

BACTERIA IMPLEMENTATION GROUP

Roster

Name	Representing	Affiliation	Alternate 1	Alternate 2
Michael Bloom	Ag/Business	PBS&J, Greater Houston Partnership	Jason Maldonado	
John Blount	County	Harris County Planning & Operations Division	Alisa Max	
Pat Buzbee	County	Montgomery County Environmental Health	Phil Moore	
Marilyn Christian	County	Harris County Public Health & Environmental Svcs.	Snehal Patel	
Robert W. Collins	County	Montgomery County		
Carol Ellinger	Municipal	City of Houston	Sarah Metzger	Richard Chapin
Catherine Elliott	County	Harris County Flood Control District	Joe Myers	Carolyn White
Joe Ferro	Municipal	City of Webster	Johnny Arrendondo	Pam Guillory
Mike Garver	Buffalo/Whiteoak TMDL	Buffalo Bayou Partnership	Scott Barnes	Jessalyn Ballard*
Teague Harris	Municipal	Pate Engineers, Inc.		
Jason Iken	Metro TMDL	City of Houston	Alex Van Keuren	Richard Chapin
Tom Ivy	Public	Texas Stream Team	Jim Williams	
Ron Kelling	Ag/Business	San Jacinto River Authority	Michael Mooney	
James Tynan Kelly	Conservation	Bayou Preservation Association	Bruce Heiberg	
Helen Lane	Conservation	Houston Audubon	Gina Donovan	
Craig Maske	Metro TMDL	Dodson & Associates, Inc./HCEC	Scott Saenger	
Cathy McCoy	Ag/Business	Harris County Soil & Water Conservation Dist. #442		
Michael Mooney	Lake Houston TMDL	The Woodlands Joint Powers Agency	Ron Kelling	
Jack Murphy	Municipal	City of League City	Susie Cavazos	Brian Craig
Becky Olive	Ag/Business	AECOM	Nancy Sullins	Tony Bennett
Mitchell G. Page	Lake Houston TMDL	Schwartz, Page & Harding, LLP	Michael Page	
Raymond Pavlovich	Wildcard	Nottingham Country Municipal Utility District	Michael Thornhill	Mark Stendahl
Linda Pechacek	Public	Citizen, Civil Engineer	Fred Lazare	Steve Archer
Ceil Price	Buffalo/Whiteoak TMDL	City of Houston	Michael Schaffer	Guyneth Williams
Kathy Richolson	Clear Creek TMDL	Gulf Coast Waste Disposal Authority	Phyllis Frank	
Jim Robertson	Conservation	Cypress Creek Flood Control Coalition	Richard "Dick" Smith	
Linda Shead	Conservation	The Trust for Public Land	Mary Ellen Whitworth	Carolyn White
Brian Shmaefsky	Public	Lone Star College, Kingwood	Dr. John Connolly	
Melvin Solomon	Municipal	City of Conroe	Ron Green	
Robert Stokes	Clear Creek TMDL	Galveston Bay Foundation	Vanessa Mintzer	Scott Jones

*not yet approved

**Bacteria Implementation Group
Meeting Summary**

Tuesday, May 19, 2009

Members Present:

Michael Bloom	Jason Iken	Becky Olive
John Blount	Tom Ivy	Raymond Pavlovich
Marilyn Christian	Ron Kelling	Linda Pechacek (phone)
Robert Collins (phone)	Helen Lane	Ceil Price
Carol Ellinger	Craig Maske	Jim Robertson
Catherine Elliott	Cathy McCoy (phone)	Linda Shead
Joe Ferro	Michael Mooney	Brian Shmaefsky (phone)
Teague Harris	Jack Murphy	

Pat Buzbee was represented by Philip Moore.
James Tynan Kelly was represented by Bruce Heiberg.
Robert Stokes was represented by Scott Jones.

