



**SPRING MEETING
Agenda**

**Tuesday, June 5, 2018
1:00 pm to 3:30 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 31, 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: Addendum Four

Addendum Four adds Jarbo Bayou to the BIG project area. The BIG will review and approve as appropriate.

Item Two: TMDL Program Updates

Jimmy Millican (TIAER) will present updates on the Mound Creek TMDL project in the West Fork of the San Jacinto River watershed and to a TMDL project in the Armand Bayou watershed.

Amin Kiaghadi (UH) will present an update to the Mary's Creek Bypass TMDL project.

Item Three: TCEQ Response to the BIG

H-GAC staff will provide the TCEQ response to the BIG's letter requesting implementation information from TCEQ. The BIG will review and discuss.

Item Four: 2018 Annual Report Process

H-GAC staff will review progress on the 2018 Annual Report and discuss potential changes to the I-Plan.

Item Five: SARA Modeling and BMP Tool, Yu-Chun Su, Ph.D. (LAN) and Sheeba M. Thomas (SARA)

Item Six: Use of Lidar Data for Public Health, Sarah Gunter, Ph.D. Baylor College of Medicine

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 23, 2018

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.

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

BACTERIA IMPLEMENTATION GROUP ROSTER (6-6-18)

Last	First	Representing	Organization	Alternate1	Alternate 2
Bailes IV	Rep. Ernest	Agriculture (County)	San Jacinto County	Dale Everitt	
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	Jennifer Wheeler	Jerry Caraviotis
Cioce	Danielle	Urban County	Harris County	Camila Biaggi	Nick Russo
Cruce	Hannah	Agriculture	Texas Forest Service	Hughes Simpson	
Ehrlich	Denise	Business / Industry	Gulf Coast Waste Disposal 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		
Shead	Linda	Conservation	Bayou Preservation Association	James "Ty" Kelly	
Carole	LeBreche	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	Michael Page	
Parkhill	David	Business / Industry	San Jacinto River Authority		
		Utility District	Nottingham Country Municipal Utility District	Michael Thornhill	Matt Carpenter
Pechacek	Linda	Public	Citizen, Civil Engineer	Rachel Powers	
Penhero	Ron	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	
Tarrant	Mayor Leah	Rural Small City	City of Patton Village		
Tuma**	Scott	Business / Industry (Boating)	Boater	Sarah Gossett**	

**Approval of BIG Required



**FALL MEETING
Summary**

**Tuesday, October 31, 2017
1:00 pm to 3:00 pm
H-GAC Conference Room B, Second Floor
3555 Timmons Lane**

Members Present

Michael Bloom, Richard Chapin, Marilyn Christian, Danielle Cioce, Hannah Cruce, Denise Ehrlich, Catherine Elliott, Teague Harris, Andrew Isbell, Tom Ivy, Becky Olive, Raymond Pavlovich, Jim Robertson, Linda Shead, Brian Shmaefsky (Phone)

David Brown was represented by Michael Lee
Marilyn Christian was represented by Jennifer Wheeler
Steve Hupp was represented by Linda Shead
Jason Iken was represented by Carol LaBreche
Nate Johnson was represented by Sarah Gossett
Michael Lindsey was represented by Reuben Martinez*
Anne Olson was represented by Linda Shead
Linda Pechacek was represented by Rachel Powers
**A non-voting representative*

Members Absent

Ernest Bailes IV, Greg Hall, Helen Lane, Craig Maske, Cathy McCoy, Jack Murphy, David Parkhill, Mitchell Page

Guests Present

Adrienne Boen, Camila Briaggi, Linda Broach, Ralph Calvino, Jerry Caraviotis, Christine Cooper, Tom Douglas, Brian Eastham, Diane Humes, Karen Kottke, Jim Kelly, Stephen Lammers, Carole Lemont, Earlene Lambeth, Jason Leifester, Lisa Marshall, Rick Masters, Daniela Moderow, John Moss, Linda Orłowski, Eilan Pavlovich, Nick Russo, Scott Saenger, Richard Smith, Robert Snoza, Christen Specht, Roberto Vega, Jennifer Wheeler, Kyle Wright

H-GAC Staff Present

Becki Begley, Rachel Fields, Steven Johnston, Paniz Miesen, Todd Running, Jean Wright

Call to Order/Welcome/Introductions

Mr. Steven Johnston 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.

