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Chapter 5 – Impacts of Water Management Strategies on Key Parameters of Water Quality and Impacts of Moving Water from Rural and Agricultural Areas

5.1 Scope of Work

This planning effort is part of a consensus-based planning effort to include local concerns in the statewide water supply planning effort. This chapter presents the results of Task 5 of the project scope, which addresses:

- Impacts of Water Management Strategies on Key Parameters of Water Quality
- Evaluation of Third-Party Impacts of Reduced Levels in Water Supply Reservoirs
- Impacts of Moving Water from Rural and Agricultural Areas.

5.2 Impacts of Water Management Strategies on Key Parameters of Water Quality

The potential impacts that water management strategies may have on water quality are discussed in this section, including the identified water quality parameters which are deemed important to the use of the water resources within the region. Under the Clean Water Act, Texas must define designated uses for all major water bodies and, consequently, the water quality standards that are appropriate for that designated water body use. The water quality parameters which are listed for Region H below were selected based on the *TCEQ Water Quality Inventory for Designated Water Body Uses* as well as the water quality parameters identified in the Texas Commission on Environmental Quality (TCEQ) 303d list of impaired water bodies. For reference purposes, *Appendix 5A* contains the TCEQ 303d list of impaired waters within the region and the tabular summaries of use support for the water bodies that are part of Region H.

Key surface water parameters identified within Region H fall into two broad categories:

Nutrients and non-conservative substances:

- Bacteria
- pH
- Dissolved Oxygen
- Total Suspended Solids (TSS)
- Temperature
- Nutrients (Nitrogen, Phosphorus)

Minerals and conservative substances:

- Total Dissolved Solids (TDS)
- Chlorides

- Mercury
- Salinity
- Sediment Contaminants

Non-conservative substances are those parameters that undergo rapid degradation or change as the substance flows downstream, such as nutrients which are consumed by plant life. Nutrient and non-conservative loading to surface water originates from a variety of natural and man-made sources. One significant source of these loads is wastewater treatment facilities. As population increases, the number and size of these wastewater discharges will likely increase as well. Stormwater runoff from certain land use types constitutes another significant source of nutrient loading to the region's watercourses, including agricultural areas, golf courses, residential development, or other landscaped areas where fertilizers are applied. Nutrient loads in Region H are typically within the limits deemed acceptable for conventional water treatment facilities, and are therefore not considered a major concern as related to source of supply.

Conservative substances are those that do not undergo rapid degradation or do not change in water as the substance flows downstream, such as metals. Mineral and other conservative substance loading to surface water generally originates from three sources: (1) non-point source runoff or groundwater seepage from mineralized areas, either natural or man-made (2) wastewater discharges, and (3) sea water migration above estuaries. Region H is fortunate in that the first category is not typical of this area except for the Brazos River which has several natural salt-contributing areas; fortunately, flows in the lower basin generally are sufficient to dilute these sources to easily manageable concentrations. Wastewater discharges, and industrial discharges in particular, have improved over the past 30-years due to the requirements of the Clean Water Act. If local concentrations of conservative contaminants are identified, they are remediated by the appropriate agency. Salinity migration above estuaries is controlled in the Trinity River by the Wallisville Saltwater Barrier, and in the San Jacinto River by the Lake Houston Dam. The 2006 Region H Plan and the 2011 update of the Plan recommends a saltwater barrier be added above the Brazos estuary to protect water quality in that reach of the Brazos River as well. Sediment contaminants can provide particulate matter that can encourage the growth of blue-green algae (cyanobacteria). Sand mining, in particular, has lead to increased nutrient loads in the San Jacinto River which can result in an increase in cyanobacteria levels.

Groundwater in Region H is generally of good quality with no usage limitations. Quality parameters of interest include Total Dissolved Solids (TDS), metals and hardness. Portions of the Carrizo-Wilcox aquifer can contain levels of iron that require sequestering or removal through treatment facilities. The Brazos River Alluvium is directly recharged from the based flow in the Brazos River, and has the potential to reflect any contaminant loading of the Brazos River. Portions of the aquifer currently experience elevated TDS and hardness.

Water quality of the Gulf Coast aquifer is generally good throughout the Region. The Chicot and Evangeline aquifers are capable of yielding moderate to large amounts of fresh water in most of the Region. Fresh water is overlain and underlain by saline water in coastal areas and the coastal deposits are not capable of yielding fresh water. Deeper formations throughout the region are able to supply limited freshwater and slightly saline water in updip areas.

Some localized sites within the Region have the potential to cause contamination of the aquifer under adverse conditions. These sites once generated surface water pollution which, if not properly handled, could cause contamination of local soils or shallow groundwater supplies. Except for the northern areas of the Region, the thickness of the near-surface clay soils located over much of the Region provide an effective barrier to deeper aquifer contamination due to normal infiltration. As a consequence, the primary risk for Gulf Coast aquifer groundwater contamination occurs if there are improperly designed or inadequately sealed wells which are exposed to this surface contamination. Localized shallow alluvial aquifers primarily located along the major streams such as the Brazos River

are at greater risk for contamination from these sites as a result of the more direct travel paths for potential contaminated water to reach these areas, especially if they are being pumped by small household or livestock wells. At this time, there are no recorded incidents of contaminated groundwater in the Region as a result of these sites.

The water quality parameters and water management strategies selected by the RHWPG were evaluated to determine the impacts on water quality as a result of these recommended strategies. This evaluation used the data available to compare current conditions to future conditions with Region H management strategies in place. The recommended and alternative management strategies, as described in *Chapter 4* of this report and used in this evaluation, are listed below.

Recommended Water Management Strategies

Conservation Strategies:

- Industrial Conservation
- Irrigation Conservation
- Municipal Conservation

Contractual Strategies:

- Expand/Increase Current Contracts
- New Contracts from Existing Supplies
- Reallocation of Existing Supplies
- TRA to SJRA Contract
- TRA to Houston Contract
- WUG-Level Contracts¹
- WWP Contracts

Groundwater Strategies:

- Expanded Use of Groundwater
- Interim Strategies
- New Groundwater Wells for Livestock

Groundwater Reduction Plans:

- CHCRWA GRP
- COH GRP
- City of Missouri City GRP
- Fort Bend MUD 25 GRP
- Fort Bend WCID 2 GRP
- NFBWA GRP²
- NHCRWA GRP²
- Pecan Grove GRP
- Richmond/Rosenberg GRP
- River Plantation GRP
- SJRA WRAP³
- Sugar Land GRP
- WHCRWA GRP²

Infrastructure Strategies:

- CHCRWA Transmission Line
- CHCRWA Internal Distribution
- CLCND West Chambers System
- COH Distribution Expansion
- COH Treatment Expansion
- Harris County MUD 50 WTP
- Huntsville WTP
- LLWSSSC Surface Water Project

- Luce Bayou Transfer
- NFBWA Internal Distribution
- NFBWA Shared Transmission Line
- NHCRWA Internal 2010 Distribution
- NHCRWA Internal 2020 Distribution
- NHCRWA Internal 2030 Distribution
- NHCRWA Transmission 2010
- NHCRWA Transmission 2020
- NHCRWA Transmission 2030
- Pearland SWTP
- Sealy GW Treatment Expansion
- WHCRWA Internal Distribution
- WHCRWA Transmission Line

Reservoir Strategies:

- Allens Creek Reservoir
- Brazoria County Off-channel Reservoir
- Dow Off-Channel Reservoir
- Fort Bend County Off-channel Reservoir
- GCWA Off-channel Reservoir

Reuse Strategies:

- Fulshear Reuse
- Houston Indirect Reuse
- Montgomery MUD 8/9 Indirect Reuse
- NHCRWA Indirect Reuse
- Wastewater Reuse for Industry
- Wastewater Reclamation for Mun. Irrigation

Permit Strategies:

- BRA System Operations Permit
- Houston Bayous Permit

Other Strategies:

- Brazoria Co. Interruptible Supplies for Irr.
- Freeport Desalination Plant
- Brazos Saltwater Barrier

Alternative Water Management Strategies

- Montgomery MUD 8/9 Brackish Water Desalination
- Sabine to Region H Transfer
- Little River Off-channel Reservoir

The following paragraphs discuss the impacts of each management strategy on the chosen water quality parameters.

Increased Groundwater Usage, including Expanded Use of Groundwater, Interim Groundwater, and New Groundwater Wells, is not expected to have significant environmental effects. Groundwater within the Region is generally of good quality and available at the point of use. Increases in well pumping will also contribute to return flows in all river basins in Region H. The return flows will increase in proportion to increased groundwater use and significantly contribute to flows into Galveston Bay. Increased and interim groundwater pumping in the region will continue to be monitored by groundwater regulatory agencies since excessive pumping can lead to land subsidence and exacerbate flooding and drainage problems.

Water Conservation, including municipal, industrial, and agricultural conservation, can have both positive and negative impacts on water quality. Water that is being processed through a wastewater treatment plant typically has acquired additional dissolved solids prior to discharge to the waters of the state. Conventional wastewater treatment reduces suspended solids, but does not reduce dissolved solids in the effluent. Water conservation measures will reduce the volume of water passing through the wastewater plants without reducing the mass loading rates (a 1.6 gallon flush carries the same waste mass to the plant that a 6-gallon flush once carried). This may result in slightly increased conservative contaminant loads in the stream. However, it should be noted that during low flow conditions, the wastewater effluent in a stream may represent water that helps to augment and maintain the minimum stream flows. Tail water is the term used to describe that water returned to the stream after application to irrigated cropland. Tail water carries nutrients, sediments, salts, and other pollutants from the farmland. This return flow can have a negative impact on water quality, and by implementing conservation measures which reduce tail water losses, the nutrient and sediment loading can be reduced. Once again, however, this return flow tends to be introduced into the receiving stream during normally dry periods so it may have a net beneficial effect in terms of maintaining minimum stream flow conditions. Furthermore, the loss of the return flows could be offset by a reduction in irrigation diversions resulting in no net affect on the stream flow.

BRA System Operations strategy potentially impacts the water quality in the lower basin depending on the actual diversion quantities and diversion locations. The BRA will develop a management plan for implementing its System Operations Permit. The management plan will address actual operations under the System Operations Permit, including water quality considerations. Decreased instream flows directly influence saltwater intrusion, which may be mitigated by a saltwater barrier. However, in the “Report in Support of System Operation Permit Application” prepared by Freese and Nichols, Inc. for the BRA, it is stated that system operations would not negatively impact instream flows and may increase the frequency of meeting instream criteria in many locations. Because many of the existing impaired segments within the Brazos Basin are located above system reservoirs, it was also found that the hydrology of these segments will not be significantly impacted by the BRA System Operations.

Although the maximum diversions anticipated under the system operations conditions may pose some slight impact on estuary conditions, the frequency of occurrence for these actual diversions is very low. Additionally, since the Brazos River empties directly into the Gulf of Mexico, operational changes will not affect a large bay system but may impact flows into the Brazos River Estuary and the Columbia Bottomlands. Changes to flow patterns will likely be localized and fall within historical parameters. In conclusion, the BRA’s analysis recognized the System Operations Permit to be more environmentally sensitive than other potential strategies including new reservoir construction, groundwater resource development, and importing water supplies from outside the basin.

The Brazos Saltwater Barrier would help maintain water quality in the lower Brazos basin during low flow periods. Currently, during low flow periods the Dow Chemical and Brazosport Water Authority lower intakes are compromised due to saltwater intrusion. Increased use of Brazos River supplies will extend this seasonal condition upstream unless a barrier or other control measure is implemented.

Freeport Desalination does not affect other water management strategies and affects only the salinity levels in the area of discharge. The discharge water will blend with and be diluted by other water before flowing into the Brazos River above the Intracoastal Waterway. The diversion of Brazos River water to supplement seawater supplies to the desalination plant would maximize the operational efficiency, but could increase the salinity of the Brazos River Estuary, depending upon the size and season of the diversion.

Allens Creek Reservoir, Brazoria County Off-channel Reservoir, Fort Bend County Off-channel Reservoir, Dow Off-channel Reservoir and GCWA Off-channel Reservoir will modify downstream flow regimes, but potentially have positive impacts on water quality. The impacts will be investigated further once a flow regime is developed for the Brazos River. These off-channel reservoirs will be

operated as “scalping reservoirs”. During times of high flow, water quality in the Brazos River is often poor in terms of suspended solids due to increased sediment loads. At the same time, that water is of better quality in terms of dissolved solids concentrations since the salt being introduced into the Brazos in its upper reaches is diluted. The water that is diverted and stored in reservoirs would allow sediments to settle and accordingly water released from the reservoir would potentially have less sediment concentration. However, reduced sediment loads may have negative impacts on habitats relying on sediments downstream of the proposed reservoirs. Nutrients such as nitrogen and phosphorous are often attached to fine sediment particles that settle in reservoirs reducing nutrient loads to downstream aquatic species. Water that is released from the reservoirs during low flow conditions would have a beneficial effect by diluting the low flow salt concentration in the river. The GCWA Off-channel Reservoir is not expected to create any new water quality issues. The reservoir will allow the GCWA to use supplies from existing water right permits more efficiently.

New Contracts from Existing Supplies, including Expand/Increase Current Contracts, Reallocation of Existing Supplies, CLCND West Chambers System, Brazoria County Interruptible Irrigation, the TRA to Houston Contract, the TRA to SJRA Contract, and Groundwater Reduction Plans (GRPs) are not expected to create any new water quality issues. Fully utilizing existing water supplies may amplify some existing concerns, particularly contaminant concentrations due to reduced opportunities for in-stream dilution. The continued return of flows via wastewater treatment facility discharges will provide some mitigation of that effect. Typical municipal return flows are 60 percent of the total quantity diverted for use.

The Luce Bayou Interbasin Transfer will potentially improve the quality of Lake Houston, due to the blending with water from the Trinity River. However, recent studies performed by the Luce Bayou program have not indicated that this will be the case. Transfers such as this allow an increased opportunity for invasive species migration from the source to receiving waters. Additionally, the transfer will potentially reduce flow in the Trinity River below Dayton, because the Lake Livingston water rights are not fully utilized today. The effects of this reduced flow in the Trinity are mitigated by the existence of the Wallisville Saltwater Barrier at the mouth of the river, which maintains a minimum river level for navigation and prevents the migration of brackish water upstream.

Wastewater Reuse by Houston, NHCRWA and Fort Bend MUD 25, Montgomery County MUDs 8&9, Wastewater Reuse for Industry, and reuse strategies implemented as part of a Groundwater Reduction Plan (GRP) will potentially reduce in-stream flows, thus concentrating any in-stream contaminants. However, the reuse process should remove a portion of the waste load discharged from these facilities, either through the secondary treatment process or simply by the rerouting of effluent. A concern for this strategy would be the disposal method for any liquid wastes from the secondary treatment. In the case of industrial reuse, the reverse-osmosis discharge water would be injected into the bottom of the Houston Ship Channel, into an already brackish zone. The Houston Ship Channel is dredged to a depth of 45-feet (five times the depth of Galveston Bay) with fresh water flowing to the bay at the top and salt water returning on the tides at the bottom. The reverse-osmosis discharge and resultant mixing would be in the salt water layer at the bottom of this channel, increasing the salinity in the brackish zone. Further investigation will be required to determine the full environmental impacts of the reverse osmosis discharge. This reuse is not projected to occur until a time when the overall water use of the region has increased. Wastewater return flows will increase proportionally, so that the reuse of this portion will not constitute a significant reduction below current return flows.

Infrastructure and transmission line expansions including the COH infrastructure expansion, CHCRWA, NFBWA, NHCRWA, and WHCRWA transmission lines, SJRA WRAP and Water Treatment Plant strategies for Pearland, Huntsville, Harris County MUD #50, Sealy and the Lake Livingston Water Supply and Sewer Service Company (LLWSSC) are not expected to create any new water quality issues. The water management strategies are associated with the transmission of existing supplies to new and increased contractual demands of each wholesale water provider.

The Houston Bayous Permit has the potential to reduce instream flows. The requested diversions from the Houston Bayous Permit account for 20% to 40% of the average flow in Sims, Brays, and Buffalo bayous and 40% to 70% of the average flow in White Oak Bayou. The location of the diversion facilities will also have to be located and any wetland mitigation considered appropriately.

The Sabine to Region H Transfer has the potential to introduce Neches and Sabine River water into the Trinity, San Jacinto, San Jacinto - Brazos, and Brazos basins. This strategy therefore has the potential to result in changes in water chemistry, temperature, nutrients, organic particulates, and sediment in the Neches and Trinity basins. Instream flows in the lower Sabine River will also be reduced by the additional diversion of water from the Sabine River basin. Instream flows in portions of the Neches, Trinity, and San Jacinto Rivers will increase slightly. This strategy is included in the 2011 Plan as an alternative to off-channel reservoirs in Brazoria and Fort Bend Counties. Water transferred from the Sabine to the San Jacinto basin will be used to meet demands primarily in the Brazos and San Jacinto – Brazos basins. This may be accomplished by using the imported water in lieu of Trinity water from Lake Livingston to meet demands in Harris County. Additional infrastructure would be required to convey water from the San Jacinto basin to meet demands in the Brazos and San Jacinto – Brazos basins.

Montgomery County MUD 8/9 Brackish Water Desalination will not affect other water management strategies, but only the salinity in the area of the discharge. The location of the brine disposal will have to be investigated further to determine the impacts of brine concentrate effluent on the receiving surface water or groundwater.

5.3 Evaluation of Third-Party Impacts of Reduced Levels in Water Supply Reservoirs

One of the distinguishing characteristics of Region H is the abundance of recreational opportunities that enrich the quality of life of its residents. (See *Chapter 3* for a discussion of recreational water uses.) Recreation also contributes to attracting tourists and tourist dollars to the region. Some of these recreational activities are associated with water, both freshwater and salt water, and may be sensitive to water supply. The relation to water supply translates through impacts on reservoir levels, instream flows, bay and estuary inflows, water quality, habitat and aesthetics. *Table 5-1* lists recreational activities in Region H and the ways in which those activities are sensitive to water supply.

Although the major reservoirs in Region H were built and are maintained for municipal and industrial water supply, their existence has spurred the development of recreation related economic activity around their perimeters. In addition, this recreation-oriented development expands the tax base of local jurisdictions located near the reservoirs. Other water bodies similarly provide economic opportunities in recreation support activities.

Table 5-1
Recreational Activities Associated with Water in Region H

Activity	Major Sensitivity to Supply
Boating: (Canoe/kayak, sailboats, personal watercraft, power boats)	Reservoir level Instream flow Aesthetics
Swimming	Aesthetics Water quality Reservoir level Instream flow
Fishing	Reservoir level Instream flow Bay & Estuary inflows

	Water quality Habitat
Hunting	Habitat Instream flow
Parks: (Camping, hiking, biking, horseback riding)	Aesthetics Habitat Instream flow
Nature Tourism	Reservoir level Instream flow Bay & Estuary inflows Habitat Aesthetics
Golfing	Course upkeep Aesthetics

These activities impact the economy of the region through many paths, some of which are captured under the heading of "commercial activities" in the municipal water user group (WUG) in the socioeconomic analysis of water shortages (discussed in *Chapter 4*). Examples of these would be the sale of boating equipment, pier use fees collected by a convenience store or hotel receipts. Others impacts are not accounted for among the WUGs.

The determination of a direct relationship between water management strategies and recreational opportunities and indirect economic impacts is not feasible, due to the numerous other factors that affect recreational economics (i.e., weather conditions, national economic conditions, travel restrictions, etc.). However, the collective affects of strategies on anticipated lake levels during historical meteorological conditions were analyzed and some conclusions may be inferred on the impacts to recreation and economics.

For this analysis, the TCEQ Water Availability Model was updated to include the water management strategies recommended by Region C and Region H in their 2006 Regional Water Plans. The tributaries to Galveston Bay were then modeled under four scenarios to compare the results with and without the recommended strategies. The scenarios used were Run 8 "Current Conditions" (current levels of water diversions and return flows), Run 1 (full use of water rights with current percentage of return flows), Run 3 (full use of water rights with no return flows) and a future condition (full use of water rights, new strategies in place, and full return flows except for recommended reuse strategies). The first three models used the year 2000 reservoir sedimentation conditions to represent the 2010 condition, and the fourth used the 2060 condition. The future sedimentation condition benefits downstream projects, because upper basin projects have less capacity to store available flows. In this case, Lakes Houston and Livingston may be considered downstream projects.

The results of these simulations are summarized in *Table 5-2*. Reservoir elevations, capacities and surface areas are shown in *Figure 5-1*, *Figure 5-2* and *Figure 5-3* as a reference. *Appendix 5B* contains figures graphically displaying the model outputs and the percentile comparisons. Percentile values indicate the percentage of time the result value is less than or equal to the subject value. Therefore, the maximum value is the full lake elevation, the median value is the lake level in 50% of the monthly outputs, and the minimum value is the lowest monthly elevation in the simulation. Because the yield of these water supply reservoirs is based upon full use of the stored water during the drought of record, the Run 3 minimum elevation is, by definition, the lake bottom elevation. Note that this value is greater in the 2060 conditions simulation due to the projected accumulation of sediments on the reservoir floor. Each simulation run used the same 57-year inflow data set, which includes the drought of record period.

Table 5-2
Lake Level Percentile Tables
Lake Conroe Water Surface Elevations

	Current Conditions	Yr 2010 Run 1	Yr 2010 Run 3	Yr 2060 w/ Strategies
Maximum	201.0	201.0	201.0	201.0
90th	201.0	201.0	201.0	201.0
75th	201.0	200.5	200.5	200.5
Median	200.5	198.4	198.2	198.5
25th	198.6	193.6	193.0	194.2
10th	195.3	184.2	183.1	185.9
Minimum	187.8	145.0	145.0	152.0

Lake Houston Water Surface Elevations

	Current Conditions	Yr 2010 Run 1	Yr 2010 Run 3	Yr 2060 w/ Strategies
Maximum	44.0	44.0	44.0	44.0
90th	44.0	44.0	44.0	44.0
75th	44.0	44.0	44.0	44.0
Median	44.0	44.0	44.0	44.0
25th	43.3	43.3	42.8	44.0
10th	42.0	42.0	40.4	43.8
Minimum	32.8	32.8	9.0	40.3

Lake Livingston Water Surface Elevations

	Current Conditions	Yr 2010 Run 1	Yr 2010 Run 3	Yr 2060 w/ Strategies
Maximum	131.0	131.0	131.0	131.0
90th	131.0	131.0	131.0	131.0
75th	131.0	131.0	131.0	131.0
Median	131.0	131.0	129.8	131.0
25th	130.5	130.4	124.3	129.5
10th	129.0	128.0	116.5	127.1
Minimum	125.5	114.0	60.0	120.7

As can be seen from *Table 5-2*, under current conditions Lake Conroe would have a 13.2-ft elevation variation range during the historical period, Lake Houston an 11.2-ft range and Lake Livingston a 5.5-ft range. In all cases, the lakes are essentially full more than 50% of the time. To compare the runs with and without management strategies, it is best to compare Run 1 with the Recommended Strategies simulation, because both models use expected return flows.

