

APPENDIX Q
ENVIRONMENTAL EVALUATION

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This appendix addresses environmental issues associated with Region C water management strategies. Categories of environmental issues evaluated include:

- Instream flows;
- Bay and estuary flows;
- Wildlife habitat
- Cultural resources;
- Wetlands; and
- Water quality.

Environmental Assessment Tables

Table Q-1 lists the general strategies that are defined in Senate Bill 1. These strategies range from fully adoptable to impracticable for implementation in region C. Table Q-1 has been structured to display those strategies that have been recommended in Region C. In some cases the strategy involves a major construction component that has environmental issues in itself. For example, pipelines and pump stations are necessary to implement several of the strategies. Table Q-1 includes these components and provides an assessment for them as well as the strategy itself. Table Q-2 lists regional water management strategies contemplated for Region C and the associated environmental issues. Table Q-3 lists the environmental issues for water management strategies associated with major water providers and other regional suppliers. Table Q-4 lists the environmental issues for water management strategies associated with each water user group in Region C. Rankings are provided in each table, shown as low, moderate, high, or a combination of low, moderate or high. This ranking system is based on the degree of difficulty necessary to either avoid the specific environmental issue or to mitigate it. Where appropriate a narrative explanation has been provided in the tables to provide additional information. More specific information on reservoir sites was referenced from documents and studies performed for the planned sites. These sources are found as (21),

(22), (39), (63), (64), (65), (70) and (71) in Appendix A, List of References, for the Region C Plan.

The tables do not include any discussion of effects that can logically be considered as low or non-existent. An example of a low effect is an administrative action such as renewal of existing water supply contracts. Another example is installation of a new well when sufficient groundwater supply exists.

General Strategies

Table Q-1 contains environmental impacts of general strategies that are feasible for Region C:

- New Water Supply Development
 - Reservoir Construction
 - Adding a New Well
 - Pipeline and Pump Station Construction;
- Connecting to Existing Sources
- Interbasin Transfers
- Reservoir System Operations
 - Overdrafting Reservoirs
 - Temporary Aquifer Overdrafting;
- Reuse of Wastewater
- Desalination
- Water Conservation
- Emergency Management and Drought Response
- Reallocation to New Uses
- Water Management Strategies in Current State Water Plan
- Brush Control

The following strategies were not included in Tables Q-1 through Q-4 as having specific project identification or applicability at this time:

- Voluntary Transfer of Water Rights
- Voluntary Subordination of Water Rights
- Control of Naturally Occurring Chlorides
- Precipitation Enhancement
- Water Right Cancellation

Aquifer Storage and Recovery

An assessment of the various General Strategies, or their individual components, is provided below.

New Supply Development

Reservoir Construction

In general, reservoir construction can result in changes in the following environmental conditions.

- Instream Flows:** Construction of a reservoir will result in a change in downstream flow conditions. The environmental effect, both positive and negative, will be assessed during the reservoir permitting process. Mitigation of negative effects, such as maintaining instream flow conditions, will be a component of the permit(s) provisions.
- Bay - Estuary Flows:** Construction of a reservoir may change the flow pattern that enters downstream bays and estuaries. The projections for bay and estuary needs are subject to refinement as site-specific data is gathered regarding water quality conditions and fishery production. Sources of inflow to bays and estuaries include gaged and ungaged streams within contributing basins.
- Wildlife Habitat:** Construction of a reservoir creates a new wildlife habitat for fisheries and other aquatic animals. The inundation of lowland stream channels and riparian corridors will result in changing the nature of the aquatic and terrestrial habitat.
- Cultural Resources** A reservoir may impact cultural resources by the construction of the dam and spillway or inundation of certain areas. Impacts on cultural resources will be minimized during the design and construction process and will be mitigated during the permitting process
- Wetlands** Wetlands may be impacted both within the impoundment area and downstream of the dam. Oftentimes significant areas are altered.
- Water Quality** Reservoirs can affect the quality of water by changing from a riverine environment of varying flow regimes to a pool environment. The resulting water quality depends to a large degree on the characteristics of the upstream drainage area (i.e.,

non-point discharge sources and wastewater return flows.) Additionally, the physical characteristics and hydrology of the reservoir has an effect on water quality conditions. A reservoir can serve to improve water quality by removing and reducing pollutants such as sediments with their attached chemical constituents. Pondered water within the reservoir can also result in an increase in algae and macrophyte levels, a naturally occurring process that can be stimulated by nutrients (i.e., phosphorous and nitrogen). Water quality within reservoirs can be managed to a large degree by watershed management programs. Actions for controlling the water quality conditions to ensure the quality is suitable for its intended use will be dictated by the Texas Natural Resource Conservation Commission Water Quality Standards.

Adding New Wells

The addition of new wells is recommended in those cases where sustainable groundwater is available within the aquifers that underlie the region. Environmental impacts of groundwater wells are minor and are usually limited to the construction of pipelines and pump stations. Since groundwater wells are an alternative to surface water use, the strategy of adding wells represents an avoidance of environmental conflicts with developing surface water resources.

Pipeline and Pump Station Construction (a major component of Reservoir Construction, Interbasin Transfers, Reuse projects and Groundwater projects)

Careful selection of pipeline routes and construction methodology for stream crossings can limit the environmental issues associated with pipelines and pump stations. The preferred route for pipelines is along existing road right-of-ways or in existing rights-of ways for other utility systems. Whereas this does not obviate the need for consideration of environmental study of the proposed route, it does locate the construction in areas where other construction has already taken place. Where pipelines are planned for areas where no other utilities or roadways exist, or where economics favor other alignments, there is usually a choice of possible alignments, such that the pipeline can be routed around areas where known cultural resources exist, or where a critical wildlife habitat is known. Stream crossings can be selected based on careful investigation of habitat and aquatic environment within the reach. If conflicts exist that

cannot be resolved by relocating the crossing, other construction techniques, such as tunneling can be used to limit intrusion into the streambed and riparian corridor.

Connecting to Existing Sources

The principal component of connecting to existing sources is pipeline and pump station construction. The strategy provides for the use of reserves that are currently available. In the case of reservoirs the use will have some effect on the stage-frequency of the lake level and the number of spills from the reservoir.

Interbasin Transfer

Depending on location, interbasin transfer and interstate transfer of water can affect instream flows, bays and estuary flows, wildlife habitat and cultural resources and water quality. In general there is a decrease in flows in the basin of origin while the flows in the receiving basin are increased, by at least the amount the return flows are released to the streams. Water quality issues may arise related to organisms from one basin being imported to another. In the case of Region C all proposed interbasin transfers are from basins from which water is currently being imported. Other issues include the regulatory difficulty in affecting interbasin transfers.

Reservoir System Operations

Overdrafting Reservoirs

Operating a series of reservoirs as a system can maximize the yield from the reservoirs. Often this is accomplished by overdrafting reservoirs at the lowest portion of the basin, or overdrafting the reservoirs that are in areas of higher annual rainfall. Overdrafting a reservoir increases available storage and results in a decrease in downstream spills. Lower lake levels associated with overdrafting could have an effect on wildlife habitat by changing the littoral zone of the lake. Finally, lower lake volumes could have a water quality impact on the lake.

Temporary Aquifer Overdrafting

Overdrafting aquifers as a strategy can only be contemplated for short-term duration until alternate supplies can be obtained. Overdrafting can have adverse effects, such as localized surface subsidence, loss of flows to springs, permanent loss of reservoir capacity, and impact on yields of neighboring wells. The actual impact may have only minimal effect on the above factors and must be determined on a case-by-case basis. In those cases where resolution of additional supplies might be a lengthy process, establishment of groundwater conservation districts may be considered for managing groundwater supplies on a district-wide basis.

Water Reclamation and Reuse

The reuse of reclaimed water (i.e., treated wastewater) is a water management strategy that can be a significant supply source for meeting water demands. Reclaimed water has historically been used for irrigation and certain industrial purposes. The use of reclaimed water for supplementing water supplies is currently being pursued within Region C as well as across the country. The practice of water reclamation and reuse serves as an effective water conservation measure.

The quality of reclaimed water has to satisfy the Texas Natural Resource Conservation Commission (TNRCC) rules and regulations for it to be suitable for irrigation purposes. Additionally, the water quality of reclaimed water for supplementing water supplies must result in the quality of a blend of reclaimed water and natural water meeting Safe Drinking Water Standards for potable use.

In addition to the water quality issues sited above, the potential effect on instream flows has to be assessed. The use of reclaimed water may alter the instream flows. However, this effect on instream flow is projected to be offset by population growth and resulting wastewater return flows in Region C. The environmental issue will be addressed during the water reuse permitting process.

