North Bosque River
TMDL and I-Plan

A Brief Overview

August 2020
Impairment and Report History

- 1992 – Listed as impaired on 303(d) List
- 1996 – Bosque River Advisory Committee formed
- 1998 – TMDL development initiated for excessive algae associated with high nutrients
- 2001 – TMDLs for phosphorus adopted (February)
- 2001 – TMDLs approved by EPA (December)
- 2002 – I-Plan approved by TCEQ (December)
- 2003 – I-Plan approved by TSSWCB (January)
Public Participation

• Public participation in the watershed was robust
• TMDLs considered extensive data and several studies from the 1990s
North Bosque River TMDL

- Mandates an approximate 50% reduction in soluble reactive phosphorus (SRP)
- Establishes five index sites for monitoring and evaluation of goal attainment
- Targets concentrations of phosphate phosphorus (PO\textsubscript{4}-P) at about 0.03 mg/L as the river flows into Lake Waco
  
  (Target concentrations vary with Index Site from 0.448 mg/L below Stephenville to 0.028 mg/L at Valley Mills)
North Bosque Monitoring Stations

Index Stations circled in Red
North Bosque River
TMDL Reduction Goals

<table>
<thead>
<tr>
<th></th>
<th>Above Stephenville</th>
<th>Below Stephenville</th>
<th>Above Meridian</th>
<th>Clifton</th>
<th>Valley Mills</th>
</tr>
</thead>
<tbody>
<tr>
<td>From ‘Existing’ scenario (ppb)</td>
<td>203.3</td>
<td>1,143.2</td>
<td>117.0</td>
<td>52.2</td>
<td>41.3</td>
</tr>
<tr>
<td>From ‘TMDL-e’ scenario (ppb)</td>
<td>114.2</td>
<td>448.1</td>
<td>54.5</td>
<td>30.3</td>
<td>27.5</td>
</tr>
<tr>
<td>% reduction</td>
<td>43.83 %</td>
<td>60.80 %</td>
<td>53.42 %</td>
<td>41.95 %</td>
<td>33.41 %</td>
</tr>
</tbody>
</table>

The decimal places shown in this table are artifacts of the estimation process, and should not be considered significant.
North Bosque River TMDL — Phosphorus Sources

Two major sources of SRP:

- Wastewater Treatment Facilities
- Dairy Waste Application Fields
North Bosque River I-Plan

- Identified four feasible measures to be implemented through six management strategies
- Defined specific water quality measures of success
Questions?