Figure 5-1
Lake Conroe Surface Area and Capacity (2060 Conditions)



Surface Elevation	Surface Area	Storage Volume	Percent Fill
Feet (msl)	Acres	Acre-Feet	%
201	19,360	377,560	100%
195.5	15,600	283,170	75%
188.7	12,190	188,780	50%
179.5	8,500	94,390	25%
152			Bottom

Figure 5-2
Lake Houston Surface Area and Capacity (2060 Conditions)



Surface Elevation	Surface Area	Storage Volume	Percent Fill
Feet (msl)	Acres	Acre-Feet	%
44	11,850	106,410	100%
41.5	9,250	79,810	75%
38.0	7,780	53,210	50%
33.4	5,700	26,600	25%
20			Bottom

Figure 5-3
Lake Livingston Surface Area and Capacity (2060 Conditions)



Surface Elevation	Surface Area	Storage Volume	Percent Fill
Feet (msl)	Acres	Acre-Feet	%
131	82,920	1,717,080	100%
125.4	70,600	1,287,810	75%
118.6	56,920	858,540	50%
109.8	39,510	429,270	25%
63			Bottom

For Lake Conroe, full use of water rights reduces the frequency of the lake being full from 50% to 25% of the time in every simulation. The lake level falls below the current conditions minimum elevation between 10 and 25 percent of the time. The transfer of water to Lake Houston via Luce Bayou slightly increases the levels in Lake Conroe, but otherwise the two models are about the same.

For Lake Houston, the full use of water rights does not significantly change the lake level frequencies. This is mainly due to the fact that Lake Houston is senior in priority date to Lake Conroe, and therefore the model always stores available flows in Lake Houston first, and then makes the remainder available to Lake Conroe. In actual operation, a better balance is maintained between the two, but Lake Conroe will always decline faster than Lake Houston because it is supplied from a smaller watershed. Of note in the future condition simulation is that the import of water through Lake Houston via the Luce Bayou transfer increased the frequency of the lake being full from 50% to 90% of the time.

Finally, the Lake Livingston results show how dependent the reservoir is upon return flows from upstream (Run 3 condition). Under the recommended strategies run, the results are very close to the current conditions simulation. This is because increased use in the upper Trinity Basin is off-set by increased import of out-of-basin supplies. Region H indirectly benefits from the growth of the Dallas-Fort Worth Metroplex. In the current round of planning, Region C is increasing the amount of recommended reuse, although it is not expected they will reach the full-reuse condition modeled in Run 3.

The drought of record lasted six years, and subsequent droughts have exceeded two years in duration. Looking at the simulation results in *Figures 5B-1 and 5B-5*, it can be seen that when significant declines in lake levels occur, they will not be instantaneous events, but will be a subset of the overall drought period. Anecdotally, a month with low lake levels will impact a land owner's ability to use a dock. A year with low lake levels may impact his property rental or resale value. Similar inferences may be made as to the impacts on lake area communities and businesses.

Reduced lake levels will also impact water quality. During extreme low flow periods, reduced residence time in the reservoir will lessen the beneficial effects of sediment settling. Because the climate in this area is mild, the seasonal turn-over in lakes occurs less frequently than in colder climates. When reservoirs are drawn down, the denser lower layer of water will be tapped, which may increase the level of treatment required for use.

An option to mitigate these affects is to establish a minimum storage pool for a given reservoir, and prohibit withdrawals below that level. Because that would reduce the available storage pool for these reservoirs, and thus reduce the yield, such an imposition would constitute a taking of property. As a practical matter, the establishment of a minimum storage pool (for habitat, recreation, or other uses) would need to be off-set by the development of a new source of water supply, equal in yield to that lost from the lake. Development of this additional supply would be costly, and was not considered under this plan.

5.4 Impacts of Moving Water from Rural and Agricultural Areas

Currently, the water used in rural (livestock) and agricultural areas represent 13% of the total water used in Region H, a decline from 22% estimated in the year 2000. It is estimated that this will be reduced to 12% of the Region's 3,525,100 acre-feet demand projected in year 2060, mainly due to the growth of municipal and industrial demands. There is a slight projected decrease in irrigation (from 450,175 acre-feet per year in 2010 to 430,930 acre-feet per year in 2060, or a net reduction of 4%). Livestock demand is constant over the planning period. Water management strategies, along with current sources of reliable water supply and interruptible supplies, are available to agricultural users throughout the planning period; therefore, the impacts on agricultural users are not directly related to moving water from these areas.

The potential impacts of moving water from rural and agricultural areas are mainly associated with socio-economic impacts to third parties. The potential impetus for moving water is expected to occur from two sources: 1) the cost of raw water may become too great for the local irrigator to afford, and he may elect to voluntarily leave the industry for economic reasons; or 2) the value of the raw water for municipal or industrial purposes may create a market for the wholesale owner to re-direct the sale of the water making it unavailable to the irrigator. In some cases, it may be feasible for a third party to pay for conservation measures and then utilize the saved water for their own needs (through re-contracting or other agreements) and allow the irrigator to remain in business; however, there are few contractual and institutional measures in effect to allow this trade-off to occur at this time. The intent of this plan is to provide water or the conservation means to meet all projected water demands throughout the planning period.

Appendix 5A

Texas Commission on Environmental Quality 303(d)
List of Impaired Waters

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APPENDIX 5A

Texas Commission on Environmental Quality
303(d)
List of Impaired Waters

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2008 Texas 303(d) List (March 19, 2008)

As required under Sections 303(d) and 304(a) of the federal Clean Water Act, this list identifies the water bodies in or bordering Texas for which effluent limitations are not stringent enough to implement water quality standards, and for which the associated pollutants are suitable for measurement by maximum daily load.

In addition, the TCEQ also develops a schedule identifying Total Maximum Daily Loads (TMDLs) that will be initiated in the next two years for priority impaired waters. Issuance of permits to discharge into 303(d)-listed water bodies is described in the TCEQ regulatory guidance document *Procedures to Implement the Texas Surface Water Quality Standards* (August 2002, RG-194).

Impairments are limited to the geographic area described by the Assessment Unit and identified with a six or seven-digit AU_ID. A TMDL for each impaired parameter will be developed to allocate pollutant loads from contributing sources that affect the parameter of concern in each Assessment Unit. The TMDL will be identified and counted using a four or five-digit SegID. Water Quality permits that are issued before a TMDL is approved will not increase pollutant loading that would contribute to the impairment identified for the Assessment Unit.

Information Provided

SegID and Name:

The unique identifier (SegID), segment name, and location of the water body. The SegID may be one of two types of numbers. The first type is a classified segment number (4 digits, e.g., 0218), as defined in Appendix A of the Texas Surface Water Quality Standards (TSWQS). The second type (five digits, e.g., 0218A) is a partially classified water body described in Appendix D of the TSWQS, or an unclassified water body, not defined in the TSWQS, though associated with a classified water body because it is in the same watershed. The segment name and description immediately follow SegID.

Identifies the assessment unit (AU_ID, six or seven digits, e.g., 0101A_01) and describes the location of the specific area in which one or more water quality standards are not met.

Pollutants or water quality conditions that assessment procedures indicate do not meet assigned water quality standards.

Category:

In the 2008 Assessment, one of three subcategories was assigned to each impaired parameter to provide information about water quality status and management activities on that water body. The categories are defined below:

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.

Category 5a - A TMDL is underway, scheduled, or will be scheduled.

Category 5b - A review of the water quality standards for this water body will be conducted - before a TMDL is scheduled.

Category 5c - Additional data and information will be collected before a TMDL is scheduled.

The assessment year the pollutant or water quality condition in this water body initially did not meet water quality standards as indicated in any of the areas assessed (AU_IDs).

Year First Listed:

2008 Texas 303(d) List (March 19, 2008)

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<u>06154_01</u> Lower 9 miles bacteria	5c	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<u>0701_01</u> From saltwater lock to 8 miles upstream depressed dissolved oxygen	5a	1996
<u>0701_02</u> From 8 miles upstream of saltwater lock to the confluence of N and S Forks Taylor Bayou depressed dissolved oxygen	5a	1996

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
07024_02 <i>Lower portion from SH82 to its confluence with Taylor Bayou</i> impaired fish community	5c	2002
	5c	1998
07024_03 <i>Upper portion from its headwaters at the Port Arthur Canal to SH82</i> toxicity in water	5c	1998
07024_04 <i>Drainage canal leading into Alligator Bayou approx. 0.8 miles north of SH82</i> toxicity in water	5c	1998

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
0803_01 <i>Lowermost portion of reservoir, adjacent to dam</i>		
pH sulfate	5c	2008
0803_02 <i>Lower portion of reservoir, East Wolf Creek</i>	5c	2006
sulfate	5c	2006
0803_03 <i>Lower portion of reservoir, East Willow Springs</i>	5c	2006
sulfate	5c	2006
0803_04 <i>Middle portion of reservoir, East Pointblank</i>	5c	2006
sulfate	5c	2006
0803_05 <i>Middle portion of reservoir, downstream of Kickapoo Creek</i>	5c	2006
sulfate	5c	2006
0803_06 <i>Middle portion of reservoir, centering on US 190</i>	5c	2008
pH sulfate	5c	2006
0803_07 <i>Upper portion of reservoir, west of Carlisle</i>	5c	2006
sulfate	5c	2006
0803_08 <i>Cove off upper portion of reservoir, East Trinity</i>	5c	2006
sulfate	5c	2006
0803_09 <i>West Carolina Creek cove, off upper portion of reservoir</i>	5c	2006
sulfate	5c	2006
0803_10 <i>Upper portion of reservoir, centering on SH 19</i>	5c	2006
sulfate	5c	2006
0803_11 <i>Riverine portion of reservoir, centering on SH 21</i>	5c	2006
sulfate	5c	2006
0803_12 <i>Remainder of reservoir</i>	5c	2006
sulfate	5c	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
0804C_01 <i>Upper half of bayou</i> depressed dissolved oxygen	5b	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
0804G_01 <i>Entire Segment</i> depressed dissolved oxygen impaired macrobenthic community	5c	2006
	5c	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>0805_01</i> 25 mile reach near FM 85 PCBs in edible tissue	5a	2002
<i>0805_02</i> 25 mile reach near SH 34 PCBs in edible tissue	5a	2002
<i>0805_03</i> 11 mile reach near S. Loop 12 bacteria	5a	1996
PCBs in edible tissue	5a	2002
<i>0805_04</i> <i>Upper 8 miles:</i> bacteria	5a	1996
PCBs in edible tissue	5a	2002
<i>0805_05</i> <i>Remainder of segment</i> PCBs in edible tissue	5a	2002
<i>From 15.57 mi. upstream of SH 34 to 4.71 mi. downstream of S Loop 12</i> PCBs in edible tissue	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>0810_01</i> Five mile stretch of Sycamore Creek running upstream from confluence with the W. Fork of Trinity River to confluence with Echo Lake Tributary in Fort Worth bacteria	5a	2006
<i>0810_01</i> Lower 25 miles of segment	5a	1998
<i>0810A_01</i> Fifteen mile stretch of Big Sandy Creek running from confluence with Waggoner Creek to FM 1810 West of Abond. Wise Co. bacteria	5a	2006
<i>0810B_01</i> Eighteen mile stretch of Garrett Creek running upstream from confluence with Salt Creek to Wise County Road approximately 14 miles upstream of SH 4, Wise Co. bacteria	5a	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>0806_01</i> Marine Creek, from the confluence with W. Fork Trinity River 2 miles upstream to Tennyile Bridge Rd. in Ft. Worth bacteria	5a	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>0810C_01</i> Eight mile stretch of Martin Branch running upstream from confluence with Center Creek to FM 730 south of Decatur, Wise County. bacteria	5a	2006
<i>0810D_01</i> Eleven mile stretch of Salt Creek running upstream from confluence with Garrett Creek, Wise County. bacteria	5a	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>0812_01</i> Lower 2.5 miles of segment chloride depressed dissolved oxygen total dissolved solids	5b	1998
<i>0812_02</i> Upper 60 miles of segment total dissolved solids chloride	5b	1998

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>0818_01</i> pH	<i>167C</i>	1974
<i>0818_02</i> pH	<i>Caney Creek cove</i>	2002
<i>0818_03</i> pH	<i>Clear Creek cove</i>	2002
<i>0818_04</i> pH	<i>Lower portion of reservoir east of Key Ranch Estates</i>	2002
<i>0818_05</i> pH	<i>Cove off lower portion of reservoir adjacent to Clearview Estates</i>	2002
<i>0818_06</i> pH	<i>Middle portion of reservoir downstream of Twin Creeks cove</i>	2002
<i>0818_07</i> pH	<i>Twin Creeks cove</i>	2002
<i>0818_08</i> pH	<i>Prairie Creek cove</i>	2002
<i>0818_09</i> pH	<i>Upper portion of reservoir adjacent to Lacy Fork cove</i>	2002
<i>0818_11</i> pH	<i>Upper portion of reservoir east of Tolosa</i>	2002
<i>0818_12</i> pH	<i>Uppermost portion of reservoir downstream of Kings Creek</i>	2002
<i>0819_01</i> sulfate total dissolved solids chloride		

Category	Year First Listed
5c	2002

Category	Year First Listed
5a	2006

Category	Year First Listed
5a	2006

Category	Year First Listed
5b	1996

Category	Year First Listed
5b	1998

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>0838C_01</i> Entire segment. bacteria	5c	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>0841D_01</i> Entire segment. bacteria	5a	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>0841I_01</i> Lower 1/4 miles of segment bacteria	5a	1996
PCBs in edible tissue	5a	1996
<i>0841L_02</i> Upper 1/3 miles of segment PCBs in edible tissue	5a	1996

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>0841E_01</i> Entire segment. bacteria	5c	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>0841F_01</i> Entire segment. bacteria	5c	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>0841R_01</i> Entire segment. bacteria	5a	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>0841C_01</i> Entire segment. bacteria	5a	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>0841G_01</i> Entire segment. bacteria	5a	2006

Category	Year First Listed
5a	2006

Category	Year First Listed
5a	2006

Category	Year First Listed
5c	2006

Category	Year First Listed
5a	2006

Category	Year First Listed
5c	2006

Area	Category	Year First Listed
1001_01 <i>Entire segment impaired macrobenthic community</i>	5c	2006
1001_02 <i>From US Hwy 90 to IH 10</i>	5a	2000
1001_02 <i>dioxin in edible tissue</i>	5a	2000
1001_02 <i>PCBs in edible tissue</i>	5a	2002
1002_06 <i>Confluence with Spring Creek to West Lake Houston Pkwy</i>	5a	2006

Area	Category	Year First Listed
1003_01 <i>Confluence with Caney Creek upstream to US 59 bacteria</i>	5a	2006
1003_02 <i>US Hwy 59 to 25 miles upstream (just upstream of Clear Creek confluence) bacteria</i>	5a	2006
1003_03 <i>25 miles upstream of US 59 to US 190 (upper segment boundary) bacteria</i>	5a	2006
1004_02 <i>IH 45 to the Spring Creek confluence bacteria</i>	5a	1996
1004D_01 <i>Confluence with West Fork San Jacinto River upstream to confluence of the East and West Forks of Crystal Creek bacteria</i>	5a	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1004E_02 From Airport Rd to confluence with West Fork San Jacinto River</i> bacteria	5a	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1005_01 Downstream I-10 to Lynchburg Ferry Road</i> dioxin in edible tissue PCBs in edible tissue	5a	1996
<i>1005_02 Lynchburg Ferry Road to Goose Island</i> dioxin in edible tissue PCBs in edible tissue	5a	2002
<i>1005_03 Goose Island to SH 146</i> dioxin in edible tissue PCBs in edible tissue	5a	1996
<i>1005_04 SH 146 to Morgans Point</i> dioxin in edible tissue PCBs in edible tissue	5a	2002
<i>1005_05 Goodyear Creek Tidal</i> bacteria depressed dissolved oxygen PCBs in edible tissue dioxin in edible tissue	5c	2006
		5c
		5a
		2002
		5a
		1996
<i>1006D_01 From the confluence with Greens Bayou to US 59</i> bacteria	5a	2002
<i>1006D_02 From Hirsch Road to Homestead Road</i> bacteria	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
1006F_01 Entire water body bacteria	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
1007_01 <i>Houston Ship Channel/Buffalo Bayou Tidal</i> dioxin in edible tissue PCBs in edible tissue bacteria	5a 5a 5c	1996 2002 2006
1007_02 <i>Sims Bayou Tidal (upstream of SH 35 to Houston Ship Channel confluence)</i> dioxin in edible tissue PCBs in edible tissue	5a	1996
1007_03 <i>Hunting Bayou Tidal (I-10 to confluence with Houston Ship Channel)</i> dioxin in edible tissue PCBs in edible tissue	5a	2002
1007_04 <i>Brays Bayou Tidal downstream of I-45 to confluence with the Houston Ship Channel</i> dioxin in edible tissue PCBs in edible tissue	5a	1996
1007_05 <i>Vince Bayou Tidal (SH 225 to confluence with the Houston Ship Channel)</i> dioxin in edible tissue PCBs in edible tissue bacteria	5a 5a 5c	2002 2002 2006
1007_06 <i>Berry Bayou Tidal (2.4 km upstream of the Sims Bayou confluence)</i> dioxin in edible tissue PCBs in edible tissue	5a 5a	1996 2002
1007_07 <i>Buffalo Bayou (US 59 to upstream of 69th Street WWTP)</i> dioxin in edible tissue PCBs in edible tissue bacteria	5a 5a 5c	1996 2002 2006
1007_08 <i>Little Vince Bayou Tidal (From confluence with Vince Bayou to SH 25)</i> dioxin in edible tissue PCBs in edible tissue	5a 5a	1996 2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1007A_01 From confluence with an unnamed flood control ditch near Corsair St to the confluence with Sims Bayou bacteria</i>	5c	2006
<i>1007D_02 From Hiram Clark to 11 miles upstream of the confluence with the Houston Ship Channel bacteria</i>	5a	2002
<i>1007D_03 From 11 miles upstream of the Houston Ship Channel confluence to SH 35 bacteria</i>	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1007B_01 From 11.5km upstream of confluence with Brays Bayou Tidal to SH 6 bacteria</i>	5a	2002
<i>1007B_02 SH 6 to Clodine Road bacteria</i>	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1007D_01 From 0.4 miles north of Bellway 8 to Hiram Clark bacteria</i>	5a	2002
<i>1007E_01 Entire water body bacteria</i>	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1007C_01 From Harris County line to confluence with Brays Bayou bacteria</i>	5a	2002
<i>1007F_01 1.5 miles upstream from confluence with Sims Bayou to SH 3 bacteria</i>	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1007G_01 Entire water body bacteria</i>	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1007H_01</i> Entire water body bacteria	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1007I_01</i> Entire water body bacteria	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>From just downstream of South Lockwood Drive to the confluence with Brays Bayou</i> depressed dissolved oxygen bacteria	5c 5a	2002 2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1007L_01</i> Entire perennial portion of water body bacteria	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1007M_01</i> Entire water body bacteria	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1007N_01</i> Entire water body bacteria	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1007O_01</i> Entire water body bacteria depressed dissolved oxygen	5a 5c	2002 2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1007R_01</i> <i>From Bain Street to Sayers Street (South Fork)</i>		
bacteria	5a	2002
depressed dissolved oxygen	5c	2002
<i>1007R_02</i> <i>From just east of Elysian Street to Falls Street (North Fork)</i>		
bacteria	5a	2002
<i>1007R_03</i> <i>From Falls Street to Loop 610 East</i>		
bacteria	5a	2002
<i>1007R_04</i> <i>From Loop 610 East to IH 10</i>		
bacteria	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1008H_01</i> <i>Entire water body</i>		
bacteria	5a	2006
<i>1008_01</i> <i>Upper portion of segment to downstream of US 290</i>		
bacteria	5a	1996
<i>1009_02</i> <i>US 290 to SH 249</i>		
bacteria	5a	1996
<i>1009_03</i> <i>SH 249 to IH 45</i>		
bacteria	5a	1996
<i>1009_04</i> <i>IH 45 to confluence with Spring Creek</i>		
bacteria	5a	1996

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1008B_01</i> <i>From Old Conroe Road to the confluence with Bear Branch</i>		
bacteria	5a	2006
<i>1009C_01</i> <i>From an unnamed lake 3.3 miles southeast of Telge Road to the confluence with Cypress Creek</i>		
bacteria	5c	2006
<i>1009D_01</i> <i>Entire water body</i>		
bacteria	5c	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1009E_01</i> Entire water body bacteria	5a	2006
<i>1010_02</i> FM 1097 to SH 105 bacteria	5a	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1010_04</i> FM 2090 to lower segment boundary bacteria	5a	2006
<i>1011_02</i> US Hwy 59 to confluence with Caney Creek bacteria	5a	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1014_01</i> Entire segment bacteria	5a	1996

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1014_01</i> Confluence with South Mayde Creek to a point upstream of an unnamed tributary north of Langenthal Road bacteria	5a	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1013A_01</i> <i>From the confluence of White Oak Bayou upstream to the</i> <i>RR Tracks north of IH 610</i> <i>bacteria</i> <i>depressed dissolved oxygen</i>	5a 5c	2002 2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1013C_01</i> <i>Entire water body</i> <i>bacteria</i>	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1014_01</i> <i>Entire segment</i> <i>bacteria</i>	5a	1996

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1014_01</i> <i>Confluence with South Mayde Creek to a point upstream of</i> <i>an unnamed tributary north of Langenthal Road</i> <i>bacteria</i>	5a	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1014B_01 From SH6 to the confluence with Willow Fork Buffalo Bayou bacteria</i>	5a	2006
<i>1014K_02 From south of Clay Road upstream to north of Tanner Road bacteria</i>	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1014E_01 Confluence with Bear Creek upstream to the confluence with Dinner Creek bacteria</i>	5a	2006
<i>1014L_01 Confluence with Buffalo Bayou upstream to the channelization south of Frazz Rd. bacteria</i>	5a	2006

Area
1014H_01 From the confluence with Buffalo Bayou upstream to the confluence with an unnamed tributary 0.62 km east of Bunker-Cypress Road bacteria

Area
1014H_02 From the confluence with an unnamed tributary 0.62 km east of Bunker-Cypress Road upstream to an unnamed tributary 1.05 km south of Clay Road bacteria

<u>Category</u>	<u>Year First Listed</u>
5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1014M_01 Entire water body depressed dissolved oxygen bacteria</i>	5c	2002
<i>1014N_01 Entire water body bacteria</i>	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1014N_01 Entire water body bacteria</i>	5a	2002

