Recreational Use Attainability Analysis
Summary of Findings &
Public Comment

Texas Institute for Applied Environmental Research
Stephenville, Texas

August 10, 2015
Project Partners

- Texas State Soil and Water Conservation Board (TSSWCB)

- Texas Institute for Applied Environmental Research (TIAER)
TSSWCB

• Provide state oversight
• Management and coordination of project activities
  – Project partners
  – Texas Commission on Environmental Quality (TCEQ)
• Provide project funding
TIAER

- Project administration
- Develop & maintain stakeholder relations
- Perform RUAA survey activities
- GIS inventory
- Facilitate meetings
- Develop final technical reports
Why we are here

• Texas 303 (d) List of Impaired Water bodies
  – Developed by TCEQ to summarize the condition of the state’s surface waters, including concerns for public health, fitness for use by aquatic species and other wildlife, and specific pollutants and their possible sources.
Bacteria Impairment

- Kickapoo Creek and the Neches River Above Lake Palestine are not meeting the water quality standard for primary contact recreation
  - Due to elevated levels of bacteria, *E. coli*.
  - Requires action to meet the standards that are set by the State of Texas and EPA.
    - Geometric mean should not exceed 126 cfu/100ml
What is the Texas 303 (d) List?

- Requirement of the Clean Water Act
- Developed by TCEQ to summarize the condition of the state’s surface waters, including concerns for public health, fitness for use by aquatic species and other wildlife, and specific pollutants.
Why we chose this approach

• Once on the 303(d) List, action is required by the state
  – Viable Candidate
  – The Most Cost Effective
  – Non Regulatory Approach
  – State Led, Not Federal
Purpose of RUAA

• Collect information that will:
  1. Confirm or deny primary contact recreation
  2. Provide evidence to support a change in recreational use category of the impaired creeks

• Recreational Use Categories:
  1. Primary Contact Recreation
  2. Secondary Contact Recreation 1
  3. Secondary Contact Recreation 2
  4. Noncontact Recreation
Impaired Stream Segments

- Kickapoo Creek in Henderson County (0605A)
  - 2000 Texas Water Quality 303 (d) List
    - Bacteria

- The Neches River Above Lake Palestine (0606)
  - 2008 Texas Water Quality 303(d) List
    - Bacteria
Survey Dates for Kickapoo Creek in Henderson County

- **First RUAA Survey**
  - Conducted July 25 – 26, 2014
  - Summary
    - Limited water for recreation
    - No direct recreation observed
    - Limited public access, mostly private property

- **Second RUAA Survey**
  - Conducted August 22, 2014
  - Summary
    - Limited water for recreation
    - No direct recreation observed
    - Limited public access, mostly private property
<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site Description</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Distance from Confluence (mi)</th>
<th>Distance from Previous Site (mi)</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>KC01</td>
<td>Kickapoo Creek crossing at SH31</td>
<td>32.300024</td>
<td>-95.507758</td>
<td>NA</td>
<td>0.06</td>
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<tr>
<td>KC02</td>
<td>Kickapoo Creek on private property approximately 720 meters south of Henderson CR3302 and 1.1 km west of Henderson CR3315</td>
<td>32.313740</td>
<td>-95.521041</td>
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<td>2.16</td>
<td>Private</td>
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<td>Kickapoo Creek on private property approximately 1.8 km south of Henderson CR3302 and 5.8 km west of Henderson CR3315</td>
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<tr>
<td>KC04/10517</td>
<td>Kickapoo Creek crossing at FM314</td>
<td>32.309099</td>
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<td>10.29</td>
<td>3.13</td>
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<tr>
<td>KC05</td>
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<td>KC06</td>
<td>Kickapoo Creek on private property approximately 1.3 km north of Henderson CR3516</td>
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<td>KC07</td>
<td>Kickapoo Creek crossing at Henderson CR3520</td>
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<td>17.04</td>
<td>Public*</td>
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<tr>
<td>KC08/16796</td>
<td>Kickapoo Creek crossing at FM1803</td>
<td>32.312309</td>
<td>-95.705716</td>
<td>20.35</td>
<td>3.31</td>
<td>Public</td>
</tr>
<tr>
<td>KC09</td>
<td>Kickapoo Creek on private property (Fund for Animals) approximately 1.5 km east of Henderson CR3806</td>
<td>32.303873</td>
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<td>1.55</td>
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<td>KC10</td>
<td>Kickapoo Creek crossing at Henderson CR3806</td>
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<td>23.98</td>
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<tr>
<td>KC11/16797</td>
<td>Kickapoo Creek crossing at FM773</td>
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<td>KC12</td>
<td>Kickapoo Creek on private Property approximately 1.2 km west of FM773</td>
<td>32.339385</td>
<td>-95.758632</td>
<td>28.44</td>
<td>1.22</td>
<td>Private</td>
</tr>
</tbody>
</table>
## RUAA Survey Sites Locations – Kickapoo Creek