Members Absent:

Mike Garver	Kathy Richolson
Mitchell Page	Melvin Solomon

Guests Present:

Scott Avis (TCEQ), Steve Barry (Jones & Carter), Tony Bennett (AECOM), Linda Broach (TCEQ), Richard Chapin (City of Houston), Catarina Cron (Harris County), Jim Davenport (TCEQ), Jennifer Davis (Parsons), Chris Defrancis (City of Nassau Bay), Bryan Eastham (TCEQ), Rick Felan (TCEQ), Jedediah Greenfield (City of Houston), Lori Hamilton (TCEQ), Nicole Hausler (PHA), Ruthanne Haut (City of Houston), Michael Hogan (City of Nassau Bay), Brian Koch (TSSWCB), Kim Laird (TCEQ), Jason Leifester (TCEQ), Ward Ling (TCEQ), Kathy Lord (BPA), Charles Maguire (TCEQ), Alisa Max (Harris County), Maria Modelska (University of Houston), Snehal Patel (Harris County), Allen Peach (URS), Mary Purzer by phone (AECOM), Nick Russo (Harris County), Scott Saenger (Jones & Carter), Robert E. Snoza (HCFCD), Brenda Templeton (City of Houston), Ashley K. Wadick (TCEQ), Carolyn White (HCFCD)

H-GAC Staff Present:

Jeff Taebel, Carl Masterson, Rachel Powers, Erin Livingston, Om Chawla, Bill Bass

1. Welcome & Introductions

Rachel Powers welcomed and thanked everyone for coming. She initiated self-introductions of BIG members and H-GAC staff. Rachel then reviewed the agenda,

pointing out that TCEQ's Lori Hamilton would be making a presentation on Recreational Use Attainability Studies as part of Other Business.

2. Certification of Quorum

Twenty-six members and alternates were present, achieving a quorum.

3. Approval of Proposed Alternates

No alternates were proposed.

4. Approval of April 21, 2009, Meeting Summary

Meeting notes were approved with no changes.

5. Public Engagement Plan Phase I

Rachel explained that she received several comments that she tried to incorporate into the document. Some of the comments were contradictory, but she tried to reconcile them. After giving the group a few moments to review changes, Rachel asked for comments.

The group agreed that the first sentence in the problem statement of the letter would be modified to read, "Testing of our rivers, lakes, streams, and bayous has indicated that many of our waterways have bacteria levels higher than state standards."

The group then agreed that each letter should specify a date for a deadline of about three weeks, depending on holidays, for providing comments.

The group agreed to use "provide" instead of "ensure" in the "Background" section of the letter.

The group agreed to use "disease-causing organisms" instead of bacteria, where appropriate, to address the variety of disease causing organisms for which *E. coli* is an indicator.

The group agreed to add the Texas Environmental Health Association-Southeast Chapter to the list of professional organizations and the Texas Water Conservation Association to the list of possible speaking opportunities.

Rachel briefly explained that phone calls and letters would begin going out in the next few weeks and would continue to go for the next few months.

6. Workgroup Reports

Six workgroups met since the April BIG meeting. The BIG liaison for each of these workgroups or an H-GAC staff member gave a verbal summary to the BIG, as follows:

- **Land Development:** At the last meeting, the group discussed how land development activities are closely related to stormwater activities and how the two topics fit together. The group reviewed the implementation activities it developed and focused on the activities that were identified in the BIG prioritization exercise. There was a good discussion of how to implement BMPs through the use of incentives for green space and reimbursements from TCEQ for desirable BMPs in new developments. The group also discussed the significance of implementing land development activities in areas outside Phase I and II MS4 areas.
- **WWTF:** The group discussed the regionalization of WWTF, confirming the belief that it is appropriate in some instances but cost prohibitive in most situations. It might be appropriate to identify an incentive program to encourage new developments to accommodate regionalization. The group also discussed bacteria monitoring and how it is being incorporated into permits for WWTF. The group briefly discussed technology advances and how to address that. Next meeting will be on July 8.
- **Sanitary Sewer Systems:** The group discussed mapping, sanitary sewer overflows, subscriber systems, and Capacity, Management, Operations, and Maintenance (CMOM) programs. The discussion focused on regulatory measures that might be put in place to address the issues of concern. The next meeting will be on July 20.
- **OSSF:** While OSSF (aka septic tanks) were not identified as a source of primary concern in the sticky-dot exercise, although a top implementation activity was to map, identify, and address OSSF, especially failing OSSF. The group discussed what information is available and how to collect it. H-GAC has begun collecting some of that data from Authorized Agents in the area.
- **Research:** The group reviewed research topics identified in previous meeting and grouped them into three categories: BMP effectiveness, bacteria persistence and regrowth, and appropriate indicators. The group discussed current studies to address these topics as well as potential funding sources for future studies.
- **Construction:** The meeting focused on the fact that the existing rules and regulations are good. The question is how to adequately enforce those rules. Most of the concern regarding construction sites is not specific to bacteria, but instead to runoff in general. Construction runoff, and sediment in particular, provides a vehicle for hiding/transporting bacteria.

