



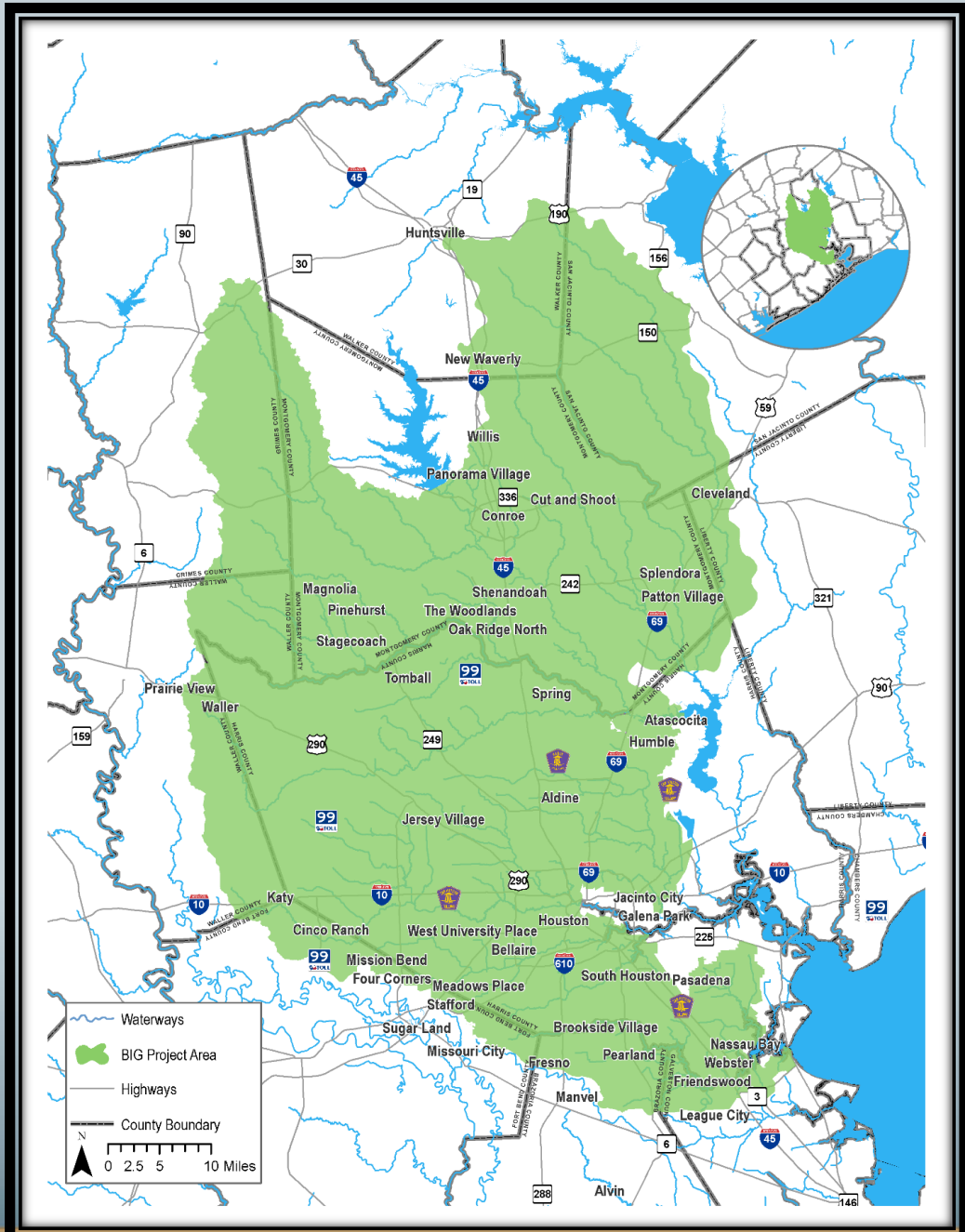
BACTERIA IMPLEMENTATION GROUP (BIG)

Fall Meeting
November 29, 2022



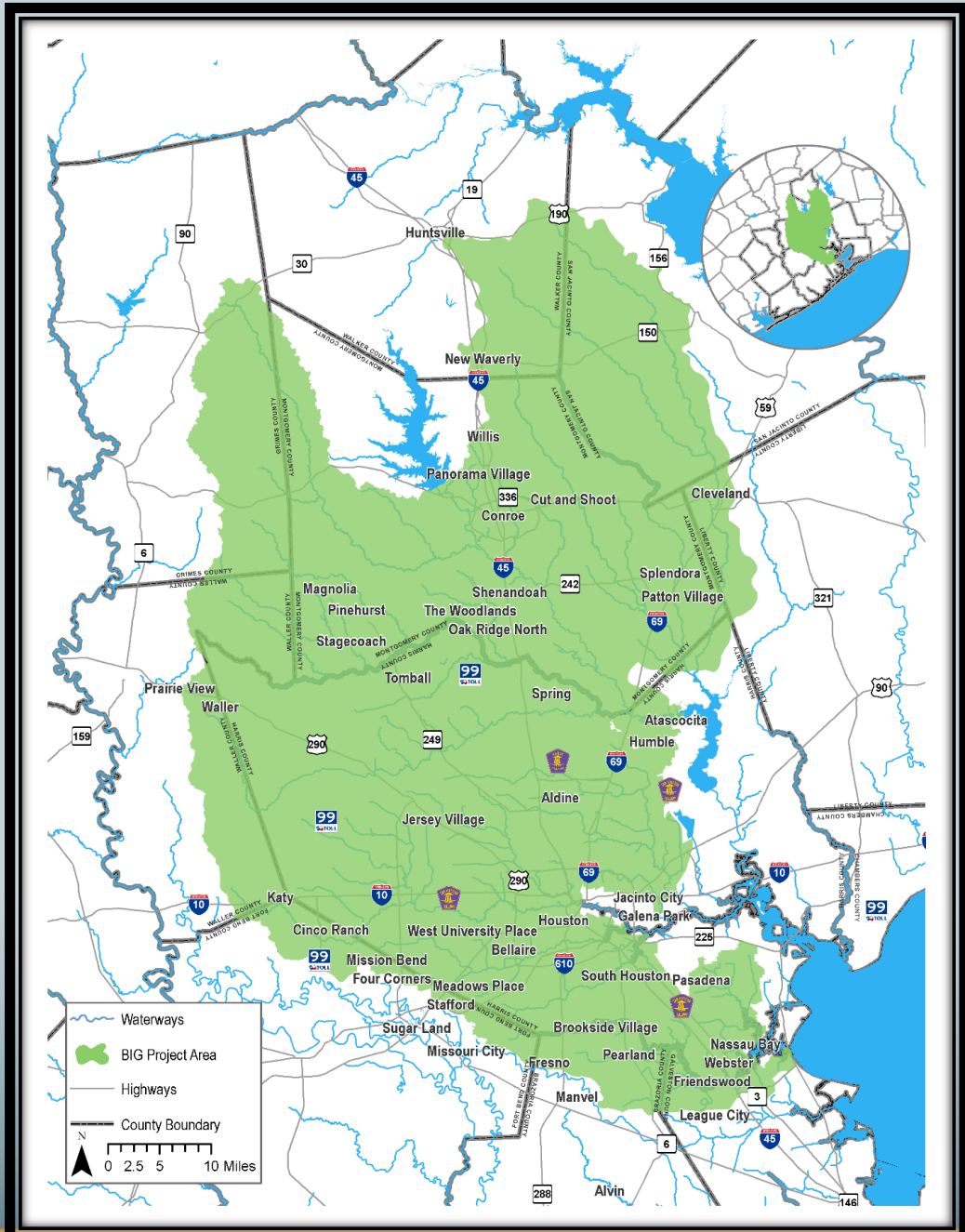
AGENDA

- **Call to Order/Introductions**
- **Quorum Certification**
- **Review and Approve Changes to the BIG Roster**
- **Review and Approve Minutes**
- **Public Comment**
- **Item One:** I-Plan Update
- **Item Two:** 2021 Annual Report
- **Item Three:** 2022 Annual Report
- **Item Four:** TMDL Program Update
- **Item Five:** Implementation Project Presentations
- **Item Six:** Other Business
- **Adjourn**



AGENDA

- Call to Order/Introductions
- **Quorum Certification**
- **Review and Approve Changes to the BIG Roster**
- Review and Approve Minutes
- Public Comment
- **Item One:** I-Plan Update
- **Item Two:** 2021 Annual Report
- **Item Three:** 2022 Annual Report
- **Item Four:** TMDL Program Update
- **Item Five:** Implementation Project Presentations
- **Item Six:** Other Business
- **Adjourn**



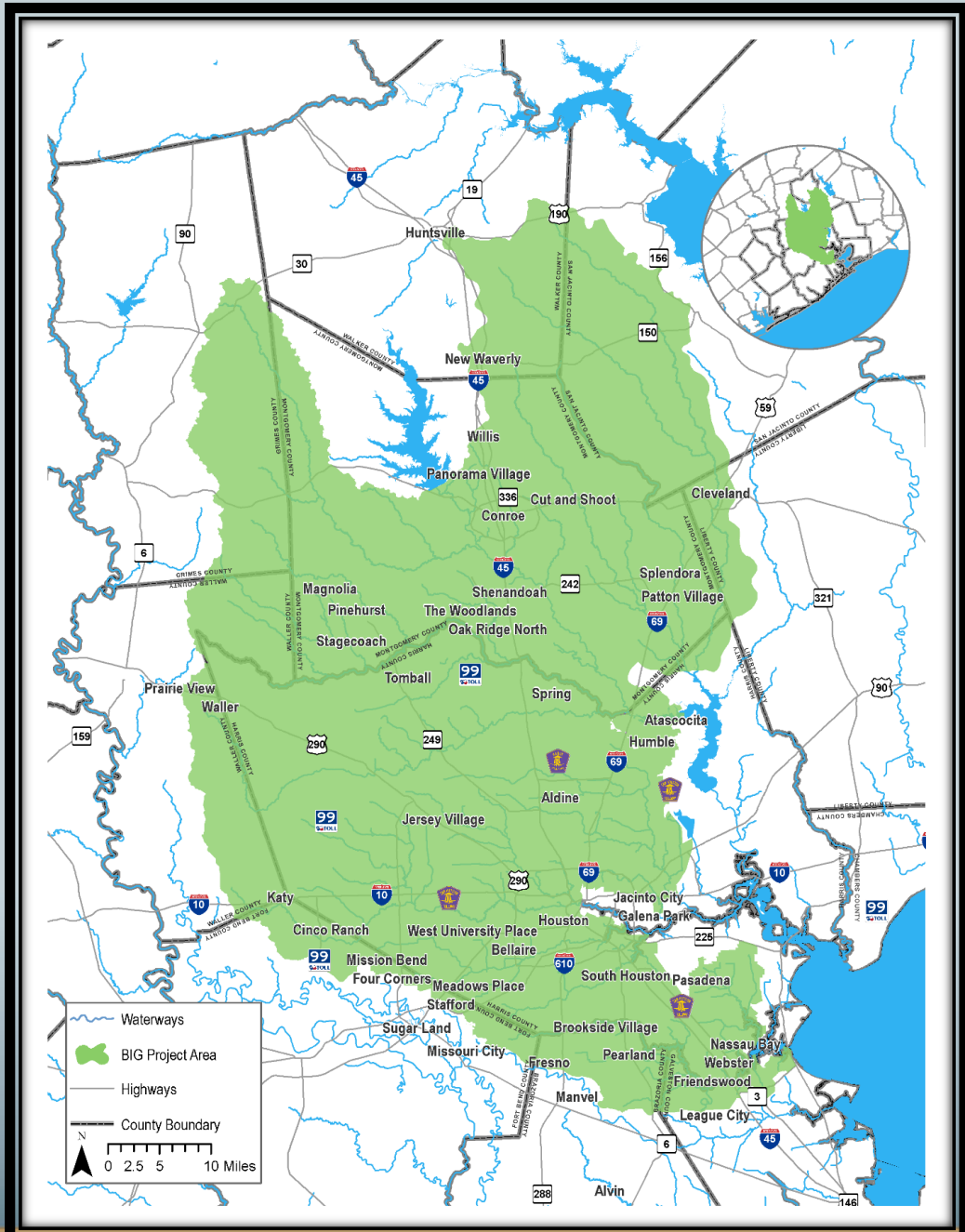
ROSTER UPDATES

- **BIG Membership**
 - **Natasha Zarnstorff** (Conservation) Galveston Bay Foundation
- **Alternates**
 - **Julia Schmidt** (Agriculture) Texas Forest Service
 - **Charlotte Cisneros** (Conservation) Citizens' Environmental Coalition
 - **Lisa Scobel** (Conservation) Galveston Bay Foundation
 - **Mikayla Panariello** (Conservation) Galveston Bay Foundation