Item One: Satellite Image Process Monitoring: Sean Donegan, Satelytics.com

Mr. Donegan presented on how Satelytics uses hyper and multispectral imagery gathered from remote sensing platforms, i.e. satellites, nano-satellites, aircraft, and drones. Satelytics uses reflective signature algorithms to identify and quantify water quality and landcover parameters, e.g. phosphorus, algal cover, heavy metals, thermal variations, and vegetative cover. Mr. Donegan provided multiple examples of Satelytics' use and noted that the cost of surveying and processing remote sensing has fallen in recent years, particularly in the use of nano-satellites and drones. Future growth in use of these techniques will assist organizations in conducting maintenance inspections and surveys. Satelytics is currently working on an algorithm to measure *E.coli* concentrations.

Certification of Quorum

A quorum was certified during the meeting.

Item 2: Approval of Proposed Members & Alternates

The following changes were approved by the BIG:

- Mayor Leah Tarrant of the City of Patton Village was approved to fill the vacancy in Small Rural City representative;
- Sarah Gossett replaced Nate Johnson in representing Conservation;
- Carol LaBreche replaced Jason Iken in representing Large City;
- Linda Shead replace Steve Hupp in representing Conservation;
- Karen Kottke will serve as Becky Olive's alternate and replaces Ralph Calvino; and
- Reuben Martinez will serve as Michael Lindsey's alternate

Item 3: Approval of May 23, 2017 Meeting Summary

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

Item 4: Public Comment

No public comments were made.

Item 5: Review 2017 Annual Report

Mr. Johnston led the review of the Annual Report. Mr. Johnston noted the process to bring the document to the BIG. Mr. Johnston presented key highlights from the document. The BIG was

given an opportunity to provide comments. It was commented that when discussing efforts to address onsite sewage facilities (OSSFs), that it should be stressed that OSSFs when functioning properly, are an effective means of managing human wastes. Concern was noted that it might appear as if the BIG were recommending OSSFs be converted to centralized systems. Central to this point were the inclusion of two success stories that revolved around abandoning OSSFs, some of which were failing though not all, to hook up to WWTFs. The use of converting OSSFs to centralized waste water treatment is one means for addressing failing OSSF systems and that other options such as repairing or replacing can work depending on the situation. Other comments noted that there were missing page numbers; excessive decimals for geometric means on a couple of tables; and color used for graphics should consider how they might appear to color blindness or in black and white. An example of the latter was pointed out to be Appendix F where one of the colors used to represent a monitoring organization was like the background color. Mr. Johnston ask the BIG considering the edits and if the edits were addressed, would the BIG approve the report. The BIG approved the report.

Item 6: TCEQ TMDL Program Update

Jason Leifester gave the TMDL Program Update. Mr. Leifester reported that the Jarbo Bayou TMDL would be proceeding to TCEQ's Commissioners Agenda or adoption in January 2018. It was also reported that TMDL work will start on Mary's Creek Bypass (2019), Armand Bayou Tidal (Fall 2018) and Mound Creek in the West Fork of the San Jacinto River (Fall 2018). As these are in the BIG project area, these TMDLs will be accepted through the Water Quality Management Plan process.

Item 7: Draft Letter to the TCEQ

Mr. Johnston reported on changes to the letter since the BIG last met. Mr. Johnston stated that the letter was presented and reviewed by the Coordination and Policy work group. Mr. Johnston asked the BIG if they were prepared to approve the document and for H-GAC to send the document to the TCEQ. The BIG approved the letter and for the letter to be sent to the TCEQ.

Item 8: TXDOT MS4 General Permit, Adrienne Boer, Program Manager, Environmental Affairs Division, Texas Department of Transportation

Mrs. Boer presented on TXDOT's Municipal Separate Storm Sewer System (MS4) program. According to Mrs. Boer, the focus of the program is on addressing illicit discharges. TXDOT's illicit discharge detection and elimination (IDDE) process is to work with adjacent MS4 jurisdiction. The reasoning behind developing partners is that TXDOT does not have enforcement power and will not be collecting wet weather monitoring or characterizations. The current stormwater management plan is available at txdot.gov/environmentalaffairs and includes IDDE and other management control measures, i.e. education. The permit also includes language for addressing bacteria which TXDOT addresses through its best management practices like IDDE. Mrs. Boer said that TXDOT maintains a host of information and tools on its website. One tool is access to all TXDOT outfall locations through a search of arcgis.com-TXDOTMS4areas. The first annual report is due in February 2018.

