hall	Greg	Small City	City of Conroe		
Harris	Teague	Utility District	IDS Engineering		
La Breche	Carol	Large City	City of Houston	Richard Chapin	
Isbell	Andrew	Rural County	Walker County		
Ivy	Tom	Conservation	Texas Stream Team	Jim Williams	
Gossett	Sarah	Conservation	Galveston Bay Foundation	Scott Jones	
Lane	Helen	Conservation	Houston Audubon Society	Bethany Foshee	
Lindsey	Mike	Rural County	Montgomery County	Frank Green	Scott Nichols Reuben Martinez
Maske	Craig	Business / Industry	IDS Engineering	Scott Saenger	
McCoy	Cathy	Agriculture	Harris County SWCDistrict #442		
Murphy	Jack	Small City	City of League City	Susie Blake	Jody Hooks
Olive	Becky	Business / Industry	AECOM	Karen Kottke	Patty Matthews
Olson	Anne	Conservation	Buffalo Bayou Partnership	Jessalyn Glacona	Linda Shead
Page	Mitchell	Utility District	Schwartz, Page, & Harding, LLP		
Pechacek	Linda	Public	Citizen, Civil Engineer	Rachel Powers	
Pinheiro	Rod	Large City	City of Houston		
Robertson	Jim	Conservation	Cypress Creek Flood Control Coalition	Richard Smith	
Schindewof	Aaron	Business / Industry	San Jacinto River Authority		
Shead	Linda	Conservation	Texas Coastal Partners	Mary Ellen Whitworth	
Shmaefsky	Brian	Resource Agency / Academia	Lone Star College, Kingwood	Jon Connolly	
Singhania	Monica	Agriculture	Texas Forest Service	Hughes Simpson	
Tarrant	Mayor Leah	Rural Small City	City of Patton Village		
Thornhill	Michael	Utility District	SI Environmental	Matt Carpenter	
Tuma	Scott	Business / Industry (Boating)	Boater	Sarah Gossett	

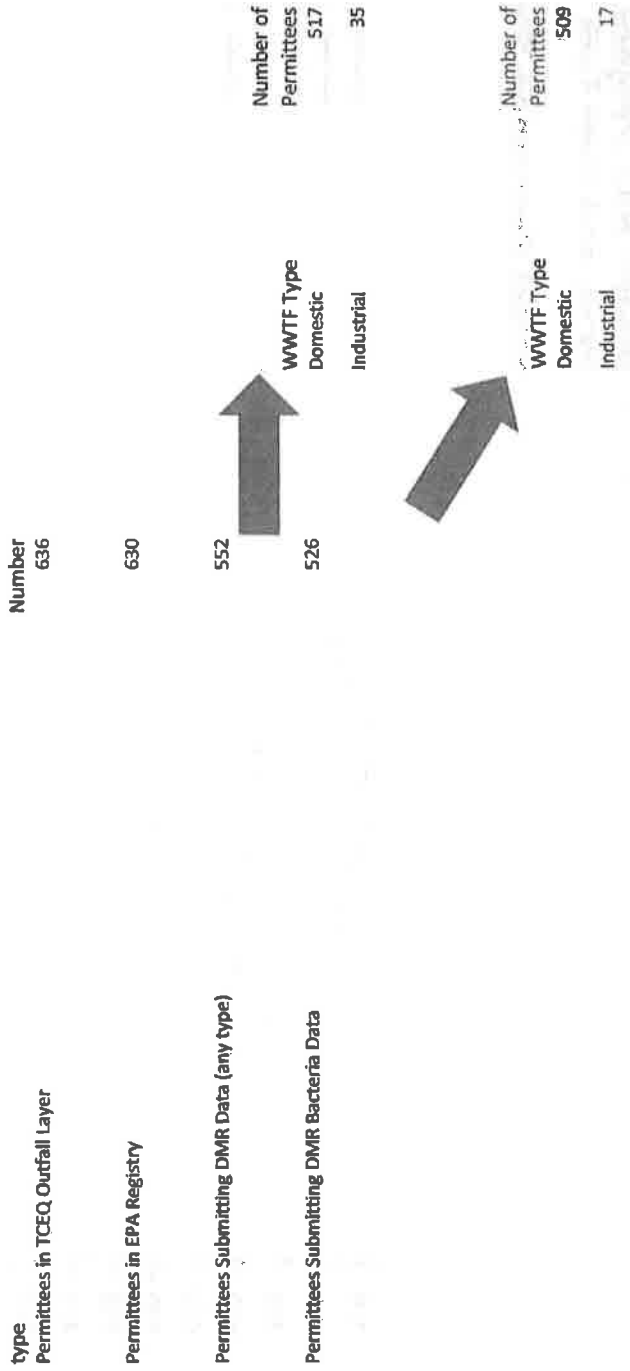
**Approval of BIG Required

**Moving Seven-Year Geometric Mean- BIG Project Area
All Areas, Original BIG Area, Armand Bayou, Jarbo Bayou, and East Fork / West Fork SJR
Additions**

Expressed as Multiple of Primary Contact Recreation Standard



WWTF Within the BIG Project Area



DMR for WWTF

Relative Plant size	number_plants	Geometric Mean	Daily Maximum or Grab Sample
0.1-0.5 MGD	133	0.5	0.8
0.5-1 MGD	107	0.2	1.6
1-5 MGD	99	0.2	4.4
5-10 MGD	17		4.3
< 0.1 MGD	169	0.5	1.4
> 10 MGD	10		10.0
Variable/Intermittent Discharge	6		3.2



Relative Plant size	2012	2013	2014	2015	2016	2017	2018	2012	2013	2014	2015	2016	2017	2018
Variable/Intermittent Discharge	0.0	0.0	55.6	43.8	26.9	42.9	0.0			44.4	50.0	26.9	50.0	3.2
< 0.1 MGD	3.2	2.8	3.1	1.3	0.8	1.2	0.5	4.8	4.4	3.8	2.3	1.6	1.8	1.4
0.1-0.5 MGD	1.7	0.9	0.7	0.3	0.7	0.9	0.5	3.8	2.4	1.5	1.8	1.0	1.3	0.8
0.5-1 MGD	0.5	0.4	0.2	0.0	0.1	0.1	0.2	6.1	4.5	1.5	2.1	0.9	2.1	1.6
1-5 MGD	0.5	0.4	0.2	0.2	0.1	0.3	0.2	6.0	5.2	3.1	5.5	4.7	4.7	4.4
5-10 MGD	0.6	0.0	0.0	0.5	0.0	0.5	0.0	10.2	10.6	5.5	7.8	7.1	6.1	4.3
> 10 MGD	0.0	0.0	0.8	0.0	0.0	0.0	0.0	6.4	10.0	12.5	22.5	14.2	15.0	10.0

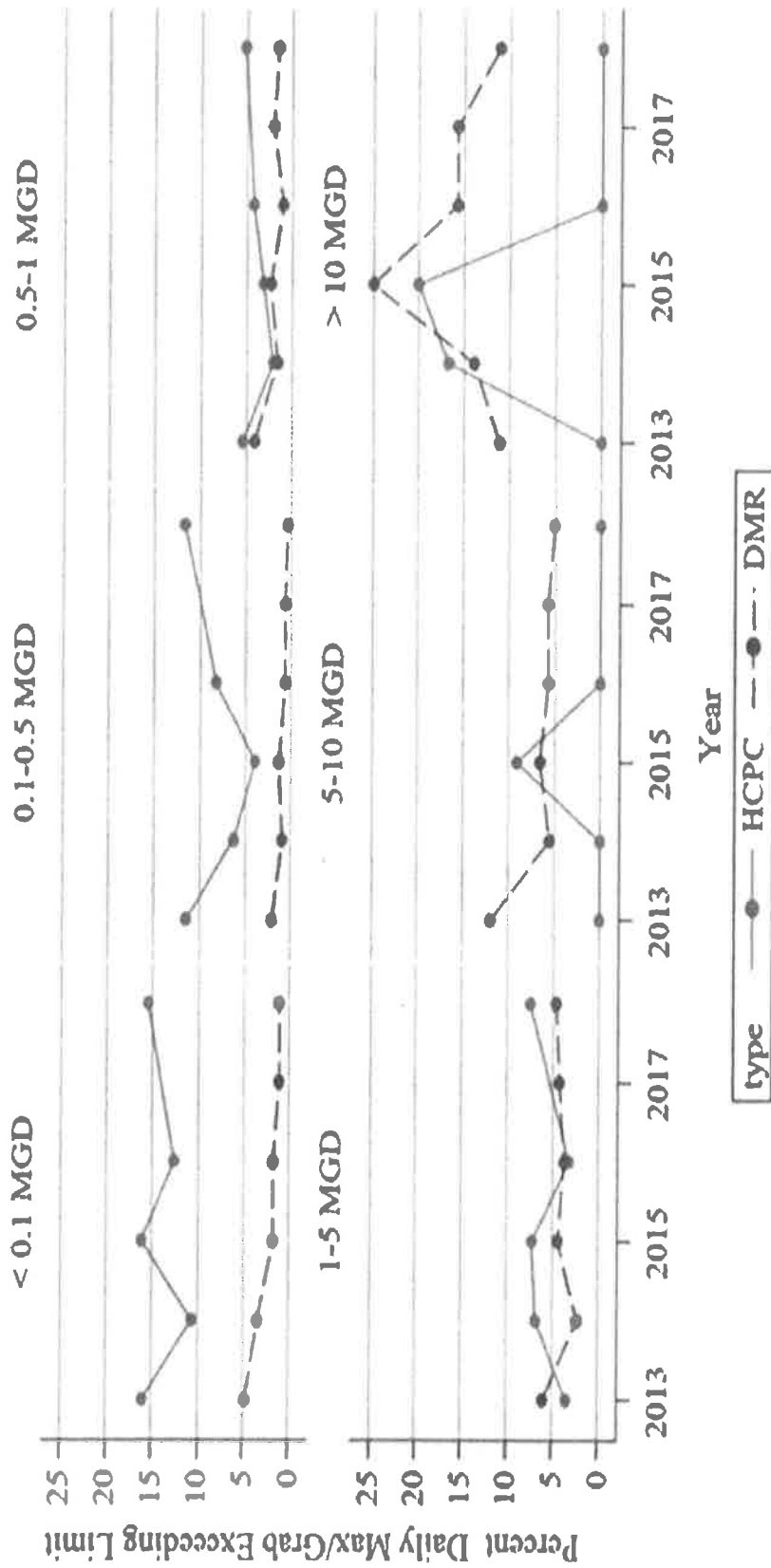
Harris County PCS Domestic WWTF Inspection Data

Relative Plant Size	DMR Grab/Max Sample Results	Percentage Exceeding Limit	Percent in Compliance	HCPC Inspection Samples	HCPC Inspection Daily Max PCT Exceedance	Percent Compliance, HCPC Samples
<0.1 MGD	457	1.1	98.9	97	15.5	84.5
0.1-0.5 MGD	996	0.4	99.6	94	11.7	88.3
0.5-1 MGD	977	1.5	98.5	77	5.2	94.8
1-5 MGD	929	4.6	95.4	67	7.5	92.5
5-10 MGD	156	5.1	94.9	7	0.0	100
>10 MGD	108	11.1	88.9	4	0.0	100

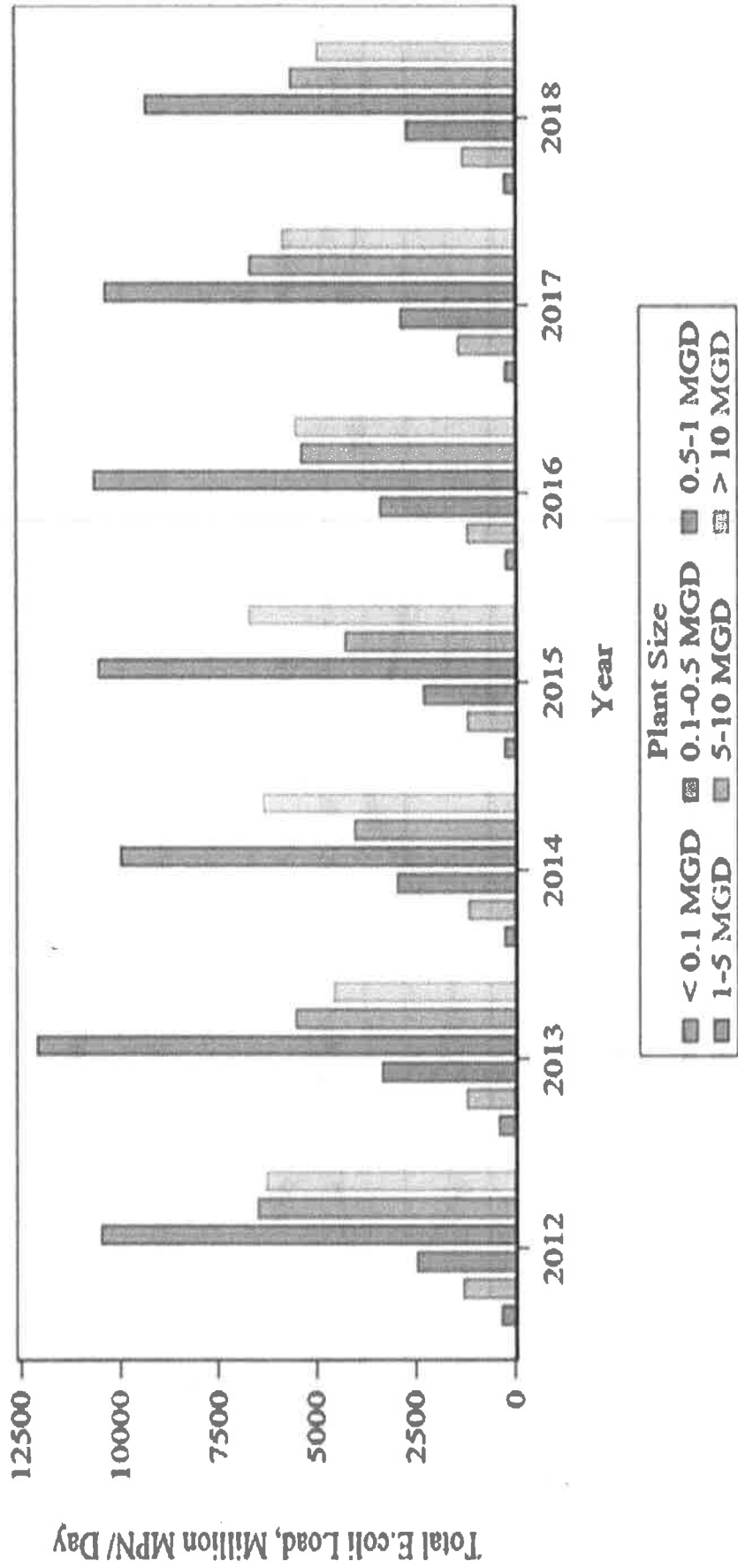
Permittee	Relative Plant size	NPDES ID	Number of HCPC Inspection Samples	Percent HCPC Samples in Compliance	Number of Grab/Daily Max Sample Results Reported in DMR	Percent in Compliance	Deviation from HCPC Percent Compliance	Monitoring Frequency
Reporting Frequency								
Soren Strategies, LLC; LEG TRANSPORT LLC; House Hahl Commercial Owners Association, Inc.	< 0.1 MGD	TX0134546	1	0.0	8	100	100	1/QUARTER
Quarterly								
Aldine Independent School District	< 0.1 MGD	TX0094188	2	0.0	23	95.7	95.7	1/QUARTER
Quarterly								
Roving Meadows Utilities, Inc.	< 0.1 MGD	TX0097527	8	37.5	21	100	62.5	1/QUARTER
Quarterly								
UA Holdings 1994-5, L.P.	< 0.1 MGD	TX0077062	5	40.0	21	100	60.0	1/QUARTER
Quarterly								
HARRIS COUNTY FWSD 61	1-5 MGD	TX0091804	9	33.3	64	92.2	58.9	1/DAY
Monthly								

Analysis of Discharge Monitoring Report Data Obtained March 2018
Analysis of Harris County PCS Domestic WWTF Infection Data- BIG Area of Harris County

Percent Daily Max/Grab Exceedance, DMR and HCPC Data Comparison

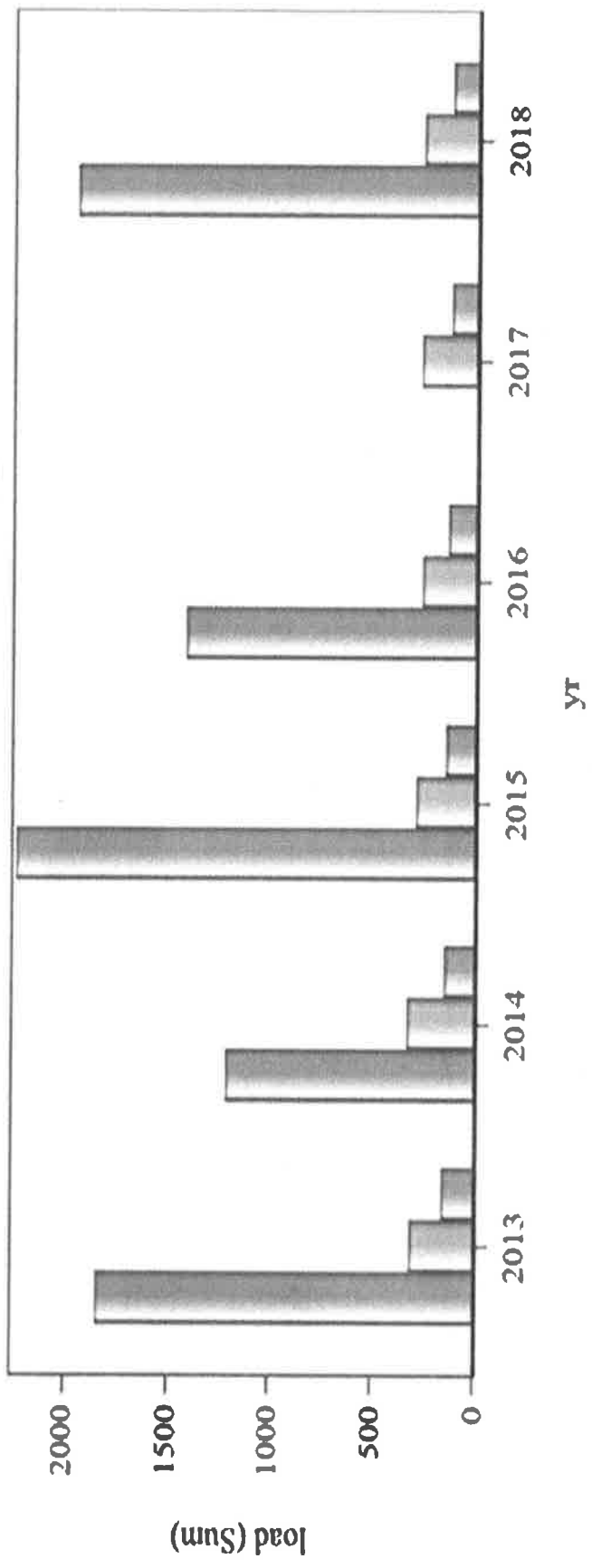


Analysis of Discharge Monitoring Report Data Obtained March 2018
Estimated E. Coli Load from Domestic WWTF - Permittees in BIG Project Area
By Year and Relative Plant Size



**Analysis of Discharge Monitoring Report Data Obtained March 2018
 Analysis of Harris County PCS Domestic WWTF Inspection Data- BIG Area of Harris
 County**

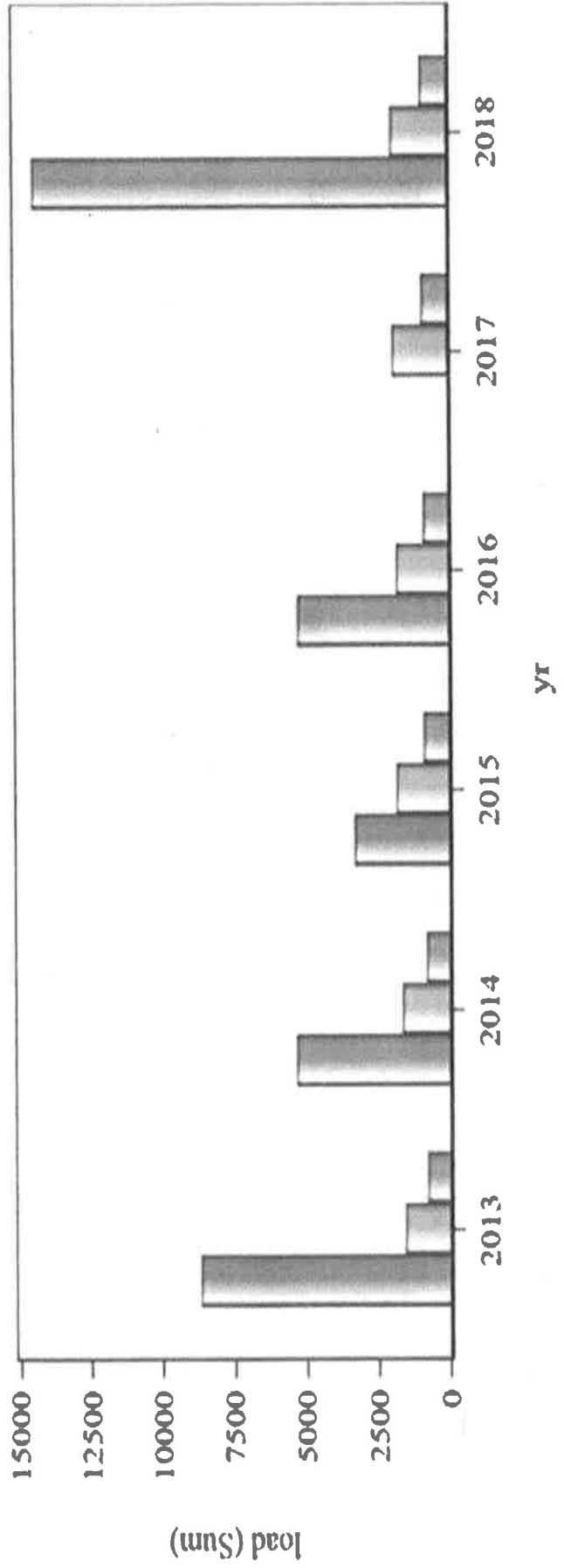
**Estimated Peak Loads from WWTF Inspected by HCPCS, Million MPN/Day
 Permitted Flow: < 0.1 MGD**



Estimates Based on HCPCS Geomeans and DMR Flow Results and Geomean of Daily Max Results

Analysis of Discharge Monitoring Report Data Obtained March 2018
Analysis of Harris County PCS Domestic WWTF Inspection Data- BIG Area of Harris
County

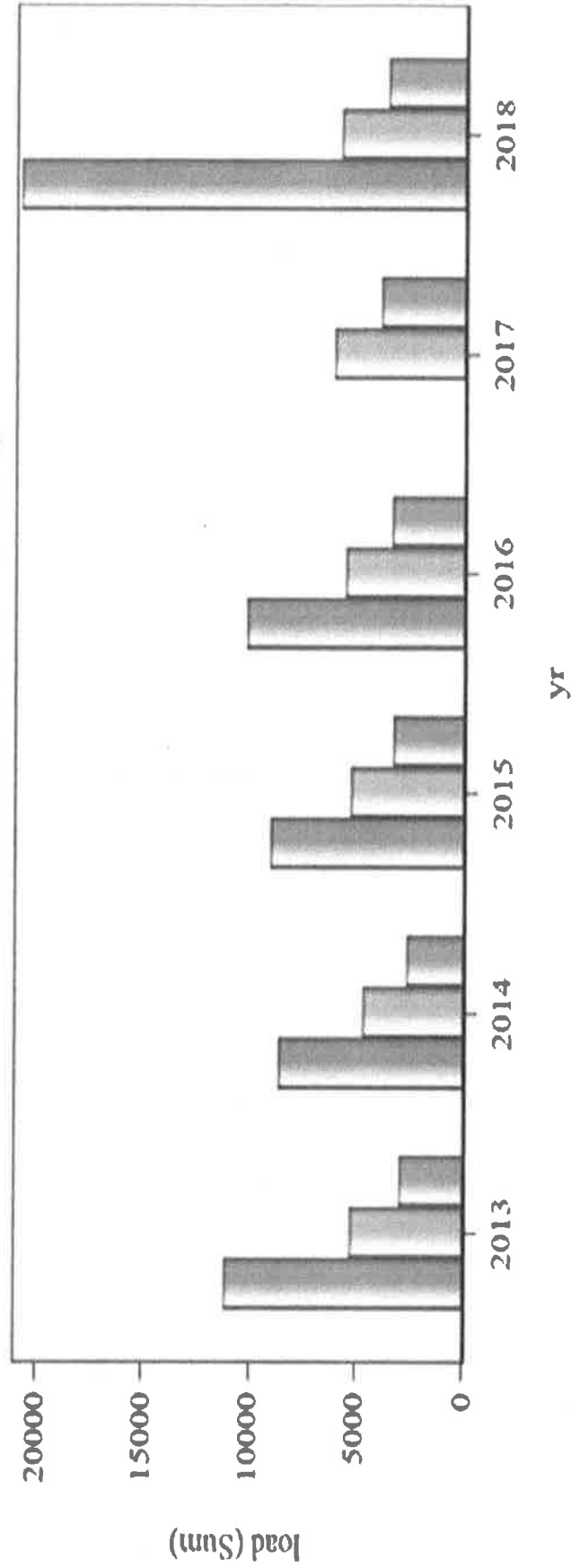
Estimated Peak Loads from WWTF Inspected by HCPCS, Million MPN/Day
Permitted Flow: 0.1 - 0.5 MGD



Estimates Based on HCPCS Geomeans and DMR Flow Results and Geomean of Daily Max Results

**Analysis of Discharge Monitoring Report Data Obtained March 2018
 Analysis of Harris County PCS Domestic WWTF Inspection Data- BIG Area of Harris
 County**

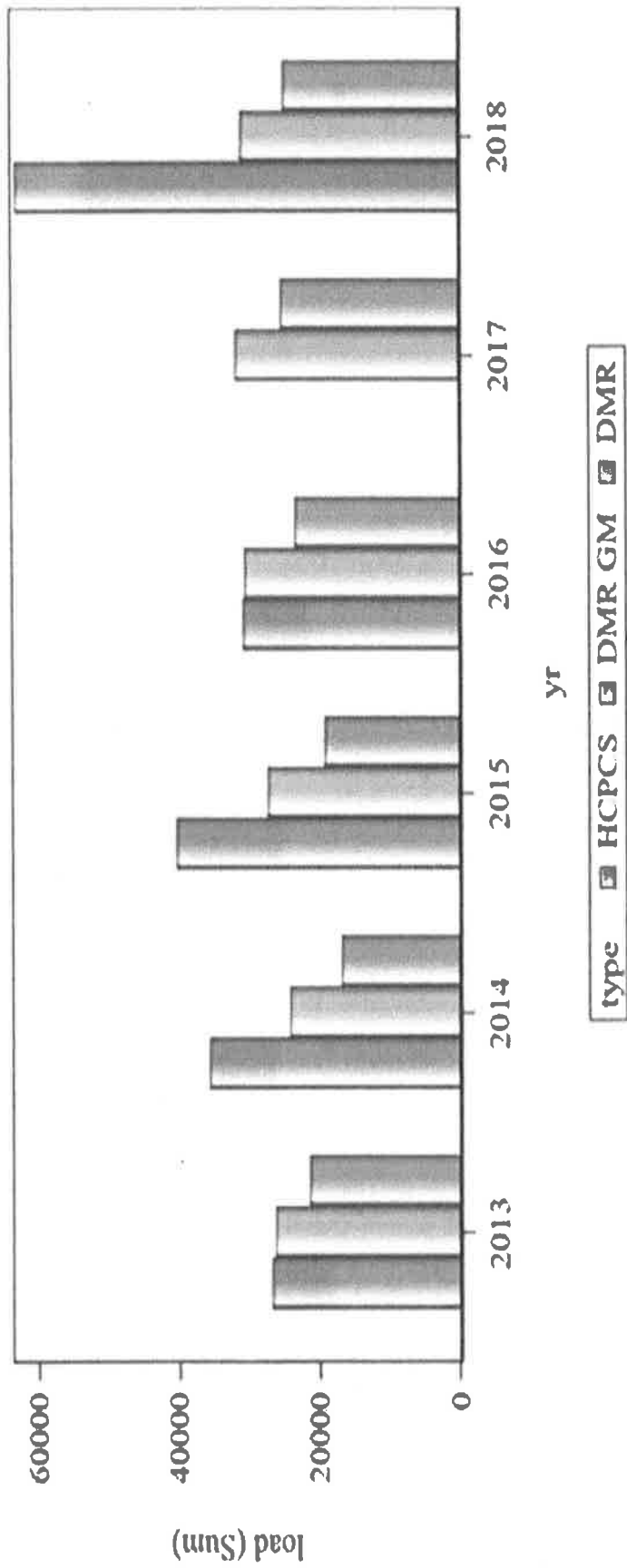
**Estimated Peak Loads from WWTF Inspected by HCPCS, Million MPN/Day
 Permitted Flow: 0.5-1.0 MGD**



Estimates Based on HCPCS Geomeans and DMR Flow Results and Geomean of Daily Max Results

**Analysis of Discharge Monitoring Report Data Obtained March 2018
 Analysis of Harris County PCS Domestic WWTF Inspection Data- BIG Area of Harris
 County**

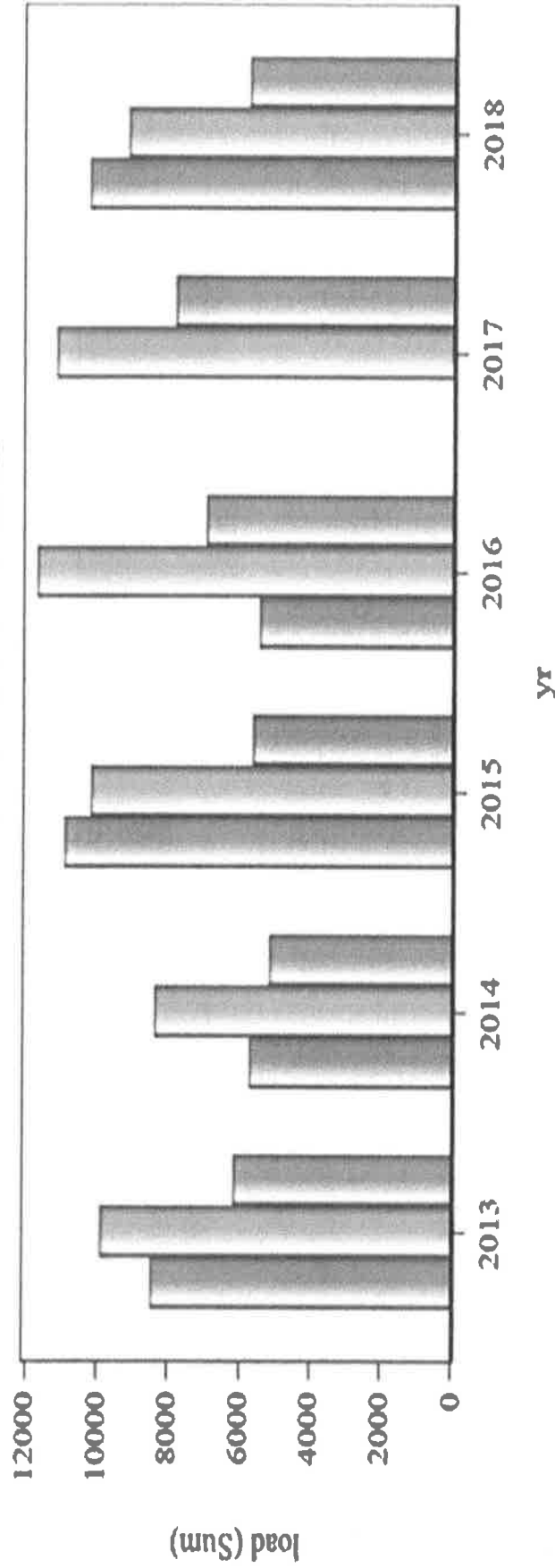
**Estimated Peak Loads from WWTF Inspected by HCPCS, Million MPN/Day
 Permitted Flow: 1.0-5.0 MGD**



Estimates Based on HCPCS Geomeans and DMR Flow Results and Geomean of Daily Max Results

Analysis of Discharge Monitoring Report Data Obtained March 2018
Analysis of Harris County PCS Domestic WWTF Inspection Data- BIG Area of Harris
County

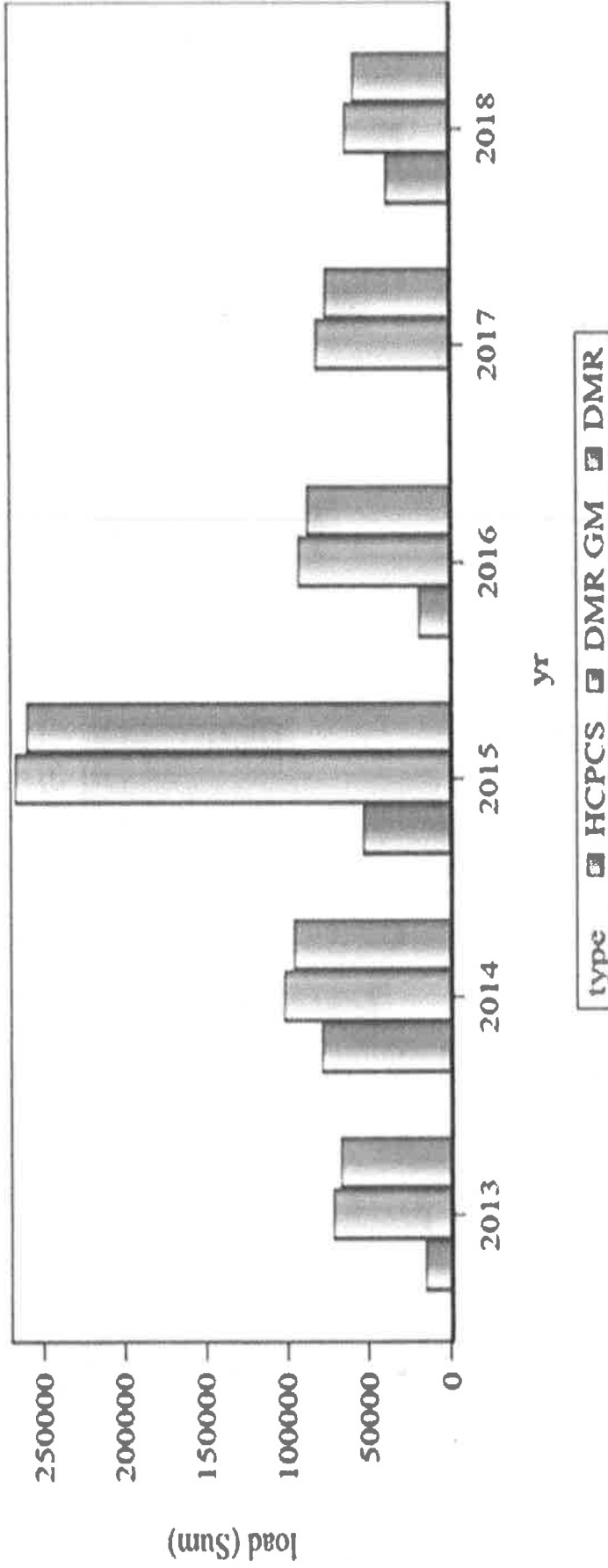
Estimated Peak Loads from WWTF Inspected by HCPCS, Million MPN/Day
Permitted Flow: 5 -10 MGD



Estimates Based on HCPCS Geomeans and DMR Flow Results and Geomean of Daily Max Results

Analysis of Discharge Monitoring Report Data Obtained March 2018
Analysis of Harris County PCS Domestic WWTF Inspection Data- BIG Area of Harris
County

Estimated Peak Loads from WWTF Inspected by HCPCS, Million MPN/Day
Permitted Flow: > 10 MGD



Estimates Based on HCPCS Geomeans and DMR Flow Results and Geomean of Daily Max Results

Permittees with 25% or More Excursions

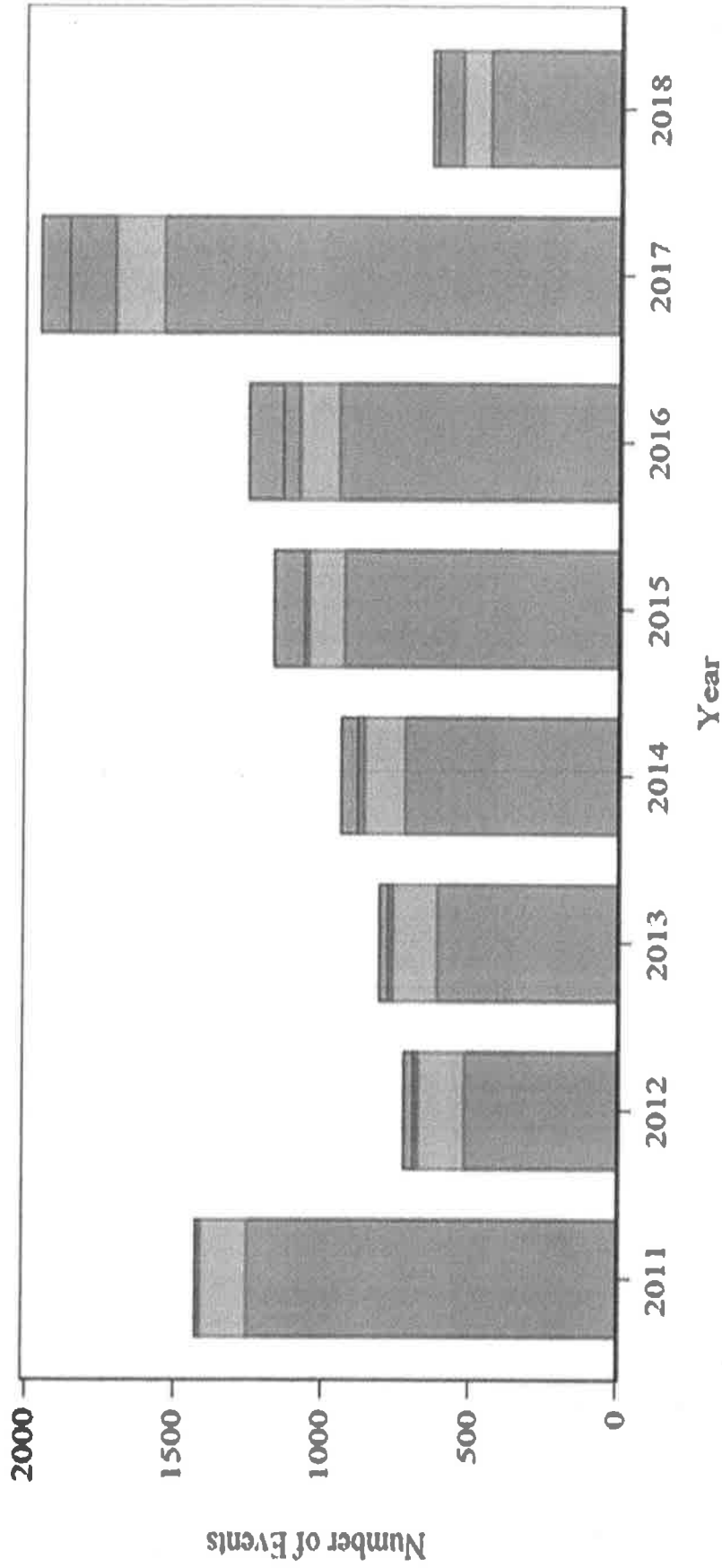
For 2018 by
Plant Size

Year	Geometric Mean Limit Violation	Daily Max or Grab Limit Violation	Relative Plant Size	Geometric Mean Limit Violation	Daily Max or Grab Limit Violation
2011	2	12	0.1-0.5 MGD	5	5
2012	6	15	0.5-1 MGD	1	11
2013	6	13	1-5 MGD	1	25
2014	7	9	5-10 MGD	1	5
2015	3	14	< 0.1 MGD	17	26
2016	1	13	> 10 MGD	1	15
2017	3	10	Variable/Intermittent Discharge	6	6
2018	1	7			

Water Quality Trend Summary by AUS

parameter	Deteriorating	Improving	No_Change
Dissolved Oxygen grab screening level	42	26	158
E. Coli	5	45	109
Enterococci	3	12	53
Nitrate-N	69	30	127
Total Phosphorus	70	30	126

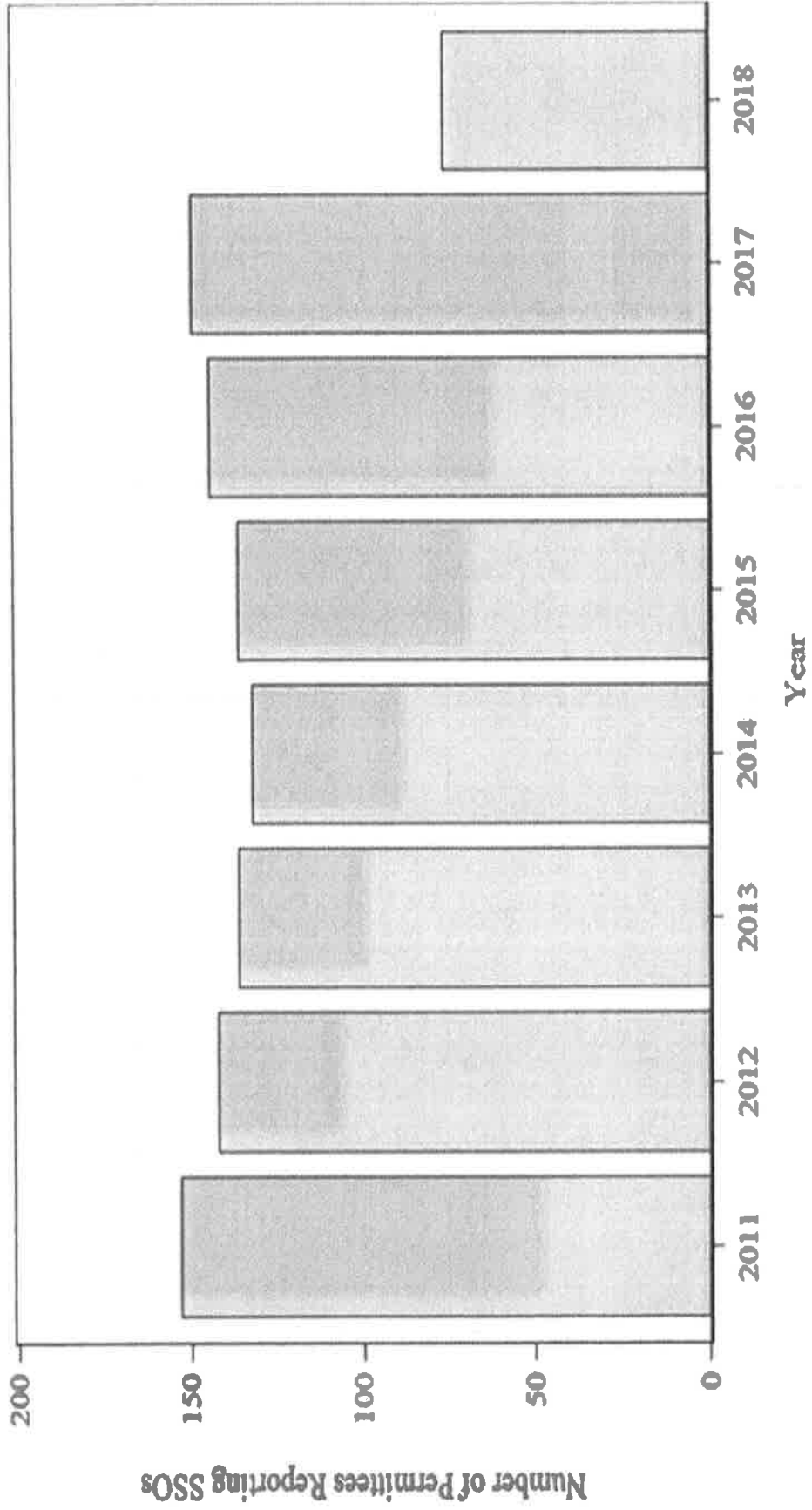
Cause of Reported SSOs by Year in BIG Project Area, 2018
Number of Events



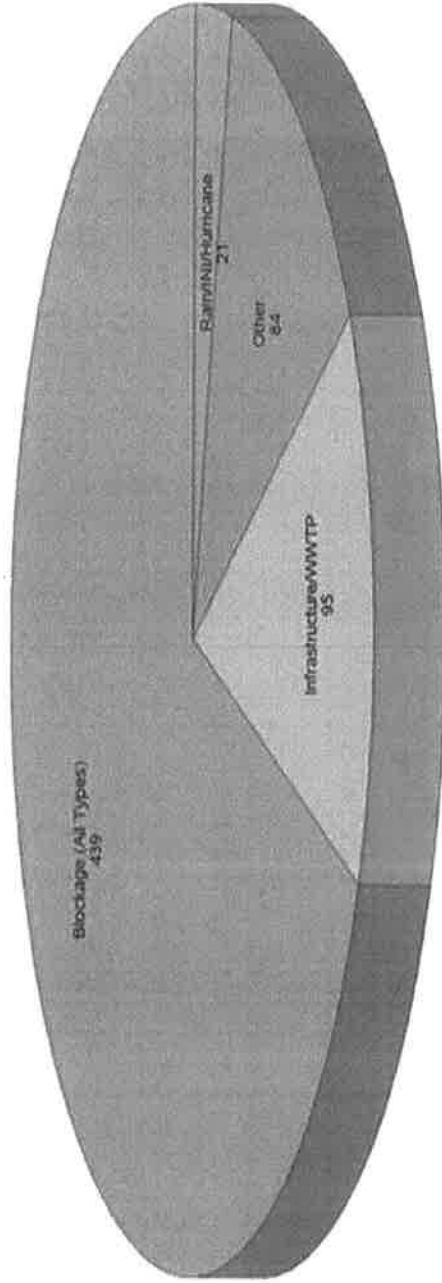
Cause of SSO

- Blockage (All Types)
- Infrastructure/WWTP
- Other
- Rain/INL/Hurricane

Summary of SSO Data



Cause of Reported SSOs by Year in BIG Project Area, 2018
Number of Events





BACTERIA IMPLEMENTATION GROUP

**On-Site Sewage Facilities and Illicit Discharges Work Group
Meeting Agenda
Monday, May 6, 2019
10:00 AM to 12:00 PM
H-GAC Conference Room B, Second Floor**

Call to Order/Welcome/Introductions

Review Summary from 5/2/18 Meeting

Presentation: Update on ongoing H-GAC OSSF Implementation
- Brian Sims and Jessie Casillas

Discussion: Preparing for the BIG 2019 Annual Report

Work group will:

- review the 2019 Annual Report,
- review the timeline for preparing the 2019 report,
- report on implementation activities accomplished in the 2018 calendar year,
- open discussion on expectations for the 2019 Annual Report, and
- discuss focus and priorities for 2019 calendar year.

Discussion: Review I-Plan Strategy 3.0 OSSF and 6.0 Illicit Discharges and Dumping Language

Workgroup will:

- review approved I-Plan wording and anticipate potential I-Plan revisions during 5th year of implementation (2019),
- discuss potential editorial changes,
- agree on any updates, and
- develop recommendations, if necessary, that will be presented at the annual BIG meeting for approval.

Adjourn

Upcoming Meeting Schedule

5/9/2019 Caney Creek CC meeting - (5:30 PM, Caney Creek Chapel, Sargent, TX)
5/23/2019 Animals and Agriculture Work Group – (9:00 AM, HARC, The Woodlands)
5/23/2019 Oyster Creek CC meeting (3:00 PM – Angleton County Library Lake Jackson)
6/4/2019 BIG Spring Meeting (1:00 PM – H-GAC)
6/11/2019 East and West Fork San Jacinto River Work Group – (HARC, The Woodlands)
6/12/2019 Basin 11 Leadership Forum – (10:00 AM, ACC, Alvin)

Instructions to call into BIG meetings:

To call in, dial 713-481-0090 (or 800-240-3895). You will be asked to enter your pass code, followed by the # sign. The pass code is 1084242. If you dial in before H-GAC, you will hear "music on hold". Once H-GAC dials in, the music will cease, and the conference call will begin. During the course of the conference, you may hear beeps. A single beep indicates someone has joined the conference call. A double beep indicates someone has left the conference call. Remember--if you do press hold, everyone will hear your hold music.

In compliance with the Americans with Disabilities Act, H-GAC provides for reasonable accommodation for persons attending H-GAC functions. Requests should be received by H-GAC 24 hours prior to the function.



BACTERIA IMPLEMENTATION GROUP

**On-Site Sewage Facilities and Illicit Discharges Work Group
Meeting Summary
Monday, May 6, 2019
10:00 AM to 12:00 PM
H-GAC Conference Room B, Second Floor**

Call to Order/Welcome/Introductions

Darla Branch (Chambers Co.), Richard Chapin (COH), Danielle Cioce (HC), Keith Miles (Montgomery Co.), Carol LaBreche (COH), Brian Sims (H-GAC), Robert Snoza (HCFCD), Mike Thornhill (Utilities)

Review Summary from 5/2/18 Meeting

Work group reviewed the summary from the previous year and did not provide any changes.