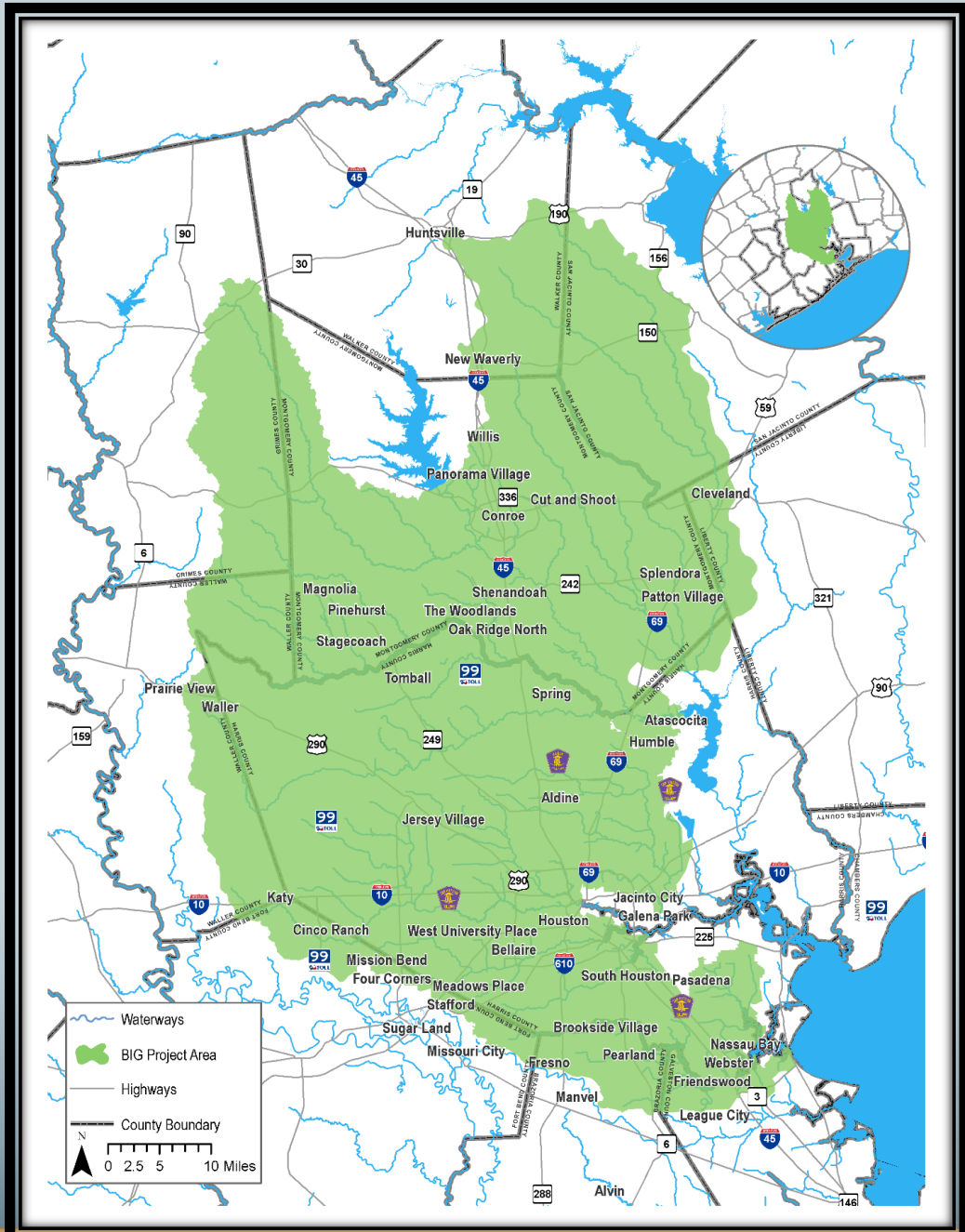
AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve Changes to the BIG Roster
- Review and Approve Minutes
- Public Comment
- Item One: I-Plan Update
- Item Two: 2021 Annual Report
- Item Three: 2022 Annual Report
- Item Four: TMDL Program Update
- Item Five: Implementation Project Presentations
- Item Six: Other Business
- Adjourn



AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve Changes to the BIG Roster
- Review and Approve Minutes
- Public Comment
- **Item One: I-Plan Update**
- **Item Two: 2021 Annual Report**
- **Item Three: 2022 Annual Report**
- **Item Four: TMDL Program Update**
- **Item Five: Implementation Project Presentations**
- **Item Six: Other Business**
- **Adjourn**



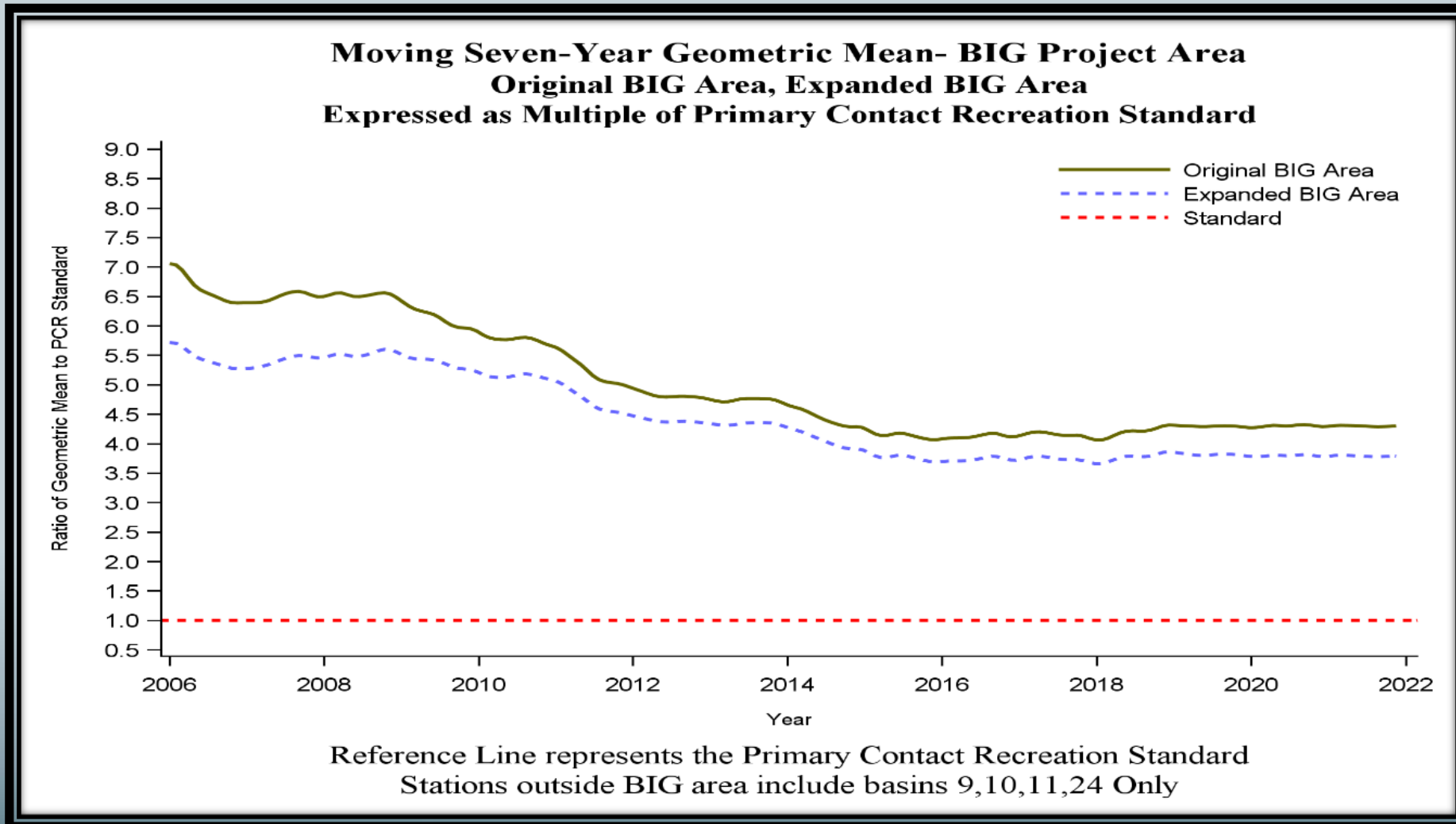
For Total Maximum Daily Loads for Bacteria
in the Houston-Galveston Region

I-Plan Update

Moving the Needle



Bacteria Reduction Trend



1.0 Wastewater Treatment Facilities

- Implementation Activities

- 1.1 Encourage More Rigorous Bacteria Monitoring

- 1.2 Continue to Track the Use of More Strict Bacteria Limits within the BIG Project Area

