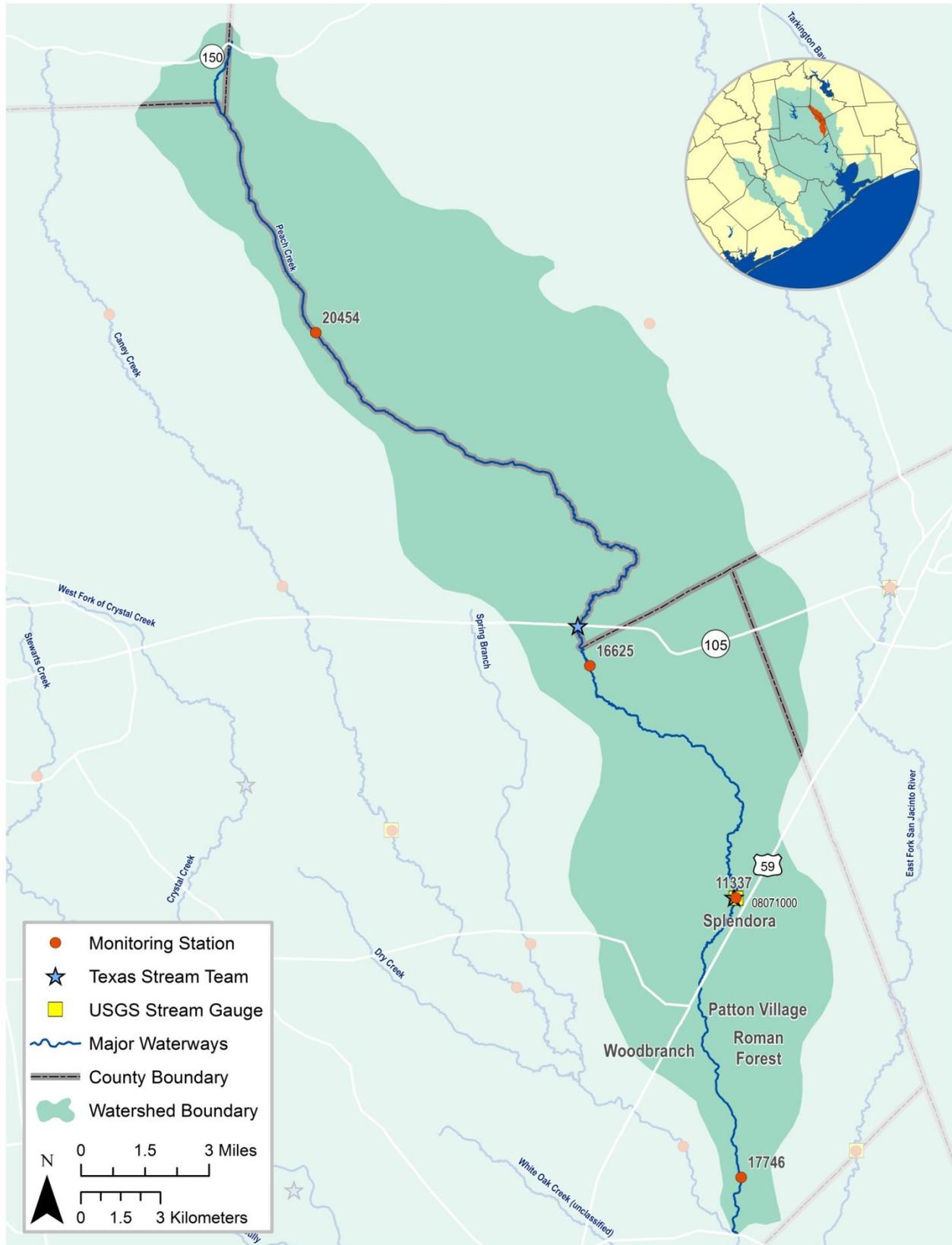
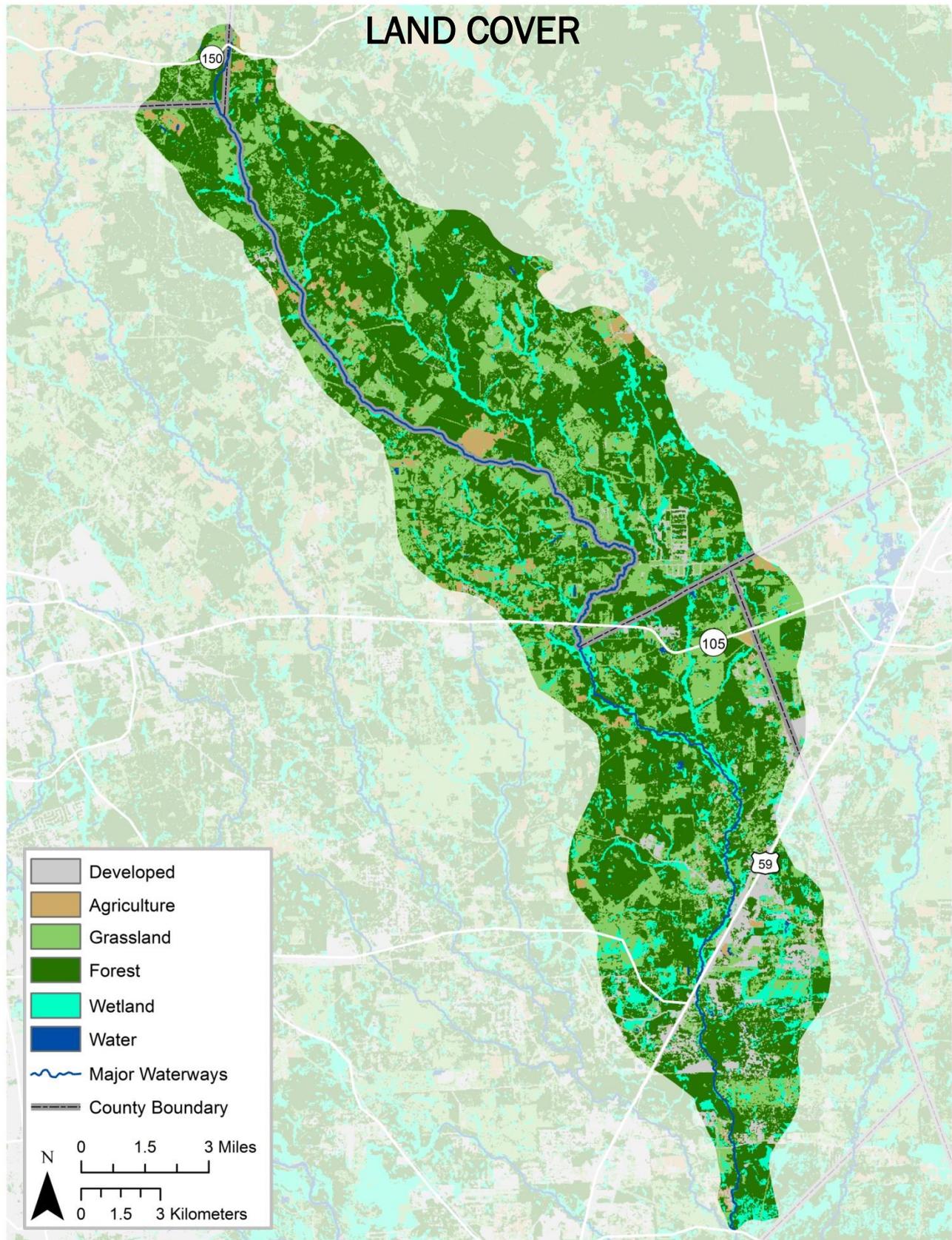


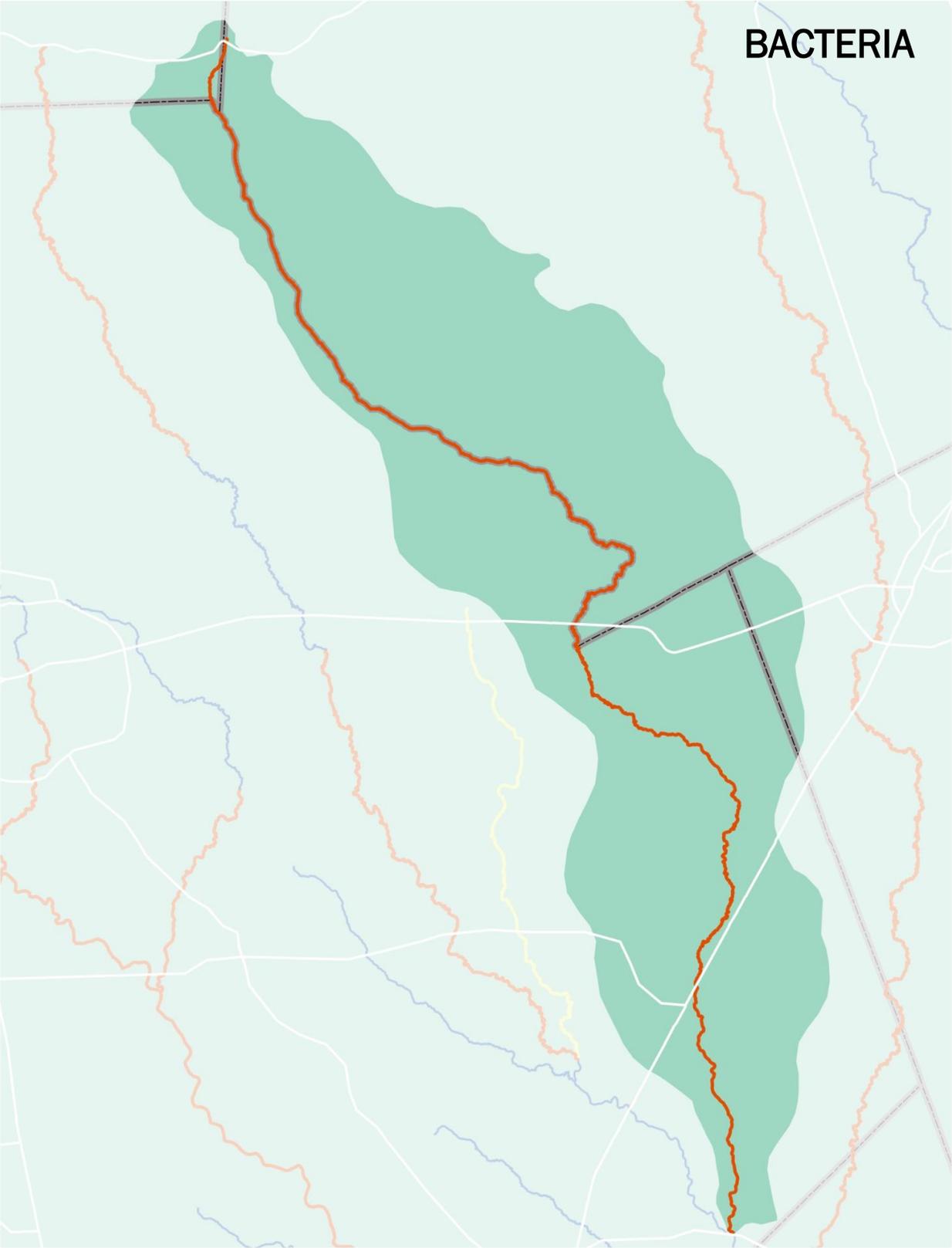
PEACH CREEK - SEGMENT 1011



PEACH CREEK - SEGMENT 1011

LAND COVER





~~~~~ Impairment    ~~~~~ Concern    ~~~~~ No Impairments or Concerns

|                                              |                                                                                                                                   |                                    |                    |                            |                                                                      |  |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------------|----------------------------|----------------------------------------------------------------------|--|
| <b>Segment Number:</b>                       | <b>1011</b>                                                                                                                       | <b>Name:</b>                       | <b>Peach Creek</b> |                            |                                                                      |  |
| <b>Length:</b>                               | 43 miles                                                                                                                          | <b>Watershed Area:</b>             | 151 square miles   | <b>Designated Uses:</b>    | Primary Contact Recreation 1; High Aquatic Life; Public Water Supply |  |
| <b>Number of Active Monitoring Stations:</b> | 4                                                                                                                                 | <b>Texas Stream Team Monitors:</b> | 2                  | <b>Permitted Outfalls:</b> | 12                                                                   |  |
| <b>Description:</b>                          | Segment 1011 (Perennial Stream w/ high ALU): From the confluence with Caney Creek in Montgomery County to SH 150 in Walker County |                                    |                    |                            |                                                                      |  |

