



Watershed Protection Development Review

FINDINGS OF THE DRAFT 2002 TEXAS WATER QUALITY INVENTORY AND 303(D) LIST FOR THE AUSTIN AREA

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ABSTRACT

The Texas Commission on Environmental Quality is responsible for determining the status of water resources statewide including those in Austin Area. Its methodology for ranking these water bodies is reviewed and approved by the U.S. Environmental Protection Agency. From the most recent assessment, the condition of water bodies in the Austin area are summarized. The current status of nineteen water bodies is listed as impaired or of concern due to benthic macroinvertebrate community degradation, elevated bacteria levels, elevated toxins in sediments, or depressed dissolved oxygen concentrations. This information provides a standard of comparison for Austin water bodies state-wide and a source of information to target watersheds for special attention in protection and remediation efforts.

INTRODUCTION

The Texas Water Quality Inventory [305(b) report] is prepared by the Texas Commission on Environmental Quality (TCEQ) and submitted to the USEPA biennially in accordance with Section 305(b) of the Clean Water Act (CWA). Recent guidance from the Environmental Protection Agency (EPA) directed the state to integrate the 305(b) Water Quality Inventory and 303(d) List for all waters of the state. Section 305(b) of the act requires states to report the extent to which water bodies attain designated water quality standards. The table below summarizes Austin area impairments and concerns identified in the statewide assessment.

Table 1
Summary of COA Water Bodies 2002 Status

Problem identified	Number of water bodies affected	Concern or Impairment Status
Impaired macrobenthic invertebrate community	3	Impairment
	4	Concern
Frequently elevated bacteria levels	4	Impairment
	5	Concern

Problem identified	Number of water bodies affected	Concern or Impairment Status
Depressed dissolved oxygen	1	Impairment
	2	Concern
Elevated nutrients	8	Concern
Elevated toxins in sediments	4	Concern

Water bodies that do not support their water quality standards, and for which existing controls are not adequate are placed on the 303(d) list of impaired water bodies. Concerns are also identified where the use assessment is met but elevated pollutants with indirect impacts are seen or a paucity of data limits the assessment. Assessments are based on five years of water quality data collected by the TNRCC and cooperating agencies under approved quality assurance guidelines. Watershed Protection and Development Review Department (WPDRD) staff has been working for many years to have City data incorporated into the TCEQ database through the Clean Rivers Program.

The 2002 assessment included many more area creeks as a result of the inclusion of City data. Both impairments and concerns were identified in the Austin area as described below, but none of them will currently require the development of a TMDL. Development of a TMDL (Total Maximum Daily Load), a model to determine the capacity of the water body for the pollutant of concern and allocate this amount among the sources in the watershed, is required to identify actions to take to restore and maintain human uses or aquatic life. The primary focus at this time for Austin area water bodies is continued monitoring. Toxins in sediments and nutrients in water, of greatest concern to City staff, are addressed only as “secondary concerns” by the state as only screening levels rather than regulatory criteria have been adopted by the state.

IMPAIRED WATER BODIES

Many Austin water bodies were listed as not supporting their designated uses, many of these for elevated bacteria. The recreational uses are impaired when bacteria are elevated, while depressed dissolved oxygen or impaired macrobenthic communities indicate that the aquatic life support use may not be met. Many creeks were removed since the previous listing when USGS data for bacteria were removed from the TCEQ database. Onion Creek impairments for elevated Total Dissolved Solids (TDS) and sulfate were also delisted when standards were revised to allow higher levels of these constituents; currently the TMDL for dissolved oxygen, which was initiated, has been downgraded as shown below to a data collection effort. The table below lists water bodies in the Austin area designated as impaired, but none are categorized for TMDL development, but rather scheduled to obtain additional data.

Table 2
Individual Impairments of COA Water Bodies 2002
From: “DRAFT 2002 Texas 303(d) List (October 1, 2002)”

Segment	Water body	Impairment area	Impairment	Category*
1403A Bull Creek	Lake Austin to upstream perennial portion	From most downstream xing to most upstream xing of Spicewood Springs Rd	Impaired macrobenthos community	5c [rank D]
1403J Spicewood Tributary to Shoal Creek	From MoPac to a point west of Hart Lane	Entire water body	Bacteria	5c [rank D]

Segment	Water body	Impairment area	Impairment	Category*
1403K Taylor Slough South	From Lake Austin to west of Pecos Street	Entire water body	Bacteria	5c [rank D]
1427 Onion Creek	From Colorado River to most upstream xing of FM165	From end of segment upstream to US183	Depressed dissolved oxygen	5c [rank D]
1427A Slaughter Creek	Intermittent stream with perennial pools from Onion to above US290	Entire water body	Impaired macrobenthos community	5c [rank D]
1428C Gilleland Creek	Perennial stream and intermittent stream w/perennial pools from Colorado River to spring source	From Taylor Lane upstream to Old Highway 20	Bacteria	5c [rank D]
1429B Eanes Creek	From Town Lake to upstream perennial portion	Entire water body	Bacteria	5c [rank D]
1429C Waller Creek	From Town Lake to upstream portion	From Town Lake to East MLK Blvd.	Impaired macrobenthos community	5c [rank D]

Category 5	The water body does not meet applicable water quality standards or is threatened for one or more designated uses by one or more pollutants. A TMDL is underway, scheduled, or will be scheduled.
Category 5a	A review of the water quality standards for this water body will be conducted before a TMDL is scheduled.
Category 5b	
Category 5c	

WATER BODIES WITH CONCERNS FOR USE ATTAINMENT

For the first time in 2002, concerns for designated uses were also identified (Primary Concerns) by TCEQ.