- 1.3 Enhance WWTF Compliance

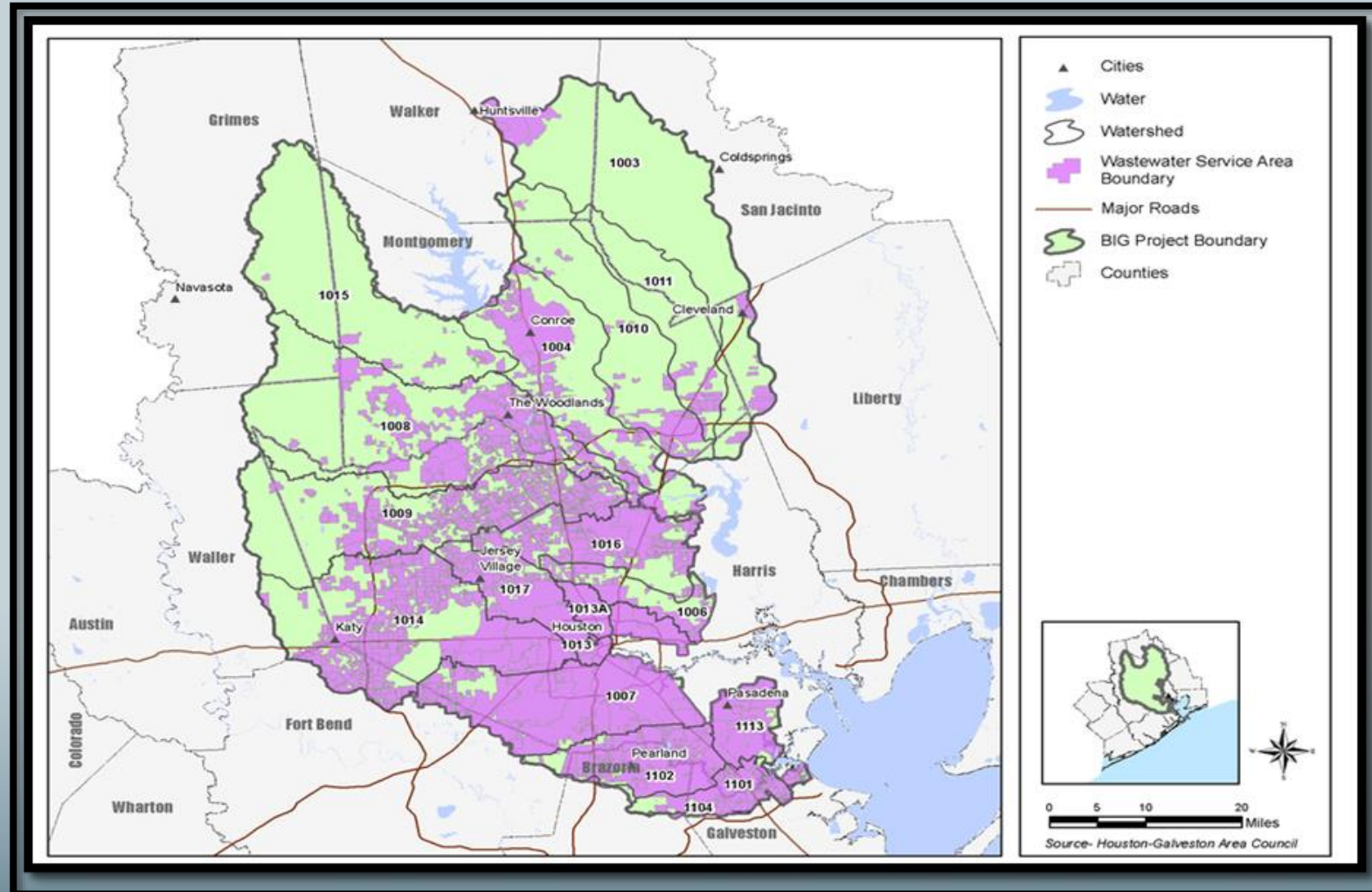
- 1.4 Track Changes to Improve Design and Operation Criteria for New Plants

- 1.5 Upgrade Facilities

- 1.6 Consider Regionalization of WWTFs

- 1.7 Use Treated Effluent for Facility Irrigation

WWTF Service Area



Discharge Monitoring Report Compliance 2021

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
Variable/Intermittent Discharge	12	0	100	4	0	100
< 0.1 MGD	463	0.9	99.1	130	10	90
0.1-0.5 MGD	1029	0.9	99.1	97	6.2	93.8
0.5-1 MGD	984	1.2	98.8	94	9.6	90.4
1-5 MGD	936	3.1	96.9	106	5.7	94.3
5-10 MGD	168	6	94	7	0	100
> 10 MGD	108	16.7	83.3	9	0	100

2.0 Sanitary Sewer Systems

- **Implementation Activities**

- 2.1 Develop Utility Asset Management Programs for Sanitary Sewer Systems

- 2.2 Address Fats, Oils, Grease and Wipes

- 2.3 Encourage Appropriate Mechanisms to Maintain Function at Lift Stations

- 2.4 Improve Reporting Requirements for Sanitary Sewer Overflows

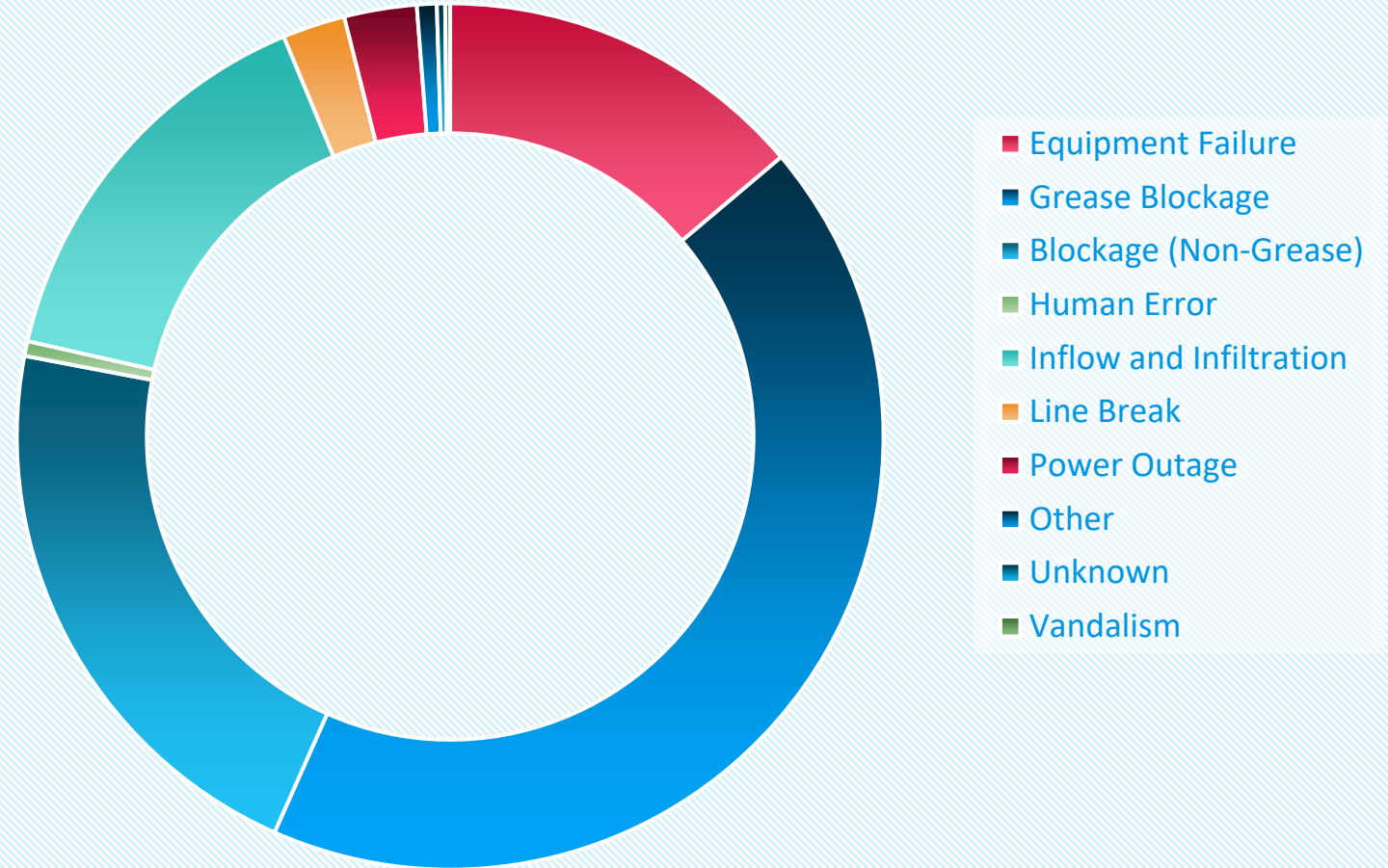
- 2.5 Strengthen Controls on Subscriber Systems

- 2.6 Penalties for Violations

Sanitary Sewer Overflow Occurrences

SSO Count in 2021

Cause	Count	Volume
Equipment Failure	225	1,069,428
Grease Blockage	696	509,804
Blockage (Non-Grease)	347	291,714
Human Error	9	47,535
Inflow and Infiltration	247	3,834,571
Line Break	38	113,015
Power Outage	44	2,056,070
Other	12	8,700
Unknown	5	7,371
Vandalism	3	2,000
Total	1626	7,940,207

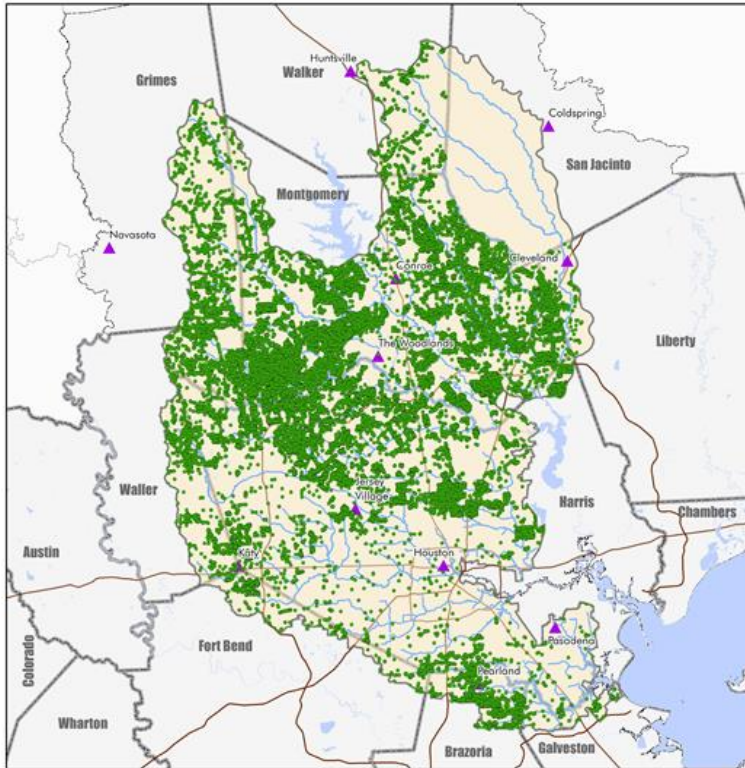


3.0 Onsite Sewage Facilities

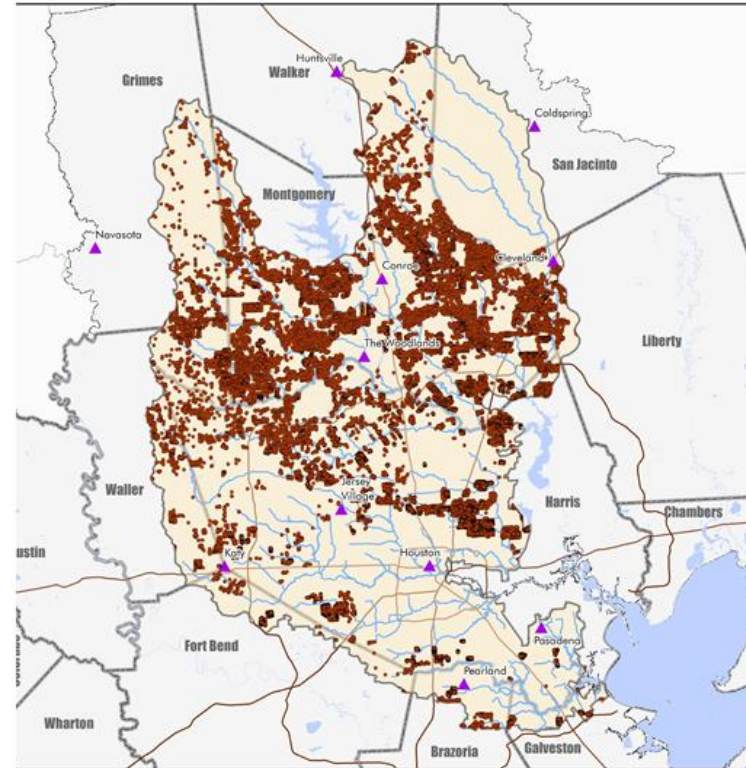
- Implementation Activities:
 - 3.1 Identify and Address Failing Systems
 - 3.2 Address Inadequate Maintenance of OSSFs
 - 3.3 Legislation and Other Regulatory Actions