One comment on the report was that EPA has proposed new guidelines for construction activity that might be national in scope and that might require the use of coagulation and flocculation to treat stormwater runoff from construction sites so that it has less than 13 NTU (a measure of turbidity). More information at <http://www.epa.gov/guide/construction/#proposed>. The discussion relating to this proposed regulation does not identify bacteria as a significant pollutant of concern in runoff from construction sites.

7. Staff Presentation on GIS

Carl discussed several maps that H-GAC staff have been developing, and some statistics that have been gleaned from the examination. The BIG area is about three times the size of Rhode Island or half the size of New Jersey, and contains a population about half the size of New Jersey. The maps are as follows:

- Impaired Streams, watershed boundaries, and monitoring stations
- Municipal WWTF Outfalls (data from TCEQ)
- OSSF – The map has incomplete information because there is no central repository for the locations of permitted facilities or violations. H-GAC is collecting some of this information. The OSSF Research Council might be a source of funds to help inventory these.
- Land Cover – 2008 Land Cover Data
- Land Use – two maps that compare current land use information with projected land use information. The data do not exist for the entire BIG area.

H-GAC is working on additional maps to illustrate other issues identified by the BIG and its workgroups. Any requests for maps may be directed to Rachel or Carl.

These maps are going to be particularly useful as we go out on our public engagement meetings. We'll be able to use these base maps and just zoom in on the area specific to each stakeholder. The group suggested that maps brought to public engagement meetings should represent more sources than those presented today.

There was a brief aside about skimboarding, what appears to be an emerging form of contact recreation, along Cypress Creek.

We might be able to use some of these maps to prioritize geographically where to undertake various implementation activities.

8. Other Business/Roundtable

Lori Hamilton, in the water quality standards group at TCEQ, made a presentation entitled Recreation Use Attainability Analyses (UAAs).

- TCEQ has proposed to modify the standard for contact recreation. The changes would differentiate levels of recreation and revise numerical criteria. The new levels and relative criteria would be as follows:
 1. Primary Contact Recreation—206 colony forming units per 100 milliliters (cfu/100ml)
 2. Secondary Contact Recreation I—630 cfu/100ml
 3. Secondary Contact Recreation II—1030 cfu/100 ml
 4. Non-contact Recreation—2060 cfu/100ml

These numbers were based on criteria that have been approved or considered by EPA, criteria used by other states, and recommendations of TCEQ staff with input from stakeholders.

- Lori reviewed new procedures for conducting UAAs. Significantly, UAAs will involve significant local coordination.
- Lori reviewed the UAA that was conducted in summer of 2008 along Buffalo and Whiteoak Bayous. Elements of the UAA include data collection and evaluation. The results may be incorporated into the current water quality standards revision. The results will need to be reviewed and approved by the EPA.
- Lori shared two maps, one of each watershed, showing the impaired waterways and tributaries.
- Lori presented three potential recommendations based on the recreational UAA:
 1. The main stems of Buffalo and Whiteoak Bayous remain as Primary Contact Recreation while the 13 tributaries are classified as Secondary Contact Recreation I.
 2. Same as (1), with the exception of one tributary of Buffalo Bayou which would also be Primary Contact Recreation
 3. All the waterways remain Primary Contact Recreation, except for Brickhouse Gully and two unnamed tributaries which would be Secondary Contact Recreation I.
- Lori then asked for recommendations from the BIG regarding other alternatives for classifying the streams based on the proposed recreation categories.