Desalination

Raw water supplies from the Red River and within Lake Texoma are being evaluated as appropriate strategies. Because of the chloride concentration in the water, desalination will be necessary to make the water potable. This will result in a waste stream with concentrated chloride and dissolved solids constituents. In that the waste stream will not be suitable for discharging into nearby water courses, the disposal of the waste stream will require special evaluation as to options which might be feasible.

Water Conservation

Water Conservation has been made part of all strategies. Water User Group demand figures reflect the decreased per capita consumption. Actual per capita usage must be evaluated over the years to determine whether conservation goals are being achieved or whether more active public awareness/information programs or other strategies should be instituted.

Reallocation of Reservoir Storage to New Uses - Reallocation of Groundwater

In some counties where the available groundwater is fully allocated to meet current water demands, the implementation of surface water strategies is expected to free up groundwater at various times during the planning period. The groundwater made available can be reallocated to other uses with no attendant environmental impacts.

Water Management Strategies in Current Water Plan –Contract Renewal

The strategies selected follow the projects in the current Water Plan. “Contract Renewal” has been identified with that strategy. There are no direct environmental impacts due to water user groups renewing contracts with a water supplier. In general, the individual contract user demands are aggregated into a single demand on the part of the supplier. The environmental impacts are associated with the total project. In the case of a surface water supplier, the project will have been permitted by the state. Conditions established for operations, such as releases to sustain instream flows, will be part of the permit.

Brush Control

Brush control is not adopted as a regional strategy, however, it is recognized that brush control has local application, particularly in livestock operations. Brush control will serve to improve the amount of instream flow by increasing the amount of rainfall runoff that reaches the stream; however, it will result in a loss of habitat for wildlife. Brush control projects will require assessments on a site-specific basis.

Regional Strategies

The greatest potential for environmental changes are generally associated with water management strategies that might be adopted by the major water providers (Dallas Water Utilities (DWU), North Texas Municipal Water District (NTMWD), Tarrant Regional Water District (TRWD), the City of Fort Worth, and the Trinity River Authority (TRA), and by regional suppliers, such as the Upper Trinity Regional Water District (UTRWD). Water management strategies by such entities include:

- Construction of new water supply reservoirs;
- Construction of pump stations and pipelines;
- Water reclamation and reuse;
- Interbasin transfer of water;
- Interstate transfer of water; and
- System operation of reservoirs (including overdrafting).

Regional strategies are shown in Tables Q-2 and Q-3.

Subregional Strategies

A number of water management strategies for Region C involve local entities acting individually or in cooperation with the regional water suppliers shown in Table Q-3. The specific local strategies are summarized in Table Q-4.

The environmental issues associated with the local strategies are generally presented in the Tables Q-1, Q-2 and Q-3 for General Strategies and Regional Strategies. If that is the case the assessments are not repeated in Table Q-4. Only assessments unique to a specific local strategy are presented in Table Q-4. Other than typical water supply projects the local strategies also include:

- Reuse of reclaimed wastewater for cooling at steam electric power plants;
- Increased diversions from local reservoirs;
- Overdrafting of local reservoirs;
- Reuse of reclaimed wastewater for golf course irrigation; and
- Conversion of water from one type of use to another (i.e. Mining to Manufacturing).

**Table Q-1
Environmental Issues for General Strategies for Water Management**

Strategy	Strategy Components	Level of Difficulty to Address Environmental Issues (1)								Issues to be Addressed and Resolved During Planning and Design (See narrative section of Appendix for additional considerations)
		Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other	Summary	
NEW SUPPLY DEVELOPMENT	Reservoir Construction	M	L - M	M - H	L - H	L - H	L - M		M - H	Instream Flows. Loss of instream flows in the impounded section. Alteration of flow frequency below the dam, including possible dampening of high flows and more reliable low flow periods. Bay and Estuary Flows will be altered by the amount of water diverted from the reservoir and increased evaporation losses. Wildlife Habitat will be affected to the extent that impoundment will cover stream and riparian corridors. Unique species may have critical habitats changed. Cultural Resources will be subjected to permanent inundation or relocation during construction of the dam and appurtenances. Wetlands will be permanently altered in the impoundment area and may be affected downstream. Water Quality issues range from effects of nutrient accumulation to sedimentation depending on watershed management practices. Changes in downstream flow regime could also affect water quality.
	Add Groundwater Wells)	L	L	L	L	L	L		L	This strategy is feasible when sustainable groundwater is available. Instream Flows are indirectly increased by the return flows from groundwater use in municipal and industrial applications. Depending on the type of well field, a large, area-wide system
	Pipeline and Pump Station Construction	L	L	L	L	L	L		L	Wildlife Habitat and Cultural Resources will need to be assessed with respect to pipeline alignment and location and manner of stream crossings so that the effect on wildlife habitat and cultural resources can be minimized during the route selection and design.
INTERBASIN TRANSFER	Interbasin transfer	L	L	L - M	L	L	L - H	L - H	L - H	Instream Flows in the receiving water, if discharge is to a stream, will be increased which may cause changes in the steam bottom and bank configuration. Flows in the donor water system will be reduced. Wildlife Habitat will be affected by either the diminution of flows in the donor system and increase inflows in the recipient system. Bays and Estuaries below the donor water systems will have a reduction in the amount of flows. Bays and estuaries below the receiving waters will have an increase in the amount of flow. Other: Regulatory issues will have to be addressed in accomplishing interbasin transfer.
	Pipeline and Pump Station Construction									See Pipeline and Pump Station Construction above.
	New Supply Development or Connect to Existing Sources									See Reservoir Construction or Add Groundwater Well(s) above

Strategy	Strategy Components	Level of Difficulty to Address Environmental Issues (1)								Issues to be Addressed and Resolved During Planning and Design (See narrative section of Appendix for additional considerations)
		Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other	Summary	
CONNECT TO EXISTING SOURCES	Utilize storage in existing reservoirs	L - M	L - M	L	L	L	L		L	Instream and Bays and Estuaries Flows: The diversion of stored water to other uses will reduce the number of spills from the reservoir that have been historically experienced.
	Pipeline and Pump Station Construction									See Pipeline and Pump Station Construction above.
REALLOCATION OF STORAGE TO OTHER USES	Reservoirs									No impacts other than change in user or category of user
	Groundwater	L - M	L	L	L	L	L		L	Instream Flows : Depending on the project, a large, area-wide well field system could affect spring flow and base flow to streams.
RESERVOIR SYSTEM OPERATIONS	Temporary Overdrafting of Reservoirs	M	L	L	L	L	M		L - M	Instream Flows : Reservoir overdraft would increase available storage which could result in a decrease in the frequency of downstream spills. Wildlife Habitat: Lower lake levels could have an effect on wildlife habitat by changing the littoral zone of the lake. Water Quality: Reduced lake water volumes could affect water quality.
	Temporary Aquifer Overdrafting	L - M	L	L	L	L	L		L	Instream Flows may be affected by reduction in spring flows where the aquifer is hydraulically connected to springs.
REUSE OF WASTEWATER	Reuse	L - H	L	L	L	L	L - M		L - M	Instream Flows may be affected by the reduction in return flows that here-to-fore were returned to the streams. Any reduction will be offset to some degree by the increase in total return flows related to population growth in the upstream areas. Bays and Estuaries effects, if any, must be assessed in accordance with State of Texas guidelines.
	Pipeline and Pump Station Construction									See Pipeline and Pump Station Construction above.
DESALINATION	Desalination	L	L	L	L	L	L-H		L	Water Quality: Desalination will result in a waste stream with high dissolved solids and chloride concentrations that most likely can not be discharged to receiving streams and will require alternative disposal options such as deep well injection or landfilling . Desalination, if accomplished, would require importation from other basins, or groundwater sources. Therefore, there would be no diminution of existing stream flow nor effects to habitat.
WATER CONSERVATION	Water Conservation	L	L	L	L	L	L	M	L	Other: Water conservation is included in all strategies. Periodic confirmation of conservation results are necessary to gauge progress. Increased public awareness measures may be required.

Strategy	Strategy Components	Level of Difficulty to Address Environmental Issues (1)								Issues to be Addressed and Resolved During Planning and Design (See narrative section of Appendix for additional considerations)
		Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other	Summary	
WATER MANAGEMENT STRATEGIES - TEXAS WATER PLAN	Contract Renewal	L	L	L	L	L	L		L	
BRUSH CONTROL	Adopted for as local strategy	L	L	L	L	L	L		L	Brush control will tend to increase instream flows and decrease wildlife habitat.