Presentation: Update on ongoing H-GAC OSSF Implementation

- Brian Sims and Jessie Casillas

H-GAC staff reviewed OSSF implementation covering the OSSF database, Homeowner Education, OSSF Visual Inspection Course, and the OSSF Supplemental Environmental Project (SEP). Staff noted that there remains a gap in data for Grimes and San Jacinto counties. Additionally, the database is going through a quality check. Staff with responsibility for the OSSF database are new and will be reviewing the process for acquiring data from the authorized agents. Staff will also be working to determine alternatives for the data covering Grimes and San Jacinto counties. Staff will be working on hosting future homeowner education courses. The next one is planned for the fall at Brazosport College and will target communities in the Oyster Creek and Bastrop Bayou watersheds. The Visual Inspection Course is the instruction for real estate inspectors. H-GAC is working to get the course recertified by the Texas Real Estate Commission to allow for CEUs to be collected. Finally, staff reviewed the SEP, also called the wastewater assistance program. Funding for the SEP comes from the TCEQ. Additional funding has also been provided by the Harris County District Attorney's Office and from private foundations. Homeowners are not required to provide any funds; however, they must meet income requirements. There have been 16 completed projects and 14 projects that have been awarded funding. There are another 26 that have been approved but are waiting on funding. Four projects have been completed in the BIG project area and another six have been awarded.

Discussion: Preparing for the BIG 2019 Annual Report

Staff provide copies of the 2018 Annual Report. The work group reviewed the report. Staff reviewed the timeline for preparing the 2019 report and asked for any actions completed by the attendees. Attendees discussed expectations for the 2019 Annual Report. Each action area was reviewed and discussed. Staff reviewed the Dallas Waste Hauler program which includes an automated tracking system.

Discussion: Review I-Plan Strategy 3.0 OSSF and 6.0 Illicit Discharges and Dumping Language

Staff provided the relevant sections of the I-Plan. Section 6 contained revised language to reflect the addition of boater wastes as a potential source of fecal bacteria. The work group discussed the changes.

Adjourn

Upcoming Meeting Schedule

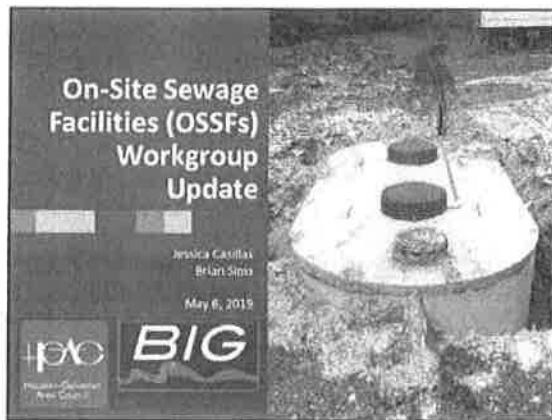
5/9/2019 Caney Creek CC meeting - (5:30 PM, Caney Creek Chapel, Sargent, TX)
5/23/2019 Animals and Agriculture Work Group – (9:00 AM, HARC, The Woodlands)
5/23/2019 Oyster Creek CC meeting (3:00 PM – Angleton County Library Lake Jackson)
6/4/2019 BIG Spring Meeting (1:00 PM – H-GAC)

6/11/2019 East and West Fork San Jacinto River Work Group – (HARC, The Woodlands)
6/12/2019 Basin 11 Leadership Forum – (10:00 AM, ACC, Alvin)

Instructions to call into BIG meetings:

To call in, dial 713-481-0090 (or 800-240-3895). You will be asked to enter your pass code, followed by the # sign. The pass code is 1084242. If you dial in before H-GAC, you will hear "music on hold". Once H-GAC dials in, the music will cease, and the conference call will begin. During the course of the conference, you may hear beeps. A single beep indicates someone has joined the conference call. A double beep indicates someone has left the conference call. Remember--if you do press hold, everyone will hear your hold music.

In compliance with the Americans with Disabilities Act, H-GAC provides for reasonable accommodation for persons attending H-GAC functions. Requests should be received by H-GAC 24 hours prior to the function.

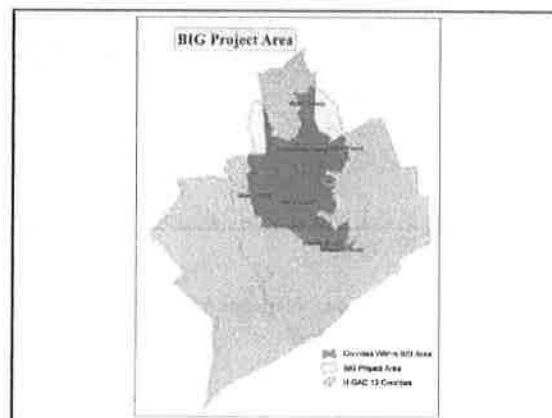


Ongoing Projects

- Database and OSSF Information System Updates
- Homeowner Education
- OSSF Visual Inspection Course for Home Inspection Professionals
- OSSF Supplementary Environmental Project

OSSF Information System Update

<http://arcgis02.h-gac.com/ossf/>



Homeowner Education

- 2 Hour Course
- Course covers:
 - Basics of OSSF operations and maintenance
 - Pointers to assist with maintaining conventional, low-pressure dosing (LPD), and aerobic treatment unit (ATU) systems
- **NOT** the same as the Basic Wastewater Operation class to obtain Wastewater Class D License and **NOT** approved for Homeowner Maintenance Training/Aerobic Treatment Operation and Maintenance

Homeowner Education

- Class will be offered by H-GAC through various watershed-based programs within the region.
- Class will be hosted by Brazosport College in the Fall.
- Planning to contact other Community Colleges in the area to host the program as well.

Visual Inspection Course for Real Estate Inspectors

- **6 Hour Course**
- **Course covers:**
 - Basics of OSSF operations and maintenance
 - OSSF rules and regulations
 - Maintenance, operation, and visual inspection of conventional, low-pressure dosing (LPD), and aerobic treatment unit (ATU) systems
- Course has been submitted to the Texas Real Estate Commission for approval for CEUs.

Wastewater Assistance Program

Project Background

- Provides assistance to qualifying homeowners to repair or replace malfunctioning or failing on-site sewage facilities (OSSFs).
- Funding may also be used to provide extension of first-time sewer service, pump-out and sludge hauling, etc.
- Eligible homeowners are not charged for any portion of the cost of the project (no homeowner cost share).

Wastewater Assistance Program

Applicant Qualifications

- Must own and reside at the property
- Must be at or below 80% of the median household income for the county
- Must have a failing on-site sewage facility (includes those who have no system)

Wastewater Assistance Program

Project Funding


- Funding for this project is provided through a Supplemental Environmental Project from the Texas Commission on Environmental Quality.
- Additional funding is received from the Harris County District Attorney's Office.
- Funding available from Olin and Dow Corporations, but only available for Brazoria County.

Wastewater Assistance Program


Project Funding

SUPPLEMENTAL ENVIRONMENTAL PROJECT FUNDING
for SEPTIC or AEROBIC SEWAGE FACILITY REPAIR/REPLACEMENT

MONIES FURNISHED WITH PENALTY SAVED FROM A TEXAS COMMISSION ON ENVIRONMENTAL QUALITY ENFORCEMENT ACTION



SUPPLEMENTAL ENVIRONMENTAL PROJECT FUNDING
SEPTIC or AEROBIC SEWAGE FACILITY REPAIR/REPLACEMENT
DONATED BY



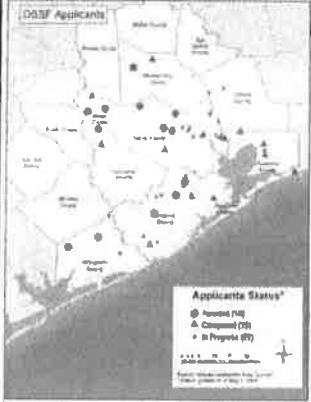
HARRIS COUNTY DISTRICT ATTORNEY'S OFFICE

Wastewater Assistance Program

Project Funding

Funding Source	Amount
Harris County District Attorney's Office	\$216,950
TCEQ	\$74,025
Dow/Olin	\$20,000
TOTAL	\$310,975

- Funding from Harris County is not limited to Harris County.
- Funding from Dow and Olin is limited to Brazoria County.
- Funding from TCEQ cannot be used for homeowners who are under enforcement or have been issued a notice of violation



Category Descriptions

- **Completed** – a repair or replacement has been successfully completed and Invoice processed.
- **Awarded** – work has been awarded to a vendor and a purchase order issued. Funds have been allocated for the work, but work has not yet been completed.
- **In Progress** – applicant has been approved for the program, but work has not yet been awarded to a vendor. Funds have not been allocated.

Applicant Status*

- Approved (14)
- ▲ Completed (19)
- ◆ In Progress (87)

Wastewater Assistance Program

Project Expenditures

Work Completed (as of April 30, 2019)	Amount
OSSF Repairs Completed (8)	\$26,890.25
OSSF Replacements Completed (8)	\$79,025.00
TOTAL	\$105,915.25

Work Awarded (as of April 30, 2019)	Amount
OSSF Repairs Awarded (2)	\$5,205.00
OSSF Replacements Awarded (13)	\$79,025.00
TOTAL	\$163,940.00

Wastewater Assistance Program

Total Project Expenditures

Project Expense	Amount
Work Awarded	\$105,915.25
Work Completed	\$169,145.00
TOTAL	\$275,060.25

Wastewater Assistance Program


Project Funding Remaining



Category	Amount
Total Funding	\$310,975.00
Total Expenses	(\$275,060.25)
TOTAL	\$35,914.75

Wastewater Assistance Program

Project Successes

- Installation of a new aerobic OSSF in Baytown (Harris County)
- Referred by Harris County Engineering







Wastewater Assistance Program

Project Successes

- Installation of a new aerobic OSSF in Baytown (Harris County)
- Referred by Harris County Engineering




Wastewater Assistance Program

Project Successes

- Installation of a new aerobic OSSF in Houston (Harris County)




Conventional Grassfield New aerobic OSSF with spray field

Wastewater Assistance Program

Project Successes

- Installation of a new aerobic OSSF in Hempstead (Waller County)
- Referred by Waller County Environmental Division




Pipe discharging to field New aerobic OSSF

Wastewater Assistance Program

Project Successes

- Installation of a new aerobic OSSF in Brookshire (Waller County)
- Referred by Waller County Environmental Division

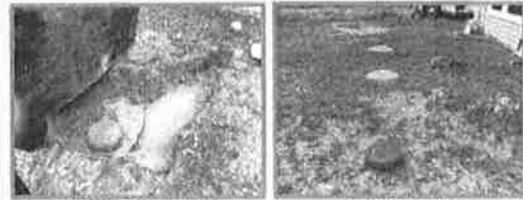


New aerobic OSSF

Wastewater Assistance Program

Project Successes

- Repair of aerobic OSSF in Montgomery (Montgomery County)



Existing connections from house to tank Repaired aerobic system

Wastewater Assistance Program

Project Successes



- Installation of new aerobic OSSF in Hitchcock (Galveston County)



Failed conventional system New aerobic OSSF

Questions?

Brian Sims
Senior Planner
Houston-Galveston Area Council
Phone: (713) 933-2433
brian_sims@hgaac.com





**Animal and Agriculture Work Group
Meeting Agenda
Thursday, May 23, 2019
9:00 AM to 11:00 AM
Houston Advanced Research Center
8801 Gosling Rd., The Woodlands, TX 77381**

Call to Order/Welcome/Introductions

Review Summary from 4/26/2018 Meeting

Discussion: Preparing BIG 2019 Annual Report – I-Plan Strategies 7.0 Animal and Agriculture Sources

Work group will:

- review the 2018 Annual Report,
- review the timeline for preparing the 2019 report,
- report on implementation activities accomplished in the 2018 calendar year, and
- discuss focus and priorities for 2019 calendar year.

Discussion: Review I-Plan Language for Strategies 7.0 Animal and Agriculture

Work group will:

- review approved I-Plan wording and anticipate potential I-Plan revisions during 5th year of implementation (2019),
- agree on any updates, and
- develop recommendations, if necessary, that will be presented at the annual BIG meeting for approval.

Adjourn

Upcoming Meeting Schedule

6/4/2019 BIG Spring Meeting (1:00 PM)
6/11/2019 East and West Fork of the San Jacinto River Work Group
6/12/2019 Green Infrastructure Workshop (Pearland) Registration is free -
<https://www.eventbrite.com/o/green-infrastructure-for-texas-18604831521>

Instructions to call into BIG meetings:

To call in, dial 713-481-0090 (or 800-240-3895). You will be asked to enter your pass code, followed by the # sign. The pass code is 1084242. If you dial in before H-GAC, you will hear "music on hold". Once H-GAC dials in, the music will cease and the conference call will begin. During the course of the conference, you may hear beeps. A single beep indicates someone has joined the conference call. A double beep indicates someone has left the conference call. Remember--if you do press hold, everyone will hear your hold music.



**Animal and Agriculture Work Group
Meeting Summary
Thursday, May 23, 2019
9:00 AM to 11:00 AM
Houston Advanced Research Center
8801 Gosling Rd., The Woodlands, TX 77381**

Call to Order/Welcome/Introductions

Shannon Dietz (Harris Co.), Ray Flora (Liberty Co.), Brandon Gregson (Montgomery Co.), Andrew Isabell (Walker Co.), Brian Koch (TSSWCB), Robert Snoza (HCFCD)

Review Summary from 4/26/2018 Meeting

Work group reviewed the meeting summary from the previous year. No changes were requested.

Discussion: Preparing BIG 2019 Annual Report – I-Plan Strategies 7.0 Animal and Agriculture Sources

Staff provided copies of the 2018 Annual Report for review. The work group reviewed the 2018 Annual Report and discussed current implementation. Staff reviewed the timeline for preparing the 2019 report and asked for any implementation to be provided by summer.

Discussion: Review I-Plan Language for Strategies 7.0 Animal and Agriculture

Staff provided copies of section 7 for the group to review and discuss. Staff noted that much of the revision included the addition of language to address the expansion of the project area. The expansion included working forest lands that the Texas Forest Service (TFS) helps land owners manage. The revision includes language from the TFS website. The work group reviewed the document and considered the draft changes. The group discussed how to move the needle on encouraging landowners to adopt best practices. One interesting thought was to seek legislative approval to stack a water quality management plan tax exemption on top of an ag exemption.

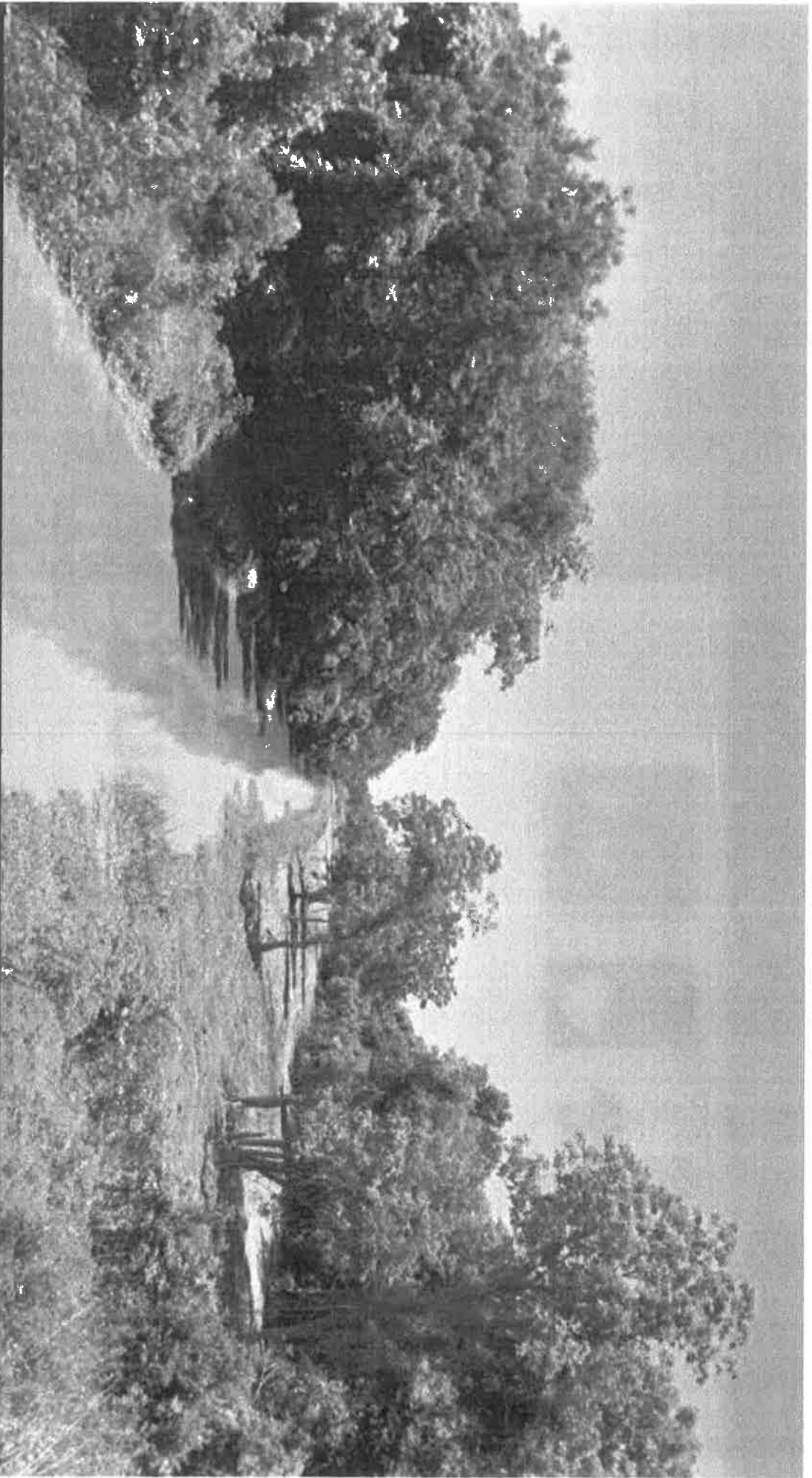
Adjourn

Upcoming Meeting Schedule

6/4/2019 BIG Spring Meeting (1:00 PM)
6/11/2019 East and West Fork of the San Jacinto River Work Group
6/12/2019 Green Infrastructure Workshop (Pearland) Registration is free -
<https://www.eventbrite.com/o/green-infrastructure-for-texas-18604831521>

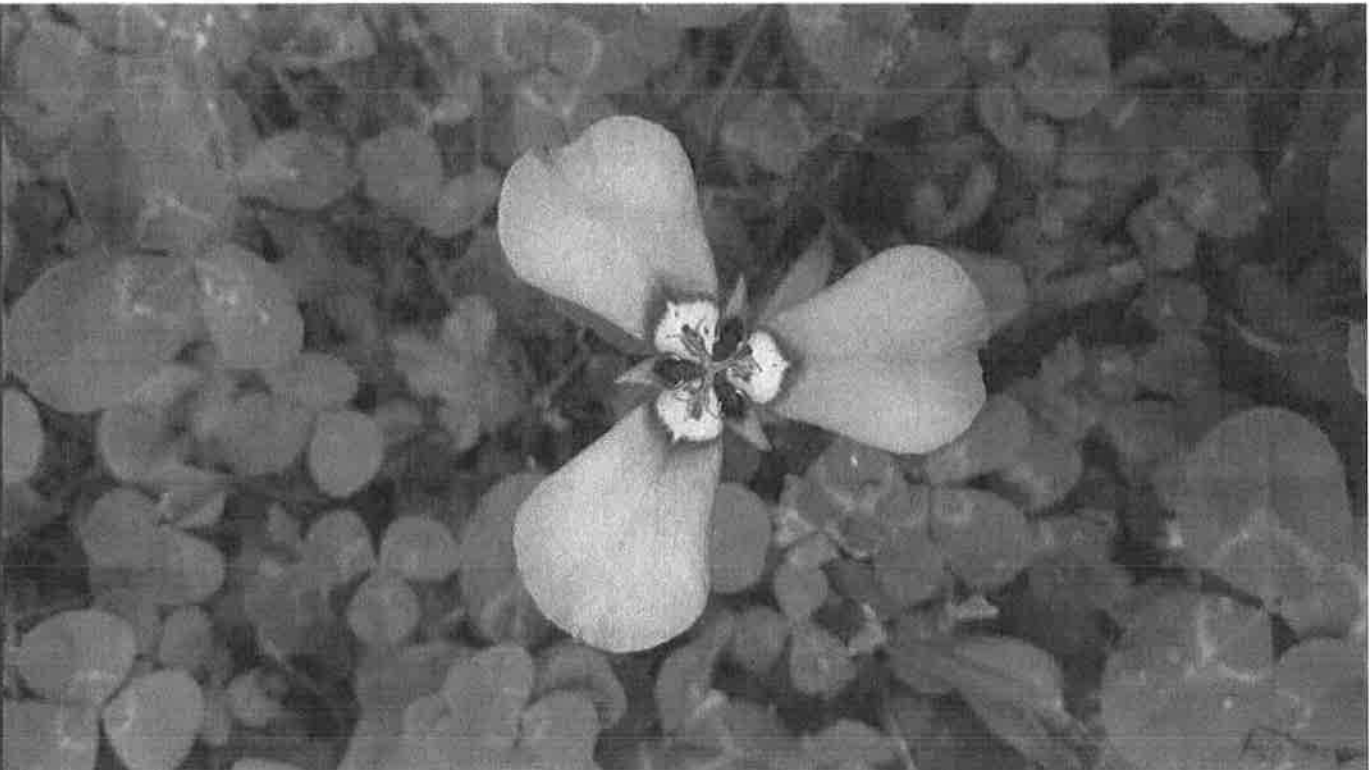
Instructions to call into BIG meetings:

To call in, dial 713-481-0090 (or 800-240-3895). You will be asked to enter your pass code, followed by the # sign. The pass code is 1084242. If you dial in before H-GAC, you will hear "music on hold". Once H-GAC dials in, the music will cease and the conference call will begin. During the course of the conference, you may hear beeps. A single beep indicates someone has joined the conference call. A double beep indicates someone has left the conference call. Remember--if you do press hold, everyone will hear your hold music.



Upper Oyster Creek TMDL Implementation Plan

Annual Meeting
April 11, 2019

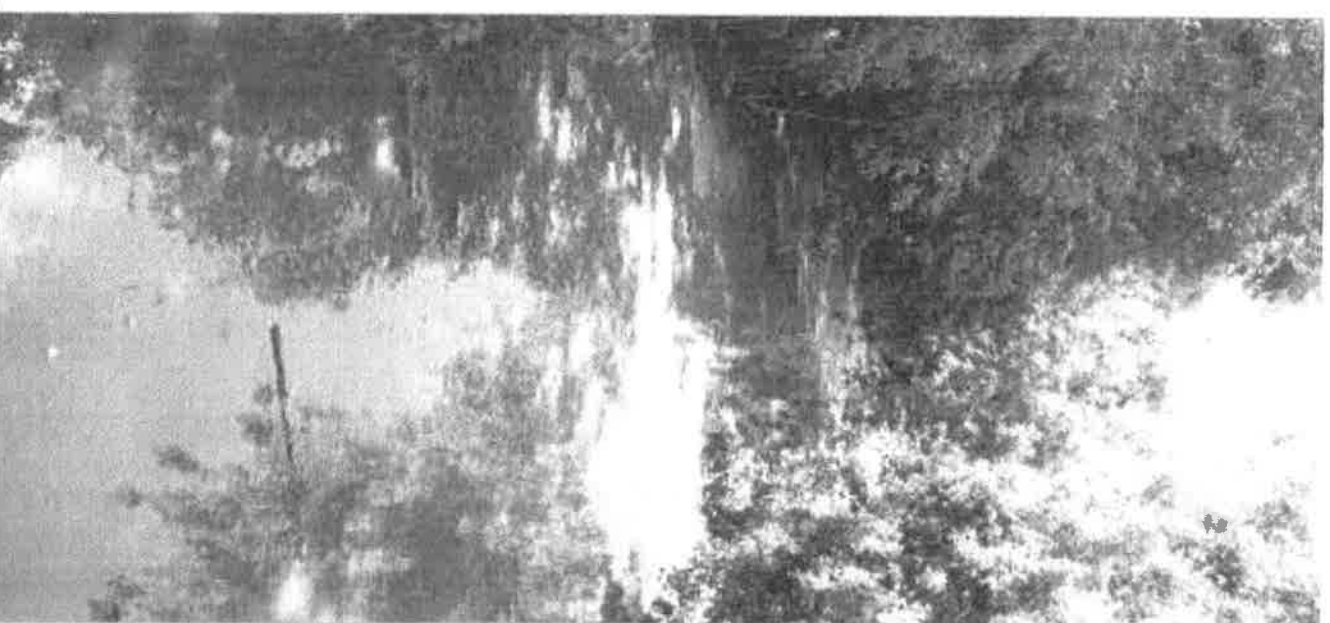


**Welcome,
and Thank You
for Coming.**



Agenda

- Project History
- Water Quality Status
- Implementation Progress
 - 2018 Review
- Plans for 2019/2020
- Open Discussion





Project History

Upper Oyster Creek
TMDL I-Plan

Quality Challenges

- Water quality monitored
- Assessed against state water quality standards
- Has not supported contact recreation (fecal waste), aquatic life (dissolved oxygen)

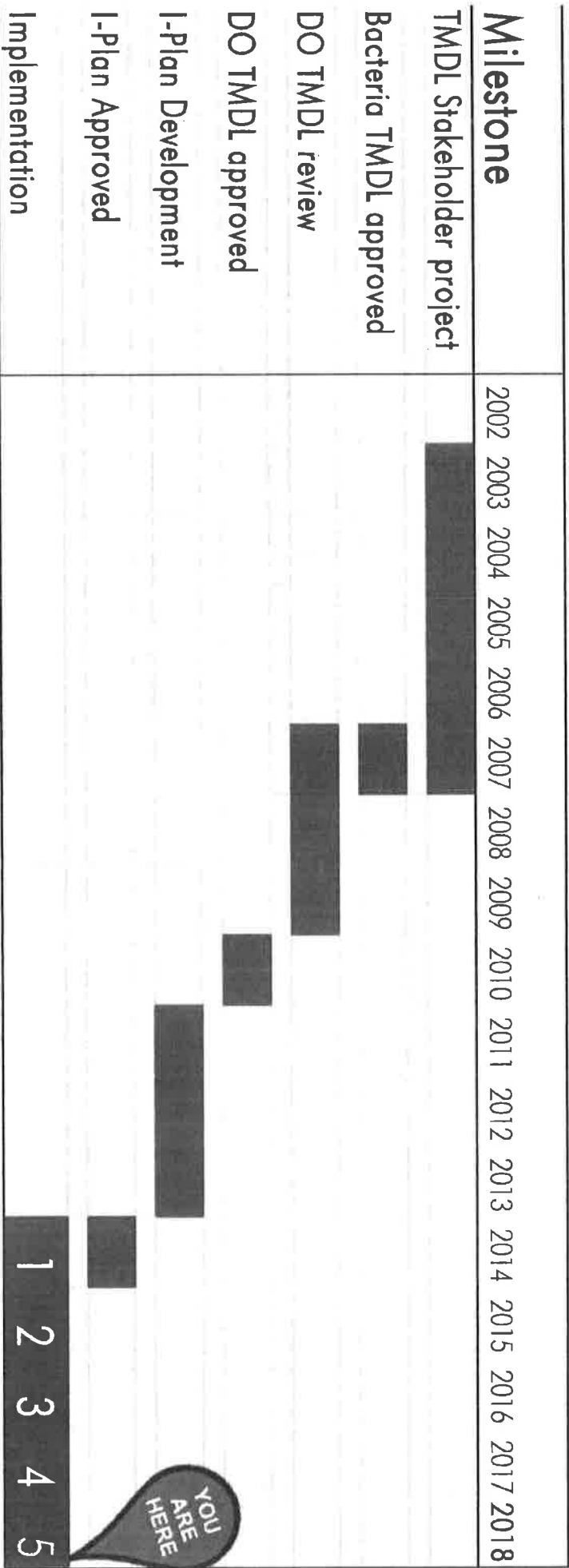


Planning for Water Quality

- **Total Maximum Daily Loads** –
 - Specific constituents (*E. coli*; CBOD5, NH3-N); reduction needs
- **Implementation Plan**
 - Answers “how, when, where, who, what”
 - Locally led, reviewed annually

Project Timeline

2019



Milestone: Year 5 completed



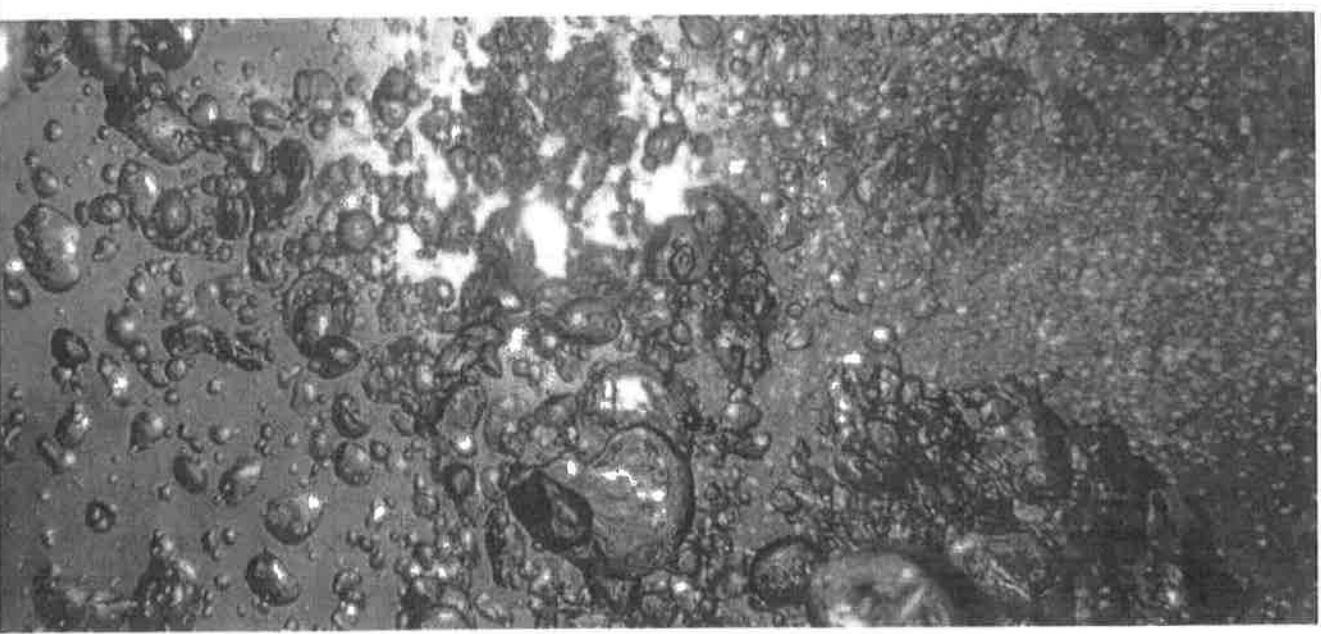
Water Quality Status

Upper Oyster Creek
TMDL I-Plan

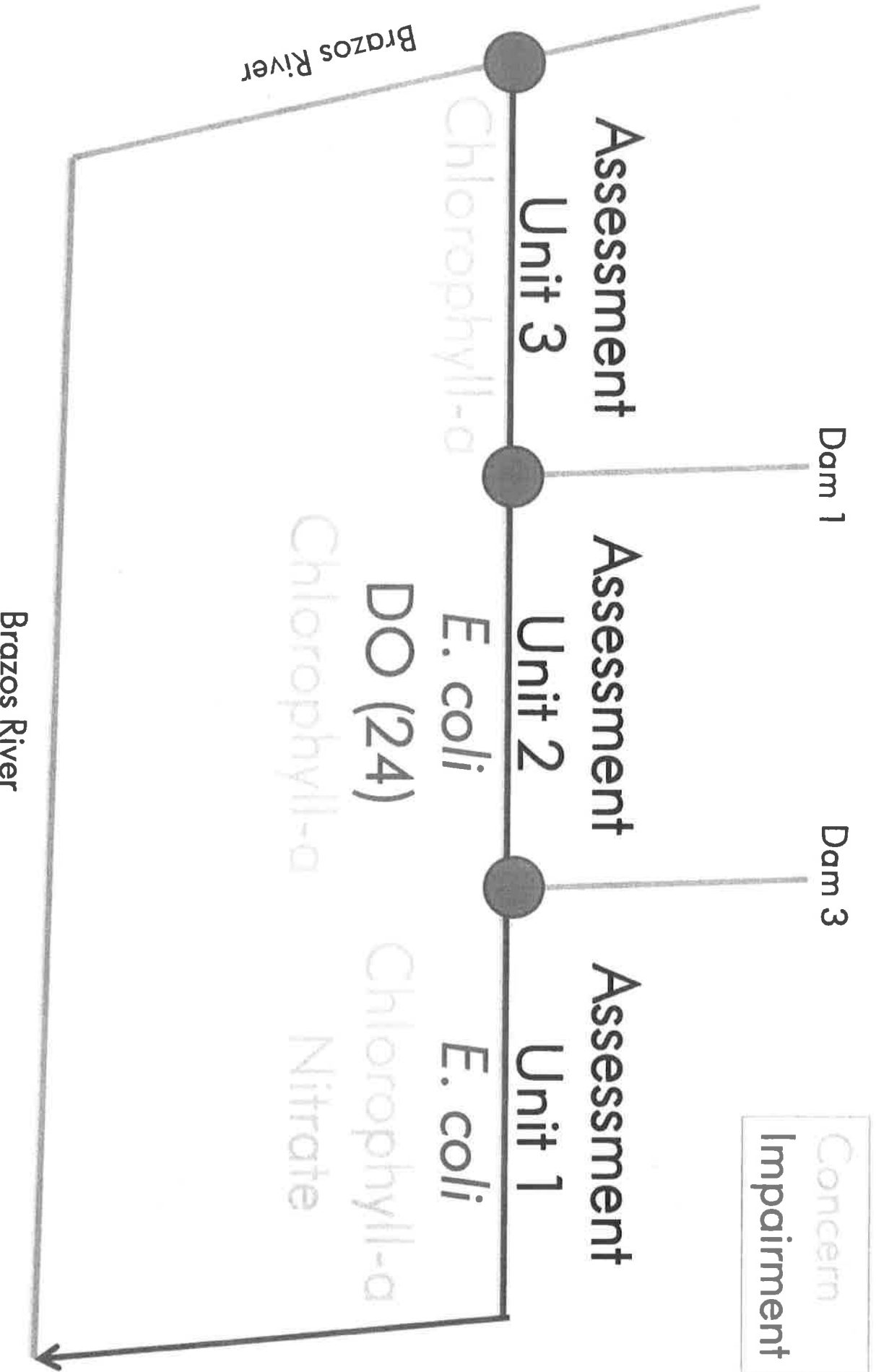
Water Quality Status

The 2018 Evaluation
considered:

- Regulatory status
- Ambient Water Quality
- Sanitary Sewer Overflows
- Wastewater Treatment
Facility Effluent

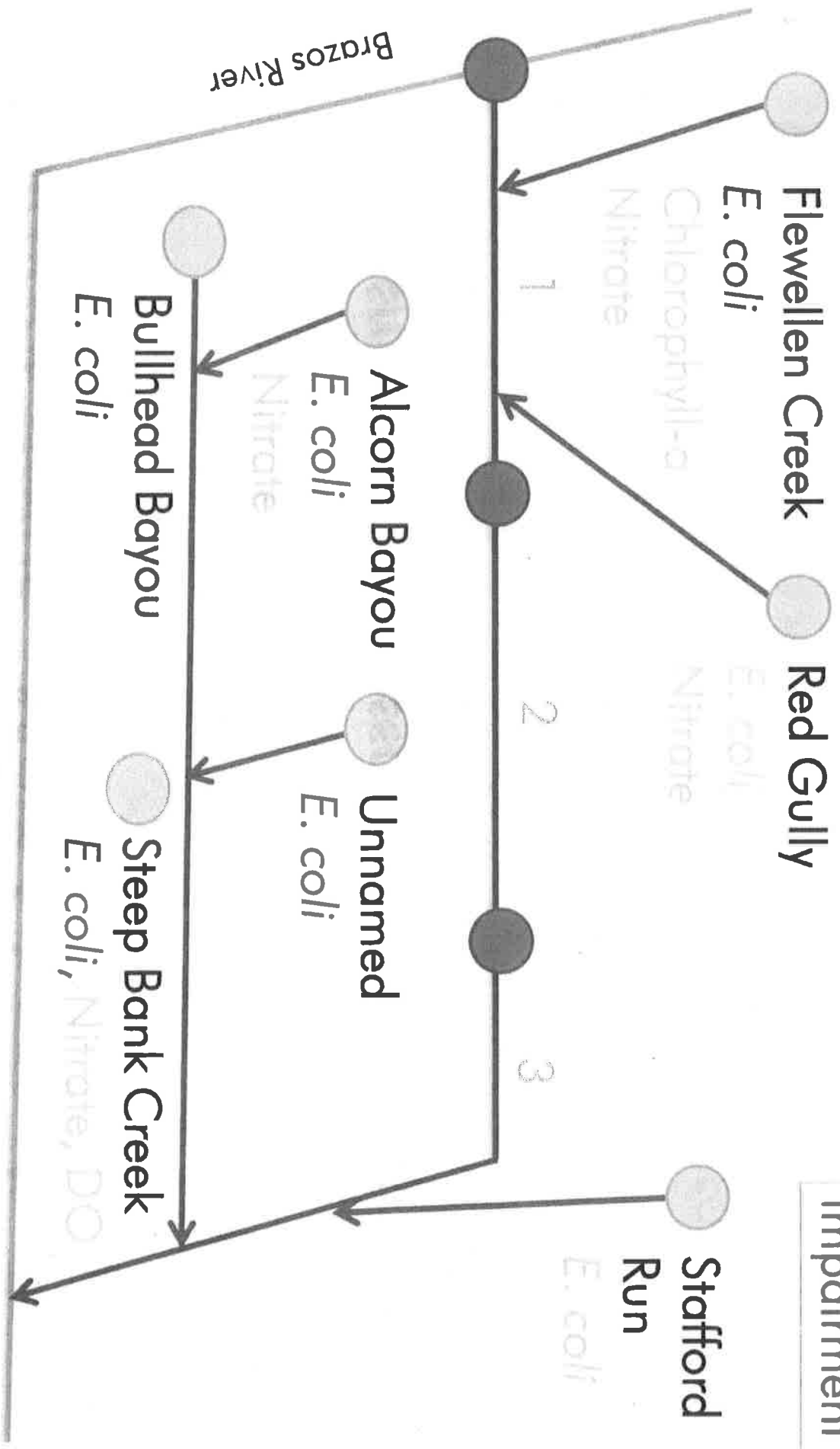


Regulatory Status - Main Channel



Regulatory Status - Tributaries

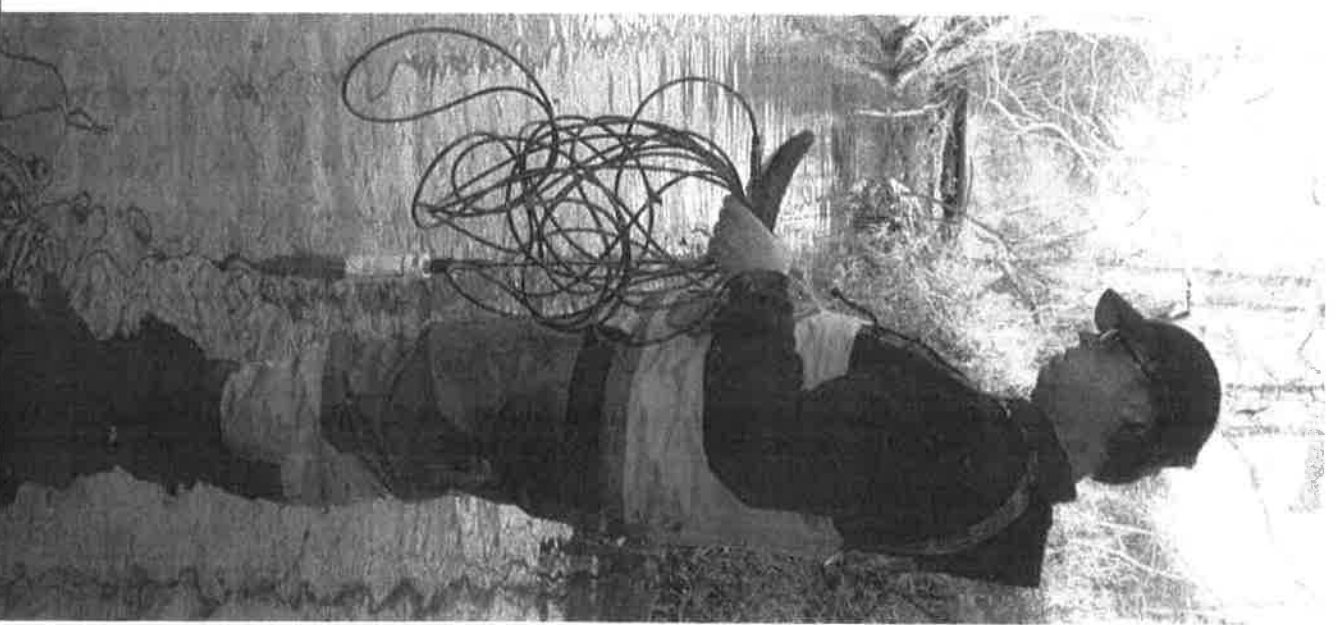
Concern
Impairment



Brazos River

Ambient Data

- TCEQ monitoring data, TIAER special study
- 2014-2018
- Focus on *E. coli*, DO, Nitrate, Chlorophyll-*a* on main channel stations

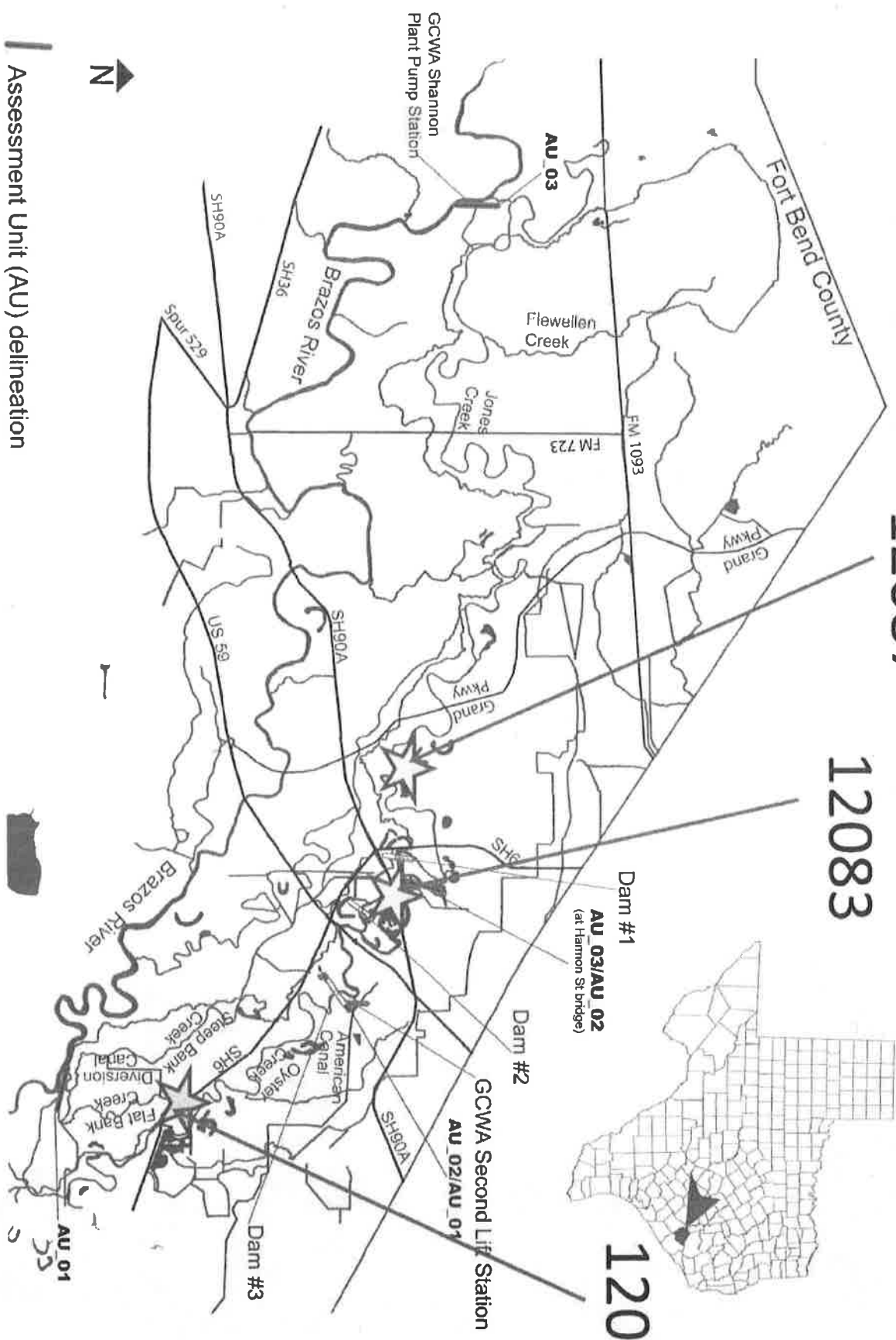


Monitoring Stations

12087

12083

12074



Assessment Unit (AU) delineation

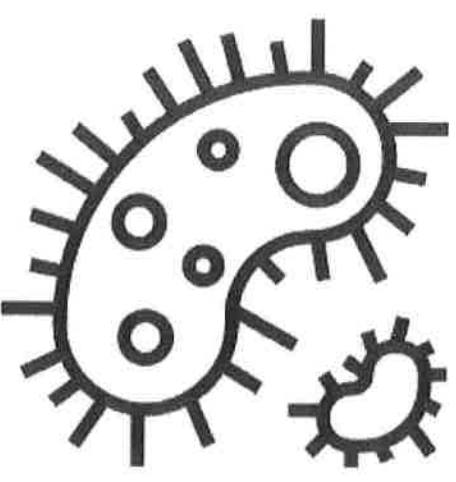


-5 0 5 10 Kilometers



Ambient Data - Bacteria

- Assessment Unit 3
 - Bacteria geomean – 127 MPN/100ml
(Max. 5800)
- Assessment Unit 2
 - Bacteria geomean – 111 MPN/100ml
(Max. 11,000)
- Assessment Unit 1
 - Bacteria geomean – 188 MPN/100ml
(Max. 4100)



Ambient Data – DO (grab)

- Assessment Unit 3
 - DO (grab), 7.3% < screening level (4 mg/l)
 - None less than minimum (1 mg/l)
- Assessment Unit 2
 - DO (grab), 29.7% < screening level (4 mg/l)
 - None less than minimum (1 mg/l)
- Assessment Unit 1
 - DO (grab), 11.1% < screening level (4 mg/l)
 - None less than minimum (1 mg/l)



Ambient Data – DO (24)

- Assessment Unit 3
 - DO (24 hr.) Minimum, 2.5% (3 mg/l)
 - DO (24 hr.) Average, 22.5% (4 mg/l)
- Assessment Unit 2
 - DO (24 hr.) Minimum, 15% (3 mg/l)
 - DO (24 hr.) Average, 30% (4 mg/l)
- Represents TIAER 2-year data, 2016-2017



Ambient Data – Nitrate and Chlorophyll-a

- Assessment Unit 3

- Nitrate N – 2.8% > screening level (mg/l)
- Chlorophyll-a – 30.6% > screening level (mg/l)

- Assessment Unit 2

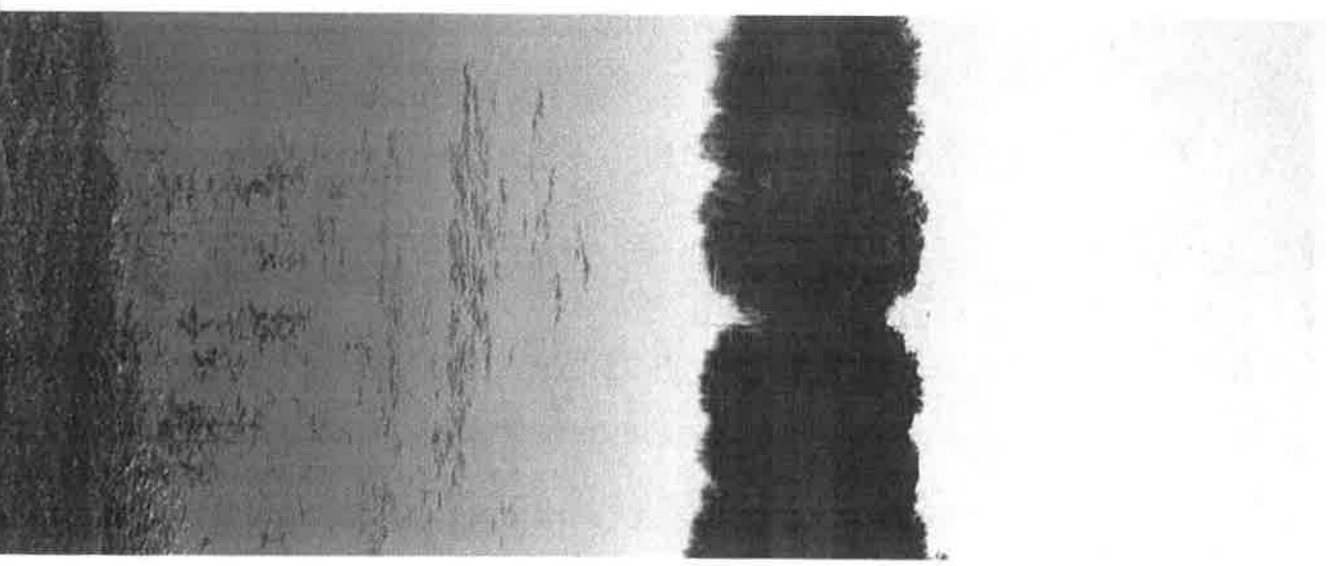
- Nitrate N – 5.1% > screening level (mg/l)
- Chlorophyll-a – 30.8% > screening level (mg/l)

- Assessment Unit 1

- Nitrate N – 82.4% > screening level (mg/l)
- Chlorophyll-a – 81.3% > screening level (mg/l)

Ambient Data – Takeaways

- Bacteria still an issue, but not insurmountable
- DO continues to be a challenge in AU2
- Nitrate/Chlorophyll-a concern, especially for AU1 (80%+ above standard)



Sewer Overflows

- SSOs reported to TCEQ
(may not reflect all)
- Assessed 2016-2018
 - Assessed for totals (volume, number, causes), volume by cause, number by cause
- 2018 data is incomplete

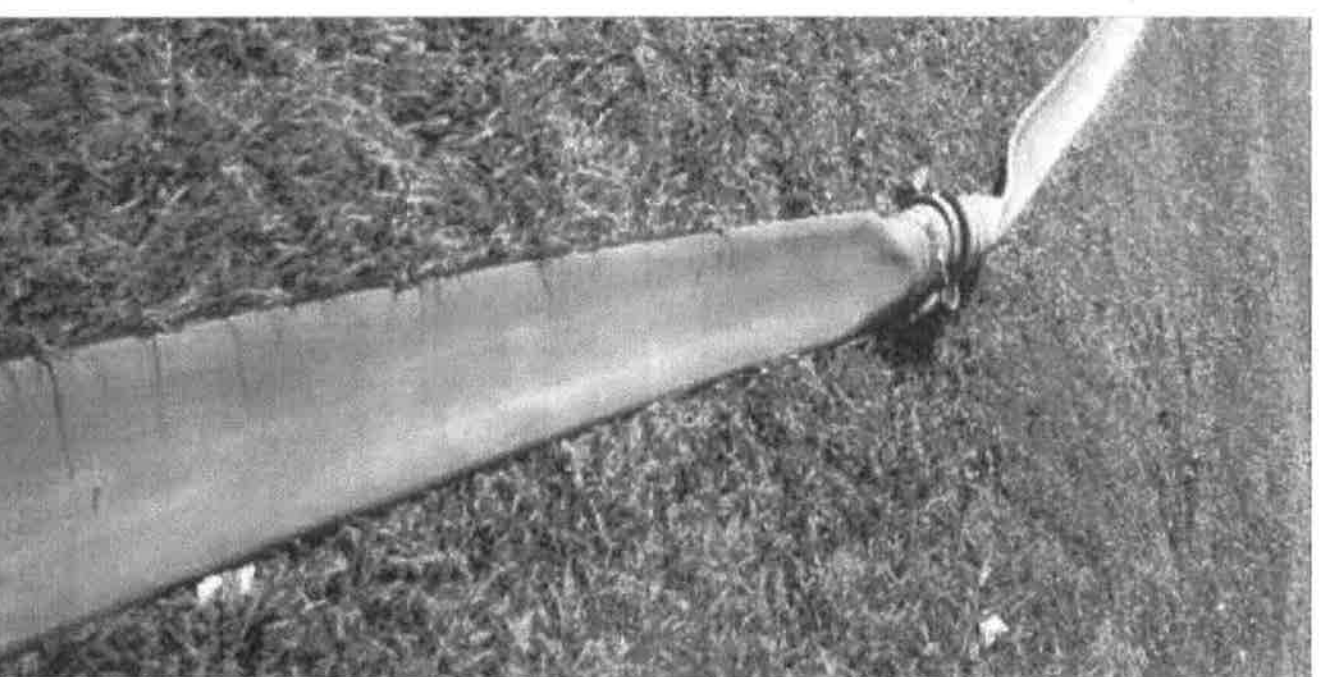


Period	Number Reported	Volume In gallons	Facilities Reporting
Total (2016-2018)	24	232,245	7
2016	12	117,520	7
2017	11	113,825	4
2018*	1*	900*	1*

SSO - Causes

Causes

- Assessed causes as reported
- Broke into 9 categories
- Actual causes may be multiple
 - E.g. excess rainfall in a broken line, with a blockage
- Lift Stations, I&I prominent causes



SSO Cause	Number Reported	% of total Volume
Blockage - Fats/Grease	1	0.4%
Blockage – Other Cause	1	<0.1%
Collection System Structural Failure	2	0.2%
Lift Station Failure	7	44.4%
Power Failure	1	4.3%
Rain / Inflow / Infiltration	4	37.4%
Unknown Cause	3	10.8%
WWTP Operation or Equipment Malfunction	5	2.4%

Wastewater Facilities

- Data source – Discharge Monitoring Reports, TCEQ
- Assessed 2016-2018
- Bacteria, NH₃, CBOD₅
- Generally performing well



WWTF Results

TMDL Constituent	Number of Exceedances	% of total Samples
Bacteria (<i>E. coli</i>)	0	0
CBOD5	0	0
Ammonia (NH3N)	14	1.7%

Water Quality Summary

- Improvement in some areas, issues persist in others.
- Impairments/concerns still present throughout system
- Continued growth may continue to impact
- WWTFs doing well.



