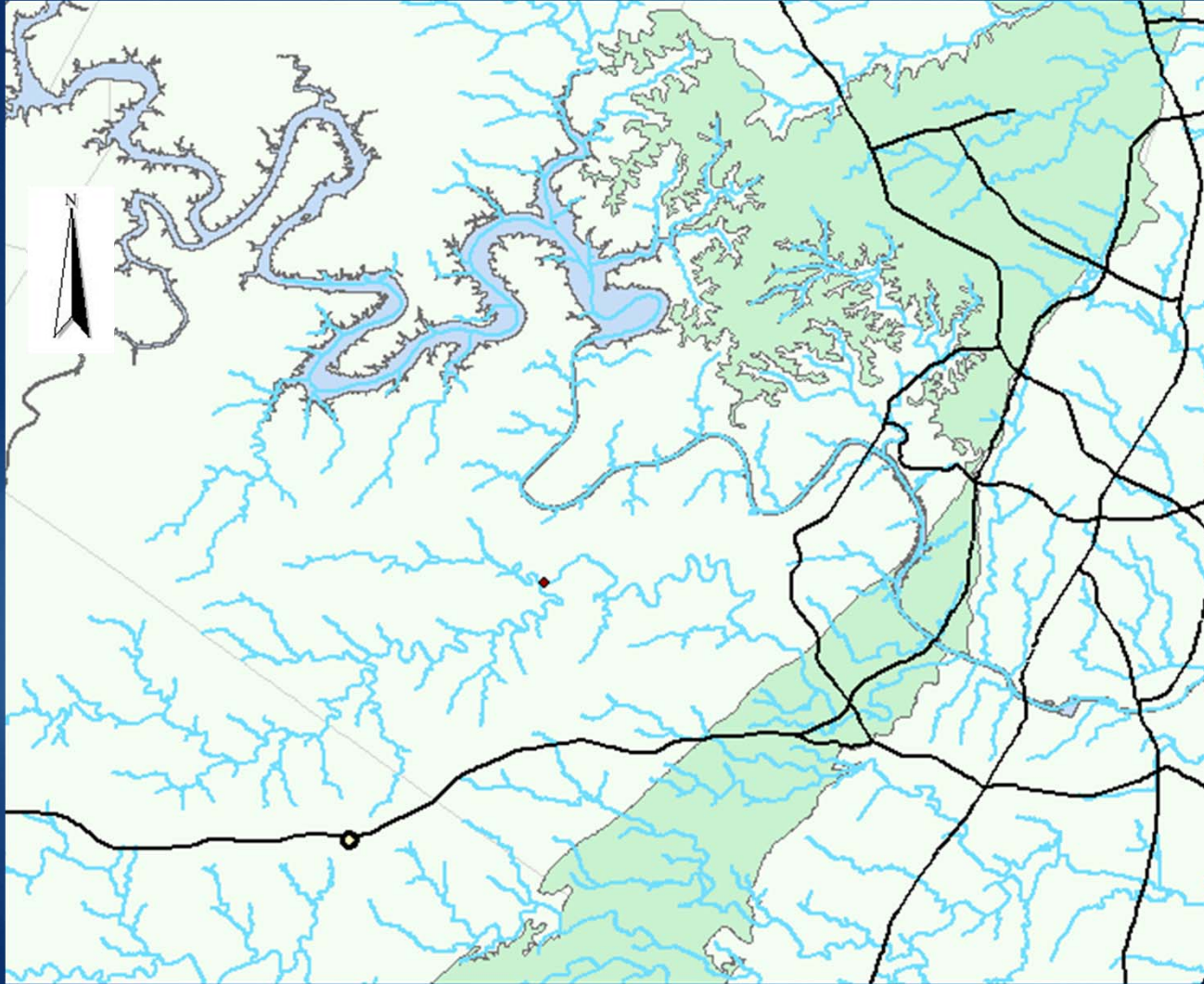# Water Quality Impacts from a Proposed Wastewater Discharge to Barton Creek