Area	Category	Year First Listed
10140_01 Entire water body bacteria	5a	2002
1016_01 Upper segment boundary (FM 1960) to IH 45 bacteria	5a	1996
1016_02 IH 45 to US 59 bacteria	5a	1996

Area	Category	Year First Listed
1016_03 US 59 to lower segment boundary at the Halls Bayou confluence bacteria	5a	1996
1016A_02 From the confluence with Williams Gully upstream to 1.5 km north of Atascosita Road bacteria	5a	2002
1016A_03 From the confluence with Greens Bayou upstream to the confluence with Williams Gully bacteria	5a	2002

Area	Category	Year First Listed
1017_01 Huffsmith Rd to the confluence with Vogel Creek bacteria	5a	1996
1017_02 Vogel Creek to the Cole Creek confluence bacteria	5a	1996
1017_03 Cole Creek confluence to the Brickhouse Gully confluence bacteria	5a	1996
1017_04 Brickhouse Gully confluence to lower segment boundary bacteria	5a	1996

Area	Category	Year First Listed
1016B_01 Entire water body bacteria	5a	2002
1016C_01 Entire water body bacteria	5a	2002
1016D_01 Entire water body bacteria depressed dissolved oxygen	5a 5c	2002 2002

Category	Year First Listed
<i>10174_01</i> Entire water body bacteria	5a 2002
<i>1101_02</i> <i>Chigger Creek confluence to IH 45</i> bacteria	5a 1996
<i>1101_03</i> <i>IH45 to Cov Bayou confluence</i> bacteria	5a 1996

Category	Year First Listed
<i>1017B_02</i> <i>From Flintlock Street to confluence with White Oak Bayou</i> bacteria	5a 2002

Category	Year First Listed
<i>1017D_01</i> Entire water body bacteria	5a 2002

Category	Year First Listed
<i>1017E_01</i> Entire water body bacteria	5a 2002

Category	Year First Listed
<i>1101B_01</i> <i>From the headwaters to FM 528</i> bacteria	5a 2002
<i>1101B_02</i> <i>FM 528 to the confluence with Clear Creek</i> bacteria	5a 2002

Category	Year First Listed
<i>1101D_01</i> <i>From headwater to Abilene St.</i> bacteria	5c 2006
<i>1101D_02</i> <i>From Abilene St. to confluence with Clear Lake</i> bacteria	5c 2006

<u>Area</u>		<u>Category</u>	<u>Year First Listed</u>
<i>1102_01</i>	<i>Upper segment boundary (Rouen Road) to SH 288</i>		
bacteria		5a	1996
<i>1102_02</i>	<i>SH 288 to Hickory Slough confluence</i>		
bacteria		5a	1996
impaired fish community		5c	2006
<i>1102_03</i>	<i>Hickory Slough confluence to Turkey Creek confluence</i>		
bacteria		5a	1996
<i>1102_04</i>	<i>Turkey Creek confluence to Mary's Creek confluence</i>		
bacteria		5a	1996
<i>1102_05</i>	<i>Mary's Creek confluence to lower segment boundary</i>		
bacteria		5a	1996

<u>Area</u>		<u>Category</u>	<u>Year First Listed</u>
<i>1102A_01</i>	<i>Sunset Drive to SH35</i>		
bacteria		5a	2002
<i>1102A_02</i>	<i>Confluence with Clear Creek to Sunset Drive</i>		
bacteria		5a	2002

<u>Area</u>		<u>Category</u>	<u>Year First Listed</u>
<i>1102B_01</i>	<i>Entire segment</i>		
bacteria		5a	2002

<u>Area</u>		<u>Category</u>	<u>Year First Listed</u>
<i>1102C_01</i>	<i>From confluence with Clear Creek to (approx. 0.3 miles) upstream of CR 93</i>		
bacteria		5c	2006
<i>1102D_01</i>	<i>Confluence with Clear Creek to IH 45</i>		
bacteria		5c	2006
<i>1102E_01</i>	<i>Beamer Road to confluence with Clear Creek</i>		
bacteria		5c	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>From 2.5 miles downstream of FM 517 to the Borden's Gully confluence</i>		
bacteria	5a	1996
depressed dissolved oxygen	5a	1996
<i>From the Borden's Gully confluence to the Benson Bayou confluence</i>		
bacteria	5a	1996
depressed dissolved oxygen	5a	1996
<i>From the Benson Bayou confluence to the confluence with Gum Bayou</i>		
bacteria	5a	1996
depressed dissolved oxygen	5a	1996

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>From confluence with Dickinson Bayou Tidal to 0.37 miles upstream of FM 646</i>		
bacteria	5a	2002
<i>From lower segment boundary upstream to FM 517</i>		
bacteria	5a	1996
depressed dissolved oxygen	5c	2006
<i>From FM 517 upstream to FM 528</i>		
bacteria	5a	1996

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>4 mi upstream South Texas Water Co. Canal to just above Ramsey Prison Unit</i>		
bacteria	5c	2006
<i>From just upstream of Ramsey Prison Unit (Cow Cr) to CR 290/S Walker St.</i>		
bacteria	5b	1996
depressed dissolved oxygen	5c	2006
<i>Entire water body</i>		
bacteria	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1113_01</i> <i>Upper segment boundary to confluence with Big Island Slough</i> depressed dissolved oxygen	5b	1996
<i>1113_02</i> <i>Big Island Slough confluence to Horsepen Bayou confluence</i> depressed dissolved oxygen bacteria	5b 5c	1996 2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1113A_01</i> <i>0.5 miles downstream of Genoa Red Bluff to Preston Road</i> bacteria depressed dissolved oxygen	5a 5c	1998 1998
<i>1113B_01</i> <i>Confluence with Armand Bayou to SH 3</i> bacteria	5c	2006
<i>1202H_01</i> <i>Entire water body</i> bacteria	5c	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1202A_01</i> <i>Upstream portion of water body to Whaley-Longpoint Road impaired fish community bacteria</i>	5b 5c	2006 2002
<i>1202B_01</i> <i>Downstream portion of water body to Whaley-Longpoint Road impaired fish community bacteria</i>	5b 5c	2006 2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1205_01</i> <i>Upstream portion of lake chloride</i>	5c	2008
<i>1205_02</i> <i>Portion of lake adjacent to the City of Oak Trail Shores chloride</i>	5c	2008
<i>1205_03</i> <i>Portion of lake adjacent to the City of Granbury chloride</i>	5c	2008
<i>1205_04</i> <i>Portion of lake downstream of Granbury chloride</i>	5c	2008
<i>1205_05</i> <i>Downstream portion of lake chloride</i>	5c	2008

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1206_01</i> <i>Downstream portion of segment chloride impaired macrobenthic community</i>	5b 5c	2006 2008
<i>1206_02</i> <i>Middle Portion of Segment chloride impaired macrobenthic community</i>	5b 5c	2006 2008
<i>1206_03</i> <i>Upstream portion of segment chloride</i>	5b	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>I208_01</i> <i>From confluence with Possum Kingdom upstream to confluence with Spring Branch</i> bacteria	5c	2008
<i>I208_02</i> <i>Portion of segment from confluence with Spring Branch upstream to confluence with Fish Creek</i> bacteria	5c	2008
<i>I208_04</i> <i>From confluence with Boggy Creek upstream to confluence with Millers Creek</i> bacteria	5c	2008
<i>I208_05</i> <i>From confluence with Millers Creek upstream to confluence with Lake Creek</i> bacteria	5c	2008

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>I209B_01</i> <i>Entire reservoir toxicity in sediment</i>	5c	2000
<i>I209C_01</i> <i>Entire water body</i> bacteria	5a	1999

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>I209_02</i> <i>From confluence with Rocky Creek to confluence with Sandy Branch</i> bacteria	5a	2002
<i>I209_03</i> <i>From confluence with Sandy Branch to confluence with Shepherd Branch</i> bacteria	5a	2002
<i>I209_05</i> <i>From confluence with Camp Creek to 25 miles upstream</i> bacteria	5a	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>I209D_01</i> <i>entire water body</i> bacteria	5c	2006
<i>I209E_01</i> <i>Entire water body</i> bacteria	5c	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>I209A_01</i> <i>Entire reservoir toxicity in sediment</i>	5c	1999

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1209G_01</i> Entire water body bacteria	5c	2002
[REDACTED]		

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1209H_01</i> From the lower end of the creek to FM 2096 bacteria	5c	2006
<i>1209H_02</i> From FM 2096 to Twin Oak Reservoir dam bacteria	5c	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1209I_01</i> From lower end to confluence with Dry Creek bacteria	5c	2002
[REDACTED]		

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1209J_01</i> Entire water body bacteria	5c	2002
[REDACTED]		

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1209K_02</i> From the confluence with Willow Creek upstream to the end of the water body bacteria	5c	2002
[REDACTED]		

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1209L_01</i> entire water body bacteria	5c	2006
[REDACTED]		

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1210A_01</i> Entire water body bacteria	5c	2002
[REDACTED]		

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1211A_02</i> Upper 25 miles bacteria	5c	2002
[REDACTED]		

<u>Area</u>		
	<u>Category</u>	<u>Year First Listed</u>
<i>I2I2_01</i>		
<i>Eastern end of reservoir near dam</i>		
pH depressed dissolved oxygen	5c	2008
	5c	2002
<i>I2I2_03</i>		
<i>Middle of reservoir near Birch Creek State Park</i>		
pH	5c	2002

<u>Area</u>		
	<u>Category</u>	<u>Year First Listed</u>
<i>I2I3_01</i>		
<i>From the confluence with Brazos River upstream to conflu.</i>		
<i>bacteria</i>		
	5c	2002
<i>I2I4_02</i>		
<i>From confluence with Alligator Creek upstream to Lake</i>		
<i>Granger</i>		
sulfate	5c	2006
chloride	5c	2008

<u>Area</u>		
	<u>Category</u>	<u>Year First Listed</u>
<i>I2I5_01</i>		
<i>Lower 2.5 miles</i>		
<i>bacteria</i>		
	5c	2002

<u>Area</u>		
	<u>Category</u>	<u>Year First Listed</u>
<i>I2I7_04</i>		
<i>From the FM 1690 crossing to the CR 117 crossing</i>		
<i>bacteria</i>		
	5c	2002
<i>I2I7_05</i>		
<i>From CR 117 crossing to the upper end of the segment</i>		
<i>bacteria</i>		
	5c	2002

<u>Area</u>		
	<u>Category</u>	<u>Year First Listed</u>
<i>I2I7_01</i>		
<i>From the confluence with City of Cameron WWTP receiving water</i>		
<i>bacteria</i>		
	5c	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1221_01</i> Entire segment bacteria	5a	1996
<i>1221_04</i> From the confluence with Plum Creek, upstream to the confluence with Pecan Creek	5a	1996
<i>1221_05</i> From confluence with Pecan Creek, upstream to confluence with South Leon Creek	5a	1996
<i>1221_06</i> From confluence with South Leon Creek upstream to confluence with Walnut Creek	5a	1996
<i>1221_07</i> From the confluence with Walnut Creek upstream to Lake Proctor	5a	1996

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1221A_01</i> Downstream portion, from confluence with Leon River upstream to conf. with unnamed tributary, approx. 1.0 mile N. of Comanche County Line	5c	2006
depressed dissolved oxygen bacteria	5c	2004
<i>1221A_02</i> From confluence with unnamed tributary, upstream to end of water body, approx. 1.0 mile north west of Dublin	5c	2004
bacteria		
<i>1221B_01</i> Entire water body	5c	2006
bacteria		
<i>1221C_01</i> Entire water body	5c	2006
bacteria		

Category	Year First Listed
<u>Area</u> <i>I222ID_01</i> From confluence with Leon River, upstream to confluence with Armstrong Creek bacteria	5c 2006
<u>Area</u> <i>I222ID_02</i> From confluence with Armstrong Creek, upstream to headwaters of water body bacteria	5c 2006

Category	Year First Listed
<u>Area</u> <i>I222IF_01</i> entire water body bacteria	5c 2006

Category	Year First Listed
<u>Area</u> <i>I222IA_01</i> Entire creek bacteria	5c 1999

Category	Year First Listed
<u>Area</u> <i>I222IB_01</i> Entire water body bacteria	5c 2006

Category	Year First Listed
<u>Area</u> <i>I222IE_01</i> Downstream portion of segment bacteria	5c 2006

Category	Year First Listed
<u>Area</u> <i>I222II_01</i> Entire Segment bacteria depressed dissolved oxygen	5c 2006

Category	Year First Listed
<u>Area</u> <i>I223I_01</i> entire water body bacteria	5c 2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1226B_01</i> Entire water body depressed dissolved oxygen	5c	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1226C_01</i> Entire water body bacteria	5c	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1226F_01</i> Entire water body bacteria	5c	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1226G_01</i> entire water body bacteria	5c	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1227_01</i> <i>Downstream portion, including Mustang Creek confluence</i>		
chloride	5b	2006
sulfate	5b	2002
total dissolved solids	5b	2006
<i>1227_02</i> <i>Upstream portion, to Lake Pat Cleburne</i>		
chloride	5b	2006
sulfate	5b	2002
total dissolved solids	5b	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1229_01</i> <i>Lower 7 miles</i>		
sulfate	5c	2008
total dissolved solids	5c	2008
<i>1229_02</i> <i>Middle 25 miles</i>		
chloride	5c	2008
sulfate	5c	2008
total dissolved solids	5c	2008
<i>1229_03</i> <i>Upper 25 miles</i>		
chloride	5c	2008
sulfate	5c	2008
total dissolved solids	5c	2008

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1232B_01</i> <i>From the confluence with Clear Fork Brazos upstream to city of Abilene WWTP receiving water</i>		
bacteria	5c	2006

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
I238_01 25 miles near Hwy 83 chloride	5b	2002
I238_02 25 miles near Hwy 380 at Swenson chloride	5b	2002
I238_03 Remainder of segment chloride	5b	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
I24A_01 Entire segment total dissolved solids	5c	2006
I24A_02 Remainder of segment chloride	5c	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
I24B_01 Entire segment total dissolved solids	5c	2006
I24B_02 Remainder of segment chloride	5c	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
I24C_01 Downstream portion, downstream of Sanderson Farms receiving water bacteria	5c	2006
I24C_02 Upstream portion, upstream of Sanderson Farms receiving water bacteria	5c	2006

	<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
1242D_01	<i>Portion downstream of the confluence with Still Creek</i> bacteria	5c	2002
1242D_02	<i>Portion of segment upstream of confluence with Still Creek</i> bacteria depressed dissolved oxygen	5c	2002 2004

	<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
	<i>1242L_01</i>	<i>Entire water body</i> bacteria	5a 2002
	<i>1242M_01</i>	<i>Entire water body</i> bacteria	5a 2002
	<i>1242N_01</i>	<i>Downstream portion of water body, from confluence with</i> <i>Brazos River upstream to confl. with Little Tehuacana</i> Creek bacteria	5a 2002
	<i>1242O_01</i>	<i>Entire water body</i> bacteria	5c 2006
	<i>1242K_01</i>	<i>Entire water body</i> bacteria	5a 2002

Category	Year First Listed
5c	2002

Category	Year First Listed
5c	2006

Category	Year First Listed
5a	2006

Category	Year First Listed
5c	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1248C_01</i> Entire water body bacteria	5c	2004

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1255_01</i> <i>Lower portion of segment downstream of Stephenville</i> bacteria	5c	1996
<i>1255_02</i> <i>Upper portion of segment, upstream of Stephenville</i> bacteria depressed dissolved oxygen	5c	1996
	5c	2008

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1255D_01</i> Entire water body bacteria	5c	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1255F_01</i> Entire water body bacteria	5c	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1255G_01</i> Entire water body bacteria	5c	2002

<u>Area</u>	<u>Category</u>	<u>Year First Listed</u>
<i>1255H_01</i> Entire water body bacteria	5c	2002

Category	Year First Listed
<u>I301_01</u> <i>Entire Segment</i> bacteria	5c 2006
<u>I302_B_02</u> <i>Upper 15 miles of segment</i> bacteria	5c 2006

Category	Year First Listed
<u>I302_01</u> <i>Lower 25 miles of segment</i> bacteria	5a 2002
<u>I302_02</u> <i>25 miles from just upstream of FM 442 to downstream of US 904</i> bacteria	5a 2002
<u>I302_03</u> <i>25 miles from downstream of US 904 to upstream of FM 3013</i> bacteria	5a 2002

Category	Year First Listed
<u>I304_01</u> <i>Lower 25 miles of segment</i> bacteria	5c 2006
<u>I305_02</u> <i>25 miles surrounding SH 35</i> bacteria depressed dissolved oxygen	5a 2002
<u>I305_03</u> <i>Upper 35 miles of segment</i> depressed dissolved oxygen	5b 1999

Category	Year First Listed
<u>I40_01</u> <i>Entire segment</i> bacteria	5a 2006

**Neches River Basin
Summary Tables**

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Basin Tabular Summaries

For each basin, there are two documents: Tabular Summary of Use Support and Tabular Summary of Water Quality Concerns

Tabular Summary of Use Support

This series of tables provides a quick, detailed reference to water quality status within a basin. The summary identifies the indicators used to assess support of designated uses. For each indicator, support codes are used to identify the level of attainment as fully supporting (FS), partial supporting (PS), not supporting (NS), not assessed (NA), and not applicable (X). Indicators that contribute to partially supporting and not supporting uses are in bold type.

Tabular Summary of Water Quality Concerns

This series of tables provides a quick, detailed reference to water quality problems within a basin. The summary identifies the indicators used to assess water quality concerns. For each indicator, the presence of a water quality problem is identified as a concern (C), no concern (NC), threatened (TH), not assessed (NA), or not applicable (X). Indicators that contribute to concerns are in bold type.

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Neches River Basin Tabular Summary of Use Support

Neches River Basin Tabular Summary of Use Support (continued)

DESIGNATED USE SUPPORT		GENERAL USE SUPPORT									
Key to support codes		Water Temperature					pH				
FS = fully supporting		FS	FS	NA	NA	FS	FS	FS	FS	FS	FS
PS = partially supporting		X	X	X	X	X	X	X	X	X	X
NA = not supporting		X	X	FS	X	FS	X	X	X	X	X
NA = not assessed											
X = not applicable											
0601A	Neches River Tidal Canal	Dissolved Oxygen grab min	FS	FS	NS	NA	FS	FS	FS	FS	NA
0601B	Neches River Below	Dissolved Oxygen 24-hour avg	NA								
0601C	B. A. Seinebaugh Lake	Dissolved Oxygen 24-hour min	NA								
0602	Neches River Below	Metals in water	FS	NA	FS	NA	NA	NS	NA	NA	NA
0603	B. A. Seinebaugh Lake	Organics in water	NA								
0603A	Sandy Creek	Water Toxicity Tests	NA								
0603B	Wolff Creek	Sediment Toxicity Tests	NA								
0604	Noches River Below	Habitat	NA								
0604A	Cedar Creek	Macrobenthos Community	NA								
0604B	Hummitume Creek	Fish Community	NA								
0604C	Jack Creek	Fish Consumption Use									
0604D	Piney Creek	Advisories and Closures	FS	NA	FS	NA	PS	NA	NA	NA	NA
0605	Human Health Criteria	Human Health Criteria	NA	NA	FS	NA	NA	NA	FS	NA	NA

Neches River Basin Tabular Summary of Use Support (continued)

DESIGNATED USE SUPPORT											
Contact Recreation Use	FS	FS	NS	FS	FS	NA	NS	NA	FS	FS	FS
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	FS	X	X	X	X	X	X	FS	FS	X	FS
Aquatic Life Use											
Dissolved Oxygen grab min	FS	FS	FS	FS	FS	NA	FS	FS	FS	FS	FS
Dissolved Oxygen 24-hour avg	NA										
Dissolved Oxygen 24-hour min	NA										
Metals in water	NA	NA	NA	NA	NA	NA	FS	FS	NA	NA	FS
Organics in water	NA										
Water Toxicity Tests	NA										
Sediment Toxicity Tests	NA										
Habitat	NA	FS									
Macrobenthos Community	NA										
Fish Community	FS	NA	NS								
Fish Consumption Use											
Advisories and Closures	NA	NA	NA	NA	NA	NA	PS	NA	PS	NA	PS
Human Health Criteria	NA	NA	NA	NA	NA	NA	FS	FS	NA	FS	NA

Neches River Basin Tabular Summary of Use Support (continued)

DESIGNATED USE SUPPORT											
Water Temperature	FS	X	X	X	X	X	FS	FS	X	FS	NA
pH	PS	X	X	X	X	X	FS	X	X	FS	NA
Chloride	FS	X	X	X	X	X	FS	X	X	FS	FS
Sulfate	FS	X	X	X	X	X	FS	FS	X	FS	FS
Total Dissolved Solids	FS	X	X	X	X	X	FS	FS	X	FS	FS
GENERAL USE SUPPORT											
Water Temperature		X	X	X	X	X	X	FS	X	FS	NA
pH			X	X	X	X	X	FS	X	FS	NA
Chloride			X	X	X	X	X	FS	X	FS	FS
Sulfate			X	X	X	X	X	FS	X	FS	FS
Total Dissolved Solids		X	X	X	X	X	FS	FS	X	FS	FS

Neches River Basin Tabular Summary of Use Support (continued)

Neches River Basin Tabular Summary of Water Quality Concerns

<p>Key to support codes</p> <p>FS = fully supporting</p> <p>PS = partially supporting</p> <p>NS = not supporting</p> <p>NA = not assessed</p> <p>X = not applicable</p>	<p>6015A Papermill Creek</p>
DESIGNATED USE SUPPORT	
Contact Recreation Use	FS
Noncontact Recreation Use	X
Public Water Supply Use	X
Aquatic Life Use	
Dissolved Oxygen grab min	FS
Dissolved Oxygen 24-hour avg	NA
Dissolved Oxygen 24-hour min	NA
Metals in water	FS
Organics in water	NA
Water Toxicity Tests	NA
Sediment Toxicity Tests	NA
Habitat	NA
Macrobenthos Community	NA
Fish Community	NA
Fish Consumption Use	
Advisories and Closures	NA
Human Health Criteria	FS
GENERAL USE SUPPORT	
Water Temperature	X
pH	X
Chloride	X
Sulfate	X
Total Dissolved Solids	X

Neches River Basin Tabular Summary of Water Quality Concerns (continued)