**Table Q-2
Environmental Issues for Region C Water Management Strategies
Selected Regional Water Supply Projects**

Entity	County	Basin	Project	Level of Difficulty to Address Environmental Issues (1)							Issues to be Addressed and Resolved During Planning and Design	
				Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other		Summary
DWU, NTMWD, TRWD			Marvin Nichols I Reservoir Site & Connecting Pipeline/Pump Station(s)	M	L	H	M-H	H	L		H	See comments on Reservoir Construction and Interbasin Transfers in Table 1. Instream Flows and Wildlife Habitat: The proposed reservoir will inundate approximately 62,100 acres, including a portion of the Sulphur River Bottom West/Cuckoo Pond bottomland hardwood area (USFWS Priority I area). Water Quality issues include inundating oil and gas wells and lignite deposits/mines.
	Fannin		Ralph Hall Reservoir Site	M	L	M	L-M	M	L	M	M	See comments on Reservoir Construction and Interbasin Transfer in Table 1. Other: One of the purposes of Ralph Hall Reservoir is to address erosion problems along the North Fork of the Sulphur River. There is some potential for conflict with the Caddo National Grasslands in southern Fannin County.
	Fannin		Upper Bois d'Arc Creek Reservoir Site	M	L	M	L - M	M	L		M	See comments on Reservoir Construction and Interbasin Transfer in Table 1.
DWU, NTMWD, TRWD			Marvin Nichols II Reservoir Site	M	L	H	M - H	H	L	M		See comments on Reservoir Construction and Interbasin Transfer in Table 1. Instream Flows and Wildlife Habitat will be affected to some degree since the reservoir will inundate parts of the White Oak Creek Wildlife Management Area, lowland stream channels, bottomland hardwoods (including the White Oak bottomland hardwoods, A USFWS Priority 1 area) and wetland areas.
DWU, NTMWD, TRWD			George Parkhouse I Reservoir Site	M	L	H	L - M	H	L		M - H	See comments on Reservoir Construction and Interbasin Transfer in Table 1. Wildlife Habitat: Some of the mitigation areas associated with the Lake Chapman project will be inundated.
DWU, NTMWD, TRWD			George Parkhouse II Reservoir Site	M	L	H	M - H	H	M		M - H	See comments on Reservoir Construction in Table 1.
Water User Groups in Cooke County	Cooke	Red, Trinity	Cooke County Regional Supply System (Treatment and Pipeline)	L	L	L	L	L	L		L	See comments for Pipeline and Pump Station Construction in Table 1
Water User Groups in Cooke County	Grayson	Red, Trinity	Grayson County South Regional Supply System (Treatment and Pipeline) with Raw Water Source from Lake Texoma	L	L	L	L	L	M		L	See comments for Pipeline and Pump Station Construction in Table 1. Water Quality: This alternative will require desalination and disposal of a brine waste stream.
Pottsboro, Grayson County-Other	Grayson	Red	Grayson County North Regional Supply System (Treatment and Pipeline) with Raw Water Source from Lake Texoma	L	L	L	L	L	M		L	See comments for Pipeline and Pump Station Construction in Table 1. Water Quality: This alternative will require desalination and disposal of a brine waste stream.

**Table Q-3
Environmental Issues for Region C Water Management Strategies
Major Water Providers and Other Regional Suppliers**

Entity	Project	Level of Difficulty to Address Environmental Issues (1)								Issues to be Addressed and Resolved During Planning and Design
		Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other	Summary	
NTMWD	Additional Reuse of Water from Wilson Creek WWTP	L	L	L	L	L	M		L	See Reuse from Table 1. Water Quality: The wastewater treatment level and effects of additional discharge of treated wastewater into Lake Lavon must be assessed.
NTMWD	Increase Water Supply from Lake Texoma	L	L	L	L	L	M	L	M	See Pipeline and Pump Station Construction and Interbasin Transfer from Table 1. Instream Flows of Sister Grove creek will be increased with attendant effects on streambank morphology. Water Quality issues related to the raw water quality of Lake Texoma water will require evaluation as to blending with other sources and treatment options.
NTMWD	Oklahoma Water: Pipeline and Pump Stations to Transport Water from Oklahoma to Chapman Lake	L	L	L	L	L	L	L	L	See Pipeline and Pump Station Construction and Interbasin Transfers from Table 1.
NTMWD	Lower Bois d'Arc Creek Reservoir Site & Connecting Pipeline/Pump Station(s)	M	L	M - H	L - M	M - H	L	L	M	See comments for Reservoir Construction, Pipeline and Pump Station Construction, and Interbasin Transfer in table 1. Wildlife Habitat: The Bois D'arc Creek bottomland hardwoods area will be inundated. Other: The Caddo National Grasslands is located immediately downstream of the area
NTMWD	Marvin Nichols I Reservoir Site & Connecting Pipeline/Pump Station(s)									See Marvin Nichols I Reservoir project in Table 2
NTMWD	Treated Water Transmission System	L	L	L	L	L	L		L	See comments on Pipeline and Pump Station Construction in Table 1.
NTMWD	Substantial Additional Water from Lake Texoma & Connecting Pipeline/Pump Station(s)	L	L	L	L	L	M - H	L	L - M	See comments on Pipeline and Pump Station Construction and Interbasin Transfer in Table 1. Instream Flows of Sister Grove creek will be increased with attendant effects on streambank morphology. Water Quality issues related to the raw water quality of Lake Texoma water will require evaluation as to blending with other sources and treatment options. Disposal options for brine generated in any desalination project will require evaluation.
NTMWD	Extend Texoma Pipeline from Headwaters of Sister Grove Creek to Lake Lavon.	L	L	L	L	L	L		L	See comments for Pipeline and Pump Station Construction in Table 1. Instream flows and Wildlife Habitat. Extension of the pipeline alongside Sister Grove Creek will return the creek to its antecedent condition.
TRWD	Cedar Creek/Richland-Chambers pipeline capacity	L	L	L	L	L	L		L	See Pipeline and Pump Station Construction in Table 1. Construction may be limited to existing pump station expansion

Entity	Project	Level of Difficulty to Address Environmental Issues (1)								Issues to be Addressed and Resolved During Planning and Design
		Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other	Summary	
TRWD	Reuse from Trinity River. Diversion of Water Through Constructed Wetlands and into Cedar Creek and Richland-Chambers Lakes.	M	L	L	L	L	M		M	See Reuse from Table 1. Wetlands will be enhanced as a result of the project. Water Quality issues of this strategy are currently being evaluated.
TRWD	Marvin Nichols I Reservoir Site & connecting pipeline/pump station(s)									See Marvin Nichols I Reservoir project in Table 2
TRWD	Oklahoma Water & Connecting Pipeline/Pump Station(s)	M	L	L	L	L	L		L - M	See Pipeline and Pump Station Construction in Table 1. Instream Flows and Wildlife Habitat: The effects of discharge into receiving streams regarding the streambank morphology and existing habitat vis-à-vis pipeline lengths and discharge points requires evaluation.
TRWD	West Fork Connection: Pipeline Between Lake Benbrook and Eagle Mountain Lake to Allow Coordinated Operation of East and West Portions of TRWD system.	L	L	L	L	L	L		L	See comments for Pipeline and Pump Station Construction in Table 1. Impacts of system operation are in the process of being studied.
TRWD	Lake Tehuacana	M	L	M - H	M	M - H	L	L - M	M	See comments on Reservoir Construction in Table 1. Instream Flows and Wildlife Habitat and Wetlands: Lake Tehuacana would inundate several thousand acres, including mixed bottomland hardwood forest and mixed post oak forest . Mitigation lands will require assessment. Other: Natural and mineral resource conflicts may require assessment.
TRWD	Red River/Lake Texoma Water & Connecting Pipeline/Pump Station(s)	M	L	L	L	L	H	L	M	See comments on Pipeline and Pump Station Construction and Interbasin Transfers in Table 1. Instream Flows of the upper West Fork of the Trinity River will be increased depending on the location of the pipeline discharge point The increase in stream flow will affect the streambank morphology. Water Quality issues related to the raw water quality of Red River water will require evaluation as to blending with other sources and treatment options. Disposal options for brine generated in any desalination project will require evaluation.
TRWD	Freestone County Groundwater & Connecting Pipeline/Pump Station(s); Water Transported to Richland-Chambers Reservoir.	L	L	L	L	L	L	M - H	L - H	See Pipeline and Pump Station Construction in Table 1. Other: Local groundwater use may be affected. Geohydrology assessments are required to quantify effects
DWU	Renew expiring contracts	L	L	L	L	L	L		L	See Contract Renewal in Table 1
DWU	Existing Return Flows above DWU Lakes	L	L	L	L	L	L		L	See Reuse in Table 1