Information about proposed procedures for UAAs along with the report for the Buffalo and Whiteoak Bayous UAA can be found at http://www.tceq.state.tx.us/permitting/water_quality/stakeholders/swqsawg_handouts.html#ruaa.

The group suggested that it would be important to consider potential activity and actions that individuals and groups are undertaking to increase or improve potential activity. For example, Buffalo Bayou Partnership and Cypress Creek Flood Control Coalition are working to increase recreation along bayous. Historical and existing uses are not a sufficient measure for categorization.

Lori explained that historical review must go back as far as November of 1975, although the two UAAs go back even further and identify historical swimming holes along the bayous.

It was pointed out that the water in many of the waterways being discussed consists mostly of effluent from wastewater treatment facilities. It might be inappropriate to encourage recreation in wastewater effluent.

If a recommendation was made to change the designation of a waterway, from Primary Contact Recreation to Secondary Contact Recreation I, for example, the EPA would

review the recommendation to see if it met six requirements for such a change. If approved, it would be included in the upcoming standards revision, which would then be subject to public comment, etc.

According to EPA regulations, recreational UAAs need to look at two things:

1. Whether swimming or contact recreation is in fact an existing use in the stream being examined, for the purpose of proving the negative that nobody is swimming. This is required because any existing use (defined as any use occurring on or after November 1995) must be a designated use and must be protected. AND,
2. Whether controls could be implemented to attain contact recreational standards without causing widespread economic and social harm. If it can be shown that attainment is only possible by implementing controls that would cause widespread economic or social harm, then EPA can deem that use unattainable and a secondary use could become the designated use.

If a less stringent standard is applied to a stream as a result of a UAA, we basically have said that, at least for the time being, we don't want to meet the water quality goals of the Clean Water Act for that segment. It is reversible, and Chicago has an example of a reversal.

The comment regarding the high levels of wastewater effluent is relevant to the discussion, although the question should be, with enough investment in treating the wastewater (or other sources), could the streams be made appropriate for contact recreation?

We have the opportunity now, as part of this revision to the standards, to recategorize some of the segments. We might not have this opportunity for another four years or so. This is a significant decision that should be considered carefully before making a decision.

