

Colorado/Lavaca BBEST

Draft Water Quality Evaluation Framework

July 21, 2010

Water Quality Considerations

- Existing conditions:
 - Baseline water quality assessment
 - Standards attainment
 - Known water quality issues/impairments
 - Relationship to flow
 - Identify historical trends and changes

Water Quality Considerations in Flow Regime Development

- How does the recommended flow regime affect water quality and maintain SEE?
- Pay particular attention to subsistence flows
- Evaluate base flows and higher too

Proposed WQ Framework

Collect/evaluate existing data:

1. Obtain WQ data (LCRA, USGS, CRP, etc.) for longest period available at each of our sites
2. Plot WQ variables vs. flow; note trend line and any historical changes
3. Assess data in light of 2010 draft 303(d) list
4. Compare data to screening criteria in TCEQ 2010 draft Water Bodies Assessment

Proposed WQ Framework – cont'd.

Answer the following questions:

5. Which WQ parameters are of concern (WQPoC)?
6. Is there a link between WQPoC and flow?
7. Is there a seasonal link to WQPoC and are concerns related to flow?
8. If the historical flow regime changed, is flow still adequate to meet WQ criteria?

Proposed WQ Framework – cont'd.

9. Are any WQ parameters at/near critical levels for a healthy ecosystem?
10. What is the longitudinal extent of WQ issues?

LCRA Assessment Tool

Llano River at Llano (12386)

Data Completeness: 99%

Significant Trends

Parameter			Parameter vs Flow			Residuals vs Date		
			Season			Season		
			All	Stratified	Mixed	All	Stratified	Mixed
Dissolved Oxygen Deficit								
Total Suspended Solids			+	+				
NO ₂ +NO ₃ Nitrogen			+	+	+			
Chloride					+			
Chlorophyll a								
Water Temperature			+	+				

Trend indicates water quality degraded between 1988 - 2008

Trend indicates water quality improved between 1988 - 2008

+

Values increased with increasing flow/date

-

Values decreased with increasing flow/date

Notes:

Approach: WQ Assessment

Existing WQ data evaluation

- **Begin: immediately**
- **Who:**
 - Okla Thornton – upper basin sites
 - Bryan Cook, middle basin sites
 - Steve Watters, lower basin sites
 - Others?
- **WQ subgroup confer to ID longitudinal issues, if any**

Approach: WQ Assessment

WQ evaluation of recommended flow regime

- **Begin:** upon receipt of proposed flow regime
- **Who:** WQ subgroup
- **What:**
 - Focus 1st on WQPoC & flow-linked parameters
 - Emphasis on subsistence and base flows
 - Consider higher flows

Questions/Comments