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>KC13</td>
<td>Kickapoo Creek on private property approximately 2.0 km west of FM773</td>
<td>32.339670</td>
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<td>KC14</td>
<td>Kickapoo Creek on private property approximately 1.4 km south of Van Zandt CR4301</td>
<td>32.345898</td>
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<td>KC15</td>
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<td>KC16</td>
<td>Kickapoo Creek crossing at FM1861</td>
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<td>KC17</td>
<td>Kickapoo Creek on private property approximately 25 meters southwest of Deer Park Estates Road</td>
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<td>KC18</td>
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<td>KC19</td>
<td>Creek crossing at FM858</td>
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<td>2.45</td>
<td>39.58</td>
<td>Public*</td>
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</tbody>
</table>

1Distances were digitally estimated using the measuring tool in ArcGIS 9.3 with the 2010 NAIP 1m DOQQs and the NHD stream layer as reference guides.
Kickapoo Creek in Henderson County
Photographs

0m Upstream at KC01 – first survey

0m Upstream at KC01 – second survey
Kickapoo Creek in Henderson County Photographs

300m Upstream at KC03

0m Upstream at KC04
Kickapoo Creek in Henderson County
Photographs

300m Downstream at KC07

0m Downstream at KC09
Kickapoo Creek in Henderson County
Photographs

150m Downstream at KC11 – first survey

150 Downstream at KC11 – second survey
Kickapoo Creek in Henderson County
Photographs

0m Downstream at KC14

0m Upstream at KC16
Neches River Above Lake Palestine Creek
Photographs

150m Upstream at KC18

Obstruction between 0m and 150m at KC19
Survey Dates for the Neches River Above Lake Palestine

• First RUAA Survey
  – Conducted July 25 – 28, 2014
    • Summary
      – Limited water for recreation
      – No direct recreation observed
      – Limited public access, mostly private property

• Second RUAA Survey
  – Conducted August 22 – 23, 2014
    • Summary
      – Limited water for recreation
      – No direct recreation observed
      – Limited public access, mostly private property
Survey Site Locations - The Neches River Above Lake Palestine
# Survey Site Locations – The Neches River