BIG Project Area OSSFs

BIG Project - Permitted OSSFs



BIG Project - Unregistered OSSFs



4.0 Stormwater

- Implementation Activities:

- 4.1 Continue Existing Stormwater Programs

- 4.2 Model Best Practices

- 4.3 Encourage Expansion of Stormwater Management Programs

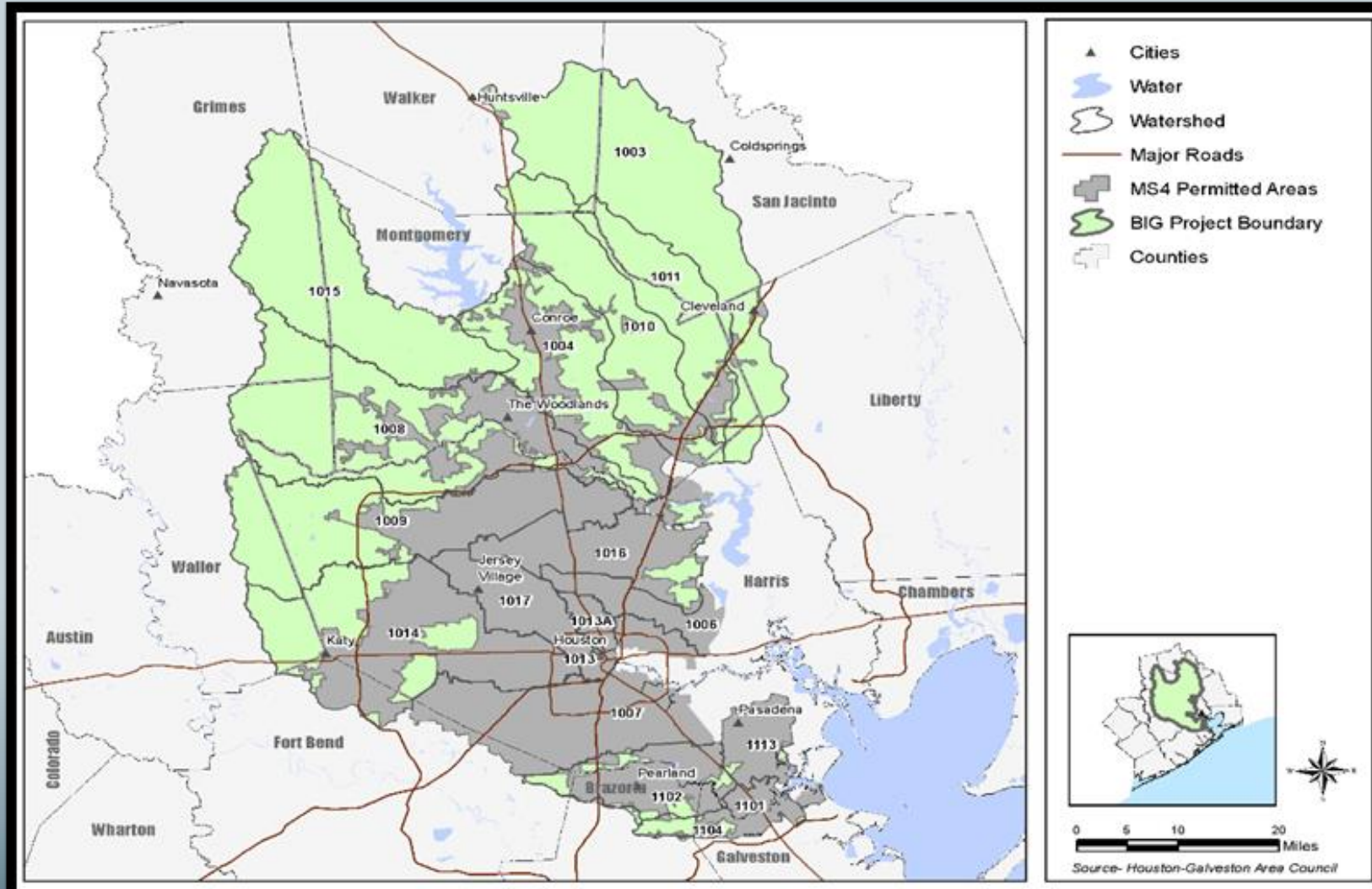
- 4.4 Promote Recognition Programs for Developments that Voluntarily Incorporate Bacteria Reduction Measures

- 4.5 Targeted Stormwater Outreach Programs

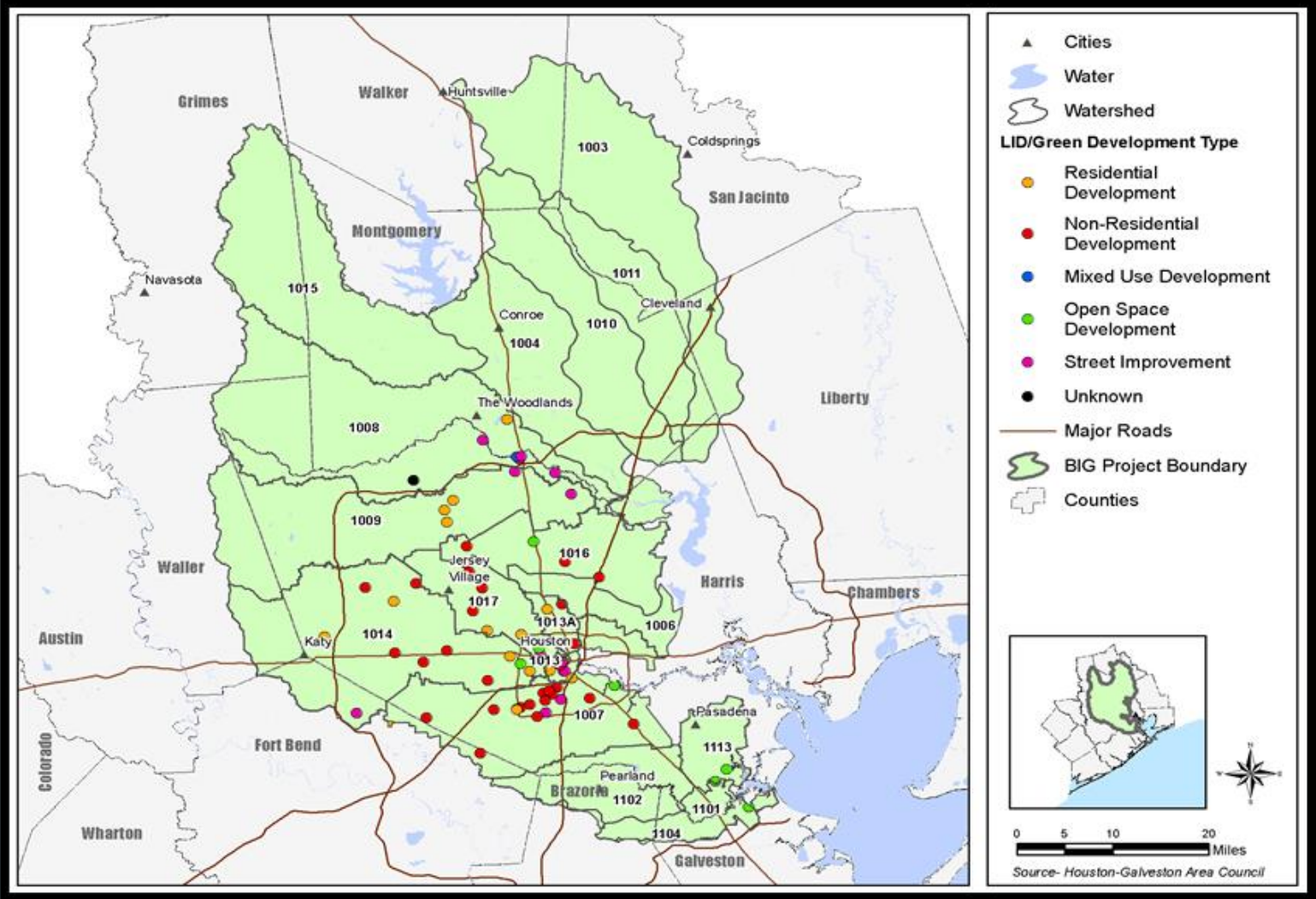
- 4.6 Encourage Incentives for Bacteria Reduction Measures



Census Designate Urbanized Area



Model Practices

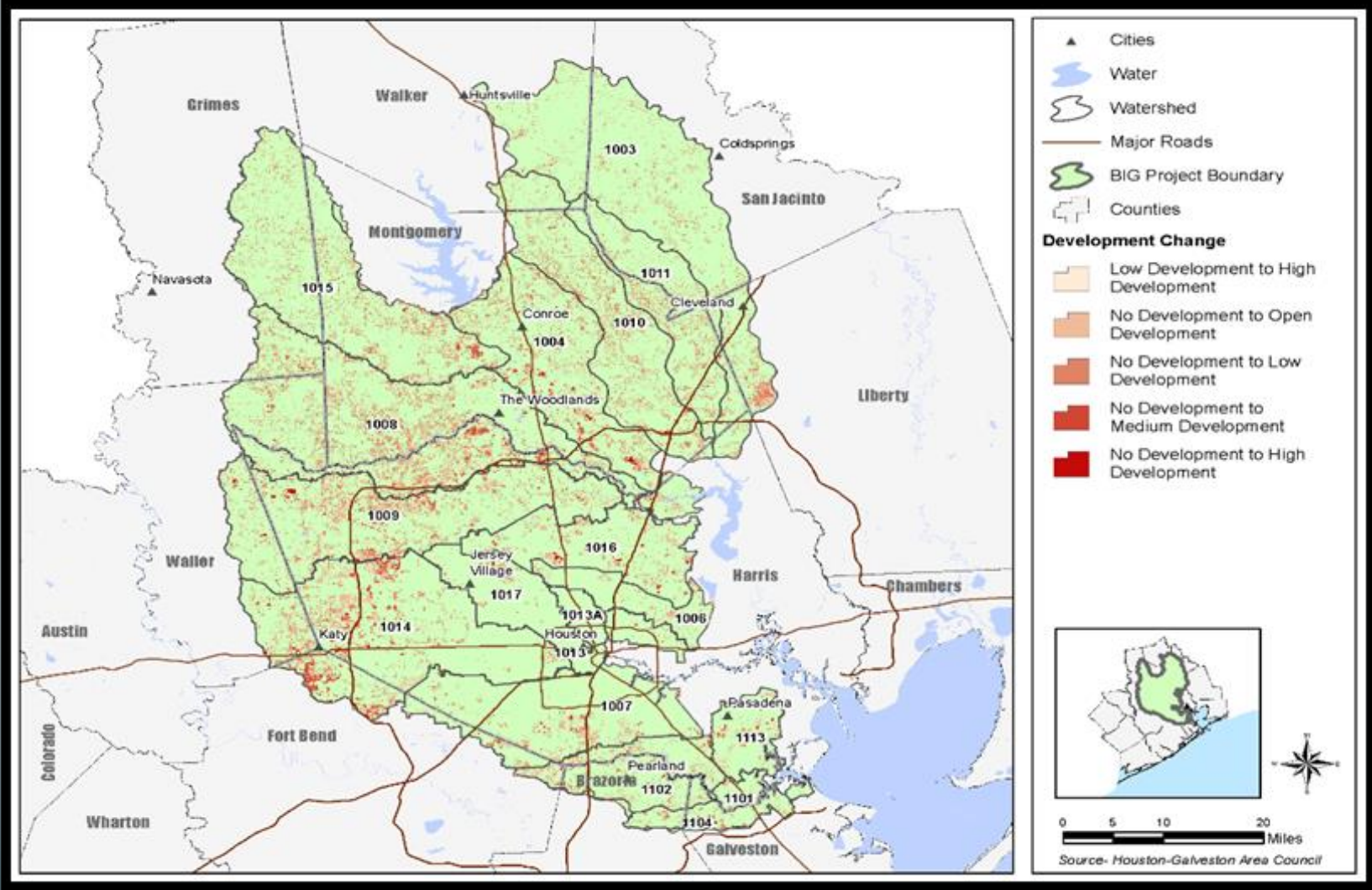


5.0 Construction



- Implementation Activity:
 - 5.1 Encourage Increased Compliance and Enforcement of Stormwater Management Permits