Item 9: Other Business/Roundtable

Mr. Johnston handed out, BIG Ideas for Cleaner Water, a new document being produced by H-GAC. H-GAC used information from the BIG's annual reports to develop the document which will be used in meetings with local governments. While not a document of the BIG, H-GAC wanted to provide the document to the BIG as a courtesy and give the BIG the opportunity to comment.

Next Meeting Date

May 23, 2016

H-GAC Conference Room B (2nd Floor)

Adjourn

DRAFT

Bacteria Implementation Group Implementation Plan

Fourth Addendum

- 1) Change to Title Page to reflect the addition of 1 new TMDL (in bold) within the BIG project area.

New Title Page:

Approved by the Commission: January 30, 2013

Approved by the Bacteria Implementation Group: October 16, 2012

Revised by the Bacteria Implementation Group: **June 5, 2018**

Implementation Plan for One Hundred and **Three** Total Maximum Daily Loads for Bacteria in the Houston-Galveston Region

Segments

Buffalo and White Oak Bayous: 1013, 1013A, 1013C, 1014, 1014A, 1014B, 1014E, 1014H, 1014K, 1014L, 1014M, 1014N, 1014O, 1017, 1017A, 1017B, 1017D, 1017E, and 1017F

Clear Creek: 1101, 1101A, 1101B, 1101C, 1101D, 1101E, 1102, 1102A, 1102B, 1102C, 1102D, 1102E, and 1102G

Greens Bayou: 1016, 1016A, 1016B, 1016C, and 1016D

Eastern Houston: 1006F, 1006H, 1007F, 1007G, 1007H, 1007I, 1007K, 1007M, 1007O, and 1007R

Halls Bayou: 1006D, 1006I, and 1006J

Brays Bayou: 1007B, 1007C, 1007E, and 1007L

Sims Bayou: 1007 D and 1007N

Watershed Upstream of Lake Houston: 1004E, 1008, 1008H, 1009, 1009C, 1009D, 1009E, 1010, and 1011

Armand Bayou: 1113, 1113 A, 1113B, 1113C, 1113D, and 1113E

Lake Houston, East Fork San Jacinto River, West Fork San Jacinto River, and Crystal Creek: 1002, 1003, 1004, 1004D

Jarbo Bayou: 2425B_01

November 7, 2017

Mr. Chris Loft, Program Lead
Total Maximum Daily Load Program
Texas Commission on Environmental Quality
MC-203
P.O. Box 13087
Austin, TX 78711-3087

Subject: TCEQ Implementation of the Implementation Plan for Seventy-Two Total Maximum Daily Loads for Bacteria in the Houston-Galveston Region (I-Plan).

Dear Mr. Loft,

The Houston-Galveston Area Council, on behalf of the Bacteria Implementation Group (BIG), is writing this letter to request information from the TCEQ in support of actions taken to implement the I-Plan. The BIG notes appreciatively that staff at TCEQ's Region 12 Office have contributed greatly toward documenting TCEQ's implementation efforts and assisting development of the annual reports.

The BIG created the I-Plan to address bacteria impairments and improve water quality in the region. The I-Plan was approved by the Commission on January 30, 2013. A copy of the I-Plan can be found at: <http://www.h-gac.com/community/water/tmdl/BIG/reports.aspx>. As part of the I-Plan, stakeholders are required to draft an annual report that:

- chronicles partner projects carried out during the year which implement plan actions
- highlights successful projects
- documents water quality environmental improvement resulting from stakeholder efforts.

A copy of the most recent annual report can be found at: <http://www.h-gac.com/community/water/tmdl/BIG/reports.aspx>.

The BIG requests TCEQ provide the current status of the I-Plan strategies that directly reference TCEQ, and any data that can assist tracking other I-Plan areas where TCEQ might have additional information. Enclosed with this letter is a list of I-Plan actions that specifically reference TCEQ and for which the BIG lacks information.

The BIG respectfully requests a written response within the next thirty (30) days which outlines the steps TCEQ has taken or plans to take to address these I-Plan activities. Thank you for the opportunity to work together on improving water quality in the greater Houston area. Please contact me, should you need any additional information or have any questions, at todd.running@h-gac.com or 713.993.4549.