Implementation Progress

Upper Oyster Creek
TMDL I-Plan

Implementation Plan

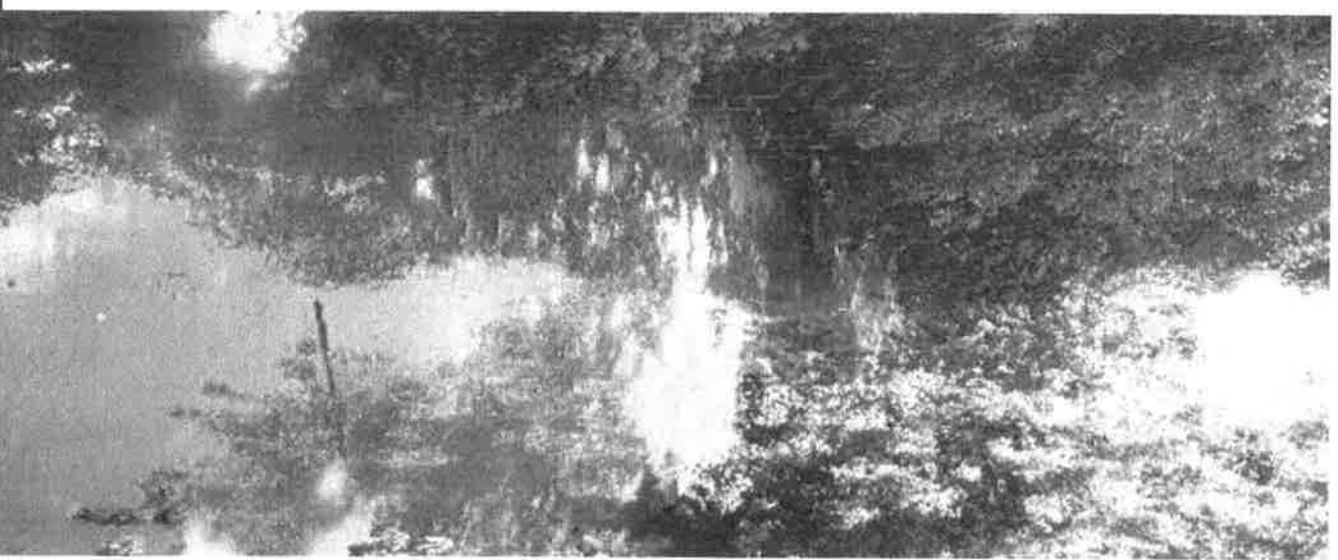
Five Big Strategies

1. Monitoring and Research
2. Education and Outreach
3. Urban Nonpoint Sources (MS4s, general)
4. Agriculture, Invasives and Wildlife
5. Human Waste (WWTFs, SSOs, OSSFs)



Implementation Progress

- Five-year milestone
- What needs to be changed?
- How can we support you?
- Group feedback on achievements



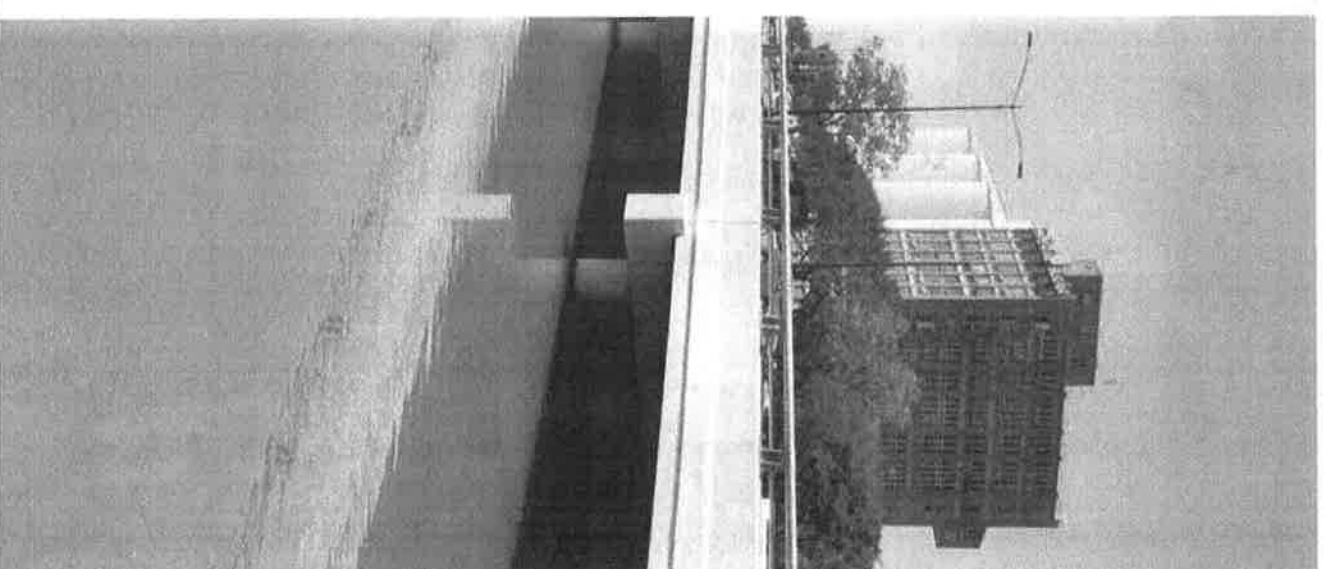
Next Steps

Continue to look for additional opportunities, funding

- Continue ongoing projects

- Continued monitoring

- Report for 2017 to be released including your feedback



Any Questions?

For more information, contact:

Justin Bower

Senior Environmental Planner

713-499-6653

Justin.Bower@H-GAC.com

Houston-Galveston Area Council

3555 Timmons Lane, Suite 120

Houston, TX 77027



www.Upperoystercreek.com

Upper Oyster Creek
TMDL I-Plan



Houston-Galveston Area Council

July 17, 2019

Ms. Earlene Lambeth (MC 203)
TMDL Project Manager
Water Quality Division
Texas Commission on Environmental Quality
12100 Park 35 Circle, Bldg. F
Austin, Texas 78753

RE: July 2019 Progress Report Houston Region TMDL Public Outreach Contract No. 582-18-91222,
Work Order 01.

Dear Ms. Lambeth:

Enclosed is one (1) copy of the FY 2019 4th Progress Report for Contract No. 582-18-81222-01. It covers all deliverable activities for the project period June 1, 2019 through June 30, 2019. Financial Statements, HUB report and Voucher will be submitted separately.

Included in this Report are:

1. One copy of the quarterly progress report for June 1, 2019 thru June 30, 2019.
2. Copies of meeting summaries and other pertinent materials from project related meetings.
3. Copy of H-GAC newsletters, related water quality meetings, workshops, seminars, and training.

We hope you find the quarterly report satisfactory. Any comments you have will be appreciated. If you have any questions, please contact me by phone (713-993-4549) or E-mail (todd.running@h-gac.com).

Sincerely,

Todd Running
Water Resources Program Manager
Community & Environmental Planning Dept.

Cc: Jason Leifester
Chris Loft

TR/srj
Enclosures

TMDL Program**Date: July 17, 2019****FY 2019 Progress Report #4****Time Period Covered: 6/01/2019 – 6/30/2019****Name of Project: Houston-Galveston Area TMDL Public Participation Project****Contract No./Work Order 582-18-81222-01****TASK #1 PROJECT ADMINISTRATION**

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
PRs (Task 1.1)	July 15, 2019	Completed on July 17, 2019.
Weekly E-mail Updates (Task 1.2)	Weekly	Provided hard copies with report.
FSRs (Task 1.3)	July 15, 2019	Provided as a separate report.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

Work performed for this task during this period included writing and assembling the monthly report.

TASK #2 PUBLIC OUTREACH AND SUPPORT FOR THE BIG AND RELATED IMPLEMENTATION ACITIVITIES

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Meetings, workshops, or outreach activities to discuss and monitor I-plan for the BIG (Task 2.1)	Up to four public meetings, workshops, or other outreach activities and up to ten associated work group meetings.	<ul style="list-style-type: none"> • <u>BIG Fall Meeting</u>: the fall meeting was held on October 23, 2018 during this project quarter. • <u>Coordination and Policy Work Group</u>: met on October 15, 2018. • <u>Coordination and Policy Work Group</u>: met on March 4, 2019. • <u>Coordination and Policy Work Group</u>: met on May 6, 2019. • <u>OSSF/Illicit Discharge Work Group</u>: met on May 6, 2019. • <u>Animals and Agriculture Work Group</u>: met on May 23, 2019. • <u>BIG Spring Meeting</u>: was held on June 4, 2019
Draft meeting or event agenda and materials (Task 2.2)	Two (2) weeks prior to meeting	The BIG Spring meeting was held on June 4, 2019. Meeting materials were shared with the TCEQ PM.
Draft meeting or event summary (Task 2.3)	Within two (2) weeks following completion of meeting	The BIG Spring meeting was held on June 4, 2019. A meeting summary was included as part of the weekly reports.
Final agenda and meeting or event summary, list of attendees and contact information, and	Within thirty (30) days of the completion of the meeting	Final meeting summary and agenda for each meeting has been included with this report. Any meeting materials and presentations have also been provided.

copies of any printed materials (Task 2.4)		
Implementation Summary Report (Task 2.5)	August 31, 2018	Not started.
Digital link to regional implementation database (Task 2.6)	August 31, 2018	Not due. Updated throughout the year.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

Staff met with BIG members for the Spring meeting on June 4, 2019. Work performed to prepare for the meeting included scheduling the meeting, identifying a meeting location, sending out meeting announcements and reminders, and preparing for the meeting, including developing meeting agendas and meeting materials most of this was performed in the month of May. Staff completed final data analysis and minor changes to the presentation prior to the meeting. A brief summary of the meeting is below. For a more extensive summary, please see the attached meeting summary included with this report.

June 4, 2019 BIG Spring Meeting: Meeting was held, and 37 stakeholders were in attendance. H-GAC presented an update on changes to the I-Plan, including discussion on incorporating silviculture and boater wastes. H-GAC reviewed data and information gathered for the 2019 Annual Report. H-GAC discussed the timeline for both topics. The BIG heard a presentation given by TIAER on two TMDLs in the upper Lake Houston watershed. TWRI presented on the latest research on bacteria source tracking. H-GAC staff presented on WPP work being carried out in the West Fork, Cypress and Spring watersheds.

Staff prepared for the East and West Fork of the San Jacinto River coordination committee meeting that was to be held on June 11, 2019. Preparation for this meeting included identifying a meeting location, sending out meeting announcements and reminders, and preparing for the meeting, including developing meeting agendas and meeting materials, so of which was performed in May. The meeting had to be canceled due to a scheduling error in which it was too late to alert the stakeholders. The meeting has been scheduled for July 24, 2019.

Staff also participated in workshops, outreach, and regional meetings in relation to this task. Those meetings are listed below under the heading Additional Related Meetings, Training, Events and Conferences.

TASK #3 PUBLIC OUTREACH SUPPORT FOR THE UPPER OYSTER CREEK COORDINATING COMMITTEE AND RELATED IMPLEMENTATION ACTIVITIES

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Meetings or events for Upper Oyster Creek (Task 3.1)	One public meeting and up to two events.	April 11, 2019 – the Upper Oyster Creek annual meeting was held. No additional meetings were held in June.
Draft meeting or event agenda and materials (Task 3.2)	Two (2) weeks prior to meeting	No meetings were held in June.
Draft meeting or event summary (Task 3.3)	Within two (2) weeks following completion of meeting	No meetings were held in June.
Final agenda and meeting or event summary, list of attendees and contact information, and copies of any printed materials (Task 3.4)	Within thirty (30) days of the completion of the meeting	No meetings were held in June.
Upper Oyster Creek annual report	With final PR	Staff started drafting the Annual Report .

Work Performed This Period

No meetings were held during June. Staff began drafting the meeting summary for the April 11, 2019 meeting. Additionally, staff began drafting the Annual Report.

TASK #4 PUBLIC OUTREACH SUPPORT AND IMPLEMENTATION PLAN DEVELOPMENT FOR CHOCOLATE BAYOU

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Draft I-Plan for Chocolate Bayou (Task 4.1)	December 15, 2018.	Draft I-Plan submitted on June 21, 2019.
Final I-Plan for Chocolate Bayou (Task 4.2)	May 15, 2019	Draft I-Plan submitted on June 21, 2019.
Meetings or events for Chocolate Bayou (Task 4.3)	Up to two public meetings or events	A meeting was held on June 13, 2019.
Draft meeting or event agenda and materials (Task 4.4)	Two weeks prior to meeting or event	Meeting materials were shared with TCEQ prior to the meeting.
Draft meeting or event summary (Task 4.5)	Within two weeks following completion of meeting or event	A summary for June 13, 2019 meeting was provided with the weekly reports.

Final agenda and meeting or event summary, list of attendees, and contact information, and copies of any printed materials (Task 4.6)	Within 30 days of the completion of the meeting or event.	A final meeting summary for the June 13, 2019 meeting has been attached to this report. The report includes a list of attendees and any contact information.
---	---	--

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

In June, staff completed the draft I-Plan and submitted the document to TCEQ on June 21, 2019. Staff also presented on the information contained in the document to stakeholders during a meeting held on June 13, 2019. A brief summary has been provided below. Please see the attached meeting summary for more details, including the list of attending stakeholders.

- June 13, 2019 Chocolate Bayou CC meeting: Chocolate Bayou CC met at the Brazoria County Public Library in Alvin. Four stakeholders were in attendance. Staff presented on updates and revisions to the TMDL document and TSD. Staff then provided an update on the I-Plan.

TASK #5 PUBLIC OUTREACH SUPPORT FOR OTHER TMDL PROJECTS IN THE HOUSTON REGION

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Support for other TMDL public outreach activities, as needed (Task 5.1)	As requested and scheduled.	No meetings or activities carried out during the quarter.
Draft meeting or event agenda and materials (Task 5.2)	Two (2) weeks prior to meeting	No meetings or activities carried out during the quarter.
Draft meeting or event summary (Task 5.3)	Within two (2) weeks following completion of meeting	No meetings or activities carried out during the quarter.
Final agenda and meeting summary, list of attendees and contact information, and copies of any printed materials (Task 5.4)	Within thirty (30) days of the completion of the meeting	No meetings or activities carried out during the quarter.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

No work was carried out for Task 5.

ADDITIONAL RELATED MEETINGS, TRAINING, EVENTS, AND CONFERENCES

- 1) Presentations:
 - a. June 12, 2019 – staff presented on LID to attendees of the Green Infrastructure for Texas conference in Pearland.
- 2) Meetings, Events and Conferences:
 - a. June 6, 2019 – Staff presented at the Montgomery County OSSF conference.
 - b. June 21, 2019 - Staff attended the GBEP Water and Sediment Quality Subcommittee and provided TMDL project updates.
- 3) Associated Implementation Projects and Programs
 - a. H-GAC is working with the Bayou Preservation Association to continue to address illicit discharges. BPA received funding from GBEP to target waterbodies in the BIG area to identify and remove illicit discharges.
 - b. OSSF SEP – H-GAC has an ongoing SEP project and has received funding through the state and from Harris County District Attorney’s Office to repair and replace failing systems. H-GAC is targeting OSSFs in areas with watershed-based plans, including the BIG project area. For more information on the program: <http://h-gac.com/community/water/ossf.aspx>.
- 4) Associated Partner Activities
 - a. No associated activities to report for June.

BRIEF DESCRIPTION OF OVERALL FINDINGS:

Staff spend the month of June executing two meetings, one the BIG and the other for Chocolate Bayou coordination committee members. Work preparing for both meetings was completed. In addition, staff prepared for the East and West Fork of the San Jacinto River coordination committee. That meeting had to be canceled due to a scheduling error which could not be corrected in time to hold the meeting. The meeting was rescheduled for July 24, 2019.

Staff also work to complete the draft Chocolate Bayou I-Plan. The I-Plan was delivered to TCEQ on June 21, 2019.

Significant Problems (describe any scheduling shortfalls, detail significant problems and how these problems were resolved, etc.): Other than the delay with the Chocolate Bayou I-Plan, no other issues arose. The draft plan was delivered in June.

Johnston, Steven

From: Johnston, Steven
Sent: Wednesday, June 12, 2019 11:49 AM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (June 3 - June 7)

Good Morning, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

June 3rd – June 7th:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (May 31, 2019):** \$82,375.78 **Remaining Budget Amount:** \$27,624.22

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - East and West Fork San Jacinto – June 11, 2019. Presentation and agenda sent to TCEQ PM.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look. More will be discussed at the next Coordination and Policy meeting.
- June 4, 2019 BIG Spring Meeting. Meeting was held and 37 stakeholders were in attendance. H-GAC presented an update on changes to the I-Plan, including discussion on incorporating silviculture and boater wastes. H-GAC reviewed data and information gathered for the 2019 Annual Report. H-GAC discussed the timeline for both topics. The BIG heard a presentation given by TIAER on two TMDLs in the upper Lake Houston watershed. TWRI presented on the latest research on bacteria source tracking. H-GAC staff presented on WPP work being carried out in the West Fork, Cypress and Spring watersheds.
- Public Outreach Events:
 - June 6, 2019 - Staff presented at the Montgomery County OSSF Conference. Conference included county public health staff and water quality professionals.
 - June 12, 2019 - LID workshop in Pearland. Staff will be presenting.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan. **Anticipate delivery the third week of June.**
- June 13, 2019 – Basin 11 elected officials, local government staff and water quality permittees will meet to discuss I-Plan and other water quality planning in the area. Calls and email were made to select members to encourage attendance.
- June 13, 2019 - Chocolate Bayou CC will meet at the Brazoria County Public Library in Alvin to hear an update to the draft I-Plan.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Thursday, June 20, 2019 2:19 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (June 10 - June 14)
Attachments: PR3-20Jun2019.pdf

Good Morning, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. I have also attached the 3rd progress report. Please let me know if you have any questions.

June 10th – June 14th:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (May 31, 2019):** \$82,375.78 **Remaining Budget Amount:** \$27,624.22

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - East and West Fork San Jacinto – June 11, 2019. Meeting canceled due to a scheduling error. Meeting has been rescheduled for July 24, 2019.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look. More will be discussed at the next Coordination and Policy meeting which is being scheduled for late July.
- Public Outreach Events:
 - June 12, 2019 - LID workshop in Pearland. Staff presented at the workshop.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completing the draft I-Plan. **Anticipate delivery the third week of June.**
- June 13, 2019 –Leadership Forum was held. Twelve local governments and permit holders were in attendance. Staff presented on basin water quality and discussed the ways to be involved in the review of draft watershed-based plans and opportunities to address impaired waters and implement completed plans.
- June 13, 2019 - Chocolate Bayou CC met at the Brazoria County Public Library in Alvin. Four stakeholders were in attendance. Staff presented on updates and revisions to the TMDL document and TSD. Staff then provided and update on the I-Plan.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Saturday, June 22, 2019 12:18 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (June 17 - June 21)

Good Afternoon, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. I will be out on vacation beginning June 24, 2019 and returning to the office on July 3, 2019. Please let me know if you have any questions.

June 17th – June 21st:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (May 31, 2019):** \$82,375.78 **Remaining Budget Amount:** \$27,624.22
- **Submitted 3rd Progress Report on June 20, 2019.**

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - East and West Fork San Jacinto – scheduled for July 24, 2019.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look. More will be discussed at the next Coordination and Policy meeting which is being scheduled for late July.
- Staff attended GBEP WSQ subcommittee and provided a TMDL update.
- Public Outreach Events:
 - None scheduled.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.
- Staff drafting Annual Meeting summary.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com

832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Sunday, July 7, 2019 5:03 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (June 24 - June 28) and (July 1 - July 5)

Good Afternoon, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

June 24th – June 28th:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (May 31, 2019):** \$82,375.78 **Remaining Budget Amount:** \$27,624.22
- **Received the 2019 Umbrella Contract from the TCEQ PM. Routed contract for Signatures.**

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - Coordination and Policy Work Group – scheduled for July 23, 2019.
 - East and West Fork San Jacinto – scheduled for July 24, 2019 in The Woodlands.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look. More will be discussed at the next Coordination and Policy meeting.
- Public Outreach Events:
 - None scheduled.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.
- Staff drafting Annual Meeting summary.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

July 1st – July 5th:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (May 31, 2019):** \$82,375.78 **Remaining Budget Amount:** \$27,624.22
- **2019 Umbrella Contract has been routed for Signatures.**

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - Coordination and Policy Work Group – scheduled for July 23, 2019.
 - East and West Fork San Jacinto – scheduled for July 24, 2019 in The Woodlands.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look. More will be discussed at the next Coordination and Policy meeting.
- Public Outreach Events:
 - None scheduled.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.
- Staff drafting Annual Meeting summary.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

OUR VIEWPOINT: Bacteria levels are no laughing matter

Save

Alex Woolsey The Facts (Jun 3 21, 2019)

Mention the presence of fecal bacteria in the water, and it seems everyone's inner 4-year-old boy comes out, trying to elicit snickers with bathroom humor.

Higher-than-acceptable fecal bacteria levels in Chocolate Bayou are no joking matter, however. They are potentially costing Brazoria County hundreds of thousands of dollars a year in recreation revenue.

Because of the high bacteria levels, activities such as commercial fishing and oyster harvesting essentially are not an option in the bayou. That robs the region of a slice of ecotourism dollars, which a study conducted by the Houston-Galveston Area Council Clean Rivers Program pegs at an estimated \$4 billion industry.

Efforts to clean up the bayou would benefit residents by opening the area up to more tourism and employment opportunities. While the upfront costs associated with ridding the waters of the dangerous levels might turn some people off, in the long run it is likely worth it for the area to address the problem.

Bacteria levels in the bayou recently have measured in excess of 126 colony forming units, or CFUs, the maximum the state considers safe for recreational use, according to the Texas Commission on Environmental Quality.

While officials say it's difficult to pinpoint exactly where the bacteria come from, since water passes through Houston, Fort Bend County and central Brazoria County before reaching Chocolate Bay and the Gulf of Mexico, that doesn't mean the problem is insurmountable.

One step will be to ensure privately maintained septic systems are not leaking waste into the bayou or its tributaries. Given the rural nature of sections along the bayou, this is not a small task, but it is a crucial one.

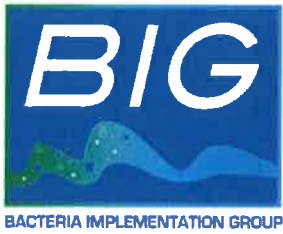
Not all of the bacteria is caused by humans though. Sources could include animal waste, a combination of feral animals such as cats and dogs as well as livestock. Progress in this area can be made through neutering efforts and trapping waste before it enters the water.

Of course, any body of untreated water — from small creeks to large bays — will have some presence of fecal bacteria. It must be kept below acceptable levels, however, or fish caught from it should not be eaten and people with open wounds should not swim in it. That is not the case with Chocolate Bayou.

People shouldn't come to associate Brazoria County waters with high fecal or dangerous bacteria levels, especially when it comes to thinking of how they should spend their weekends. Galveston County gets its fair share of recreation money from Houston, but for those who want to avoid the crowded beaches and find some solitude, Brazoria County has plenty of options.

Stakeholders in the region and state should continue studying the most effective ways to clean up Chocolate Bayou so it can be one of those options.

This editorial was written by Alec Woolsey, assistant managing editor of The Facts



**SPRING MEETING
Agenda**

**Tuesday, June 4, 2019
1:00 pm to 3:00 pm
H-GAC Conference Room B, Second Floor
3555 Timmons Lane**

(Instructions to attend the meeting via conference call can be found at the bottom of the Agenda)

Call to Order/Welcome/Introductions

Welcome by H-GAC

Introductions of BIG members & staff

Review Agenda. Each agenda item shall provide time for discussion by the BIG followed by comments from the audience.

Certification of Quorum

Approval of the Proposed Members & Alternates

BIG members will review the Bacteria Implementation Group Roster and approve as appropriate.

Approval of the October 23, 2018 Meeting Summary

BIG members will review, comment and approve as appropriate.

Public Comment

The public may sign up at the beginning of the meeting to make an informal comment of no more than three minutes.

Item One: I-Plan Revision Update

H-GAC staff will provide an update on revising the BIG Implementation Plan.

Item Two: 2019 Annual Report Update

H-GAC staff will review progress on the 2019 Annual Report covering implementation activities carried out in the 2018 calendar year.

Item Three: TMDL Program Updates

Dr. Jimmy Millican, Texas Institute for Applied Environmental Research, "Status of Additions to Indicator Bacteria TMDLs in the Lake Houston Watershed." .

Item Four: Presentation

Dr. Terry J. Gentry, Texas Water Resources Institute, "Use of Bacteria Source Tracking to Characterize Texas Watersheds."

Item Five: H-GAC Staff Presentations

Mr. Justin Bower – will present on watershed protection planning efforts within the BIG Project Area.

Ms. Kathy Janhsen – will present on the Water Innovation Strategies of Excellence Awards.

Item Six: Other Business/Roundtable

As time permits, H-GAC, BIG members, and stakeholders are encouraged to discuss implementation activities, related projects, and announcements.

Next Meeting Date

October 29, 2019

Adjourn

BIG Meeting Call-in instructions:

To call in, dial 713-481-0090 (or 800-240-3895). You will be asked to enter your pass code, followed by the # sign. The pass code is 1084242. If you dial in before H-GAC, you will hear "music on hold". Once H-GAC dials in, the music will cease and the conference call will begin. Remember--if you do press hold, everyone will hear your hold music.

In compliance with the Americans with Disabilities Act, H-GAC provides for reasonable accommodation for persons attending H-GAC functions. Requests should be received by H-GAC 24 hours prior to the function.

BACTERIA IMPLEMENTATION GROUP ROSTER (6/4/2019)

Last	First	Representing	Organization	Alternate1	Alternate 2
Bailes IV	Rep. Ernest	Agriculture (County)	San Jacinto County	Dale Everitt	
Bernhardt	Sarah	Conservation	Bayou Preservation Association	James "Ty" Kelly	
Brown	David	Resource Agency / Academia	US Geological Survey	Michael Lee	
Calvino**	Ralph	Business / Industry	Terracon	Clint Miller**	Jason Maldonado
Caraviotis	Jerry	Urban County	Harris County Public Health & Environmental Services		
Chapin	Richard	Large City	City of Houston	Zafar Ahmed	
Cioce	Danielle	Urban County	Harris County	Camila Biaggi	Nick Russo
Cooper	Christine	Small City	City of Conroe	Greg Hall	
Ehrlich	Denise	Business / Industry	Gulf Coast Authority	Shaun Austin	
Elliott	Catherine	Urban County	Harris County Flood Control District	Robert Snoza	Roberto Vega
Gossett	Sarah	Conservation	Galveston Bay Foundation	Scott Jones	
Harris	Teague	Utility District	IDS Engineering		
Isbell	Andrew	Rural County	Walker County		
Ivy	Tom	Conservation	Houston Sierra Club	Jim Williams	
La Breche	Carol	Large City	City of Houston	Richard Chapin	
Lane	Helen	Conservation	Houston Audubon Society		
Lindsey	Mike	Rural County	Montgomery County	Frank Green	Scott Nichols Reuben Martinez
Maske	Craig	Business / Industry	IDS Engineering	Scott Saenger	
McCoy	Cathy	Agriculture	Harris County SWCDistrict #442		
Murphy	Jack	Small City	City of League City	Susie Blake	Jody Hooks
Olive	Becky	Business / Industry	AECOM	Karen Kottke	
Page	Mitchell	Utility District	Schwartz, Page, & Harding, LLP		
Pechacek	Linda	Public	Citizen, Civil Engineer	Rachel Powers	
Pinheiro	Rod	Large City	City of Houston	Patrick Rightmyer**	
Powers**	Rachel	Conservation	Citizens' Environmental Coalition	Anne Olson**	Linda Shead
Robertson	Jim	Conservation	Cypress Creek Flood Control Coalition	Richard Smith	
Schindewolf	Aaron	Business / Industry	San Jacinto River Authority		
Shead	Linda	Conservation	Texas Coastal Partners	Mary Ellen Whitworth	
Shmaefsky	Brian	Resource Agency / Academia	Lone Star College, Kingwood	Jon Connolly	
Singhania	Monica	Agriculture	Texas Forest Service	Hughes Simpson	
Tarrant	Mayor Leah	Rural Small City	City of Patton Village		
Thornhill	Michael	Utility District	SI Environmental	Matt Carpenter	
Tuma	Scott	Business / Industry (Boating)	Boater	Sarah Gossett	

**Approval of BIG Required



**SPRING MEETING
Summary**

**Tuesday, June 4, 2019
1:00 pm to 3:00 pm**

**H-GAC Conference Room B, Second Floor
3555 Timmons Lane**

Members Present

Sarah Bernhardt, Richard Chapin, Ralph Calvino*, Jerry Caraviotis, Danielle Cioce, Denise Ehrlich, Catherine Elliot, Cynthia Cooper, Carol La Breche, Andrew Isbell, Sarah Gossett, Jack Murphy, Linda Pechacek, Rachel Powers*, Jim Robertson, Linda Shead, Monica Singhanian (Phone)

Mike Lindsey was represented by Reuben Martinez
Becky Olive was represented by Karen Kottke
Anne Olson was represented by Linda Shead
Rod Pinheiro was represented by Patrick Rightmyer*

*Did not count toward quorum

Members Absent

Ernest Bailes IV, David Brown, Teague Harris, Tom Ivy, Helen Lane, Craig Maske, Cathy McCoy, Mitchell Page, Aaron Schindewolf, Brian Schmaefsky, Leah Tarrant, Michael Thornhill, Scott Tuma

Guests Present

Rosa Acheson, Allen Berthold, Camila Biaggi, Darla Branch, Tom Douglas, Bryan Eastham, Terry Gentry, Brian Koch, Earlene Lambeth, Jimmy Millican, Wonju Rielly, Elain Savage, Kristen Schlemmer, Robert Snoza, Jennifer Thayer

H-GAC Staff

Justin Bower, Kendall Guidroz, Bill Hoffman, Kathy Janhsen, Steven Johnston, Todd Running

Call to Order/Welcome/Introductions

Mr. Steven Johnston, H-GAC welcomed those in attendance. Members of the BIG were asked to introduce themselves. The agenda was reviewed and the BIG was provided with an opportunity to discuss.

Certification of Quorum

A quorum was certified during the meeting.

Approval of the Proposed Members & Alternates

The BIG approved the following changes to the roster:

- Ralph Calvino will replace Michael Bloom to represent Business/Industry
- Rachel Powers will replace Anne Olson to represent Conservation Interests
- Anne Olson will become the alternate for Rachel Powers
- Dr. Clint Miller will become Ralph Calvino's alternate
- Patrick Rightmyer will become the alternate for Rod Pinheiro

Approval of the October 23, 2018 Meeting Summary

BIG members approved the October 23, 2018 meeting summary.

Public Comment

No public comments were made.

Item One: I-Plan Revision Update

Mr. Johnston reviewed progress on the I-Plan Update. Mr. Johnston noted that the update will include revised or adjusted maps and data through out, including data not available at the time the document was drafted, i.e. WWTFs DMR data or the larger project area. In addition, the update will include new photos; consider revised milestones and goals; and take a look at changes to actions (slow or non-moving, or completed).

Mr. Johnston reviewed the steps taken so far, including holding workgroup meetings to discuss the topic: Coordination and Policy (05/06/19), OSSF and Illicit Discharge (05/06/19) and Animals and Agriculture (05/23/19).

BIG members discussed how to address implementation measures where the lead is TCEQ. Mr. Johnston noted that TCEQ was still working on the set of implementation questions submitted to TCEQ. General agreement was to look at each activity and determine if the action should be adjusted, removed or documented while leaving it in the plan.

Mr. Johnston concluded by reviewing the timeline. The goal is to have a good draft by the end of August for the Coordination and Policy to begin to review for meeting in September. Then to present the working draft to the BIG in October. A target completion date for the final document would be the end of 2019.

Item Two: 2019 Annual Report Update

Mr. Johnston provided the 2019 Annual Report update to the BIG. Mr. Johnston reviewed the progress in getting 2018 implementation data through work group meetings. He stated that rather than having the WWTF/SSS workgroup and Stormwater workgroups meet, the groups are part of the Coordination and Policy discussions. The thinking is that the group would assist with identifying speakers for a two issue specific workshops in the fall.

Mr. Johnston reviewed the bacteria trends for the BIG project area. This included trend lines for the BIG, BIG in 2013, East and West Fork of the San Jacinto River, Armand Bayou and Jarbo Bayou. Jarbo Bayou differed from the other waterbodies by including a significant spike between 2014 and 2016. It was observed that only 2 stations are monitored quarterly so the geometric mean is based on few data points. The BIG discussed the Jarbo Bayou geometric trend line. Mr. Johnston noted that the trend and data behind it needs some additional investigation.

The next topic was a review of individual AUs and their water quality trends. Mr. Johnston asked how the group wanted to measure success as two AUs were removed from the impaired list and many more were trending positive. One concern is determining if this improvement is going to be sustained or there is the possibility the AU might reverse course in the next year or so. Consensus was to highlight the improvement and report success while noting that there is still work remaining.

Mr. Johnston reviewed WWTF DMR data and compliance. The BIG discussed small WWTFs vs. larger ones and the challenge each presents. Sanitary sewer overflows were discussed. It was stated that there was a gap in reporting permittee data in 2018. Staff are working with TCEQ to get missing data.

Finally, Mr. Johnston reviewed the success stories that had been identified to this point. He asked the BIG for their input on additional topics. One thought was to highlight Harris County for its efforts to get onsite wastewater research funding back after 7 or 8 years.

Item Three: TMDL Program Updates

Mr. Jimmy Millican, Texas Institute for Applied Environmental Research (TIAER), presented on "Status of Additions to Indicator Bacteria TMDLs in the Lake Houston Watershed." Mr. Millican reviewed previously completed TMDLs within the Lake Houston watershed. There have been nine impaired segments covering 15 AUs addressed by a previous TMDL that was approved by the EPA in June 2011. Six additional impaired AUs were added to the project area by addendum and approved by the EPA in February 2014.

TIAER is working on two additional impaired AUs, Brushy Creek (1008J) and Spring Branch (1010C_01). Mr. Millican reviewed data from the 2016 draft Integrated Report that demonstrated the elevated fecal bacteria geometric means. He then proceeded to characterize the waterbodies'

permitted WWTFs, stormwater permits, land cover, OSSFs, and the location of monitoring and flow gauge stations.

Mr. Millican concluded his presentation reviewing the next steps for the technical support document, public review and eventual inclusion within the TCEQ's Water Quality Management Plan update.

Item Four: Presentation

Dr. Terry J. Gentry, Texas Water Resources Institute, gave his presentation on "Use of Bacteria Source Tracking to Characterize Texas Watersheds." Dr. Gentry began with a review of fecal bacteria sources and the history of bacteria source tracking (BST). During this part of his presentation, Dr. Gentry covered the different types of indicator bacteria and possible viruses that could be used to track fecal matter back to the host sources.

Dr. Gentry reviewed the development of a BST library. The BST library is important to successfully fingerprinting a source DNA through the comparison of the records held within the library. The type of investigation can have ramification on how accurate and to what level of source identification can be differentiated.

Dr. Gentry review the Plum Creek BST project with the BIG. The effort looking at *E. coli* using a 3-way split (i.e. Human, Livestock and Wildlife) found the watershed to hold fecal wastes at 4%, 32% and 53%, respectively. There was another 11% of samples that were unidentified.

Dr. Gentry stated that there were 23 BST studies using *E. coli* completed to date. Dr. Gentry then reviewed the use of Bacteroidales that can be found in human and animal feces. The bacteria are more host specific, though not 100%. One study was done following hurricane Harvey near Clear Lake near Houston for approximately 2 months.

A review of this data found a spike in fecal marker soon after the event, decreasing within a week. A low concentration of fecal bacteria indicator for human was found in the first sampling, suggesting a strong stormwater related contribution of non-human fecal matter. A delay spike of human fecal bacteria was found after one week. The human fraction increased over time suggesting a prevalence under normal conditions.

Item Five: H-GAC Staff Presentations

- a. Mr. Justin Bower presented on watershed protection planning (WPP) efforts within the BIG Project Area. Mr. Bower specifically reviewed the development of WPP in the Lake Houston watershed. This effort includes working with stakeholders within the West Fork of the San Jacinto River, Spring Creek and Cypress Creek watershed. Mr. Bower noted that the San Jacinto River Authority completed a Lake Conroe WPP a few years ago. The West Fork and Lake Creek WPP was completed and approved in late 2018. H-GAC is currently working on the Cypress Creek WPP with stakeholders. A proposal was submitted to the TCEQ 319 program for the Spring watershed.
- b. Ms. Kathy Janhsen presented on the results of the first annual Water Innovation Strategies of Excellence Awards. The mission of the awards is to recognize innovative strategies and projects that serve as models for improving water quality. There are four categories: Planning and Policy, Education and Awareness, Built

Projects greater than \$500k and Build Projects less than \$500k. The winners of the first annual award were: the Galveston Bay Foundation's Galveston Bay Action Network under Education and Public Awareness; the City of Houston Parks and Recreation Department's Houston Parks Riparian Restoration Plan under Planning and Policy; Harris County Precinct 4's Precinct 4 Service Center under the Built greater than \$500k; and Harris County Flood Control District's Bioswale Demonstration Project under the Built less than \$500k.

Item Six: Other Business/Roundtable

As time permits, H-GAC, BIG members, and stakeholders are encouraged to discuss implementation activities, related projects, and announcements.

Next Meeting Date

October 29, 2019

Adjourn

BIG Meeting Call-in instructions:

To call in, dial 713-481-0090 (or 800-240-3895). You will be asked to enter your pass code, followed by the # sign. The pass code is 1084242. If you dial in before H-GAC, you will hear "music on hold". Once H-GAC dials in, the music will cease and the conference call will begin. Remember--if you do press hold, everyone will hear your hold music.

In compliance with the Americans with Disabilities Act, H-GAC provides for reasonable accommodation for persons attending H-GAC functions. Requests should be received by H-GAC 24 hours prior to the function.




AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: I-Plan Revision Update
- Item Two: 2019 Annual Report Update
- Item Three: TMDL Program Update
- Item Four: TWRP Presentation
- Item Five: H-GAC Program Reports
- Item Six: Other Business
- Adjourn



AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: I-Plan Revision Update
- Item Two: 2019 Annual Report Update
- Item Three: TMDL Program Update
- Item Four: TWRP Presentation
- Item Five: H-GAC Program Reports
- Item Six: Other Business
- Adjourn




ROSTER DISCUSSION

- BIG Membership
 - Rachel Powers for Anne Olson (Conservation)
 - Ralph Calvino for Michael Blom (Business/Industry)
- Alternates
 - Anne Olson (Conservation)
 - Patrick Rughtmeyer (Large Cities)
 - Dr. Clint Miller (Business/Industry)




AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: I-Plan Revision Update
- Item Two: 2019 Annual Report Update
- Item Three: TMDL Program Update
- Item Four: TWRP Presentation
- Item Five: H-GAC Program Reports
- Item Six: Other Business
- Adjourn



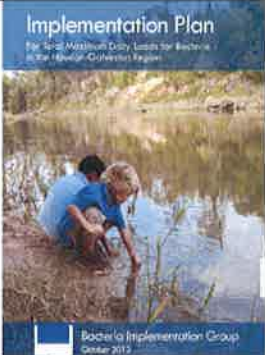
AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: I-Plan Revision Update
- Item Two: 2019 Annual Report Update
- Item Three: TMDL Program Update
- Item Four: TWRP Presentation
- Item Five: H-GAC Program Reports
- Item Six: Other Business
- Adjourn



I-Plan Revision Update

- Updating Maps, Tables, and Photos
- Revising Text
 - Ball Discharge
 - Animals and Agriculture
- Considering Changes to Actions
- Format
- Timeline




Implementation Plan
For Total Maximum Daily Loads for Bacteria
in the Bayou, Calumet Region

Bacteria Implementation Group
October 2013

AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: I-Plan Revision Update
- Item Two: **2019 Annual Report Update**
- Item Three: TMDL Program Updates
- Item Four: TWRI Presentation
- Item Five: H-GAC Program Reports
- Item Six: Other Business
- Adjourn

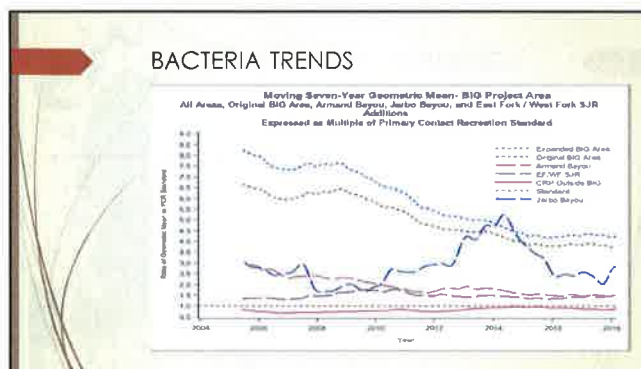


2019 ANNUAL REPORT

- Met with Workgroups
 - Coordination and Policy (3/1, 3/6)
 - OSSF and Ball Discharge (5/4)
 - Animals and Agriculture (6/23)

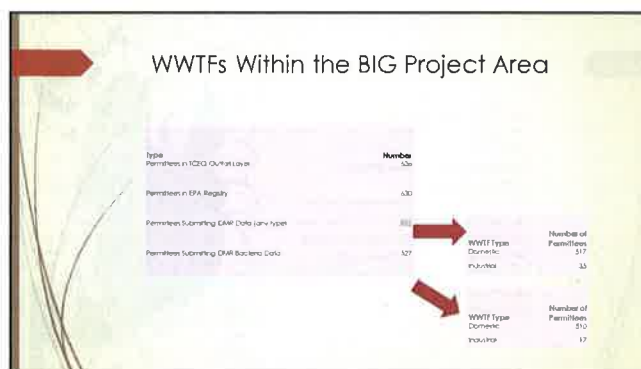


BIG 2018 ANNUAL REPORT



Water Quality Trend Summary by AUs

Parameter	Deteriorating	Improving	No Change
Bacteria (Geometric Mean)	42	26	158
TSS	8	45	109
Biological	8	18	53
Amphibian	18	30	127
Total Parameters	76	31	326



DMRs for WWTFs 2012-2018

Year	Total Geomorph. Results Reported from Permits with Limits to Geomorph. Limit	Percent Exceeding Geomorph. Limit	Total Geomorph. Results Reported from Permits with Limits to Geomorph. Limit	Percent Exceeding Geomorph. Limit	Geomorph. Results	Percent Exceeding Geomorph. Limit
2012	2741	31	2907	151	24	5.2
2013	3997	33	4283	184	4.5	95.5
2014	4533	42	4673	131	2.8	97.2
2015	4432	24	4529	181	3.7	96.3
2016	4722	24	4912	192	2.7	97.3
2017	4797	33	4978	133	3.1	96.9
2018	4848	15	5072	118	2.3	97.7

Exceedances by Plant Size (DMRs 2012-2018)

Relative Plant Size	Number Plant Size	Geomorph. Mean Limit Violation	Daily Mean or Geomorph. Limit Violation
<0.1 MGD	12	0.3	0.0
0.1-0.5 MGD	109	0.2	1.4
0.5-1 MGD	99	0.2	4.4
1-5 MGD	17	0.4	4.3
>5 MGD	18	0.4	1.4
Variable/Intermittent Discharge	10	0.0	11.7

Relative Plant Size	2012	2013	2014	2015	2016	2017	2018	Relative Plant Size	2012	2013	2014	2015	2016	2017	2018
<0.1 MGD	0.0	0.0	3.6	43.6	26.9	42.9	0.0	<0.1 MGD	4.8	4.4	3.8	2.3	1.6	1.8	1.4
0.1-0.5 MGD	1.7	0.9	0.7	0.3	0.7	0.3	0.3	0.1-0.5 MGD	3.8	2.4	1.5	1.8	1.0	1.3	0.8
0.5-1 MGD	0.3	0.4	0.2	0.0	0.1	0.1	0.2	0.5-1 MGD	6.1	4.3	1.5	2.1	0.9	2.1	1.6
1-5 MGD	0.3	0.4	0.2	0.2	0.1	0.3	0.2	1-5 MGD	6.0	5.2	3.1	3.5	4.7	4.7	4.4
5-10 MGD	0.4	0.0	0.0	0.3	0.0	0.5	0.0	5-10 MGD	10.2	10.6	3.5	7.8	7.1	6.1	4.3
>10 MGD	0.0	0.0	0.8	0.0	0.0	0.0	0.0	>10 MGD	6.4	10.0	12.3	22.3	14.2	13.0	11.7

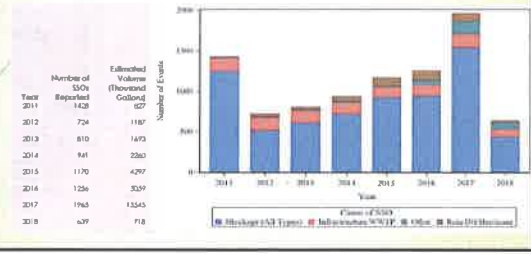
Harris County PCS Domestic WWTF Inspection Data with DMRs 2018

Relative Plant Size	DMR Geomorph. Sample Results	Percentage Exceeding Limit	Percent In Compliance	HCPC Inspection Summary	HCPC Inspection Daily Mean PCI Exceedance	Percent Compliance, HCPC Samples
<0.1 MGD	459	1.1	98.9	97	13.3	81.5
0.1-0.5 MGD	974	0.4	99.6	89	12.4	87.6
0.5-1 MGD	189	1.5	98.5	10	4.9	95.1
1-5 MGD	931	4.4	95.6	47	7.5	92.3
5-10 MGD	156	5.1	94.9	7	0.0	100
>10 MGD	108	11.1	88.9	4	0.0	100

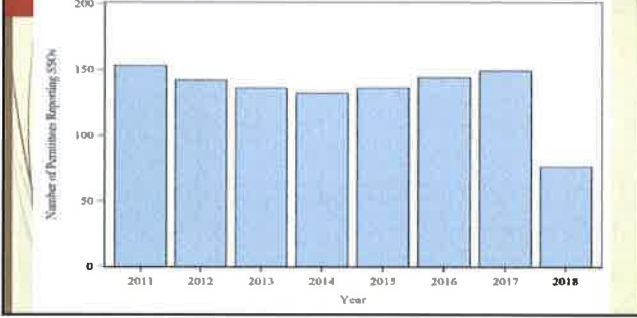
Permittees with 25% or More Excursions

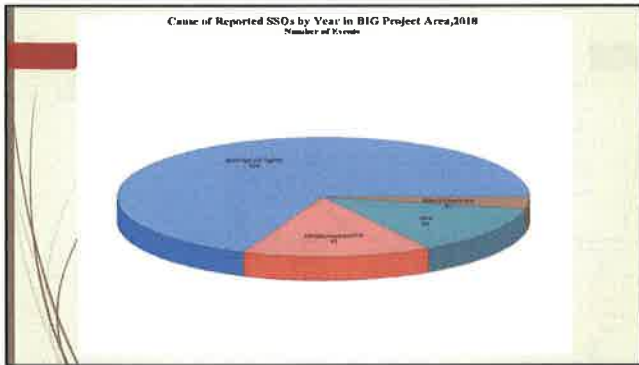
Year	Geomorph. Mean Limit Violation	Daily Mean or Geomorph. Limit Violation	Excursions by Plant Size	Geomorph. Mean Limit Violation	Daily Mean or Geomorph. Limit Violation
2011	2	12	0.1-0.5 MGD	3	5
2012	6	15	0.5-1 MGD	1	11
2013	6	13	1-5 MGD	1	25
2014	7	9	5-10 MGD	3	5
2015	3	14	>10 MGD	17	26
2016	1	13	Variable/Intermittent Discharge	6	6
2017	3	10			
2018	1	7			

Sanitary Sewer Overflows (2011-2018)



Summary of SSO Data





SUCCESS STORIES

- Pearland LID Maintenance and Corle Ordinance Project
- Residential Waste Water Assistance Program for CWSF Repair / Replacement
- Water Innovation Strategies of Excellence Awards
- Olliers?