| Percent of Stream Impaired or of Concern |             |          |                  |           |               |       |
|------------------------------------------|-------------|----------|------------------|-----------|---------------|-------|
| Segment ID                               | PCBs/Dioxin | Bacteria | Dissolved Oxygen | Nutrients | Chlorophyll a | Other |
| 1011                                     | -           | 100      | -                | -         | -             | -     |

| Segment 1011                                  |                  |                                   |                  |
|-----------------------------------------------|------------------|-----------------------------------|------------------|
| Standards                                     | Perennial Stream | Screening Levels                  | Perennial Stream |
| Temperature (°C / °F):                        | 32 / 90          | Ammonia (mg/L):                   | 0.33             |
| Dissolved Oxygen (24-Hr Average) (mg/L):      | 5.0              | Nitrate-N (mg/L):                 | 1.95             |
| Dissolved Oxygen (Absolute Minima) (mg/L):    | 3.0              | Orthophosphate Phosphorus (mg/L): | 0.37             |
| pH (standard units):                          | 6.5-8.5          | Total Phosphorus (mg/L):          | 0.69             |
| <i>E. coli</i> (MPN/100 mL) (grab):           | 399              | Chlorophyll-a (µg/L):             | 14.1             |
| <i>E. coli</i> (MPN/100 mL) (geometric mean): | 126              |                                   |                  |
| Chloride (mg/L as Cl):                        | 50               |                                   |                  |
| Sulfate (mg/L as SO <sub>4</sub> ):           | 50               |                                   |                  |