Development Pressure



6.0 Illicit Discharge

- Implementation Activities:
 - 6.1 Encourage Local Jurisdictions to Detect and Eliminate Illicit Discharges
 - 6.2 Improve Regulation and Enforcement of Illicit Discharges
 - 6.3 Monitor and Control Waste Hauler Activities
 - 6.4 Reduce Boater Wastes (New)



7.0 Agriculture, Animal and Silviculture Sources



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

Feral Hogs by Watershed

Watershed	High Quality	Low Quality	Total
Clear Creek	32,007.07	47,170.61	1,476
Armand Bayou	9,232.50	14,327.57	436
Sims Bayou	5,667.51	29,574.07	556
Brays Bayou	1,675.75	23,677.49	372
Buffalo Bayou	1,754.92	20,993.41	337
Barker Reservoir	34,964.47	26,594.64	1,266
Hunting Bayou	1,775.82	7,019.89	143
White Oak Bayou	1,788.50	27,859.85	433
Addicks Reservoir	32,506.34	31,385.25	1,269
Greens Bayou	31,090.35	57,914.29	1,602

8.0 Residential

- Implementation Activity:
 - 8.1 Expand Homeowner Education Efforts Throughout the BIG Project Area



9.0 Monitoring and I-Plan Revision

- Implementation Activities:

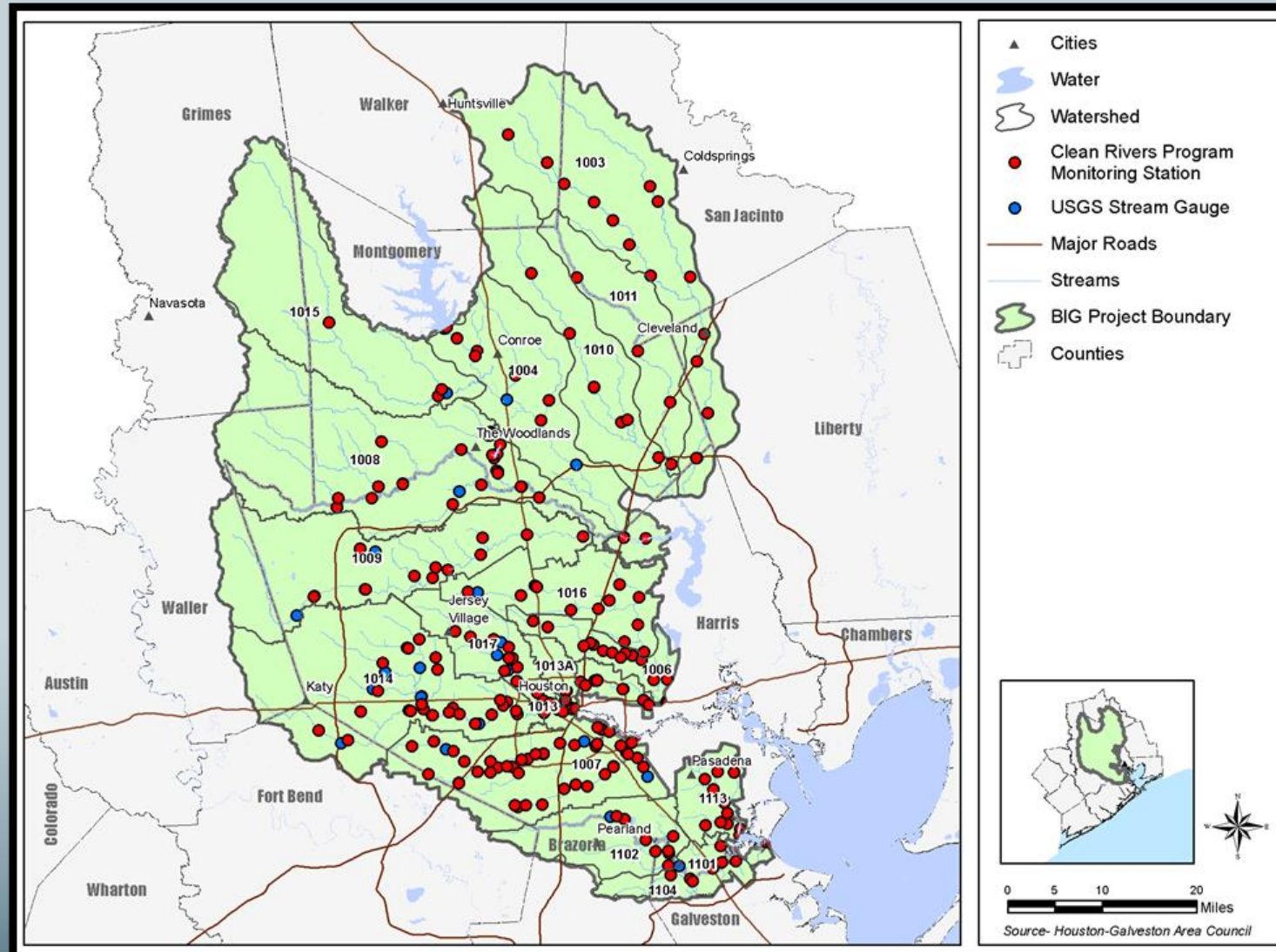
9.1 Continue to Utilize Ambient Water Quality Monitoring and Data Analysis

9.2 Conduct and Coordinate Non-Ambient Water Quality Monitoring

9.3 Create and Maintain a Regional Implementation Activity Database

9.4 Assess Monitoring Results and Modify I-Plan

Clean Rivers Monitoring Stations



10.0 Research



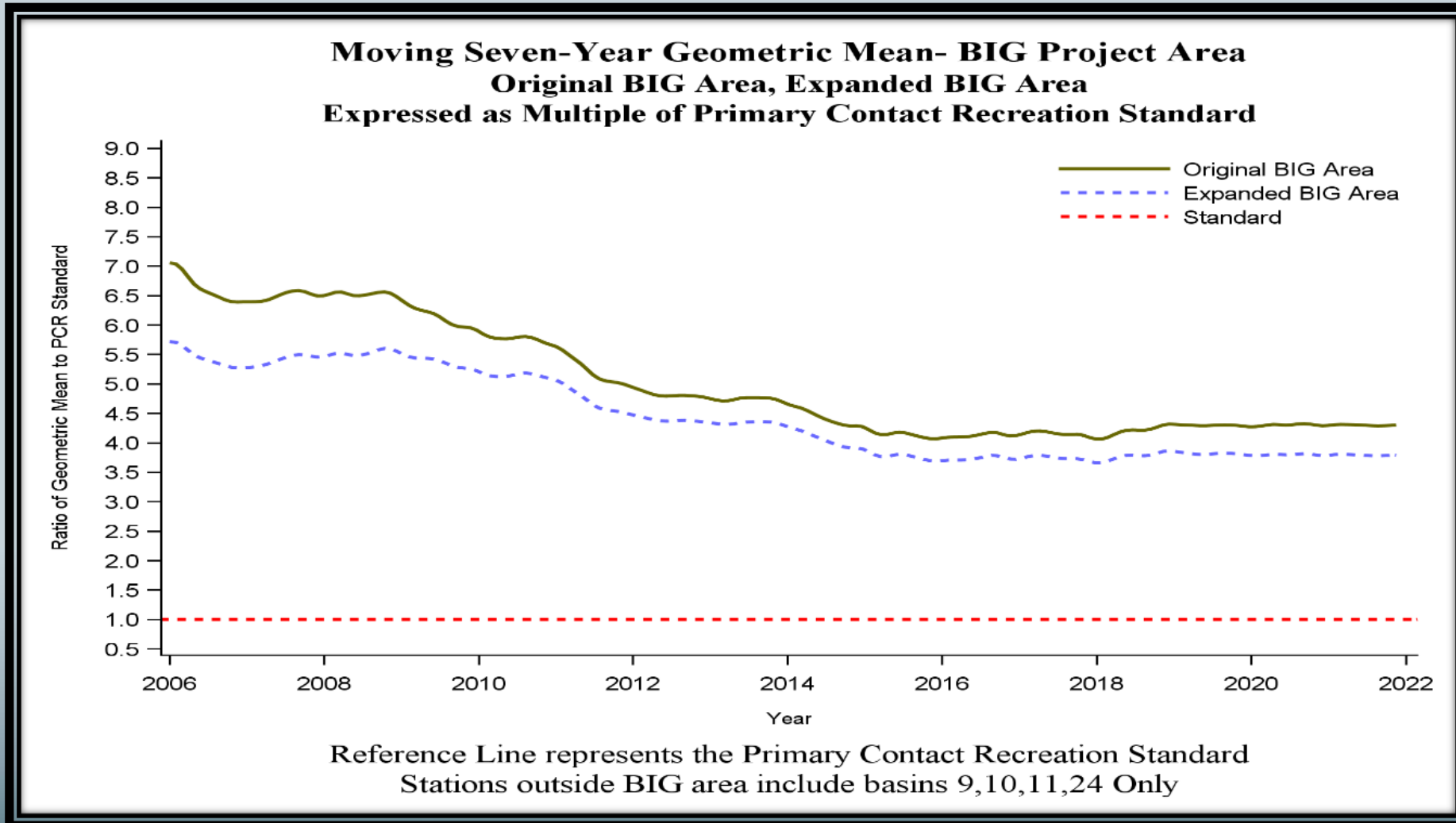
- Implementation Activities:
 - 10.1 Evaluate the Effectiveness of Stormwater Implementation Activities
 - 10.2 Further Evaluate Bacteria Persistence and Regrowth
 - 10.3 Determine Appropriate Indicators
 - 10.4 Additional Research Topics

11.0 Geographic Priority Framework

- Implementation Activity:
 - 11.1 Consider recommended criteria when selecting geographic location for projects



Opportunity to Discuss!



Discussion

Success Stories? Sharing work with the BIG.

Discussion

Role of members?

BIG structure?

Peer exchange?

Discussion

Work group reporting? (minimum of two examples of effort – yours or others?)