Entity	Project	Level of Difficulty to Address Environmental Issues (1)								Issues to be Addressed and Resolved During Planning and Design
		Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other	Summary	
DWU	Additional Temporary Overdraft of Lake Tawakoni and Lake Ray Hubbard	L	L	L	L	L	L	M	L	See Temporary Overdrafting of Reservoirs in Table 1. Other: Reservoirs could be depleted during extended droughts.
DWU	Extend Elm Fork Permit	L	L	L	L	L	L	L	L	
DWU	Lake Fork Connection	L	L	L	L	L	L		L	See comments on Pipeline and Pump Station Construction and Interbasin Transfer in Table 1.
DWU	Lake Palestine Connection	L	L	L	L	L	L		L	See comments on Pipeline and Pump Station Construction and Interbasin Transfer in Table 1.
DWU	Marvin Nichols I Reservoir Site & Connecting Pipeline/Pump Station(s)									See Marvin Nichols I Reservoir project in Table 2
DWU	Southside WWTP Reuse and Necessary Pipelines and Pump Stations.	M	L	L	L	L	M		M	See Reuse from Table 1. Water Quality: The wastewater treatment level and effects of additional discharge of treated wastewater into Lake Ray Hubbard must be assessed.
DWU	Additional Return Flows to DWU Lakes.	L	L	L	L	L	L		L	See Reuse in Table 1
DWU	Additional Reuse	L	L	L	L	L	M		M	See Reuse in Table 1
Fort Worth	Renew Expiring Contracts	L	L	L	L	L	L		L	See Contract Renewal in Table 1
Fort Worth	Proportion of TRWD projects									See TRWD Strategies in Table 2
TRA	Proportion of TRWD projects									See TRWD Strategies in Table 2
TRA	Reuse Project (Dallas, Denton, Ellis, and Tarrant Counties)	L - M	L	L	L	L	L - M		L	See Reuse in Table 1
TRA	Ellis County Project	L	L	L	L	L	L		L	See comments on Pipeline and Pump Station Construction in Table 1. Cultural Resources: An initial study in connection with this alternative indicated no National Register of Historic Places/State Archeological Landmarks; however, some historic farm sites, prison/poor farm site, school site and prehistoric litter sites were found in the general vicinity of pipeline routes.
UTRWD	Connect to Lake Chapman by Pipeline, Transporting Water to Doe Creek above Lake Lewisville for Release into Lake Lewisville	M	L	L	L	L	L		L	See comments on Pipeline and Pump Station Construction and Interbasin Transfer in Table 1. Instream Flows: Completing the Lake Chapman connection would result in stored water being diverted from Lake Chapman and the Sulphur River system, resulting in a decrease in downstream spills/flows. Effects of increased flow into Doe Creek are being evaluated in the design of the pipeline.
UTRWD	Reuse of Lake Chapman Water	L	L	L	L	L	L		L	See Reuse in Table 1. Instream Flows: Since the source of the raw water is from the Sulphur River basin, the reuse of the water will have no effect on instream flows in the Trinity Basin.

**Table Q-4
Environmental Impacts of Region C Water Management Strategies
Water User Groups**

Entity	County	Basin	Project	Level of Difficulty to Address Environmental Issues (1) (2)							Items to be Resolved During Planning and Design	
				Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other		Summary
Allen	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Blue Ridge	Collin	Trinity	Overdraft Woodbine Aquifer in 2000 and Add New Well	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting and Add New Well in Table Q-1
Blue Ridge	Collin	Trinity	Reallocate Woodbine Aquifer (2020-2050)	L	L	L	L	L	L		L	See Reallocation of Groundwater in Table Q-1
Celina	Collin	Trinity	New UTRWD (DWU) customer									See UTRWD strategies in Table Q-3
Celina	Collin	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Celina	Collin	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Dallas	Collin	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Fairview	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Farmersville	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Frisco	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Garland	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Lucas	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
McKinney	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Melissa	Collin	Trinity	Current NTMWD (thru North Collins WSC) customer									See NTMWD strategies in Table Q-3
Murphy	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
New Hope	Collin	Trinity	Current NTMWD (thru North Collins WSC) customer									See NTMWD strategies in Table Q-3
Parker	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Plano	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Princeton	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Prosper	Collin	Trinity	Overdraft Woodbine Aquifer in 2000	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Prosper	Collin	Trinity	In 2010, new NTMWD customer									See NTMWD strategies in Table Q-3
Prosper	Collin	Trinity	New UTRWD (DWU) customer									See UTRWD strategies in Table Q-3
Prosper	Collin	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Prosper	Collin	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Richardson	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Royse City	Collin	Sabine	Current NTMWD customer									See NTMWD strategies in Table Q-3
Sachse	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Wylie	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
County-Other	Collin	Sabine	Current NTMWD customer									See NTMWD strategies in Table Q-3
County-Other	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Manufacturing	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Steam Electric Power	Collin	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Steam Electric Power	Collin	Trinity	Reuse	L - M	L	L	L	L	L - M		L - M	See Reuse in Table Q-1. Water Quality impacts are related to amount of water used, type of cooling system and location of intakes and discharges
Gainesville	Cooke		Overdraft Trinity Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1

Entity	County	Basin	Project	Level of Difficulty to Address Environmental Issues (1) (2)								Items to be Resolved During Planning and Design
				Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other	Summary	
Gainesville	Cooke		Complete 1 MGD pipeline from Moss Lake by 2000	L	L	L	L	L	L		L	See comments on Pipeline and Pump Station Construction in Table Q-1. Instream Flows and Wildlife Habitat. Completing the Moss Lake pipelines would result in additional waters being diverted from Moss Lake causing decrease in downstream flows and greater fluctuations in the lake elevations.
Gainesville	Cooke		Cooke County Regional Supply System by 2010, Including Construction of a Parallel Pipeline to Moss Lake	L	L	L	L	L	L		L	See Pipeline and Pump Station Construction in Table Q-1. Instream Flows: Increased diversion of water from the lake will reduce the frequency of spills.
Lindsay	Cooke		Overdraft Trinity Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Lindsay	Cooke		Cooke County Regional Supply System by 2010, Including Construction of a Parallel Pipeline to Moss Lake	L	L	L	L	L	L		L	See Pipeline and Pump Station Construction in Table Q-1. Instream Flows: Increased diversion of water from the lake will reduce the frequency of spills.
Muenster	Cooke		Overdraft Trinity Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Muenster	Cooke		Construct Muenster Lake by 2010	M	L	L - M	L - M	L - M	L		L - M	See comments on Reservoir Construction in Table Q-1. Instream Flows in Brushy Elm Creek below the dam will be altered. The effect on the Elm Fork of the Trinity River, further downstream will be marginal. Wildlife Habitat and Cultural Resources issues will require assessment, both at the reservoir site and downstream
Valley View	Cooke		Overdraft Trinity Aquifer, 2000-2010 and Add New Wells by 2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting and Add New Well in Table Q-1
Valley View	Cooke		New UTRWD customer by 2030									See UTRWD strategies in Table Q-3
County-Other	Cooke		Overdraft Trinity Aquifer, 2000-2010, Add New Wells and Utilize Unaccounted for Annual Recharge	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting and Add New Well in Table Q-1
County-Other	Cooke		Cooke County Regional Supply System by 2010, Including Construction of a Parallel Pipeline to Moss Lake	L	L	L	L	L	L		L	See Pipeline and Pump Station Construction in Table Q-1. Instream Flows: Increased diversion of water from the lake will reduce the frequency of spills.
County-Other	Cooke		Acquire water from UTRWD by 2030									See UTRWD strategies in Table Q-3
Manufacturing	Cooke		Continue to be supplied by Gainesville									See Gainesville strategies
Manufacturing	Cooke		Continue to be supplied by Muenster									See Muenster strategies
Mining	Cooke		Overdraft Trinity Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Irrigation	Cooke		Overdraft Trinity Aquifer, 2000-2010 and Add New Wells by 2010, Utilize Unaccounted for Annual Effective Recharge	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting and Add New Well in Table Q-1
Livestock	Cooke		Overdraft Trinity Aquifer, 2000-2010 and Add New Wells by 2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting and Add New Well in Table Q-1
Addison	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Balch Springs	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Carrollton	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Cedar Hill	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Cockrell Hill	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Combine	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Coppell	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Dallas	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
DeSoto	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Duncanville	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Farmers Branch	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3