ABEL PORRAS, PE
ENVIRONMENTAL RESOURCE MANAGEMENT DIVISION
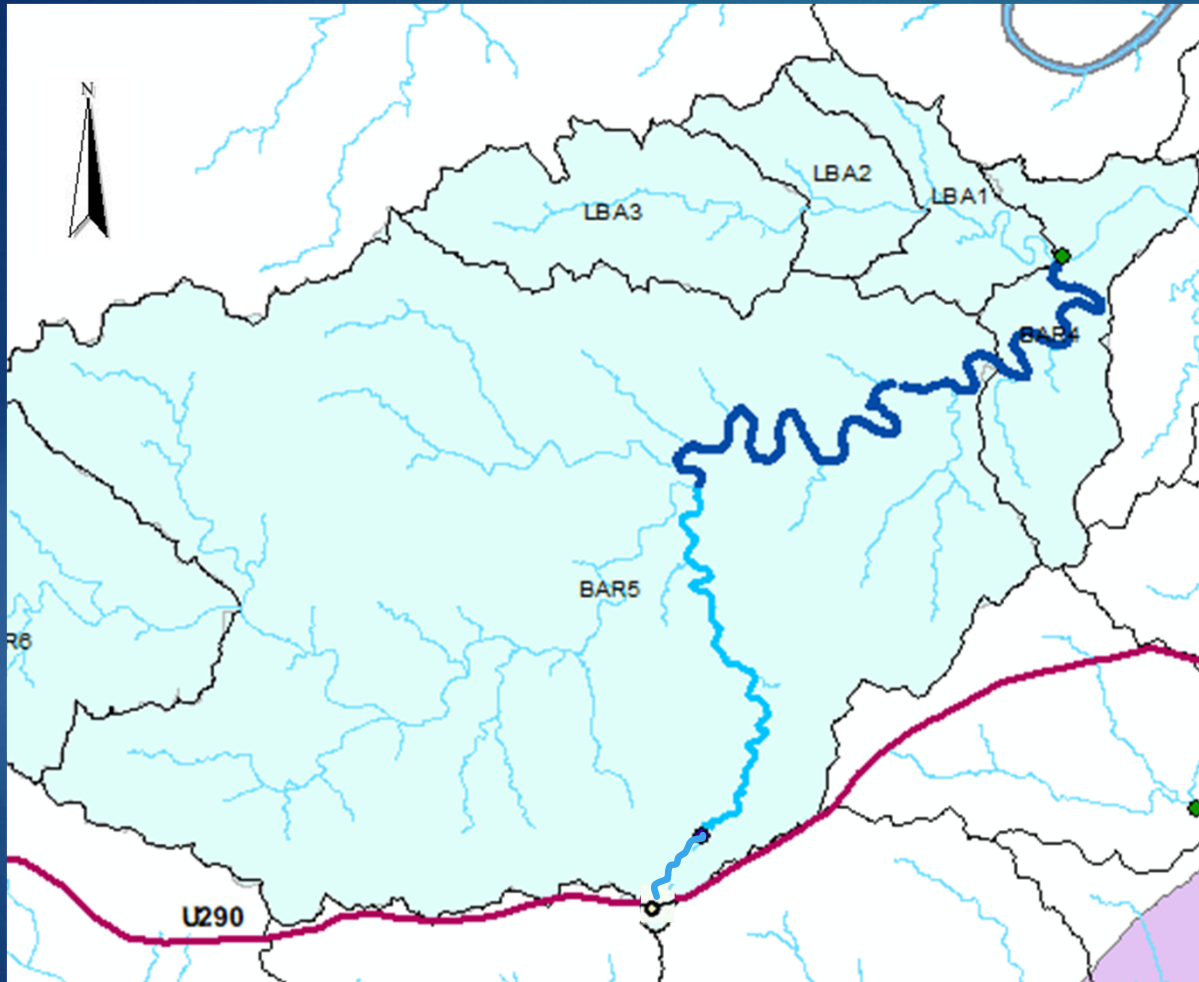WATERSHED PROTECTION DEPARTMENT