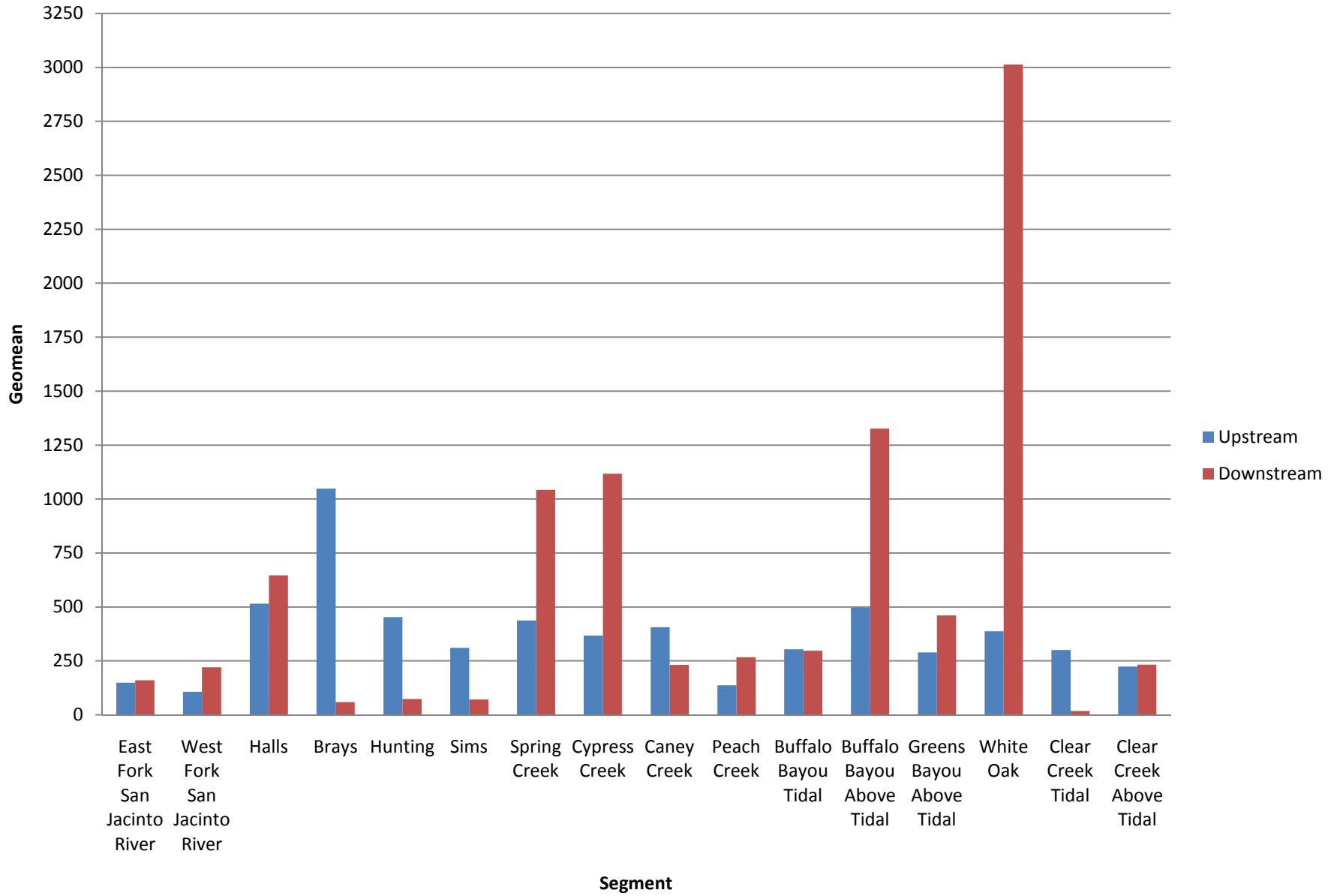
9. Next Meeting Date

The next regularly scheduled meeting will be on June 16, 2009.