| Total Dissolved Solids (mg/L):                | 300              |                                   |                  |

## FY 2016 Active Monitoring Stations

| Site ID | Site Description                        | Frequency    | Monitoring Entity | Parameter Groups                             |
|---------|-----------------------------------------|--------------|-------------------|----------------------------------------------|
| 11337   | Peach Creek at FM 2090 in Splendora     | Bimonthly    | COH / WQC         | Field, Conventional, Bacteria                |
| 16625   | Peach Creek at Old Hwy 105              | Bimonthly    | COH / WQC         | Field, Conventional, Bacteria                |
| 17746   | Peach Creek at Lake Houston Speedway    | Quarterly    | TCEQ              | Field, Conventional, Bacteria, Chlorophyll a |
| 17746   | Peach Creek at Lake Houston Speedway    | Twice / Year | TCEQ              | Flow, Biological Assessment w/ 24-hr DO      |
| 20454   | Peach Creek at County Line Road-FM 3081 | Quarterly    | H-GAC             | Field, Conventional, Bacteria, Flow          |

## Water Quality Issues Summary

| Issue                                        | 2014 Assessment<br><i>I - Impaired</i><br><i>C - Of Concern</i> | Possible Causes / Influences / Concerns Voiced by Stakeholders                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Possible Solutions / Actions To Be Taken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Elevated Levels of Indicator Bacteria</b> | 1011 I                                                          | <ul style="list-style-type: none"> <li>▪ Animal waste from agricultural production, hobby farms, and riding stables</li> <li>▪ Rapid urbanization and increased impervious cover, especially in the lower portion of the watershed</li> <li>▪ Developments with malfunctioning OSSFs</li> <li>▪ Improper or no pet waste disposal</li> <li>▪ Direct and dry weather discharges</li> <li>▪ Poorly operated or undersized WWTFs</li> <li>▪ WWTF non-compliance, overflows, and