Entity	County	Basin	Project	Level of Difficulty to Address Environmental Issues (1) (2)							Items to be Resolved During Planning and Design	
				Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other		Summary
Garland	Dallas	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Glenn Heights	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Grand Prairie	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Grapevine	Dallas	Trinity	New DWU customer									See DWU strategies in Table Q-3
Grapevine	Dallas	Trinity	Reuse									See Grapevine in Tarrant County
Hutchins	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Irving	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Irving	Dallas	Trinity	Connect to Chapman Lake, transporting water to Lake Lewisville, releasing the water into Doe Creek above the lake, thence releasing from Lake Lewisville to the Elm Fork Trinity River for delivery to Irving.	L	L	L	L	L	L		L	See comments on Pipeline and Pump Station Construction and Interbasin Transfer in Table Q-1. Instream Flows: Completing the Chapman Lake connection would result in stored water being diverted from Chapman Lake and the Sulphur River system, resulting in a decrease in downstream spills/flows. Effects of increased flow into Doe Creek are being evaluated in the design of the pipeline. Flow in the Elm Fork of the Trinity River below Lake Lewisville to the City of Dallas intake point in Carrollton would be increased by the amount of the City of Irving's daily releases.
Irving	Dallas	Trinity	Connect to Marvin Nichols I Lake, transporting water to Lake Lewisville, releasing the water into Doe Creek above the lake, thence releasing from Lake Lewisville to the Elm Fork Trinity River for delivery to Irving.	L	L	L	L	L	L		L	See comments on Marvin Nichols Reservoir in Table Q-2 and Construction and Interbasin Transfer in Table Q-1. Similar impacts as enumerated in Connecting to Chapman Lake as shown above
Irving	Dallas	Trinity	Oklahoma Water: Pipeline and Pump Stations to Transport Water from Oklahoma to Lewisville Lake	L	L	L	L	L	L		L	See comments for NTMWD; Oklahoma Water in Table Q-3
Irving	Dallas	Trinity	Reuse	L	L	L	L	L	L		L	See Reuse in Table Q-1.
Lancaster	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Lewisville	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Mesquite	Dallas	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Ovilla	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Richardson	Dallas	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Rowlett	Dallas	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Sachse	Dallas	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Seagoville	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Sunnyvale	Dallas	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Wilmer	Dallas	Trinity	Overdraft aquifer in 2000	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Wilmer	Dallas	Trinity	New DWU customer									See DWU strategies in Table Q-3
County-Other	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
County-Other	Dallas	Trinity	Buy from DWU									See DWU strategies in Table Q-3
County-Other	Dallas	Trinity	Reuse from TRA CRWS for Landscape Irrigation	L - M	L	L	L	L	L - M		L - M	See Reuse in Table Q-1.
County-Other	Dallas	Trinity	Reuse from TRA CRWS , Joe Pool Lake for municipal supply	L - M	L	L	L	L	L - M		L - M	See Reuse in Table Q-1.

Entity	County	Basin	Project	Level of Difficulty to Address Environmental Issues (1) (2)							Items to be Resolved During Planning and Design	
				Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other		Summary
County-Other	Dallas	Trinity	Reuse from TRA Denton Creek WTP, Grapevine Lake for municipal supply	L - M	L	L	L	L	L - M		L - M	See Reuse in Table Q-1.
Manufacturing	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Manufacturing	Dallas	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Steam Electric Power	Dallas	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Steam Electric Power	Dallas	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Steam Electric Power	Dallas	Trinity	Reuse (DWU)	L - M	L	L	L	L	L - M		L - M	See Reuse in Table Q-1. Water Quality impacts are related to amount of water used, type of cooling system and location of intakes and discharges
Steam Electric Power	Dallas	Trinity	Reuse (TRA)	L - M	L	L	L	L	L - M		L - M	See Reuse in Table Q-1. Water Quality impacts are related to amount of water used, type of cooling system and location of intakes and discharges
Mining	Dallas	Trinity	Overdraft Trinity Aquifer thru 2010 and Add New Well									See Temporary Aquifer Overdrafting and Add New Well in Table Q-1
Mining	Dallas	Trinity	Reallocate Trinity Aquifer	L	L	L	L	L	L		L	See Reallocation of Groundwater in Table Q-1
Mining	Dallas	Trinity	New DWU customer									See DWU strategies in Table Q-3
Argyle	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Argyle	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Argyle	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Aubrey	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Aubrey	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Aubrey	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Bartonville	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Bartonville	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Bartonville	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Carrollton	Denton	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Copper Canyon	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Copper Canyon	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Copper Canyon	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Corinth	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Corinth	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Corinth	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Crossroads	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Crossroads	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Crossroads	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Dallas	Denton	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Denton	Denton	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Denton	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Denton	Denton	Trinity	Current TRWD Customer (thru DWU)									See DWU and UTRWD strategies in Table Q-3
Denton	Denton	Trinity	Reuse Chapman Lake water delivered to Denton									Strategy currently being developed
Double Oak	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Double Oak	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Double Oak	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Flower Mound	Denton	Trinity	Current DWU customer									See DWU strategies in Table Q-3

Entity	County	Basin	Project	Level of Difficulty to Address Environmental Issues (1) (2)							Items to be Resolved During Planning and Design	
				Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other		Summary
Flower Mound	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Flower Mound	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Flower Mound	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Frisco	Denton	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Hebron	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Hebron	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Hebron	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Hickory Creek	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Hickory Creek	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Hickory Creek	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Highland Village	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Highland Village	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Highland Village	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Justin	Denton	Trinity	Overdraft Trinity Aquifer in 2000	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Justin	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Justin	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Krugerville	Denton	Trinity	Overdraft Trinity Aquifer in 2000 and Add New Well	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting and Add New Well in Table Q-1
Krugerville	Denton	Trinity	New DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Krugerville	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Krugerville	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Krum	Denton	Trinity	Overdraft Trinity Aquifer in 2000	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Krum	Denton	Trinity	New DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Krum	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Krum	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Lake Dallas	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Lake Dallas	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Lake Dallas	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Lewisville	Denton	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Lewisville	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Lincoln Park	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Lincoln Park	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Lincoln Park	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Little Elm	Denton	Trinity	Overdraft Woodbine Aquifer in 2000 and Add New Well									See Temporary Aquifer Overdrafting and Add New Well in Table Q-1
Little Elm	Denton	Trinity	New DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Little Elm	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Little Elm	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Northlake	Denton	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Northlake	Denton	Trinity	Current TRWD Customer									See TRWD strategies in Table Q-3
Oak Point	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Oak Point	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Oak Point	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Pilot Point	Denton	Trinity	Overdraft Trinity Aquifer in 2000	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Pilot Point	Denton	Trinity	New DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Pilot Point	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Pilot Point	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3

Entity	County	Basin	Project	Level of Difficulty to Address Environmental Issues (1) (2)							Items to be Resolved During Planning and Design	
				Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other		Summary
Plano	Denton	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Ponder	Denton	Trinity	New DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Ponder	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Ponder	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Roanoke	Denton	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Sanger	Denton	Trinity	Current DWU customer (thru UTRWD thru Denton)									See DWU and UTRWD strategies in Table Q-3
Sanger	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Sanger	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Shady Shores	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Shady Shores	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Shady Shores	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Southlake	Denton	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
The Colony	Denton	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Trophy Club	Denton	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
County-Other	Denton	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
County-Other	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
County-Other	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
County-Other	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
County-Other	Denton	Trinity	Reuse (TRA), Landscape irrigation	L - M	L	L	L	L	L - M		L - M	See Reuse in Table Q-1.
Manufacturing	Denton	Trinity	Current DWU customer (thru UTRWD)									See DWU and UTRWD strategies in Table Q-3
Manufacturing	Denton	Trinity	New UTRWD customer (Reuse)									See UTRWD strategies in Table Q-3
Manufacturing	Denton	Trinity	New UTRWD customer (Chapman Lake)									See UTRWD strategies in Table Q-3
Steam Electric Power	Denton	Trinity	Reuse	L - M	L	L	L	L	L - M		L - M	See Reuse in Table Q-1. Water Quality impacts are related to amount of water used, type of cooling system and location of intakes and discharges.
Cedar Hill	Ellis	Trinity	Renew contract with DWU									See Contract Renewal in Table Q-1. See DWU strategies in Table Q-3
Ennis	Ellis	Trinity	TRA Ellis County Water Supply Project by 2010									See TRA strategies in Table Q-3
Ferris	Ellis	Trinity	TRA Ellis County Water Supply Project by 2020									See TRA strategies in Table Q-3
Glenn Heights	Ellis	Trinity	Renew contract with DWU									See Contract Renewal in Table Q-1. See DWU strategies in Table Q-3
Grand Prairie	Ellis	Trinity	Renew contract with DWU									See Contract Renewal in Table Q-1. See DWU strategies in Table Q-3
Italy	Ellis	Trinity	Overdraft Trinity Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Italy	Ellis	Trinity	TRA Ellis County Water Supply Project by 2010									See TRA strategies in Table Q-3
Italy	Ellis	Trinity	Additional supply from TRA Ellis County Water Supply Project by 2050									See TRA strategies in Table Q-3
Mansfield	Ellis	Trinity	Obtain additional water from TRWD by 2010									See TRWD strategies in Table Q-3
Maypearl	Ellis	Trinity	Overdraft Woodbine Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Maypearl	Ellis	Trinity	TRA Ellis County Water Supply Project by 2010									See TRA strategies in Table Q-3