WATER QUALITY CONCERNS											
Key to concern codes											
NC = no concern C = concern TH = threatened NA = not assessed X = not applicable											
Sediment Contaminants	NA										
Fish Tissue Contaminants	NA										
Narrative	NC										
Nutrient Enrichment											
Ammonia Nitrogen	NA	NC	NC	NA	C	C	NC	NA	NC	NC	NC
Nitrite + Nitrate Nitrogen	NA	NC	NC	NA	C	NC	C	NA	NC	NC	NC
Orthophosphorus	NA	NA	NA	NC	NA	NC	NA	NA	NA	NA	NA
Total Phosphorus	NA	NA	NA	NC	NA	NC	NA	NA	NA	NA	NA
Algal Growth											
Chlorophyll <i>a</i>	NA	NA	NA	NC	NA	NC	NA	NA	NA	NA	NA
Public Water Supply											
Finished Water: Chloride	X	X	X	X	NC	X	NC	X	X	X	X
Finished Water: Sulfate	X	X	X	X	NC	X	NC	X	X	X	X
Finished Water: TDS	X	X	X	X	NC	X	NC	X	X	X	X
Surface Water: Chloride	X	X	X	X	NC	X	NC	X	X	X	X
Surface Water: Sulfate	X	X	X	X	NC	X	NC	X	X	X	X
Surface Water: TDS	X	X	X	NC	X	NC	X	X	X	NC	NC

Neches River Basin Tabular Summary of Water Quality Concerns (continued)

WATER QUALITY CONCERNS											
Key to concern codes											
NC = no concern C = concern TH = threatened NA = not assessed X = not applicable											
Sediment Contaminants	NA										
Fish Tissue Contaminants	NA										
Narrative	NC										
Nutrient Enrichment											
Ammonia Nitrogen	NC	NC	NC	NC	NC	NA	NC	NA	NC	NC	NA
Nitrite + Nitrate Nitrogen	NC	NC	NC	NC	NC	NA	NC	NA	NC	NC	NA
Orthophosphorus	NC	NA	NC	NC	NA						
Total Phosphorus	NC	NA	NC	C	NA						
Algal Growth											
Chlorophyll <i>a</i>	NC	NA	NC								
Public Water Supply											
Finished Water: Chloride	NC	X	X	X	X	X	X	X	NC	NC	X
Finished Water: Sulfate	NC	X	X	X	X	X	X	X	NC	NC	X
Finished Water: TDS	NC	X	X	X	X	X	X	X	NC	NC	X
Surface Water: Chloride	NC	X	X	X	X	X	X	X	NC	NC	X
Surface Water: Sulfate	NC	X	X	X	X	X	X	X	NC	NC	X
Surface Water: TDS	NC	X	X	X	X	X	X	X	NC	NC	X

Neches River Basin Tabular Summary of Water Quality Concerns (continued)

Neches River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes		WATER QUALITY CONCERNs									
NC	= no concern	Sediment Contaminants	NA								
C	= concern	Fish Tissue Contaminants	NA								
TH	= threatened	Narrative	NC								
NA	= not assessed										
X	= not applicable										
Public Water Supply		Finished Water: Chloride	X	X	X	X	X	X	X	X	NC
		Finished Water: Sulfate	X	X	X	X	X	X	X	X	NC
		Finished Water: TDS	X	X	X	X	X	X	X	X	NC
		Surface Water: Chloride	X	X	X	X	X	X	X	X	NC
		Surface Water: Sulfate	X	X	X	X	X	X	X	X	NC
		Surface Water: TDS	X	X	X	X	X	X	X	X	NC

Key to concern codes		WATER QUALITY CONCERNs									
NC	= no concern	Sediment Contaminants	NA								
C	= concern	Fish Tissue Contaminants	NA								
TH	= threatened	Narrative	NC								
NA	= not assessed										
X	= not applicable										
Water Quality Concerns											
Sediment Contaminants											
6011A East Fork Anegiehna River		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6011B La Nama Bayou		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6011C Mud Creek		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
6011D West Mud Creek		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6011E Lake Nagodoches		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6011F Attoyac Bayou		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6011G Waterlow Creek		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6011H Ragsdale Creek		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6011I La Nama Bayou		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6011J Lake Nagodoches		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6011K Attoyac Bayou		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6011L Lake Tyler		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6011M Pine Island Reservoir		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6011N Rayburn Reservoir/Sam Rayburn Reservoir		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6012 Atoyaac Bayou		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6012B Waterlow Creek		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6012C Pine Island Reservoir		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6013 Lake Tyler/Lake Tyler		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6014 Lake Jebechville		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6015 Angelina River/Sam Rayburn Reservoir		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nutrient Enrichment											
Ammonia Nitrogen		NC	C	NC	NA	NA	NA	NA	NA	C	C
Nitrite + Nitrate Nitrogen		NC	NC	C	NA	NA	NA	NA	NA	C	NC
Orthophosphorus		NA	NA	NA	NA	NA	NA	NA	NA	C	C
Total Phosphorus		NA	NA	NA	NA	NA	NA	NA	NA	C	NC
Algal Growth											
Chlorophyll <i>a</i>		NA	NA	NA	NA	NA	NA	NA	NA	NC	NC
Chlorophyll <i>a</i>		NA	NA	NA	NA	NA	NA	NA	NA	NC	NC

**Neches - Trinity Coastal Basin
Summary Tables**

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Basin Tabular Summaries

For each basin, there are two documents: Tabular Summary of Use Support and Tabular Summary of Water Quality Concerns

Tabular Summary of Use Support

This series of tables provides a quick, detailed reference to water quality status within a basin. The summary identifies the indicators used to assess support of designated uses. For each indicator, support codes are used to identify the level of attainment as fully supporting (FS), partial supporting (PS), not supporting (NS), not assessed (NA), and not applicable (X). Indicators that contribute to partially supporting and not supporting uses are in bold type.

Tabular Summary of Water Quality Concerns

This series of tables provides a quick, detailed reference to water quality problems within a basin. The summary identifies the indicators used to assess water quality concerns. For each indicator, the presence of a water quality problem is identified as a concern (C), no concern (NC), threatened (TH), not assessed (NA), or not applicable (X). Indicators that contribute to concerns are in bold type.

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Neches-Trinity Coastal Basin Tabular Summary of Use Support

DESIGNATED USE SUPPORT									
Contact Recreation Use	FS	NA	FS	FS	FS	FS	NA	NA	NA
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X
Public Water Supply Use	X	X	X	X	X	X	X	X	X
Aquatic Life Use									
Dissolved Oxygen grab min	FS	NA	FS	FS	FS	FS	FS	NA	
Dissolved Oxygen 24-hour avg	NA								
Dissolved Oxygen 24-hour min	NA								
Metals in water	NA								
Organics in water	NA								
Water Toxicity Tests	NA								
Sediment Toxicity Tests	NA								
Habitat	FS	NA	NA	NA	NA	NA	NA		
Macrobenthos Community	NA								
Fish Community	FS	NA	NA	NS	NA	NA	NA		
Fish Consumption Use									
Advisories and Closures	NA								
Human Health Criteria	NA								
GENERAL USE SUPPORT									
Water Temperature	FS	X	FS	X	FS	X	X	X	
pH	FS	X	FS	X	FS	X	X	X	
Chloride	FS	X	X	X	FS	X	X	X	
Sulfate	FS	X	X	X	FS	X	X	X	
Total Dissolved Solids	FS	X	X	X	FS	X	X	X	

Neches-Trinity Coastal Basin Tabular Summary of Water Quality Concerns

WATER QUALITY CONCERNs									
Sediment Contaminants	NA								
Fish Tissue Contaminants	NA	NC	NA						
Narrative	NC	NC	NC	C	NC	NC	NC	NC	NC
Nutrient Enrichment									
Ammonia Nitrogen	NC	NA	NC	NC	C	NA	NA	NA	
Nitrite + Nitrate Nitrogen	NC	NA	NC	NC	NC	NA	NA	NA	
Orthophosphorus	NC	NA	NC	NC	NC	NA	NA	NA	
Total Phosphorus	NC	NA	NC	NC	NC	NA	NA	NA	
Algal Growth									
Chlorophyll <i>a</i>	C	NA	NC	C	NC	C	NA	NA	NA
Public Water Supply									
Finished Water: Chloride	X	X	X	X	X	X	X	X	
Finished Water: Sulfate	X	X	X	X	X	X	X	X	
Finished Water: TDS	X	X	X	X	X	X	X	X	
Surface Water: Chloride	X	X	X	X	X	X	X	X	
Surface Water: Sulfate	X	X	X	X	X	X	X	X	
Surface Water: TDS	X	X	X	X	X	X	X	X	

Key to support codes
 FS = fully supporting
 PS = partially supporting
 NS = not supporting
 NA = not assessed
 X = not applicable

Key to concern codes
 NC = no concern
 C = concern
 TH = threatened
 NA = not assessed
 X = not applicable

**Trinity River Basin
Summary Tables**

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Basin Tabular Summaries

For each basin, there are two documents: Tabular Summary of Use Support and Tabular Summary of Water Quality Concerns

Tabular Summary of Use Support

This series of tables provides a quick, detailed reference to water quality status within a basin. The summary identifies the indicators used to assess support of designated uses. For each indicator, support codes are used to identify the level of attainment as fully supporting (FS), partial supporting (PS), not supporting (NS), not assessed (NA), and not applicable (X). Indicators that contribute to partially supporting and not supporting uses are in bold type.

Tabular Summary of Water Quality Concerns

This series of tables provides a quick, detailed reference to water quality problems within a basin. The summary identifies the indicators used to assess water quality concerns. For each indicator, the presence of a water quality problem is identified as a concern (C), no concern (NC), threatened (TH), not assessed (NA), or not applicable (X). Indicators that contribute to concerns are in bold type.

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Trinity River Basin Tabular Summary of Use Support

Trinity River Basin Tabular Summary of Use Support (continued)

Key to support codes		Trinity River Below										Trinity River Above										
FS = fully supporting PS = partially supporting NS = not supporting NA = not assessed X = not applicable		Trinity River Creek					Lake Livingston					Trinity River Below					Trinity River Above					
		0801	0802	0803	0804	0805	0806	0806A	0806B	0807	0808	0809	0810	0811	0812	0813	0814	0815	0816	0817	0818	0819
DESIGNATED USE SUPPORT																						
Contact Recreation Use	FS	FS	FS	FS	FS	FS	NA	FS	NA	NA	NA	NA	NA	NA	NS	FS	NA	NA	NA	NA	FS	NA
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	X	FS	FS	X	X	X	FS	X	X	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	X
Aquatic Life Use																						
Dissolved Oxygen grab min	FS	FS	FS	FS	FS	FS	FS	FS	NA	NA	NA	NA	NA	NA	FS	FS	NA	NA	FS	NA	NA	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	FS	FS	FS	FS	FS	FS	NA	NA	NA	NA	NA	NA	NA	FS	NA	NA	ES	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Consumption Use																						
Advisories and Closures	NA	NA	FS	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	FS	FS	NA	FS	FS	FS	FS	NA	NA	NA	NA	NA	NA	FS	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT																						
Water Temperature	FS	FS	FS	X	FS	X	FS	X	FS	X	X	X	X	NA	FS	FS	NA	FS	X	NA	FS	FS
pH	FS	FS	PS	X	FS	X	FS	X	X	X	NA	NA	FS	NA	FS	FS	X	NA	NA	NS	FS	
Chloride	X	FS	FS	X	FS	X	FS	X	FS	X	X	X	NA	NA	FS	FS	NA	X	NA	NA	FS	FS
Sulfate	X	FS	FS	X	FS	X	FS	X	FS	X	X	X	NA	NA	FS	FS	NA	X	NA	NA	FS	FS
Total Dissolved Solids	X	FS	FS	X	FS	X	FS	X	FS	X	X	X	NA	FS	FS	X	NA	FS	X	NA	FS	FS

Key to support codes		Trinity River Below										Trinity River Above										
FS = fully supporting PS = partially supporting NS = not supporting NA = not assessed X = not applicable		Trinity River Creek					Lake Livingston					Trinity River Below					Trinity River Above					
		0801	0802	0803	0804	0805	0806	0806A	0806B	0807	0808	0809	0810	0811	0812	0813	0814	0815	0816	0817	0818	0819
DESIGNATED USE SUPPORT																						
Contact Recreation Use	FS	FS	FS	FS	FS	FS	FS	NA	FS	NA	NA	NA	NA	NA	NA	NS	FS	NA	NA	NA	FS	NA
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	X	FS	FS	X	X	X	FS	X	X	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	X
Aquatic Life Use																						
Dissolved Oxygen grab min	FS	FS	FS	FS	FS	FS	FS	FS	NA	NA	NA	NA	NA	NA	NA	FS	FS	NA	NA	NA	NA	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	FS	FS	FS	FS	FS	FS	NA	NA	NA	NA	NA	NA	NA	FS	NA	NA	ES	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Consumption Use																						
Advisories and Closures	NA	NA	FS	NA	NA	NA	NA	NS	NS	NS	NS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	FS	FS	NA	FS	FS	FS	FS	FS	NA	NA	NA	NA	NA	FS	NA	NA	FS	NA	NA	NA	NA
GENERAL USE SUPPORT																						
Water Temperature	FS	FS	FS	X	FS	X	FS	X	FS	X	X	X	X	NA	FS	FS	NA	FS	X	NA	FS	FS
pH	FS	FS	PS	X	FS	X	FS	X	X	X	NA	NA	FS	NA	FS	FS	X	NA	NA	NS	FS	
Chloride	X	FS	FS	X	FS	X	FS	X	FS	X	X	X	X	NA	FS	FS	NA	X	NA	NA	FS	FS
Sulfate	X	FS	FS	X	FS	X	FS	X	FS	X	X	X	X	NA	FS	FS	NA	X	NA	NA	FS	FS
Total Dissolved Solids	X	FS	FS	X	FS	X	FS	X	FS	X	X	X	X	NA	FS	FS	X	NA	NA	NA	FS	FS

Trinity River Basin Tabular Summary of Use Support (continued)

DESIGNATED USE SUPPORT										
		Key to support codes								
		FS = fully supporting								
		PS = partially supporting								
		NS = not supporting								
		NA = not assessed								
		X = not applicable								
Contact Recreation Use	NA	NS	NA	NA	NA	FS	NA	NS	NA	FS
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	FS	X	FS	X	FS	X	X	X	X	FS
Aquatic Life Use										
Dissolved Oxygen grab min	FS	FS	FS	FS	FS	FS	NA	FS	FS	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Consumption Use										
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA	NA	NS	NS
Human Health Criteria	FS	FS	FS	FS	FS	NA	NA	NA	FS	NA
GENERAL USE SUPPORT										
Water Temperature	FS	X	FS	X	X	FS	X	X	FS	FS
pH	FS	X	FS	X	X	FS	X	X	FS	NA
Chloride	FS	X	FS	X	FS	X	X	FS	FS	NA
Sulfate	NA	X	FS	FS	X	X	X	FS	FS	NA
Total Dissolved Solids	FS	X	NA	X	FS	X	X	FS	FS	NA

Trinity River Basin Tabular Summary of Use Support (continued)

DESIGNATED USE SUPPORT										
		Key to support codes								
		FS = fully supporting								
		PS = partially supporting								
		NS = not supporting								
		NA = not assessed								
		X = not applicable								
Contact Recreation Use	NA	FS	NA	NA	NA	FS	NA	FS	NA	FS
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	FS	X	FS	X	FS	X	X	FS	X	FS
Aquatic Life Use										
Dissolved Oxygen grab min	NA	FS	NA	FS	FS	NA	FS	FS	NA	PS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA	FS	FS	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity Tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrofauna Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Consumption Use										
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA	NA	NS	NS
Human Health Criteria	NA	NA	NA	NA	NA	NA	NA	NA	FS	NA
GENERAL USE SUPPORT										
Water Temperature	NA	X	NA	NA	X	FS	X	FS	NA	FS
pH	NA	X	NA	FS	X	FS	X	FS	NA	FS
Chloride	NA	X	NA	FS	X	X	FS	X	FS	NA
Sulfate	NA	X	FS	FS	X	X	FS	X	FS	NA
Total Dissolved Solids	FS	X	NA	X	FS	X	X	FS	FS	NA

Trinity River Basin Tabular Summary of Use Support (continued)

Trinity River Basin Tabular Summary of Water Quality Concerns

Key to concern codes									
NC	= no concern								
C	= concern								
TH	= threatened								
NA	= not assessed								
X	= not applicable								
WATER QUALITY CONCERNs									
Sediment Contaminants	NA	NC	NA						
Fish Tissue Contaminants	NA	NC	NA						
Narrative	NC	NC	NC	NC	NC	NC	NC	NC	NC
Nutrient Enrichment									
Ammonia Nitrogen	NC	NC	NC	NC	NC	C	NC	NA	NA
Nitrite + Nitrate Nitrogen	NC	NC	C	NC	C	NC	NA	NA	NA
Orthophosphorus	NC	NC	C	C	C	NC	NA	NA	NA
Total Phosphorus	NC	NC	C	C	NA	C	NC	NA	NA
Algal Growth									
Chlorophyll <i>a</i>	NC	NC	C	NA	C	NA	NC	C	NA
Public Water Supply									
Finished Water: Chloride	X	NC	NC	X	X	X	NC	X	X
Finished Water: Sulfate	X	NC	NC	X	X	X	NC	X	X
Finished Water: TDS	X	NC	NC	X	X	X	NC	X	X
Surface Water: Chloride	X	NC	NC	X	X	X	NA	X	X
Surface Water: Sulfate	X	NC	NC	X	X	X	NA	X	X
Surface Water: TDS	X	NC	NC	X	X	X	NC	X	X

Trinity River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes												
NC	= no concern	C	= concern	TH	= threatened	N/A	= not assessed	X	= not applicable			

WATER QUALITY CONCERNS												
Sediment Contaminants	NC	NA										
Fish Tissue Contaminants	NC	NA	NA	NA	NC	NA						
Narrative	NC	C	NC									
Nutrient Enrichment												
Ammonia Nitrogen	NC	NC	NC	NA	NC	NA	NA	C	C			
Nitrite + Nitrate Nitrogen	NC	NC	NC	NA	NC	C	NA	NA	NC	C		
Orthophosphorus	NC	NC	NC	NA	NC	NA	NA	C	C			
Total Phosphorus	C	NC	NC	NA	NA	NA	NA	C	NA			
Algal Growth												
Chlorophyll <i>a</i>		C	NC	NC	NA	NA	NA	NA	C	NA		

Trinity River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes												
NC	= no concern	C	= concern	TH	= threatened	N/A	= not assessed	X	= not applicable			
Finisihed Water: Chloride	NC	NC	NC	NC	NC	NC	X	NC	NC	X	X	X
Finisihed Water: Sulfate	NC	NC	NC	NC	NC	NC	X	NC	NC	X	X	X
Finisihed Water: TDS	NC	NC	NC	NC	NC	X	NC	NC	NC	X	X	X
Surface Water: Chloride	NC	NC	NC	NA	NA	NA	X	NA	NA	X	X	X
Surface Water: Sulfate	NC	NC	NC	NA	NC	NA	X	NA	NA	X	X	X
Surface Water: TDS	NC	NC	NC	NA	NA	NC	X	NA	NA	X	X	X

WATER QUALITY CONCERNS												
Sediment Contaminants		NA										
Fish Tissue Contaminants		NA										
Narrative	NC	C	NC									
Nutrient Enrichment												
Ammonia Nitrogen		C	C	NC	NC	C	C	C	NA	NC	C	NC
Nitrite + Nitrate Nitrogen		C	C	C	NC	NC	C	NC	NA	NC	C	NC
Orthophosphorus		NC	NA	NC	C	NC						
Total Phosphorus		NC	NC	NA	NA	NA	NC	NC	NA	NC	C	NA
Algal Growth												
Chlorophyll <i>a</i>			C	NA	NA	NA	C	NC	NA	NA	C	NA
Public Water Supply												
Finished Water: Chloride		NC	X	NC	X	X	NC	NC	X	X	X	NC
Finished Water: Sulfate		NC	X	NC	X	X	NC	NC	X	X	X	NC
Finished Water: TDS		NC	X	NC	X	X	NC	NC	X	X	X	NC
Surface Water: Chloride		NC	X	NC	X	X	NC	NC	X	X	X	NC
Surface Water: Sulfate		NA	X	NC	X	X	NC	NC	X	X	X	NC
Surface Water: TDS		NC	X	NA	X	X	NC	NC	X	X	X	NC

Trinity River Basin Tabular Summary of Water Quality Concerns (continued)

Trinity River Basin Tabular Summary of Water Quality Concerns (continued)

WATER QUALITY CONCERN											
Sediment Contaminants	Fish Tissue Contaminants	NC	NA								
Narrative		NC									
Nutrient Enrichment											
Ammonia Nitrogen	NC	C	NA	NC	NC	NA	C	NC	NA	NA	C
Nitrite + Nitrate Nitrogen	NC	NC	NC	NC	NC	NC	NC	NA	NA	C	NC
Orthophosphorus	NC	NC	NA	NC	NC	NA	C	NA	NA	C	C
Total Phosphorus	NC	NC	NA	NA	NA	NC	NA	NC	NA	C	NA
Algal Growth											
Chlorophyll <i>a</i>	NC	NA	NA	NA	NA	C	NC	NA	NA	NC	NA
Public Water Supply											
Finished Water: Chloride	NC	X	X	NC	X	NC	X	NC	NC	NC	X
Finished Water: Sulfate	NC	X	X	NC	X	NC	X	NC	NC	NC	X
Finished Water: TDS	NC	X	X	NC	X	X	NC	NC	NC	NC	X
Surface Water: Chloride	NA	X	X	NC	X	X	NC	NA	NA	NA	X
Surface Water: Sulfate	NA	X	X	NC	X	X	NC	NA	NA	NC	X
Surface Water: TDS	NC	X	X	NC	X	X	NC	NA	NA	NC	X

WATER QUALITY CONCERN											
Sediment Contaminants	Fish Tissue Contaminants	NC	NA								
Narrative		NC									
Nutrient Enrichment											
Ammonia Nitrogen	NA	NC	NC	NC	NC	NA	C	NC	NA	C	NC
Nitrite + Nitrate Nitrogen	NA	C	NC	NC	NC	NC	NC	NA	NA	C	NC
Orthophosphorus	NA	NC	NC	NC	NC	NC	C	NA	NA	C	C
Total Phosphorus	NA	NC	NA	NA	NA	NC	NA	NC	NA	C	NA
Algal Growth											
Chlorophyll <i>a</i>	NA	C	NC	NC	NA	C	NC	NA	NA	NC	NA
Public Water Supply											
Finished Water: Chloride	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	X
Finished Water: Sulfate	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	X
Finished Water: TDS	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	X
Surface Water: Chloride	NA	X	X	NC	X	X	NC	NA	NA	NA	X
Surface Water: Sulfate	NA	X	X	NC	X	X	NC	NA	NA	NC	X
Surface Water: TDS	NC	X	X	NC	X	X	NC	NA	NA	NC	X

**Trinity – San Jacinto Coastal Basin
Summary Tables**

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Basin Tabular Summaries

For each basin, there are two documents: Tabular Summary of Use Support and Tabular Summary of Water Quality Concerns

Tabular Summary of Use Support

This series of tables provides a quick, detailed reference to water quality status within a basin. The summary identifies the indicators used to assess support of designated uses. For each indicator, support codes are used to identify the level of attainment as fully supporting (FS), partial supporting (PS), not supporting (NS), not assessed (NA), and not applicable (X). Indicators that contribute to partially supporting and not supporting uses are in bold type.