NEXT STEPS

- Draft 2019 report (Sept. 1, 2019)
- Coor. & Policy Review (Sept. 2019)
- BIG Fall Meeting (October 29, 2019)

AGENDA

- Call to Order/Introduction
- Quorum Certification
- Review and Approve BID Roster
- Review and Approve Minutes
- Public Comment
- Item One: LID Revision Update
- Item Two: 2019 Annual Report Update
- Item Three: TMDL Program Update
 - TMDL by Jimmy Millican
- Item Four: TWR Presentation
- Item Five: H-GAC Program Results
- Item Six: Other Business
- Adjourn

AGENDA


- Call to Order/Introduction
- Quorum Certification
- Review and Approve BID Roster
- Review and Approve Minutes
- Public Comment
- Item One: LID Revision Update
- Item Two: 2019 Annual Report Update
- Item Three: TMDL Program Update
- Item Four: TWR Presentation
 - TWR - Dr. Terry J. Gentry
- Item Five: H-GAC Program Results
- Item Six: Other Business
- Adjourn

AGENDA

- Call to Order/Introduction
- Quorum Certification
- Review and Approve BID Roster
- Review and Approve Minutes
- Public Comment
- Item One: LID Revision Update
- Item Two: 2019 Annual Report Update
- Item Three: TMDL Program Update
- Item Four: TWR Presentation
- Item Five: H-GAC Program Results
 - Mr. Justin Sweeney
 - Ms. Emily Janssen
- Item Six: Other Business
- Adjourn

AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: Review 2018 Draft Annual Report
- Item Two: T/ADJ Program Updates
- Item Three: Response to TCEQ Letter
- Item Four: H-GAC Program Reports
- Item Five: **Other Business**
- Adjourn




Up Coming Meetings

- 6/11 East and West Fork San Jacinto River C.C. Meeting – 10:00 AM (Houston Advanced Research Center)
- 6/12 Green Infrastructure for Texas – 1:00 PM (John Hargrove Environ. Center, Pearland, TX)
- 6/13 Basin 11 Leadership Forum – 10:00 AM (Nolan Ryan Center, ACC, Alvin, TX)
- 7/11 Caney Creek C.C. Meeting – 5:30 PM (Caney Creek Chapel, 2477 CR 297, Sargent, TX 77414)

ADJOURN

- Fall Meeting
- October 29, 2019

Steven Johnston
 Steven.Johnston@h-gac.com
 281-681-2579

Status of Additions to Indicator Bacteria TMDLs in the Lake Houston Watershed

TCEQ TMDL Project Manager

Jason Leifester

Project Staff:

Jimmy Millican
Todd Adams

Texas Institute for Applied Environmental Research (TIAER)
Tarleton State University
Stephenville, Texas

June 4, 2019

Acknowledgements

- Agency Lead:
Texas Commission on Environmental Quality (TCEQ)
- Support Funding:
U.S. Environmental Protection Agency (EPA)

Major Presentation Topics

- Previously completed TMDLs
- Overview & status of two present TMDL projects

Previously Completed Indicator Bacteria TMDLs for Watersheds Upstream of Lake Houston

Adopted by TCEQ: Apr. 6, 2011; Approved by EPA: Jun. 29, 2011

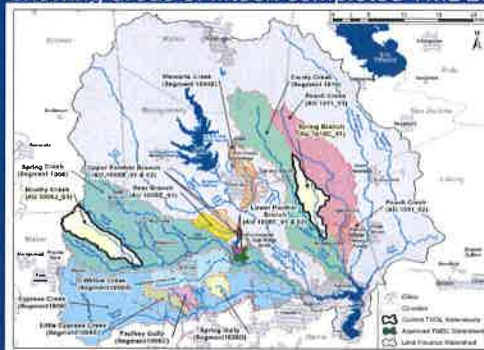
Segment Name	Segment Number	Assessment Unit (AU)
Stewarts Creek	1004E	1004E_02
Spring Creek	1008	1008_02, 1008_03, 1008_04
Willow Creek	1008H	1008H_01
Cypress Creek	1009	1009_01, 1009_02, 1009_03, 1009_04
Faulkey gully	1009C	1009C_01
Spring Gully	1009D	1009D_01
Little Cypress Creek	1009E	1009E_01
Caney Creek	1010	1010_02, 1010_04
Peach Creek	1011	1011_02

Previously Completed Addendum to Fifteen TMDLs Upstream of Lake Houston

Added by Addendum October 2013 by TCEQ; Approved by EPA: Feb. 14, 2014

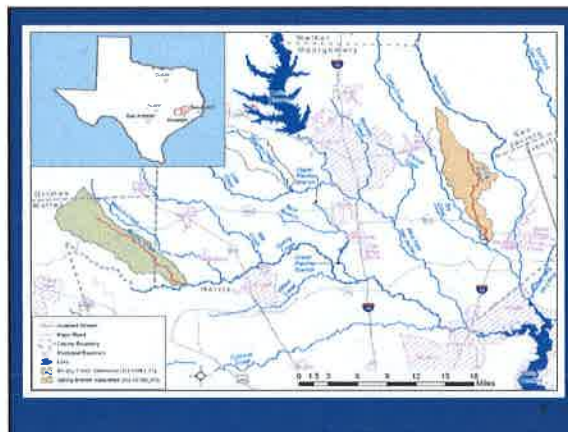
Segment Name	Segment Number	Assessment Unit (AU)
Upper Panther Branch	1008B	1008B_01, 1008B_02
Lower Panther Branch	1008C	1008C_01, 1008C_02
Bear Branch	1008E	1008E_01
Peach Creek	1011	1011_01

Lake Houston Upstream Watersheds showing areas of fifteen completed TMDLs



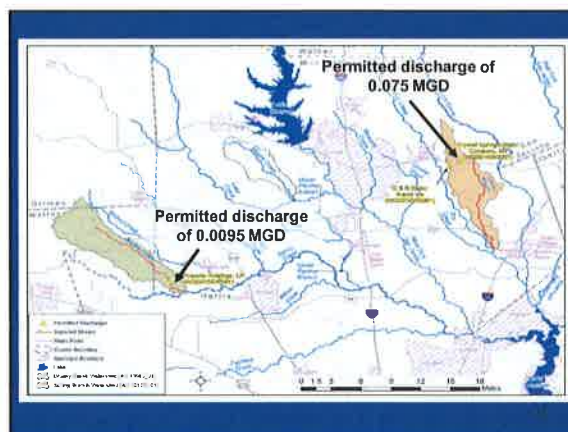
Addendum to *Fifteen TMDLs for Indicator Bacteria in Watersheds Upstream of Lake Houston*

- Project water bodies
 - Brushy Creek (1008J_01)
 - Spring Branch (1010C_01)
- Approach for TMDL – FDCs/LDCs



Summary Integrated Report Findings for *E. coli* Assessment (criterion = 126 MPN/100 mL)

Integrated Report Year	Waterbody	AU	No. of Samples	Data Date Range	Geometric Mean (MPN/100 mL)
2016 (draft)	Brushy Creek	1008J_01	22	2007-2014	221
2016 (draft)	Spring Branch	1010C_01	20	2007-2014	384

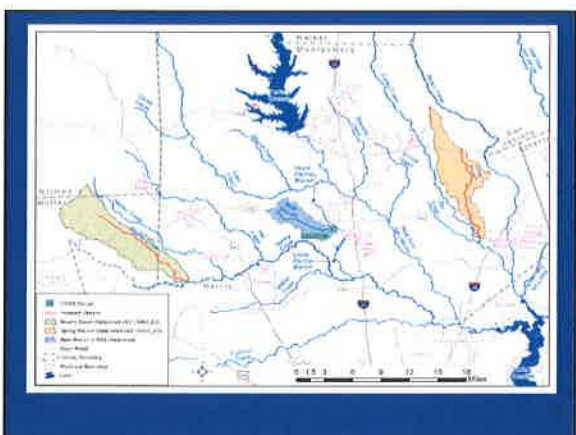
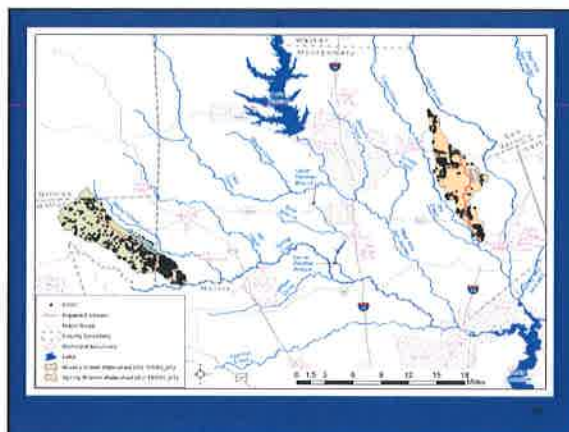
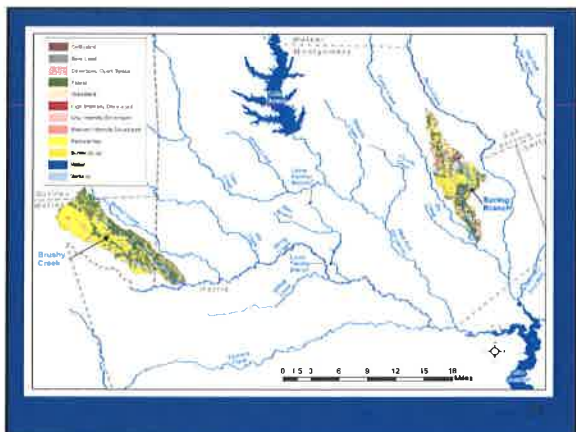


Estimated Area under Stormwater Permit Regulations within the Brushy Creek Watershed

AU Area within 2010 Urbanized Areas (acres)	AU watershed area (acres)	Percentage of drainage area under stormwater regulation (%)
1,332	31,508	4.23

Estimated Area under Stormwater Permit Regulations within the Spring Branch Watershed

AU Area within 2010 Urbanized Areas (acres)	AU Area under construction and industrial stormwater permits (acres)	AU watershed area (acres)	Percentage of drainage area under stormwater regulation (%)
0	411	22,969	1.79



Status of TMDL Development

- Technical Support Document (TSD) to be completed by the end of Aug. 2019
- TSD will be posted on TCEQ website (TCEQ will notify BIG when it is available for public review and comment)
- TCEQ will use TSD to develop an addendum to be included in Water Quality Management Plan update

Thank You

Any Questions?

Jimmy Millican
email: jmillican@tarleton.edu

Use of Bacterial Source Tracking to Characterize Texas Watersheds

Terry Gentry

Department of Soil and Crop Sciences
Texas A&M University

June 4, 2019



Where Did the Bacteria Come From?

- Potential sources
 - Humans
 - Domesticated animals
 - Wildlife
- Methods for determining sources
 - Source survey
 - Modeling
 - Bacterial source tracking



2014 Texas Integrated Report
Watersheds with Bacteria Impairments

What is Bacterial Source Tracking?

- Used to determine the sources of fecal contamination
- Based on uniqueness of bacteria from individual sources
- A variety of different methods are used
- Often works best as part of a “toolbox approach”

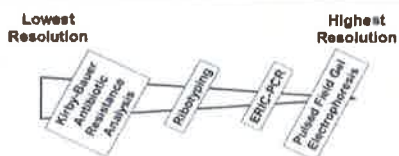


BST Target Organisms

- Bacterial v. Microbial Source Tracking
- Different targets:
 - *E. coli*
 - *Bacteroidales*
 - Bacteriophage
 - Human viruses
 - Chemicals

History of BST Use in Texas

- Lake Waco/Belton Project initiated Sep. 2002
- Funded by TSSWCB
- Evaluated utility & methods
- Completed Feb. 2006



History of BST Use in Texas

- Lake Waco/Belton Project Findings
 - 4-method composite performed better than individual methods
 - 2-method composites appeared promising
 - ERIC-ARA = lower cost but more sample & data processing
 - ERIC-RP = higher cost but automated
- TMDL Task Force Report – 2007
 - Confirmed ERIC-RP as recommended method

Library-Dependent BST Methods

Methods:

- DNA fingerprinting
 - Enterobacterial repetitive intergenic consensus sequence-polymerase chain reaction (ERIC-PCR)
 - RiboPrinting® (RP)

Advantages/Disadvantages:

- More discriminating
- Allows ranking of sources
- Relatively expensive

Development of Texas E. coli BST Library

Sources

Isolate *E. coli* → DNA Fingerprint → Add to Library

Texas E. coli BST Library (v. 12-17)

- Contains 1,853 *E. coli* isolates from 1,612 different human and animal samples
- Developed by collecting over 4,000 domestic sewage, wildlife, livestock, and pet fecal samples and screening over 7,000 isolates for clones and host specificity
- Samples from 20 watersheds across Texas for BST including:
 - Plum Creek
 - San Antonio
 - Lake Granbury
 - Oyster Creek / Trinity River
 - Waco / Belton Lake
 - Little Brazos River Tributaries
 - Attoyac Bayou
- Additional Isolates being added from ongoing and future BST projects in other areas of Texas

Use of Texas E. coli BST Library for Identifying Water Isolates

Isolate *E. coli* → DNA Fingerprint → Compare to Library → Source ID

Comparison to Texas E. coli BST Library

- Best match approach with 80% minimum similarity cutoff based on laboratory QC data
- Water isolate must match library isolate \geq 80% similarity or it is considered unidentified
- Identification to single library isolate with highest similarity – max similarity approach

Three-way v. Seven-way Split of Results

Using the results

- Is it from human sources?
- Is it from livestock?
- Is it from wildlife?

Biology

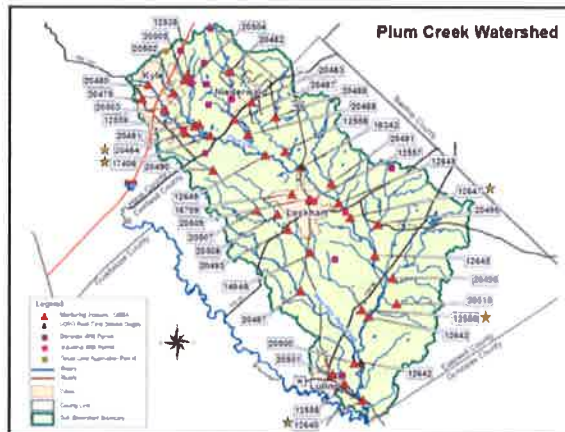
- Large variety of wildlife
- Cosmopolitan strains
- Geographical and temporal differences

Statistics

- Number of isolates collected
- May only use three-way split for limited studies

Texas *E. coli* BST Library Composition & Rates of Correct Classification (RCC)

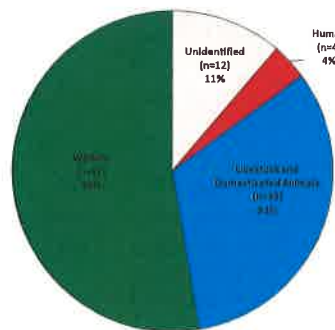
Source Class	Number of Isolates	Number of Families	Library Composition of Ecotype/Adapted Ecotype/Adapted Ecotype/Adapted Ecotype	Number of Correct Classifications (RCC)	Library Accuracy Ratio**	Library Misclassification Rate	
HUMAN	417	351		23%	100	4.3	22%
DOMESTIC ANIMALS	545	500		29%	100	3.4	19%
Pigs	83	74		4%	88	21.0	41%
Cattle	244	225		13%	94	7.2	11%
Avian Livestock	96	89		5%	89	17.8	27%
Other	122	117		7%	90	12.8	15%
Non-Avian Livestock	122	117		7%	90	12.8	15%
WILDLIFE	891	761		48%	100	2.1	16%
Avian Wildlife	272	250		15%	79	5.3	18%
Non-Avian Wildlife	619	511		33%	91	2.8	15%
Overall	1869	1812		33%	100	1.9	18%



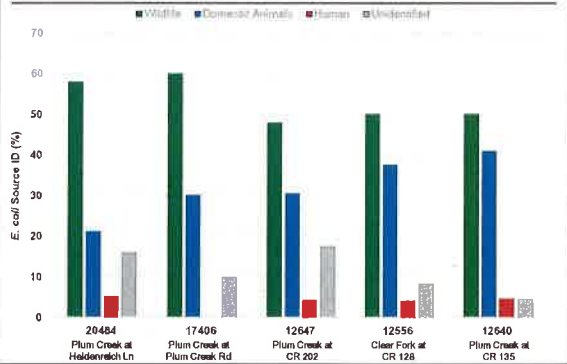
BST for Plum Creek

- Addition of Known-Source *E. coli* Isolates
 - Isolated and DNA fingerprinted 76 *E. coli* from Plum Creek fecal/wastewater samples for addition to the Texas *E. coli* BST Library
 - Wastewater, poultry, cattle, wildlife, feral hogs, etc.
- Characterization of Water *E. coli* Isolates
 - Isolated *E. coli* from water samples collected monthly at five sites over one year (60 samples)
 - DNA fingerprinted 108 *E. coli* isolates and compared to Texas *E. coli* BST Library for source identification

E. coli BST Results 3-Way Split



E. coli BST Results 5 Sampling Sites (3-Way Split)



BST Summary for Plum Creek

- Major *E. coli* sources in tested samples appear to be wildlife (feral hogs, small mammals, deer, birds) as well as domesticated animals (cattle)
- Domesticated animal contributions trended higher in samples from lower in the watershed
- Limited proportion of human *E. coli* isolates detected; primarily seen in samples collected below WWTF outfalls

Use of BST Results

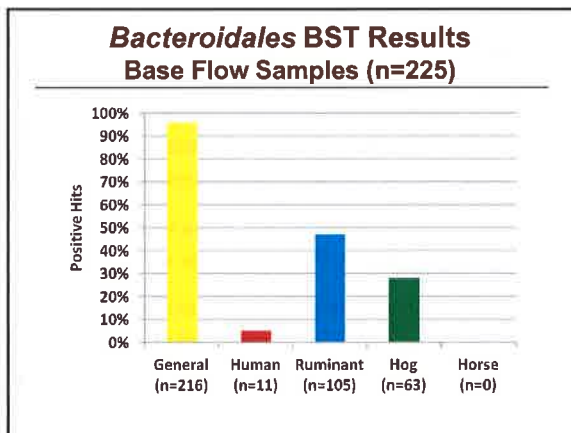
- Reconcile with:
 - *E. coli* enumeration data
 - Land use
 - Watershed source survey
 - Modeling
 - Stakeholder input
 - Common sense

Texas BST Studies To Date

Library Independent BST

- Most common approach targets *Bacteroidales*
- *Bacteroidales* – human and animal fecal bacteria, more abundant than *E. coli*
- Markers available for
 - Ruminants (cattle, deer, elk, sheep, horses, llama)
 - Humans
 - Horses (needs optimization and validation)
 - Birds (needs optimization and validation)
 - Hogs (including feral hogs – in development)
- Highly (but not 100%) specific
- Limited markers for wildlife
- Relationship to *E. coli* and pathogens uncertain

Library Independent BST



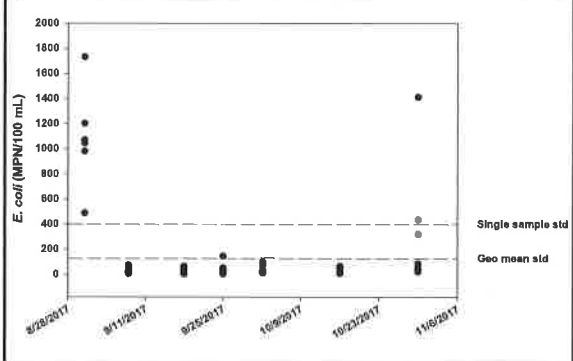
Hurricane Harvey Flooding

- Six locations in the southeastern Houston area around Clear Lake
- Surface water samples were collected as soon as sites were accessible following the hurricane and then every 1-2 weeks for ~2 months

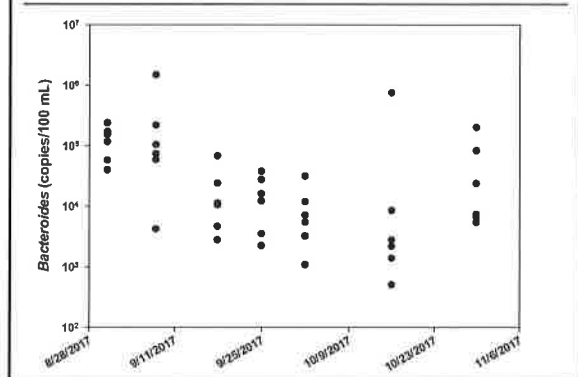
Analyses

- *E. coli* using IDEXX Quanti-Tray/2000 with Collert
- qPCR for total and human *Bacteroides*
 - Passed through 0.2 µm filter
 - DNA extracted with Qiagen PowerWater kit
 - Primers GENBAC 32F/708R used for total *Bacteroides* (Bernhard and Field, 2000)
 - HumM2 primers used for human-specific *Bacteroides* (Shanks et al., 2009, 2010, 2016)

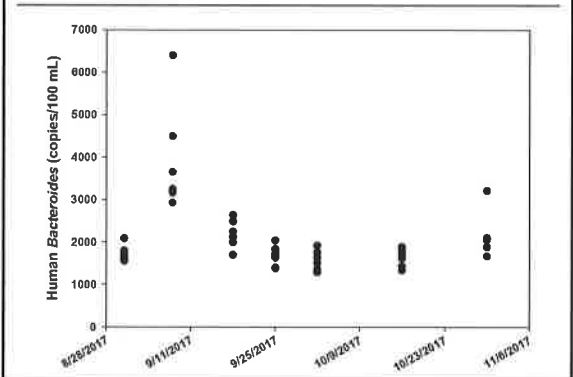
E. coli Levels



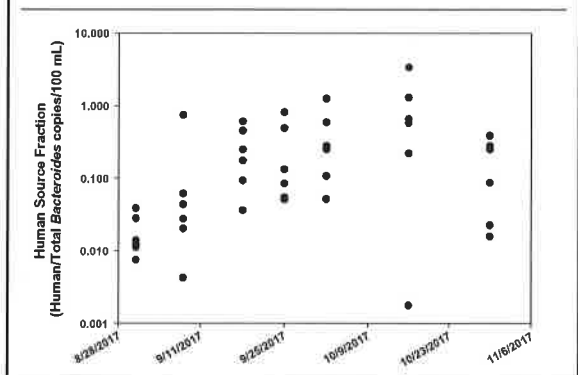
Total *Bacteroides* Levels



Human *Bacteroides* Levels



Human:Total *Bacteroides* Levels



Summary/Conclusions

- Most fecal indicator and marker levels were elevated immediately after the hurricane but decreased within one week
- Low concentration of human *Bacteroides* detected at the first sampling date suggests non-human fecal sources were primarily responsible for contamination during the initial flooding
- The delayed (one week) spike in human *Bacteroides* marker abundance, and increased fraction over time, suggests the prevalence of human sources under normal conditions

How to Start a BST Project?

- Government and commercial BST labs
- What is the goal of BST?
 - Characterize watershed or monitor specific sources?
 - How many potential sources?
 - All, most numerous...
 - One or a few (e.g., human)
 - What level of resolution is needed?
 - Individual species
 - Groups (e.g., humans, domesticated animals, and wildlife)
 - Presence/absence, relative ranking, or absolute number for various sources

Costs of a BST Project?

- Current BST costs:
 - ERIC-RP = \$250/isolate
 - Bacteroidales PCR
 - General + one specific marker = \$250/sample
 - General + four specific markers = \$325/sample
- Example watershed:
 - Three sites
 - Samples collected monthly for one year
 - ERIC-RP five isolates per sample
 - 3 sites x 12 sampling events x 5 isolates/sample [180 total isolates] x \$250/isolate = \$45,000
 - Does not include sample collection, initial sample processing, and transport to lab

Questions?

Terry Gentry
Texas A&M University
2474 TAMU
College Station, TX 77843
Phone: (979) 845-5323
Email: tjgentry@tamu.edu






Watershed Protection Planning in the BIG Project Area


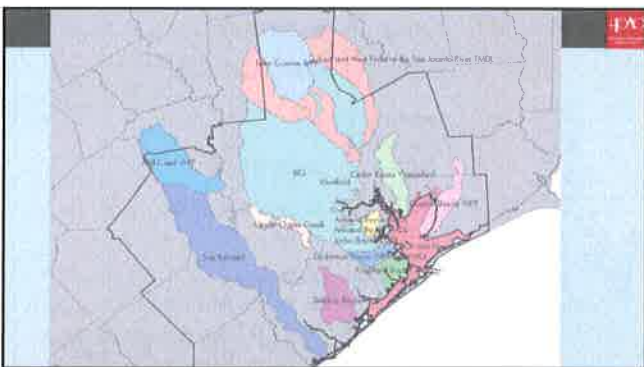
BIG Annual Meeting
May 22, 2019




Watershed Protection Plans (WPP)




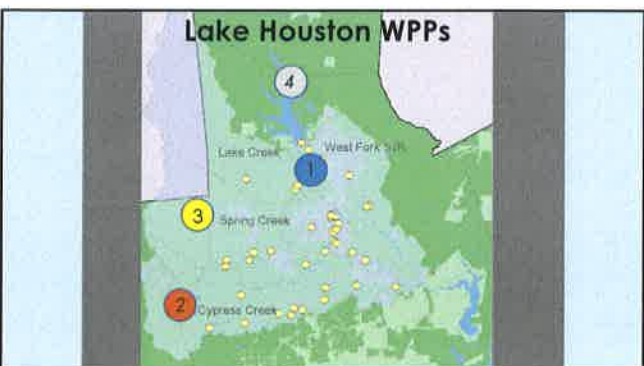
- H-GAC and other local coordinators with TCEQ/TSSWCB
- Voluntary, locally-led, represent all stakeholders
- Can incorporate other stakeholder concerns (related to water quality)
- Can be used to attract funding, help collaboration, get consensus,

West Lake Houston WPPs



- Current focus for H-GAC
- Recognize importance of this watershed to water supply, recreation, ecology, public health.
- Plans are watershed specific, coordination is regional
- Coordinate with TMDLs; smaller more specific focus, other concerns


West Fork and Lake Creek WPP



- Completed, approved in late 2018, 2019
- First year implementation complete; seeking further funds
 - Outreach, education primary focus
 - Heavily coordinated with flood mitigation concerns
- www.westforkwpp.com




Cypress Creek WPP



- Initiated 2019
- Preliminary work complete, public phase initiating in June/July
- Similar concerns to West Fork; greater density
- Looking for additional leads, contacts, partners, groups

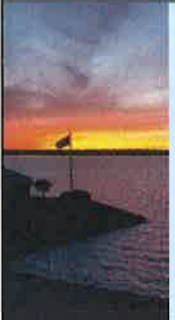
www.cypresspartnership.com

Spring Creek WPP



- TCEQ proposed project
- Focus on fecal bacteria, DO issues;
- Preliminary work completed under previous projects
- Reviewing ongoing data, seeking early partners

Lake Conroe WPP



- Completed by San Jacinto River Authority in 2015 (not 319 funded)
- Efforts focus on SJRA's sphere of influence and operations around the Lake
- Source Water protection focus
- In implementation

Any Questions?

For more information, contact:

Justin Bower
713-499-6653
justin.bower@h-gac.com

**3555 Timmons Lane, Suite 120,
Houston, TX 77077**

www.westforkwpp.com
www.cypresspartnership.com

2019 Water Innovation Strategies of Excellence Awards

Bacteria Implementation Group – Spring Meeting

June 4, 2019



Mission Statement

The WISE Awards recognize innovative strategies and projects in the Houston-Galveston region that serve as models for improving water quality.

Four Award Categories



PLANNING AND POLICY

The Planning and Policy category honors projects with potential to improve water quality through collaborative and strategic planning and policy creation.

Projects should highlight how entities effectively utilized planning tools, authored plans, or implemented policy, such as ordinances. Winning submissions will outline the process through which the project was developed and, if applicable, implemented.



BUILT PROJECT (GREATER THAN \$500K)

The Built Project (Greater than \$500k) category honors projects contributing positively toward improving water quality through built / installed infrastructure.

Projects include, but are not limited to, repair, maintenance or installation of new wastewater treatment facilities or on-site sewage systems, and installation of wetland detention basins, riparian buffers, or other vegetative areas with a water quality benefit. Winning submissions will identify how new or existing technologies were successfully incorporated into project infrastructure.



EDUCATION AND PUBLIC AWARENESS

The Education and Public Awareness category honors projects with potential to improve water quality through public and stakeholder engagement.

Projects should bring to light how everyday activities impact water quality, creating a sense of personal investment and spurring positive behavioral changes. Winning submissions will detail innovative, successful engagement activities and will include metrics demonstrating how success was measured.



BUILT PROJECT (LESS THAN \$500K)

The Built Project (Greater than \$500k) category honors projects contributing positively toward improving water quality through built / installed infrastructure.

Projects include, but are not limited to, repair, maintenance or installation of new wastewater treatment facilities or on-site sewage systems, and the installation of wetland detention basins, riparian buffers, or other vegetative areas with a water quality benefit. Winning submissions will identify how new or existing technologies were successfully incorporated into project infrastructure.

Digital Badges



2019 Award Winners



Serving Today • Planning for Tomorrow

h-gac.com



The Houston-Galveston Area Council
**2019 WATER INNOVATION STRATEGIES OF
EXCELLENCE AWARDS**



2019 WINNER

Winner of the Built Project (Less than \$500k) Category

HARRIS COUNTY FLOOD CONTROL DISTRICT

for their

BIOSWALE DEMONSTRATION PROJECT



The Houston-Galveston Area Council
**2019 WATER INNOVATION STRATEGIES OF
EXCELLENCE AWARDS**



2019 WINNER

Winner of the Built Project (More than \$500K) Category

HARRIS COUNTY PRECINCT 4

for their

HARRIS COUNTY PRECINCT 4 SERVICE CENTER

POLLUTION REPORTING MADE EASY.



**Gaveston Bay
Action Network**

From
THE
GAVESTON BAY
ACTION NETWORK

VISIT GALVBAY.ORG/CBAH OR
DOWNLOAD THE APP FOR FREE.



ENSURE THE FASTEST
POLLUTION CLEANUP.

The Houston-Galveston Area Council 2019 WATER INNOVATION STRATEGIES OF EXCELLENCE AWARDS



Winner of the Education and Public Awareness Category

GALVESTON BAY FOUNDATION

for their

GALVESTON BAY ACTION NETWORK



Honoring Special Recognition Recipients





The Houston-Galveston Area Council
**2019 WATER INNOVATION STRATEGIES OF
EXCELLENCE AWARDS**



Presented to

**BAYPORT BERM PLANTING, PORT OF HOUSTON
AUTHORITY (PORT HOUSTON)**

in recognition for

ROBUST COMMUNITY INVOLVEMENT



The Houston-Galveston Area Council
2019 WATER INNOVATION STRATEGIES OF
EXCELLENCE AWARDS



Presented to

**CITY OF MONT BELVIEU SUPPLEMENTAL
DETENTION CRITERIA, CITY OF MONT BELVIEU**

in recognition for

**POSITIVE INTEGRATION OF AMENITIES IN
PLANNING**



The Houston-Galveston Area Council
2019 WATER INNOVATION STRATEGIES OF
EXCELLENCE AWARDS



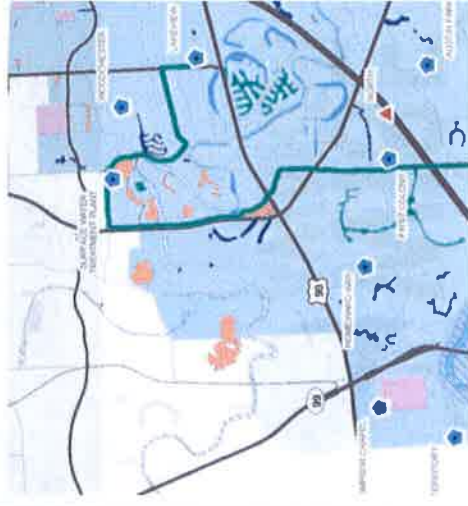
Presented to

**BRIDGELAND CREEK PARKWAY SECTIONS SEVEN
AND EIGHT, THE HOWARD HUGHES
CORPORATION**

in recognition for

INNOVATIVE APPROACH FOR NEW DEVELOPMENT





The Houston-Galveston Area Council 2019 WATER INNOVATION STRATEGIES OF EXCELLENCE AWARDS

Presented to

SUGAR LAND INTEGRATED WATER RESOURCE PLAN, CITY OF SUGAR LAND

in recognition for

PROACTIVE PLANNING & LEADERSHIP





The Houston-Galveston Area Council 2019 WATER INNOVATION STRATEGIES OF EXCELLENCE AWARDS

Presented to

THE PORT OF HOUSTON TREE & RIPARIAN ENHANCEMENT OF ECOSYSTEM SERVICES PROGRAM, HOUSTON WILDERNESS

in recognition for

EFFECTIVE USE OF NATURAL POLLUTION MITIGATION MEASURES



2019 Judges

- Andrew Isbell, Walker County
- Jin Ye, City of Houston – Public Works Department
- Kelli Gallagher, Port Houston
- Michael Thornhill, SI Environmental
- Richard Chapin, City of Houston – Public Works
- Robert Adair, Houston Land/Water Sustainability Forum
- Sarah Gossett, Galveston Bay Foundation

THANK YOU!



Serving Today • Planning for Tomorrow

h-gac.com



Search H-GAC

Search

BIG Meeting Materials

Find all meeting materials for the current and past Bacteria Implementation Group (BIG) meetings, which are held twice a year with a Fall meeting typically in October and a Spring Meeting usually in May. Expand each meeting listing to find all available meeting materials.

- 2019 Spring Meeting - June 4, 2019 4 
- 2018 Fall Meeting - October 23, 2018 8 
- 2018 Spring Meeting - June 5, 2018 7 
- 2017 Fall Meeting - October 31, 2017 2 
- 2017 Spring Meeting - May 23, 2017 6 
- 2016 Fall Meeting - October 25, 2016 2 
- 2016 Spring Meeting - May 24, 2016 3 
- 2015 Fall Meeting - November 2, 2015 4 
- 2015 Annual Meeting - June 22, 2015 6 
- 2014 Mid-Year Meeting - October 21, 2014 4 
- 2014 Annual Meeting - May 27, 2014 9 
- 2013 Mid-Year Meeting - October 15, 2013 6 
- 2013 Annual Meeting - May 14, 2013 4 

2012 Mid-Year Meeting - October 16, 2012 7



2012 Annual Meeting - May 22, 2012 10



Bacteria Implementation Group (BIG)

BIG Meeting Materials

BIG Membership Directory

BIG Reports

BIG Resources and Information

Contact

Steven Johnston

Senior Planner

(832)-681-2579

steven.johnston@h-gac.com

Newsletter

Signup for the **BIG newsletter!**

H-GAC News & Events

There are no news items at this time.

[Careers](#)

[Legal Disclaimer](#)

[Privacy Policy](#)

[Site Feedback](#)

[Intranet](#)

©2019 Houston-Galveston Area Council

Search H-GAC

Search

BIG Coordination and Policy Workgroup

Announcements













The Coordination and Policy work group will meet at 1:00 PM July 23, 2019, H-GAC, Conference Rm D. For more information or to be added to the e-mail list, please contact Steven Johnston at steven.johnston@h-gac.com.

I-Plan

The Coordination & Policy Workgroup submitted the [Executive Summary and Introduction](#) to the I-Plan for consideration.

Meetings

- July 23, 2019 
- May 6, 2019 
- March 4, 2019 
- October 15, 2018 
- May 30, 2018 
- February 28, 2018 
- September 25, 2017 

- March 6, 2017 
- October 11, 2016 
- August 1, 2016 
- December 11, 2015 
- July 16, 2015 
- May 18, 2015 
- March 30, 2015 
- February 2, 2015 
- November 5, 2014 
- March 25, 2014 
- December 16, 2013 
- March 28, 2013 

Bacteria Implementation Group (BIG) Workgroups

BIG Animals and Agriculture Work Group

BIG Coordination and Policy Workgroup

BIG Illicit Discharges and Dumping Work Group

BIG Monitoring Plan Revision Work Group

BIG On-Site Sewage Facilities (OSSF) Work Group

BIG Research Work Group

BIG Stormwater and Land Development Work Group

BIG Sanitary Sewer Systems Workgroup

BIG Wastewater Treatment Facilities Workgroup

BIG Watershed Outreach Workgroup

BIG Residential Workgroup

Contact Us

Steven Johnston

Senior Planner

(832) 681-2579

steven.johnston@h-gac.com

H-GAC News & Events

There are no news items at this time.

[Careers](#)

[Legal Disclaimer](#)

[Privacy Policy](#)

[Site Feedback](#)

[Intranet](#)



Search H-GAC

Search

East and West Forks of the San Jacinto River TMDL and Implementation Plan

Watershed Characteristics

The streams addressed by this project are located within the Lake Houston watershed of the San Jacinto River Basin. The southern part of the watershed includes portions of the city of Houston and its northern suburbs. The Woodlands and the City of Conroe are the largest municipalities located entirely within the watershed. Other smaller municipalities located in the watershed include Cleveland, Cut and Shoot, Magnolia, New Waverly, Pinehurst, Splendora, Tomball, and Waller. The northern part of the watershed is relatively rural, and includes portions of the Sam Houston National Forest. The total drainage area for Lake Houston is 2,850 square miles. The TMDL watersheds are located primarily within Montgomery and San Jacinto Counties, but also include portions of Grimes, Harris, Liberty, and Walker Counties.

About the TMDL Project

The Lake Houston, East Fork & West Fork San Jacinto, and Crystal Creek Watersheds TMDL project was initiated through a contract between the TCEQ and Texas Institute for Applied Environmental Research (TIAER). The Texas Commission on Environmental Quality (TCEQ) first identified the bacteria impairments within the West Fork San Jacinto River in 2002, and within East Fork San Jacinto River, Crystal Creek, and Lake Houston in 2006 and each subsequent edition through the 2012 Texas Water Quality Integrated Report for Clean Water Sections 305(b) and 303 (d) (formerly called the Texas Water Quality Inventory and 303(d) List).

This project considered bacteria impairments in 4 water bodies (segments) consisting of 7 total assessment units (AUs). The complete list of water bodies and their identifying segment_AU number are as follows:

1. Lake Houston 1002_06
2. East Fork San Jacinto River 1003_01, 1003_02, 1003_03
3. West Fork San Jacinto River 1004_01, 1004_02
4. Crystal Creek (unclassified water body) 1004D_01

Watershed stakeholders and interested organizations met between 2014 and 2017 to discuss the TMDL, considered the best approaches to reduce fecal bacteria and determined to join the Bacteria Implementation Group (BIG) and implement the BIG's Implementation Plan developed to reduce fecal bacteria (<http://www.h-gac.com/community/water/tmdl/big/default.aspx>). The East and West Fork of the San Jacinto River joined the BIG in October 2016. The stakeholders continue to meet annually to discuss implementation.

Additional TMDL Information

Please see the [TCEQ's website](#) for more information.

Meetings


- | | |
|--------------------|---|
| July 23, 2019 | ▼ |
| June 6, 2018 | ▼ |
| April 27, 2017 | ▼ |
| March 17, 2016 | ▼ |
| September 22, 2015 | ▼ |
| April 13, 2015 | ▼ |
| November 3, 2014 | ▼ |
| October 1, 2014 | ▼ |

Issue Specific Workgroup Meetings

September 3, 2014 

September 3, 2014 

August 25, 2014 

August 22, 2014 

August 21, 2014 

July 8, 2014 

July 8, 2014 

July 9, 2014 

July 9, 2014 

June 26, 2014 

June 25, 2014 

June 25, 2014 

Round 3 - Meetings

March 5, 2014 

March 5, 2014 

March 6, 2014 

Total Maximum Daily Loads and Implementation Plans (TMDL)

TMDL Frequently Asked Questions

Brazos-Colorado Coastal Basin Bacteria Reduction Project

East and West Forks of the San Jacinto River TMDL and
Implementation Plan

Houston Ship Channel and Galveston Bay TMDL and Implementation
Plan

San Jacinto-Brazos Coastal Basin Bacteria Reduction Project

Upper Oyster Creek TMDL and Implementation Plan

Contact

Steven Johnston

Senior Planner

(832)-681-2579

steven.johnston@h-gac.com

TMDL Study Resources

[TMDL Frequently Asked Questions](#)

H-GAC News & Events

There are no news items at this time.

[Careers](#)

[Legal Disclaimer](#)

[Privacy Policy](#)

[Site Feedback](#)

[Intranet](#)



**San Jacinto – Brazos Coastal Basin:
Public Outreach Report**

Coordination Committee Meeting 2

June 13, 2019

TABLE OF CONTENTS

I. OVERVIEW	2
II. PURPOSE	2
III. APPROACH	3
IV. NOTIFICATION	3
V. MATERIALS	3
VI. MEETING SYNOPSIS	3
VII. NEXT MEETING	5

DRAFT



I. OVERVIEW

Per Umbrella Contract 582-18-81222-04, the Texas Commission on Environmental Quality (TCEQ) requested Public Outreach support from the Houston-Galveston Area Council (H-GAC) for Basin 11, with activities for all elements of Public Outreach including, but not necessarily limited to:

- Identifying and Reserving Facilities for Meetings and / or Events;
- Providing a Facilitator for Any Meetings (As Needed);
- Providing Support for Organizing and Advertising Meetings and / or Events;
- Distribution and Posting of Meeting Agenda(s);
- Preparation of Meeting and / or Event Summaries;
- Preparation of Printed or Other Presentation Materials in Support of a Meeting and / or Event;
- Use of the H-GAC Website for Posting Meeting and / or Event Information; and
- Any Other Necessary Support Activities.

On June 13, 2019 (Coordination Committee Meeting #2), H-GAC conducted a Chocolate Bayou committee meeting to review the Chocolate Bayou water quality data, revisions to the Chocolate Bayou Technical Support Document (TSD) and draft TMDL, and the latest developments and information on the Chocolate Bayou Implementation Plan (I-Plan).

II. PURPOSE

The water bodies included in this analysis are all within Basin 11, which originates in Fort Bend and Harris Counties, transverses Harris, Brazoria and Galveston Counties before entering the Gulf of Mexico by way of Galveston Bay.

The Purpose of this committee meeting was to discuss the following:

1. Review Chocolate Bayou water quality,
2. Discuss revisions to the TSD and TMDL Document, and
3. Present development of the Chocolate Bayou I-Plan.



III. APPROACH and NOTIFICATION

A list of stakeholders and interested parties was generated based on a survey initiated in FY 2016. The list has been augmented following over the course of several years due to hosting public and watershed specific meetings. Identified Chocolate Bayou stakeholders were contacted directly via e-mail and phone to notify them of the planned coordination meeting. Announcement was placed on the H-GAC website. Additional meeting details; and meeting reminders were sent to the identified list of stakeholders.

IV. MATERIALS

The following materials were made available for the meeting:

1. Sign-In Sheet(s)
2. Meeting Presentation
3. TSD
4. Priority Source Management Map Set

V. MEETING SYNOPSIS

Location
Brazoria County Public Library
105 South Gordon St.
Alvin TX

When
Thursday, June 13, 2019
4 PM – 6 PM



Attendees

NAME	ORGANIZATION REPRESENTED	ASSUMED COUNTY?
Christian Rines	GBEP	Regional
Valerie Lara	EHRA	Regional
Lisa Brady	Alvin ISD	Brazoria
Courtney Blackann	The Facts	Brazoria

To view the sign-in sheet in its entirety, please see Attachment A.

Meeting Summary

Mr. Steven Johnston from H-GAC provided a presentation that included an agenda, reviewed of the Chocolate Bayou water quality and information contained in the Chocolate Bayou TSD and draft TMDL. Mr. Johnston reviewed the revisions that were made to the load duration curves and TMDL calculations due to changes to the hydrologic boundary and efforts to naturalize the flow. He provided additional background information as a member of the Facts was present. A bacteria source priority map set was handed out to discuss best management practices and efforts to best direct those practices to specific areas of the watershed. Mr. Johnston reviewed how the priority maps and management measure will fit into the larger Chocolate Bayou I-Plan. Mr. Johnston wrapped up the meeting by reviewing the anticipated timeline to complete the I-Plan and what happens after it is delivered to the TCEQ, particularly where the group will have an opportunity to review the document.