Entity	County	Basin	Project	Level of Difficulty to Address Environmental Issues (1) (2)							Items to be Resolved During Planning and Design		
				Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other		Summary	
Midlothian	Ellis	Trinity	TRA Ellis County Water Supply Project by 2020									See TRA strategies in Table Q-3	
Midlothian	Ellis	Trinity	Additional supply from TRA Ellis County Water Supply Project by 2030									See TRA strategies in Table Q-3	
Milford	Ellis	Trinity	Overdraft Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1	
Milford	Ellis	Trinity	Acquire surface water from Italy (via TRA) by 2010.	L	L	L	L	L	L		L		
Milford	Ellis	Trinity	Additional surface water from Files Valley WSC by 2000.	L	L	L	L	L	L		L		
Oak Leaf	Ellis	Trinity	Renew contract with DWU									See Contract Renewal in Table Q-1. See DWU strategies in Table Q-3	
Ovilla	Ellis	Trinity	Contract for water from DWU									See DWU strategies in Table Q-3	
Palmer	Ellis	Trinity	Overdraft Woodbine Aquifer, 2000-2010									See Temporary Aquifer Overdrafting in Table Q-1	
Palmer	Ellis	Trinity	TRA Ellis County Water Supply Project by 2010									See TRA strategies in Table Q-3	
Pecan Hill	Ellis	Trinity	Contract for supply from Rockett SUD by 2000	L	L	L	L	L	L		L		
Red Oak	Ellis	Trinity	Overdraft Woodbine Aquifer, 2000-2010									See Temporary Aquifer Overdrafting in Table Q-1	
Red Oak	Ellis	Trinity	TRA Ellis County Water Supply Project by 2010									See TRA strategies in Table Q-3	
Waxahachie	Ellis	Trinity	TRA Ellis County Water Supply Project by 2050									See TRA strategies in Table Q-3	
County-Other	Ellis	Trinity	TRA Ellis County Water Supply Project by 2030									See TRA strategies in Table Q-3	
Manufacturing	Ellis	Trinity	Continue to obtain supply from current sources: Ennis, Ferris, Midlothian, Waxahachie, County-Other; see strategies for these entities										See Contract Renewal in Table Q-1 (Ennis, Ferris, Midlothian, Waxahachie, County-Other)
Steam Electric Power	Ellis	Trinity	Reuse of wastewater from Ennis WWTP by Tractebel plant by 2010	L - M	L	L	L	L	L - M		L - M	See Reuse in Table Q-1. Instream Flows: Cummings Creek below the treatment plant will be Water Quality impacts are related to amount of water used, type of cooling system and location of intakes and discharges	
Steam Electric Power	Ellis	Trinity	Ennis to supplement above reuse with water from Lake Bardwell (to Tractebel)	L	L	L	L	L	L		L	Instream Flows: Use water for consumptive use will reduce the number and frequency of spills from the lake. Water Quality: Water temperature in the near vicinity of the discharge	
Steam Electric Power	Ellis	Trinity	Midlothian supply to ANP plant from Joe Pool Lake	L	L	L	L	L	L		L	Minor quantities involved	
Steam Electric Power	Ellis	Trinity	Reuse from TRA Ten Mile Creek WWTP by 2010	L - M	L	L	L	L	L - M		L - M	See Reuse in Table Q-1. Instream Flows: Discharge to Ten Mile Creek will be reduced. Water Quality impacts are related to amount of water used, type of cooling system and location of intakes and discharges	
County-Other	Fannin	Trinity	Additional wells from Trinity or Woodbine Aquifers	L	L	L	L	L	L		L	See Add New Well in Table Q-1	
Bonham	Fannin	Red	Lower Bois d'Arc Creek Reservoir, water treatment plant, pipelines and pump stations	M	L	M-H	L	M-H	L	L	L	See Lower Bois d'Arc Creek reservoir in Table Q-3, NTMWD	
Honey Grove	Fannin	Sulphur	Lower Bois d'Arc Creek Reservoir, water treatment plant, pipelines and pump stations	M	L	M-H	L	M-H	L	L	L	See Lower Bois d'Arc Creek reservoir in Table Q-3, NTMWD	

Entity	County	Basin	Project	Level of Difficulty to Address Environmental Issues (1) (2)								Items to be Resolved During Planning and Design
				Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other	Summary	
Honey Grove	Fannin	Red	Lower Bois d'Arc Creek Reservoir, water treatment plant, pipelines and pump stations	M	L	M-H	L	M-H	L	L	L	See Lower Bois d'Arc Creek reservoir in Table Q-3, NTMWD
Leonard	Fannin	Sulphur	Lower Bois d'Arc Creek Reservoir, water treatment plant, pipelines and pump stations	M	L	M-H	L	M-H	L	L	L	See Lower Bois d'Arc Creek reservoir in Table Q-3, NTMWD
Leonard	Fannin	Trinity	Lower Bois d'Arc Creek Reservoir, water treatment plant, pipelines and pump stations	M	L	M-H	L	M-H	L	L	L	See Lower Bois d'Arc Creek reservoir in Table Q-3, NTMWD
Savoy	Fannin	Red	Lower Bois d'Arc Creek Reservoir, water treatment plant, pipelines and pump stations	M	L	M-H	L	M-H	L	L	L	See Lower Bois d'Arc Creek reservoir in Table Q-3, NTMWD
Trenton	Fannin	Trinity	Lower Bois d'Arc Creek Reservoir, water treatment plant, pipelines and pump stations	M	L	M-H	L	M-H	L	L	L	See Lower Bois d'Arc Creek reservoir in Table Q-3, NTMWD
County-Other	Fannin	Trinity	Lower Bois d'Arc Creek Reservoir, water treatment plant, pipelines and pump stations	M	L	M-H	L	M-H	L	L	L	See Lower Bois d'Arc Creek reservoir in Table Q-3, NTMWD
County-Other	Fannin	Trinity	Upper Bois d'Arc Creek Reservoir, water treatment plant, pipelines and pump stations	M	L	M-H	L	M-H	L	L	L	See Reservoir Construction and Pipeline and Pump Stations in Table Q-1
County-Other	Fannin	Trinity	Ralph Hall Reservoir, water treatment plant, pipelines and pump stations	M	L	M-H	L	M-H	L	L	L	See Reservoir Construction and Pipeline and Pump Stations in Table Q-1
Fairfield	Freestone	Trinity	Add new well									See Add New Well in Table Q-1
Fairfield	Freestone	Trinity	New TRWD customer									See TRWD strategies in Table Q-3
Fairfield	Freestone	Trinity	New TRWD customer (thru TRA)									See TRWD and TRA strategies in Table Q-3
Wortham	Freestone	Trinity	Contract for water from L. Mexia, Pipeline is in place.	L	L	L	L	L	L		L	
Wortham	Freestone	Trinity	New TRWD Customer after 2010	L	L	L	L	L	L		L	See TRWD strategies in Table Q-3
Steam Electric Power	Freestone	Trinity	Calpine (formerly Entergy) contract with TRWD. New customer.	L	L	L	L	L	L		L	See comments on Pipeline and Pump Station Construction in Table Q-1.
Steam Electric Power	Freestone	Trinity	New TRWD customer	L	L	L	L	L	L		L	See comments on Pipeline and Pump Station Construction in Table Q-1.
Steam Electric Power	Freestone	Trinity	Additional Carrizo-Wilcox Aquifer	L	L	L	L	L	L		L	See Add New Well in Table Q-1
Bells	Grayson		Overdraft both the Trinity and the Woodbine Aquifers, 2000-2010.	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Bells	Grayson		Grayson County South Regional Supply System by 2010									See Grayson County South Regional Supply System in Table Q-3
Collinsville	Grayson		Overdraft Trinity Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Collinsville	Grayson		Grayson County South Regional Supply System by 2010									See Grayson County South Regional Supply System in Table Q-3
Gunter	Grayson		Overdraft Trinity Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Gunter	Grayson		Grayson County South Regional Supply System by 2010									See Grayson County South Regional Supply System in Table Q-3
Howe	Grayson		Overdraft Woodbine Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Howe	Grayson		Grayson County South Regional Supply System by 2010									See Grayson County South Regional Supply System in Table Q-3
Luella	Grayson		Overdraft Woodbine Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Luella	Grayson		Grayson County South Regional Supply System by 2010									See Grayson County South Regional Supply System in Table Q-3
Pottsboro	Grayson		Grayson County North Regional Supply System by 2020									See Grayson County North Regional Supply System in Table Q-3