Tabular Summary of Water Quality Concerns

This series of tables provides a quick, detailed reference to water quality problems within a basin. The summary identifies the indicators used to assess water quality concerns. For each indicator, the presence of a water quality problem is identified as a concern (C), no concern (NC), threatened (TH), not assessed (NA), or not applicable (X). Indicators that contribute to concerns are in bold type.

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Trinity-San Jacinto Coastal Basin Tabular Summary of Use Support

		Key to support codes	
		FS = fully supporting	NC = no concern
		PS = partially supporting	C = concern
		NS = not supporting	TH = threatened
		N/A = not assessed	X = not assessed
		0901	Cedar Bayou Tidal
		0902	Cedar Bayou Above Tidal

		Key to concern codes	
		NC = no concern	C = concern
		TH = threatened	NA = not assessed
		X = not applicable	X = not applicable
DESIGNATED USE SUPPORT			
Contact Recreation Use	FS	FS	
Noncontact Recreation Use	X	X	
Public Water Supply Use	X	FS	
Aquatic Life Use			
Dissolved Oxygen grab min	FS	FS	
Dissolved Oxygen 24-hour avg	NA	NA	
Dissolved Oxygen 24-hour min	NA	NA	
Metals in water	NA	NA	
Organics in water	NA	NA	
Water Toxicity Tests	NA	NA	
Sediment Toxicity Tests	NA	NA	
Habitat	NA	NA	
Macrobenthos Community	NA	NA	
Fish Community	NA	NA	
Fish Consumption Use			
Advisories and Closures	NS	NA	
Human Health Criteria	NA	NA	
GENERAL USE SUPPORT			
Water Temperature	FS	FS	
pH	FS	FS	
Chloride	X	FS	
Sulfate	X	FS	
Total Dissolved Solids	X	FS	
WATER QUALITY CONCERNS			
Sediment Contaminants	NA	NA	
Fish Tissue Contaminants	NA	NA	
Narrative	NC	NC	
Nutrient Enrichment			
Ammonia Nitrogen	NC	NC	
Nitrite + Nitrate Nitrogen	NC	NC	
Orthophosphorus	NC	NC	
Total Phosphorus	NC	NC	
Algal Growth			
Chlorophyll <i>a</i>	NC	NC	
Public Water Supply			
Finished Water: Chloride	X	NC	
Finished Water: Sulfate	X	NC	
Finished Water: TDS	X	NC	
Surface Water: Chloride	X	NC	
Surface Water: Sulfate	X	NC	
Surface Water: TDS	X	NC	

**San Jacinto River Basin
Summary Tables**

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Basin Tabular Summaries

For each basin, there are two documents: Tabular Summary of Use Support and Tabular Summary of Water Quality Concerns

Tabular Summary of Use Support

This series of tables provides a quick, detailed reference to water quality status within a basin. The summary identifies the indicators used to assess support of designated uses. For each indicator, support codes are used to identify the level of attainment as fully supporting (FS), partial supporting (PS), not supporting (NS), not assessed (NA), and not applicable (X). Indicators that contribute to partially supporting and not supporting uses are in bold type.

Tabular Summary of Water Quality Concerns

This series of tables provides a quick, detailed reference to water quality problems within a basin. The summary identifies the indicators used to assess water quality concerns. For each indicator, the presence of a water quality problem is identified as a concern (C), no concern (NC), threatened (TH), not assessed (NA), or not applicable (X). Indicators that contribute to concerns are in bold type.

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San Jacinto River Basin Tabular Summary of Use Support

San Jacinto River Basin Tabular Summary of Use Support (continued)

Trinity River Basin Tabular Summary of Use Support (continued)

DESIGNATED USE SUPPORT										
Contact Recreation Use	NS	NS	NS	NS	NS	NS	FS	NA	FS	NA
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	X	X	X	X	X	FS	X	X	X	X
Aquatic Life Use										
Dissolved Oxygen grab min	FS	FS	NS	FS	PS	NS	FS	FS	NA	FS
Dissolved Oxygen 24-hour avg	NA									
Dissolved Oxygen 24-hour min	NA									
Metals in water	NA									
Organics in water	NA									
Water Toxicity tests	NA									
Sediment Toxicity tests	NA									
Habitat	NA									
Macrobenthos Community	NA									
Fish Community	NA									
Fish Consumption Use										
Advisories and Closures	NA									
Human Health Criteria	NA									
GENERAL USE SUPPORT										
Water Temperature	X	X	X	X	X	FS	X	X	X	X
pH	X	X	X	X	X	FS	X	X	X	X
Chloride	X	X	X	X	FS	X	X	X	FS	X
Sulfate	X	X	X	X	FS	X	X	X	FS	X
Total Dissolved Solids	X	X	X	X	X	FS	X	X	FS	X

Trinity River Basin Tabular Summary of Use Support (continued)

DESIGNATED USE SUPPORT										
Contact Recreation Use	NS	FS	FS	NA	NS	NS	NS	NS	NS	NS
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	FS	FS	FS	X	X	X	X	X	X	X
Aquatic Life Use										
Dissolved Oxygen grab min	FS	FS	FS	FS	PS	FS	FS	FS	FS	NS
Dissolved Oxygen 24-hour avg	NA									
Dissolved Oxygen 24-hour min	NA									
Metals in water	NA									
Organics in water	NA									
Water Toxicity tests	NA									
Sediment Toxicity tests	NA									
Habitat	NA									
Macrofauna Community	NA									
Fish Community	NA									
Fish Consumption Use										
Advisories and Closures	NA	NA	NA	FS	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	NA	NA	FS	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT										
Water Temperature	FS	FS	FS	FS	FS	X	X	FS	X	X
pH	FS	FS	FS	FS	X	X	FS	X	X	X
Chloride	FS	FS	FS	X	X	X	FS	X	X	X
Sulfate	FS	FS	FS	X	X	X	FS	X	X	X
Total Dissolved Solids	FS	FS	FS	X	X	X	FS	X	X	X

Trinity River Basin Tabular Summary of Use Support (continued)

San Jacinto River Basin Tabular Summary of Water Quality Concerns

DESIGNATED USE SUPPORT		WATER QUALITY CONCERNs									
Contact Recreation Use	NS	NA	NS								
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	X	FS	X	X	X	X	X	X	X	X	X
AQUATIC LIFE USE		WATER QUALITY CONCERNs									
Dissolved Oxygen grab min	FS	FS	FS	FS	PS	FS	FS	FS	FS	FS	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FISH CONSUMPTION USE		WATER QUALITY CONCERNs									
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT		WATER QUALITY CONCERNs									
Water Temperature	X	NA	FS	X	X	X	X	FS	X	X	X
pH	X	NA	FS	X	X	X	X	FS	X	X	X
Chloride	X	NA	FS	X	X	X	X	FS	X	X	X
Sulfate	X	NA	FS	X	X	X	X	FS	X	X	X
Total Dissolved Solids	X	NA	FS	X	X	X	X	FS	X	X	X

Key to concern codes		WATER QUALITY CONCERNs									
NC = no concern		Sediment Contaminants									
C = concern		Fish Tissue Contaminants									
TH = threatened		Narrative									
NA = not assessed		Nutrient Enrichment									
X = not applicable		Ammonia Nitrogen									
		Nitrite + Nitrate Nitrogen									
		Orthophosphorus									
		Total Phosphorus									
AQUATIC LIFE USE		Algal Growth									
Dissolved Oxygen grab min	FS	FS	FS	FS	PS	FS	FS	FS	FS	FS	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FISH CONSUMPTION USE		WATER QUALITY CONCERNs									
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT		WATER QUALITY CONCERNs									
Water Temperature	X	NA	FS	X	X	X	X	FS	X	X	X
pH	X	NA	FS	X	X	X	X	FS	X	X	X
Chloride	X	NA	FS	X	X	X	X	FS	X	X	X
Sulfate	X	NA	FS	X	X	X	X	FS	X	X	X
Total Dissolved Solids	X	NA	FS	X	X	X	X	FS	X	X	X

San Jacinto River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes												
NC	= no concern											
C	= concern											
TH	= threatened											
NA	= not assessed											
X	= not applicable											

WATER QUALITY CONCERNS												
Sediment Contaminants												
NA	C	NA										
Fish Tissue Contaminants												
Narrative	NC	C	NC									
Nutrient Enrichment												
Ammonia Nitrogen	C	C	C	C	NC	C	C	C	C	NC	C	NC
Nitrite + Nitrate Nitrogen	NA	C	C	NA								
Orthophosphorus	NA	C	C	NA								
Total Phosphorus	NA	C	C	NA								
Algal Growth												
Chlorophyll <i>a</i>	NA	NC	NA									
Public Water Supply												
Finished Water: Chloride	X	X	X	X	X	X	X	X	X	X	X	X
Finished Water: Sulfate	X	X	X	X	X	X	X	X	X	X	X	X
Finished Water: TDS	X	X	X	X	X	X	X	X	X	X	X	X
Surface Water: Chloride	X	X	X	X	X	X	X	X	X	X	X	X
Surface Water: Sulfate	X	X	X	X	X	X	X	X	X	X	X	X
Surface Water: TDS	X	X	X	X	X	X	X	X	X	X	X	X

San Jacinto River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes												
NC	= no concern											
C	= concern											
TH	= threatened											
NA	= not assessed											
X	= not applicable											

WATER QUALITY CONCERNS												
Sediment Contaminants												
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Tissue Contaminants												
Narrative	NC											
Nutrient Enrichment												
Ammonia Nitrogen	NC	C	C	C	C	C	NC	C	NC	NC	NA	C
Nitrite + Nitrate Nitrogen	NA	NA	NA	NA	NA	NA	C	NA	C	NA	NA	NA
Orthophosphorus	NA	NA	NA	NA	NA	NA	C	NA	C	NA	NA	NA
Total Phosphorus	NA	NA	NA	NA	NA	NA	C	NA	C	NA	NC	NA
Algal Growth												
Chlorophyll <i>a</i>	NA	NA	NA	NA	NC	NA	NC	NA	NA	NA	NA	NA
Public Water Supply												
Finished Water: Chloride	X	X	X	X	X	X	X	NC	X	X	X	X
Finished Water: Sulfate	X	X	X	X	X	X	X	NC	X	X	X	X
Finished Water: TDS	X	X	X	X	X	X	X	NC	X	X	X	X
Surface Water: Chloride	X	X	X	X	X	X	X	X	NC	X	X	X
Surface Water: Sulfate	X	X	X	X	X	X	X	X	NC	X	X	X
Surface Water: TDS	X	X	X	X	X	X	X	X	NC	X	X	X

San Jacinto River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes		WATER QUALITY CONCERNS											
NC	= no concern	Sediment Contaminants	NA										
C	= concern	Fish Tissue Contaminants	NA										
TH	= threatened	Narrative	NC										
X	= not applicable	Nutrient Enrichment											
1009	Cypress Creek	Ammonia Nitrogen	C	NC	NC	NC	C	C	NC	C	C	C	C
1010	Camby Creek	Nitrite + Nitrate Nitrogen	C	NC	NC	NA	C	NA	NA	C	NA	NA	NA
1011	Peach Creek	Orthophosphorus	C	NC	NC	NA	C	NA	NA	C	NA	NA	NA
1012	Lake Comroe	Total Phosphorus	C	NC	NC	NA	C	NA	NA	C	NA	NA	NA
Algal Growth													
1009	Cypress Creek	Chlorophyll <i>a</i>	NA	NA	NC	NA	NC	NA	NA	NC	NA	NA	NA
Public Water Supply													
1013A	Lime White Oak Bayou	Finished Water: Chloride	NC	NC	NC	X	X	X	X	X	X	X	X
1013B	Buffalo Bayou Tidal	Finished Water: Sulfate	NC	NC	NC	X	X	X	X	X	X	X	X
1013C	Umm-Non-Tidal Tidal	Finished Water: TDS	NC	NC	NC	X	X	X	X	X	X	X	X
1014	Buffalo Bayou Above	Surface Water: Chloride	NC	NC	NC	X	X	X	X	X	X	X	X
1014A	South Mayde Creek	Surface Water: Sulfate	NC	NC	NC	X	X	X	X	X	X	X	X
1014B	Garnet Bayou	Surface Water: TDS	NC	NC	NC	X	X	X	X	X	X	X	X
1015	Lake Creek	Surface Water: Chloride	NC	NC	NC	X	X	X	X	X	X	X	X
1016	Greens Bayou Above	Surface Water: Sulfate	NC	NC	NC	X	X	X	X	X	X	X	X
1016A	Garnet Bayou	Surface Water: TDS	NC	NC	NC	X	X	X	X	X	X	X	X
1016B	Grenes Bayou	Ummated Tributary of Greens Bayou	NC	NC	NC	X	X	X	X	X	X	X	X
1016C	Grenes Bayou	Ummated Tributary of Greens Bayou	NC	NC	NC	X	X	X	X	X	X	X	X
1017	Tidal Greens Bayou Above	Ummated Tributary of Greens Bayou	NC	NC	NC	X	X	X	X	X	X	X	X
1017A	Brickhouse Gulf /	White Oak Bayou	NC	NC	NC	X	X	X	X	X	X	X	X
1017B	Colie Creek	White Oak Bayou	NC	NC	NC	X	X	X	X	X	X	X	X
1017C	Ummated Tributary of White Oak Bayou	White Oak Bayou	NC	NC	NC	X	X	X	X	X	X	X	X
1017E	Ummated Tributary of White Oak Bayou	White Oak Bayou	NC	NC	NC	X	X	X	X	X	X	X	X

**San Jacinto – Brazos Coastal Basin
Summary Tables**

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Basin Tabular Summaries

For each basin, there are two documents: Tabular Summary of Use Support and Tabular Summary of Water Quality Concerns

Tabular Summary of Use Support

This series of tables provides a quick, detailed reference to water quality status within a basin. The summary identifies the indicators used to assess support of designated uses. For each indicator, support codes are used to identify the level of attainment as fully supporting (FS), partial supporting (PS), not supporting (NS), not assessed (NA), and not applicable (X). Indicators that contribute to partially supporting and not supporting uses are in bold type.

Tabular Summary of Water Quality Concerns

This series of tables provides a quick, detailed reference to water quality problems within a basin. The summary identifies the indicators used to assess water quality concerns. For each indicator, the presence of a water quality problem is identified as a concern (C), no concern (NC), threatened (TH), not assessed (NA), or not applicable (X). Indicators that contribute to concerns are in bold type.

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San Jacinto-Brazos Coastal Basin Tabular Summary of Use Support

San Jacinto-Brazos Coastal Basin Tabular Summary of Use Support (continued)

Key to support codes									
FS = fully supporting									
PS = partially supporting									
NS = not supporting									
NA = not assessed									
X = not applicable									

DESIGNATED USE SUPPORT									
Contact Recreation Use	NS	FS							
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X
Public Water Supply Use	X	X	X	X	X	X	X	X	X

DESIGNATED USE SUPPORT									
Contact Recreation Use	FS	N/A							
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X
Public Water Supply Use	X	X	X	FS	X	X	X	X	X

Aquatic Life Use

Dissolved Oxygen grab min	FS								
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	PS	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NS	NA	NA	NA
Metals in water	NA								
Organics in water	NA	NA	FS	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA								
Sediment Toxicity tests	NA								
Habitat	NA								
Macrobenthos Community	NA								
Fish Community	NA								

Fish Consumption Use

Advisories and Closures	FS	NA	FS	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA								

GENERAL USE SUPPORT

Water Temperature	FS	X	FS	X	X	FS	X	FS	FS
pH	FS	X	FS	X	X	FS	X	FS	X
Chloride	X	X	NS	X	X	X	X	FS	X
Sulfate	X	X	FS	X	X	X	X	FS	X
Total Dissolved Solids	X	X	NS	X	X	X	X	FS	X

Key to support codes									
FS = fully supporting									
PS = partially supporting									
NS = not supporting									
NA = not assessed									
X = not applicable									

DESIGNATED USE SUPPORT									
Contact Recreation Use	FS	N/A							
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X
Public Water Supply Use	X	X	X	FS	X	X	X	X	X

Aquatic Life Use

Dissolved Oxygen grab min	FS	N/A							
Dissolved Oxygen 24-hour avg	NA								
Dissolved Oxygen 24-hour min	NA								
Metals in water	NA	FS	NA						
Organics in water	NA	NA	FS	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA								
Sediment Toxicity tests	NA								
Habitat	NA								
Macrobenthos Community	NA								
Fish Community	NA								

Fish Consumption Use

Advisories and Closures	FS	NA	FS	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA								

GENERAL USE SUPPORT

Water Temperature	FS	X	FS	X	X	FS	X	FS	X
pH	FS	X	FS	X	X	FS	X	FS	X
Chloride	X	X	NS	X	X	X	X	FS	X
Sulfate	X	X	FS	X	X	X	X	FS	X
Total Dissolved Solids	X	X	NS	X	X	X	X	FS	X

San Jacinto-Brazos Coastal Basin Tabular Summary of Water Quality Concerns

San Jacinto-Brazos Coastal Basin Tabular Summary of Water Quality Concerns (continued)

WATER QUALITY CONCERN		Public Water Supply									
Sediment Contaminants	NA	NA	NA	NA	NA	NA	NA	NA	NA	NC	NC
Fish Tissue Contaminants	NA	NA	NA	NA	NA	NA	NA	NA	NA	NC	NC
Narrative	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Nutrient Enrichment											
Ammonia Nitrogen	NC	C	C	C	C	NC	NC	NC	C	NC	NC
Nitrite + Nitrate Nitrogen	NC	C	NC								
Orthophosphorus	NC	NA	C	NA	NA	NA	NA	NA	NC	NC	NC
Total Phosphorus	NC	NA	C	NA	NA	NA	NA	NA	NC	NC	NC
Algal Growth											
Chlorophyll <i>a</i>	NC	NA	NC	NA	NC	NA	NA	NA	NC	NC	C
Chlorophyll <i>a</i>	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NA
Finished Water: Chloride	X	X	X	X	X	X	X	X	X	NC	X
Finished Water: Sulfate	X	X	X	X	X	X	X	X	X	NC	X
Finished Water: TDS	X	X	X	X	X	X	X	X	X	NC	X
Surface Water: Chloride	X	X	X	X	X	X	X	X	X	NC	X
Surface Water: Sulfate	X	X	X	X	X	X	X	X	X	NC	X
Surface Water: TDS	X	X	X	X	X	X	X	X	X	NC	X

WATER QUALITY CONCERN		Water Quality Concerns									
Sediment Contaminants	NA	NA									
Fish Tissue Contaminants	NA	NA									
Narrative	NC	NC									
Nutrient Enrichment											
Ammonia Nitrogen	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Nitrite + Nitrate Nitrogen	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Orthophosphorus	NC	NA	C	NA	NA	NA	NA	NA	NC	NC	NC
Total Phosphorus	NC	NA	C	NA	NA	NA	NA	NA	NC	NC	NC
Algal Growth											
Chlorophyll <i>a</i>	NC	NA	NC	NA	NC	NA	NA	NA	NC	NC	C
Chlorophyll <i>a</i>	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NA
Public Water Supply											
Finished Water: Chloride	X	X	X	X	X	X	X	X	X	NC	X
Finished Water: Sulfate	X	X	X	X	X	X	X	X	X	NC	X
Finished Water: TDS	X	X	X	X	X	X	X	X	X	NC	X
Surface Water: Chloride	X	X	X	X	X	X	X	X	X	NC	X
Surface Water: Sulfate	X	X	X	X	X	X	X	X	X	NC	X
Surface Water: TDS	X	X	X	X	X	X	X	X	X	NC	X

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**Brazos River Basin
Summary Tables**

Basin Tabular Summaries

For each basin, there are two documents: Tabular Summary of Use Support and Tabular Summary of Water Quality Concerns

Tabular Summary of Use Support

This series of tables provides a quick, detailed reference to water quality status within a basin. The summary identifies the indicators used to assess support of designated uses. For each indicator, support codes are used to identify the level of attainment as fully supporting (FS), partial supporting (PS), not supporting (NS), not assessed (NA), and not applicable (X). Indicators that contribute to partially supporting and not supporting uses are in bold type.

Tabular Summary of Water Quality Concerns

This series of tables provides a quick, detailed reference to water quality problems within a basin. The summary identifies the indicators used to assess water quality concerns. For each indicator, the presence of a water quality problem is identified as a concern (C), no concern (NC), threatened (TH), not assessed (NA), or not applicable (X). Indicators that contribute to concerns are in bold type.