Discussion

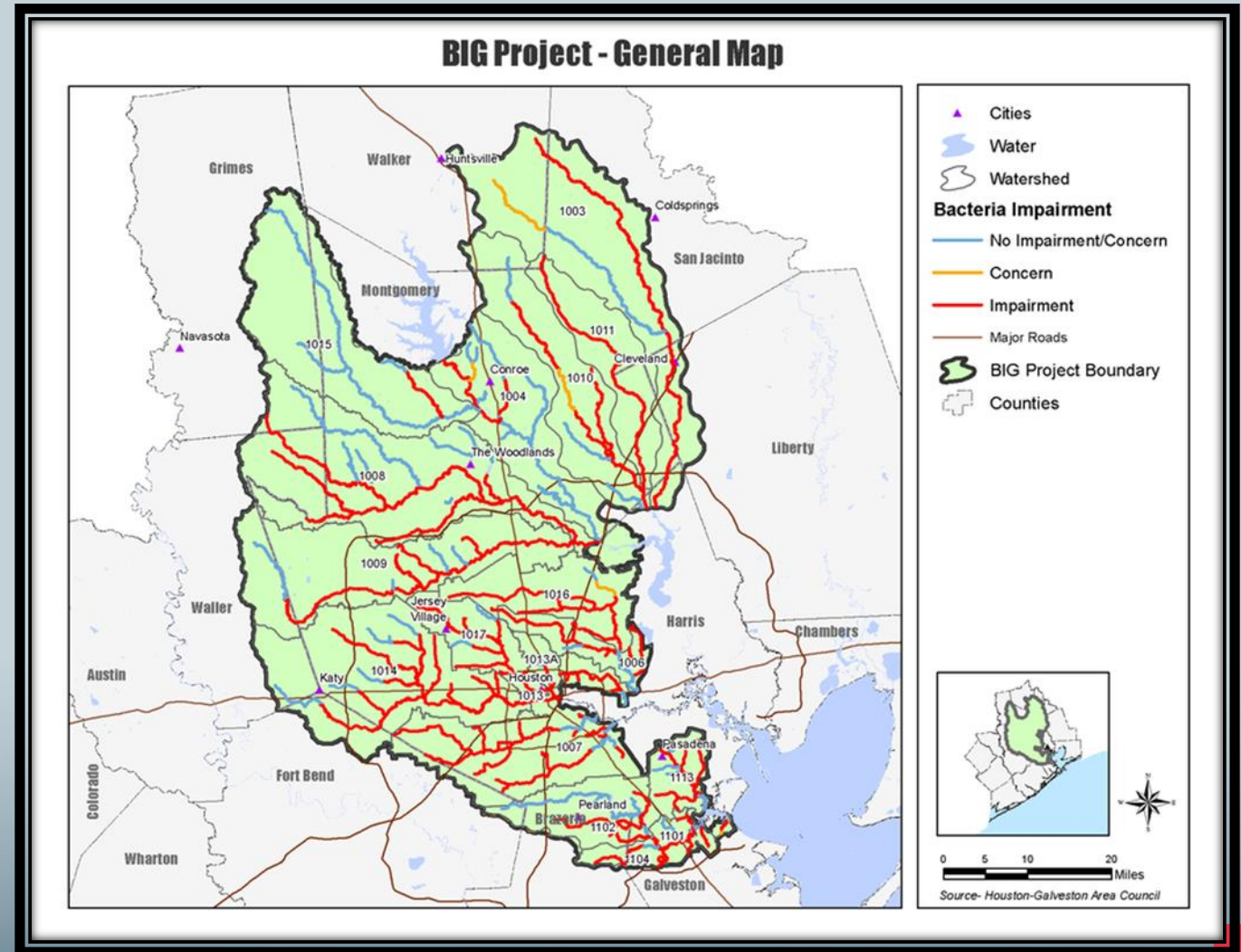
Capital Improvement Projects – age of infrastructure and schedule – repair, rehabilitation, replacement.

Discussion

Municipal Utility District engagement?

I-Plan Format

- Essentially the same
- Strategy Summary
- Activity
 - Action
 - Background
 - Metric
 - Milestone
 - Monitoring



I-Plan Update Timeline



Dec.-Jan.

- Review and Comment

Jan. 26

- Coordination and Policy

Feb.-March

- H-GAC - InDesign

Mar.-April

- Review and Comment

April

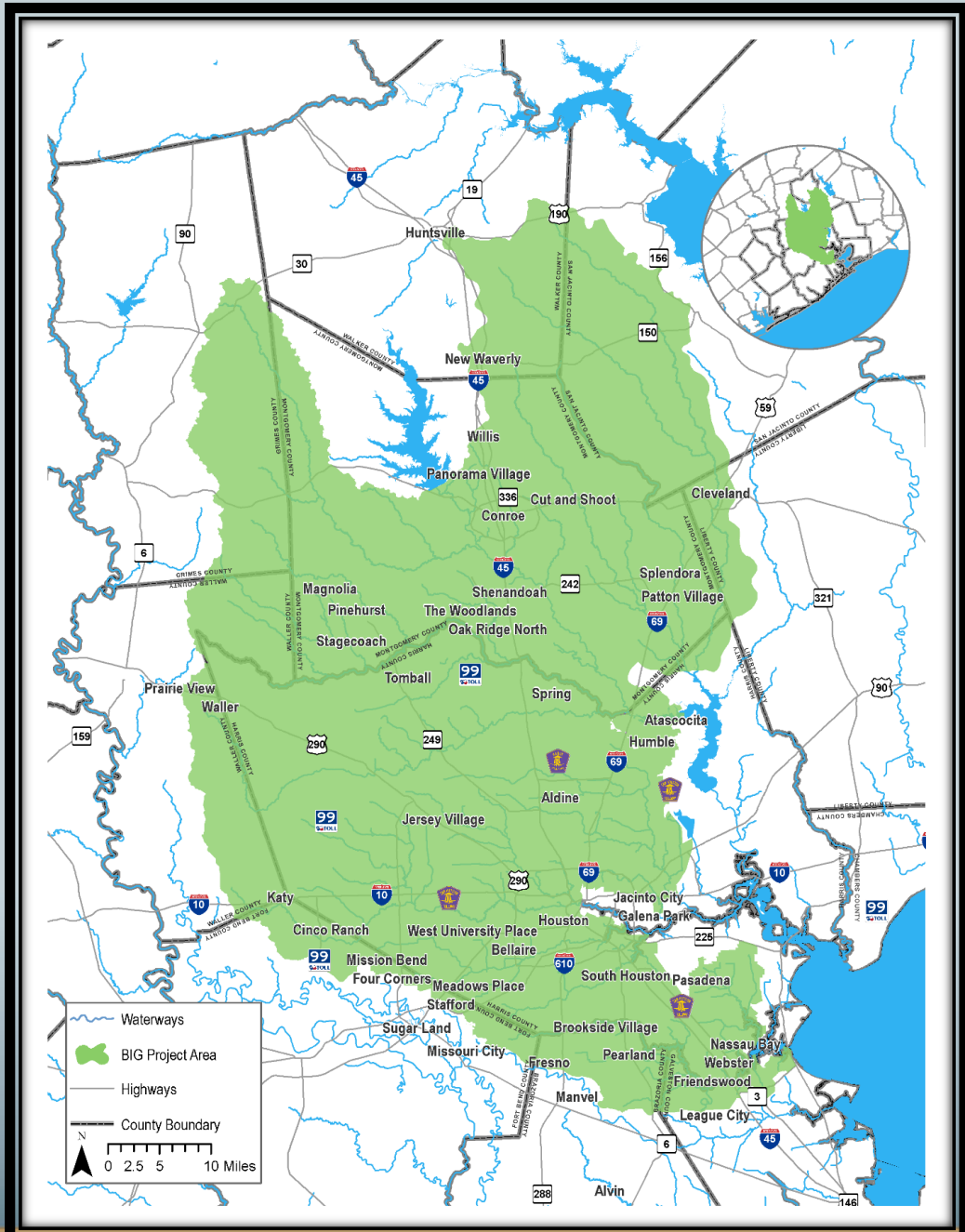
- Coordination and Policy

May 23

- BIG Spring Meeting

AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve Changes to the BIG Roster
- Review and Approve Minutes
- Public Comment
- **Item One:** I-Plan Update
- **Item Two:** **2021 Annual Report**
- **Item Three:** 2022 Annual Report
- **Item Four:** TMDL Program Update
- **Item Five:** Implementation Project Presentations
- **Item Six:** Other Business
- Adjourn



2021 Annual Report

- Calendar Year 2020
- Three Success Stories
- Three BIG Ideas
- Implementation Progress



BIG

BACTERIA IMPLEMENTATION GROUP

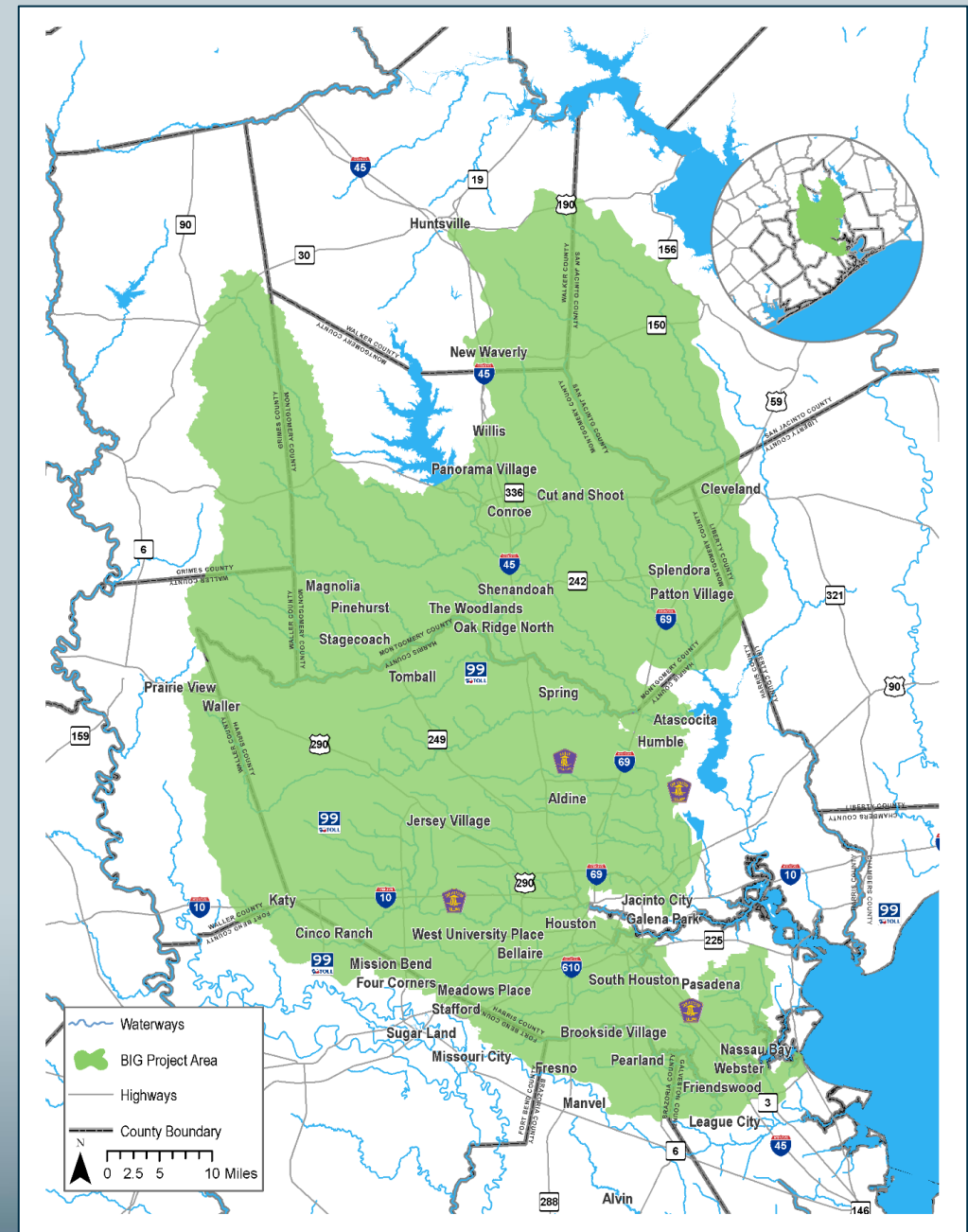
2021 ANNUAL REPORT

JANUARY 1, 2020–DECEMBER 31, 2020



AGENDA

- **Call to Order/Introductions**
- **Quorum Certification**
- **Review and Approve Changes to the BIG Roster**
- **Review and Approve Minutes**
- **Public Comment**
- **Item One:** I-Plan Update
- **Item Two:** 2021 Annual Report
- **Item Three:** **2022 Annual Report**
- **Item Four:** TMDL Program Update
- **Item Five:** Implementation Project Presentations
- **Item Six:** Other Business
- **Adjourn**



