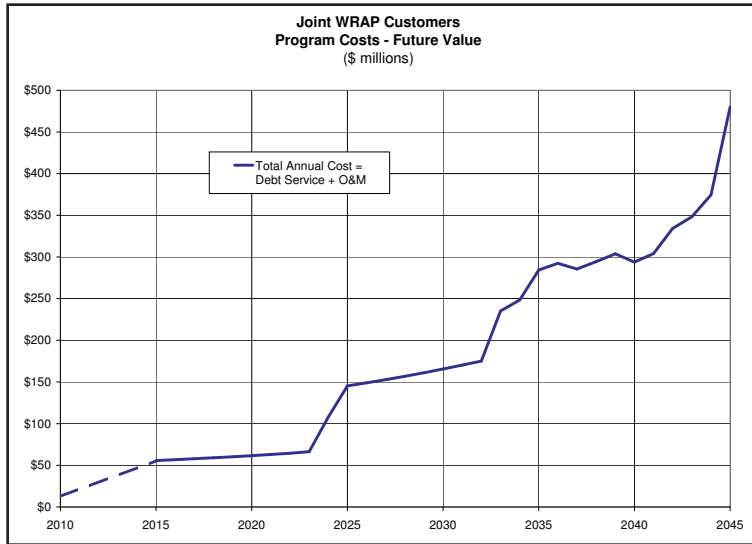
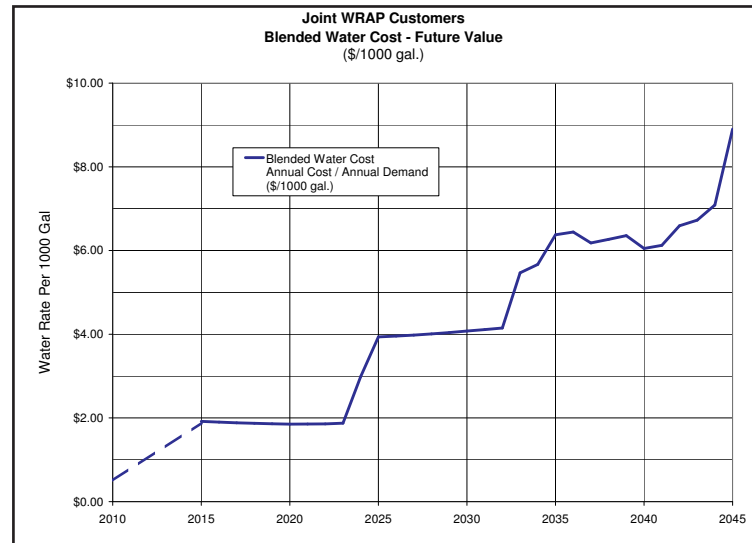




Joint WRAP II Executive Summary



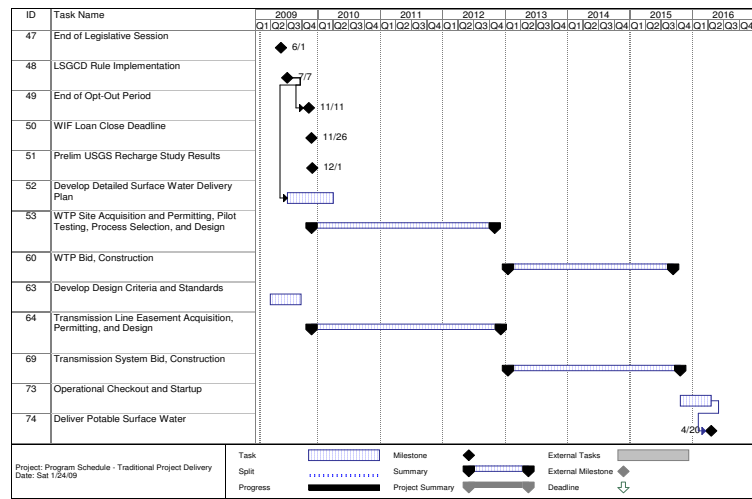
The total annual costs (i.e., debt service, O&M, raw water costs) will be financed through fees or rates charged to Joint WRAP customers. The total annual costs will be allocated or charged on the basis of total water used; both groundwater and surface water. The 'blended' (i.e., groundwater and surface water) rate required is determined by dividing the total annual costs by the average annual water demand and is shown in the following figure.