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Brazos River Basin Tabular Summary of Use Support

DESIGNATED USE SUPPORT											
Contact Recreation Use											
Noncontact Recreation Use											
Public Water Supply Use											
Dissolved Oxygen grab min	FS	FS	NA	FS	FS	NA	FS	FS	FS	FS	FS
Dissolved Oxygen 24-hour avg	NA										
Dissolved Oxygen 24-hour min	NA										
Metals in water	NA										
Organics in water	NA										
Water Toxicity tests	NA										
Sediment Toxicity tests	NA										
Habitat	NA										
Macrobenthos Community	NA										
Fish Community	NA										
Fish Consumption Use											
Advisories and Closures											
Human Health Criteria											
GENERAL USE SUPPORT											
Water Temperature	FS	FS	X	X	X	FS	X	FS	FS	X	X
pH	FS	FS	X	X	X	FS	X	FS	X	X	X
Chloride	X	FS	X	X	X	FS	X	FS	X	X	X
Sulfate	X	FS	X	X	X	FS	X	FS	X	X	X
Total Dissolved Solids	X	FS	X	X	X	FS	X	FS	X	X	X

Brazos River Basin Tabular Summary of Use Support (continued)

DESIGNATED USE SUPPORT											
Contact Recreation Use											
Noncontact Recreation Use											
Public Water Supply Use											
Dissolved Oxygen grab min	FS	FS	FS	NA	FS	FS	NA	FS	FS	NS	NA
Dissolved Oxygen 24-hour avg	NA										
Dissolved Oxygen 24-hour min	NA										
Metals in water	NA	FS	NA								
Organics in water	NA										
Water Toxicity tests	NA										
Sediment Toxicity tests	NA										
Habitat	NA										
Macrobenthos Community	NA										
Fish Community	NA										
Fish Consumption Use											
Advisories and Closures											
Human Health Criteria											
GENERAL USE SUPPORT											
Water Temperature	FS	FS	FS	X	X	X	X	X	X	X	X
pH	FS	FS	X	X	X	X	X	X	X	X	X
Chloride	X	FS	X	X	X	FS	X	FS	X	X	X
Sulfate	X	FS	X	X	X	FS	X	FS	X	X	X
Total Dissolved Solids	X	FS	X	X	X	FS	X	FS	X	X	X

Brazos River Basin Tabular Summary of Use Support (continued)

Brazos River Basin Tabular Summary of Use Support (continued)

DESIGNATED USE SUPPORT		Key to support codes									
Contact Recreation Use	Noncontact Recreation Use	FS	NS	FS	NS	FS	NS	FS	FS	FS	FS
Public Water Supply Use		FS	X	FS	X	FS	X	FS	FS	X	X
Aquatic Life Use											
Dissolved Oxygen grab min	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Consumption Use											
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

DESIGNATED USE SUPPORT		Key to support codes									
Contact Recreation Use	Noncontact Recreation Use	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
Public Water Supply Use		FS	X	FS	X	FS	FS	X	FS	X	X
Aquatic Life Use											
Dissolved Oxygen grab min	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Consumption Use											
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Brazos River Basin Tabular Summary of Use Support (continued)

DESIGNATED USE SUPPORT											
Contact Recreation Use	FS	FS	FS	NA	FS	FS	FS	NS	FS	FS	NS
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	X	X	FS	FS	X	FS	X	X	X	X	X
Aquatic Life Use											
Dissolved Oxygen grab min	FS	NA	FS								
Dissolved Oxygen 24-hour avg	NA										
Dissolved Oxygen 24-hour min	NA										
Metals in water	NA										
Organics in water	NA										
Water Toxicity tests	NA										
Sediment Toxicity tests	NA										
Habitat	NA										
Macrobenthos Community	NA										
Fish Community	NA										
Fish Consumption Use											
Advisories and Closures	NA										
Human Health Criteria	NA										
GENERAL USE SUPPORT											
Water Temperature	X	X	FS	NA	FS	X	FS	X	X	X	FS
pH	X	X	FS	NA	FS	X	X	FS	X	X	FS
Chloride	X	X	FS	FS	X	FS	X	FS	X	X	FS
Sulfate	X	X	FS	FS	X	FS	X	FS	X	X	FS
Total Dissolved Solids	X	X	FS	FS	X	FS	X	FS	X	X	FS

Brazos River Basin Tabular Summary of Use Support (continued)

DESIGNATED USE SUPPORT											
Contact Recreation Use	NS	FS	NS	NA	FS	NA	NA	FS	FS	FS	NA
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	X	X	X	FS	FS	X	X	X	X	X	FS
Aquatic Life Use											
Dissolved Oxygen grab min	FS	FS	FS	NA	FS	NA	NA	FS	FS	FS	NA
Dissolved Oxygen 24-hour avg	NA										
Dissolved Oxygen 24-hour min	NA										
Metals in water	NA										
Organics in water	NA										
Water Toxicity tests	NA										
Sediment Toxicity tests	NA										
Habitat	NA										
Macrofauna Community	NA										
Fish Community	NA										
Fish Consumption Use											
Advisories and Closures	NA										
Human Health Criteria	NA										
GENERAL USE SUPPORT											
Water Temperature	X	X	FS	NA	FS	NA	NA	FS	X	X	FS
pH	X	X	FS	NA	FS	NA	NA	FS	X	X	FS
Chloride	X	X	FS	FS	X	FS	NA	FS	X	X	FS
Sulfate	X	X	FS	FS	X	FS	NA	FS	X	X	FS
Total Dissolved Solids	X	X	FS	FS	X	FS	NA	FS	X	X	FS

Brazos River Basin Tabular Summary of Use Support (continued)

Brazos River Basin Tabular Summary of Use Support (continued)

DESIGNATED USE SUPPORT		Key to support codes									
Contact Recreation Use	Noncontact Recreation Use	FS	FS	FS	FS	NA	NA	FS	NA	NA	NA
Public Water Supply Use		FS	FS	X	FS	X	X	FS	FS	X	X
Aquatic Life Use											
Dissolved Oxygen grab min	NA	NA	FS	NA	FS	NA	FS	FS	FS	FS	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Consumption Use											
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT											
Water Temperature	NA	NA	NA	FS	X	FS	X	FS	X	X	X
pH	NA	NA	FS	X	FS	X	FS	X	X	X	FS
Chloride	NA	NA	NA	NS	X	NS	X	FS	X	X	FS
Sulfate	NA	NA	FS	X	FS	X	FS	X	X	X	FS
Total Dissolved Solids	NA	NA	NS	X	FS	X	FS	X	X	X	FS

DESIGNATED USE SUPPORT		Key to support codes									
Contact Recreation Use	Noncontact Recreation Use	FS	FS	FS	FS	NA	NA	FS	NA	NA	FS
Public Water Supply Use		FS	FS	X	FS	X	X	FS	FS	X	X
Aquatic Life Use											
Dissolved Oxygen grab min	NA	NA	FS	NA	FS	NA	FS	FS	NA	PS	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Consumption Use											
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT											
Water Temperature	NA	NA	NA	FS	X	FS	X	FS	X	X	X
pH	NA	NA	FS	X	FS	X	FS	X	X	X	FS
Chloride	NA	NA	NA	NS	X	NS	X	FS	X	X	FS
Sulfate	NA	NA	FS	X	FS	X	FS	X	X	X	FS
Total Dissolved Solids	NA	NA	NS	X	FS	X	FS	X	X	X	FS

Brazos River Basin Tabular Summary of Use Support (continued)

Brazos River Basin Tabular Summary of Use Support (continued)

Key to support codes: FS = fully supporting PS = partially supporting NS = not supporting NA = not assessed X = not applicable	
1244A	Brushy Creek Above South Brushy Creek
1245	Upper Oyster Creek
1246	Middle Bosque/South Bosque River
1246D	Tonk Creek
1246E	Wasp Creek
1247	Granger Lake
1247A	Willis Creek
1248	San Gabriel/North Fork San Gabriel River
1248A	Berry Creek
1248B	Huddleston Branch
1248C	Mankins Branch
1249	Lake Georgetown

DESIGNATED USE SUPPORT

Contact Recreation Use	FS	NS	FS	NS	FS	NS	FS	NA	NA	FS
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	X	FS	X	X	FS	X	X	X	FS	

Aquatic Life Use

Dissolved Oxygen grab min	FS	FS	FS	FS	FS	NA	NA	NA	FS	
Dissolved Oxygen 24-hour avg	NA									
Dissolved Oxygen 24-hour min	NA									
Metals in water	NA									
Organics in water	NA									
Water Toxicity tests	NA									
Sediment Toxicity tests	NA									
Habitat	NA									
Macrobenthos Community	NA									
Fish Community	NA									

Fish Consumption Use

Advisories and Closures	NA									
Human Health Criteria	NA									

GENERAL USE SUPPORT

Water Temperature	X	FS	FS	X	X	FS	X	X	X	FS
pH	X	FS	FS	X	X	FS	X	X	X	FS
Chloride	X	FS	X	X	FS	X	X	X	FS	
Sulfate	X	FS	X	X	FS	X	X	X	FS	
Total Dissolved Solids	X	FS	X	X	FS	X	X	X	X	FS

Key to support codes: FS = fully supporting PS = partially supporting NS = not supporting NA = not assessed X = not applicable	
1250	South Fork San Gabriel River
1251	North Fork San Gabriel River
1252	Lake Limestone
1253	Navasota River Below Lake Mexia
1254	Aquilla Reservoir
1255	Upper North Bosque River
1255A	Goose Branch
1255B	North Fork Upper North Bosque River
1255C	Scarborough Creek
1255D	South Fork North Bosque River
1255E	Unnamed tributary of Goose Branch
1255F	Unnamed tributary of Scarborough Creek

DESIGNATED USE SUPPORT

Contact Recreation Use	NA	NA	FS	FS	NS	NS	NS	NS	NS	NS
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	FS	FS	FS	X	X	X	X	X	X	X

Aquatic Life Use

Dissolved Oxygen grab min	FS									
Dissolved Oxygen 24-hour avg	NA									
Dissolved Oxygen 24-hour min	NA									
Metals in water	NA									
Organics in water	NA									
Water Toxicity tests	NA									
Sediment Toxicity tests	NA									
Habitat	NA									
Macrobenthos Community	NA									
Fish Community	NA									

Fish Consumption Use

Advisories and Closures	NA									
Human Health Criteria	NA									

GENERAL USE SUPPORT

Water Temperature	FS	FS	FS	X	X	FS	X	X	X	FS
pH	FS	FS	FS	X	X	FS	X	X	X	FS
Chloride	FS	FS	X	X	FS	X	X	X	FS	
Sulfate	X	FS	X	X	FS	X	X	X	FS	
Total Dissolved Solids	X	FS	X	X	FS	X	X	X	X	FS

Brazos River Basin Tabular Summary of Use Support (continued)

Brazos River Basin Tabular Summary of Water Quality Concerns

DESIGNATED USE SUPPORT		WATER QUALITY CONCERNs					
Contact Recreation Use	NS	FS	FS	FS	FS	FS	FS
Noncontact Recreation Use	X	X	X	X			
Public Water Supply Use	X	FS	X	FS			
AQUATIC LIFE USE		WATER QUALITY CONCERNs					
Dissolved Oxygen grab min	FS	FS	FS	FS	FS	FS	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA	NA	NA	NA	NA	NA	NA
SEDIMENT TOXICITY TESTS		WATER QUALITY CONCERNs					
Habitat	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	NA	NA	NA	NA	NA	NA	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA
FISH CONSUMPTION USE		WATER QUALITY CONCERNs					
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT		WATER QUALITY CONCERNs					
Water Temperature	X	FS	X	FS	FS	FS	FS
pH	X	FS	X	FS	FS	FS	FS
Chloride	X	FS	X	FS	FS	FS	FS
Sulfate	X	FS	X	FS	FS	FS	FS
Total Dissolved Solids	X	FS	X	FS	FS	FS	FS

Key to concern codes NC = no concern C = concern TH = threatened NA = not assessed X = not applicable	1201 Brazos River Tidal Narragansett River Below Alief's Creek	1202 Brazos River Below Narragansett River Big Creek	1203 Whitemy Lake Mifflin Creek	1204 Brazos River Below Lake Granbury	1205 Lake Granbury Sleete Creek	1206 Possum Kingdom Lake Brazos River Below	1207 Palo Pinto Creek below Palo Pinto Reservoir
WATER QUALITY CONCERNs							
Sediment Contaminants	NA	NA	NA	NA	NA	NA	NA
Fish Tissue Contaminants	NA	NA	NA	NA	NA	NA	NA
Narrative	NC	NC	NC	NC	NC	NC	NC
NUTRIENT ENRICHMENT							
Ammonia Nitrogen	NC	NC	NA	NA	NC	NA	NC
Nitrite + Nitrate Nitrogen	NC	NC	NA	NC	C	NA	NC
Orthophosphorus	NC	NC	C	NA	NC	NA	NC
Total Phosphorus	NC	NC	NA	NA	NA	NA	NA
ALGAL GROWTH							
Chlorophyll <i>a</i>	NC	C	NA	NA	NC	NA	NC
PUBLIC WATER SUPPLY							
Finished Water: Chloride	NC	NC	X	X	X	NC	X
Finished Water: Sulfate	NC	NC	X	X	X	NC	X
Finished Water: TDS	NC	NC	X	X	X	NC	X
Surface Water: Chloride	NA	NC	X	X	C	X	NC
Surface Water: Sulfate	NA	NC	X	X	X	NC	X
Surface Water: TDS	NA	NC	X	X	X	NC	C

Brazos River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes											
NC = no concern	C = concern	TH = threatened	NA = not assessed	X = not applicable							

WATER QUALITY CONCERNS

Key to concern codes											
NC = no concern	C = concern	TH = threatened	NA = not assessed	X = not applicable							
Sediment Contaminants	NA	C	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Tissue Contaminants	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Narrative	NC	NC	C	C	NC	C	NC	NC	NC	NC	NC

Nutrient Enrichment

Key to concern codes											
NC = no concern	C = concern	TH = threatened	NA = not assessed	X = not applicable							
Ammonia Nitrogen	NA	NC	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite + Nitrate Nitrogen	NC	NC	NA	NA	C	NA	NC	NC	NC	NC	NC
Orthophosphorus	NC	NC	NA	NA	C	NA	NC	NC	NC	NC	NC
Total Phosphorus	NA	NC	NA	NA	NA	NA	NA	NA	NA	NA	NA

Algal Growth

Chlorophyll <i>a</i>	NA	C	NA	NC	NC						
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Public Water Supply

Key to concern codes											
NC = no concern	C = concern	TH = threatened	NA = not assessed	X = not applicable							
Finished Water: Chloride	C	X	NC	X	X	X	X	X	X	NC	NC
Finished Water: Sulfate	C	X	NC	X	X	X	X	X	X	NC	X
Finished Water: TDS	C	X	NC	X	X	X	X	X	X	NC	NC
Surface Water: Chloride	C	X	NC	X	X	X	X	X	X	NC	X
Surface Water: Sulfate	C	X	NC	X	X	X	X	X	X	NC	X
Surface Water: TDS	C	X	NC	X	X	X	X	X	X	NC	X

Brazos River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes											
NC = no concern	C = concern	TH = threatened	NA = not assessed	X = not applicable							
Possum Kingdom Lake											
Brazos River Above Possum Kingdom Lake											
Navasota River Below Lake Limestone											
Country Club Lake											
Fin Feather Lake											
Carters Creek											
Country Club Branch											
Cedar Creek											
Duck Creek											
Gibbons Creek											
Shepherd Creek											
Steele Creek											
Lake Mexia											
Navasota River above Lake Mexia											
Yegua Creek											
Davidson Creek											
Somerville Lake											
Middle Yegua Creek											
East Yegua Creek											
Little River											
San Gabriel River											
Lampasas River Below Stillhouse Hollow Lake											
Stillhouse Hollow Lake											
Lampasas River Above Stillhouse Hollow Lake											

WATER QUALITY CONCERNS

Key to concern codes											
NC = no concern	C = concern	TH = threatened	NA = not assessed	X = not applicable							
Sediment Contaminants	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Tissue Contaminants	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Narrative	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

Nutrient Enrichment

Key to concern codes											
NC = no concern	C = concern	TH = threatened	NA = not assessed	X = not applicable							
Ammonia Nitrogen	NC	NA	NA	NA	NA	NA	NA	NC	NC	NC	NA
Nitrite + Nitrate Nitrogen	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Orthophosphorus	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Total Phosphorus	C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Algal Growth

Chlorophyll <i>a</i>	NC	NA	NA	NA	NA	NA	NA	NC	NC	NA	NA
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Public Water Supply

Key to concern codes											
NC = no concern	C = concern	TH = threatened	NA = not assessed	X = not applicable							
Finished Water: Chloride	NC	X	NC	X	X	X	X	NC	NC	NC	X
Finished Water: Sulfate	NC	X	NC	X	X	X	X	NC	NC	NC	X
Finished Water: TDS	NC	X	NC	X	X	X	X	X	X	NC	X
Surface Water: Chloride	NC	X	NC	X	X	X	X	X	X	NC	X
Surface Water: Sulfate	NC	X	NC	X	X	X	X	X	X	NC	X
Surface Water: TDS	NC	X	NC	X	X	X	X	X	X	NC	X

Brazos River Basin Tabular Summary of Water Quality Concerns (continued)

Brazos River Basin Tabular Summary of Water Quality Concerns (continued)

WATER QUALITY CONCERN		Brazos River Basin									
Concern	Concern	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227
Sediment Contaminants	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Tissue Contaminants	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Narrative	NC	NC	NC	NC	C	NC	NC	NC	NC	NC	NC
Nutrient Enrichment											
Ammonia Nitrogen	NA	NA	NC	NC	NC	NA	NC	NC	NC	NC	NC
Nitrite + Nitrate Nitrogen	NC	NC	C	NC	C	NC	NA	NC	NC	NC	C
Orthophosphorus	NC	NC	C	NC	NC	NA	NC	NC	NC	NC	NC
Total Phosphorus	NA	NA	C	NA	NC	NA	NC	NC	NC	NC	NC
Algal Growth											
Chlorophyll <i>a</i>	NA	NA	NC	NA	C	NA	NC	NA	NC	C	NC
Public Water Supply											
Finished Water: Chloride	X	X	X	NC	X	NC	X	X	NC	X	X
Finished Water: Sulfate	X	X	X	NC	X	NC	X	X	NC	X	X
Finished Water: TDS	X	X	X	NC	X	NC	X	X	NC	X	X
Surface Water: Chloride	X	X	X	NC	X	NC	X	X	NC	X	X
Surface Water: Sulfate	X	X	X	NC	X	NC	X	X	NC	X	X
Surface Water: TDS	X	X	X	NC	X	NC	X	X	NC	X	X

WATER QUALITY CONCERN		Brazos River Basin									
Concern	Concern	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237
Sediment Contaminants	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Tissue Contaminants	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Narrative	NC	NC	NC	NC	C	NC	NC	NC	NC	NC	NC
Nutrient Enrichment											
Ammonia Nitrogen	NA	NA	NC	NC	NC	NA	NC	NC	NC	NC	NC
Nitrite + Nitrate Nitrogen	NC	NC	C	NC	C	NC	NA	NC	NC	NC	C
Orthophosphorus	NC	NC	C	NC	NC	NA	NC	NC	NC	NC	NC
Total Phosphorus	NA	NA	C	NA	NC	NA	NC	NC	NC	NC	NC
Algal Growth											
Chlorophyll <i>a</i>	NA	NA	NC	NA	C	NA	NC	NA	NC	C	NC
Public Water Supply											
Finished Water: Chloride	X	X	X	NC	X	NC	X	X	NC	X	X
Finished Water: Sulfate	X	X	X	NC	X	NC	X	X	NC	X	X
Finished Water: TDS	X	X	X	NC	X	NC	X	X	NC	X	X
Surface Water: Chloride	X	X	X	NC	X	NC	X	X	NC	X	X
Surface Water: Sulfate	X	X	X	NC	X	NC	X	X	NC	X	X
Surface Water: TDS	X	X	X	NC	X	NC	X	X	NC	X	X

Brazos River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes													
NC	= no concern	C	= concern	TH	= threatened								
X	= not assessed												

WATER QUALITY CONCERNS													
Sediment Contaminants	NA												
Fish Tissue Contaminants	NA												
Narrative	NC												
Nutrient Enrichment													
Ammonia Nitrogen	NC	NC	NC	NA	NC	NA	NC	NC	NA	NA	NA	NA	NA
Nitrite + Nitrate Nitrogen	NC	NC	C	NA	NC	NA	C	C	NC	NA	NC	NA	C
Orthophosphorus	NC	NC	C	NA	NC	NA	C	NC	NA	NC	NA	NC	C
Total Phosphorus	NC	NC	NC	NA	NC	NA	NC	NA	C	NA	NA	NA	NA
Algal Growth													
Chlorophyll <i>a</i>	NA	NA	NA	NC	NA	NC	NA	NC	NA	NA	NC	C	NA
Public Water Supply													
Finished Water: Chloride	X	X	X	NC	NC	NC	X	X	X	NC	X	NC	X
Finished Water: Sulfate	X	X	X	NC	NC	NC	X	X	X	NC	X	NC	X
Finished Water: TDS	X	X	X	NC	NC	NC	X	X	X	NC	X	NC	X
Surface Water: Chloride	X	X	X	NA	NC	NA	X	X	X	NC	NA	NC	X
Surface Water: Sulfate	X	X	X	NA	NC	NA	X	X	X	NC	NA	NC	X
Surface Water: TDS	X	X	X	NA	NC	NA	X	X	X	NC	NA	NC	X

Brazos River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes													
NC	= no concern	C	= concern	TH	= threatened								
X	= not assessed												

WATER QUALITY CONCERNS													
Sediment Contaminants	NA												
Fish Tissue Contaminants	NA												
Narrative	NC												
Nutrient Enrichment													
Ammonia Nitrogen	NA	NA	NA	C	NA	NA	NA	NC	NC	NC	NA	NA	NA
Nitrite + Nitrate Nitrogen	NA	NA	NA	NC	NA	NC	NA	NA	C	NC	NA	C	
Orthophosphorus	NA	NA	NA	NC	C								
Total Phosphorus	NA	NA	NA	NC	NA	NC	NA	NA	NC	NC	NA	NA	NA
Algal Growth													
Chlorophyll <i>a</i>	NA	NA	NA	NC	NA	NA	NA	NC	C	NA	NA	NA	NA
Public Water Supply													
Finished Water: Chloride	C	NC	NC	X	NC	NC	X	X	X	NC	NC	X	
Finished Water: Sulfate	C	NC	C	X	NC	NC	X	X	X	NC	NC	X	
Finished Water: TDS	C	NC	NC	X	NC	NC	X	X	X	NC	NC	X	
Surface Water: Chloride	NA	NA	NA	X	NA	NC	X	X	X	NC	NA	X	
Surface Water: Sulfate	NA	NA	NA	X	NA	NC	X	X	X	NC	NC	X	
Surface Water: TDS	NA	NA	NA	X	NA	NC	X	X	X	NC	NA	X	

Brazos River Basin Tabular Summary of Water Quality Concerns (continued)

Brazos River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes		WATER QUALITY CONCERNs											
		Sediment Contaminants	Fish Tissue Contaminants	Narrative	Nutrient Enrichment			Algal Growth			Public Water Supply		
NC = no concern	NA	NA	NA	Ammonia Nitrogen	Chlorophyll <i>a</i>	Finished Water: Chloride	Surface Water: Chloride	Surface Water: Sulfate	Surface Water: TDS	Surface Water: Chloride	Surface Water: Sulfate	Surface Water: TDS	
C = concern	X	X	X	Nitrite + Nitrate Nitrogen		Finished Water: Sulfate							
TH = threatened				Orthophosphorus		Finished Water: TDS							
NA = not assessed				Total Phosphorus		Surface Water: Chloride							
X = not applicable						Surface Water: Sulfate							
1242E	Little Brazos River												
1242F	Pond Creek												
1242I	Campbell's Creek												
1242J	Deer Creek												
1242K	Mud Creek												
1242L	Pim Oak Creek												
1242M	Spring Creek												
1242N	Thachacana Creek												
1242O	Whitni Creek												
1242P	Big Creek												
1242Q	Salado Creek												
1243													
1244	Brushy Creek												

Key to concern codes		WATER QUALITY CONCERNs											
		Sediment Contaminants	Fish Tissue Contaminants	Narrative	Nutrient Enrichment			Algal Growth			Public Water Supply		
NC = no concern	NA	NA	NA	Ammonia Nitrogen	Chlorophyll <i>a</i>	Finished Water: Chloride	Surface Water: Chloride	Surface Water: Sulfate	Surface Water: TDS	Surface Water: Chloride	Surface Water: Sulfate	Surface Water: TDS	
C = concern	X	X	X	Nitrite + Nitrate Nitrogen		Finished Water: Sulfate							
TH = threatened				Orthophosphorus		Finished Water: TDS							
NA = not assessed				Total Phosphorus		Surface Water: Chloride							
X = not applicable						Surface Water: Sulfate							
1244A	Busby Creek Above Burnt Branch												
1244B	Upper Oyster Creek												
1244D	Middle Bosque South												
1244E	Bosque River												
1244F	South Burnt Branch												
1244G	Upper Oyster Creek												
1244H	Granger Lake												
1244I	Willis Creek												
1244J	San Gabriel North Fork												
1244K	Berry Creek												
1244L	San Gabriel Branch												
1244M	Hilderton Branch												
1244N	Lake Georgetown												