VI. NEXT MEETING

To Be Determined.



AGENDA

- Welcome/Introductions
- TMDL Update
- Implementation Plan Update
- Implementation
- Adjourn




Why Are We Here?



Chocolate Bayou TMDL Update

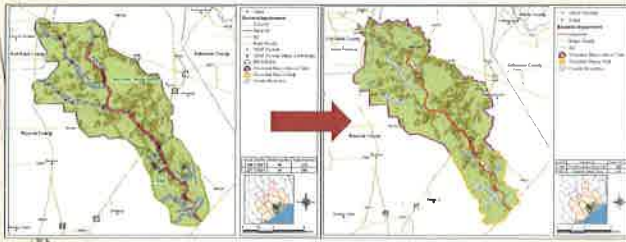
- Technical Support Document Revised
 - Submitted in 2017
 - Resubmitted to TCEQ for review May 2019
- TMDL Document Revised
 - Submitted in 2018
 - Resubmitted to TCEQ for review May 2019

Technical Support Document for Total Maximum Daily Loads for Indicator Bacteria in the Chocolate Bayou Watershed
Segments: 1107 and 1108




May 2019

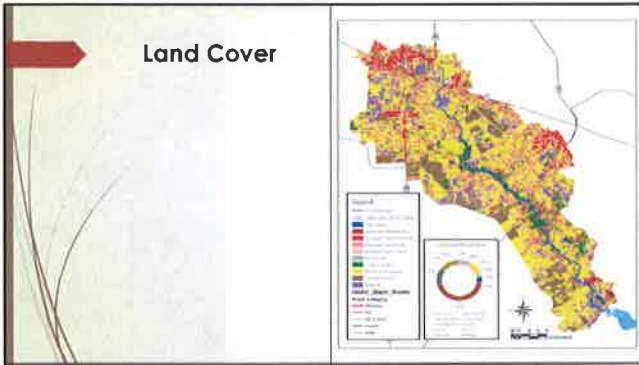
Watershed Boundary Adjustment



"Naturalized Flow"

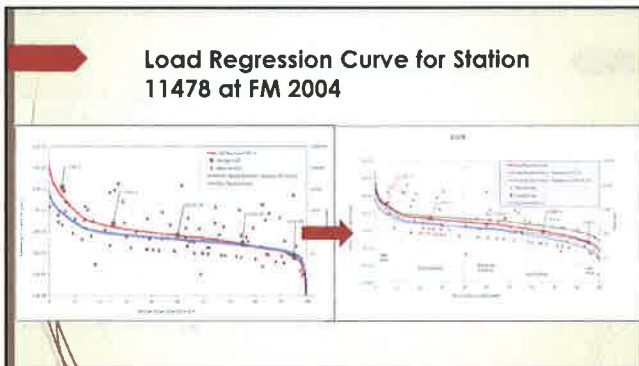
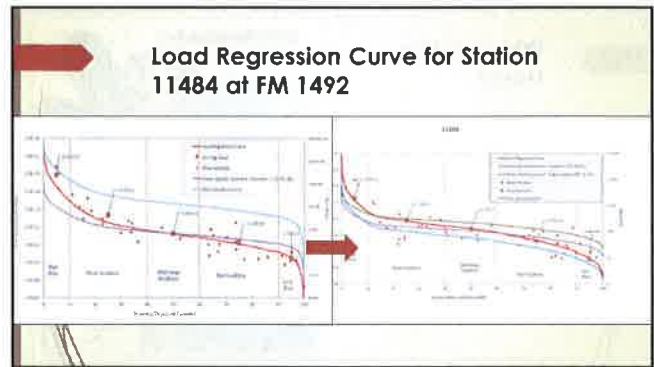
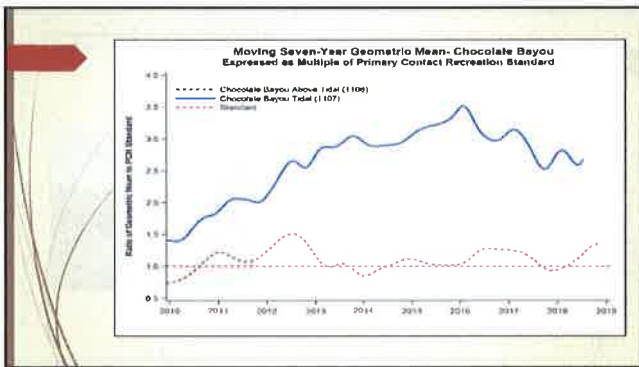
- External Sources
 - Brazos River
 - Trinity River
- Internal Sources
 - Irrigation
 - Industrial





Population Adjustment

Segment	Y2015	Y2040	Change	Segment	Y2016	Y2040	Change
1107	1,278	686	-46.31%	1107	939	504	-46.31%
1108	29,552	88,231	198.56%	1108	41,963	125,284	198.56%



Load Reductions

Flow Condition	Exceedance Range	E. coli (CFU/100ml)		TSS (CFU/100ml)	
		Geometric Mean	Required Percent Reduction	Geometric Mean	Required Percent Reduction
High Flow Flood	0-10%	113.25	49.0%	263.98	90.1%
	10-40%	75.14	53.4%	292.15	54.8%
Mid Range	40-70%	47.92	44.3%	171.48	24.5%
	70-90%	52.72	33.4%	74.27	0.0%
Dry	90-100%	3.9	7.4%	22.54	0.0%


Revised TMDL

Watershed	Segment	TMDL (lb/day)	MDS (lb/day)	WLA _{max} (lb/day)	WLA _{avg} (lb/day)	LA _{max} (lb/day)
Chocolate Bayou Total	1107	718.01	25.08	44.72	18.46	611.75
Chocolate Bayou	1108	1,334.80	66.74	142.63	57.96	1,067.83

Watershed	Segment	TMDL (lb/day)	MDS (lb/day)	WLA _{max} (lb/day)	WLA _{avg} (lb/day)	LA _{max} (lb/day)
TMDL 41	38	85.47	39.17	47.88	46.21	86.28
TMDL 61	128	1,368.18	25.26	150.32	112.73	1,167.83

Chocolate Bayou I-Plan Update


- Summary of TMDL/ISD
- Prioritizes Sources
- Identifies Management Measures
- Identifies Implementing Partners
- Identifies Potential Funding Sources



Priorities and Subwatersheds

- Divided 1107 and 1108 watersheds into Subwatersheds
- Weighted each fecal bacteria source within subwatershed
- Calculate source load


Subwatershed	Source Load
1	2,847,416
2	1,175,029
3	8,373,938
4	2,745,499
5	4,888,818
6	1,302,458
7	9,900,841
8	1,800,008
9	4,888,818
10	8,888,818
11	1,100,000




Management Measures

- Management Measure 1: Support Rural Land Management Initiatives
- Management Measure 2: Promote Safe OSSF Use and Maintenance
- Management Measure 3: Improve Wastewater Facility and Collection System Function
- Management Measure 4: Address Fecal Deposition of Feral Populations
- Management Measure 5: Address fecal Deposition of Dog Waste
- Management Measure 6: Support Urban Stormwater Management

Management Measure 1: Support Rural Land Management Initiatives



Management Measure 2: Promote Safe OSSF Use and Maintenance



Management Measure 3: Improve Wastewater Facility and Collection System Function



Management Measure 4: Address Fecal Deposition of Feral Populations



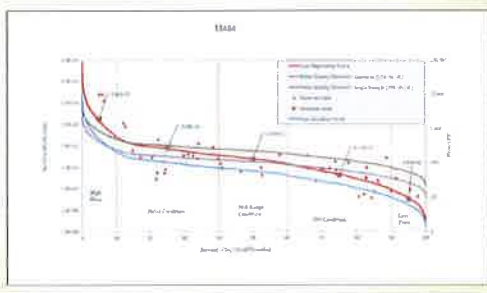
Management Measure 5: Address Fecal Deposition of Dog Waste



Management Measure 6: Support Urban Stormwater Management



Source Reductions



Source Reductions

Load Reduction by Source and Assessment Unit								
Assessment Unit	SSO	Dog Waste	Feral Hog	Urban Stormwater	Total	SSO	Dog Waste	Feral Hog
1000_01	920.21	3,921.28	916.43	17.60	64.87	144.29	0.42	10,655.68
1007_01	143.71	1,478.47	348.74	6.72	36.88	64.64	0.00	685.14
Total	1,063.92	5,399.75	1,265.17	24.32	101.75	208.93	0.42	11,340.85

Source Reductions

Representative Units to Address Impairments				
Endemic Source	Representative Unit	Representative Unit Daily Load	100%_01	100%_01
OSSE	1 Failing OSSE	3.70E+09	39	249
SSOs	1 SSO	4.93E+09	1	1
Cattle	1 Cattle	2.70E+09	548	1452
Sheep/Goats	1 Sheep/Goat	2.10E+08	651	4364
Horse	1 Horse	9.00E+09	1	2
Deer	1 Deer	1.75E+08	211	552
Feral Hogs	1 Feral Hog	4.45E+09	15	37
Dog	1 Dog	2.50E+09	198	4262

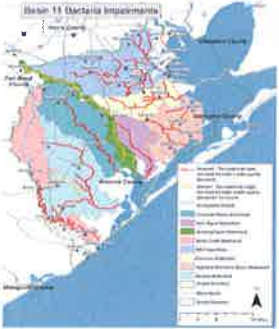

NEXT STEPS

- Draft I-Plan Stakeholder Review (July 1-31, 2019)
- Begin Agency Review (August 15, 2019)
- CC Review Revision (Nov. 2019)




Future Work

- Holly Bayou
- Mustang Bayou

Basin 10 Cleanup
873-551-2579
3Pwv6c@tceq.texas.gov





Managing Our Stormwater

From Gutter to Stream

June 12, 2019
1 - 4 pm

A workshop on natural techniques to clean and conserve stormwater for humans and wildlife, at any scale

TEXAS A&M
AGRI LIFE
EXTENSION

Delores Fenwick Nature Center
5750 Magnolia Parkway
Pearland, TX 77584



These events are funded in part by a Texas Coastal Management Program Grant approved by the Texas Land Commissioner pursuant to National Oceanic and Atmospheric Administration Award No. NA18NOS4190153.

Agenda

Speaker Contacts

12:30 pm	Registration	Green Infrastructure for Texas (GIFT) GIFT.tamu.edu
1:00 - 1:10	Welcome	Charriss York , cyork@tamu.edu Green Stormwater Infrastructure Texas A&M AgriLife Extension Program Specialist
1:10 - 2:00	Charriss York on capturing and cleansing stormwater runoff at homes, businesses and in the neighborhood.	Christie Taylor , cctaylor@tamu.edu Stormwater Wetlands Texas A&M AgriLife Extension Program Specialist
2:00 - 2:20	Steven Johnston on implementing and incentivizing Low Impact Development	John Jacob , jjacob@tamu.edu Texas A&M AgriLife Extension, Professor and Specialist
2:00 - 2:35	Break	Houston Galveston Area Council www.h-gac.com
2:35 - 3:15	Christie Taylor on changing the way we design flood control basins, using stormwater wetlands.	Steven Johnston , Steven.Johnston@h-gac.com Senior Planner
3:15 - 4:00	John Jacob on large scale restoration of natural areas to promote water quality benefits.	
4:00pm	Concluding Remarks	

Notes



The Texas Community Watershed Partners is a part of the Texas A&M AgriLife Extension Service
For more information, visit us at: TCWP.tamu.edu



DESIGNING FOR IMPACT

- COMMUNITY ENGAGEMENT
- CONDUCT WORKSHOPS
- DEVELOPED A LID TOOLBOX
- MAINTENANCE AGREEMENTS
- PARTNER WITH MUNICIPALITIES
- ORDINANCE REVIEW
- IDENTIFY BARRIERS
- PROVIDE PRACTICAL RECOMMENDATIONS




TOOLBOX

- VEGETATED FILTER STRIP
- VEGETATED SWALE
- BIORETENTION SYSTEMS:
 - RAIN GARDENS
 - BIOSWALES
 - STORMWATER PLANTER BOX
- PERMEABLE PAVEMENT
- CONSTRUCTED STORMWATER WETLANDS
- RAINWATER HARVESTING:
 - CISTERN
 - RAIN BARREL
 - UNDERGROUND STORAGE
- GREEN ROOF

CONSTRUCTED STORMWATER WETLANDS

MAKING A CASE FOR LID

- COST-EFFECTIVE
- IMPROVED WATER QUALITY
- MORE SPACE FOR MORE STUFF
- REDUCED POTENTIAL FLOOD IMPACTS
- MULTI-FUNCTIONAL LID
- INCREASED PROPERTY VALUE



MAKING A CASE FOR LID

CONVENTIONAL SITE PLAN

LID SITE PLAN

MAKING A CASE FOR LID

COST BENEFIT OF STORMWATER MANAGEMENT INFRASTRUCTURE

	Conventional	LID	Difference	%
Concrete Sidewalk	\$ 114,572	\$ 180,848	\$ 66,276	58 %
Concrete Driveway	\$ 794,421	\$ 320,154	(\$ 474,267)	-60 %
Curbs & Gutters	\$ 118,887	\$ 125,848	(\$ 6,961)	0 %
Street	\$ 1,082,403	\$ 1,542,427	\$ 460,024	43 %
Parking Lot	\$ 318,057	\$ 0	\$ 318,057	100 %
Conventional Stormwater Storage	\$ 987,525	\$ 598,108	(\$ 389,417)	-39 %
Standard Roof	\$ 2,344,267	\$ 1,988,792	\$ 355,495	-15 %
Permeable Pavement: Driveways		\$ 54,573	(\$ 54,573)	
Turf	\$ 1,572,590	\$ 323,065	\$ 1,249,525	79 %
Native Plants		\$ 709,485	(\$ 709,485)	
Rain Garden		\$ 197,136	(\$ 197,136)	
Trees	\$ 125,908	\$ 100,536	(\$ 25,372)	-20 %
Downspout Disconnection		\$ 101	(\$ 101)	
Rain Barrels		\$ 5,873	(\$ 5,873)	
Total	\$ 7,454,618	\$ 6,152,614	\$ 1,302,004	-17 %

Does not include retention basins, stormwater management ponds, fees or fees assessed for land in residential buildings

BARRIERS & SOLUTIONS

PERCEPTUAL BARRIERS

<p>BARRIER Cost Prohibitive Difficult to Maintain Clay & Mosquito Myth</p>		<p>SOLUTION Demonstrate Costs & Added Value LID Maintenance Agreements Information Sharing & Education</p>
--	---	--

REGULATORY & TECHNICAL BARRIERS

<p>BARRIER Curb & Gutter Excessive Impervious Cover Maintenance</p>		<p>SOLUTION Flexible Curb And Gutter Requirements Efficient Site Design Technical Training</p>
---	---	--



BARRIERS & SOLUTIONS

REGULATORY BARRIERS

- Identify Barriers in Ordinances & Development Code
- Recommend Code/process Modifications
- Maintenance Agreements
- Ordinance Adoption


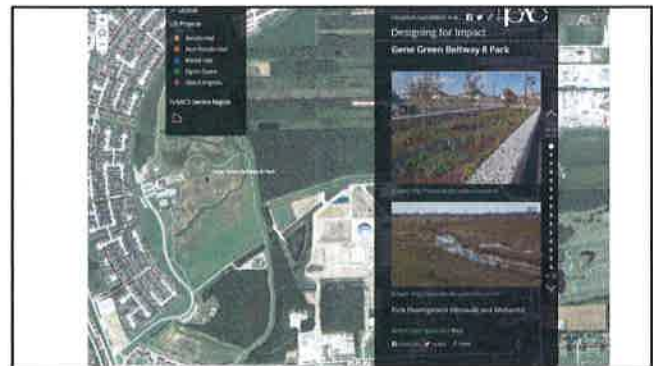
TECHNICAL BARRIERS

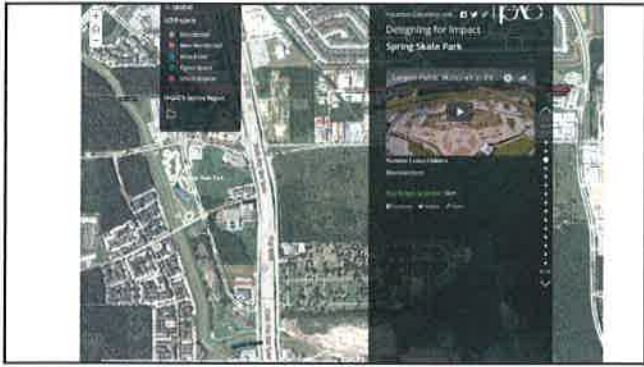
- Installation Checklists
- Maintenance Schedules
- Implementation Workshop



ONLINE INTERACTIVE MAP

- LOCAL EXAMPLES
- TYPE OF LID APPLICATION
- PROJECT PICTURES
- GOALS & METHODS
- LOCATION





Houston-Galveston Area Council

August 15, 2019

Ms. Earlene Lambeth (MC 203)
TMDL Project Manager
Water Quality Division
Texas Commission on Environmental Quality
12100 Park 35 Circle, Bldg. F
Austin, Texas 78753

RE: August 2019 Progress Report Houston Region TMDL Public Outreach Contract No. 582-18-91222, Work Order 01.

Dear Ms. Lambeth:

Enclosed is one (1) copy of the FY 2019 5th Progress Report for Contract No. 582-18-81222-01. It covers all deliverable activities for the project period July 1, 2019 through July 31, 2019. Financial Statements, HUB report and Voucher will be submitted separately.

Included in this Report are:

1. One copy of the quarterly progress report for July 1, 2019 thru July 31, 2019.
2. Copies of meeting summaries and other pertinent materials from project related meetings.
3. Copy of H-GAC newsletters, related water quality meetings, workshops, seminars, and training.

We hope you find the quarterly report satisfactory. Any comments you have will be appreciated. If you have any questions, please contact me by phone (713-993-4549) or E-mail (todd.running@h-gac.com).

Sincerely,

Todd Running
Water Resources Program Manager
Community & Environmental Planning Dept.

Cc: Jason Leifester
Chris Loft

TR/srj
Enclosures

**TMDL Program
FY 2019 Progress Report #5**

Date: August 15, 2019

Time Period Covered: 7/01/2019 – 7/31/2019

Name of Project: Houston-Galveston Area TMDL Public Participation Project

Contract No./Work Order 582-18-81222-01

TASK #1 PROJECT ADMINISTRATION

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
PRs (Task 1.1)	August 15, 2019	Completed on August 16, 2019.
Weekly E-mail Updates (Task 1.2)	Weekly	Provided hard copies with report.
FSRs (Task 1.3)	August 15, 2019	Provided as a separate report.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

Work performed for this task during this period included writing and assembling the monthly report.

TASK #2 PUBLIC OUTREACH AND SUPPORT FOR THE BIG AND RELATED IMPLEMENTATION ACITIVITIES

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Meetings, workshops, or outreach activities to discuss and monitor I-plan for the BIG (Task 2.1)	Up to four public meetings, workshops, or other outreach activities and up to ten associated work group meetings.	<ul style="list-style-type: none"> • <u>BIG Fall Meeting</u>: the fall meeting was held on October 23, 2018 during this project quarter. • <u>Coordination and Policy Work Group</u>: met on October 15, 2018. • <u>Coordination and Policy Work Group</u>: met on March 4, 2019. • <u>Coordination and Policy Work Group</u>: met on May 6, 2019. • <u>OSSF/Illicit Discharge Work Group</u>: met on May 6, 2019. • <u>Animals and Agriculture Work Group</u>: met on May 23, 2019. • <u>BIG Spring Meeting</u>: was held on June 4, 2019 • <u>Coordination and Policy</u>: was held on July 23, 2019 • <u>East and West Fork San Jacinto River CC</u>: was held on July 24, 2019
Draft meeting or event agenda and materials (Task 2.2)	Two (2) weeks prior to meeting	The Coordination and Policy meeting was held on July 23, 2019. The East and West Fork of the San Jacinto River Coordination Committee was held on July 24, 2019. Meeting materials were shared with the TCEQ PM.
Draft meeting or event summary (Task 2.3)	Within two (2) weeks following completion of meeting	Meeting summaries were included as part of the weekly reports.

Final agenda and meeting or event summary, list of attendees and contact information, and copies of any printed materials (Task 2.4)	Within thirty (30) days of the completion of the meeting	Final meeting summaries and agenda for each meeting were included with this report. Any meeting materials and presentations have also been provided.
Implementation Summary Report (Task 2.5)	August 31, 2018	Not started.
Digital link to regional implementation database (Task 2.6)	August 31, 2018	Not due. Updated throughout the year.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

Staff met with two BIG work groups during this project period. Work performed to prepare for each meeting included scheduling the meeting, identifying a meeting location, sending out meeting announcements and reminders, and preparing for the meeting, including developing meeting agendas and meeting materials most of this was performed in the month of July. Staff completed final data analysis and minor changes to the presentation prior to the meeting. A brief summary of each meeting can be found below. For a more extensive summary, please see the attached meeting summary included with this report.

- July 23, 2019 BIG Coordination and Policy: Fourteen stakeholder attended. The group discussed the Plan update, reviewed the Stormwater Section of the Plan, discussed TCEQ implementation information, and discussed the 2019 Annual Report.
- July 24, 2019 East and West Forks of the San Jacinto River CC: . Five stakeholders were in attendance. H-GAC reviewed BIG implementation efforts, TMDL project updates and four WPP projects in the watershed.

Staff also participated in workshops, outreach, and regional meetings in relation to this task. Those meetings are listed below under the heading Additional Related Meetings, Training, Events and Conferences.

TASK #3 PUBLIC OUTREACH SUPPORT FOR THE UPPER OYSTER CREEK COORDINATING COMMITTEE AND RELATED IMPLEMENTATION ACTIVITIES

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Meetings or events for Upper Oyster Creek (Task 3.1)	One public meeting and up to two events.	April 11, 2019 – the Upper Oyster Creek annual meeting was held. No additional meetings were held in June.
Draft meeting or event agenda and materials (Task 3.2)	Two (2) weeks prior to meeting	No meetings were held in June.
Draft meeting or event summary (Task 3.3)	Within two (2) weeks following completion of meeting	No meetings were held in June.

Final agenda and meeting or event summary, list of attendees and contact information, and copies of any printed materials (Task 3.4)	Within thirty (30) days of the completion of the meeting	No meetings were held in June.
Upper Oyster Creek annual report	With final PR	Staff started drafting the Annual Report .

Work Performed This Period

No meetings were held during June. Staff began drafting the meeting summary for the April 11, 2019 meeting. Additionally, staff began drafting the Annual Report.

TASK #4 PUBLIC OUTREACH SUPPORT AND IMPLEMENTATION PLAN DEVELOPMENT FOR CHOCOLATE BAYOU

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Draft I-Plan for Chocolate Bayou (Task 4.1)	December 15, 2018.	Draft I-Plan submitted on June 21, 2019.
Final I-Plan for Chocolate Bayou (Task 4.2)	May 15, 2019	Draft I-Plan submitted on June 21, 2019.
Meetings or events for Chocolate Bayou (Task 4.3)	Up to two public meetings or events	No meetings were held this project period.
Draft meeting or event agenda and materials (Task 4.4)	Two weeks prior to meeting or event	No meetings were held this project period.
Draft meeting or event summary (Task 4.5)	Within two weeks following completion of meeting or event	No meetings were held this project period.
Final agenda and meeting or event summary, list of attendees, and contact information, and copies of any printed materials (Task 4.6)	Within 30 days of the completion of the meeting or event.	No meetings were held this project period.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

No meetings were held during this reporting period.

TASK #5 PUBLIC OUTREACH SUPPORT FOR OTHER TMDL PROJECTS IN THE HOUSTON REGION

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Support for other TMDL public outreach activities, as needed (Task 5.1)	As requested and scheduled.	No meetings or activities carried out during the quarter.
Draft meeting or event agenda and materials (Task 5.2)	Two (2) weeks prior to meeting	No meetings or activities carried out during the quarter.
Draft meeting or event summary (Task 5.3)	Within two (2) weeks following completion of meeting	No meetings or activities carried out during the quarter.
Final agenda and meeting summary, list of attendees and contact information, and copies of any printed materials (Task 5.4)	Within thirty (30) days of the completion of the meeting	No meetings or activities carried out during the quarter.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

No work was carried out for Task 5.

ADDITIONAL RELATED MEETINGS, TRAINING, EVENTS, AND CONFERENCES

- 1) Presentations:
 - a. No presentations were provided this report period.
- 2) Meetings, Events and Conferences:
 - a. July 31, 2019 - Staff hosted the Coastal Communities’ Fats, Oils, and Grease Multi-Family Education Project. Project includes efforts to address apartments in Pearland, a city within the BIG.
- 3) Associated Implementation Projects and Programs
 - a. H-GAC is working with the Bayou Preservation Association to continue to address illicit discharges. BPA received funding from GBEP to target waterbodies in the BIG area to identify and remove illicit discharges.
 - b. OSSF SEP – H-GAC has an ongoing SEP project and has received funding through the state and from Harris County District Attorney’s Office to repair and replace failing systems. H-GAC is targeting OSSFs in areas with watershed-based plans, including the BIG project area. For more information on the program: <http://h-gac.com/community/water/ossf.aspx>.
- 4) Associated Partner Activities
 - a. No associated activities to report for June.

BRIEF DESCRIPTION OF OVERALL FINDINGS:

Staff spend the month of July preparing for two meetings, BIG Coordination and Policy (7/23/2019) and the East and West Forks of the San Jacinto River coordination committee. Of note will be the need to reinvigorate the San Jacinto work group as the number of attendees has dropped for that group. Tie-ins with the completed

West Fork WPP and other similar efforts might be advised for future meetings. We are also looking toward additional opportunities to implement NPS best practices and workshops in the area. They might also be a good source for future stakeholders. Staff also worked on the Upper Oyster Creek Annual Report and Annual Meeting summary.

Significant Problems (describe any scheduling shortfalls, detail significant problems and how these problems were resolved, etc.): No issues were found during the report period.

Johnston, Steven

From: Johnston, Steven
Sent: Sunday, July 7, 2019 5:03 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (June 24 - June 28) and (July 1 - July 5)

Good Afternoon, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

June 24th – June 28th:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (May 31, 2019):** \$82,375.78 **Remaining Budget Amount:** \$27,624.22
- **Received the 2019 Umbrella Contract from the TCEQ PM. Routed contract for Signatures.**

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - Coordination and Policy Work Group – scheduled for July 23, 2019.
 - East and West Fork San Jacinto – scheduled for July 24, 2019 in The Woodlands.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look. More will be discussed at the next Coordination and Policy meeting.
- Public Outreach Events:
 - None scheduled.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.
- Staff drafting Annual Meeting summary.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

July 1st – July 5th:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (May 31, 2019):** \$82,375.78 **Remaining Budget Amount:** \$27,624.22
- **2019 Umbrella Contract has been routed for Signatures.**

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - Coordination and Policy Work Group – scheduled for July 23, 2019.
 - East and West Fork San Jacinto – scheduled for July 24, 2019 in The Woodlands.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look. More will be discussed at the next Coordination and Policy meeting.
- Public Outreach Events:
 - None scheduled.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.
- Staff drafting Annual Meeting summary.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Wednesday, July 17, 2019 10:32 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (July 8 - July 12)
Attachments: CorrectionPR3.pdf; PR4_July19.pdf

Good Evening, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. I have attached the PR4 for your review. Additionally, I have attached a correction for PR3 to amend your file. Please let me know if you have any questions.

July 8th – July 12th:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (May 31, 2019):** \$92,012.41 **Remaining Budget Amount:** \$17,987.59
- **2019 Umbrella Contract was returned to TCEQ for execution.**

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - Coordination and Policy Work Group – scheduled for July 23, 2019.
 - East and West Fork San Jacinto – scheduled for July 24, 2019 in The Woodlands.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look. More will be discussed at the next Coordination and Policy meeting.
- Public Outreach Events:
 - None scheduled.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.
- Staff drafting Annual Meeting summary.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council

3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Sunday, July 21, 2019 2:50 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (July 15 - July 19)
Attachments: CC Outreach Summer 2019 Update.pdf

Good Afternoon, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

July 15th – July 19th:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (May 31, 2019):** \$92,012.41 **Remaining Budget Amount:** \$17,987.59
- Prepared and submitted PR4, for June 1, 2019 – June 30, 2019.

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - Coordination and Policy Work Group – scheduled for July 23, 2019.
 - East and West Fork San Jacinto – scheduled for July 24, 2019 in The Woodlands.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look. More will be discussed at the next Coordination and Policy meeting.
- Public Outreach Events:
 - July 31, 2019 - Fats, Oils, and Grease Multi-Family Education Project subcommittee (see flyer).
 - August 8, 2019 - Save Water Texas Coalition – Water Quality Mobile Teaching Lab Tour (see flyer).

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.
- Staff drafting Annual Meeting summary.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council

3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Sunday, July 7, 2019 5:03 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (June 24 - June 28) and (July 1 - July 5)

Good Afternoon, Earlene – Below you will find the weekly reports for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

June 24th – June 28th:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (May 31, 2019):** \$82,375.78 **Remaining Budget Amount:** \$27,624.22
- **Received the 2019 Umbrella Contract from the TCEQ PM. Routed contract for Signatures.**

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - Coordination and Policy Work Group – scheduled for July 23, 2019.
 - East and West Fork San Jacinto – scheduled for July 24, 2019 in The Woodlands.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look. More will be discussed at the next Coordination and Policy meeting.
- Public Outreach Events:
 - None scheduled.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.
- Staff drafting Annual Meeting summary.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

July 1st – July 5th:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (May 31, 2019):** \$82,375.78 **Remaining Budget Amount:** \$27,624.22
- **2019 Umbrella Contract has been routed for Signatures.**

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - Coordination and Policy Work Group – scheduled for July 23, 2019.
 - East and West Fork San Jacinto – scheduled for July 24, 2019 in The Woodlands.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look. More will be discussed at the next Coordination and Policy meeting.
- Public Outreach Events:
 - None scheduled.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.
- Staff drafting Annual Meeting summary.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Tuesday, August 13, 2019 5:42 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (July 29 - Aug 2)

Good Afternoon, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

July 29th – Aug. 2nd:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (May 31, 2019):** \$92,012.41 **Remaining Budget Amount:** \$17,987.59

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - No meetings held.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look.
- Public Outreach Events:
 - July 31, 2019 - Fats, Oils, and Grease Multi-Family Education Project subcommittee. Eight stakeholders attended, including the city of Pearland. The city will be working with a local apartment complex and plans on before and after monitoring of FOG education and sewer lines.
 - August 8, 2019 - Save Water Texas Coalition – Water Quality Mobile Teaching Lab Tour (see flyer).

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.
- Staff drafting Annual Meeting summary.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503

steven.johnston@h-gac.com

<http://h-gac.com/community/water/tmdl/big/default.aspx>



Search H-GAC

Search

BIG Coordination and Policy Workgroup

Announcements













The Coordination and Policy work group will meet at 1:00 PM July 23, 2019, H-GAC, Conference Rm D. For more information or to be added to the e-mail list, please contact Steven Johnston at steven.johnston@h-gac.com.

I-Plan

The Coordination & Policy Workgroup submitted the [Executive Summary and Introduction](#) to the I-Plan for consideration.

Meetings

- July 23, 2019 
- May 6, 2019 
- March 4, 2019 
- October 15, 2018 
- May 30, 2018 
- February 28, 2018 
- September 25, 2017 

- March 6, 2017 
- October 11, 2016 
- August 1, 2016 
- December 11, 2015 
- July 16, 2015 
- May 18, 2015 
- March 30, 2015 
- February 2, 2015 
- November 5, 2014 
- March 25, 2014 
- December 16, 2013 
- March 28, 2013 

Bacteria Implementation Group (BIG) Workgroups

BIG Animals and Agriculture Work Group

BIG Coordination and Policy Workgroup

BIG Illicit Discharges and Dumping Work Group

BIG Monitoring Plan Revision Work Group

BIG On-Site Sewage Facilities (OSSF) Work Group

BIG Research Work Group

BIG Stormwater and Land Development Work Group

BIG Sanitary Sewer Systems Workgroup

BIG Wastewater Treatment Facilities Workgroup

BIG Watershed Outreach Workgroup

BIG Residential Workgroup

Contact Us

Steven Johnston

Senior Planner

(832) 681-2579

steven.johnston@h-gac.com



[Careers](#)

[Legal Disclaimer](#)

[Privacy Policy](#)

[Site Feedback](#)

[Intranet](#)

©2019 Houston-Galveston Area Council



**Coordination & Policy Work Group
Meeting Agenda
Tuesday, July 23, 2019
1:00 PM to 3:00 PM
H-GAC Conference Rm. D**

Call to Order/Welcome/Introductions

Item 1: Review: May 6, 2019 Meeting Summary

Item 2: Bacteria Source Tracking Discussion

Discuss the possibility of Texas A&M researcher reviewing the previous TMDL BST study?

Item 3: Implementation Plan Update

Discuss updates to the I-Plan and review the stormwater section. Update to TCEQ implementation.

Item 4: 2019 Annual Report Update

Discuss progress to the 2019 Annual Report.

Other Topics/Announcements/Adjourn

Upcoming Meeting Schedule

7/24/2019 East and West Fork San Jacinto River Work Group – (HARC, The Woodlands)

Instructions to call into BIG meetings:

To call in, dial 713-481-0090 (or 800-240-3895). You will be asked to enter your pass code, followed by the # sign. The pass code is 1084242. If you dial in before H-GAC, you will hear "music on hold". Once H-GAC dials in, the music will cease and the conference call will begin. During the conference, you may hear beeps. A single beep indicates someone has joined the conference call. A double beep indicates someone has left the conference call. Remember--if you do press hold, everyone will hear your hold music.



**Coordination & Policy Work Group
Meeting Agenda
Tuesday, July 23, 2019
1:00 PM to 3:00 PM
H-GAC Conference Rm. D**

Call to Order/Welcome/Introductions

Camila Biaggi (HC), Danielle Cioce (HC), Denise Ehrlich (GCA), Claire Iseton (TPWD), Mack Martin (TAMU Forest), Hannah Meeks (Harris Co.), Jack Murphy (League City), Scott Nichols (Montgomery Co), Linda Pechacek (Public), Sarah Robinson (GBF), Aaron Schindewolf (SJRA), Linda Shead (TX Coastal Partners), Monica Singhania (TAMU Forest), Robert Snoza (HCFCF)

Item 1: Review May 6, 2019 Summary

Work group reviewed the meeting summary and made not changes.

Item 2: Bacteria Source Tracking Discussion

The group discussed whether there should be any follow up to the TAMU presentation on bacteria source tracking (BST). There was a question about whether the BST data gathered early in the TMDL process (mid 2000s) could be reviewed under the lens of current bacteria libraries to lessen the large uncertainty with the data set. Mr. Steven Johnston, H-GAC stated that he would reach out to TAMU to see if the data was ever reviewed by the researchers and if there would be any benefit to developing a project to have it reviewed.

Item 3: Implementation Plan Update

H-GAC staff presented the update. Mr. Johnston noted that not much had been accomplished since the previous meeting or the BIG Spring meeting. He noted that he did receive updated information from TCEQ. That information was recent and could not be assessed in time for the meeting. However, it did provide for new SSO, WWTF inspection, and SSOI data. H-GAC would go through the information for completeness and use ability and update the group at the next meeting. Of note was the discussion on Strategy 6. The group discussed the merits of folding the strategy into Stormwater, Strategy 4. They agreed to combine both strategies. It was also suggested to highlight illicit discharge detection and elimination as a best practice with encouragement to adopt the practice. Mr. Johnston reviewed the timeline and hoped to get the group back together by the end of August.

Item 4: 2019 Annual Report Survey

The work group was handed copies of the 2018 Annual Report and portions of the I-Plan covering Strategies 4, 5 on Stormwater and Construction, respectively. The group reviewed each action and discussed potential implementation.

Other Topics/Announcements/Adjourn

Upcoming Meeting Schedule

7/23/2019 East and West Fork San Jacinto River Work Group – (HARC, The Woodlands)

BACTERIA IMPLEMENTATION GROUP ROSTER (6/4/2019)

Last	First	Representing	Organization	Alternate1	Alternate 2
Bailes IV	Rep. Ernest	Agriculture (County)	San Jacinto County	Dale Everitt	
Bernhardt	Sarah	Conservation	Bayou Preservation Association	James "Ty" Kelly	
Brown	David	Resource Agency / Academia	US Geological Survey	Michael Lee	
Calvino	Ralph	Business / Industry	Terracon	Clint Miller	Jason Maldonado
Caraviotis	Jerry	Urban County	Harris County Public Health & Environmental Services		
Chapin	Richard	Large City	City of Houston	Zafar Ahmed	
Cioce	Danielle	Urban County	Harris County	Camila Biaggi	Nick Russo
Cooper	Christine	Small City	City of Conroe	Greg Hall	
Douglas**	Tom	Conservation	Houston Sierra Club	Jim Williams	
Ehrlich	Denise	Business / Industry	Gulf Coast Authority	Shaun Austin	
Elliott	Catherine	Urban County	Harris County Flood Control District	Robert Snoza	Roberto Vega
Gossett	Sarah	Conservation	Galveston Bay Foundation	Scott Jones	
Harris	Teague	Utility District	IDS Engineering		
Isbell	Andrew	Rural County	Walker County		
La Breche	Carol	Large City	City of Houston	Richard Chapin	
Lane	Helen	Conservation	Houston Audubon Society		
Lindsey	Mike	Rural County	Montgomery County	Frank Green	Scott Nichols Reuben Martinez
McCoy	Cathy	Agriculture	Harris County SWCDistrict #442		
Murphy	Jack	Small City	City of League City	Susie Blake	Jody Hooks
Olive	Becky	Business / Industry	AECOM	Karen Kottke	
Page	Mitchell	Utility District	Schwartz, Page, & Harding, LLP		
Pechacek	Linda	Public	Citizen, Civil Engineer	Rachel Powers	
Pinheiro	Rod	Large City	City of Houston	Patrick Rightmyer	
Powers	Rachel	Conservation	Citizens' Environmental Coalition	Anne Olson	Linda Shead
Robertson	Jim	Conservation	Cypress Creek Flood Control Coalition	Richard Smith	
Saenger**	Scott	Business / Industry	Jones and Carter		
Schindewolf	Aaron	Business / Industry	San Jacinto River Authority		
Shead	Linda	Conservation	Texas Coastal Partners	Mary Ellen Whitworth	
Shmaefsky	Brian	Resource Agency / Academia	Lone Star College, Kingwood	Jon Connolly	
Singhania	Monica	Agriculture	Texas Forest Service	Hughes Simpson	
Tarrant	Mayor Leah	Rural Small City	City of Patton Village		
Thornhill	Michael	Utility District	SI Environmental	Matt Carpenter	
Tuma	Scott	Business / Industry (Boating)	Boater	Sarah Gossett	

**Approval of BIG Required



Search H-GAC

Search

East and West Forks of the San Jacinto River TMDL and Implementation Plan

Watershed Characteristics

The streams addressed by this project are located within the Lake Houston watershed of the San Jacinto River Basin. The southern part of the watershed includes portions of the city of Houston and its northern suburbs. The Woodlands and the City of Conroe are the largest municipalities located entirely within the watershed. Other smaller municipalities located in the watershed include Cleveland, Cut and Shoot, Magnolia, New Waverly, Pinehurst, Splendor, Tomball, and Waller. The northern part of the watershed is relatively rural, and includes portions of the Sam Houston National Forest. The total drainage area for Lake Houston is 2,850 square miles. The TMDL watersheds are located primarily within Montgomery and San Jacinto Counties, but also include portions of Grimes, Harris, Liberty, and Walker Counties.

About the TMDL Project

The Lake Houston, East Fork & West Fork San Jacinto, and Crystal Creek Watersheds TMDL project was initiated through a contract between the TCEQ and Texas Institute for Applied Environmental Research (TIAER). The Texas Commission on Environmental Quality (TCEQ) first identified the bacteria impairments within the West Fork San Jacinto River in 2002, and within East Fork San Jacinto River, Crystal Creek, and Lake Houston in 2006 and each subsequent edition through the 2012 Texas Water Quality Integrated Report for Clean Water Sections 305(b) and 303 (d) (formerly called the Texas Water Quality Inventory and 303(d) List).

This project considered bacteria impairments in 4 water bodies (segments) consisting of 7 total assessment units (AUs). The complete list of water bodies and their identifying segment_AU number are as follows:

1. Lake Houston 1002_06
2. East Fork San Jacinto River 1003_01, 1003_02, 1003_03
3. West Fork San Jacinto River 1004_01, 1004_02
4. Crystal Creek (unclassified water body) 1004D_01

Watershed stakeholders and interested organizations met between 2014 and 2017 to discuss the TMDL, considered the best approaches to reduce fecal bacteria and determined to join the Bacteria Implementation Group (BIG) and implement the BIG's Implementation Plan developed to reduce fecal bacteria (<http://www.h-gac.com/community/water/tmdl/big/default.aspx>). The East and West Fork of the San Jacinto River joined the BIG in October 2016. The stakeholders continue to meet annually to discuss implementation.

Additional TMDL Information

Please see the [TCEQ's website](#) for more information.

Meetings

- | | |
|--------------------|---|
| July 24, 2019 | ▼ |
| June 6, 2018 | ▼ |
| April 27, 2017 | ▼ |
| March 17, 2016 | ▼ |
| September 22, 2015 | ▼ |
| April 13, 2015 | ▼ |
| November 3, 2014 | ▼ |
| October 1, 2014 | ▼ |

Issue Specific Workgroup Meetings

September 3, 2014 

September 3, 2014 

August 25, 2014 

August 22, 2014 

August 21, 2014 

July 8, 2014 

July 8, 2014 

July 9, 2014 

July 9, 2014 

June 26, 2014 

June 25, 2014 

June 25, 2014 

Round 3 - Meetings

March 5, 2014 

March 5, 2014 

March 6, 2014 

Total Maximum Daily Loads and Implementation Plans (TMDL)

TMDL Frequently Asked Questions

Brazos-Colorado Coastal Basin Bacteria Reduction Project

East and West Forks of the San Jacinto River TMDL and
Implementation Plan

Houston Ship Channel and Galveston Bay TMDL and Implementation
Plan

San Jacinto-Brazos Coastal Basin Bacteria Reduction Project

Upper Oyster Creek TMDL and Implementation Plan

Contact

Steven Johnston

Senior Planner

(832)-681-2579

steven.johnston@h-gac.com

TMDL Study Resources

TMDL Frequently Asked Questions

[Careers](#)

[Legal Disclaimer](#)

[Privacy Policy](#)

[Site Feedback](#)

[Intranet](#)



East and West Fork of the San Jacinto River (E&W) Bacteria TMDL:

Coordination Committee Meeting

July 24, 2019

Table of Contents

OVERVIEW.....	1
PURPOSE	2
APP The meeting was running over ROACH	2
NOTIFICATION.....	2
MATERIALS	2
MEETING SYNOPSIS	3
NEXT MEETING	5

OVERVIEW

Per Umbrella Contract 582-18-81222-01, the Texas Commission on Environmental Quality (TCEQ) requested Public Outreach support from the Houston-Galveston Area Council (H-GAC) for E&W Bacteria TMDL project, with activities for all elements of Public Outreach including, but not necessarily limited to:

- Identifying and Reserving Facilities for Meetings and/or Events;
- Providing a Facilitator for Any Meetings (As Needed);
- Providing Support for Organizing and Advertising Meetings and/or Events;
- Distribution and Posting of Meeting Agenda(s);
- Preparation of Meeting and/or Event Summaries;
- Preparation of Printed or Other Presentation Materials in Support of a Meeting and/or Event;
- Use of the H-GAC Website for Posting Meeting and/or Event Information; and
- Any Other Necessary Support Activities.



On July 24, 2019, H-GAC conducted a Coordination Committee meeting to review BIG 2018 implementation and preparation for the 2019 Annual Report, discuss BIG I-Plan changes, discuss new TMDL studies in the watershed, and review watershed protection planning.

PURPOSE

The water bodies included in this analysis are all within the Lake Houston watershed, which originates in Walker, San Jacinto and Grimes counties and run through Montgomery, Liberty, and Harris counties.

The Purpose of this meeting was to discuss the following:

1. I-Plan Revision Update
2. Review 2018 BIG Actions and Activities for the 2019 Annual Report;
3. Present TMDL Project Updates; and
4. Watershed Protection Planning and Implementation.

APPROACH

All members of the Coordination Committee were contacted directly via e-mail and/or phone to announce the date and time for the meeting; to notify them of meeting details; to provide an opportunity for members to add topics to the meeting agenda and to remind the Committee of the upcoming meeting.

NOTIFICATION

Notification of the meeting took place via phone and/or e-mail. Additionally, TCEQ asked H-GAC to post meeting details to the project webpage:

(<http://www.h-gac.com/community/water/tmdl/san-jacinto-river-east-west-forks.aspx>).

MATERIALS

The following materials were made available for the meeting:

1. Sign-In Sheet(s); and
2. Coordination Committee meeting agenda/presentation.



MEETING SYNOPSIS

Location

Houston Advanced Research Center
8801 Gosling Road
The Woodlands, TX 77381

When

Wednesday, July 24, 2019
1 PM – 3 PM

Attendees

NAME	ORGANIZATION REPRESENTED	ASSUMED COUNTY?
Tom Douglas	Houston Sierra Club	Montgomery
Dolores Judge	Self	Montgomery
Brian Koch	TSSWCB	Wharton
Scott Nichols	Montgomery Co.	Montgomery
Shane Simpson	SJRA	Montgomery

Meeting Outcomes

1. BIG I-Plan Revision

Mr. Steven Johnston presented on the factors that are driving the need to revise the I-Plan. He stated that the plan was being revised to update maps, tables, data and photos. This was due to expanding the BIG project area to include the East and West Forks of the San Jacinto River, Armand Bayou and Jarbo Bayou watersheds since the I-Plan was completed in January 2013. Due to the inclusion of the East and West Forks of the San Jacinto River and Jarbo Bayou watershed, strategies that address agricultural and illicit discharge sources will be revised to include forest management and boater wastes, respectively. Finally, actions are being reviewed by the BIG to update, modify or remove actions that are irrelevant, seen little or no action, or could be improved.

2. Review 2018 BIG Actions and Activities and the 2019 Annual Report Update

Mr. Johnston led the review. The geometric mean graph for the BIG project area was presented. The graph includes all watersheds that have been added to the BIG, presents them as one project area and as individual watershed. Mr. Johnston stated that while the graph appears to be flattening, of the 227 AUs in the BIG project area 57 were improving, 162 presented no change and only eight were considered deteriorating.



Mr. Johnston proceeded to review available WWTF, SSS, OSSF, ambient and implementation data. Key points made was that H-GAC was going to look at providing more localized assessments. While those assessments are too many to include in an annual report, the focus will be to use the BIG Implementation website more. Mr. Johnston rounded out the presentation reviewing implementation carried out in 2018 from training and education to focused implementation projects like illicit discharge detection and elimination to OSSF repair and replacement.

Mr. Johnston presented the timeline for completing the 2019 Annual Report and process for updating the I-Plan. The annual report and I-Plan update will be finalized through additional work group meetings carried out over the summer.

3. Present TMDL Project Updates

Mr. Johnston stated that he would be reviewing a presentation put together by the Texas Institute for Applied Environmental Research (TIAER). There are seven completed TMDLs that make up the San Jacinto River watershed in following AUs: 1002_06, 1003_01, 1003_02, 1003_03, 1004_01, 1004_02 and 1004D. There are an additional 95 in the remainder of the BIG.

Mr. Johnston noted that the two new TMDLs are found in the Lake Houston TMDL area of the BIG, Spring Branch, 10010C_01, and Brushy Creek, 1008J_01. The reported geometric mean for 1008J_01 and 1010C_01 was 221 MPN/100mL and 384 MPN/100mL respectively as listed in the draft 2016 TCEQ Integrated Report (IR). The contact recreation standard for *E. coli* is 126 MPN/100mL. Mr. Johnston reviewed potential sources, noting the watershed has a low population density, few WWTF permits and limited MS4 permitted area coverage. This suggest the potential driver in elevated bacteria is from unpermitted non-point sources, agriculture, onsite sewage facilities (OSSF), feral hogs, and wildlife.

TIAER anticipates delivering the draft Technical Support Document to TCEQ in August 2019. The document will be made available through the TCEQ website for review. The document will be used by TCEQ to update the Water Quality Management Plan.

4. Review Watershed Protection Planning

Mr. Johnston presented an update on watershed protection planning (WPP) in the project area. The watershed feeding the west Lake Houston area are a focus of H-GAC, as the lake and watershed are an important as a source water supply, recreation, and ecology. To help protect these important areas, H-GAC is working to develop WPPs and hopes to implement the voluntary actions they identify.

This work is being coordinated with the completed TMDLs found within each watershed. There are four target watersheds: Lake Creek and West Fork, Spring Creek, Cypress Creek and Lake Conroe. Lake Creek and West Fork and Lake Conroe each have a WPP completed. The Lake Conroe WPP was a project of the San Jacinto River Authority. H-GAC is working



with stakeholders within the Spring and Cypress Creeks to complete plans for both watersheds. H-GAC is in the middle of developing the Spring Creek WPP, while Cypress Creek will begin in the fall of 2019.