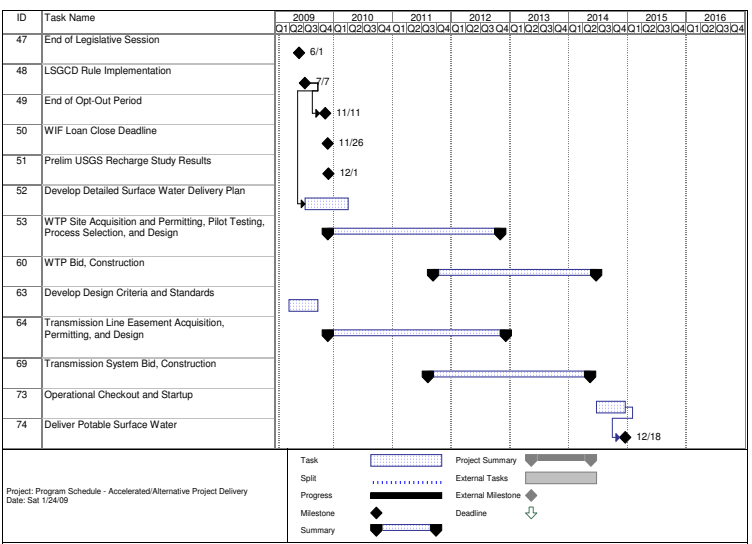
Two schedules were developed to illustrate two potential paths forward after completion of the current Joint WRAP. Both schedules are based on the LSGCD's implementation of new Rules at mid-year, 2009, as the beginning of the next phase of planning and eventual implementation. There are costs that are unique to each schedule that must be developed and compared in order to select the most cost effective direction for the project in the future.

The first schedule is based on traditional project delivery methods and assumes that six or more years are required to complete the many tasks necessary following a normal and orderly process. This schedule assumes LSGCD is cognizant of the necessity of implementing this program

in a cost-effective and orderly process and establish a realistic regulatory deadline for groundwater reduction. Implementation of the program following this schedule, illustrated in the following figure, may impact overall costs with additional inflation.



The second schedule assumes that, for some reason, the LSGCD is unable to provide adequate time to implement the program in an orderly process and retains a regulatory deadline of 2015. In order to meet this very constraining deadline, efforts such as alternative project delivery and/or accelerating design and construction schedules are used to compress the planning, permitting, land/easement acquisition, design, bidding, and construction efforts. This second schedule, illustrated in the following figure, may include significant impacts to overall program costs.



Introduction and Background

To begin reducing groundwater withdrawal and encourage the conjunctive use of surface water with groundwater supplies, the Lone Star Groundwater Conservation District (LSGCD) has adopted regulations that require certain groundwater users to conduct long-term water planning. The LSGCD District Regulatory Plan (DRP) Phase II (A) requires large volume groundwater users (LVGU) (well permittees that produce 10 million gallons or more annually) to submit a Water Resources Assessment Plan (WRAP) composed of two major parts.

WRAP Components and Due Dates

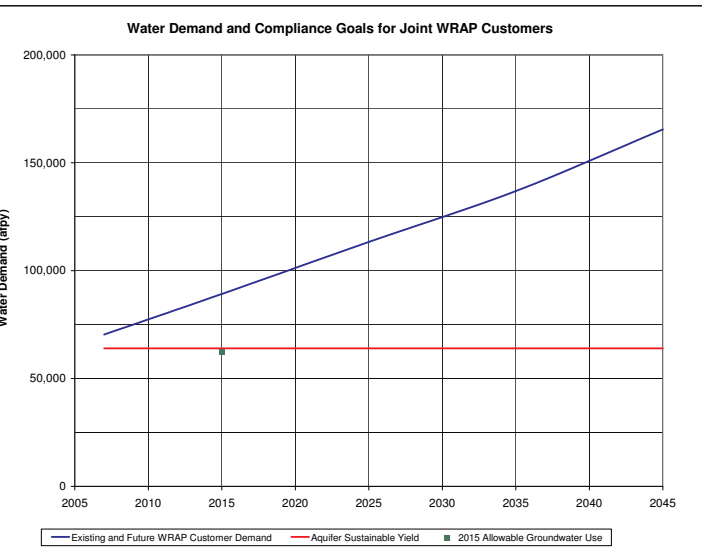
Part I. Information about current and projected water demands; identification of current water supplies; and description of current well capacities. **COMPLETED: August 28, 2008**

Part II. Identification of new water supply sources to meet projected water demands; description of infrastructure needed to deliver new supplies; timeline and cost estimate to develop new supplies; description of costs and methods of financing, and a letter from the supplier confirming the availability of the new supplies.