OCT 21, 2020
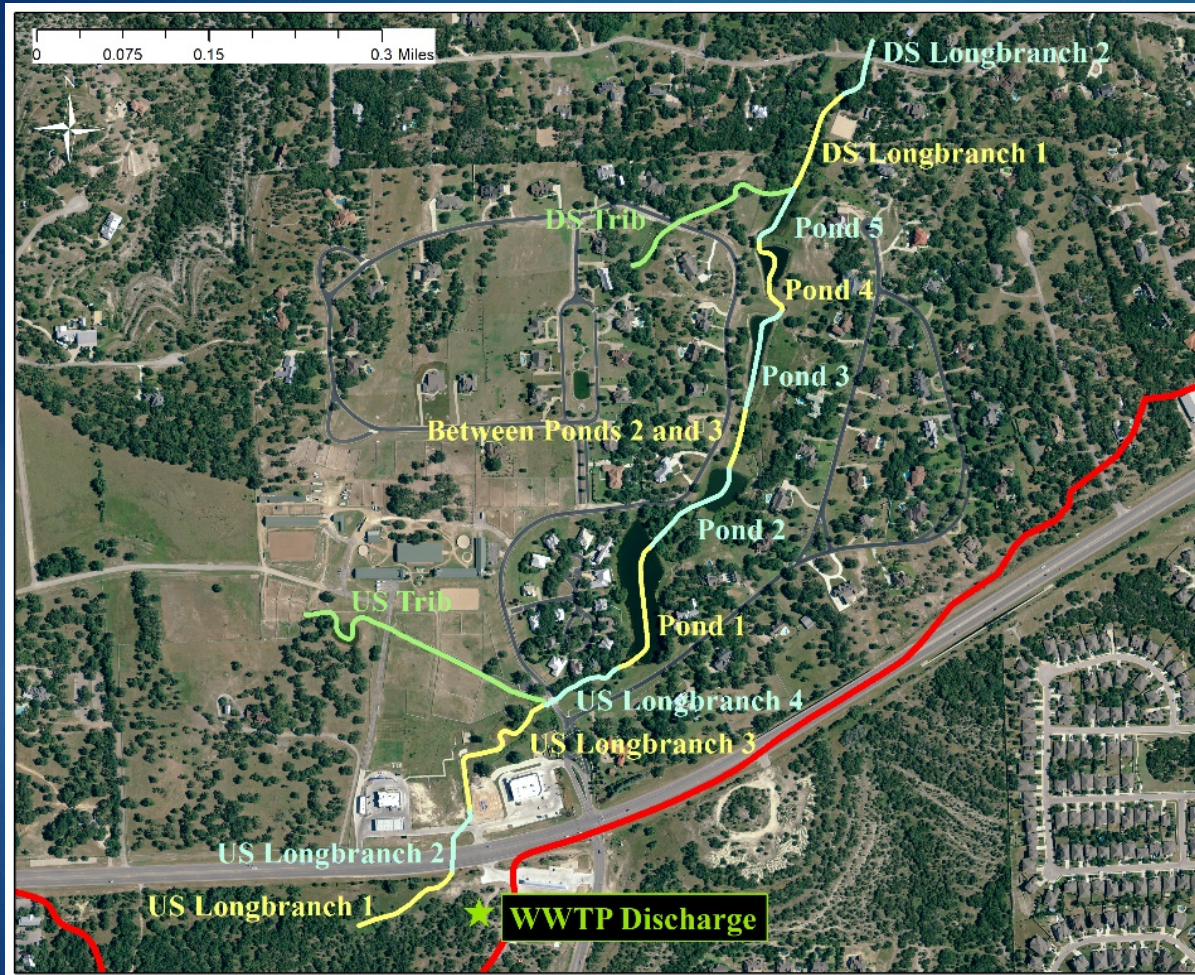
The Proposed TPDES Permit

► The Sawyer-Cleveland Partnership applied for a TPDES permit

► The permit would allow treated wastewater effluent to be discharged to a tributary of Barton Creek in the Contributing Zone of the Barton Springs Segment of the Edwards Aquifer

► Environmental Resource Management Division has modeled this discharge and assessed its impact on the water quality in Barton Creek.