Entity	County	Basin	Project	Level of Difficulty to Address Environmental Issues (1) (2)								Items to be Resolved During Planning and Design
				Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other	Summary	
Sherman	Grayson		Grayson County South Regional Supply System by 2030									See Grayson County South Regional Supply System in Table Q-3
Southmayd	Grayson		Overdraft Woodbine Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Southmayd	Grayson		Grayson County South Regional Supply System by 2010									See Grayson County South Regional Supply System in Table Q-3
Tioga	Grayson		Overdraft Trinity Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Tioga	Grayson		Grayson County South Regional Supply System by 2010									See Grayson County South Regional Supply System in Table Q-3
Tom Bean	Grayson		Overdraft Woodbine Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Tom Bean	Grayson		Grayson County South Regional Supply System by 2010									See Grayson County South Regional Supply System in Table Q-3
Van Alstyne	Grayson		Overdraft both the Trinity and the Woodbine Aquifers, 2000-2010.	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Van Alstyne	Grayson		Grayson County South Regional Supply System by 2010									See Grayson County South Regional Supply System in Table Q-3
Whitesboro	Grayson		Overdraft Trinity Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Whitesboro	Grayson		Grayson County South Regional Supply System by 2010									See Grayson County South Regional Supply System in Table Q-3
Whitewright	Grayson		Overdraft Woodbine Aquifer, 2000-2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Whitewright	Grayson		New wells in the Trinity and Woodbine Aquifers, 2010-2030	L	L	L	L	L	L		L	See Add New Well in Table Q-1
Whitewright	Grayson		Grayson County South Regional Supply System by 2030									See Grayson County South Regional Supply System in Table Q-3
County-Other	Grayson		Overdraft both the Trinity and the Woodbine Aquifers, 2000-2010.	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
County-Other	Grayson		Grayson County South Regional Supply System by 2010									See Grayson County South Regional Supply System in Table Q-3
County-Other	Grayson		Grayson County North Regional Supply System by 2010									See Grayson County North Regional Supply System in Table Q-3
Manufacturing	Grayson		Grayson County South Regional Supply System by 2010									See Grayson County South Regional Supply System in Table Q-3
Mining	Grayson		Overdraft both the Trinity and the Woodbine Aquifers, 2000-2010, Add New Wells 2010, 2030	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting and Add New Well in Table Q-1
Irrigation	Grayson		Add Trinity wells by 2010	L	L	L	L	L	L		L	See Add New Well in Table Q-1
Malakoff	Henderson		Contract with TRWD for water from Cedar Creek Reservoir									See Pipeline and Pump Station Construction in Table Q-1
Combine	Kaufman	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Crandall	Kaufman	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Dallas	Kaufman	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Forney	Kaufman	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Kaufman	Kaufman	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Oak Grove	Kaufman	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
County Other	Kaufman	Sabine	Current NTMWD customer									See NTMWD strategies in Table Q-3
County Other	Kaufman	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
County Other	Kaufman	Trinity	Current TRWD customer									See TRWD strategies in Table Q-3
County Other	Kaufman	Trinity	Additional water from Terrell (Lake Tawakoni)									

Entity	County	Basin	Project	Level of Difficulty to Address Environmental Issues (1) (2)							Items to be Resolved During Planning and Design	
				Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other		Summary
Manufacturing	Kaufman	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Steam Electric Power	Kaufman	Trinity	Reuse from Garland	L - M	L	L	L	L	L - M		L - M	See comments on Reuse and Pipeline and Pump Station Construction in Table Q-1. Instream Flows: Diverting treated wastewater from the Garland Duck Creek WWTP for use as steam electric cooling water at the Cobisa plant near Forney would result in a reduction of instream flows in Duck Creek downstream of the WWTP. Water Quality: There will be a return pipeline from the Cobisa plant to the WWTP, and the process is expected to concentrate pollutants in the wastewater discharge from the WWTP.
Mining	Kaufman	Trinity	Overdraft Woodbine in 2000 and Add New Well	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Mining	Kaufman	Trinity	New TRWD customer									See TRWD strategies in Table Q-3
Irrigation	Kaufman	Trinity	Overdraft Nacatoch aquifer in 2000 and Add New Well	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Irrigation	Kaufman	Trinity	Transfer Nacatoch groundwater from livestock to irrigation use (Reallocation)	L	L	L	L	L	L		L	See Reallocation of Groundwater in Table Q-1
Irrigation	Kaufman	Trinity	New TRWD Customer									See TRWD strategies in Table Q-3
Corsicana	Navarro	Trinity	Construct parallel pipeline to Richland Chambers after 2030 to use own water rights.	L	L	L	L	L	L		L	See Pipeline and Pump Station Construction in Table Q-1
Mining	Navarro	Trinity	Add new well in Carrizo-Wilcox Aquifer	L	L	L	L	L	L		L	See Add New Well in Table Q-1
Mining	Navarro	Trinity	Add new well in Nacatoch Aquifer	L	L	L	L	L	L		L	See Add New Well in Table Q-1
Aledo	Parker	Trinity	Overdraft Trinity Aquifer in 2000	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Aledo	Parker	Trinity	New TRWD customer (thru Weatherford)									See TRWD strategies in Table Q-3
Annetta	Parker	Trinity	Add new well in Other Aquifer	L	L	L	L	L	L		L	See Add New Well in Table Q-1
Annetta	Parker	Trinity	Overdraft other aquifer thru 2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Annetta	Parker	Trinity	New TRWD customer (thru Weatherford)									See TRWD strategies in Table Q-3
Azle	Parker	Trinity	Current TRWD customer									See TRWD strategies in Table Q-3
Briar	Parker	Trinity	Current TRWD customer									See TRWD strategies in Table Q-3
Hudson Oaks	Parker	Trinity	Overdraft Trinity Aquifer in 2000	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Hudson Oaks	Parker	Trinity	New TRWD customer (thru Weatherford)									See TRWD strategies in Table Q-3
Reno	Parker	Trinity	Current TRWD customer (thru Springtown)									See TRWD strategies in Table Q-3
Springtown	Parker	Trinity	Current TRWD customer									See TRWD strategies in Table Q-3
Weatherford	Parker	Trinity	Overdraft Lake Weatherford in 2000	L	L	L	L	L	L - M		L - M	See Temporary Overdrafting of Reservoirs in Table Q-1.
Weatherford	Parker	Trinity	Current TRWD customer. Construct Pipeline to Lake Benbrook by 2010									See TRWD strategies in Table Q-3
Weatherford	Parker	Brazos	Overdraft Lake Weatherford in 2000	L	L	L	L	L	L - M		L - M	See Weatherford in the Trinity Basin
Weatherford	Parker	Brazos	Current TRWD customer. Construct Pipeline to Lake Benbrook by 2010									See TRWD strategies in Table Q-3
Willow Park	Parker	Trinity	Overdraft Trinity Aquifer in 2000									See Temporary Aquifer Overdrafting in Table Q-1
Willow Park	Parker	Trinity	New TRWD customer (thru Weatherford)									See TRWD strategies in Table Q-3
County-Other	Parker	Trinity	Overdraft Trinity Aquifer thru 2010 and Add New Well	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting and Add New Well in Table Q-1
County-Other	Parker	Trinity	Current TRWD customer									See TRWD strategies in Table Q-3
County-Other	Parker	Brazos	Overdraft Trinity Aquifer thru 2010 and Add New Well	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting and Add New Well in Table Q-1
County-Other	Parker	Brazos	Current TRWD customer									See TRWD strategies in Table Q-3