DUE: March 2, 2009

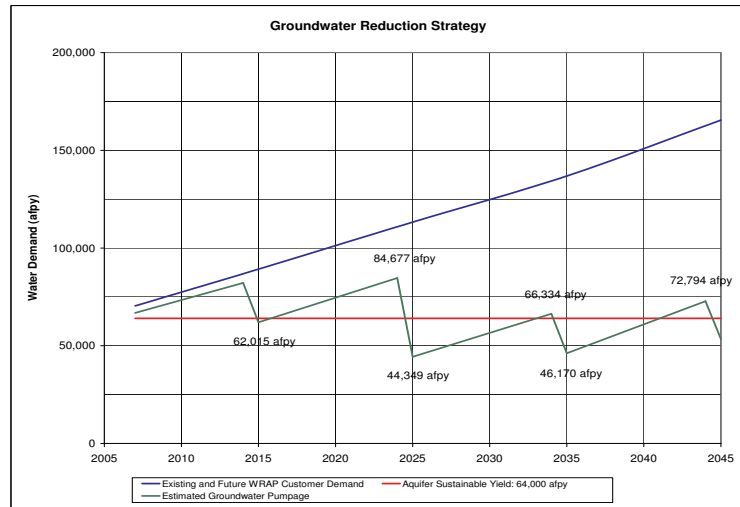
The The SJRA has responded to this need with the development of a long-term countywide approach that will provide a better solution that is faster to implement and cheaper for all the LVGUs in the county as a whole. The countywide approach is the basis of this Joint WRAP representing almost 200 entities (customers).

The following figure illustrates the total demand for the Joint WRAP customers and future customers.



A broad range of water supply sources were considered including groundwater and surface water in both the San Jacinto and Trinity River Basins. **The most cost-effective source-water supply alternative is the use of SJRA water rights in Lake Conroe plus a long-term water supply contract with the City of Houston for its water in Lake Conroe.**