collection system by-passes</li> </ul> | <ul style="list-style-type: none"> <li>▪ Create and implement Water Quality Management Plans for individual agricultural properties</li> <li>▪ Implement stream fencing or alternative water supplies to keep livestock out of or away from waterways</li> <li>▪ Improve compliance and enforcement of existing stormwater quality permits</li> <li>▪ Improve construction oversight to minimize TSS discharges to waterways</li> <li>▪ Improve stormwater controls in new developments by adding bacteria reduction measures</li> <li>▪ More public education regarding OSSF operation and maintenance</li> <li>▪ Ensure proper citing of new or replacement OSSFs</li> <li>▪ More public education on pet waste disposal</li> <li>▪ Impose new or stricter bacteria limits than currently designated by TCEQ</li> <li>▪ Increase monitoring requirements for self-reporting</li> <li>▪ Regionalize chronically non-compliant WWTFs</li> </ul> |

## Segment Discussion

**Watershed Characteristics:** The watershed is dominated by forested land with the Sam Houston National Forest in the upper reach. Peach Creek flows into the East Fork San Jacinto River approximately two miles upstream from Lake Houston, the major drinking water supply for the region. Several small communities including Splendora, Patton Village, Roman Forest, and Woodbranch are located in the lower reach of the watershed. These residential communities are growing quickly, especially along the U.S. Highway 59 corridor.

**Water Quality Issues:** This segment does not support its designated use for contact recreation. The entire watershed is listed in the 2014 IR as impaired for high levels of *E. coli*.

| Assessment Unit | TCEQ Assessment (2005-2012)              | HGAC Analysis 2001-2008                  | HGAC Analysis 2008-2015                  |
|-----------------|------------------------------------------|------------------------------------------|------------------------------------------|