Entity	County	Basin	Project	Level of Difficulty to Address Environmental Issues (1) (2)							Items to be Resolved During Planning and Design	
				Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other		Summary
Manufacturing	Parker	Trinity	New TRWD customer from Lake Benbrook									See TRWD strategies in Table Q-3
Manufacturing	Parker	Brazos	Add new well in Trinity Aquifer	L	L	L	L	L	L		L	See Add New Well in Table Q-1
Manufacturing	Parker	Brazos	Overdraft Trinity Aquifer thru 2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Manufacturing	Parker	Brazos	New TRWD customer (thru Weatherford)									See TRWD strategies in Table Q-3
Steam Electric Power	Parker	Trinity	New TRWD customer									See TRWD strategies in Table Q-3
Steam Electric Power	Parker	Trinity	Weatherford Reuse; Discharge from Weatherford WWTP to Lake Weatherford (pipeline) for Use by Plant at Lake.	M	L	L	L	L	M		L - M	See Reuse in Table Q-1. Water Quality impacts are related to amount of water used, type of cooling system and location of intakes and discharges. The steam electric plant would discharge to Lake Weatherford, causing increased temperature and pollutant loading of the lake.
Mining	Parker	Trinity	Overdraft Trinity Aquifer in 2000 and Add New Well	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting and Add New Well in Table Q-1
Mining	Parker	Trinity	New TRWD customer									See TRWD strategies in Table Q-3
Mining	Parker	Trinity	Increase Diversions from Other Local Supply	L	L	L	L	L	L		L	
Mining	Parker	Brazos	Increase diversions from Other Local Supply	L	L	L	L	L	L		L	
Mining	Parker	Brazos	New TRWD customer									See TRWD strategies in Table Q-3
Dallas	Rockwall	Trinity	Current DWU customer									See DWU strategies in Table Q-3
Heath	Rockwall	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Rockwall	Rockwall	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Rowlett	Rockwall	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Royse City	Rockwall	Sabine	Current NTMWD customer									See NTMWD strategies in Table Q-3
Wylie	Rockwall	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
County-Other	Rockwall	Sabine	Current NTMWD customer									See NTMWD strategies in Table Q-3
County-Other	Rockwall	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Manufacturing	Rockwall	Trinity	Current NTMWD customer									See NTMWD strategies in Table Q-3
Steam Electric Power	Rockwall	Sabine	Reuse	L - M	L	L	L	L	M		M	See Reuse in Table Q-1. Water Quality impacts are related to amount of water used, type of cooling system and location of intakes and discharges
Arlington	Tarrant	Trinity	Current TRWD customer									See TRWD strategies in Table Q-3
Azle	Tarrant	Trinity	Current TRWD customer									See TRWD strategies in Table Q-3
Bedford	Tarrant	Trinity	Current TRA customer									See TRA strategies in Table Q-3
Blue Mound	Tarrant	Trinity	Current TRWD customer (thru Tecon)									See TRWD strategies in Table Q-3
Briar	Tarrant	Trinity	Current TRWD customer (thru Community WSC)									See TRWD strategies in Table Q-3
Burleson	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Colleyville	Tarrant	Trinity	Current TRA customer									See TRWD strategies in Table Q-3
Crowley	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Dalworthington Gard.	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Edgecliff	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Eules	Tarrant	Trinity	Current TRA customer									See TRWD strategies in Table Q-3
Everman	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Forest Hill	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Fort Worth	Tarrant	Trinity	Current TRWD customer									See TRWD strategies in Table Q-3
Grand Prairie	Tarrant	Trinity	Current DWU customer									See DWU strategies in Table Q-3

Entity	County	Basin	Project	Level of Difficulty to Address Environmental Issues (1) (2)							Summary	Items to be Resolved During Planning and Design
				Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other		
Grand Prairie	Tarrant	Trinity	Current TRWD customer (thru TRA thru Fort Worth)									See TRWD strategies in Table Q-3
Grapevine	Tarrant	Trinity	Current TRA customer									See TRA strategies in Table Q-3
Grapevine	Tarrant	Trinity	New DWU customer									See DWU strategies in Table Q-3
Grapevine	Tarrant	Trinity	Direct Reuse for Golf Course Irrigation	L	L	L	L	L	L		L	See Reuse in Table Q-1.
Haltom City	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Haslet	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Hurst	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Keller	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Kennedale	Tarrant	Trinity	Overdraft Trinity Aquifer in 2000 and Add New Well	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting and Add New Well in Table Q-1
Kennedale	Tarrant	Trinity	New TRWD customer									See TRWD strategies in Table Q-3
Lake Worth Village	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Mansfield	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
North Richland Hills	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
North Richland Hills	Tarrant	Trinity	Current TRA customer									See TRA strategies in Table Q-3
Pantego	Tarrant	Trinity	Overdraft Trinity Aquifer in 2000	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Pantego	Tarrant	Trinity	New TRWD customer									See TRWD strategies in Table Q-3
Pantego	Tarrant	Trinity	Reallocate Trinity Aquifer	L	L	L	L	L	L		L	See Reallocation of Groundwater in Table Q-1
Pelican Bay	Tarrant	Trinity	Overdraft Trinity Aquifer in 2000 and Add New Well	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting and Add New Well in Table Q-1
Pelican Bay	Tarrant	Trinity	Reallocate Trinity Aquifer	L	L	L	L	L	L		L	See Reallocation of Groundwater in Table Q-1
Pelican Bay	Tarrant	Trinity	New TRWD customer									See TRWD strategies in Table Q-3
Richland Hills	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
River Oaks	Tarrant	Trinity	Current TRWD Customer									See TRWD strategies in Table Q-3
Saginaw	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Sansom Park Village	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Southlake	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Watauga	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Westworth Village	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
White Settlement	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
County-Other	Tarrant	Trinity	Current TRWD customer (thru Fort Worth & TRA)									See TRWD strategies in Table Q-3
County-Other	Tarrant	Trinity	Current TRA customer									See TRA strategies in Table Q-3
County-Other	Tarrant	Trinity	Current Fort Worth customer									See TRWD Strategies in Table Q-3
County-Other	Tarrant	Trinity	Reuse (TRA) for landscape irrigation	L - M	L	L	L	L	L - M		L - M	See Reuse in Table Q-1.
Manufacturing	Tarrant	Trinity	Current TRWD customer (thru Fort Worth)									See TRWD strategies in Table Q-3
Manufacturing	Tarrant	Trinity	Current TRA customer									See TRA strategies in Table Q-3
Manufacturing	Tarrant	Trinity	Current Fort Worth customer									See TRWD strategies in Table Q-3
Steam Electric Power	Tarrant	Trinity	Current TRWD customer									See TRWD strategies in Table Q-3

Entity	County	Basin	Project	Level of Difficulty to Address Environmental Issues (1) (2)							Summary	Items to be Resolved During Planning and Design
				Instream Flows	Bay and Estuary Flows	Wildlife Habitat	Cultural Resources	Wetlands	Water Quality	Other		
Steam Electric Power	Tarrant	Trinity	Reuse	L - M	L	L	L	L	L - M		L - M	See Reuse in Table Q-1. Water Quality impacts are related to amount of water used, type of cooling system and location of intakes and discharges
Alvord	Wise	Trinity	Add new well in Trinity Aquifer	L	L	L	L	L	L		L	See Add New Well in Table Q-1
Alvord	Wise	Trinity	Overdraft Trinity Aquifer in 2000	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Alvord	Wise	Trinity	Reallocate Trinity Aquifer	L	L	L	L	L	L		L	See Reallocation of Groundwater in Table Q-1
Alvord	Wise	Trinity	Purchase surface water from Decatur									See Decatur strategies
Alvord	Wise	Trinity	Construct pipeline to Decatur	L	L	L	L	L	L		L	See Pipeline and Pump Station Construction in Table Q-1
Aurora	Wise	Trinity	Add new well in Other Aquifer	L	L	L	L	L	L		L	See Add New Well in Table Q-1
Aurora	Wise	Trinity	Overdraft other aquifer thru 2010	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Aurora	Wise	Trinity	New TRWD customer (thru Walnut Creek SUD)									See TRWD strategies in Table Q-3
Boyd	Wise	Trinity	Overdraft Trinity Aquifer in 2000	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Boyd	Wise	Trinity	New TRWD customer (thru Walnut Creek SUD)									See TRWD strategies in Table Q-3
Briar	Wise	Trinity	Current TRWD customer (thru Community WSC)									See TRWD strategies in Table Q-3
Briar	Wise	Trinity	Current TRWD customer									See TRWD strategies in Table Q-3
Bridgeport	Wise	Trinity	Current TRWD customer									See TRWD strategies in Table Q-3
Chico	Wise	Trinity	Current TRWD customer (thru West Wise WSC)									See TRWD strategies in Table Q-3
Decatur	Wise	Trinity	Current TRWD customer (thru Wise County WSC)									See TRWD strategies in Table Q-3
Newark	Wise	Trinity	Add new well in Trinity Aquifer	L	L	L	L	L	L		L	See Add New Well in Table Q-1
Newark	Wise	Trinity	Overdraft Trinity Aquifer in 2000	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Newark	Wise	Trinity	New TRWD customer (thru Walnut Creek SUD)									See TRWD strategies in Table Q-3
Rhome	Wise	Trinity	Overdraft Trinity Aquifer in 2000	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Rhome	Wise	Trinity	New TRWD customer (thru Walnut Creek SUD)									See TRWD strategies in Table Q-3
County-Other	Wise	Trinity	Current TRWD customer									See TRWD strategies in Table Q-3
Manufacturing	Wise	Trinity	Current TRWD customer									See TRWD strategies in Table Q-3
Manufacturing	Wise	Trinity	Convert local mining water to manufacturing water	L	L	L	L	L	L		L	
Manufacturing	Wise	Trinity	Overdraft Trinity Aquifer in 2000	L	L	L	L	L	L		L	See Temporary Aquifer Overdrafting in Table Q-1
Steam Electric Power	Wise	Trinity	New TRWD contract with Duke									See TRWD strategies in Table Q-3
Steam Electric Power	Wise	Trinity	New TRWD contract with Tractebel									See TRWD strategies in Table Q-3
Steam Electric Power	Wise	Trinity	New TRWD customer									See TRWD strategies in Table Q-3
Steam Electric Power	Wise	Trinity	Reuse	L - M	L	L	L	L	L - M		L - M	See Reuse in Table Q-1. Water Quality impacts are related to amount of water used, type of cooling system and location of intakes and discharges