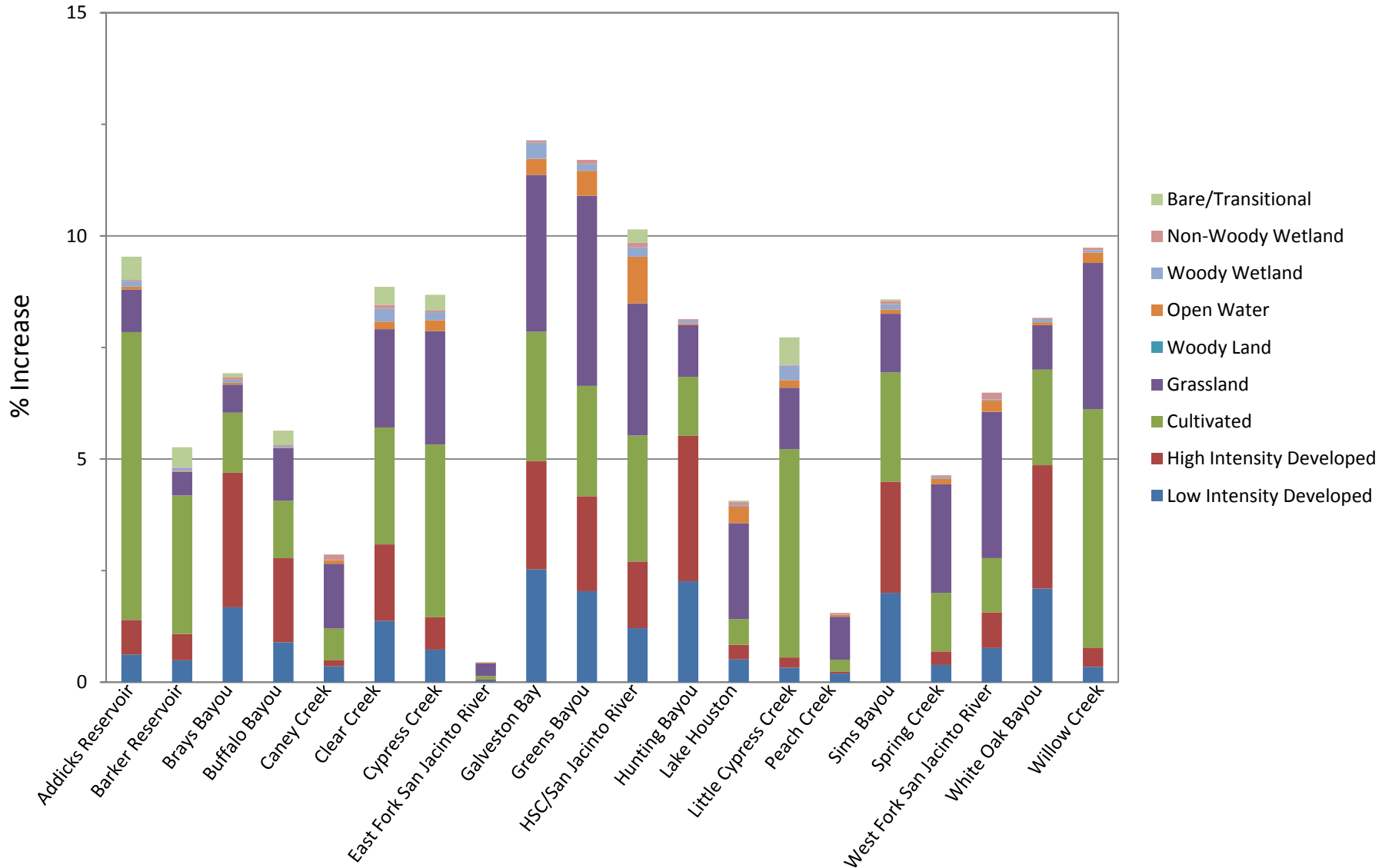
10. Adjourn

The meeting was adjourned at 3:06 PM.