Sincerely,

Todd Running
Manager
Community and Environmental Planning
Houston-Galveston Area Council

Cc: Members of the BIG
Jason Leifester
Lauren Oertel

Enclosure

BIG I-PLAN STRATEGIES REFERENCING TCEQ

The BIG is specifically interested in receiving an update on the following TCEQ initiatives:

- **I-Plan Activity 1.1: Impose More Rigorous Bacteria Monitoring Requirements.** The BIG proposed in the I-Plan monitoring at wastewater treatment facilities (WWTFs) at greater frequency than current state permit requirements. The BIG has found since the approval of the I-Plan that the increased monitoring frequency at larger permitted flow WWTFs has helped improve plant function.

The BIG requests that TCEQ increase the monitoring frequency at the smaller permitted flow WWTFs (<10 MGD) within the BIG project area.

- **I-Plan Activity 1.3: Increase Compliance and Enforcement by the TCEQ.** Activity 1.3 on page 54, Increase Compliance and Enforcement recommends increasing 'no notice' inspections, allowing TCEQ to utilize focused sampling investigations, and to increase staffing if necessary. The Regional Office has reported that TCEQ has not approved focused sampling investigation.

The BIG requests any information on implementation efforts or data that addresses increased compliance and enforcement by the TCEQ.

- **I-Plan Activity 2.5: Strengthen Controls on Subscriber Systems.** Activity 2.5 found on page 62 recommends identifying subscriber systems and recommends the TCEQ consider rulemaking to require registration of subscriber systems. Sanitary sewer overflows have been identified as a contributor to the bacteria concentrations in the project area.

The BIG requests any information on implementation efforts or data that strengthens controls on subscriber systems.

- **I-Plan Activity 4.6: Petition the TCEQ to Facilitate Reimbursement of Bacteria Reduction Measures.** Activity 4.6 on page 75, directs the BIG to petition TCEQ to secure letters of commitment from TCEQ that describe the development policies and criteria that facilitate reimbursement for bacteria reduction measures.

The BIG is concerned that the lack of a specific policy to facilitate MUD reimbursement to developers providing stormwater quality structures (i.e. Low Impact Development, Green Infrastructure) creates funding uncertainty and inhibits their broader use due to the risk-adverse development process.

The BIG requests the TCEQ release a guidance document that includes criteria that will assist in determining the eligibility of a stormwater quality feature for reimbursement.

SPEAKER BIOGRAPHIES

(Listed in Agenda Order)

Jimmy Millican

Mr. Millican is an Assistant Research Scientist for the Texas Institute for Applied Environmental Research at Tarlton State University since 2004. He has been involved since 2006 with bacteria TMDL projects in the Dallas-Ft. Worth, College Station and Houston regions.

Amin Kiaghadi

Mr. Kiaghadi is a doctoral student in Civil and Environmental Engineering. His research is on characterization and modeling of hydrodynamics and water quality post hurricanes and severe storms. Mr. Kiaghadi has been involved in several TMDL projects including the Mary's Creek Bypass.

Yu-Chun Su

Dr. Su received his Ph.D. in Civil Engineering from The University of Texas at Austin in 1991 and has more than 25 years of experience in Environmental and Water Resources Engineering (EWRE). He was with Espey, Huston & Associates, PBS&J, and Atkins for 22 years, and he conducted bacteria TMDL modeling of Buffalo Bayou and White Oak Bayou at the time. He currently serves as the EWRE Technical Director for LAN. He is a licensed professional engineer in Texas, Louisiana, Arkansas, and Florida, a Certified Professional in Erosion and Sediment Control (CPESC), a Certified Professional in Stormwater Quality (CPSWQ), and a Certified Floodplain Manager (CFM).

Sheeba M. Thomas

Sheeba Thomas has been with the San Antonio River Authority since January 2008. She has an M.S. in Mechanical Engineering from Southern Methodist University, Dallas and a PhD in Civil Engineering from the University of Texas at San Antonio. She is a licensed engineer in Texas, a Certified Floodplain Manager (CFM) and a Project Management Professional (PMP). Her expertise lies in several hydraulic, hydrologic and water quality modeling.

Sarah M. Gunter

Dr. Sarah Gunter is a postdoctoral associate at Baylor College of Medicine in the National School of Tropical Medicine. She received a bachelor's of science in biomedical science from Texas A&M University and a Master's in Public Health from Texas A&M Health Science Center. She then went on to receive a PhD in epidemiology from The University of Texas Health Science Center School of Public Health. Her current research focuses on vector-borne and zoonotic disease epidemiology in the southern United States.