NEXT MEETING

Location

BIG Fall Meeting, H-GAC

When

October 29, 2019 from 1:00 PM – 3:00 PM

BRF



AGENDA

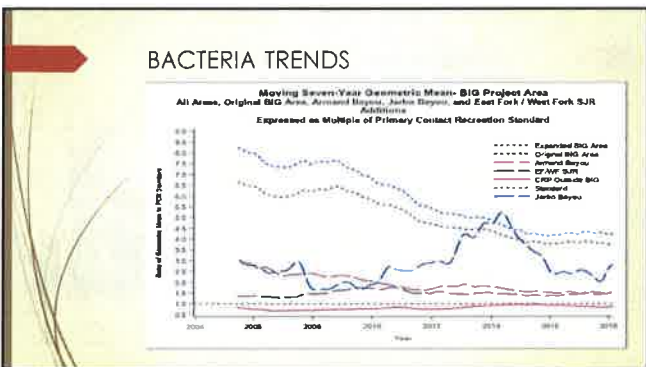
- Welcome/Introductions
- I-Plan Revision Update
- 2019 Annual Report Update
- TMDL Program Update
- Watershed Protection Planning
- Other Business
- Adjourn

I-Plan Revision Update

- Updating Maps, Tables, and Photos
- Revising Text
 - Facil Discharges
 - Animal and Agriculture
- Considering Changes to Actions
- Format
- Timeline

2019 ANNUAL REPORT

- Met with Workgroups
 - Coordination and Policy (3/4, 5/6)
 - OSSF and Soil Discharge (5/5)
 - Animals and Agriculture (5/27)
 - E&W Fork TMDL CC (6/11)
- BIG Meetings
 - Spring Meeting (6/4)
 - Fall Meeting (10/29)



Water Quality Trend Summary by AUs

Parameter Observed/Oxygen grab screening level	Deteriorating #2	Improving #3	No Change #8
E. Coli	8	88	109
Escherichia	9	112	86
Nitrosyl-N	48	30	427
Total Phosphorus	16	33	128

WWTFs Within the BIG Project Area

Type	Number
Permittees in ICEG Overall Layer	330
Permittees in EPA Region	330
Permittees Submitting DMR Data only type	352
Permittees Submitting DMR Reports DMRs	257

WWTF Type	Number of Permittees
Domestic	317
Industrial	35

WWTF Type	Number of Permittees
Domestic	310
Industrial	17

DMRs for WWTFs 2012-2018

Year	Total Geomass Results Reported from Permittees with Limits in Permits	Percent Exceeding Geomass Level	Total Geomass Results Reported from Permittees with Limits in Permits	Percent Exceeding Geomass Level	Geomass Compliance	Columnar Compliance
2012	3997	35	991	485	184	43
2014	4533	42	991	493	131	28
2015	4652	24	993	489	181	37
2016	4752	24	993	4912	132	27
2017	4787	33	993	4978	153	31
2018	4848	15	997	5072	118	23

Exceedances by Plant Size (DMRs 2012-2018)

Relative Plant Size	Number Plants	Geomass Daily/Maximum Mean or Geom Sample
0-1 MGD	122	0.5
1-2 MGD	99	0.8
2-3 MGD	17	1.4
3-4 MGD	16	1.4
4-5 MGD	15	1.7
Variable/Intermittent Discharge	8	3.2

Relative Plant Size	2012	2013	2014	2015	2016	2017	2018
0-1 MGD	22	28	31	13	0.8	1.2	0.5
1-2 MGD	17	0.9	0.7	0.3	0.7	0.9	0.5
2-3 MGD	0.5	0.4	0.2	0.0	0.1	0.1	0.2
3-4 MGD	0.8	0.4	0.3	0.2	0.1	0.3	0.2
4-5 MGD	0.6	0.0	0.0	0.3	0.0	0.5	0.0
10 MGD	0.0	0.0	0.8	0.0	0.0	0.0	0.0

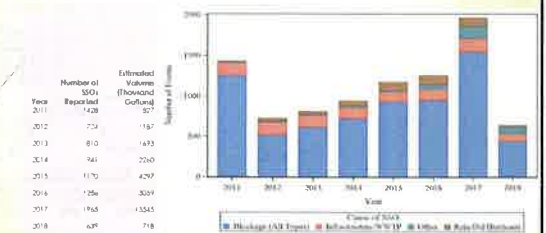
Harris County PCS Domestic WWTF Inspection Data with DMRs 2018

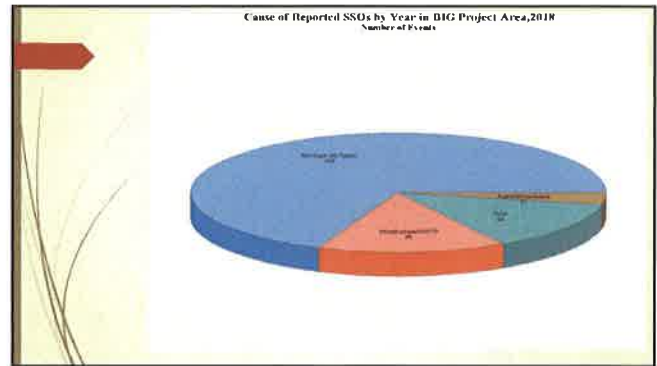
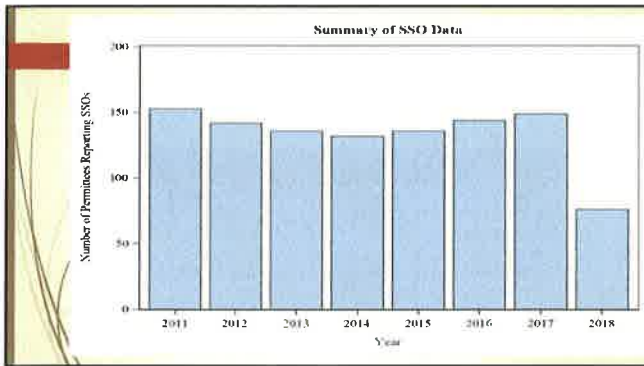
Relative Plant Size	DMR Geomass Sample Results	Percentage Exceeding Level	Percent in Compliance	HCFE Inspection Samples	WFPE Inspection Daily Max PCI Exceedance	Percent Compliance, HCFE Samples
0-1 MGD	427	34	97.6	88	1.24	87.9
1-2 MGD	1868	1.3	98.5	81	4.4	95.1
2-3 MGD	921	4.6	95.4	41	7.3	92.3
3-4 MGD	156	3.1	96.8	0	0.0	100
4-5 MGD	108	1.1	98.9	0	0.0	100

Permittees with 25% or More Excursions

Year	Geomass Mean Violation	Daily/Maximum Mean Violation	Excursions by Plant Size	Geomass Mean Level Violation	Daily Max or Geom Level Violation
2012	0	18	0-1 MGD	5	3
2013	0	18	2-3 MGD	1	11
2014	0	18	3-4 MGD	1	21
2015	0	18	4-5 MGD	1	3
2016	1	18	Variable/Intermittent Discharge	1	26
2017	1	18		1	15
2018	1	18		1	4

Sanitary Sewer Overflows (2011-2018)





SUCCESS STORIES

- Forland HD Maintenance and Cost Optimization Project
- Residential Waste Water Assistance Program for OWS Repair/Replacement
- Water Innovation Strategies of Excellence Awards
- Cibola!

NEXT STEPS

- Draft 2019 report (Sept. 1, 2019)
- Coor. & Policy Review (Sept. 2019)
- BIG Fall Meeting (October 29, 2019)

Status of Additions to Indicator Bacteria TMDLs in the Lake Houston Watershed

TMDL Project Manager
Jason Leifester

Project Staff:
Jimmy Millican
Todd Adams

Texas Institute for Applied Environmental Research (TIAER)
Tarlton State University
Stephenville, Texas

TMDL Presentation Topics

- Previously completed TMDLs
- Overview & status of two present TMDL projects

Previously Completed Indicator Bacteria TMDLs for Watersheds Upstream of Lake Houston
Adopted by TCEQ: Apr. 6, 2011; Approved by EPA: Jun. 29, 2011

Segment Name	Segment Number	Assessment Unit (AU)
Stewarts Creek	1004E	1004E_02
Spring Creek	1008	1008_02, 1008_03, 1008_04
Willow Creek	1008H	1008H_01
Cypress Creek	1009	1009_01, 1009_02, 1009_03, 1009_04
Faulkey gully	1009C	1009C_01
Spring Gully	1009D	1009D_01
Little Cypress Creek	1009E	1009E_01
Caney Creek	1010	1010_02, 1010_04
Peach Creek	1011	1011_02

Previously Completed Addendum to Fifteen TMDLs Upstream of Lake Houston
Added by Addendum October 2013 by TCEQ; Approved by EPA: Feb. 14, 2014

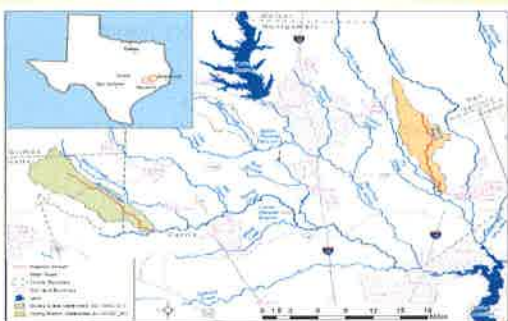
Segment Name	Segment Number	Assessment Unit (AU)
Upper Panther Branch	1008B	1008B_01, 1008B_02
Lower Panther Branch	1008C	1008C_01, 1008C_02
Bear Branch	1008E	1008E_01
Peach Creek	1011	1011_01

Lake Houston Upstream Watersheds showing areas of fifteen completed TMDLs



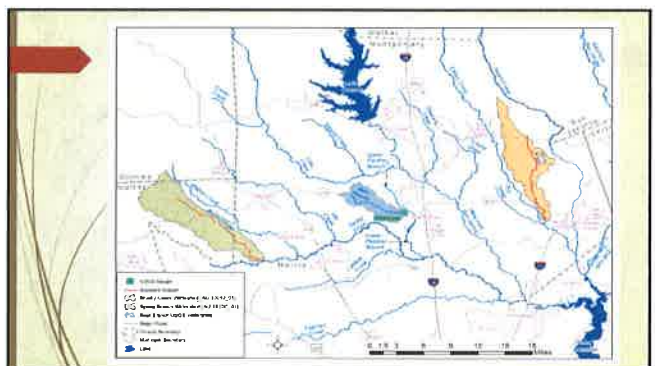
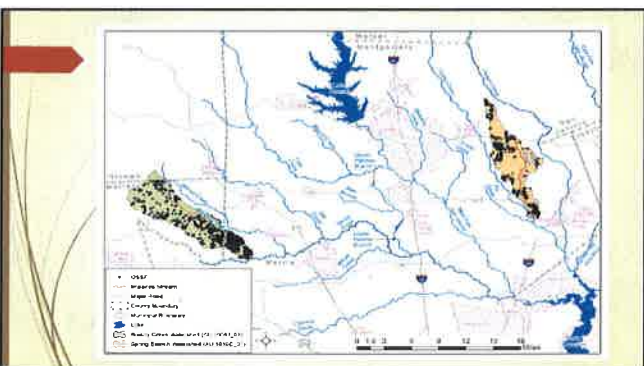
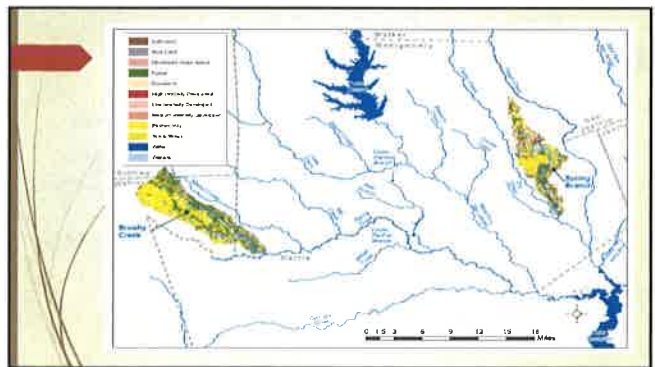
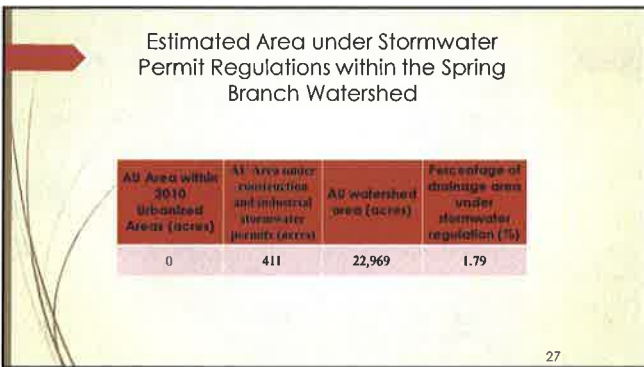
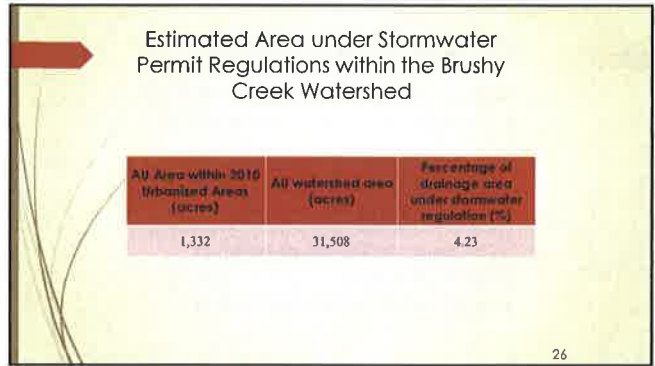
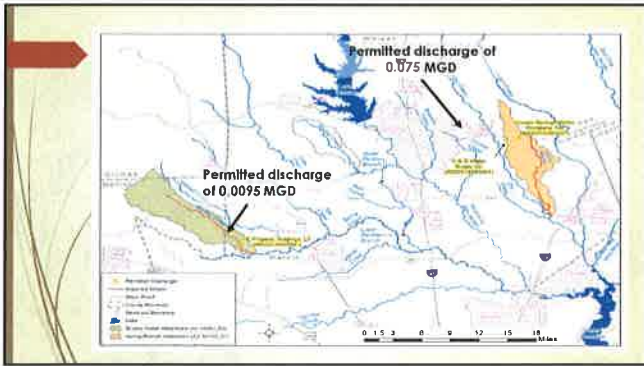
Addendum to Fifteen TMDLs for Indicator Bacteria in Watersheds Upstream of Lake Houston

- Project water bodies
 - Brushy Creek (1008J_01)
 - Spring Branch (1010C_01)
- Approach for TMDL – FDCs/LDCs



Summary Integrated Report Findings for *E. coli* Assessment (criterion = 126 MPN/100 mL)

Integrated Report Year	Waterbody	AU	No. of Samples	Data Date Range	Geometric Mean (MPN/100 mL)
2014 (draft)	Brushy Creek	1008J_01	22	2007-2014	221
2014 (draft)	Spring Branch	1010C_01	20	2007-2014	384



Status of TMDL Development

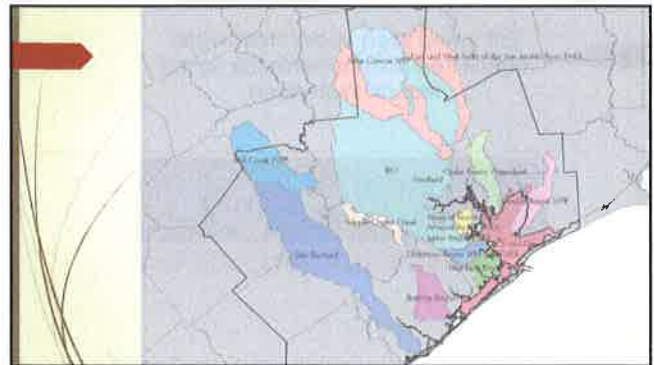
- Technical Support Document (TSD) to be completed by the end of Aug. 2019
- TSD will be posted on TCEQ website (TCEQ will notify BIG when it is available for public review and comment)
- TCEQ will use TSD to develop an addendum to be included in Water Quality Management Plan update

Watershed Protection Planning in the BIG Project Area



Watershed Protection Plans (WPPs)

- H-GAC and other local coordinators with TCEQ/TSSWCB
- Voluntary, locally-led, represent all stakeholders
- Can incorporate other stakeholder concerns (related to water quality)
- Can be used to attract funding, help collaboration, get consensus.
- Long range plans, "road maps"



West Lake Houston WPPs

- A focus for H-GAC
- Recognize importance of this watershed to water supply, recreation, ecology, public health.
- Plans are watershed specific, coordination is regional
- Coordinate with TMDLs; smaller more specific focus, other concerns



Lake Houston WPPs



West Fork and Lake Creek WPP

- Completed, approved in late 2018, 2019
- First year implementation complete; seeking further funds
 - Outreach, education primary focus
 - Heavily coordinated with flood mitigation concerns
- www.westforkwpp.com



Cypress Creek WPP

- Initiated 2019
- Preliminary work complete, public phase initiating in June/July
- Similar concerns to West Fork; greater density
- Looking for additional leads, contacts, partners, groups
- www.cypresspartnership.com



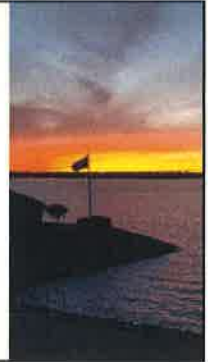
Spring Creek WPP

- TCEQ proposed project
- Focus on fecal bacteria, DO issues;
- Preliminary work completed under previous projects
- Reviewing ongoing data, seeking early partners



Lake Conroe WPP

- Completed by San Jacinto River Authority in 2015 (not 319 funded)
- Efforts focus on SJRA's sphere of influence and operations around the Lake
- Source Water protection focus
- In implementation
- <http://www.sjra.net/wp-content/uploads/2014/12/Lake-Conroe-Watershed-Protection-Plan.pdf>



For more information, contact:

Justin Bower
713-499-6653
justin.bower@h-gac.com

3555 Timmons Lane, Suite 120,
Houston, TX 77077

www.westforkwpp.com
www.cypresspartnership.com



Up Coming Meetings

- BIG Fall Meeting
 - October 29, 2019

ADJOURN

Steven Johnston
Steven.Johnston@h-gac.com
281-681-2579

IPR BIG TCEQ



The Houston-Galveston Area Council's (H-GAC) Coastal Communities program is designed to help small, coastal communities prevent water pollution by providing resources to identify needs, locate funding opportunities, and promote education and outreach to residents. Visit CoastalCommunitiesTX.com, email becki.begley@h-gac.com, or call 713-993-2410 to learn more.



PHARMACEUTICAL KIOSKS

For a short time, H-GAC can offer funding for law enforcement to place **MedSafe drug take-back systems** in your community. Safe disposal of unused and expired medications protectst your residents and our waterways.



PET WASTE STATIONS

H-GAC has funding available to provide **pet waste stations** for parks and public areas in your community. We also offer **leash bag dispensers and refill rolls** for your shelter or apartment complexes.



DEFEAT THE GREASE MONSTER

If you have areas of town with SSOs related to fats, oils, and grease (FOG), H-GAC can supply your residents with **cooking oil funnels and plate/pan scrapers** to keep FOG out of the sanitary sewer system.

COASTAL COMMUNITIES WATER QUALITY OUTREACH WORKGROUP MEETING

Join the Houston-Galveston Area Council and the Save Water Texas Coalition for a field trip to learn more about the coalition's programs and tour its brand new Water Quality Mobile Teaching Lab from **10 a.m. to noon, Thursday, August 8**, at the North Harris County Regional Water Authority, 3648 Cypress Creek Parkway, Houston. [Registration](#) is requested.

Please dress in cool, comfortable, casual clothing appropriate for outdoor weather. Parking is available but carpooling would be helpful if several folks from one organization are attending. Transportation *will not be provided* to the meeting location.

The Save Water Texas Coalition focuses include water conservation, water reuse, and water pollution education and outreach. Examples of resources include PattyPotty.com, SunflowerSuzie.com, and TexasWaterHog.com. Learn more at SaveWaterTexas.org.

WANT TO GET MORE INVOLVED?

Join our Fats, Oils, and Grease Multi-Family Education Project Subcommittee

The Coastal Communities Work Group is beginning a pilot project to work with residents of multi-family housing complexes to encourage the proper disposal of fats, oils, and grease to reduce sanitary sewer blockages, overflows, and malfunctioning septic systems. The first meeting will be at **1:30 p.m. Wednesday, July 31**, at the Alvin Library, 105 S Gordon St, Alvin. If you would like your community to be included, please contact us at waterresources@h-gac.com for more information.





Houston-Galveston Area Council

September 14, 2019

Ms. Earlene Lambeth (MC 203)
TMDL Project Manager
Water Quality Division
Texas Commission on Environmental Quality
12100 Park 35 Circle, Bldg. F
Austin, Texas 78753

RE: September 2019 Progress Report Houston Region TMDL Public Outreach Contract No. 582-18-91222, Work Order 01.

Dear Ms. Lambeth:

Enclosed is one (1) copy of the FY 2019 6th Progress Report for Contract No. 582-18-81222-01. It covers all deliverable activities for the project period August 1, 2019 through August 31, 2019. Financial Statements, HUB report and Voucher will be submitted separately.

Included in this Report are:

1. One copy of the quarterly progress report for August 1, 2019 thru August 31, 2019.
2. Copies of meeting summaries and other pertinent materials from project related meetings.
3. Copy of H-GAC newsletters, related water quality meetings, workshops, seminars, and training.

We hope you find the quarterly report satisfactory. Any comments you have will be appreciated. If you have any questions, please contact me by phone (713-993-4549) or E-mail (todd.running@h-gac.com).

Sincerely,



Todd Running
Water Resources Program Manager
Community & Environmental Planning Dept.

Cc: Jason Leifester
Chris Loft

TR/srj
Enclosures

**TMDL Program
FY 2019 Progress Report #6**

Date: September 14, 2019

Time Period Covered: 8/01/2019 – 8/31/2019

Name of Project: Houston-Galveston Area TMDL Public Participation Project

Contract No./Work Order 582-18-81222-01

TASK #1 PROJECT ADMINISTRATION

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
PRs (Task 1.1)	September 15, 2019	Completed on September 14, 2019.
Weekly E-mail Updates (Task 1.2)	Weekly	Provided hard copies with report.
FSRs (Task 1.3)	September 15, 2019	Provided as a separate report.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

Work performed for this task during this period included writing and assembling the monthly report.

TASK #2 PUBLIC OUTREACH AND SUPPORT FOR THE BIG AND RELATED IMPLEMENTATION ACITIVITIES

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Meetings, workshops, or outreach activities to discuss and monitor I-plan for the BIG (Task 2.1)	Up to four public meetings, workshops, or other outreach activities and up to ten associated work group meetings.	<ul style="list-style-type: none"> • <u>BIG Fall Meeting</u>: the fall meeting was held on October 23, 2018 during this project quarter. • <u>Coordination and Policy Work Group</u>: met on October 15, 2018. • <u>Coordination and Policy Work Group</u>: met on March 4, 2019. • <u>Coordination and Policy Work Group</u>: met on May 6, 2019. • <u>OSSF/Illicit Discharge Work Group</u>: met on May 6, 2019. • <u>Animals and Agriculture Work Group</u>: met on May 23, 2019. • <u>BIG Spring Meeting</u>: was held on June 4, 2019 • <u>Coordination and Policy</u>: was held on July 23, 2019 • <u>East and West Fork San Jacinto River CC</u>: was held on July 24, 2019
Draft meeting or event agenda and materials (Task 2.2)	Two (2) weeks prior to meeting	No meetings held in August.
Draft meeting or event summary (Task 2.3)	Within two (2) weeks following completion of meeting	No meetings held in August.
Final agenda and meeting or event summary, list of	Within thirty (30) days of the	No meetings held in August.

attendees and contact information, and copies of any printed materials (Task 2.4)	completion of the meeting	
Implementation Summary Report (Task 2.5)	August 31, 2018	Began work on the Summary Report.
Digital link to regional implementation database (Task 2.6)	August 31, 2018	Updated throughout the year, access is available at - http://h-gac.maps.arcgis.com/apps/MapSeries/index.html?appid=a75ba4bb46ca40658066c5755a8dba6e .

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

No meetings were held in the month of August during the report period. Staff completed the first draft of the 2019 Annual Report covering implementation carried out by H-GAC and members of the BIG in calendar year 2018. The draft is attached to this report. Staff also worked on the I-Plan update which will be completed in 2019.

Staff participated in workshops, outreach, and regional meetings in relation to this task. Those meetings are listed below under the heading Additional Related Meetings, Training, Events and Conferences.

TASK #3 PUBLIC OUTREACH SUPPORT FOR THE UPPER OYSTER CREEK COORDINATING COMMITTEE AND RELATED IMPLEMENTATION ACTIVITIES

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Meetings or events for Upper Oyster Creek (Task 3.1)	One public meeting and up to two events.	April 11, 2019 – the Upper Oyster Creek annual meeting was held. No additional meetings were held in June.
Draft meeting or event agenda and materials (Task 3.2)	Two (2) weeks prior to meeting	No meetings were held in June.
Draft meeting or event summary (Task 3.3)	Within two (2) weeks following completion of meeting	No meetings were held in June.
Final agenda and meeting or event summary, list of attendees and contact information, and copies of any printed materials (Task 3.4)	Within thirty (30) days of the completion of the meeting	April meeting summary is included with this report.
Upper Oyster Creek annual report	With final PR	Staff completed the Annual Report. Report is attached to this document .

Work Performed This Period

No meetings were held during June. Staff completed the April 11, 2019 meeting summary, attached. Staff completed the Annual Report, which has been attached to this report.

TASK #4 PUBLIC OUTREACH SUPPORT AND IMPLEMENTATION PLAN DEVELOPMENT FOR CHOCOLATE BAYOU

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Draft I-Plan for Chocolate Bayou (Task 4.1)	December 15, 2018.	Draft I-Plan submitted on June 21, 2019.
Final I-Plan for Chocolate Bayou (Task 4.2)	May 15, 2019	Draft I-Plan submitted on June 21, 2019.
Meetings or events for Chocolate Bayou (Task 4.3)	Up to two public meetings or events	No meetings were held this project period.
Draft meeting or event agenda and materials (Task 4.4)	Two weeks prior to meeting or event	No meetings were held this project period.
Draft meeting or event summary (Task 4.5)	Within two weeks following completion of meeting or event	No meetings were held this project period.
Final agenda and meeting or event summary, list of attendees, and contact information, and copies of any printed materials (Task 4.6)	Within 30 days of the completion of the meeting or event.	No meetings were held this project period.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

No meetings were held during this reporting period. No additional updates.

TASK #5 PUBLIC OUTREACH SUPPORT FOR OTHER TMDL PROJECTS IN THE HOUSTON REGION

Deliverable(s)	Due Date	Status
List all deliverables under the task described above	List the due dates for each deliverable	If the deliverable has been completed, enter the date submitted to the TCEQ. If the deliverable has not been completed, briefly describe the status of each deliverable.
Support for other TMDL public outreach activities, as needed (Task 5.1)	As requested and scheduled.	No meetings or activities carried out during the quarter.

Draft meeting or event agenda and materials (Task 5.2)	Two (2) weeks prior to meeting	No meetings or activities carried out during the quarter.
Draft meeting or event summary (Task 5.3)	Within two (2) weeks following completion of meeting	No meetings or activities carried out during the quarter.
Final agenda and meeting summary, list of attendees and contact information, and copies of any printed materials (Task 5.4)	Within thirty (30) days of the completion of the meeting	No meetings or activities carried out during the quarter.

Work Performed This Period – detail all activities for this task and briefly describe the progress on each deliverable:

No work was carried out for Task 5.

ADDITIONAL RELATED MEETINGS, TRAINING, EVENTS, AND CONFERENCES

- 1) Presentations:
 - a. No presentations were provided this report period.
- 2) Meetings, Events and Conferences:
 - a. August 8, 2019 - Staff hosted a Clean Waters Initiative workshop at the North Harris County Regional Water Authority. The focus of the workshop was on the state’s water future with topics on water conservation, water reuse, and water pollution education.
 - b. August 30, 2019 – Staff held an OSSF homeowner workshop at two locations in Montgomery County.
- 3) Associated Implementation Projects and Programs
 - a. H-GAC is working with the Bayou Preservation Association to continue to address illicit discharges. BPA received funding from GBEP to target waterbodies in the BIG area to identify and remove illicit discharges.
 - b. OSSF SEP – H-GAC has an ongoing SEP project and has received funding through the state and from Harris County District Attorney’s Office to repair and replace failing systems. H-GAC is targeting OSSFs in areas with watershed-based plans, including the BIG project area. For more information on the program: <http://h-gac.com/community/water/ossf.aspx>.
- 4) Associated Partner Activities
 - a. No associated activities to report for June.

BRIEF DESCRIPTION OF OVERALL FINDINGS:

Staff spend the month of August drafting the BIG and Upper Oyster Creek Annual Reports. Both documents are attached to this report. Additionally, staff provided implementation through two outreach events, a Clean Waters Initiative workshop and an OSSF workshop. Staff is preparing the implementation summary which should be delivered in September.

Significant Problems (describe any scheduling shortfalls, detail significant problems and how these problems were resolved, etc.): No issues were found during the report period.

Johnston, Steven

From: Johnston, Steven
Sent: Tuesday, August 13, 2019 5:42 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (July 29 - Aug 2)

Good Afternoon, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

July 29th – Aug. 2nd:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (May 31, 2019):** \$92,012.41 **Remaining Budget Amount:** \$17,987.59

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - No meetings held.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look.
- Public Outreach Events:
 - July 31, 2019 - Fats, Oils, and Grease Multi-Family Education Project subcommittee. Eight stakeholders attended, including the city of Pearland. The city will be working with a local apartment complex and plans on before and after monitoring of FOG education and sewer lines.
 - August 8, 2019 - Save Water Texas Coalition – Water Quality Mobile Teaching Lab Tour (see flyer).

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.
- Staff drafting Annual Meeting summary.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503

steven.johnston@h-gac.com

<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Friday, August 16, 2019 4:05 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (Aug 5 - Aug 9)
Attachments: PR5_15July2019.pdf

Good Afternoon, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. I have also attached PR5 for your review. Please let me know if you have any questions.

Aug. 5th – Aug. 9th:

Task 1 Project Administration – Worked with TCEQ PM to address funding and SOW changes to the FY2020 WO.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (July 31, 2019):** \$103,692.12 **Remaining Budget Amount:** \$6,307.88

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - No meetings held.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look.
- Public Outreach Events:
 - August 8, 2019 - Save Water Texas Coalition – Water Quality Mobile Teaching Lab Tour met and 30 attendees participated.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.
- Staff drafting Annual Meeting summary.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com

Johnston, Steven

From: Johnston, Steven
Sent: Wednesday, August 21, 2019 7:53 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (Aug 12 - Aug 16)

Good Evening, Earlene -- Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Aug. 12th – Aug. 16th:

Task 1 Project Administration -- Received executed 2020 WOs, started working on Work Plans.

- ***Anticipate Spend Down August 2019?:*** Yes.
- ***Is spending by categories going as expected?:*** Yes at this time.
- ***Last Invoice:*** N/A.
- ***Original Budget Amount:*** \$110,000
- ***Total Spent to Date: (July 31, 2019):*** \$103,692.12 ***Remaining Budget Amount:*** \$6,307.88

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - No meetings held.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look.
- Public Outreach Events:
 - None.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff began work on the annual report.
- Staff drafting Annual Meeting summary.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Friday, August 23, 2019 3:17 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: RE: FY19 WO #1 Weekly Report (Aug 19 - Aug 23)

Good Evening, Earlene – Below you will find the weekly report for Work Order #1 under 582-18-81222. Please let me know if you have any questions.

Aug. 19th – Aug. 23rd:

Task 1 Project Administration -- Received executed 2020 WO, started work on Work Plan and budget.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (July 31, 2019):** \$103,692.12 **Remaining Budget Amount:** \$6,307.88

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - No meetings held.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look.
- Public Outreach Events:
 - None.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff working on the annual report.
- Staff drafting Annual Meeting summary.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No activities to report

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

Johnston, Steven

From: Johnston, Steven
Sent: Wednesday, September 11, 2019 6:38 PM
To: 'Earlene Lambeth (Earlene.lambeth@tceq.texas.gov)'; Nicole Reed
Cc: 'Jazmyn Milford'; 'Jason Leifester (Jason.leifester@tceq.texas.gov)'; 'Chris Loft'
Subject: FY19 WO #1 Weekly Report (Aug 26 - Aug 30)

Good Evening, Earlene and Nicole – Below you will find the weekly report for Work Order #1 under 582-18-81222. This will be the last weekly report for WO1. Any remaining deliverables will be discussed under the weekly report for WO #3 of 582-19-95487. Please let me know if you have any questions.

Aug. 26th – Aug. 30th:

Task 1 Project Administration -- Received executed 2020 WO. Submitted Work Plan and budget.

- **Anticipate Spend Down August 2019?:** Yes.
- **Is spending by categories going as expected?:** Yes at this time.
- **Last Invoice:** N/A.
- **Original Budget Amount:** \$110,000
- **Total Spent to Date: (July 31, 2019):** \$103,692.12 **Remaining Budget Amount:** \$6,307.88

Task 2 Public Outreach Support for the BIG and Related Implementation Activities

- Work group meetings:
 - No meetings held.
- Continued working on draft language for the I-Plan update. BIG members are reviewing potential format changes and design look.
- Public Outreach Events:
 - Aug. 30th – Homeowner OSSF maintenance and training workshop was held in Cypress Creek.

Task 3 Public Outreach Support for the Upper Oyster Creek Coordinating Committee and Related Implementation Activities

- Staff submitted annual report.

Task 4 Public Outreach Support and Implementation Plan Development for Chocolate Bayou

- Staff completed the draft I-Plan. Submitted to TCEQ on June 21, 2019.

Task 5 Public Outreach Support for other TMDL Projects in the Houston Area

- No updates.

Thanks,

Steve

Steven Johnston
Senior Planner
Community & Environmental Department | Houston-Galveston Area Council
3555 Timmons, Suite 120 Houston, TX 77027 | www.h-gac.com
832.681.2579 | 713.627.3200 | fax: 713.993.4503
steven.johnston@h-gac.com
<http://h-gac.com/community/water/tmdl/big/default.aspx>

BIG

2019 ANNUAL REPORT



Implementing the BIG I-Plan

The 33-member Bacteria Implementation Group (BIG) consists of government, business, and community leaders working together with other stakeholders from across the region to implement the BIG I-Plan to help reduce bacteria in area waterways.



BIG Members

Rep. Ernest Bailes IV, San Jacinto County (Agriculture)

Sarah Bernhardt, Bayou Preservation Association (Conservation)

David Brown, US Geological Survey (Resource Agency/Academia)

Ralph Calvino, Terracon (Business/Industry)

Jerry Caraviotis, Harris County (Urban County)

Richard Chapin, City of Houston (Large City)

Danielle Cioco, Harris County (Urban County)

Christine Cooper, City of Conroe (Small City)

Tom Douglas, Houston Sierra Club (Conservation)

Denise Ehrlich, Gulf Coast Authority (Business/Industry)

Catherine Elliott, Harris County Flood Control District (Urban County)

Sarah Gossett, Galveston Bay Foundation (Conservation)

Teague Harris, IDS Engineering Group (Utility District)

Andrew Isbell, Walker County (Rural County)

Carol La Breche, City of Houston (Large City)

Helen Lane, Houston Audubon Society (Conservation)

Mike Lindsey, Montgomery County (Rural County)

Cathy McCoy, Harris County Soil and Water Conservation District #442 (Agriculture)

Jack Murphy, City of League City (Small City)

Becky Olive, AECOM (Business/Industry)

Mitchell Page, Schwartz, Page & Harding, LLP (Utility District)

Linda Pechacek, LDP Consultants, Inc. (Public)

Rod Pinheiro, City of Houston (Large City)

Rachel Powers, Citizen's Environmental Coalition (Conservation)

Jim Robertson, Cypress Creek Flood Control Coalition (Conservation)

Scott Saenger, Jones and Carter (Business/Industry)

Aaron Schindewolf, San Jacinto River Authority (Business/Industry)

Linda Shead, Texas Coastal Partners (Conservation)

Brian Shmaefsky, Lone Star College, Kingwood (Resource Agency/Academia)

Monica Singhania, Texas A&M Forest Service (Agriculture)

Hon. Leah Tarrant, (Rural Small City)

Michael Thornhill, SI Environmental (Utility District)

Scott Tuma, (Business/Industry)

Parenthetical indicates type of organization represented.



BIG Alternates

Zafar Ahmed, City of Houston

Shaun Austin, Gulf Coast Authority

Camila Biaggi, Harris County

Susie Blake, City of League City

Kathlie Bulloch, City of Houston

Jerry Caraviotis, Harris County

Matthew Carpenter, IDS Engineering Group

Jon Connolly, Lone Star College, Kingwood

Dale Everitt, San Jacinto County

Bethany Foshee, Houston Audubon Society

Jessalyn Giacona, Buffalo Bayou Partnership

Frank Green, Montgomery County

Greg Hall, City of Conroe

Jody Hooks, City of League City

Scott Jones, Galveston Bay Foundation

James "Ty" Kelly, Bayou Preservation Association

Karen Kottke, AECOM

Carol LaBreche, City of Houston

Michael Lee, US Geological Survey

Jason M. Maldonado, Lockwood, Andrews and Newnam

Reuben Martinez, Montgomery County

Clint Miller, Terracon

Scott Nichols, Montgomery County

Anne Olson, Buffalo Bayou Partnership

Michael Page, Schwartz, Page & Harding, LLP

Patrick Rightmyer, City of Houston

Nick J. Russo, Harris County

Scott Saenger, Jones & Carter, Inc.

Linda Shead, Buffalo Bayou Partnership

Hughes Simpson, Texas A&M Forest Service

Richard "Dick" Smith, Cypress Creek Flood Control Coalition

Robert Snoza, Harris County Flood Control District

Roberto Vega, Harris County Flood Control District

Mary Ellen Whitworth, Texas Coastal Partners

Jim Williams, Sierra Club

Many stakeholders participated in I-Plan implementation activities and development of this Annual Report

The Houston-Galveston Area Council (H-GAC) facilitates the BIG and supports and supplements implementation of the I-Plan through a grant from the Texas Commission on Environmental Quality (TCEQ).

Be Part of the Solution

The BIG project, the first of its kind in the state, is successful thanks in no small part to your support. We are eager to build on this success and seek the continued commitment of our partners and renewed interest and participation of our stakeholders.

Many of the implementation activities in the I-Plan are voluntary. Municipal Separate Storm Sewer Systems (MS4) Phase I and Phase II operators, local governments, farmers and ranchers, OSSF owners, pet owners, and residents can help reduce the number of bacteria entering waterways.

Learn more by visiting
www.h-gac.com/BIG.



Executive Summary

Half of the Houston-Galveston region's stream and shoreline miles have bacteria levels higher than state standards for contact recreation. High bacterial concentrations may cause gastrointestinal illnesses or skin infections in swimmers or others who come into direct contact with the water.

Since 2008, a group of government, business, and community leaders as members of the Bacteria Implementation Group (BIG) have joined together to develop and implement a plan, the BIG Implementation Plan (I-Plan), to reduce bacteria and improve water quality so that the region's waters support contact recreation where appropriate. The Texas Commission on Environmental Quality (TCEQ) approved the I-Plan (formally known as the Implementation Plan for Seventy-Two Total Maximum Daily Loads for Bacteria in the Houston-Galveston Region) on January 31, 2013. The 2019 Annual Report is designed to track progress made in the BIG Project Area (Figure 1) by the BIG during the period of January 1, 2018 - December 31, 2018.

4

Making Progress

The good news is the BIG appears to be making a difference. Overall, bacteria levels for waterways in the BIG project area are going down. Since 2005, when stakeholders discussed the problem during the total maximum daily load (TMDL) project, bacteria levels in waterways have decreased from above eight times the state's contact recreation standard to just above four times the standard (Figure 2). Bacteria conditions have improved in 57 of the 227 assessment units that make up the BIG project area. Only eight were found to deteriorate in 2018. In fact, two assessment units, 1004_01 and 1004D_01 on the West Fork of the San Jacinto River and Crystal Creek, respectively, were reported by TCEQ as meeting the contact recreation standard and were delisted in the 2016 Texas Integrated Report (https://www.tceq.texas.gov/assets/public/waterquality/swqm/assess/16txir/2016_delist.pdf). There remains a distance to go to accomplish the stated goal of the I-Plan to reduce bacteria concentrations in the region's waters to fully support contact recreation, where appropriate.

Many stakeholders are actively implementing and tracking progress. Partners within the BIG are examining the effectiveness of implementation activities in reducing bacteria, including installing and monitoring structural best management practices; addressing bacteria impairments as part of their MS4 program; committing resources to address aging and failing infrastructure; educating and training local wastewater treatment operators, developers, and water quality service providers; and conducting public education and involvement campaigns. By working together, we can continue to identify what's working and what remains to be implemented.

BIG Project Area

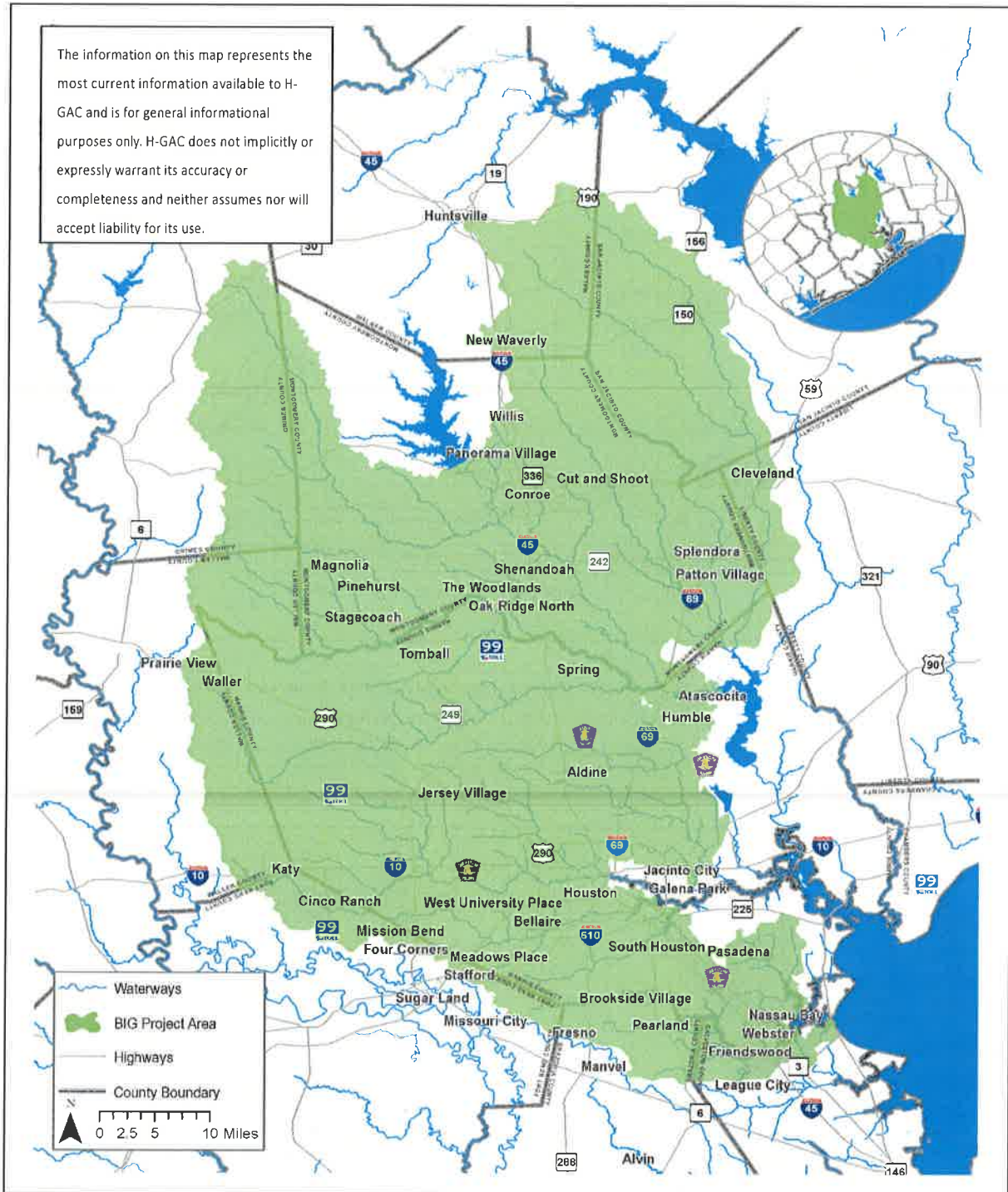


Figure 1. The BIG project area is approximately 3,260 square miles and has a population of nearly five million people. The area encompasses part of 10 counties much of the City of Houston and all or part of another 63 cities.

Since the first annual report was written in 2013, the BIG project area has expanded. The first expansion included the Armand Bayou TMDL project area in 2015. The second expansion happened in 2016 with the inclusion of the East and West Fork of the San Jacinto TMDL Project Area. The latest expansion incorporated the Jarbo Bayou watershed. The original project area was 2,202.7 square miles. The expanded area is now 3,259.89 square miles, roughly the size of Delaware and Rhode Island, combined. The I-Plan was initially written for 72 TMDLs. With additional TMDLs completed within the BIG project area and with the expanded area, the I-Plan now covers 103 TMDLs.

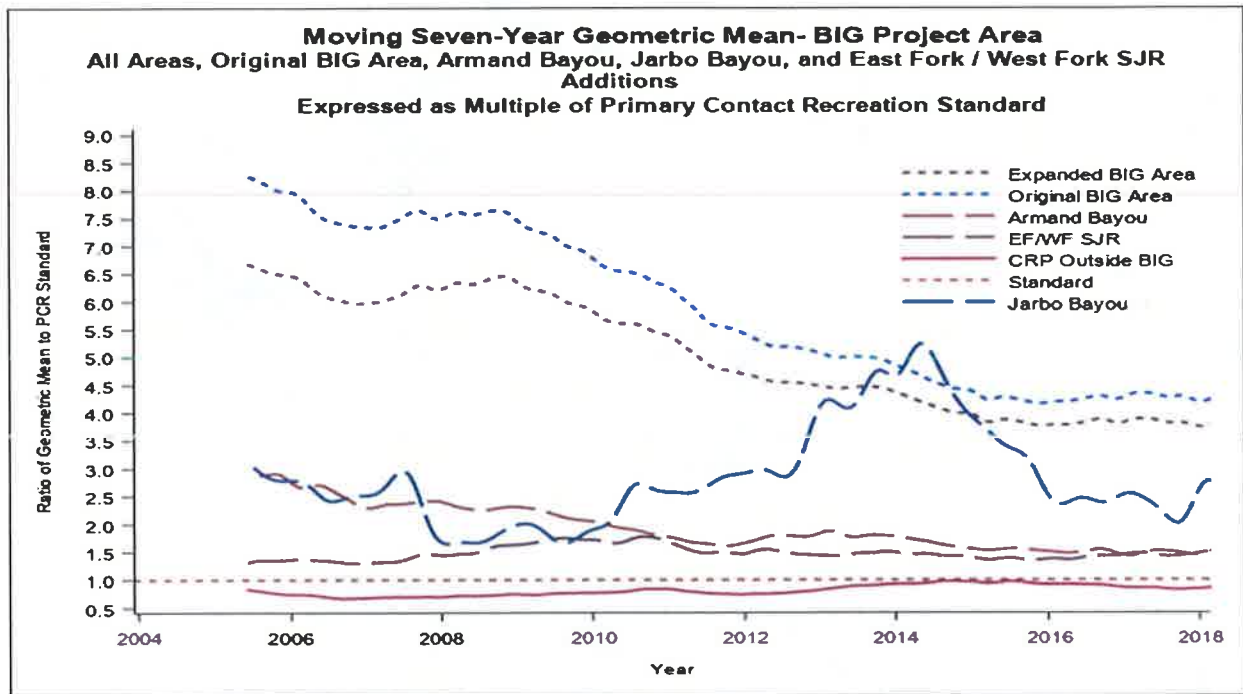


Figure 2. Bacteria trend lines for the BIG Area, Original Project Area and Expanded Project Area 2005-2018. The BIG expanded to include the Armand Bayou, East and West Fork San Jacinto River (EF/WF SJR) and Jarbo Bayou watersheds. Trend lines for Armand Bayou, EF/WF SJR, Jarbo Bayou, Clean Rivers Program (CRP) area outside BIG Project Area, and the state's water quality standard are also shown. The graph is explained in more detail in Appendix B.



Spotlight on Success



Highlighting successful projects is an important part of the BIG Annual Report. The BIG hopes by focusing on bacteria reduction projects that are having an impact, presenting cost saving opportunities for organizations on tight budgets, increasing knowledge and understanding, improving operation and maintenance, and/or contributing unique and novel approaches will foster a sharing of information and lessons learned, and ultimately result in expanded use across the BIG project area. While several projects follow, please note this list is not exhaustive and does not reflect the entirety of successful projects carried out by the BIG in 2018.