The Location of the Discharge
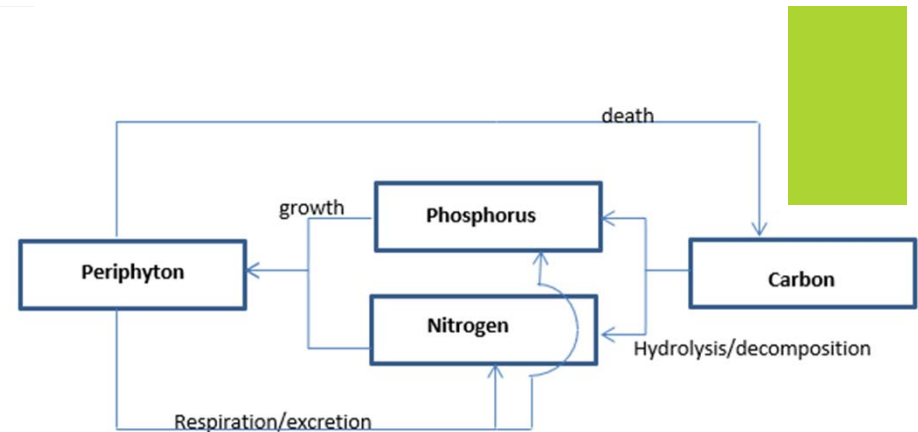
The Location of the Discharge
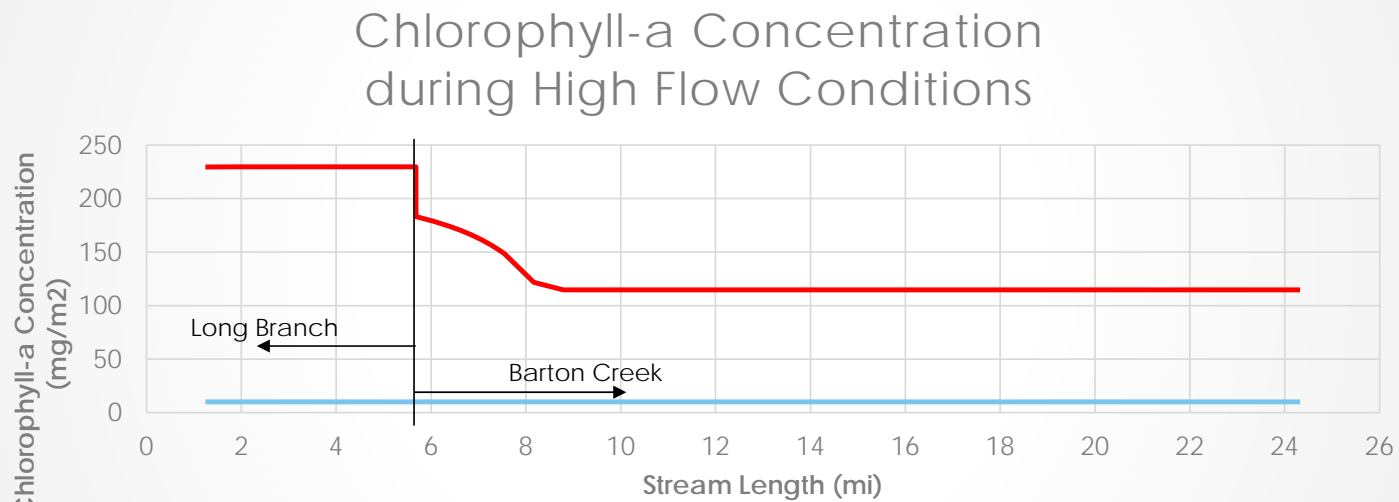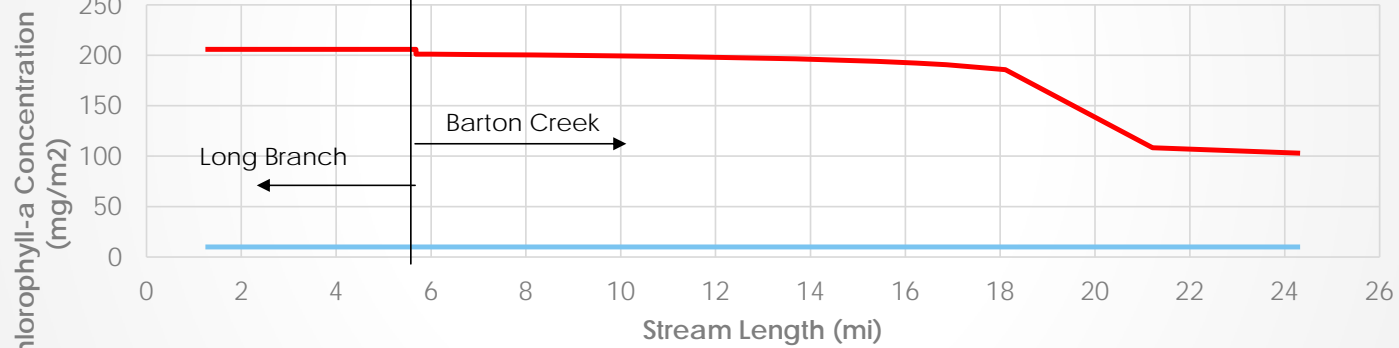
The Location of the Discharge

The Proposed TPDES Permit

▶ The Sawyer-Cleveland Partnership are proposing that their permit:

  ▶ Would authorize a discharge of treated wastewater not to exceed a daily average flow of 92,000 gallons/day;

  ▶ Estimated effluent concentrations of ~22mg/L of Nitrogen and ~4 mg/L of Phosphorus

▶ Dripping Springs TPDES permit allowed discharge of treated wastewater not to exceed a daily average flow of 995,000 gallons/day

▶ Estimated effluent concentrations of ~6mg/L of Nitrogen and ~0.5 mg/L of Phosphorus

The Model

▶ We're interested mostly in the impact on the stream from algae due to N and P.