- Use Concerns-Limited Data (Tier 1 Primary Concerns) are identified for indications where less than 10 samples were available for assessment and some exceedances were identified.
- Use Concerns (Tier 2 Primary Concerns) are identified for indicators that support the designated use as determined by an adequate number of samples, but a few reported exceedances indicated a potential water quality problem.

Water bodies with Tier 1 and Tier 2 concerns receive high priority for additional monitoring.

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Individual COA Water Bodies with Water Quality Concerns 2002

From: "DRAFT 2002 Summary of Water Bodies with Concerns for Use Attainment"

Segment	Concern Location	Use	Level of Concern [Tier 1 or Tier 2]	Parameter of Concern
1403 Lake Austin	Quinlan Park to upper end of segment	Aquatic Life Use	Use Concern [T2]	Depressed dissolved oxygen
1403E Stillhouse Hollow [Bull Creek unclassified water body]	Entire water body	Aquatic Life Use	Use Concern-Limited Data [T1]	Impaired macrobenthos community
1403G Tanglewood Tributary to Bull Creek	Entire water body	Contact Recreation	Use Concern [T2]	Bacteria

Segment	Concern Location	Use	Level of Concern [Tier 1 or Tier 2]	Parameter of Concern
1403R Unnamed tributary to Lake Austin	Entire water body	Contact Recreation	Use Concern [T2]	Bacteria
1428B Walnut	From FM 969 upstream to Loyola	Contact Recreation	Use Concern-Limited Data [T1]	Bacteria
1428B Walnut	From Sprinkle Road upstream to IH35	Aquatic Life	Use Concern-Limited Data [T1]	Impaired macrobenthos community
1428C Gilleland Creek	From Taylor Lane upstream to Old Highwa 20	Contact Recreation	Use Concern [T2]	Bacteria
1428D Little Walnut	From Walnut Creek upstream to US183	Aquatic Life	Use Concern-Limited Data [T1]	Impaired macrobenthos community
1429C Waller Creek	From Town Lake to East MLK Blvd And upper portion of creek	Contact Recreation Use	Use Concern-Limited Data [T1]	Bacteria
1430 Barton Creek	From confluence with Town Lake to Barton Springs Pool most downstream dam	Aquatic Life Use	Use Concern-Limited Data [T1]	Impaired macrobenthos community
1430A Barton Springs	Barton Springs Pool	Aquatic Life Use	Use Concern [T2]	Depressed dissolved oxygen

WATER QUALITY CONCERNS

Finally, there is also a summary of water bodies with water quality concerns (Secondary Concerns). These are designated by exceedances of screening levels for nutrients, chlorophyll a, toxic substances in sediment, and toxic substances in fish tissue that do not cause direct impairment of designated uses. In Austin, the majority of concerns were for the water bodies with elevated nutrients listed below. Austin tributaries with nutrient enrichment include both creeks and portions of the Colorado River.

- ◆ Barrow Preserve,
- ◆ Stillhouse Hollow,
- ◆ Spicewood Tributary,
- ◆ Taylor Slough South,
- ◆ Colorado River Below Town Lake,
- ◆ Walnut Creek,
- ◆ Gilleland Creek), and the
- ◆ Lower half of Town Lake.

Additional secondary concerns listed below include impaired biological communities in the Colorado River below Town Lake. This reach of the river was designated for exceptional aquatic life use in the mid-1990s. Other concerns are related to toxins in sediment. The sediment sampling conducted by WPDRD has focused on problem areas such urban creeks or below localized inputs. The levels of toxins in sediments are screened by TCEQ against both a level indicating possible biological impacts and the 85th percentile of measurements in the state. Initial ambient toxicity testing by the City, which is required by the state for designating an impairment did not identify toxicity except at two dry tributary sites with photo exposure. Phototoxicity is

not, however, a method approved by the state. Continued sampling being conducted by the state may indicate whether concerns are warranted and potential sources, however, phototoxicity is not being evaluated.

- ◆ Colorado River Below Town Lake – impaired fish and macrobenthos community
- ◆ Waller Creek – narrative concern for lead and organics in sediment [future monitoring by UT]
- ◆ East Bouldin Creek – metals and organics in sediment
- ◆ Barton Creek (Pool to 2 miles upstream of Loop 1) – PAHs, cadmium, lead, silver, and zinc in sediment
- ◆ Barton Springs Pool – arsenic and copper in sediment

CONCLUSIONS

As shown above a significant number of water bodies did poorly in statewide ratings. The City is continuing to participate in the statewide coordinated monitoring program and the Clean Rivers Program to provide data to the state. Efforts to correct problems identified by the City in the Barton Creek system have initiated additional monitoring by the state of sediments and programs to correct the problems by the City. Funds for corrective actions from TCEQ and the USEPA are limited due to the lack of sites identified for TMDL status.