On-site Sewage Facility (OSSF) Repair and Replacement

OSSFs, often referred to as septic systems, when maintained and sited correctly, are an appropriate method to safely treat human wastes. One BIG priority is to address those systems that are not functioning properly within the project area. There are approximately 46,000 permitted OSSFs and an estimated 172,000 unpermitted, those installed either illegally or prior to the establishment of permit requirements, within the project area. One study¹ conservatively estimates the rate of failing systems at 12 percent or for the 218,000 systems, 26,000 systems are likely failing to properly treat human wastes.


Two programs are seeking to address those failing systems: The East Aldine Area and the Waste Water Assistance Program.



The East Aldine Management District (District) and Harris County have made significant improvement in the East Aldine area's water and sanitary sewer infrastructure. A study in the 1990s found that there were over 4,500 single family homes in East Aldine that relied on shallow water wells for drinking water and traditional septic tank systems for wastewater treatment. Utilizing \$43 million in Community Development Block Grants received by Harris County, Texas Water Development Board grants and the District's general funds and issued bonds, new water and waste water service was and will be provided to 1,336 homes and an estimated 3,600 residents. The project began in 2001, targeting Aldine communities with the highest septic tank failure rates, areas greater than 30 percent, and with a prevalence of private drinking wells².

¹ Reed, Stowe & Yanke, LLC. 2001. Study to Determine the Magnitude of, and Reasons for, Chronically Malfunctioning On-site Sewage Facility Systems in Texas. Texas On-site Wastewater Treatment Council.

² Presentation by East Aldine Management District, "East Aldine District Water-Sewer Capital Improvement Plan." Clean Water Initiative Workshop, Houston-Galveston Area Council May 22, 2019. Web access: <http://www.h-gac.com/clean-water-initiative-workshops/default.aspx>.



Harris County and East Aldine Management District continue to install sewer service in 2018 to the Aldine region using grant funding. Since 2014, Harris County and East Aldine Management District had made 811 connections to new sanitary sewer systems, abandoning a total of 1,413 OSSFs.

The Houston-Galveston Area Council's (H-GAC) Wastewater Assistance Program is funded by directing environmental fines from water quality violations to two Supplemental Environmental Projects (SEP), one through TCEQ and the second through the Harris County District Attorney's Office (<http://www.h-gac.com/on-site-sewage-facilities/residential-wastewater-assistance-program.aspx>). H-GAC uses these SEP funds to assist homeowners with failing systems by providing holding tank pump outs, complete system repairs, and if necessary, replacement of the entire system. Homeowners must qualify based on income level, must own the home and live in the 13 county H-GAC Service Area.

H-GAC began addressing failing systems in 2018. In the BIG project area, fourteen systems were identified either through a referral from the county or by the homeowner. Of those fourteen systems, five have been fixed, one is being scheduled for repair, and eight are on a wait list. The program is looking for additional funding to address those systems on the wait list. The average cost to fix a system is \$5,000 for repairs that range from the simple and least costly, water conservation kits and pump-outs, to the more complex and greater cost, major repairs, system replacement and in limited cases, tie-ins to centralized wastewater.

2019 Water Innovation Strategies of Excellence Awards

The Water Innovation Strategies of Excellence Awards (WISE) recognize innovative strategies and projects in the Houston-Galveston region that serve as models for improving water quality (<http://www.h-gac.com/board-of-directors/advisory-committees/natural-resources-advisory-committee/wise-awards.aspx>). H-GAC and the H-GAC Board's Natural Resources Advisory Council initiated the award in 2019 for those projects carried out in 2018 and prior years. There are four award categories: Planning and Policy, Education and Public Awareness, Built Projects less than \$500,000 and Built Projects greater than \$500,000. Nine award applications were received for the inaugural award. The four winning applications were:

- **Houston Parks Riparian Restoration Plan** – The Houston Parks and Recreation Department won the Planning and Policy category for their plan to restore forest riparian buffers in 70 parks with areas adjacent to a bayou or tributary. The goal is to use this green infrastructure (GI) practice to restore over 1,000 acres of habitat and plant 200,000 native trees within a 100-foot buffer. Plans include future water quality monitoring to determine if there are any pollutant removal benefits.
- **Galveston Bay Action Network** – The Galveston Bay Foundation won the Education and Public Awareness category for their online pollution reporting tool. The goal of the tool is to increase the reporting and removal of sources of pollution. Results of the online tool have included 16 reports of boater sewage, five reports on malfunctioning septic systems and 28 reports of sanitary sewer overflows leading to a minimum of two construction site best practice adoptions and the repair to six sanitary sewers.
- **Bioswale Demonstration Project** – The Harris County Flood Control District (HCFCD) won the Built Project less than \$500,000 category for their implementation of bioswales to enhance flood detention waters. The GI is expected to decrease runoff through infiltration and plant uptake. HCFCD will begin to monitor the feature to determine secondary water quality benefits in 2019.
- **Harris County Precinct 4 Service Center** – Harris County Precinct 4 won the Built Project greater than \$500,000 for their new service center. The center was designed to be Net Zero, Low Impact Development (LID) with LEED Certification. Elements of the Net Zero include the use of photovoltaic solar panels, geothermal heating and cooling and low power lighting. LID practices included minimal site disturbance, 1,500 linear feet of bioswales, 300 square feet of biofiltration and two constructed wetlands. The building received a Gold LEED certification.

Designing For Impact: Addressing Municipal Barriers to LID

H-GAC wrapped up the second phase of the Designing for Impact program (<http://www.h-gac.com/low-impact-development/default.aspx>) in 2018. The goal of the program is to implement and incentivize LID in the region. The first phase included: An online interactive map; LID tool box of resources; LID guide and local outreach. The second phase with a grant from the Galveston Bay Estuary Program of TCEQ sought to assist local governments in identifying barriers to LID implementation and provide recommendations for removing or lowering those barriers. H-GAC worked with the cities of Pearland and Mont Belvieu and determined maintenance and ordinance were potential barriers. The project resulted in development of sample LID maintenance agreements, maintenance installation checklists, maintenance schedules and performed an ordinance review, developing recommended code and process modifications.

Progress Report



Ultimate success for the BIG will be achieved when the waters assessed by the state are no longer considered impaired, meaning they meet the state contact recreation standard. Achieving that goal requires annually assessing progress to determine what is working and what is not working, looking critically at what each of the BIG partners is doing to further the goals set forth in the I-Plan, sharing information, and coordinating future implementation activities. This Annual Report is meant to be a mechanism for annual assessment, encouraging efforts that appear to be working and redirecting implementation that seems to be falling short. It is also an opportunity to look at the I-Plan to see if expectations are being met or if some activities need further refinement.

Most of the information in this report is based on information given to H-GAC through the workgroup process by stakeholders already involved in the BIG's planning effort. The BIG workgroups met in separate meetings between March 2019 and May 2019 to discuss implementation. This report includes activities through December 2018.

I-Plan

There are 11 implementation strategies and 38 implementation activities described in the I-Plan and laid out in this report. Activity goals, an assessment, and a summary of implementation efforts conducted throughout the 2018 calendar year are presented for each (Table 1).

The BIG is revising the I-Plan. The process started in 2018 and will wrap up in 2019. The goal of the revision is to:

- update the I-Plan with new information and lessons learned after five years of implementation;
- adjust strategies and activities due to the expansion of the project area and need to include management of forest lands and boater wastes; and
- address activities that have not seen significant progress or have been completed.



Three BIG Ideas to Consider

With 11 strategies that include 38 activities, the BIG focused and prioritized implementation. A review of available data and an assessment of current actions taken by BIG stakeholders suggest three key implementation strategies for local communities to consider addressing when committing resources to reduce bacteria: It is important to target human sources, which present the greatest pathogen vector. The first two BIG Ideas, Reduce or Eliminate Sanitary Sewer Overflows and Address Failing Onsite Sewage Facilities, directly target untreated or partially treated sewage. The third, Decrease and Disconnect Impervious Surface, is a bit broader, but is a strategy that expands the landscape's capacity to naturally reduce bacteria and is an important component of a city's robust stormwater management plan.

- 1. Reduce or Eliminate Sanitary Sewer Overflows (SSOs)** – Develop and implement a routine illicit discharge detection and elimination (IDDE) program and prioritize rehabilitation and replacement of aging and/or undersized infrastructure, including collection systems, lift stations, and WWTFs. Coordinating with other partners, develop and implement effective education and outreach with residents concerning the handling of fats, oils, and grease (FOG). Example programs include the City of Houston's Corral the Grease and the Galveston Bay Foundation's Cease the Grease programs.
- 2. Address Failing On-Site Sewage Facilities (OSSFs) (commonly referred to as septic systems)** – OSSFs are wastewater infrastructure, albeit on a much smaller and localized scale than WWTFs. Like all infrastructure, OSSFs require periodic inspections, routine maintenance, and sometimes eventual replacement to function properly. Residents, cities, and counties should participate in OSSF function and maintenance training, encourage real estate OSSF inspections at the time of sale, and increase the number of resident or water professional inspections. Local governments, as needed, should seek and make funding available to help incentivize OSSF rehabilitation or replacement and promote connections to centralized waste treatment for areas with chronically failing OSSFs.
- 3. Decrease and Disconnect Impervious Surfaces** – Concrete and other impervious surfaces, particularly when linked together (i.e. gutter to driveway to roadway) increase the speed at which stormwater – and the bacteria it carries – reaches a water body. Pervious surfaces, such as native grasses and specialized, pervious concrete, interrupt the flow and decrease the volume of water to a water body and create a more disconnected drainage system. This allows natural processes time to mitigate bacteria. Consider expanding traditional development methods to include alternative practices that decrease use of and/or disconnect impervious surfaces in redevelopment and new built areas. Low impact development (LID) and green infrastructure along with other practices have been designed to reduce pollutant loads while not adversely impacting flood management. Cities and counties can encourage the use of these practices by removing potential ordinance barriers and offering incentives for their use.

The brochure, "BIG Ideas for Cleaner Water 2017: Local Government Strategies for Improving Water Quality," covers these topics in greater detail. The brochure is available at <http://www.h-gac.com/community/water/tmdl/BIG/reports.aspx>. Appendix C provides common resource links to available funding, outreach and education materials, more detailed reporting and data information to assist in the implementation of these three strategies and other activities of the I-Plan.

Implementation Strategies

Since different sources contribute to the bacteria issue in the BIG project area, there is no one-size-fits-all solution for the problem. This I-Plan is a common-sense approach for reducing bacteria in the region's waterways. Municipalities, industries, landowners, and residents can consider a menu of water protection and implementation activities addressed by the following 11 strategies:

1. Wastewater Treatment Facilities
2. Sanitary Sewer Systems
3. On-Site Sewage Facilities
4. Stormwater and Land Development
5. Construction
6. Illicit Discharges and Dumping
7. Agriculture and Animals
8. Residential
9. Monitoring and I-Plan Revision
10. Research
11. Geographic Priority Framework



Photo Source: Aaron Lee on Unsplash

2018 Implementation

The assessment of each activity includes determining progress made toward achieving the activity's interim goal: Not Started, Initiated, In Progress, or Completed (Table 1). Additionally, each activity is assessed based on the BIG partner's efforts to advance the activity over the year: Behind Schedule, On Schedule, Ahead of Schedule, or Completed and in Tracking (Table 1). Completed and in Tracking signifies that the activity has been completed and the BIG will continue to track. In a future I-Plan update, the activity will be reviewed to determine if a new activity is needed, a change to the assessment measure is required, or if the activity should continue and be tracked.

Overall, six activities have been completed and 32 are In Progress. The six completed activities and five In Progress have been placed into Tracking (11) to evaluate changes over time or are identified to be reviewed during the I-Plan update. Three activities were considered Ahead of Schedule and 24 On Schedule (Figure 3, Table 1). The BIG will be conducting an extensive Plan review in 2019 reporting year and will review the activities that are behind schedule or those completed and in tracking to determine if the activities are appropriate and the measures valid.

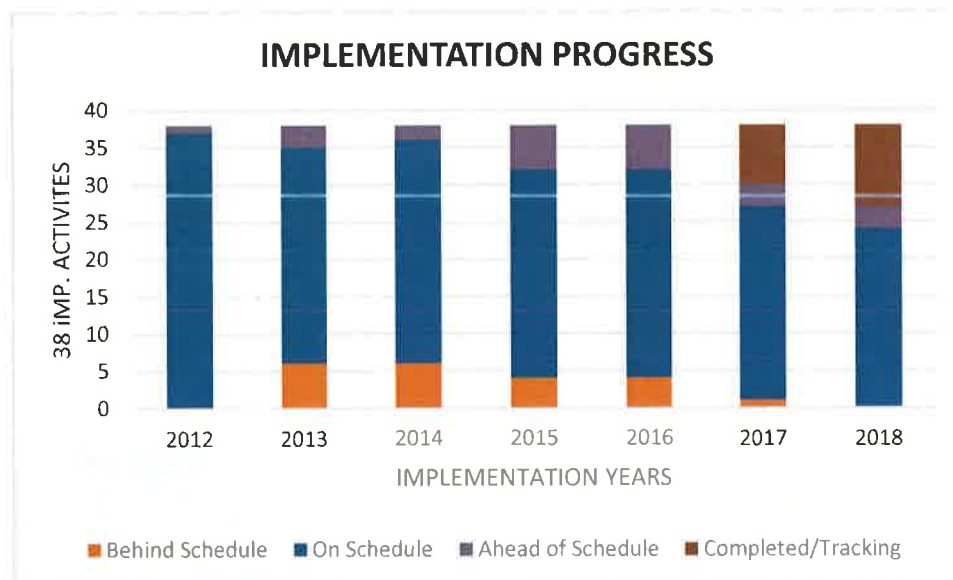


Figure 3 Implementation tracking for all 38 I-Plan Activities. Note: Completed and in Tracking is a new category added for the 2018 Annual Report. When reviewing this figure, it is possible that in a prior year assessment, one or more activity might have been considered for this category.

TABLE 1. 2018 IMPLEMENTATION REPORT

Strategy #	Activity	Achievements	Progress	Status
1.1	Impose More Rigorous Bacteria Monitoring Requirements	More strict monitoring frequency requirements found in the I-Plan have not shown up in wastewater permits. The BIG submitted a letter which requested TCEQ consider this measure in 2017. It was determined that the monitoring frequency can be changed at the request of the WWTF. A general adjustment of the frequency to the recommendation found in the I-Plan would not be carried out.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
1.2	Impose Stricter Bacteria Limits for WWTF Effluent	More stringent limits have been implemented for wastewater permits. Activity is programmatically complete. In 2018, there were 636 active permits in the project area, with 552 submitting discharge monitoring reports (DMRs) with 527 reporting bacteria in their DMRs. WWTFs with bacteria permits: 510 domestic and 17 Industrial. 449 (84%) reported 63 MPN/100mL as their limit in 2018.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
1.3	Increase Compliance and Enforcement by the TCEQ	The TCEQ reports performing compliance and enforcement capabilities within the BIG region. The BIG requested in 2017 TCEQ share data to track implementation. TCEQ provided inspection data for the period of 2013-2018 in July of 2019. H-GAC will be reviewing the information to determine if there are reportable trends in the inspection and compliance data.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
1.4	Improved Design and Operation Criteria for New Plants	Title 30 Chapter 217 of the Texas Administrative Code was updated to reflect current permitting practices of TCEQ and updated WWTF standards and criteria. Harris County reviews new WWTF plan sets and specifications. In 2017, Harris County screened 35 WWTF plan sets for compliance with state disinfections standards. None needed to be referred to outside consultants for in-depth plan review.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking

Wastewater Treatment Facilities

Strategy #	Activity	Achievements	Progress	Status
1.5	Upgrade Facilities	TCEQ's Permit Central Registry provides general information on the number of WWTF upgrades by county. The information lacks specificity on the number of non-compliant WWTFs that have been upgraded.	Not Started	Behind Schedule
			Initiated In Progress Completed	On Schedule Ahead of Schedule Tracking
1.6	Consider Regionalization of WWTFs	EPA and TCEQ maintain non-compliant lists. TCEQ through the latest Chapter 217 requires new WWTFs to consider regionalization if an existing plant is within a three-mile radius. The city of Houston reported that one WWTF was taken offline due to flooding from Hurricane Harvey and potential for future inundation. The waste was redirected to another facility.	Not Started	Behind Schedule
			Initiated In Progress Completed	On Schedule Ahead of Schedule Tracking
			Not Started	Behind Schedule
1.7	Use Treated Effluent for Facility Irrigation	TCEQ's Permit Central Registry provides general information on the number of WWTF applications for reuse by County. TCEQ received two applications in 2016 for reuse.	Not Started	Behind Schedule
			Initiated In Progress Completed	On Schedule Ahead of Schedule Tracking
			Not Started	Behind Schedule
2.1	Develop Utility Asset Management Programs (UAMPs) for Sanitary Sewer Systems	TCEQ's voluntary sanitary sewer overflow (SSO) initiative has 16 WWTF operators participating in 2018. H-GAC, TCEQ and EPA offer technical training and workshops tailored to encourage the use of life-cycle maintenance and dedicated WWTF and sanitary sewer funding. The City of Houston and the EPA have agreed to the city's plan to address SSOs. The city will be spending 2 billion to address infrastructure improvements.	Not Started	Behind Schedule
			Initiated In Progress Completed	On Schedule Ahead of Schedule Tracking
			Not Started	Behind Schedule

Sanitary Sewer Systems

Strategy #	Activity	Achievements	Progress	Status
2.2	Address Fats, Oils, and Grease	Several model FOG programs are available from the City of Houston (https://www.publicworks.houstontx.gov/pud/corral_grease.html), San Jacinto River Authority (http://www.pattypotty.com/) and H-GAC (https://coastalcommunitiestx.weebly.com/materials.html).	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
2.3	Encourage Appropriate Mechanisms to Maintain Function at Lift Stations	The TCEQ upgraded portions of Title 30, Chapter 217 of the TAC, which addressed emergency power requirements. TCEQ's Permit Central Registry provides general information on the number of Lift Station applications made by county.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
2.4	Improve Reporting Requirements for SSOs	There is not a searchable database online. H-GAC receives annual updates on the number of SSOs in the project area through a request to TCEQ. TCEQ appears to be notified of SSOs as required. In 2017, there were 2,339 SSOs and an estimated 13,719,000 gallons of untreated effluent. A problem was found with the 2018 SSO data.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
2.5	Strengthen Controls on Subscriber Systems	TCEQ was asked to consider adding a permit requirement to document subscriber systems or require subscriber system permits.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking

Strategy #	Activity	Achievements	Progress	Status
2.6	Penalties for Violations	The TCEQ is currently revising its Enforcement Initiation Criteria, revision 15. TCEQ inspectors can conduct focused SSO investigations during rain events even if the facility has never reported an SSO.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
3.1	Identify and Address Failing Systems	H-GAC maintains an OSSF permit database that shows permits by age, authorized agent, and OSSFs per square mile. Harris County and East Aldine Management District continue to install sewer service in the Aldine region using grant funding. See the included success story for more information. H-GAC addresses failing systems through a SEP. See the included success story for more information.	Completed	Tracking
			Not Started	Behind Schedule
			Initiated	On Schedule
3.2	Address Inadequate Maintenance of OSSF	Model OSSF regulations and policies are available online. H-GAC created a website for homeowners, home buyers, local governments, and real estate professionals. Harris County hosted the 8 th Annual Onsite Wastewater Seminar on May 15, 2018, with 152 water quality professionals in attendance.	In Progress	Ahead of Schedule
			Completed	Tracking
			Not Started	Behind Schedule
3.3	Legislation and Other Regulatory Actions	H.B. 2771 was enacted in September 2017 to create a dedicated fund using \$10 from OSSF application fees. TCEQ will use the fund for competitive research grants. Harris County hosted the 8 th Annual Wastewater Seminar on May 15, 2018 with 152 water quality professionals in attendance. The day-long event presented new innovations, best practices, and rules and enforcement updates.	Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking

OSSF

Strategy #	Activity	Achievements	Progress	Status
4.1	Continue Existing Programs	Two phase I municipal separate storm sewer systems (MS4s) permits (Joint Task Force [JTF] and Pasadena) and 129 MS4s phase II permits are partially or fully found in the BIG project area. A review of MS4 Phase II permit annual reports continues to see these programs identify best practices, begin linkages to impaired waters, and support educational opportunities.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
4.2	Model Best Practices	HCFCD continues to host and update the Regional BMP Database: www.bmpbase.org . H-GAC manages a LID/Green Infrastructure online resource: www.h-gac.com/community/go/LID . H-GAC hosted a series of workshops that focused on the six minimum control measures required in an MS4 permit. H-GAC hosted the Clean Waters Initiative Workshop on MS4 Minimum Control Measures, May 16, 2018.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
4.3	Encourage Expansion of Stormwater Management Programs	There are over 129 municipalities and utility districts in the BIG project area subject to the MS4 Phase II General Permit. H-GAC hosted the Clean Waters Initiative Workshop on Water Quality and Transportation, March 28, 2018. H-GAC hosted the Clean Waters Initiative Workshop on MS4 Minimum Control Measures, May 16, 2018. TCEQ held conferences on water quality and permitting at two conferences: Environmental Trade Fair (May 15-15, 2018) and the Autumn Environmental Conference and Expo (October 11-12, 2018).	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
4.4	Promote Recognition Programs for Developments that Voluntarily Incorporate Bacteria Reduction Measures	H-GAC developed an award program, Water Innovation Strategies of Excellence Awards (WISE). The program was released in 2018 and the first awards were given on May 17, 2019. Nine applicants were received and four were awarded based on the four categories: Build Project less than \$500,000, Built Project greater than \$500,000, Planning and Policy, and Education and Public Awareness. Please see the included success story for more detail.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking

Strategy	#	Activity	Achievements	Progress	Status
	4.5	Provide a Circuit Rider Program	H-GAC completed a project with the cities of Pearland and Mont Belvieu to review development ordinances and evaluate opportunities to expand the use of LID and green infrastructure. Please see the included success story for more detail. H-GAC hosted the Clean Waters Initiative Workshop on Water Quality and Transportation, March 28, 2018. H-GAC hosted the Clean Waters Initiative Workshop on MS4 Minimum Control Measures, May 16, 2018.	Not Started Initiated In Progress Completed	Behind Schedule On Schedule Ahead of Schedule Tracking
	4.6	Petition TCEQ to Facilitate Reimbursement of Bacteria Reduction Measures	Letter submitted in 2017 to TCEQ requesting development of a guidance document to standardize the reimbursement process. TCEQ responded that they would continue with the current system to reimburse for water quality features. A guidance document would not be developed at this time.	Not Started Initiated In Progress Completed	Behind Schedule On Schedule Ahead of Schedule Tracking
Construction	5.1	Increase Compliance With and Enforcement of Stormwater Management Permits	The City of Houston and Harris County manage mature programs to address construction site compliance. City of Houston reports education onsite is a big factor in ensuring compliance.	Not Started Initiated In Progress Completed	Behind Schedule On Schedule Ahead of Schedule Tracking
Illicit Discharge Detection and Elimination	6.1	Detect and Eliminate Illicit Discharges	Analysis of MS4 annual reports indicated that MS4 operators have regulatory mechanisms in place and procedures for detecting illicit discharges, including mapping to meet 10-year goal. Reporting of the number identified and addressed remains a work in progress. H-GAC and BPA were successful in 2018, receiving a grant from the GBEP/TCEQ to conduct illicit discharge monitoring in 2019. A model illicit discharge program for local governments is available online: http://www.h-gac.com/community/water/tmdl/BIG/documents/Top5-Least5-Final%20Report-06-5-17.pdf . Citizen reporting tools are available to assist local government: 311, www.CleanBayous.org , and Galveston Bay Action Network, www.galvbay.org/gban . H-GAC hosted the Clean Waters Initiative Workshop on MS4 Minimum Control Measures, May 16, 2018.	Not Started Initiated In Progress Completed	Behind Schedule On Schedule Ahead of Schedule Tracking

Strategy #	Activity	Achievements	Progress	Status
6.2	Improve Regulation and Enforcement of Illicit Discharges	MS4 Phase II operators review and implement regulations as a permit requirement. H-GAC continues to compile existing regulations. H-GAC maintains an online resource of enforcement topical presentations given at environmental workshops held at H-GAC: http://www.h-gac.com/community/environmental-enforcement/workshops.aspx	Not Started	Behind Schedule
			Initiated	On Schedule
6.3	Monitor & Control Waste Hauler Activities	No waste hauler tracking fleet program has been identified for a pilot project. City of Houston maintains a mature waste hauler tracking program. Potential online tracking programs have been developed by vendors like: https://www.trackmyfog.com/ . Dallas maintains a program that uses Scantron device (XC2 and Pearson Scan Tool Software) to upload manifests.	In Progress	Ahead of Schedule
			Completed	Tracking
			Not Started	Behind Schedule
			Initiated	On Schedule
7.1	Promote Increased Participation in Existing Programs for Erosion Control Nutrient Reduction, and Livestock Management	Natural Resource Conservation Service and Texas State Soil and Water Conservation Board manage and promote land management programs in the project area. The Texas Forest Service works with land owners with forest product management. The work group discussed incentives to expand the use of water quality management plans and conservation management plans. One potential suggestion was to seek the ability to stack a water quality property tax exemption on top of an agriculture or conservation land exemption. Would need to seek legislative action.	In Progress	Ahead of Schedule
			Completed	Tracking
			Not Started	Behind Schedule
			Initiated	On Schedule
7.2	Promote the Management of Feral Hog Populations	Bait evaluation continues for sodium citrate and warfarin.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking

Animals, Agriculture

Strategy #	Activity	Achievements	Progress	Status
Residential	Expand Homeowner Education Efforts Throughout the BIG Project Area	Texas Community Watershed Partners of TX AgriLife hosted the WaterSmart: Strategies for Water Efficient Landscapes Seminar on June 30, 2017 (https://tcwp.tamu.edu/). H-GAC continues a series of Clean Water Initiative workshops covering topics from water quality data, watershed-based plans, MS4 minimum control measures and waste water technology. Information available at www.h-gac.com/cwi .	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
Monitoring and I-Plan Revision	Continue to Utilize Ambient Water Quality Monitoring and Data Analysis	The region's Clean Rivers Program's ambient monitoring data forms the backbone of assessments used in this report. Eight monitoring partners collect ambient data at 208 monitoring sites in the BIG project area. Additional data is provided by the network 19 Texas Stream Team volunteers.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
Monitoring and I-Plan Revision	Conduct and Coordinate Non-Ambient Water Quality Monitoring	HCFCD continues to monitor water quality at several detention basins. Data is uploaded to their BMP database. Harris County wrapped up monitoring at Birnamwood Drive LID project.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
Monitoring and I-Plan Revision	Create and Maintain a Regional Implementation Database	H-GAC maintains an online Regional Implementation database: http://h-gac.maps.arcgis.com/apps/MapSeries/index.html?appid=a75ba4bb46ca40658066c5755a8dba6e .	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking

Strategy #	Activity	Achievements	Progress	Status
9.4	Assess Monitoring Results and Modify I-Plan.	H-GAC produces an annual report. The I-Plan has been modified through four addendums that expanded the project area and added additional TMDLs. In 2018 there were 103 impaired AUs with TMDLs. In 2018, the BIG began the process to revise the I-Plan to codify changes and updates. The process will be completed in 2019.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
10.1	Evaluate the Effectiveness of Stormwater Implementation Activities	HCFCO continues to monitor BMPs installed at detention basins. HCFCO modeled BMPs in White Oak Bayou to determine the number and cost to effectively meet the contact recreation standard.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
10.2	Further Evaluate Bacteria Persistence and Regrowth	Texas Water Resource Institute is continued a bacteria source tracking project in the region in 2018. H-GAC hosted the Clean Waters Initiative Workshop on Water Quality and Public Health, June 20, 2018.	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking
10.3	Determine Appropriate Indicators	EPA presented new coliphage measurement methods at national conference in 2017. EPA has completed validations for two coliphage measurements methods for ambient water with an aim to publish draft criteria in 2018 (John F. Griffith, SCCWRP Commission).	Not Started	Behind Schedule
			Initiated	On Schedule
			In Progress	Ahead of Schedule
			Completed	Tracking

Research

Strategy #	Activity	Achievements	Progress	Status
10.4	Additional Research Topics	House Bill 2771 went into effect on September 1, 2017. The bill requires TCEQ to award competitive grants using funds collected from the \$10 OSSF permit fee. Eligible projects include research and demonstration projects for OSSF treatment technology that improves water quality, reduces costs, and/or wastewater reuse	Not Started Initiated In Progress Completed	Behind Schedule On Schedule Ahead of Schedule Tracking
11.1	Consider Recommended Criteria When Selecting Geographic Locations for Projects	H-GAC developed the Top 10 "Most Likely to Succeed" and "Most Wanted" Streams lists to help local stakeholders prioritize water quality improvements. Geographic prioritization was used for the Top Five / Least Five project. The Top Five / Least Five project was completed in 2017, (http://www.h-gac.com/community/water/tmdl/BIG/reports.aspx).	Not Started Initiated In Progress Completed	Behind Schedule On Schedule Ahead of Schedule Tracking

Geographic Priority



Appendix A

Acknowledgments

Texas Commission on Environmental Quality

Chris Loft

Kimbalyn Laird

Earlene Lambeth

Jason Leifester

Texas State Soil and Water Conservation Board

Brian Koch

Houston-Galveston Area Council

Jeff Taebel

Todd Running

Steven Johnston

Stephanie Beckford

Justin Bower

Virgie Hall

Bill Hoffman

Kathy Janhsen

Sandra McKnight

Will Merrell

Andrea Tantillo

Jean Wright

Animals and Agriculture Workgroup

Zafar Ahmed, City of Houston

Ernest Bailes, IV, Agricultural Interest

Camila Biaggi, Harris County

Richard Chapin, City of Houston

Danielle Cioce, Harris County

Winston Denton, Texas Parks and Wildlife

Tom Ivy, Public

Brian Koch, Texas State Soil and Water Conservation Board

Helen Lane, Houston Audubon

Brandt Mannchen, Houston Sierra Club

Steven Mitchell, Texas Parks and Wildlife Department

Kyle Wright, National Resource Conservation Service

Stormwater and Land Development and Construction Workgroups

Zafar Ahmed, City of Houston

Camila Biaggi, Harris County

Richard Chapin, City of Houston

Danielle Cioce, Harris County

Teague Harris, IDS Engineering Group

Tom Ivy, Public

John Moss, Eco Services

Jim Robertson, Cypress Creek Flood Control Coalition

Robert Snoza, Harris County Flood Control District

Coordination and Policy and Plan Revision Workgroups

Zafar Ahmed, City of Houston

Camila Biaggi, Harris County

Ralph Calvino, AECOM

Richard Chapin, City of Houston

Danielle Cioce, Harris County

Catherine Elliott, Harris County Flood Control District

Denise Ehrlich, Gulf Coast Authority

Tom Ivy, Public


Helen Lane, Houston Audubon Society

Jason Maldonado, Lockwood, Andrews and Newnam

David Parkhill, San Jacinto River Authority

Linda Pechacek, LDP Consultants

Jim Robertson, Cypress Creek Flood Control Coalition



Linda Shead, Texas Coastal Partners

Robert Snoza, Harris County Flood Control District

Research, Monitoring, and Watershed Outreach Workgroups

Michael Bloom, R.G. Miller Engineers, Inc.

Camila Biaggi, Harris County

Richard Chapin, City of Houston

Danielle Cioce, Harris County

Tom Ivy, Public

Karen Kottke, AECOM

Carol LaBreche, City of Houston

Robert Snoza, Harris County Flood Control District

On-Site Sewage Facility and Illicit Discharges Workgroup

Alfonso Acosta, Austin County

Zafar Ahmed, City of Houston

Louis Bergman, Liberty County

Camila Biaggi, Harris County

Richard Chapin, City of Houston

Danielle Cioce, Harris County

Roy Elzondo, Montgomery County

Ryan Gerlich, Texas Agrilife Extension

Frank Green, Montgomery County

Wesley Adam Grier, Harris County

Anita Hunt, Hunt & Hunt Engineering Corp.

Andrew Isbell, Walker County

Larry Johnson, Harris County

Jeremiah Kilgore, Harris County

Robert Knight, Walker County

Rayfield May Sr., Harris County

Winford Roberts, Waller County

Robert Snoza, Harris County Flood Control District

James Walls, Harris County

Tyrone West, Harris County

Wastewater Treatment Facility and Sanitary Sewer Systems Workgroup

Zafar Ahmed, City of Houston

Susie Blake, City of League City

Camila Biaggi, Harris County

Richard Chapin, City of Houston

Marilyn Christian, Harris County

Danielle Cioce, Harris County

Denise Ehrlich, Gulf Coast Authority

Frank Green, Montgomery County

Teague Harris, IDS Engineering

Tom Ivy, Public

Carol LaBreche, City of Houston

Karen Kottke, AECOM

Jason Maldonado, Lockwood, Andrews and Newnam

Scott Nichols, Montgomery County

Ray Pavlovich, Nottingham Country MUD

Mary Purzer, AECOM

Bret Reiley, San Jacinto River Authority

Robert Snoza, Harris County Flood Control District



Appendix B

Bacteria Trends

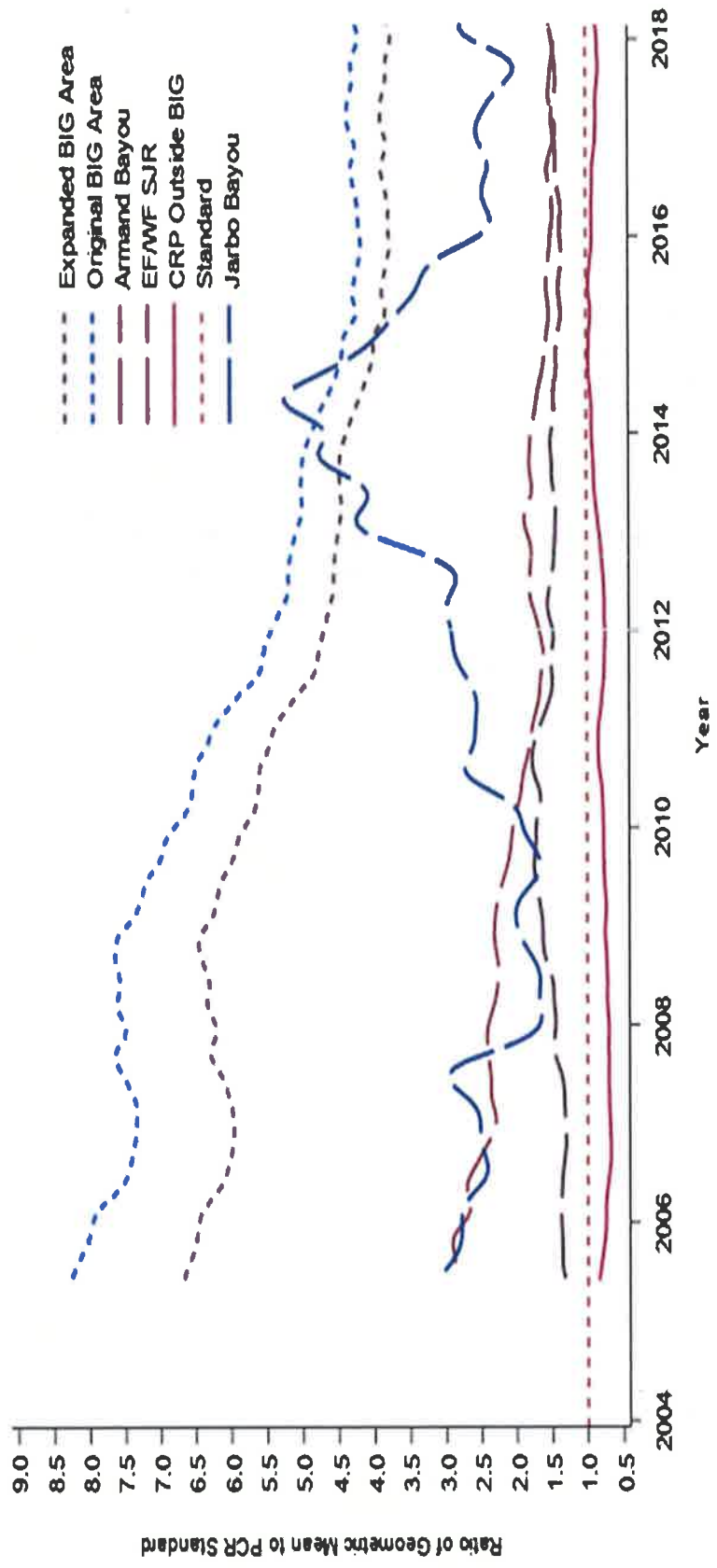
The following chart illustrates how the rolling seven-year geometric mean for bacteria levels has changed over time (2005-2018). It is based on ambient water quality data collecting indicator bacteria samples (*E. coli* and Enterococci) from all Clean Rivers Program (CRP) monitoring stations within the BIG project area through the calendar year 2018 (December 31, 2018). Included are bacteria trend lines for the BIG (dashed purple line), the BIG (solid blue line) including Armand Bayou, Jarbo Bayou and East and West Fork of the San Jacinto River (EF/WF SJR), Armand Bayou (dashed blue line), EF/WF SJR (solid grey line), Jarbo Bayou (long blue dash line) and bacteria trend for CRP areas outside of the BIG project area (dashed green line).

The lines were generated using a ratio of the geometric mean of the rolling seven years with that of the state's contact recreation standard, either *E. coli* or Enterococci, 126 Most Probable Number (MPN)/100mL or 35 MPN/100mL, respectively. The red dashed line represents the standard normalized by dividing by the standard. This allows both standards to be used on the same graph. The geometric means were also divided by the appropriate standard.

While the overall bacteria trend in the BIG project area continues to decline, it appears to be leveling out with the area's relative geometric mean at just above four times the state's water quality standard for bacteria.

Moving Seven-Year Geometric Mean- BIG Project Area All Areas, Original BIG Area, Armand Bayou, Jarbo Bayou, and East Fork / West Fork SJR Additions

Expressed as Multiple of Primary Contact Recreation Standard



Appendix B Figure 1. Moving Seven-year Bacteria Trend in the BIG Project Areas, with and without Armand Bayou and East and West Fork of the San Jacinto River watersheds.

Appendix C

Implementation Resources

IMPLEMENTATION RESOURCES			
RESOURCE	NAME	USE	WEBSITE
FUNDING	USDA Rural Development Grant	Rural Wastewater Infrastructure	https://www.rd.usda.gov/programs-services/water-waste-disposal-loan-grant-program
	319 Nonpoint Source Grant	Non permitted Nonpoint Source Reduction Measures	https://www.tceq.texas.gov/waterquality/nonpoint-source/grants
	319 Nonpoint Source Grant	Agriculture and Siviculture Nonpoint Source Measures	https://www.tswcb.texas.gov/programs/texas-nonpoint-source-management-program
	320 Estuary Program	Water Quality Improvement	https://gbep.texas.gov/
	USDA Waste and Environmental Program	Multiple assistance programs	https://www.rd.usda.gov/programs-services/all-programs/water-environmental-programs
	NRCS EQUIP	Resource Conservation for Agriculture and Silviculture	https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/
	Water Quality Management Plan	Soil and Water Conservation for Agriculture and Silviculture	https://www.tswcb.texas.gov/index.php/programs/water-quality-management-plan
	Clean Water State Revolving Fund	Low cost financial assistance for wastewater, reuse, and stormwater infrastructure	http://www.twdb.texas.gov/financial/programs/CWSRF/
	EPA Water Infrastructure and Resiliency	Resource to explore innovative finance solutions	http://water.epa.gov/infrastructure/waterfinancecenter.cfm
	Texas Water Infrastructure Coordination Committee	Identify and develop solutions to water and wastewater	www.twicc.org
	Texas Parks and Wildlife Landowner Incentive Program	Enact conservation practices on private lands	https://tpwd.texas.gov/landwater/land/private/lip/#contact
Outreach and Education	Fats, Oils, Grease, Wipes	Cease the Grease	http://galvbay.org/ceasethegrease/
		Corral the Grease	www.publicworks.houstontx.gov/pud/corral_grease.html
		Patty Potty	www.pattypotty.com
	OSSF	OSSF mapping system	http://arctgis02.h-gac.com/ossf/
		Public outreach and education	www.h-gac.com/go/septic
	Clean Waters Initiative Workshops	Technical workshops covering a variety of water quality information	www.h-gac.com/CWI
	Coastal Communities	Nonpoint source outreach and education information	http://www.h-gac.com/coastal-communities/default.aspx
	Clean Water Clear Choice	Water quality outreach and education	www.cleanwaterways.org
Loanstar Healthy Streams	Agriculture BMPs	http://lshs.tamu.edu/bmps/	
Pet Waste	Basic information on pet wastes	www.h-gac.com/community/pet-waste/default.aspx	
Reporting	Galveston Bay Action Network	Pollution reporting in five counties surrounding Galveston Bay	www.galvbay.org/gban
	Illegal Dumping	Pollution reporting system for MS4s	www.cleanbayous.org
	City of Houston Bureau of Pollution Control and Prevention	Service helpline and pollution reporting	www.houstontx.gov/311 and 713.837.0311
	HCFC Citizen's Service Hotline	Telephone reporting system	713.684.4197
Data	Wastewater and Stormwater	Permit look up	https://www.tceq.texas.gov/agency/data/lookup-data/status-stormwater-wastewater.html
	Clear Rivers Program	Water Resource Information System	www.h-gac.com/go/wrim
	HCFC BMP Database	Best Management Practices Monitoring	www.bmpbase.org
	LID Tracking	Low Impact Development Resource	www.h-gac.com/community/go/LID

Appendix C Table 1. Available online resources for implementing I-Plan activities.

Upper Oyster Creek TMDL Implementation Plan

2019 Stakeholder Update Meeting

Meeting Summary

Cane Room, City Hall, City of Sugar Land

Thursday, April 11, 2019, 1:30 – 3:00 p.m.

Attendance – There were 16 stakeholders in attendance in addition to TCEQ and H-GAC project staff.

Topics of Discussion

- I) **Welcome and Introductions**
 - a. Project staff welcomed the stakeholders, and introductions were made around the room. The stakeholders heard a brief recap of the project history. This year marked the fifth year of implementation completed, a project milestone.

- II) **Review of Water Quality Data**
 - a. Justin presented a review of water quality data from Upper Oyster Creek collected subsequent to the TMDL and I-Plan process.
 - i. Data (regulatory status and trends) from the 2014 Texas Integrated Report of Surface Water Quality (2005-2012) – *the waterway continues to have impairments related to the TMDL, and additional water quality concerns. Draft 2016 and 2018 Reports are available but not approved, and show mixed changes from 2014.*
 - ii. Ambient sampling (2014-2018/2019) – *The bacteria impairment persists in two of the assessment units (1 and 3). DO issues persist throughout the system. Nutrient issues are pronounced in the downstream assessment unit 1.*
 - iii. Sanitary sewer overflows (2016-2018) – *overflows are persistent, but 2018 data is incomplete, making comparison across years unreliable. SSOs are down from earlier years. Rain events and lift station failures are prominent causes.*
 - iv. Wastewater discharges (permitted, 2016-2018) – *Plants had no exceedances for bacteria or CBOD5, and only >2% of samples had exceedances for ammonia nitrogen.*

- III) **Review of Implementation Progress**

- a. Project staff gave an overview of implementation projects currently underway by partners, and progress toward implementation activities in the I-Plan
 - i. Many partner activities are already underway, including continuance/expansion of MS4 permit activities, installation of dog parks, household hazardous waste collection, environmental education, and feral hog abatement. The focus continues to be weighted strongly toward outreach efforts, but some structural efforts are in pace.
 - ii. Overall, stakeholders have shown steady progress in continuing activities within the I-Plan, with stormwater permittees being a strong driver for implementation.

IV) **Open Discussion**

- a. Stakeholders indicated MUD boards, HOAs, and other small districts were increasingly interested in outreach efforts, and would potentially benefit from a coordinated approach.
- b. At the five-year milestone, water quality results are mixed. However, the area has experienced rapid development and growth in sources, which has not been directly observable in a corresponding degradation in water quality data. This suggests that implementation activities are contributing to improvement, in light of increasing sources.

Upper Oyster Creek TMDL Implementation

Annual Report, FY 2019



Funding for this project was provided by the Texas Commission on Environmental Quality.



Upper Oyster Creek TMDL Implementation

Annual Report, FY 2019

Prepared by the Houston-Galveston Area Council, in coordination with the Texas Commission on Environmental Quality.

Houston Galveston Area Council

3555 Timmons Lane, Suite 120

Houston, TX 77027

For further information, please contact:

Justin Bower

Senior Planner

Houston-Galveston Area Council

713-499-6653

justin.bower@h-gac.com

Table of Contents

Acronyms	1
Executive Summary.....	2
Challenges for the Upper Oyster Creek System.....	2
A Plan for Implementation.....	2
Water Quality Status, 2017	3
Implementing Solutions	4
Introduction	5
Water Quality Status.....	7
Assessment Status.....	7
Recent Water Quality Data	10
Sanitary Sewer Overflows	12
Wastewater Treatment Facility Discharges	13
Water Quality Summary.....	14
Implementation Progress.....	15
Strategy 1 - Monitoring.....	15
Strategy 2 - Research	15
Strategy 3 - Continue and Expand Existing Education and Outreach Efforts.....	16
Strategy 4 - New Education and Outreach Efforts	16
Strategy 5 - General Nonpoint Source Management.....	17
Strategy 6 - Urban MS4 Stormwater Management	18
Strategy 7 - Agriculture/Livestock Management	18
Strategy 8 - Feral Hog Management	18
Strategy 9 - Avian Wildlife Management	19
Strategy 10 - Wastewater Treatment Facilities	19
Strategy 11 - Sanitary Sewer Collection Systems.....	19
Strategy 12 - OSSFs	20
Summary and Recommendations.....	20
Additional Funding	21

Additional Activities **Error! Bookmark not defined.**
Enhanced Monitoring Data 21

Figures

Figure 1 – The Upper Oyster Creek System.....2
Figure 2 – Current Monitoring Stations in Upper Oyster Creek.....9
Figure 3 – SSO causes by volume and number.....11

Tables

Table 1 – Status of Upper Oyster Creek in the 2014 Integrated Report.....7
Table 2 – Bacteria Data, 2015-2017.....9
Table 3 – Dissolved Oxygen Data, 2015-2017.....10
Table 4 – Sanitary Sewer Overflows in Upper Oyster Creek, 2015-201711

Acronyms

BMP	Best Management Practice
CWSRF	Clean Water State Revolving Fund
DMR	Discharge Monitoring Report
EPA	United States Environmental Protection Agency
FOG	Fats, Oils, and Grease
GIS	Geographic Information System(s)
GCWA	Gulf Coast Water Authority
H-GAC	Houston-Galveston Area Council
HHW	Household Hazardous Waste
I-Plan	Implementation Plan
MUD	Municipal Utility District
NPS	Nonpoint Source
OSSF	On-Site Sewage Facility
SEP	Supplemental Environmental Project(s)
SSO	Sanitary Sewer Overflow
TCEQ	Texas Commission on Environmental Quality
TMDL	Total Maximum Daily Load
TSSWCB	Texas State Soil and Water Conservation Board
TWDB	Texas Water Development Board
TxDOT	Texas Department of Transportation
WCID	Water Conservation and Improvement District
WQMP	Water Quality Management Plan
WPP	Watershed Protection Plan
WWTF	Wastewater Treatment Facility

Executive Summary

This report summarizes the progress made in 2019 by project stakeholders and local partners in implementing the TMDL Implementation Plan for Upper Oyster Creek. Additionally, it details the status of water quality and permitted discharges to Upper Oyster Creek as an indicator of progress toward meeting water quality standards.

Challenges for the Upper Oyster Creek System

The Upper Oyster Creek system (Figure 1) begins near Fulshear, Texas, is greatly augmented by Brazos River water, and meanders down through impoundments in the City of Sugar Land to rejoin the Brazos. Along the way, natural and human influences in the watershed can contribute pollutants to the waterway. Total Maximum Daily Load (TMDL) studies¹ were completed for the system when it became unable to support the state water quality standards for contact recreation (due to elevated levels of fecal bacteria) and aquatic life (based on low levels of dissolved oxygen). These studies indicated that reductions in fecal matter were needed and would likely be needed in the future for oxygen-demanding substances.

Subsequent studies and monitoring data have indicated there are ongoing water quality issues in the creek and its tributaries. While appreciable efforts have been put toward addressing various sources of contamination by local stakeholders, additional progress is needed to bring the creek and its tributaries into compliance with state water quality standards.

A Plan for Implementation

As part of the TMDL process, local stakeholders and regional partners worked with the Texas Commission on Environmental Quality (TCEQ) and the Houston-Galveston Area Council (H-GAC) to develop an Implementation Plan (I-Plan). The I-Plan describes categories of voluntary activities that will be undertaken by local stakeholders to address fecal contamination and improve dissolved oxygen levels. The solutions identified in the I-Plan are the result of local decision-making using sound science as a guide. The Implementation Plan for both TMDLs was approved on January 15, 2014. In the period since, the stakeholders have continued to implement activities to address Upper Oyster Creek's water quality impairments and to further study changing water quality conditions. The 2019 year marks the fifth year of implementation, a project milestone.