▶ Algae changes the trophic status (or the clarity of the stream).

▶ The water quality model looks at flow, light conditions, and nutrient cycling to assess the impacts from nitrogen and phosphorus into algae.

▶ We used site-specific data for flow and light.

Chlorophyll-a Concentration during Low Flow Conditions

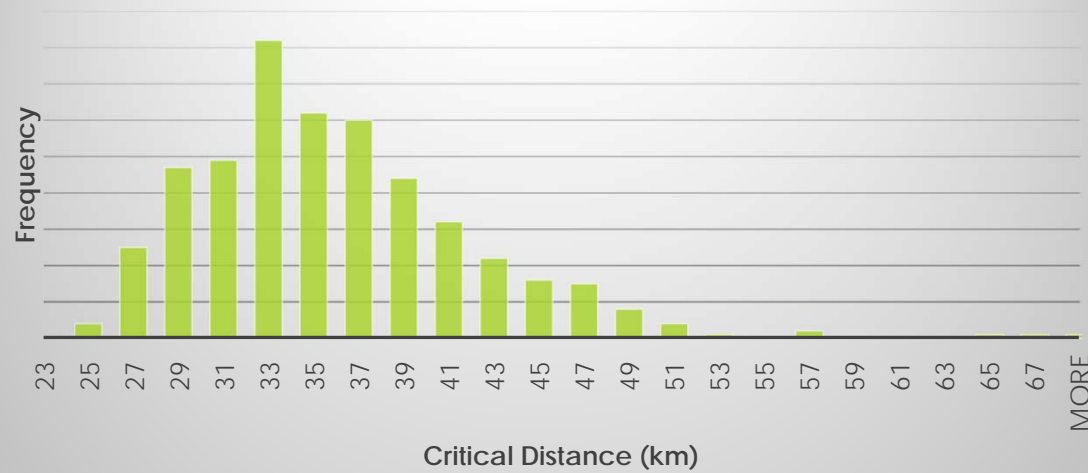Chlorophyll-a Concentration during High Flow Conditions

The Results

Next Steps

- We provided a letter of comments to TCEQ
- TCEQ is working on a draft permit based on their own modeling and Sawyer's proposed permit application
- We have requested records from TCEQ to review their modeling results and their proposed effluent limits in the draft permit.
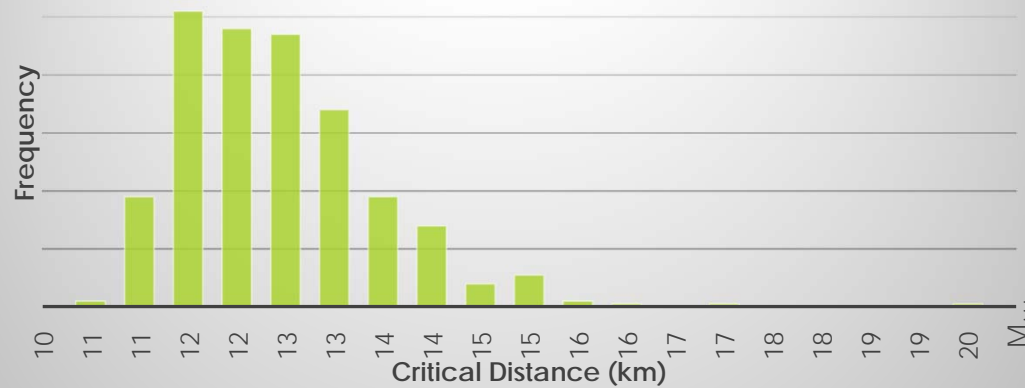- We will be continuing to keep Env. Commission informed.

Questions or comments?

Abel.Porras@austintexas.gov

Critical Distance under Low Flow

Frequency

Critical Distance (km)

23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 65 67 MORE

Critical Distance under High Flow

Frequency

Critical Distance (km)

10 11 11 12 12 13 13 14 14 15 15 16 16 17 17 18 18 19 19 20 M...

Uncertainty in the Results