Upstream & Downstream Bacteria Levels

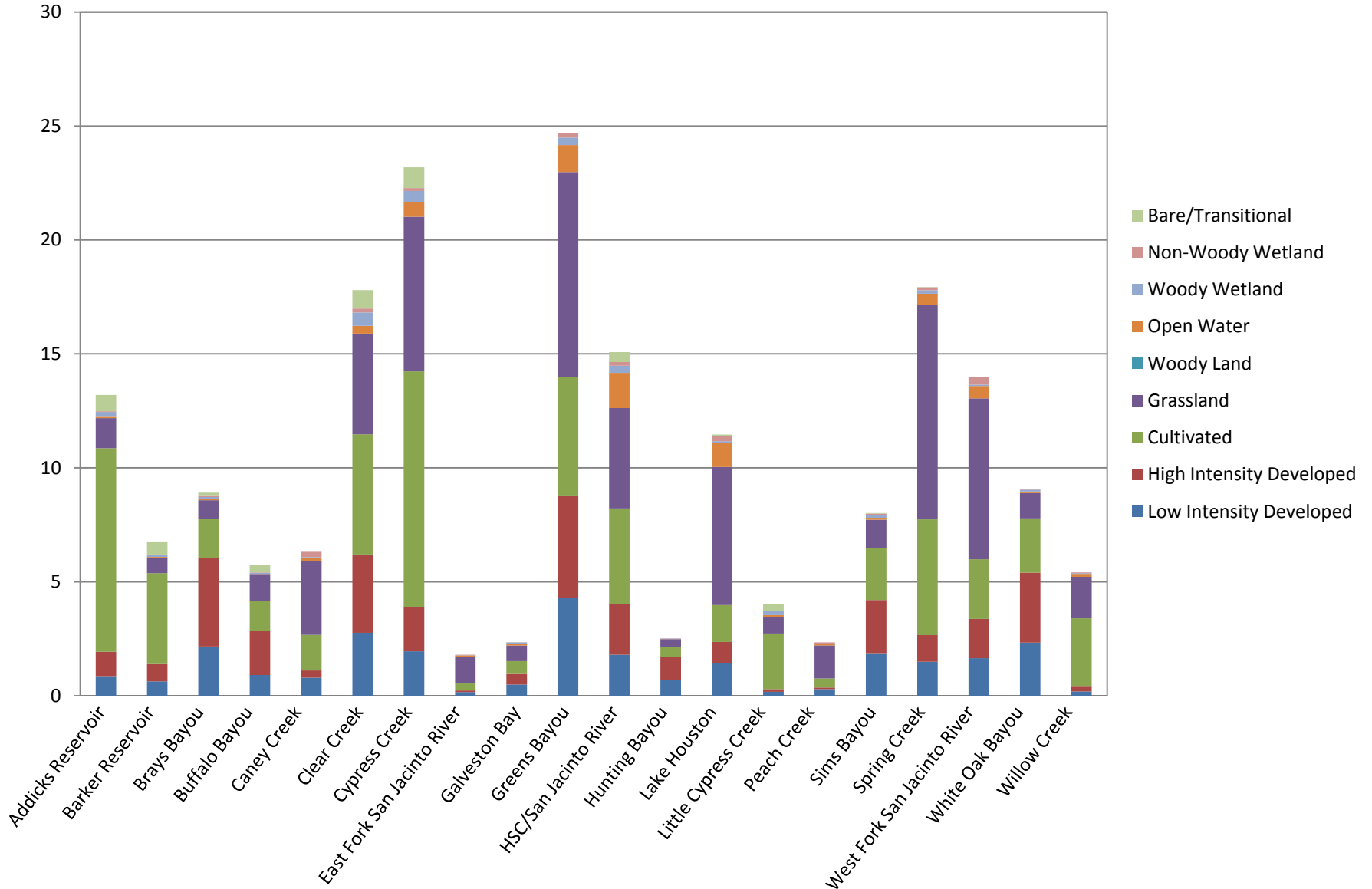


Percentage Increase in Impervious Surface by Landcover Type (2005 – 2035)



Increase in Impervious Surface by Landcover Type

2005 – 2035 (in Square Miles)



Population Living in Proximity to Impaired Streams (Within 1/2 and 1/4-mile Buffered Areas)