Brazos River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes												
NC	= no concern											
C	= concern											
TH	= threatened											
NA	= not assessed											
X	= not applicable											

WATER QUALITY CONCERNS												
Sediment Contaminants	NA	NC	NA									
Fish Tissue Contaminants	NA	NC	NA									
Narrative	NC											
Nutrient Enrichment												
Ammonia Nitrogen	NC	NC	NA	C	NC	C	C	C	C	C	NC	NC
Nitrite + Nitrate Nitrogen	NC	NC	C	NC	C	C	C	NC	NC	NC	NC	NC
Orthophosphorus	NC	NC	NC	NC	C	C	C	NC	C	NC	NC	NC
Total Phosphorus	NC	NC	NA	NC	C	C	NC	C	NC	C	NC	NC
Algal Growth												
Chlorophyll <i>a</i>	NC	NC	NA	C	NC	C	NA	C	NA	NC	NA	NA
Public Water Supply												
Finished Water: Chloride	NC	NC	NC	NC	NC	X	X	X	X	X	X	X
Finished Water: Sulfate	NC	NC	NC	NC	NC	X	X	X	X	X	X	X
Finished Water: TDS	NC	NC	NC	NC	X	X	X	X	X	X	X	X
Surface Water: Chloride	NC	NC	NC	NC	X	X	X	X	X	X	X	X
Surface Water: Sulfate	NC	NC	NC	NC	X	X	X	X	X	X	X	X
Surface Water: TDS	NC	NC	NC	NC	X	X	X	X	X	X	X	X

Brazos River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes			
NC	= no concern		
C	= concern		
TH	= threatened		
NA	= not assessed		
X	= not applicable		

WATER QUALITY CONCERNS			
Sediment Contaminants	NA	NA	NA
Fish Tissue Contaminants	NA	NA	NA
Narrative	NC	NC	NC
Nutrient Enrichment			
Ammonia Nitrogen	NC	NC	NA
Nitrite + Nitrate Nitrogen	NC	NC	NC
Orthophosphorus	NC	NC	NC
Total Phosphorus	NC	NC	NA
Algal Growth			
Chlorophyll <i>a</i>	NA	NC	NA
Public Water Supply			
Finished Water: Chloride	X	NC	X
Finished Water: Sulfate	X	NC	X
Finished Water: TDS	X	NC	X
Surface Water: Chloride	X	NC	X
Surface Water: Sulfate	X	NC	X
Surface Water: TDS	X	NC	X

**Brazos - Colorado Coastal Basin
Summary Tables**

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Basin Tabular Summaries

For each basin, there are two documents: Tabular Summary of Use Support and Tabular Summary of Water Quality Concerns

Tabular Summary of Use Support

This series of tables provides a quick, detailed reference to water quality status within a basin. The summary identifies the indicators used to assess support of designated uses. For each indicator, support codes are used to identify the level of attainment as fully supporting (FS), partial supporting (PS), not supporting (NS), not assessed (NA), and not applicable (X). Indicators that contribute to partially supporting and not supporting uses are in bold type.

Tabular Summary of Water Quality Concerns

This series of tables provides a quick, detailed reference to water quality problems within a basin. The summary identifies the indicators used to assess water quality concerns. For each indicator, the presence of a water quality problem is identified as a concern (C), no concern (NC), threatened (TH), not assessed (NA), or not applicable (X). Indicators that contribute to concerns are in bold type.

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Brazos-Colorado Coastal Basin Tabular Summary of Use Support

Brazos-Colorado Coastal Basin Tabular Summary of Water Quality Concerns

DESIGNATED USE SUPPORT		WATER QUALITY CONCERNs					
		Sediment Contaminants	Fish Tissue Contaminants	Narrative	Nutrient Enrichment		
Contact Recreation Use	FS	NS	FS	FS	Ammonia Nitrogen	NC	NC
Noncontact Recreation Use	X	X	X	X	Nitrite + Nitrate Nitrogen	NC	NC
Public Water Supply Use	X	FS	X	X	Orthophosphorus	NC	NC
Aquatic Life Use					Total Phosphorus	NC	NC
Dissolved Oxygen grab min	FS	FS	FS	FS	Chlorophyll <i>a</i>	NC	NC
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	Public Water Supply	NC	NC
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	Finished Water: Chloride	X	X
Metals in water	NA	NA	NA	FS	Finished Water: Sulfate	X	X
Organics in water	NA	NA	NA	NA	Finished Water: TDS	X	X
Water Toxicity tests	NA	NA	NA	NA	Surface Water: Chloride	X	X
Sediment Toxicity tests	NA	NA	NA	NA	Surface Water: Sulfate	X	X
Habitat	NA	NA	NA	NA	Surface Water: TDS	X	X
Macrobenthos Community	NA	NA	NA	NA			
Fish Community	NA	NA	NA	NA			
Fish Consumption Use							
Advisories and Closures	NA	NA	NA	NA			
Human Health Criteria	NA	NA	NA	FS			
GENERAL USE SUPPORT							
Water Temperature	FS	FS	FS	X			
pH	FS	FS	X	FS			
Chloride	X	FS	X	X			
Sulfate	X	FS	X	X			
Total Dissolved Solids	X	FS	X	X			

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**Colorado River Basin
Summary Tables**

Basin Tabular Summaries

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Tabular Summary of Use Support

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Tabular Summary of Water Quality Concerns

This series of tables provides a quick, detailed reference to water quality problems within a basin. The summary identifies the indicators used to assess water quality concerns. For each indicator, the presence of a water quality problem is identified as a concern (C), no concern (NC), threatened (TH), not assessed (NA), or not applicable (X). Indicators that contribute to concerns are in bold type.

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Colorado River Basin Tabular Summary of Use Support

Colorado River Basin Tabular Summary of Use Support (continued)

Colorado River Basin Tabular Summary of Use Support (continued)

Colorado River Basin Tabular Summary of Use Support (continued)

DESIGNATED USE SUPPORT		Key to support codes									
Contact Recreation Use	Noncontact Recreation Use	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X
Aquatic Life Use											
Dissolved Oxygen grab min	NA	NA	FS	NA	NA	FS	FS	PS	FS	FS	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	NA	NA	NA	NA	NA	NA	NA	NA	FS	NA	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	FS	NA	NA
Fish Consumption Use											
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT											
Water Temperature	X	X	FS	X	X	FS	X	FS	FS	X	X
pH	X	X	FS	X	X	FS	X	FS	FS	X	X
Chloride	X	X	FS	X	X	FS	X	FS	FS	X	X
Sulfate	X	X	FS	X	X	FS	X	FS	FS	X	X
Total Dissolved Solids	X	X	FS	X	X	FS	X	FS	FS	X	X

DESIGNATED USE SUPPORT		Key to support codes									
Contact Recreation Use	Noncontact Recreation Use	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X
Aquatic Life Use											
Dissolved Oxygen grab min	NA	NA	FS	NA	NA	FS	FS	PS	FS	FS	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	NA	NA	NA	NA	NA	NA	NA	NA	FS	NA	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	FS	NA	NA
Fish Consumption Use											
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT											
Water Temperature	X	X	FS	X	X	FS	X	FS	FS	X	X
pH	X	X	FS	X	X	FS	X	FS	FS	X	X
Chloride	X	X	FS	X	X	FS	X	FS	FS	X	X
Sulfate	X	X	FS	X	X	FS	X	FS	FS	X	X
Total Dissolved Solids	X	X	FS	X	X	FS	X	FS	FS	X	X

Colorado River Basin Tabular Summary of Use Support (continued)

Colorado River Basin Tabular Summary of Use Support (continued)

Colorado River Basin Tabular Summary of Use Support (continued)

Colorado River Basin Tabular Summary of Use Support (continued)

DESIGNATED USE SUPPORT		AQUATIC LIFE USE									
Contact Recreation Use	FS	FS	FS	NA	NA	FS	NA	FS	FS	FS	FS
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	FS	X	X	X	X	X	FS	X	X	X	X
Aquatic Life Use											
Dissolved Oxygen grab min	FS	FS	NA	NA	FS	FS	NA	FS	NA	FS	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	FS	NS	FS	NA	NA	NA	NA	FS	NA	FS	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Consumption Use											
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

DESIGNATED USE SUPPORT		GENERAL USE SUPPORT									
Contact Recreation Use	FS	FS	FS	NA	NA	NA	NA	NA	FS	NA	NA
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	FS	X	X	X	X	X	X	X	FS	X	X
General Use Support											
Water Temperature	FS	X	X	X	X	X	X	X	FS	X	X
pH	FS	X	X	X	X	X	X	X	FS	X	X
Chloride	FS	X	X	X	X	X	X	X	FS	X	X
Sulfate	FS	X	X	X	X	X	X	X	FS	X	X
Total Dissolved Solids	FS	X	X	X	X	X	X	X	FS	X	X

Colorado River Basin Tabular Summary of Use Support (continued)

Colorado River Basin Tabular Summary of Use Support (continued)

Key to support codes	
FS	= fully supporting
PS	= partially supporting
NS	= not supporting
NA	= not assessed
X	= not applicable

DESIGNATED USE SUPPORT	
Contact Recreation Use	NA NA NA NA FS FS FS FS NA FS FS
Noncontact Recreation Use	X X X X X X X X X X X X
Public Water Supply Use	X X X X X X X X FS FS FS X
Aquatic Life Use	
Dissolved Oxygen grab min	NA NA NA NA FS FS FS FS FS FS
Dissolved Oxygen 24-hour avg	NA
Dissolved Oxygen 24-hour min	NA
Metals in water	NA
Organics in water	NA
Water Toxicity tests	NA
Sediment Toxicity tests	NA
Habitat	NA
Macrobenthos Community	FS FS NA FS NA NA NA NA NA NA
Fish Community	NA
Fish Consumption Use	
Advisories and Closures	NA
Human Health Criteria	NA
GENERAL USE SUPPORT	
Water Temperature	X X X X FS X X FS FS FS X
pH	X X X X FS X X FS FS NA FS X
Chloride	X X X X FS X X FS FS NA FS X
Sulfate	X X X X FS X X FS FS NA FS X
Total Dissolved Solids	X X X X FS X X FS FS NA NA X

Key to support codes	
FS	= fully supporting
PS	= partially supporting
NS	= not supporting
NA	= not assessed
X	= not applicable

DESIGNATED USE SUPPORT	
Contact Recreation Use	FS
Noncontact Recreation Use	X
Public Water Supply Use	X
Aquatic Life Use	
Dissolved Oxygen grab min	FS
Dissolved Oxygen 24-hour avg	NA
Dissolved Oxygen 24-hour min	NA
Metals in water	NA
Organics in water	NA
Water Toxicity tests	NA
Sediment Toxicity tests	NA
Habitat	NA
Macrobenthos Community	NA
Fish Community	NA
Fish Consumption Use	
Advisories and Closures	NA
Human Health Criteria	NA
GENERAL USE SUPPORT	
Water Temperature	X
pH	X
Chloride	X
Sulfate	X
Total Dissolved Solids	X

Colorado River Basin Tabular Summary of Water Quality Concerns

Colorado River Basin Tabular Summary of Water Quality Concerns (continued)

WATER QUALITY CONCERN		Colorado River Tidal									
Sediment Contaminants		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Tissue Contaminants		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Narrative		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Nutrient Enrichment											
Ammonia Nitrogen	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Nitrite + Nitrate Nitrogen	NC	NC	NC	NC	NC	NC	NC	NC	C	NC	NC
Orthophosphorus	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Total Phosphorus	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Algal Growth											
Chlorophyll <i>a</i>	NC	NC	NC	C	NA	C	NA	NC	NA	NA	NA
Public Water Supply											
Finished Water: Chloride	X	NC	X	X	NC	X	NC	X	X	X	X
Finished Water: Sulfate	X	NC	X	X	NC	X	NC	X	X	X	X
Finished Water: TDS	X	NC	X	X	NC	X	NC	X	X	X	X
Surface Water: Chloride	X	NC	X	X	NC	X	NC	X	X	X	X
Surface Water: Sulfate	X	NC	X	X	NC	X	NC	X	X	X	X
Surface Water: TDS	X	NC	X	X	NC	X	NC	X	X	X	X

WATER QUALITY CONCERN		Bees Creek									
Sediment Contaminants		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Tissue Contaminants		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Narrative		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Nutrient Enrichment											
Ammonia Nitrogen	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Nitrite + Nitrate Nitrogen	NC	NC	NC	NC	NC	NC	NC	NC	C	NC	NC
Orthophosphorus	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Total Phosphorus	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Algal Growth											
Chlorophyll <i>a</i>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Public Water Supply											
Finished Water: Chloride	X	X	X	X	X	X	X	X	X	X	X
Finished Water: Sulfate	X	X	X	X	X	X	X	X	X	X	X
Finished Water: TDS	X	X	X	X	X	X	X	X	X	X	X
Surface Water: Chloride	X	X	X	X	X	X	X	X	X	X	X
Surface Water: Sulfate	X	X	X	X	X	X	X	X	X	X	X
Surface Water: TDS	X	X	X	X	X	X	X	X	X	X	X

Colorado River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes												
NC = no concern	C = concern	TH = threatened	NA = not assessed	X = not applicable								

WATER QUALITY CONCERNS

Sediment Contaminants	NA											
Fish Tissue Contaminants	NA											
Narrative	NC											
Nutrient Enrichment												
Ammonia Nitrogen	NA	NC	NC	NA	NA	NC	NC	C	NC	NC	NC	NC
Nitrite + Nitrate Nitrogen	NA	NC	NC	NA	NA	NC	NC	NC	NC	NA	NA	NC
Orthophosphorus	NA	NC	NC	NA	NA	NC	NC	NC	NC	NC	NA	NC
Total Phosphorus	NA	NA	NC	NA	NA	NC	NC	NC	NC	NA	NA	NC
Algal Growth												
Chlorophyll <i>a</i>	NA	NA	NC	NA	NA	NC	NC	C	NC	NC	NC	NC
Public Water Supply												
Finished Water: Chloride	X	X	NC	X	X	X	NC	X	NC	NC	X	X
Finished Water: Sulfate	X	X	NC	X	X	X	NC	X	NC	X	X	NC
Finished Water: TDS	X	X	NC	X	X	X	NC	X	NC	X	X	NC
Surface Water: Chloride	X	X	NC	X	X	X	NC	X	NC	X	X	NC
Surface Water: Sulfate	X	X	NC	X	X	X	NC	X	NC	X	X	NC
Surface Water: TDS	X	X	NC	X	X	X	NC	X	NC	X	X	NC

WATER QUALITY CONCERNS

Sediment Contaminants	NA											
Fish Tissue Contaminants	NA											
Narrative	NC											
Nutrient Enrichment												
Ammonia Nitrogen	NC	NA	NC	NA	NA	NA	NA	NC	NC	NA	NA	NC
Nitrite + Nitrate Nitrogen	NC	NA	NC	NA	C	NA	NA	NC	NC	NA	NA	NC
Orthophosphorus	NC	NA	NC	NA	NA	NA	NA	NC	NC	NA	NA	NC
Total Phosphorus	NC	NA	NA	NA	NA	NA	NA	NC	NC	NA	NA	NC
Algal Growth												
Chlorophyll <i>a</i>	NC	NA	NA	NA	NA	NA	NA	NC	NA	NA	NA	NC
Public Water Supply												
Finished Water: Chloride	NC	NA	X	NC	X	X	NC	X	X	X	X	NC
Finished Water: Sulfate	NC	NA	X	C	X	X	NC	X	X	X	X	NC
Finished Water: TDS	NC	NA	X	C	X	X	NC	X	X	X	X	NC
Surface Water: Chloride	C	C	X	NA	X	X	NA	NC	X	X	X	NC
Surface Water: Sulfate	NC	C	X	NA	X	X	NA	NC	X	X	X	NC
Surface Water: TDS	NC	C	X	NA	X	X	NA	NC	X	X	X	NC

Colorado River Basin Tabular Summary of Water Quality Concerns (continued)

Sediment Contaminants	NA											
Fish Tissue Contaminants	NA											
Narrative	NC											
Nutrient Enrichment												
Ammonia Nitrogen	NC	NA	NC	NA	NA	NA	NA	NC	NC	NA	NA	NC
Nitrite + Nitrate Nitrogen	NC	NA	NC	NA	C	NA	NA	NC	NC	NA	NA	NC
Orthophosphorus	NC	NA	NC	NA	NA	NA	NA	NC	NC	NA	NA	NC
Total Phosphorus	NC	NA	NA	NA	NA	NA	NA	NC	NC	NA	NA	NC
Algal Growth												
Chlorophyll <i>a</i>	NC	NA	NA	NA	NA	NA	NA	NC	NA	NA	NA	NC
Public Water Supply												
Finished Water: Chloride	NC	NA	X	NC	X	X	NC	X	X	X	X	NC
Finished Water: Sulfate	NC	NA	X	C	X	X	NC	X	X	X	X	NC
Finished Water: TDS	NC	NA	X	C	X	X	NC	X	X	X	X	NC
Surface Water: Chloride	C	C	X	NA	X	X	NA	NC	X	X	X	NC
Surface Water: Sulfate	NC	C	X	NA	X	X	NA	NC	X	X	X	NC
Surface Water: TDS	NC	C	X	NA	X	X	NA	NC	X	X	X	NC

Colorado River Basin Tabular Summary of Water Quality Concerns (continued)

Colorado River Basin Tabular Summary of Water Quality Concerns (continued)

WATER QUALITY CONCERNs		Nutrient Enrichment									
Sediment Contaminants	Fish Tissue Contaminants	Ammonia Nitrogen	Nitrite + Nitrate Nitrogen	Orthophosphorus	Total Phosphorus	Chlorophyll <i>a</i>	Public Water Supply				
NA	NA	NA	NA	NA	NA	NA	Finished Water: Chloride	X	X	X	X
NA	NA	NA	NA	NA	NA	NA	Finished Water: Sulfate	X	X	X	X
NA	NA	NA	NA	NA	NA	NA	Finished Water: TDS	X	X	X	X
NA	NA	NA	NA	NA	NA	NA	Surface Water: Chloride	X	C	X	X
NA	NA	NA	NA	NA	NA	NA	Surface Water: Sulfate	X	X	X	X
NA	NA	NA	NA	NA	NA	NA	Surface Water: TDS	X	X	X	X
NC	NC	NC	NC	NC	NC	NC					
NC	NC	NC	NC	NC	NC	NC					
C	C	C	C	C	C	C					
TH	TH	TH	TH	TH	TH	TH					
NA	NA	NA	NA	NA	NA	NA					
X	X	X	X	X	X	X					

WATER QUALITY CONCERNs		Nutrient Enrichment									
Sediment Contaminants	Fish Tissue Contaminants	Ammonia Nitrogen	Nitrite + Nitrate Nitrogen	Orthophosphorus	Total Phosphorus	Chlorophyll <i>a</i>	Public Water Supply				
NA	NA	NA	NA	NA	NA	NA	Finished Water: Chloride	X	X	X	X
NA	NA	NA	NA	NA	NA	NA	Finished Water: Sulfate	X	X	X	X
NA	NA	NA	NA	NA	NA	NA	Finished Water: TDS	X	X	X	X
NA	NA	NA	NA	NA	NA	NA	Surface Water: Chloride	X	C	X	X
NA	NA	NA	NA	NA	NA	NA	Surface Water: Sulfate	X	X	X	X
NA	NA	NA	NA	NA	NA	NA	Surface Water: TDS	X	X	X	X
NC	NC	NC	NC	NC	NC	NC					
NC	NC	NC	NC	NC	NC	NC					
C	C	C	C	C	C	C					
TH	TH	TH	TH	TH	TH	TH					
NA	NA	NA	NA	NA	NA	NA					
X	X	X	X	X	X	X					

Colorado River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes													
NC	= no concern	C	= concern	TH	= threatened	N/A	= not assessed	X	= not applicable				
Onion Creek													
1427													
Slaughter Creek													
1427A													
Williamson Creek													
1427B													
Bear Creek													
1427C													
Boggy Creek													
1427D													
Marble Creek													
1427E													
Rinard Creek													
1427F													
Unnamed Tributary to Slaughter Creek													
1427G													
Colorado River Below Town Lake													
1428													
Boggy Creek													
1428A													
Walnut Creek													
1428B													
Gilleland Creek													
1428C													

WATER QUALITY CONCERNS

Key to concern codes													
NC	= no concern	C	= concern	TH	= threatened	N/A	= not assessed	X	= not applicable				
Sediment Contaminants	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Tissue Contaminants	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Narrative	NC	NC	NC	NC	NC	NC	NC	C	NC	NC	NC	NC	NC

Nutrient Enrichment

Key to concern codes													
NC	= no concern	C	= concern	TH	= threatened	N/A	= not assessed	X	= not applicable				
Ammonia Nitrogen	NC	NC	NC	NA	NC	NA	NC	NA	NC	NA	NA	NA	NA
Nitrite + Nitrate Nitrogen	NC	NC	NC	NA	NC	NA	C	NA	C	NA	NA	NA	NA
Orthophosphorus	NC	NC	NC	NA	NC	NA	C	NA	C	NA	NA	NA	NA
Total Phosphorus	NC	NC	NC	NA	NC	NA	C	NC	NA	NC	NA	NA	NA

Algal Growth

Key to concern codes													
NC	= no concern	C	= concern	TH	= threatened	N/A	= not assessed	X	= not applicable				
Chlorophyll <i>a</i>	NC	NA	NA	NA	NA	NA	NC	NA	NC	NA	NA	NA	NA

Public Water Supply

Key to concern codes													
NC	= no concern	C	= concern	TH	= threatened	N/A	= not assessed	X	= not applicable				
Finished Water: Chloride	NC	X	X	X	X	X	NC	X	X	X	X	X	X
Finished Water: Sulfate	NC	X	X	X	X	X	NC	X	X	X	X	X	X
Finished Water: TDS	NC	X	X	X	X	X	NC	X	X	X	X	X	X
Surface Water: Chloride	NC	X	X	X	X	X	NC	X	X	X	X	X	X
Surface Water: Sulfate	NC	X	X	X	X	X	NC	X	X	X	X	X	X
Surface Water: TDS	NC	X	X	X	X	X	NC	X	X	X	X	X	X

Colorado River Basin Tabular Summary of Water Quality Concerns (continued)