2022 Annual Report

- Calendar Year 2021
- Three Success Stories
- Three BIG Ideas
- Implementation Progress

Analysis Year	Permitted OSSF	Unpermitted OSSF	Total
2020	49,856	104,270	154,126
2021	57,739	135,042	192,781



BACTERIA IMPLEMENTATION GROUP

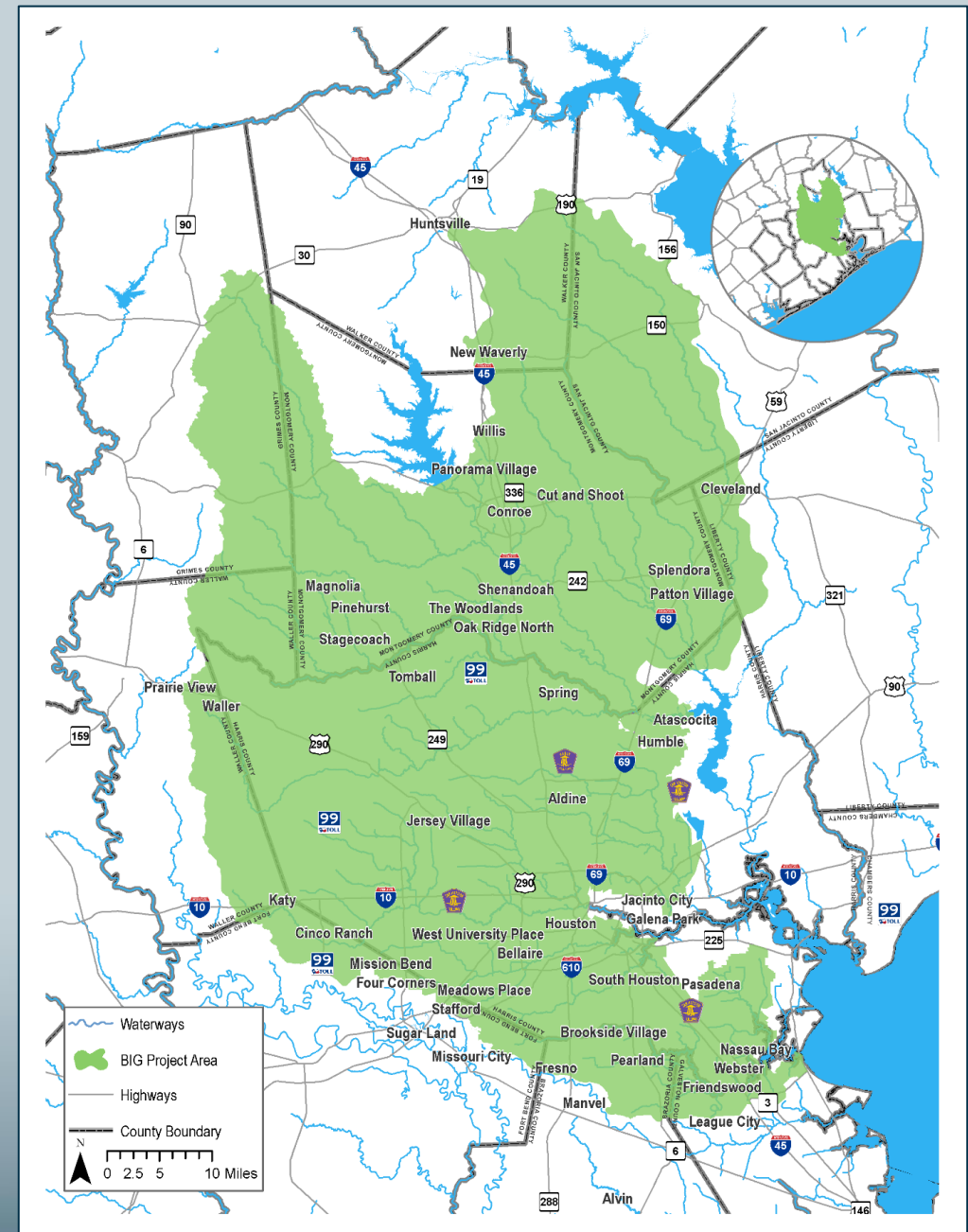
2022 ANNUAL REPORT

JANUARY 1, 2021–DECEMBER 31, 2021



AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve Changes to the BIG Roster
- Review and Approve Minutes
- Public Comment
- **Item One:** I-Plan Update
- **Item Two:** 2021 Annual Report
- **Item Three:** 2022 Annual Report
- **Item Four:** **TMDL Program Update**
- **Item Five:** Implementation Project Presentations
- **Item Six:** Other Business
- Adjourn