June 16, 2009

Segment Number	Segment Name	2005 Population		2035 Population		
		1/4-mile buffer	1/2-mile buffer	1/4-mile buffer	1/2-mile buffer	
1002	Lake Houston	5,285	10,805		12,427	22,647
1003	East Fork San Jacinto River	1,822	3,694		8,153	12,149
1004	West Fork San Jacinto River	2,682	5,794		10,354	20,712
1004D	Crystal Creek	465	1,100		1,748	4,102
1004E	Stewarts Creek	5,332	13,750		16,412	33,378
1006	Patrick's Bayou	11,595	24,986		14,025	31,259
1006D	Halls Bayou	51,038	91,848		64,709	113,154
1006F	Big Gulch Above Tidal	10,718	21,391		15,345	28,317
1006H	Spring Gully Above Tidal	5,113	8,856		7,052	11,770
1006I	Unnamed Tributary of Halls Bayou	3,120	7,343		5,990	11,683
1006J	Unnamed Tributary of Halls Bayou	5,626	10,751		8,946	15,940
1007	Houston Ship Channel/Buffalo Bayou Tidal	14,107	39,380		24,890	61,648
1007B	Brays Bayou Above Tidal	115,244	199,256		146,583	246,471
1007C	Keegans Bayou Above Tidal	43,937	71,192		51,046	82,815
1007D	Sims Bayou Above Tidal	29,720	57,510		40,178	74,156
1007E	Willow Waterhole Bayou Above Tidal	29,858	52,104		33,025	58,092
1007F	Berry Bayou Above Tidal	18,124	35,999		24,071	44,755
1007G	Kuhlman Gully Above Tidal	12,012	25,415		21,840	41,960
1007H	Pine Gully Above Tidal	16,466	30,136		17,038	33,508
1007I	Plum Creek Above Tidal	24,870	39,419		30,910	48,465
1007K	Country Club Bayou Above Tidal	16,840	32,889		18,537	38,226
1007L	Unnamed Non-Tidal Tributary of Brays Bayou	4,948	15,770		5,169	16,299
1007M	Unnamed Non-Tidal Tributary of Hunting Bayou	5,401	11,550		6,649	14,565
1007N	Unnamed Non-Tidal Tributary of Sims Bayou	5,533	7,845		7,294	10,824
1007O	Unnamed Non-Tidal Tributary of Buffalo Bayou	2,769	7,376		4,406	10,774
1007R	Hunting Bayou Above Tidal	18,708	40,287		29,785	56,835
1008	Spring Creek	11,984	29,118		42,174	88,632
1008B	Upper Panther Branch	7,228	12,521		13,386	24,695
1008H	Willow Creek	7,829	11,611		27,291	40,385
1009	Cypress Creek	34,864	80,730		82,279	155,049
1009C	Faulkey Gully	8,955	15,922		12,881	24,269
1009D	Spring Gully	6,398	12,108		12,435	22,622
1009E	Little Cypress Creek	4,500	12,622		15,402	34,588
1010	Caney Creek	5,665	10,342		12,290	24,243
1011	Peach Creek	3,684	7,029		7,701	14,053
1013	Buffalo Bayou Tidal	13,975	24,605		25,656	47,169
1013A	Little White Oak Bayou	31,293	57,920		42,376	75,266
1014	Buffalo Bayou Above Tidal	53,365	104,132		64,656	123,995
1014A	Bear Creek	4,470	10,708		18,888	35,803
1014B	Buffalo Bayou	9,387	19,049		16,552	33,605
1014E	Langham Creek	20,993	36,959		33,722	55,636
1014H	South Mayde Creek	12,366	22,179		23,121	42,959
1014K	Turkey Creek	4,355	11,389		5,836	14,415
1014L	Mason Creek	12,480	21,407		16,329	28,970
1014M	Neimans Bayou	15,662	23,374		17,463	26,615
1014N	Rummel Creek	14,259	27,571		15,445	30,519
1014O	Spring Branch	18,364	35,546		21,210	40,781
1016	Greens Bayou Above Tidal	47,070	70,471		73,816	112,508
1016A	Garners Bayou	6,808	10,765		20,137	32,859
1016B	Unnamed Tributary of Greens Bayou	5,554	11,421		9,080	18,244
1016C	Unnamed Tributary of Greens Bayou	2,005	5,982		5,207	11,953
1016D	Unnamed Tributary of Greens Bayou	1,646	6,341		5,286	12,568
1017	Whiteoak Bayou Above Tidal	85,867	143,191		113,662	189,655
1017A	Brickhouse Gully/Bayou	30,439	48,761		34,273	55,664
1017B	Cole Creek	17,209	30,452		22,539	39,355
1017D	Unnamed Tributary of Whiteoak Bayou	5,875	14,406		6,808	16,670
1017E	Unnamed Tributary of White Oak Bayou	7,295	15,013		13,251	24,815
1101	Clear Creek Tidal	8,929	21,155		16,846	33,402
1101B	Chigger Creek	6,406	11,127		12,039	20,444
1101D	Robinson Bayou	3,395	6,756		5,619	10,318
1102	Clear Creek Above Tidal	22,049	41,998		37,823	70,166
1102A	Cowart Creek	5,423	10,986		8,570	16,885
1102B	Mary's Creek/ North Fork Mary's Creek	25,195	40,449		34,567	55,607
1102C	Hickory Slough	7,123	11,653		11,162	18,829
1102D	Turkey Creek	13,566	20,963		20,048	33,967
1102E	Mud Gully	422	3,832		2,625	6,962