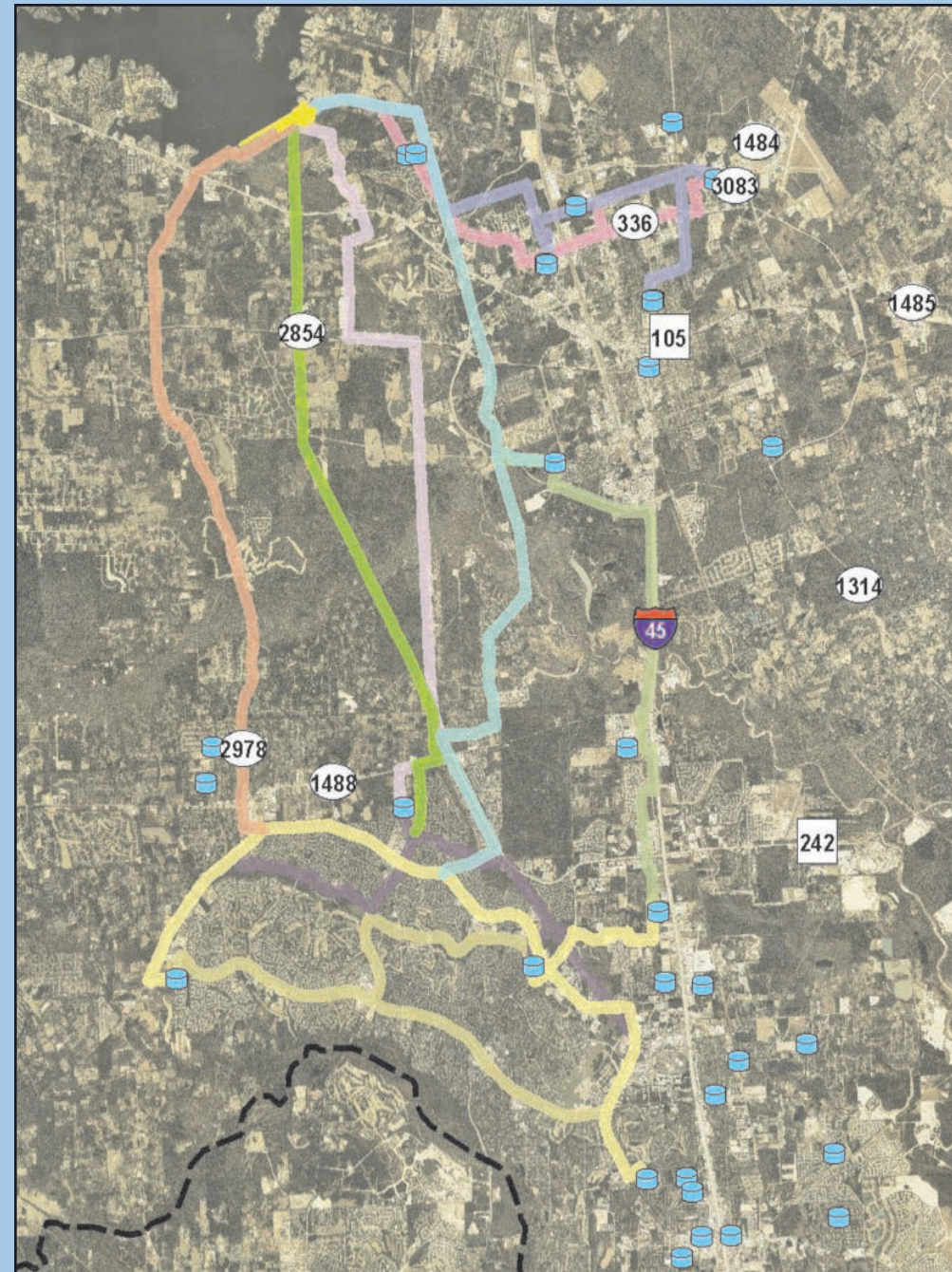
The LSGCD regulations require that groundwater use comprise no more than 70% of water demand in 2015. During the planning period from 2015 through 2045, compliance is measured by supplying surface water --or other alternative water (such as reuse for irrigation)-- in sufficient quantity that the average groundwater use during the planning period is less than or equal to 64,000 afpy. The following figure illustrates a strategy that meets the regulatory requirements by expanding surface water capacity and reducing groundwater use at ten year intervals.



The infrastructure required in the first implementation phase to treat and convey surface water from a water treatment plant located at the Lake Conroe dam to selected Joint WRAP customers has been investigated. A preliminary environmental review of potential waterline corridors was also performed to investigate four 1,000 foot wide north-