Above Lake Palestine

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<thead>
<tr>
<th>Site ID</th>
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</thead>
<tbody>
<tr>
<td>NR01</td>
<td>Neches River on private property approximately 250 meters south of SH31</td>
<td>32.313151</td>
<td>-95.451144</td>
<td>0.76</td>
<td>NA</td>
<td>Private</td>
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<tr>
<td>NR02/10595</td>
<td>Neches River at intersection with SH31</td>
<td>32.315093</td>
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<td>0.20</td>
<td>Public</td>
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<td>NR03</td>
<td>Neches River on private property approximately 1.4 km North of SH 31</td>
<td>32.326158</td>
<td>-95.456693</td>
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<td>1.09</td>
<td>Private</td>
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<td>NR04</td>
<td>Neches River on private property approximately 3.6 km north of SH 31 and 2.5 km west of SH 49</td>
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<td>-95.456751</td>
<td>4.39</td>
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<td>NR05/10596</td>
<td>Neches River at intersection with FM 279</td>
<td>32.364788</td>
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<td>Public</td>
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<td>NR06/10597</td>
<td>Neches River at intersection with SH 64</td>
<td>32.374025</td>
<td>-95.473591</td>
<td>8.26</td>
<td>2.44</td>
<td>Public</td>
</tr>
<tr>
<td>NR07</td>
<td>Neches River on private property approximately 1.4 km east of Van Zandt CR 4923 and 3 km north of SH 64</td>
<td>32.404723</td>
<td>-95.504434</td>
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<tr>
<td>NR08</td>
<td>Neches River on private property approximately 1.2 km east of Van Zandt CR 4923 and 3.4 km north of SH 64</td>
<td>32.408613</td>
<td>-95.506397</td>
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<td>0.29</td>
<td>Private</td>
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<tr>
<td>NR09/10598</td>
<td>Neches River at intersection with Van Zandt CR4915; Smith CR420</td>
<td>32.421333</td>
<td>-95.524882</td>
<td>14.71</td>
<td>2.85</td>
<td>Public</td>
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</table>
## Survey Site Locations – The Neches River Above Lake Palestine

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</thead>
<tbody>
<tr>
<td>NR10</td>
<td>Neches River at intersection with Van Zandt CR4931; Smith CR421</td>
<td>32.427673</td>
<td>-95.528349</td>
<td>15.55</td>
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<td>NR11</td>
<td>Private Property approximately 1.3 km west of Smith CR 420</td>
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<td>-95.545139</td>
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<tr>
<td>NR12</td>
<td>Neches River at intersection with Van Zandt CR4908; Smith CR426; Willow Branch Rd</td>
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<td>-95.572039</td>
<td>20.85</td>
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<td>NR13</td>
<td>Neches River at intersection with Van Zandt CR4912</td>
<td>32.471813</td>
<td>-95.595652</td>
<td>23.30</td>
<td>2.45</td>
<td>Public</td>
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<tr>
<td>NR14</td>
<td>Neches River on private property approximately 340 meters north of Van Zandt County Road 4912</td>
<td>32.470571</td>
<td>-95.602380</td>
<td>23.86</td>
<td>0.56</td>
<td>Private</td>
</tr>
<tr>
<td>NR15</td>
<td>Neches River on private property approximately 1.4 km south of Van Zandt CR 1995 and 2.2 km east of FM 314</td>
<td>32.484084</td>
<td>-95.617644</td>
<td>26.88</td>
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<td>Private</td>
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<tr>
<td>NR16</td>
<td>Neches River at intersection with FM 314</td>
<td>32.491473</td>
<td>-95.643209</td>
<td>29.70</td>
<td>2.82</td>
<td>Public</td>
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<tr>
<td>NR17</td>
<td>Neches River on private property approximately 620 meters south of FM 1995 and 850 meters west of FM 314</td>
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<td>32.490439</td>
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<td>31.36</td>
<td>0.77</td>
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</table>
Neches River Above Lake Palestine Photographs

150m Upstream at NR03 – first survey

150m Upstream at NR03 – second survey
Neches River Above Lake Palestine Photographs

300m Upstream at NR05

0m Downstream at NR06
Neches River Above Lake Palestine Photographs

Very tall vegetation at NR08

Left bank at 300m at NR08
Neches River Above Lake Palestine Photographs

Upstream at 0m at NR11 – first survey

Upstream at 0m at NR11 – second survey
Neches River Above Lake Palestine Photographs

No Trespassing sign at NR12

Obstruction at 0m
Downstream at NR14
Neches River Above Lake Palestine Photographs

Garbage at NR18

150m Upstream at NR18
Next Steps

• Public Comment Period
  • Open from **Now – September 8, 2015**
    – Please take this opportunity to review the Red River RUAA Report
    – Provide Comments
    – Report can be viewed: [http://tiaer.tarleton.edu/ruaa/index.html](http://tiaer.tarleton.edu/ruaa/index.html)
Contact Information

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Questions?

Project Website:
http://tiaer.tarleton.edu/ruaa/index.html

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