¹ More information on the TMDLs and the Implementation Plan can be found at <https://www.tceq.texas.gov/waterquality/tmdl/25-oystercreek.html> and www.upperoystercreek.com.

some parts of the watershed to sources related to development as the watershed continues its developmental transition.

Implementing Solutions

A variety of local partners are actively implementing solutions that have a positive benefit on the water quality and watershed health of the Upper Oyster Creek system. The progress made on the implementation activities in the I-Plan suggests the waterway is benefitting from the continuation of the TPDES stormwater permits, good housekeeping for local utility systems, a robust set of public education efforts, and shared benefits from other local efforts. Future needs include greater implementation of structural measures to match educational efforts, additional resources (financial and technical) to support implementation, and a focus on mitigating impacts of new development in the western and middle portions of the watershed.



Figure 2 - Upper Oyster Creek at State Highway 6

Introduction

The Upper Oyster Creek system originates in the headwaters of Jones and Flewellen Creeks, near Fulshear, Texas. The Gulf Coast Water Authority (GCWA) uses the system as a conveyance for surface water supplies from the Brazos River, which augments the system's volume to varying degrees. Flow in Jones Creek enters Oyster Creek proper west of the City of Sugar Land. Within the City's boundaries, the waterway is impounded by a series of three dams, forming several lakes held at static elevation. An appreciable portion of the volume is diverted into a GCWA water supply canal just above the third dam. Downstream of this dam, the waterway is reduced in size and depth. The last stage of the system includes a portion that flows through a diversion channel, then through a stretch of Steep and Flat Bank Creeks, eventually rejoining the Brazos south of the Riverstone development. Along the way, precipitation brings with it pollutants related to various land uses, and wastewater treatment facilities and other discharges enter directly into the waterway.

Due to pollutants in the waterway, Upper Oyster Creek is unable to support the state water quality standards for contact recreation (due to elevated levels of fecal bacteria³) and aquatic life (based on low levels of dissolved oxygen). These standards seek to ensure Texas waterways are fishable and swimmable without risk of illness or impact on aquatic ecosystems. Every two years, the State assesses water quality in its waterways using seven previous years' data. If a waterway cannot support one or more of the state water quality standards, it is considered impaired. Additionally, a waterway can be identified as having a concern if it exceeds screening levels for some constituents without numeric standard limits (e.g., nutrients). The most current approved version of the assessment during this project year was the 2014 Integrated Report of Surface Water Quality⁴.

Upper Oyster Creek developed water quality impairments for elevated fecal bacteria (based on a contact recreation standard) and depressed dissolved oxygen (based on an aquatic life standard.) Total Maximum Daily Load (TMDL) studies⁵ were completed for the system to determine the load of bacteria and oxygen-demanding substances (represented by ammonia and carbonaceous biochemical oxygen demand) the system could assimilate and still meet the applicable standards. These studies indicated that reductions in fecal matter were needed, and would likely be needed in the future for oxygen-demanding substances⁶. When TMDLs were approved for the system, an Implementation Plan (I-Plan) process was initiated.

³ Based on the 2014 Texas Integrated Report, assessment units 1 and 2 do not support the recreation use, while assessment unit 3 does. Recent data indicates that these assessments, based on trailing seven years of data, may differ from current conditions, with assessment unit 3 showing elevated levels of fecal bacteria.

⁴ Draft 2016 and 2018 Integrated Reports are available for review and considered for this report. However, the 2014 report is the most current approved Report and is the basis for the current description of impairment and concerns in the system.

⁵ More information on the TMDLs and the Implementation Plan can be found at <https://www.tceq.texas.gov/waterquality/tmdl/25-oystercreek.html> and www.upperoystercreek.com.

⁶ These efforts do not reflect current efforts by TCEQ to evaluate the DO TMDL(s) in the system.

The I-Plan for Upper Oyster Creek is the product of local decision-making, and represents a targeted set of voluntary measures that will address the impairments in the waterways. The I-Plan lays out a series of broad implementation strategies to address water quality challenges. Each strategy includes a series of implementation activities in which local partners will engage, which target the various sources of bacteria in the watershed. The I-Plan was approved by a diverse local stakeholder group representing local governments, districts, landowners, agricultural producers, community groups, and businesses and submitted to the TCEQ. The I-Plan for Upper Oyster Creek was approved on January 15, 2014, and initiated implementation of its activities in the watershed.

In the subsequent years, the stakeholder group has met to review the status of water quality in Upper Oyster Creek, and report on progress made in implementing recommended activities. This report summarizes the state of Upper Oyster Creek (see **Water Quality Status**) and the activities of the stakeholders (see **Implementation Progress**), and makes recommendations (see **Recommendations**) regarding further implementation of the I-Plan.



Figure 3 - Red Gully in Cullinan Park

Water Quality Status

In preparation for the annual stakeholder meeting, H-GAC and TCEQ evaluated several data sources to provide a view of the water quality status of the waterway, and the performance of some permitted sources which discharge to it. The data evaluated included a descriptive summary of the creek's assessment status, an evaluation of reported sanitary sewer overflows, and a review of discharge data from wastewater treatment facilities.

Assessment Status

The *Texas Integrated Report of Surface Water Quality*⁷ (Integrated Report) summarizes the assessments conducted by the state every two years. Seven years of data (2005-2012, for the 2014 report) is used to evaluate a waterway's compliance with state water quality standards. As part of the Integrated Report, the state identifies impairments and concerns associated with each water body. For the assessment, Upper Oyster Creek is divided into three assessment units: Assessment Unit 3, the reach between the headwaters and the City of Sugar Land; Assessment Unit 2 which is generally the reach within the City of Sugar Land; and Assessment Unit 1, which is the reach between dam 3 and the final confluence with the Brazos River.

The 2014 Integrated Report indicates that Upper Oyster Creek is still unable to fully support the contact recreation and aquatic life standards in all or portions of its assessment units. A summary of the status of each assessment unit and related tributaries is shown in Table 1. The status of this assessment has not changed since the FY15 Annual Report, as the same Integrated Report is still in place.

Changes reflected in the Draft 2016 and Draft 2018 Integrated Reports (not reflected in Table 1) include the following changes:

- AU1
 - Starting in the 2016 IR, the depressed oxygen grab (screening level) concern was no longer present.
 - in the 2018 IR, the contact recreation standard was fully supported.
 - In the 2018 IR, a concern was added for Total Phosphorus.
- AU2
 - Starting in the 2016 IR, the concerns for dissolved oxygen grab (minimum and screening level) were no longer present
- AU3
 - Starting in 2018, the contact recreation standard was not supported.
- Tributaries
 - 1245I – in 2016 depressed DO (grab, screening level) was listed as a concern; in 2018 it was no longer listed as a concern.

⁷ https://www.tceq.texas.gov/waterquality/assessment/305_303.html

Table 1 - Status of Upper Oyster Creek in the 2014 Integrated Report

Water Quality Issue	Assessment Unit 1 (Downstream of Dam 3)	Assessment Unit 2 (Sugar Land)	Assessment Unit 3 (Upstream of Dam 1)	Tributaries also Impacted
Bacteria	Impaired	Impaired	Supporting	Red Gully, Bullhead Bayou, Unnamed trib. to Bullhead, Flewellen Creek, Alcorn Bayou, Steep Bank Creek, Stafford Run
Dissolved Oxygen (24 hour)	Supporting	Impaired	Supporting	Steep Bank Creek
General	Nitrate (CS), Chlorophyll a (CS)	Chlorophyll a (CS)	Chlorophyll a (CS)	Red Gully, Alcorn Bayou, Steep Bank Creek (nitrate)

Two of the three assessment units still have assessments indicating elevated levels of **fecal bacteria** in the 2014 IR, and most of the system’s tributaries are likewise impaired or have concerns. However, the stretch of the Creek from the Fulshear area east to the start of the Sugar Land area remains in compliance with the water quality standard based on the assessment (and AU1 is indicated as supporting the standard in the Draft 2018 IR). **Dissolved oxygen** levels are generally supportive of the standard, except for the impounded area within the City of Sugar Land and Steep Bank Creek. In addition, there are concerns for **nutrients and other indicators of low dissolved oxygen situations** (nitrate, chlorophyll-a) throughout the system and in several tributaries. Figures 4 and 5 represent network diagram of the main channel and tributaries (respectively) including the water quality impairments and concerns of its component waterways.

Regulatory Status - Main Channel

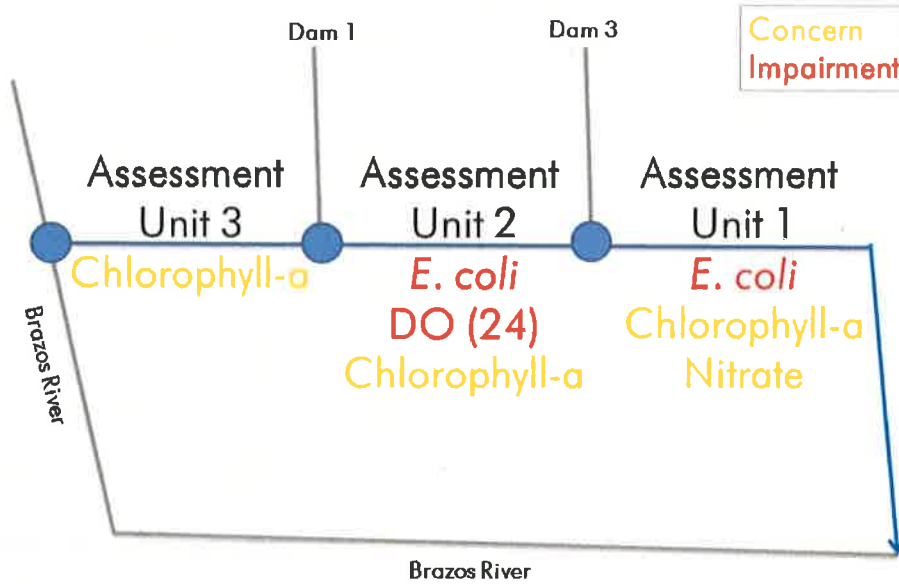


Figure 4 - Network diagram with regulatory status - main channel

Regulatory Status - Tributaries

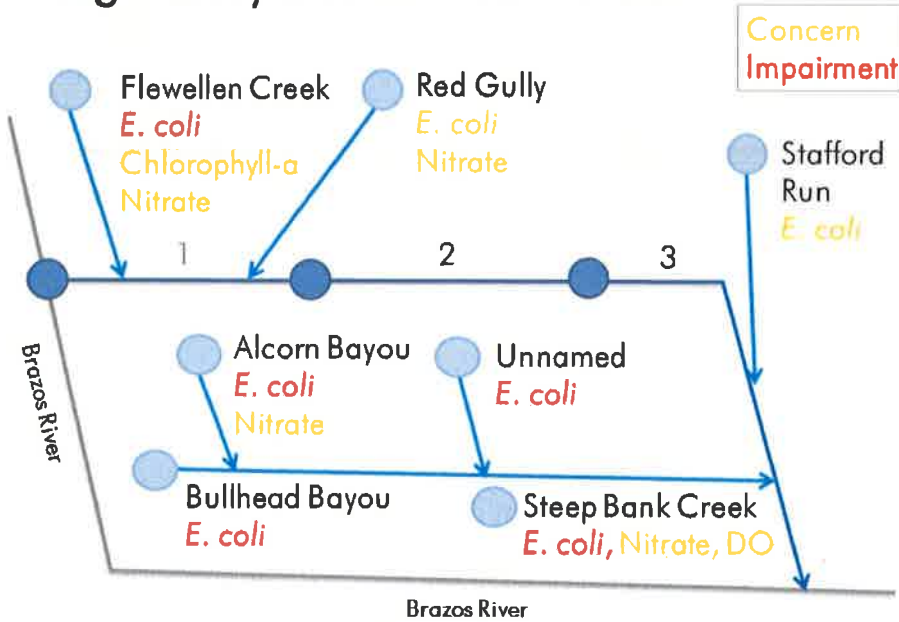


Figure 5 - Network diagram with regulatory status - tributaries

Recent Water Quality Data

During the development of the TMDLs, additional water quality monitoring was conducted throughout the watershed, providing ample data on the system's status. However, in the intervening years prior to 2015, only the monitoring station within Assessment Unit 2 at Highway 90A in Sugar Land had been sampled, leaving two of the three assessment units for the waterway without current data. In recent years, additional sites were sampled in the system as part of an effort by TCEQ and the Texas Institute for Advanced Environmental Research (TIAER)⁸. These monitoring sites are shown in Figure 6.

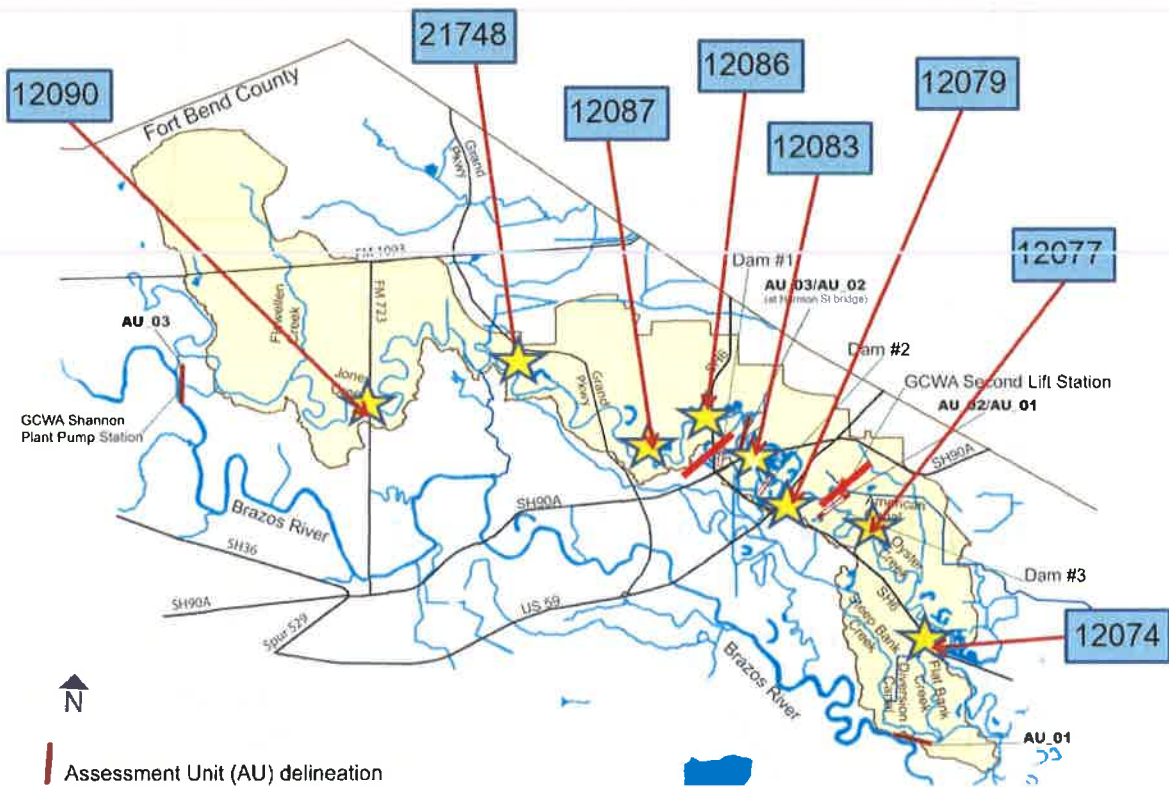


Figure 6 - Recent monitoring stations in Upper Oyster Creek

Water quality data from this sampling effort was discussed by TCEQ at the Annual Meeting in April 2018 and was included in the 2019 project year data review for stations 12087, 12083, and 12074 (representing the three assessment units).

The dataset evaluated included data collected in the five-year period between 2014 and the end of 2018 (additional data from the first quarter of 2019 was not yet available but will be

⁸ More information about current status of the TMDL projects for this waterway can be found at <https://www.tceq.texas.gov/waterquality/tmdl/25-oystercreek.html>.

included in the 2020 project year evaluation). The evaluation considered results for fecal indicator bacteria (*E. coli*), DO, Nitrate, Total Phosphorus, and chlorophyll-a. Table 2 indicates the results of the analyses showing the geomean (bacteria) or number of exceedances/percent of exceedances (all others) for each parameter.

Table 2 - Ambient water quality data analyses summary

Parameter	AU1 - Station 12074 (number of violations, % of total samples)	AU2 - Station 12083 (number of violations, % of total samples)	AU3 - Station 12087 (number of violations, % of total samples)
<i>E. coli</i> ⁹	Geomean – 189	Geomean – 111	Geomean - 127
DO (grab)	5, 11.1%	22, 29.7%	3, 7.3%
DO (24 hr. average)	(No data)	12, 30.0%	9, 22.5%
DO (24 hr. minimum)	(No data)	6, 15.0%	1, 2.5%
Nitrate	14, 82.4%	2, 5.1%	1, 2.8%
Total Phosphorus	13, 81.3%	0,0%	0,0%
Chlorophyll-a	13, 81.3%	12, 30.1%	11, 30.1%

These data indicate that during the five-year period evaluated, bacteria geomeans AU1 and AU3 were above the standard, with many instances in which values (including maximum values of 5,800 in AU3, 4,100 in AU1, and 11,000 in AU2) were in excess of the standard in all three AUs. There were no exceedances of the minimum DO grab in any AU, but all three had some samples that were too low for the screening level, with AU2 having the most prominent issue. No 24-hour DO data was available for AU1, but the data for AUs 2 and 3 indicated both had appreciable issues meeting the 24-hour average, and that AU2 had the most issue meeting the 24-hour minimum. For Nitrate, results were highest in AU1, with fairly low levels of exceedance in AUs 2 and 3, likely related to the different stream character in the most downstream AU. These results were mirrored for Total Phosphorus, which had significant exceedances in AU1, but no exceedances in the upstream AUs. While Chlorophyll-a was most significant in AU1, there were appreciable exceedances in AUs 2 and 3. These data, in summary, indicate that positive water trends in the most recent IRs may not be reflected in subsequent reports based on the most recent data. In general, the system continues to be challenged with ongoing fecal bacteria impairments and appreciable nutrient/aquatic life standard issues.

⁹ Data for bacteria is given as the geomean in MPN/100mL for the dataset, rather than the unit descriptions given in the column head.

Sanitary Sewer Overflows

Between 2016-2018¹⁰, there were 24 reported sanitary sewer overflow (SSO) events, representing a volume of 232,245 gallons of untreated sewage. The number and volume of SSOs per year has been relatively consistent in this period. While this evaluation period had fewer SSOs and volume than the 2018 assessment period, the dataset from 2018 may be underrepresenting reported SSOs, so a direct comparison is not possible.

No single problem (broken pipe infrastructure, rainwater intrusion, human error, equipment failures, or blockages, as shown in Figure 3) completely dominated the causes of these SSOs by number, but rainwater inflow and infiltration and lift station failures accounted for more than half of the SSOs, and 85.7% of the reported SSO volume. SSO data assessment is tempered by the understanding that this data is self-reported, or based on complaint data, so the full scope of SSO contributions may not be reflected. This is especially relevant in 2017/2018, given several flooding events including Hurricane Harvey in August 2017. While flooding of systems was not reported to be widespread in the area, there were locations that were not able to be actively monitored during portions of the event. However, unlike other areas in the Houston region, the utility systems in this watershed are generally newer and well-maintained, limiting chronic SSO issues. SSOs in the watershed seem to be episodic, so it is likely they represent a greater acute loading source than a chronic one. The number and volumes of SSOs are shown in Table 4, and the breakdown of SSO causes (by number and volume) is shown in Table 5.

Table 3 - Sanitary sewer overflows by number and volume, 2016-2018

Period	Number Reported	Volume In gallons	Facilities Reporting
Total (2016-2018)	24	232,245	7
2016	12	117,520	7
2017	11	113,825	4
2018*	1*	900*	1*

¹⁰ At the time of the development of this report, the full dataset for 2018 and 2019 were not available. Based on analyses created for other projects, the 2018 dataset for SSOs may be incomplete. This report will be updated as additional data for this dataset is available.

Table 4 - Sanitary sewer overflows by volume, 2016-2018

SSO Cause	Number Reported	% of total Volume
Blockage - Fats/Grease	1	0.4%
Blockage – Other Cause	1	<0.1%
Collection System Structural Failure	2	0.2%
Lift Station Failure	7	44.4%
Power Failure	1	4.3%
Rain / Inflow / Infiltration	4	37.4%
Unknown Cause	3	10.8%
WWTP Operation or Equipment Malfunction	5	2.4%

In Table 4, the total number of facilities reporting for the entire period (last row) is not intended to be cumulative of the numbers for each year. The total represents the number of unique facilities that reported in that period. This reflects that some facilities reported SSOs each year, while some only in one year. It should be noted that a reported cause may be, in reality, a combination of multiple causes, as opposed to the single reported cause. For example, rainwater may exacerbate existing clogs, or fats oils and grease blockages may cause equipment failures. Rainfall and lift station failures were prominent causes by volume in this time period.

Wastewater Treatment Facility Discharges

Wastewater treatment facilities are potential sources of all three TMDL constituents¹¹: bacteria, ammonia, and CBOD5. Improperly treated sewage, especially in areas of the waterway that are dominated by effluent flows, can have a pronounced impact on water quality. Each wastewater treatment facility (WWTF) is required to have a discharge permit, which includes both limits on constituents in the water, as well as requirements for periodic water quality sampling of their effluent. The results of this sampling are submitted in discharge monitoring reports (DMRs).

Based on the review of the DMRs for the WWTFs in the Upper Oyster Creek system that was performed for the 2019 project year, the facilities seemed to be performing well during the 2016-2018 timeframe. DMR data was available for 18 wastewater facilities in the watershed. In

¹¹ The TMDL project for depressed dissolved oxygen focused on ammonia and CBOD5 as the precursor constituents for which TMDLs would be developed.

general, the plants had few exceedances of their permit limits based on reported data. Specific information on the three TMDL constituents is as follows.

Bacteria- No samples out of 751 records exceeded their permit limit.

Ammonia Nitrogen - 9 samples out of 807 records exceeded their limits for ammonia (weight-based limit), and 14 samples out of 806 records exceeded their limits for the concentration-based limit. Less than 2% of all samples were in exceedance of permit limits.

CBOD5 – No samples out of 1605 records exceeded their limits.

While the DMR data indicates that plants generally meet their permit limit in reported data, with few exceptions, the exceedances point to potential issues at a few plants rather than a widespread irregular pattern.

Water Quality Summary

In general, the 2019 water quality data assessment indicated that there were mixed results since the 2018 project year assessment, but that conditions remained relatively consistent. Continued monitoring in those assessment units at a minimum of one station each will ensure the ability to measure progress in future years.



Figure 7 - Aquatic vegetation in lake impoundment, AU2

Implementation Progress

The I-Plan for Upper Oyster Creek lays out twelve strategies for addressing water quality challenges. Each implementation strategy includes two to eight activities¹² that are being implemented by the stakeholders. The general guidelines for implementation are to rely on existing, proven efforts; highlight cost-effectiveness; coordinate with other related efforts; and continue to evaluate effectiveness.

Over the last year, and since the start of implementation, local partners have made good progress in implementing aspects of the strategies. In addition, the maturation of efforts under the TPDES MS4 stormwater permits has added to the focus on alleviating sources of bacteria and oxygen-demanding substances in the watershed. Permit requirements now in place have augmented attention and actions that will positively benefit the TMDL goals. As part of a review of progress, H-GAC reviewed Annual Reports from stormwater permittees, spoke with local partners, and assessed activities ongoing in the watershed. Additionally, feedback and information about implementation activities was collected at the April 2019 Annual Meeting. The highlights of progress made on each strategy are summarized below. References to applicable implementation activities in the I-Plan are included in parentheses.

Strategy 1 - Monitoring

The purpose of the monitoring strategy is to support the evaluation of progress made in implementation. This year:

- DMR and SSO data were reviewed for 2016-2018, as summarized in this report (1.2);
- TCEQ continued to monitor ambient water quality in the watershed at an expanded number of stations, and TCEQ completed a special monitoring study with TIAER (1.3, 1.5). The results of the TIAER monitoring were reflected in the water quality assessment for the stations on the main channel. The City of Sugar Land has also monitored water quality in Oyster Creek in the vicinity of their surface water plant.

Strategy 2 - Research

The purpose of the research strategy is to identify changing conditions. This year:

- Current wastewater quality data (SSOs and DMR) was evaluated and presented at the April 2019 meeting, and summarized in this report (2.3); and

¹² This summary only addresses those implementation activities for which progress has been made this year. For the full list of all activities and strategies statuses, refer to the Implementation Plan at <http://www.upperoystercreek.com/ProjectDocuments.html>.

- several entities have continued to consider research and feasibility of wastewater reuse, including reclaimed water use within the annexed areas (New Territory) of the City of Sugar Land.

Strategy 3 - Continue and Expand Existing Education and Outreach Efforts

This year existing education and outreach on various elements of water quality, waste management, and related topics continued in the watershed. Local partners indicated they perceived a continued need for education, rather than a saturation of efforts.

- Cities and other MS4 utilities conducted related outreach under their Phase II permits (3.2), as outlined in their SWMPs and Annual Reports. Examples of these activities include dissemination of educational materials conducting storm drain marking, holding environmental events, and providing direct curriculum to students;
- several entities expressed an increased effort and effectiveness in utilizing social media for direct community contact (3.2);
- several districts have expanded/integrated existing website resources (3.2);
- Sugar Land, Missouri City, and other entities have call/complaint tracking databases or apps (Missouri City's SeeClickFix app, etc.) to enhance reporting and identification of problem areas;
- existing education by Keep Sugar Land Beautiful (KSLB) and other partners was conducted (e.g., KSLB Trash Off, and Earth Day) (3.2);
- Texas A&M AgriLife Extension, as promoted by H-GAC as appropriate, continued to provide educational opportunities for landowners and agricultural producers (3.3);
- HOA and MUD boards have continued to increase their interest in disseminating related materials and messages; and
- the City of Sugar Land and the City of Missouri City continued to manage their Stream Team volunteer water quality monitors (3.4).

Strategy 4 - New Education and Outreach Efforts

The purpose of this strategy is to supplement existing education and outreach with new targeted efforts that relate to the pollutants of concern. New elements¹³ included:

- a continuation of the Galveston Bay Foundation's Cease the Grease campaign (4.1) with related efforts by H-GAC;
- the H-GAC Clean Water Initiative seminars' inclusion of stormwater management and other related topics (4.1);

¹³ The items included as new elements here refer to elements added since the inception of the I-Plan. This should not be taken to indicate these elements are new for this project year. They are included in this section based on the numbering schema of the I-Plan.

- and other new elements under the MS4 permit education programs, including City of Sugar Land efforts to expand messages to annexed areas in partnership with KSLB;
- H-GAC has continued to develop and implement OSSF education programs regionally, to which watershed stakeholders are invited (4.2); and
- Local partners, including Texas Master Naturalists/Texas Master Gardeners intend to explore lawn maintenance education through AgriLife Extension, with a native plant focus (4.3).

Strategy 5 - General Nonpoint Source Management

The purpose of this strategy is to implement practices that deal with various aspects of stormwater pollution sources. In addition to efforts noted in previous project years, notable additions, expansions, or changes in efforts were undertaken by stakeholders. The continued implementation of the current permit requirements was reported as spurring both interest and activity in additional actions by permittees. This year:

- the Phase II permittees worked with new developments to enhance stormwater considerations, and the City of Sugar Land will have added industrial stormwater elements based on its increase in population size and permit category (IV), including floatables monitoring;
- the City of Sugar Land and Fort Bend County have continued to operate and enhance existing dog park areas (Pawm Springs, Kitty Hollow Park, etc.) which have seen regular use (5.4). Sugar land has indicated an interest in expanding pet waste stations if additional funds were available;
- water conservation elements (Rain barrels, etc.) continued to be offered through Missouri City, First Colony, and the City of Sugar Land.
- Missouri City continues to recycle their internal fleet waste oil, and Sugar Land and Fort Bend County have accepted waste oil from the public (5.7);
- Sugar Land has continued to offer household hazardous waste (HHW) pickup and Missouri City has continued to subsidize their residents' use of the Fort Bend County HHW disposal site (5.8); and
- Sugar Land continues to operate its liquid waste hauler licensure program.

Local partners discussed additional elements to consider, including expanded focus on HOA/MUD Boards for new activities, consideration of the potential impact of trash and lawn waste on lake storage capacity, additional waste stations in the watershed, potential to use BST in the future to identify the potential impact of MS4 actions, and the benefit of using simplified "report card" or executive summary style reports for Boards.

Strategy 6 - Urban MS4 Stormwater Management

The purpose of this strategy is to continue to coordinate with and enhance specific Phase II stormwater permit efforts¹⁴. Many of the efforts in Strategy 5 had significant overlap with the elements of this strategy, and those of strategy 4. Stormwater management continues to be a primary focus for implementation in the watershed, and a coordinating point for many of the efforts stakeholders have completed or recommended. This year:

- the permittees in the watershed continued to implement their Stormwater Management Plans (SWMPs) (6.1), and continued the second permit cycle with increased effort aimed at identifying and reducing impairment sources. Specific elements included a continued focus on educating district/HOA boards on issues by Stormwater Solutions and other operators;
- Sugar Land is continuing its transition to a level 4 permitted system, including addition of industrial stormwater elements, and has continued to maintain pet waste stations and is maintaining similarly progressive stormwater programs with the now-annexed communities of Greatwood and New Territory; and
- Missouri Citi has pet waste stations in a new park area and has indicated component MUDs have interest in adding more.

Strategy 7 - Agriculture/Livestock Management

The purpose of this strategy is to address agricultural sources of contaminants through voluntary efforts and outreach. This year:

- the existing concentrated animal feeding operation (CAFO) continued their good management practices with no CAFO permit violations (7.1); and
- agricultural partner agencies such as local Soil and Water Conservation Districts, USDA Natural Resources Conservation Service, and the Texas State Soil and Water Conservation Board continued to work with agricultural producers in the county and provided educational resources through their existing online and in-person venues (7.2).

Strategy 8 - Feral Hog Management

The purpose of this strategy is to manage the burgeoning feral hog populations in the area to reduce bacteria and habitat damage. This year:

- Texas A&M AgriLife Extension continued to offer and implement technical services in the watershed;
- Feral hog populations were identified as a large issue in the Riverstone area; and

¹⁴ Examples of existing stormwater programs can be viewed at <http://www.sugarlandtx.gov/index.aspx?NID=333> (City of Sugar Land), <http://www.missouricitytx.gov/?nid=88> (City of Missouri City), <http://www.ljams4.com/fortbend/> (Fort Bend County).

- Municipalities in the watershed continued trapping on primarily an as-needed basis. The City of Sugar Land is trapping and actively shooting in specific locations in and adjacent to the watershed (in the Brazos River corridor).

Reports from local partners indicate the impacts of new development have been exacerbating hog issues in areas like southern Sugar Land, as other habitat is disturbed.

Strategy 9 - Avian Wildlife Management

The purpose of this strategy is to deal with avian sources of bacteria. No specific activity was conducted this year. The stakeholders did not have specific interest in pursuing these efforts in the near future. Specific interest was voiced by representatives from some districts who have related issues with wastes from pigeons/domestic ducks. Anecdotal reports from a resident in the impounded lakes in Sugar Land suggest wild and domestic bird species have declined in their area. NO apparent cause was found in subsequent H-GAC site visits and consultation with TPWD staff (other than potential impact of expanded development in the area.)

Strategy 10 - Wastewater Treatment Facilities

The purpose of this strategy is to ensure WWTFs do not discharge pollutants of concern in excess of their permitted effluent limits. This year:

- the facilities continued to implement standard good housekeeping practices and utility management. DMR data results are discussed earlier in this report, but generally indicated compliance for all constituents of concern, with infrequent violations. No problem facilities were reported by the stakeholders.
- Several reuse projects (primarily irrigation and lake-filling (e.g. lake filling in Riverstone, use in Quail Valley, select Missouri City districts, etc.) are ongoing, with golf courses were identified as a continuing priority for non-potable supplies. The Fort Bend Subsidence District is now collecting reuse data, which may be a potential data source for the project moving forward. The LID 17/New Territory 2 MGD reuse project is now online serving public spaces and lakes (10.3).
- The City of Sugar Land completed an Integrated Water Resource Plan that takes a comprehensive approach to system and supply management, including integration of WWTP considerations and a heavy emphasis on non-potable reuse (10.3, 10.5).

Local partners indicated reuse has become a more interesting prospect for many districts due to the rising cost of potable water supply. With the lack of additional firm water supplies from GCWA, reuse is highly recommended in the watershed.

Strategy 11 - Sanitary Sewer Collection Systems

The purpose of this strategy is to reduce sanitary sewer overflows. This year:

- Local partners continued to implement local and regional programs and resources for fats, oils, and grease reduction (including the Galveston Bayou Foundation’s Cease the Grease program) (11.3);
- lift station function requirements continue to be an aspect of improving utility asset management to ensure proper continuance of operation (11.5, 11.4);
- the City of Sugar Land indicated they were beginning a process of evaluating potential for consolidating lift stations (11.5); and
- H-GAC’s CWI series touched on several wastewater utility related topics.

Strategy 12 - OSSFs

The purpose of this strategy is to identify and manage on-site sewage facilities (OSSFs e.g., septic tanks) to prevent bacterial contamination of surface water. This year:

- H-GAC and local authorized agents continued to assist in collecting OSSF site locations for a regional database and unpermitted system location analysis (12.1, 12.3);
- H-GAC continued its OSSF training program for real estate inspectors and homeowners held several regional trainings to which stakeholders were invited;
- Authorized agents continued to enforce existing requirements for OSSFs;
- H-GAC continued to operate a regional Supplemental Environmental Program to fund OSSF repairs, with Oyster Creek being one of several priority watersheds (12.4). Oyster Creek is one of the priority watersheds for expending those funds in the coming year, depending on needs in other areas.

Summary and Recommendations

In 2019, watershed stakeholders continued to pursue efforts that were beneficial to the aims of the I-Plan. While significant water quality improvement was not noted, the data indicated some improvement in some areas, although two AUs are now impaired based on the 2014 IR¹⁵, and dissolved oxygen levels continue to be an issue. The lack of appreciable degradation in a rapidly developing watershed is also a sign of the impact of stakeholder efforts. The TPDES stormwater permits, including the current permit requirements, continued to be a driver for pollutant reduction efforts. SSOs have not decreased appreciably¹⁶, and are a continued need for future focus. WWTFs continue to generally meet permit limits, with no exceedances reported for bacteria and CBOD5 and only a limited number of facilities reporting ammonia exceedances. Education and outreach goals are well represented by existing efforts and partners, and

¹⁵ Though AU1 is currently assessed as fully supporting in the Draft 2018 IR.

¹⁶ While 2018 data indicates fewer than normal SSOs, the dataset is incomplete and is potentially underrepresenting actual SSOs, so should not be taken in comparison with previous years.

supplemented as needed, with increased interest and activity and the HOA/MUD Board level, who continue to be a primary intended audience for this outreach additional outreach.

Avian wildlife management continues to be a lesser focus, with no activity again this year due to lack of resources and viable opportunities, and little interest in future expansion without additional resources. The watershed continues to experience growth, and surface water use continues to expand, changing the flow conditions in the conveyance waterways of the system. Feral hog issues have been exacerbated with continued growth and are especially prominent in the Brazos River corridor south of the City of Sugar Land/Riverstone area. While limited efforts are being employed to address them, a coordinated approach could enhance results.

In discussions with the local stakeholders, the following recommendations are offered for future implementation:

Additional Funding

While much of the effort is funded through existing programs or due to mutual benefit with other needs, additional funding is needed to address some of the projected implementation activities that do not fall under the purview of established programs. Continued project facilitation, in the short term, would aid in identifying and pursuing opportunities, or identifying potential local partnerships. A primary focus of need is structural activities; the greater balance of activity has been in addressing educational and outreach needs so far. Specific activities noted by stakeholders include the potential for expanded pet waste stations, the use of SEP or other funds for OSSF remediation, and additional funding for general outreach by participants like KSLB.

Message Building

Additional outreach topics of great concern are “flushable” wipes, impacts of legislation arising from the 2019 Legislature, and support for hazardous waste efforts in smaller districts. Stakeholders recommended expanded web and social media platforms as good avenues for expanded outreach, especially to districts and other smaller entities without staff dedicated to these issues.

Ongoing Monitoring Data

Maintenance of the existing TCEQ ambient stations in each of the assessment units is crucial to long term evaluation of program effectiveness.



Search H-GAC

Search

Clean Waters Initiative Workshops

Clean water is crucial to our region's environment, economy, and quality of life. The Clean Waters Initiative (CWI) program offers workshops that help local governments, landowners, and residents develop effective strategies to reduce pollution in area waterways.

Upcoming CWI Workshops

Date and Time

August 8, 2019
10 A.M. to Noon

Location

North Harris County Regional Water Authority
3648 Cypress Creek Pkwy
Houston 770689

Join the Houston-Galveston Area Council and the **Save Water Texas Coalition** for a Clean Waters Initiative Field Trip on August 8 to learn more about the coalition's programs and tour its new Water Quality Mobile Teaching Lab.

The meeting and tour will be at the **North Harris County Regional Water Authority, 3648 Cypress Creek Parkway, Houston**. Please dress in cool, comfortable, casual clothing appropriate for outdoor weather. Parking is available, but carpooling would be helpful if several folks from one organization are attending. Transportation **will not be provided** to the meeting location.

The Save Water Texas Coalition’s mission is to promote public understanding and discourse about the challenge and opportunity to secure the state’s water future. Coalition focuses include water conservation, water reuse, and water pollution education and outreach to assure sustainability of groundwater and surface water resources for our state. Examples of resources include PattyPotty.com, SunflowerSuzie.com, TexasWaterHog.com, and much more.







Registration is requested. Contact Brian Sims at brian.sims@h-gac.com or 713-993-2438 for more information.

[Register for Workshop](#)

Future Workshops

Wednesday, November 20

Past Workshops

- Better Public Engagement Practices 
- Estuary Programs and Freshwater Inflows 
- Funding Sources for Water and Wastewater-related Infrastructure 
- Land Use Management 
- MS4 Minimum Control Measures 
- MS4 Minimum Control Measures Workshop 
- On-site Sewage Facility Remediation Projects 
- Trends & Technology in Wastewater Treatment 
- Using WBPs to Improve Water Quality 
- Water Quality and Public Health 



Clean Waters Initiative Workshops

Contact

Brian Sims

Senior Planner

Brian.Sims@h-gac.com

713-993-2438

Water Resources Publications

Publications



[Careers](#)

[Legal Disclaimer](#)

[Privacy Policy](#)

[Site Feedback](#)

[Intranet](#)

LEARN HOW TO SPOT SEPTIC/AEROBIC SYSTEM PROBLEMS BEFORE THEY "RISE TO THE SURFACE"!

Please join us for one of two **free workshops on residential septic or aerobic sewage systems.** Learn about your system's function and potential signs of trouble. Open to the public!

FRIDAY, AUGUST 30, 2019

10 AM TO 12 PM 2 PM TO 4 PM
STEWART LIBRARY, OR CENTRAL LIBRARY
202 BESSIE PRICE 104 INTERSTATE 45N,
OWEN DRIVE, CONROE, TEXAS
MONTGOMERY, TEXAS

FOR INFORMATION CALL 713-499-6653



Funding for this effort is provided through a Clean Water Act Section 319(h) grant from the U.S. Environmental Protection Agency administered by the Texas Commission on Environmental Quality.

Johnston, Steven

From: Bower, Justin
Sent: Thursday, August 29, 2019 11:55 AM
To: 'abel.gonzales@houstontx.gov'; 'andrewsansom@txstate.edu';
'andy.icken@houstontx.gov'; 'b.martinez@hotmail.com'; Tom Douglas;
'bbrock@cityofhumble.net'; 'bdailey@wjpa.org'; 'belindahumbert@gmail.com';
'birdiebloosfarm@gmail.com'; 'bkoch@tsswcb.texas.gov'; 'bmartinez@bayouland.org';
'bob.wise@intertek.com'; 'bobfloyd@consolidated.net'; 'braley@sjra.net';
'Brandon.Gregson@ag.tamu.edu'; 'brandtshnfbt@juno.com';
'bruce.bodson@bodsonlaw.com'; 'bstokes@galvbay.org';
'carol.haddock@houstontx.gov'; 'Casey.Christman@house.texas.gov';
'ccooper@cityofconroe.org'; 'charlie.riley@mctx.org'; 'chrison923@yahoo.com';
'city@cutandshoot.org'; 'citysecretary@woodlochtx.org'; 'cjohnson@huitt-zollars.com';
'coasterdoctor@aol.com'; 'commissionercagle@hcp4.net';
'Connie.Bushey@houstontx.gov'; 'CStrupp@aeiengr.com'; 'cward@wallertexas.com';
'dale@dpis.com'; 'danielle.cioce@hcpid.org'; 'dave.4975@gmail.com';
'davidleyen@aol.com'; 'dc@damiencairey.com'; 'dcoburn@cityofmagnolia.com'; 'ddj306
@hotmail.com'; Deborah J-B; 'desquivel@tomballtx.gov'; 'detmxm@aol.com';
'djohnston@hcp4.net'; 'dmarburger@wallertexas.com'; 'drice@wilsonengr.com';
'dwight.williams@houstontx.gov'; 'ekussy@gmail.com'; 'enfoque@sbcglobal.net';
'eric.spurgeon@houstontx.gov'; 'ernest@reproselect.com';
'eshackelford@jonescarter.com'; 'Evan.Besong@mctx.org';
'fjackson@prairieviewtexas.gov'; 'foerster@dfcllp.com'; 'Frank.Green@mctx.org';
'frankilindm@tsu.edu'; 'GBunch@thewoodlandstowship-tx.gov';
'ghalljr@cityofconroe.org'; 'gilberteb@aol.com'; Glenda Callaway; Glenn Laird;
'glenn@lakecreektx.org'; 'grafikstar@aol.com'; 'grbuckley419@comcast.net';
'griley@tfs.tamu.edu'; 'harmoneverett@hotmail.com'; 'hneeley@oakridgenorth.com';
'hopethompson_ms@tsu.edu'; 'hsimpson@tfs.tamu.edu'; 'j.barnett@wallercounty.us';
'Adrian.garcia@pct2.hctx.net'; 'jared@restorationorganics.com'; 'jaseale1@cs.com';
'jbb@blackburncarter.com'; 'jclark@tsswcb.texas.gov'; 'jcronin@shepherdisd.net';
'jesus.deltoro@rumbonet.com'; 'jim.clark@mctx.org'; 'jjyoun@hotmail.com';
'jklump@stormwatersolutions.com'; 'pbond@oakridgenorth.com';
'john.bleyl@bleylengineering.com'; 'john.bulletin@gmail.com';
'jpeart@shenandoahtx.us'; 'jsherwin@oakridgenorth.com'; 'jstinson@wjpa.org';
'jstuebe@cityofhumble.net'; 'judge.hidalgo@cjo.hctx.net'; 'Julia@trigrants.com';
'justforthebirds@sbcglobal.net'; 'jwarner@tfs.tamu.edu'; 'jwilliams@cityofmagnolia.com';
'jyates@ci.montgomery.tx.us'; 'KDempsey@thewoodlandstowship-tx.gov';
'kenfountain@hotmail.com'; 'kim.laird@tceq.texas.gov'; 'kitty.weisman@icloud.com';
'kjones@ci.montgomery.tx.us'; 'kreyer@shenandoahtx.us'; 'kyle.wright@tx.usda.gov';
'l.tarrant@pattonvillage.us'; 'lanellemiller1@yahoo.com'; 'Larry.Kent@tdcj.state.tx.us';
'lashley@poha.com'; 'ldearman@seabrooktx.gov'; 'lgeorge@cityofmagnolia.com';
'linda.shead@shheadconservation.com'; Lisa Marshall; 'maaron@cityofhumble.net';
'Mark.Webb@tpwd.texas.gov'; Mary Anne Piacentini; 'mayor@cityofconroe.org';
'mayor@stagecoachtx.us'; 'mayor@woodlochtx.org'; 'mcclellankin@aol.com';
'mcruse3997@aol.com'; 'Mel.Vargas@parsons.com'; 'mfarrelltx@gmail.com';
'mhastings@cgmf.org'; 'm-heimer@tamu.edu'; 'mhowlett@hcp4.net';
'Michael.Heimer@ag.tamu.edu'; 'mike.meador@mctx.org'; 'mike@gulfmex.org';
'mike@stoeckercorp.com'; 'mikehaines@swbell.net'; 'miller_hagen@yahoo.com';
'mitchellsarah@me.com'; 'mkattan@univision.net'; 'mkelly@bleylengineering.com';
'mlanclos@sjra.net'; 'mmathena@bleylengineering.com'; 'mmoss@alvincollege.edu';
'montgomery-tx@tamu.edu'; 'mriggens@cityofconroe.org'; 'msimpson@sjra.net';

To: 'msinghania@tfs.tamu.edu'; 'mweaver@tfs.tamu.edu'; 'niki.ragan@tpwd.texas.gov'; 'noticiasdefb@aol.com'; 'nuent@industryinet.com'; 'office@stagecoachtexas.us'; 'oliver2197@gmail.com'; 'Patrick.Rightmyer@houstontx.gov'; 'pcjw_98@yahoo.com'; 'pct3@hctx.net'; 'pd@kpft.org'; 'pmendes@cityofmagnolia.com'; 'pnelson@lonestargcd.org'; 'ppaciorek@galvbay.org'; 'Publicworks@woodlochtx.org'; 'pvirgadamo@cityofconroe.org'; 'rachel@cechouston.org'; 'racreman@sjra.net'; 'rbare@harcresearch.org'; Chapin, Richard - HPC-HPW; 'ricomyers@aol.com'; 'rknight@co.walker.tx.us'; 'robert.litz@houstontx.gov'; 'robin_bird_egg@yahoo.com'; 'roger1@taasports.org'; 'ron.sanders@whartonchamber.com'; 'rtramm@portersud.com'; 'ryan.palaciosbeacon@gmail.com'; 'salexander@prairieviewtexas.gov'; 'sarahmitchell@cooksbranch.org'; 'Scott.Galaway@twdb.texas.gov'; 'Scott.Nichols@mctx.org'; 'SGibson@cityofconroe.org'; 'shensley@ci.montgomery.tx.us'; 'Shubha.Thakur@houstontx.gov'; 'srichards@cgmf.org'; 'ssimpson@sjra.net'; 'stacey.carr@tceq.texas.gov'; 't.duhon@wallercounty.us'; 'tess.regan@gmail.com'; 'texasnaturelover@earthlink.net'; 'tfrench@plwave.com'; 'tiffany.swann@gmail.com'; 't-linton@tamu.edu'; 'tmacarthur@thewoodlandstowship-tx.gov'; 'twghcg@aol.com'; 'vrudy@oakridgenorth.com'; 'wbf1@rice.edu'; 'wealee@aol.com'; 'woja@fs.fed.us'; 'yvonne.forrest@houstontx.gov'; 'cnunes@thewoodlandstowship-tx.gov'; montgomery-tx@tamu.edu; info@taminatexas.org; info@friendsofconroe.com; jmartineau@mccfoundation.org; Shane Porter; info@cac-mctx.org; mtschantz@unitedwayhouston.org; lvmontgomerycounty@gmail.com

Cc: Sims, Brian; Johnston, Steven

Subject: Final Reminder - Septic/Aerobic System Workshop for Residents Tomorrow, 8/30/19

Attachments: FreeOn-siteSewageSystem Training.pdf

Good morning,

This is the final reminder that H-GAC will be holding **two free workshops on residential septic tanks and aerobic systems (OSSFs)** tomorrow, August 30.

What is this About?

Are you:

- a new landowner with a septic tank or aerobic treatment system?
- A long-time resident who wants to know more about spotting problems and maintaining your system?
- A real estate inspector or local government representative who wants to refresh your knowledge on residential systems?

...then this workshop is for you! We'll the basic structure and operation of septic and aerobic systems, give practical skills in recognizing signs of problems with your systems, and answer your questions. We'll also talk about potential funding to fix failing residential systems (income and funding limitations apply).

When are the Workshops?

This Friday, August 30, at either:

- 10AM-12Pm – Stewart Library, 202 Bessie Price Owen Drive, Montgomery, Texas
- 2PM-4PM – Central Library, 104 Interstate 45N, Conroe, Texas

The workshops are free, and light refreshments are served. Please forward this email on to your neighbors, organizations, or constituents if you feel it is appropriate to do so. We hope to see you there!

Respectfully,

Justin Bower

Senior Planner, Community and Environmental Planning
Houston-Galveston Area Council
3555 Timmons Lane, Suite 120
Houston, TX 77277
713-499-6653
832-746-2140 (c)

N.b. – These workshops are informational, and are not intended to train homeowners to meet requirements concerning maintaining their own systems. Please contact your local authorized agent for your county or municipality’s requirements for system maintenance. These workshops are part of a water quality effort for the West Fork San Jacinto River and Lake Creek, a project funded by the United States EPA through a Section 319(h) Clean Water Act grant, administered by the Texas Commission on Environmental Quality.