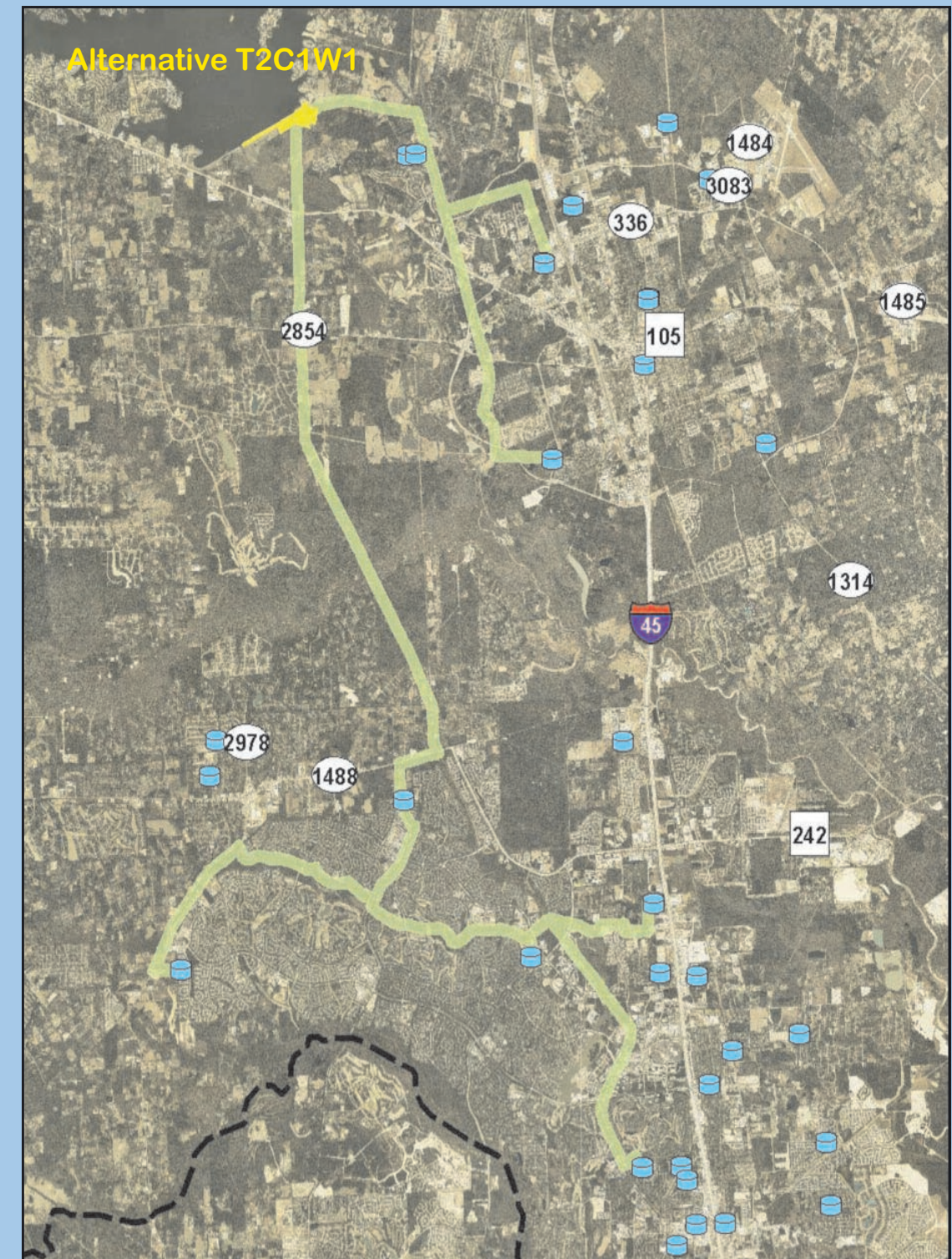
south corridors between a possible treatment plant site and The Woodlands, three east-west corridors joining the five groundwater plants within The Woodlands, and two corridors from the treatment plant to various existing groundwater plants within the City of Conroe. The evaluation considered existing soils, vegetation, floodplains and waters of the U.S., archeological sites, potential presence of hazardous materials, transportation corridors, schools, cemeteries, parks and other public land, and number of affected parcels. *The following figure shows the corridors evaluated as part of the preliminary review for the first implementation phase.*

Note: the small blue cylindrical symbols represent selected existing groundwater storage tanks that were considered for surface water delivery.



Based on the potential waterline corridors investigated and the Joint WRAP customer water demands, alternative pipeline systems were developed and hydraulic modeling was used to further quantify infrastructure requirements by determining the sizes of proposed transmission mains.

Twenty-four alternative transmission systems were developed and evaluated on the basis of the present worth of their capital, operation and maintenance costs. Based on the evaluation, and for the purpose of this WRAP, **Alternative T2C1W1** is the preferred alternative as shown on the next page.



After the infrastructure capacity requirements were defined, unit costs were applied in order to calculate the costs of treatment and transmission facilities. In addition, other 'soft' costs associated with planning, permitting, land acquisition, design, bidding, constructing, and financing projects such as program management, engineering, surveying, geotechnical studies, construction management, inspection, materials testing, and contingency, financial, and legal costs were included.

Costs were inflated 5% annually during the planning period. The annual debt service is estimated based on a bond or interest rate of 5%. The preliminary estimated total project and annual costs for **Alternative T2C1W1** through 2045 are shown in the following figure, next page.