Key to concern codes													
NC	= no concern	C	= concern	TH	= threatened	N/A	= not assessed	X	= not applicable				
Little Walnut Creek													
1428D													
Fort Branch Creek													
1428E													
Tannehill Branch Creek													
1428F													
Wells Branch													
1428G													
Carson Creek													
1428H													
Decker Creek													
1428I													
Harris Branch													
1428J													
Town Lake													
1429													
Shoal Creek													
1429A													
Eanes Creek													
1429B													
Waller Creek													
1429C													
East Bouldin Creek													
1429D													

WATER QUALITY CONCERNS

Key to concern codes													
NC	= no concern	C	= concern	TH	= threatened	N/A	= not assessed	X	= not applicable				
Finished Water: Chloride	X	X	X	X	X	X	NC	X	X	X	X	X	X
Finished Water: Sulfate	X	X	X	X	X	X	NC	X	X	X	X	X	X
Finished Water: TDS	X	X	X	X	X	X	NC	X	X	X	X	X	X
Surface Water: Chloride	X	X	X	X	X	X	NC	X	X	X	X	X	X
Surface Water: Sulfate	X	X	X	X	X	X	NC	X	X	X	X	X	X
Surface Water: TDS	X	X	X	X	X	X	NC	X	X	X	X	X	X

Colorado River Basin Tabular Summary of Water Quality Concerns (continued)

WATER QUALITY CONCERN		WATER QUALITY CONCERN									
Sediment Contaminants	Fish Tissue Contaminants	Sediment Contaminants		Fish Tissue Contaminants		Sediment Contaminants		Fish Tissue Contaminants		Sediment Contaminants	
Narrative	Narrative	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Nutrient Enrichment											
Ammonia Nitrogen	NA	NA	NA	NA	C	NA	NA	NA	NA	NC	NC
Nitrite + Nitrate Nitrogen	NA	NA	NA	NC	NC	NC	NA	C	NC	NC	NC
Orthophosphorus	NA	NA	NA	NC	NC	NC	NC	NA	NC	NC	NC
Total Phosphorus	NA	NA	NA	NC	NC	NC	C	NC	NA	NC	NC
Algal Growth											
Chlorophyll <i>a</i>	NA	NA	NA	NC	NC	NA	NC	NA	NC	NC	NC
Public Water Supply											
Finished Water: Chloride	X	X	X	X	X	X	X	X	NC	NC	X
Finished Water: Sulfate	X	X	X	X	X	X	X	X	NC	NC	X
Finished Water: TDS	X	X	X	X	X	X	X	X	NC	NC	X
Surface Water: Chloride	X	X	X	X	X	X	X	X	NC	C	X
Surface Water: Sulfate	X	X	X	X	X	X	X	X	NC	NC	X
Surface Water: TDS	X	X	X	X	X	X	X	X	NC	C	NA

WATER QUALITY CONCERN		WATER QUALITY CONCERN																					
Sediment Contaminants	Fish Tissue Contaminants	Sediment Contaminants		Fish Tissue Contaminants		Sediment Contaminants		Fish Tissue Contaminants		Sediment Contaminants													
Narrative	Narrative	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC										
Key to concern codes																							
NC = no concern																							
C = concern																							
TH = threatened																							
NA = not assessed																							
X = not applicable																							
1429E	West Building Creek	1429F	Blum Creek	1429G	Harper's Branch	1429H	Johmson Creek	1430A	Bartoon Creek	1430B	Thributaries to Barton Creek	1431	Mid Pecan Bayou	1432	Upper Pecan Bayou	1433	O. H. Lake Reservoir	1434	Colorado River above La Grange	1434B	Cedar Creek	1434C	Lake Basaltop

Appendix 5B

Lake Level Graphs and Tables

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Figure 5B-1
Lake Conroe Elevations

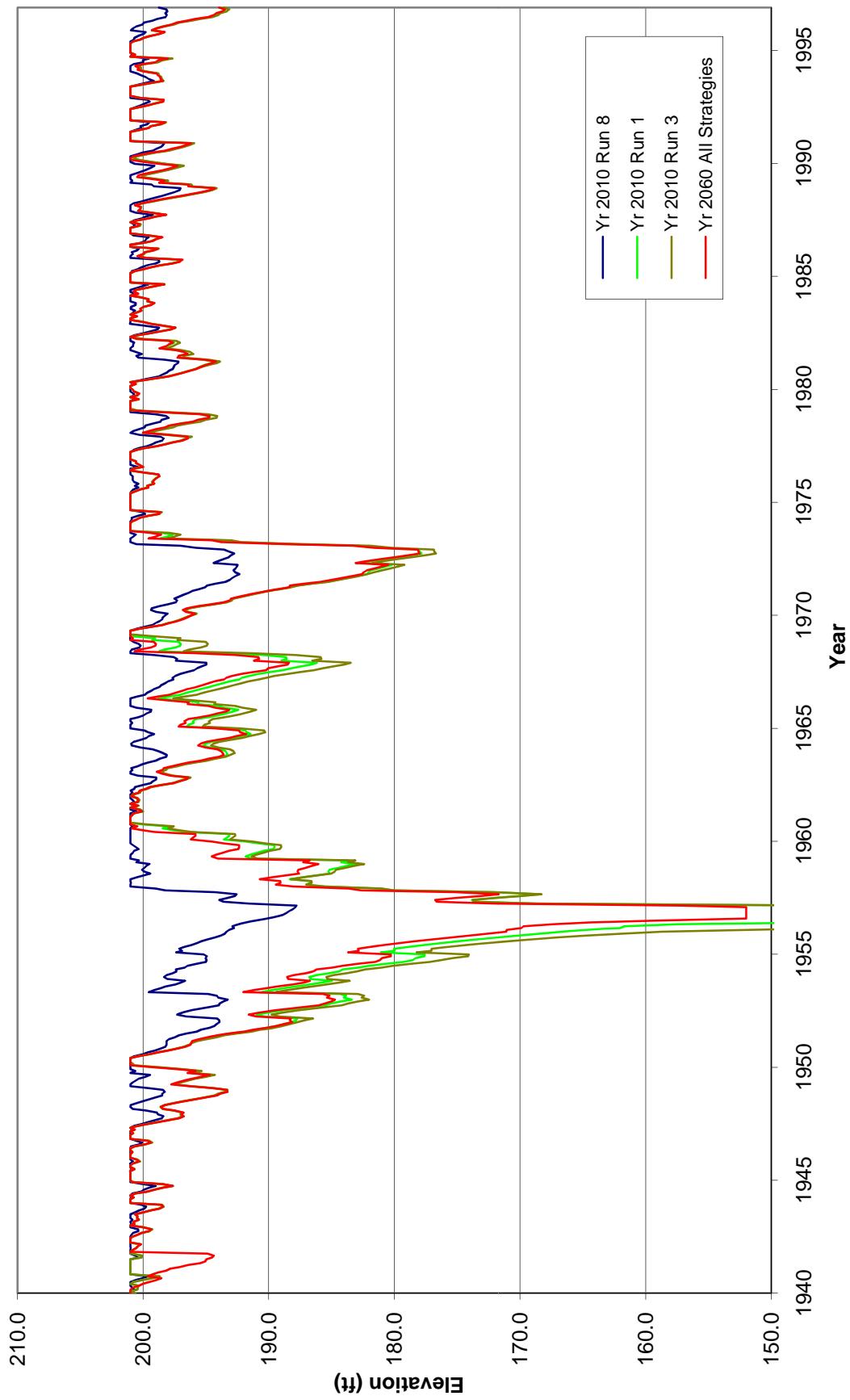


Figure 5B-2
Lake Conroe Elevation Percentiles

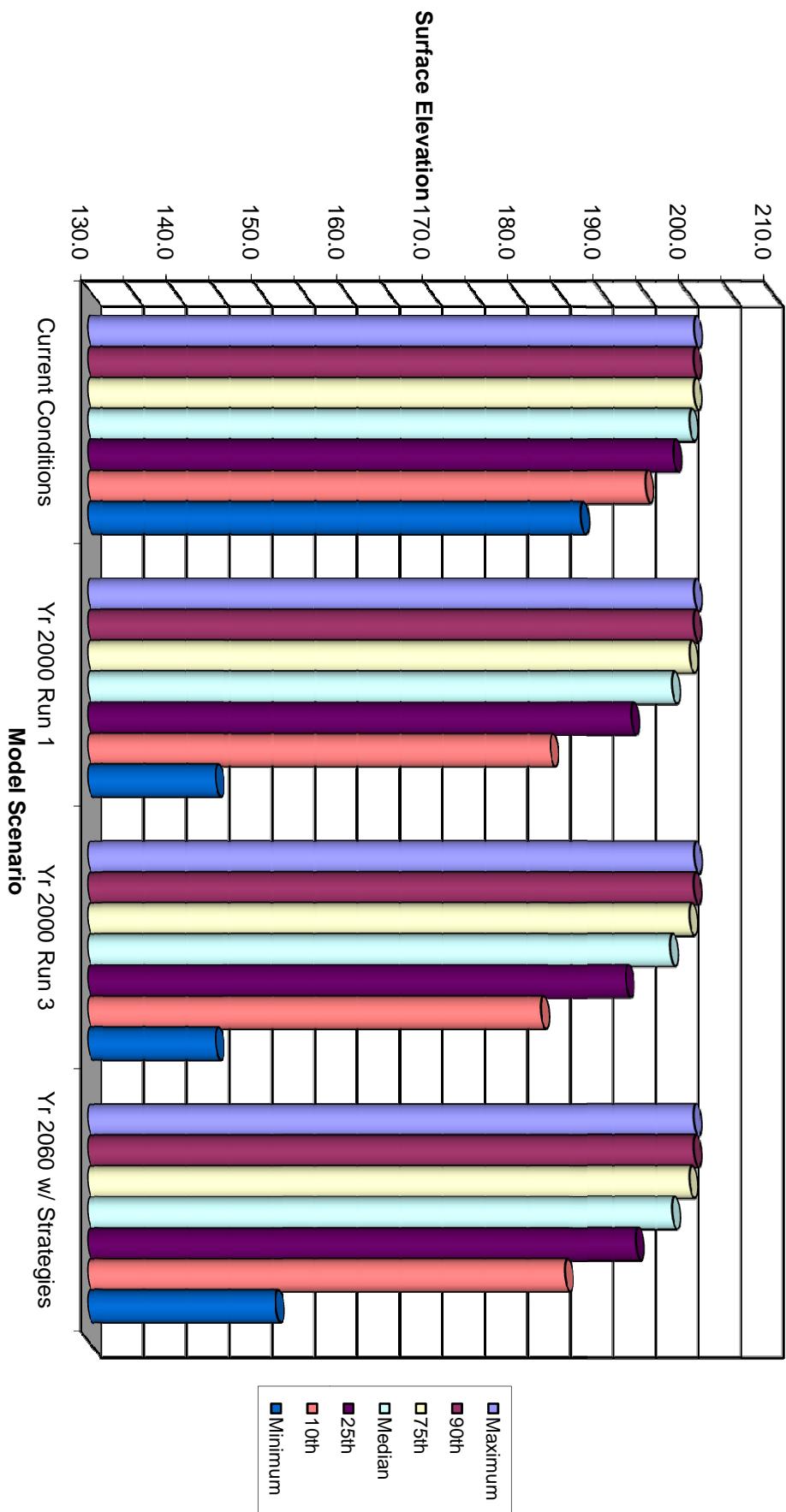


Figure 5B-3
Lake Houston Elevations

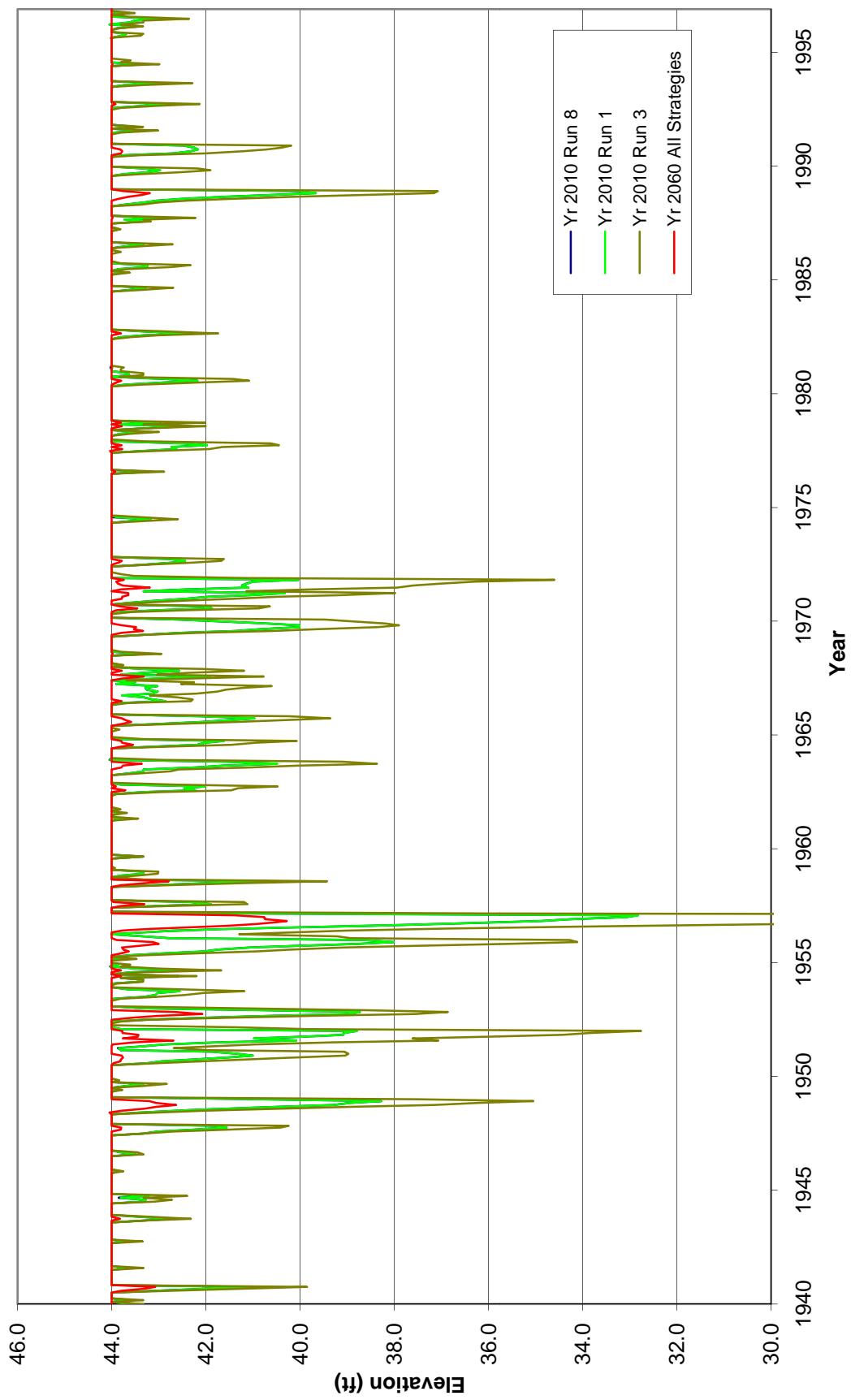


Figure 5B-4
Lake Houston Elevation Percentiles

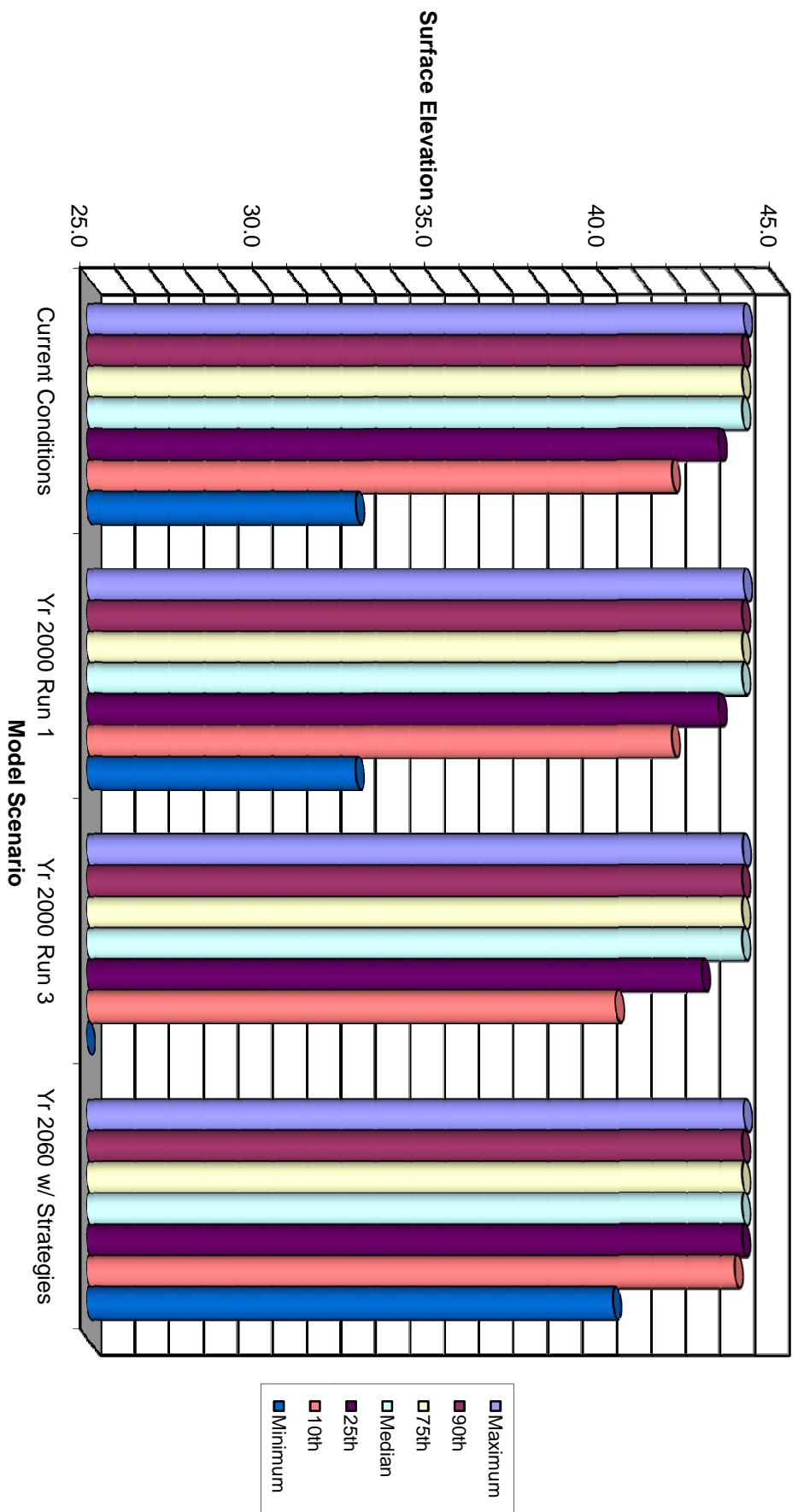


Figure 5B-5
Lake Livingston Elevations

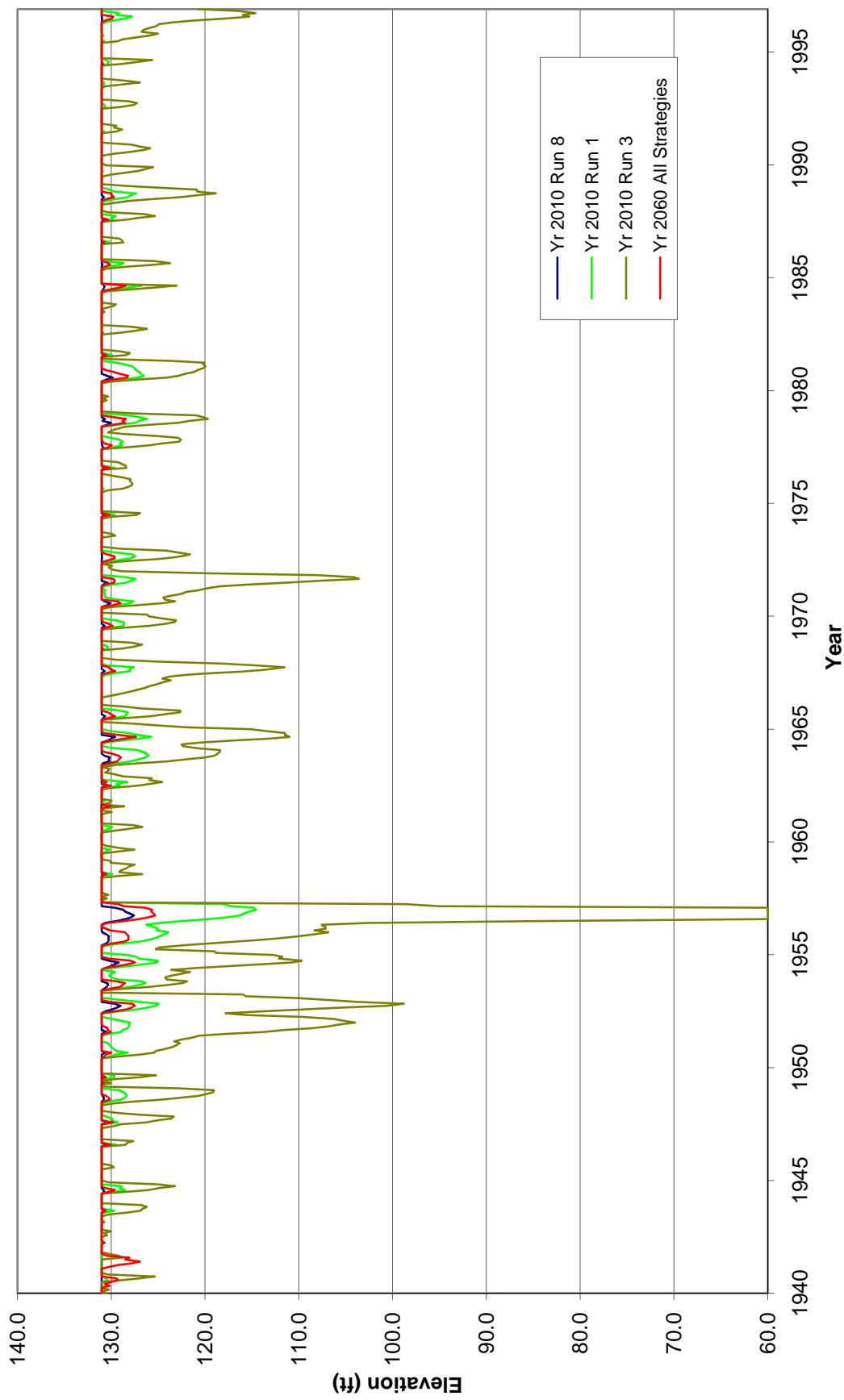


Figure 5B-6
Lake Livingston Elevation Percentiles