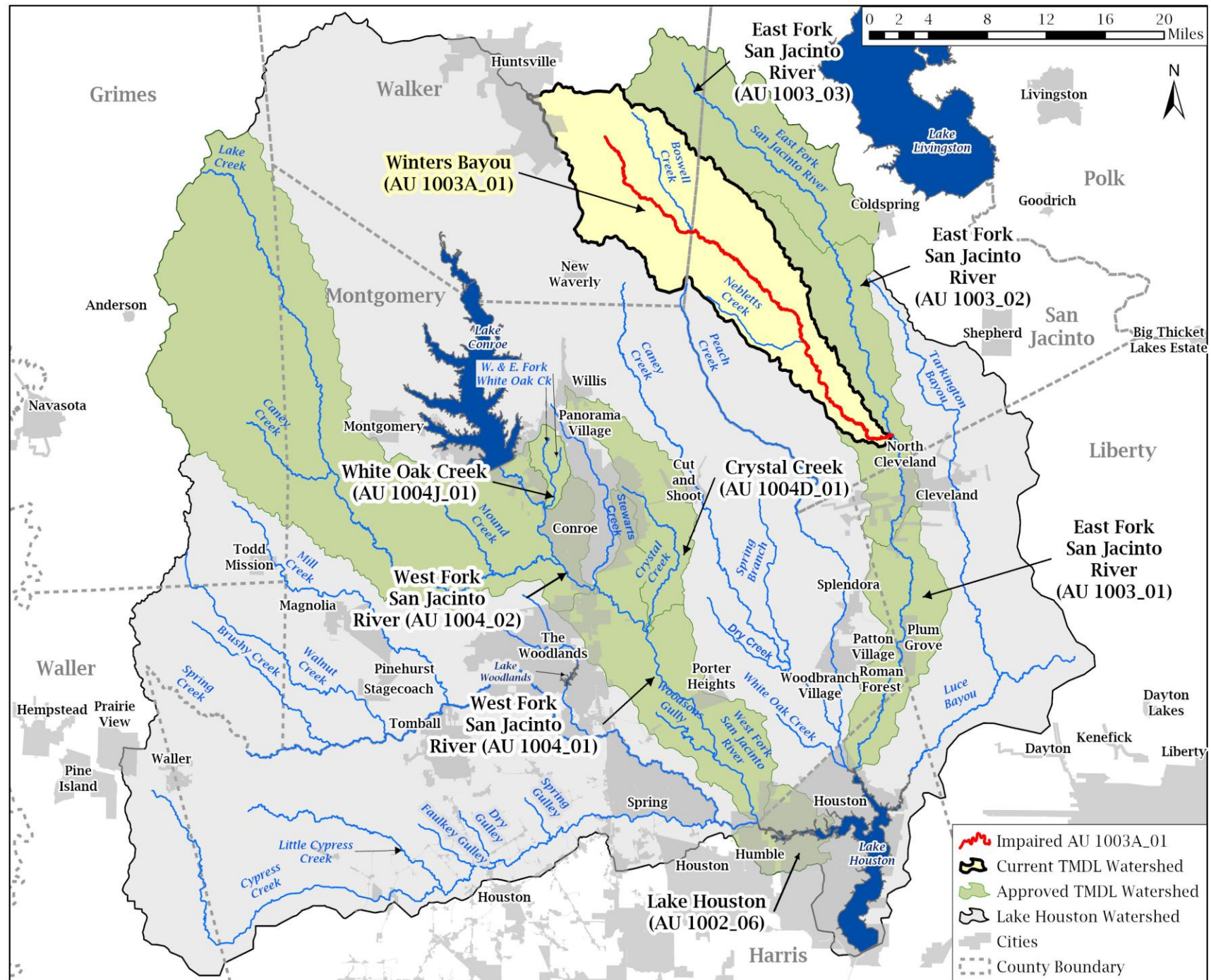


TMDL Updates

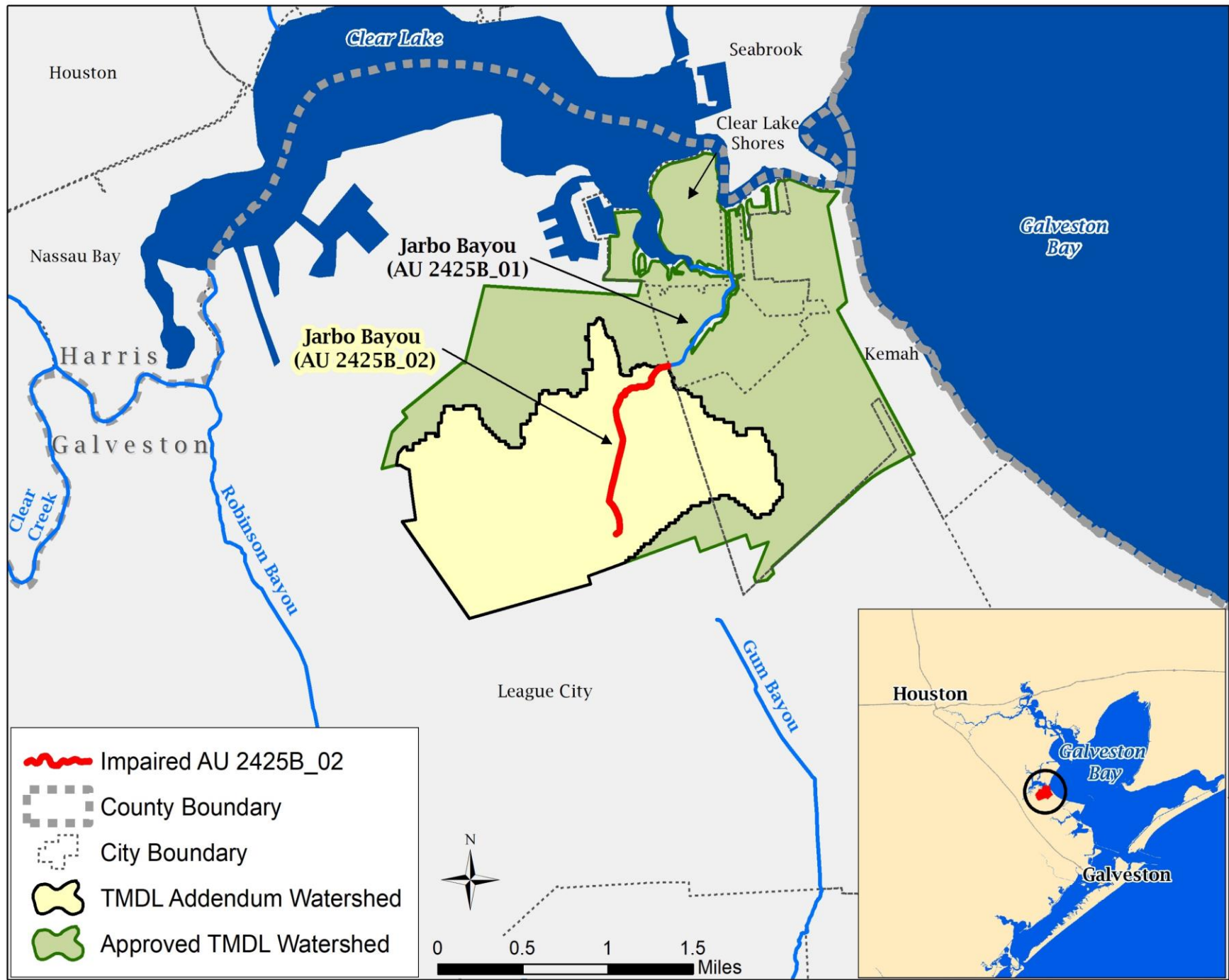
Ms. Nicole Reed, TCEQ -
Two TMDLs within the project area.



Winters Bayou addendum (AU 1003A_01)

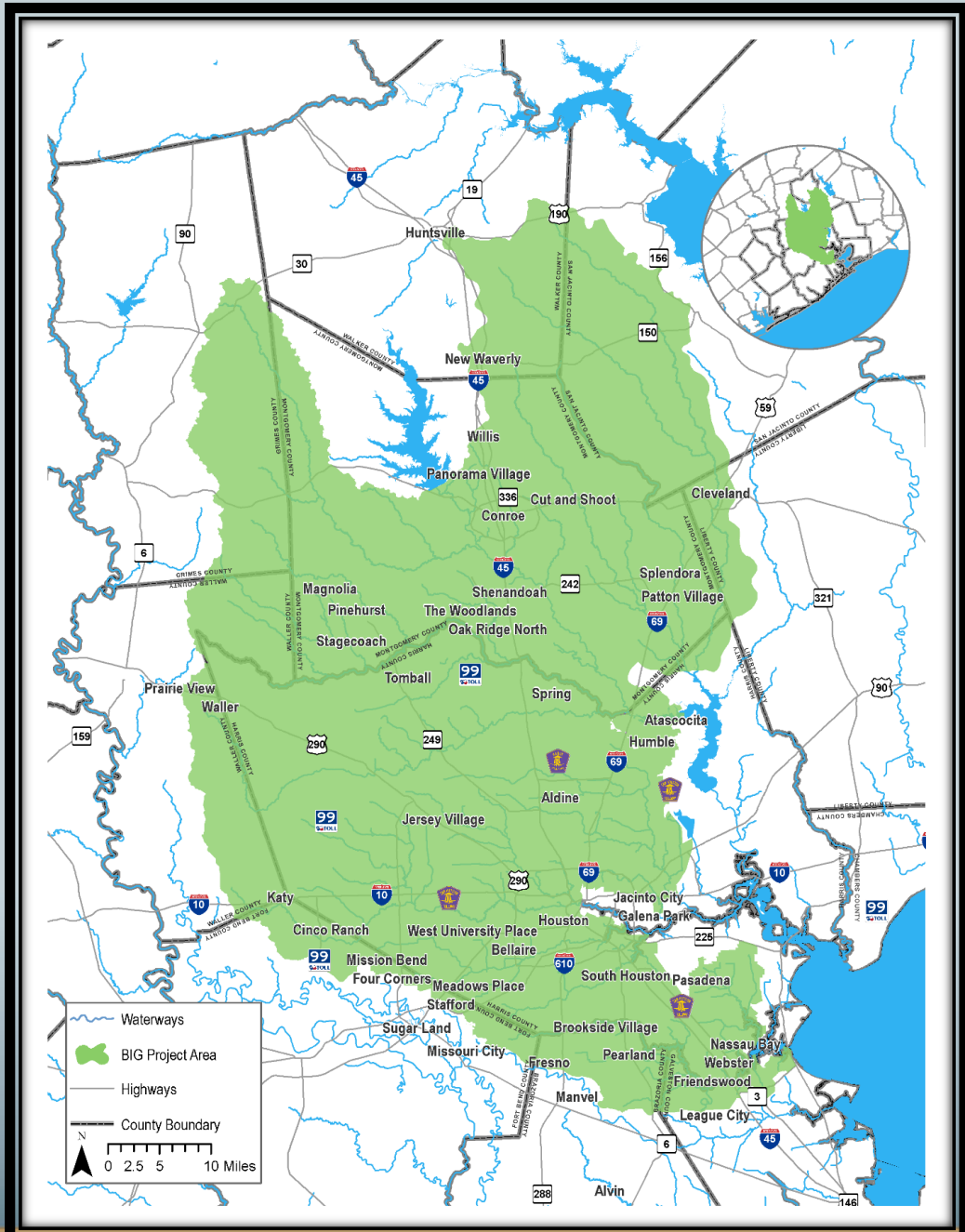


Jarbo Bayou addendum (AU 2425B_02)



AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve Changes to the BIG Roster
- Review and Approve Minutes
- Public Comment
- **Item One:** I-Plan Update
- **Item Two:** 2021 Annual Report
- **Item Three:** 2022 Annual Report
- **Item Four:** TMDL Program Update
- **Item Five:** Implementation Project Presentations
- **Item Six:** Other Business
- Adjourn



Presentations

Implementation Projects

***Targeted Monitoring Project with
Bayou Preservation Association –
Ms. Kendall Guidroz, H-GAC***

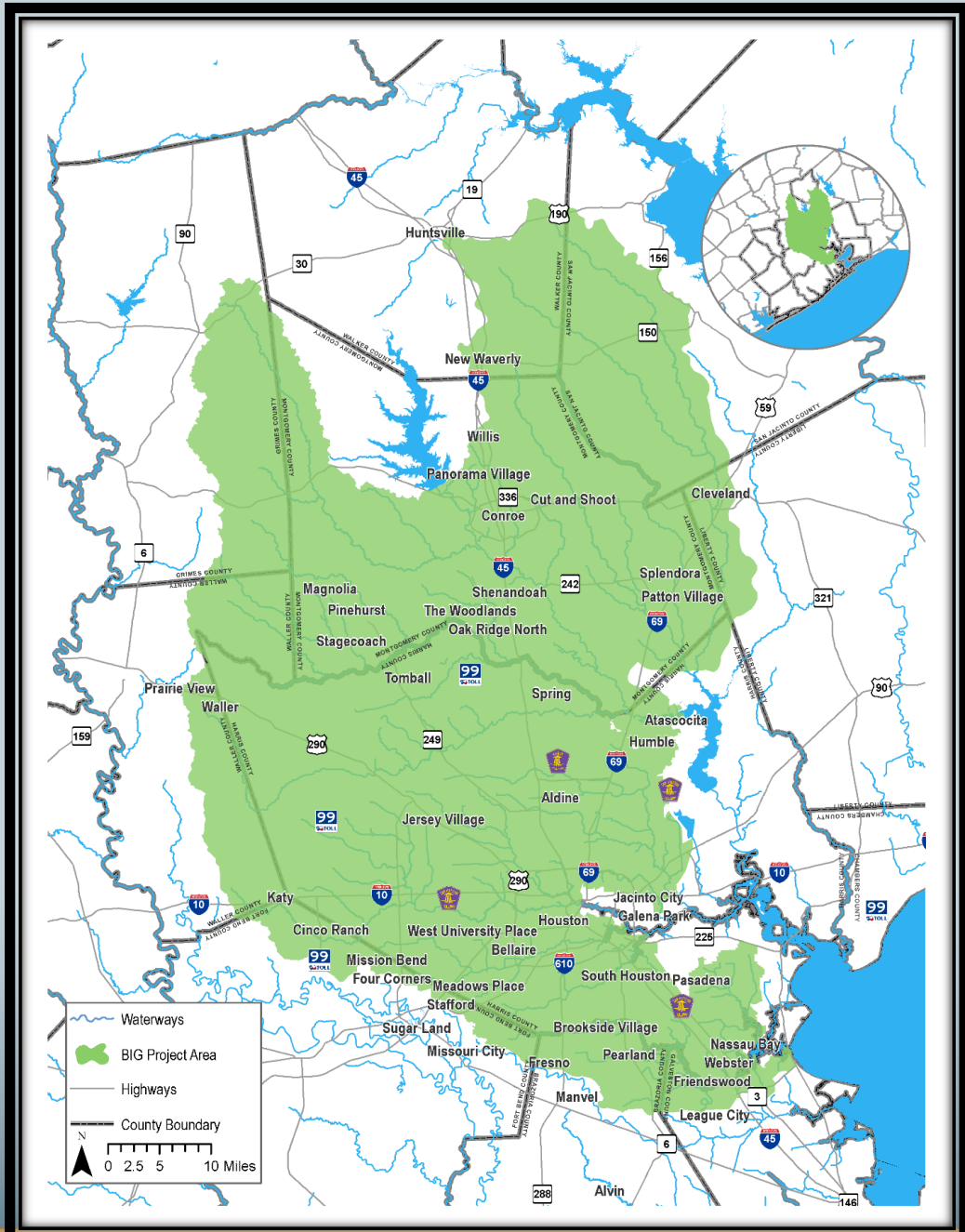
Partner Highlight

***Galveston Bay Foundation
Outreach Programs – Ms.
Natasha Zarnstorff***



AGENDA

- Call to Order/Introductions
- Quorum Certification
- Review and Approve Changes to the BIG Roster
- Review and Approve Minutes
- Public Comment
- **Item One:** I-Plan Update
- **Item Two:** 2021 Annual Report
- **Item Three:** 2022 Annual Report
- **Item Four:** TMDL Program Update
- **Item Five:** Implementation Project Presentations
- **Item Six:** Other Business
- **Adjourn**



Upcoming Meetings and Events

- December 2nd – Fall Planning Workshop
- December 12th – East Fork WPP Stakeholder
- December 13th – Chocolate Bay TMDL Stakeholder
- December 14th – Oyster Creek TMDL Stakeholder
- February 10th – Parks and Natural Areas Awards
- May 23, 2023 - BIG Spring Meeting



ADJOURN

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



Toadie
2009-2022