|                 | Geomean (MPN/100 mL) / % Grab Exceedance | Geomean (MPN/100 mL) / % Grab Exceedance | Geomean (MPN/100 mL) / % Grab Exceedance |
| 1011_01         | 247                                      | 148 / 28.3                               | 186 / 21.8                               |
| 1011_02         | 277                                      | 211 / 31.3                               | 202 / 20.0                               |

All other uses are fully supported.

**Special Studies/Projects:** This segment is part of a larger geographic area covered under several TMDLs, collectively known as the Bacteria Implementation Group (BIG) I-Plan. Refer to the Public Involvement and Outreach section of the 2016 Basin Summary Report for more information about the BIG.

**Trends:** Regression analysis of watershed data revealed four significant parameter trends for this segment including increasing pH, sulfate, [total Kjeldahl nitrogen \(TKN\)](#), and [total phosphorous \(TP\)](#). Although nutrient concentrations are slightly increasing throughout the watershed, levels are still well below the set screening criteria, so no concern for nutrients is present at this time. The 2014 Integrated Report lists this entire segment as impaired for bacteria. Regression analysis of [E. coli](#) data detected a stable trend for bacteria concentrations in Peach Creek during the period of record. [Moving seven-year bacteria geometric means](#) show *E. coli* concentrations slowly decreasing since its peak in 2009-2010; however, levels remain well above the 126 MPN/100 mL standard. Potential sources of bacterial contamination in this watershed include surface runoff from agricultural areas and hobby farms, as well as from malfunctioning OSSFs in the upstream portions of Peach Creek.

## Recommendations

Address concerns found in this segment summary through stakeholder participation.

Continue collecting water quality data to support actions associated with any future watershed protection plan development and possible modeling.