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December 2, 1999

Via Federal Express

Ms. Blanco Bayo, Director  
Department of Records & Reporting  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, FL 32399-0850

RE: Emergency Petition by D.R. Horton Custom Homes, Inc., to Eliminate Authority of Southlake Utilities, Inc., to Collect Service Availability Charges and AFPI Charges in Lake County, Docket No. 981609-WS ("Petition")

Dear Ms. Bayo:

In response to Staff's Third Data Request, dated October 21, 1999, Southlake Utilities, Inc., hereby files an original and five (5) copies of Southlake Utilities, Inc.'s Response to Staff's Third Data Request. Southlake Utilities, Inc., was granted an extension by Samantha Cibula until December 3, 1999 to file its response.

Please file an original and distribute the copies in accordance with your usual procedures.

If you have any questions or comments regarding this matter or need additional information, please do not hesitate to call me.

Sincerely yours,

*Scott G. Schildberg*  
Scott G. Schildberg

AFA 1  
AAPP  
CAF  
CMB  
CWR  
EACG  
LEGG  
MAGS  
OPCD  
PAIA  
SEEC  
WAW  
OTH

SGS/arr  
Enclosures

cc: Mr. Robert L. Chapman, III  
Mr. Bill Deas, Esquire  
Ms. Samantha Cibula, Esquire  
Mr. F. Marshall Deterding, Esquire  
Mr. Norman Mears

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DOCUMENT NUMBER-DATE

14804 DEC-3 99

FPSC-RECORDS/REPORTING

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Emergency Petition by D.R. )  
Horton Custom Homes, Inc., to ) Docket No. 981609-WS  
eliminate authority of Southlake )  
Utilities, Inc. to collect service ) Date Submitted for Filing:  
availability charges and AFPI ) December 2, 1999  
charges in Lake County )  

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RESPONSE OF SOUTHLAKE UTILITIES, INC.  
TO STAFF'S THIRD DATA REQUEST

DOCUMENT NUMBER-DATE

14804 DEC-3 89

FPSC-RECORDS/REPORTING

## QUESTION 1

1. With regard to your facsimile dated October 8, 1999, (see attached).

a. Please provide, in detail, all supporting information that was used to project the water and wastewater on-site facilities for the years 2001 to 2007. Your response should include, but not be limited to, any assumptions, changes to plant facilities, formulas, and historical cost information used to project this proforma plant.

b. Please provide a detailed description of the water and wastewater on-site additions for the years 2001 to 2007 and the cost associated with each specific addition.

c. Please indicate the additional capacity that will result from the on-site additions to the utility's water and wastewater systems for the years 2001 to 2007.

In response to Question 1, Southlake Utilities, inc. ("Southlake") provides the following documents for its water system:

1. A schedule of Projected Utility Plant in Service Additions for the Water Division ("Water Schedule"). The Water Schedule has been revised to conform with CPH Engineers, Inc. Water System Facility Plan (see page 4).
2. Excerpts from Southlake Utilities Water Facilities Plan (see pages 5 - 22).

3. Excerpts from a draft of the Water 2020 Work Group Area I: East - Central Florida, Conceptual Water Supply Plan by St. Johns River Water Management District and CH2M Hill (see pages 23 - 24).

Southlake provides the following documents for its wastewater system:

1. A schedule of Projected Utility Plant in Service Additions for the Wastewater Division ("Wastewater Schedule") (see pages 25 - 26).

2. An engineering cost summary of certain wastewater treatment and effluent disposal facility proposed system improvements ("Prior Engineering Cost Summary") (see pages 27 - 29).

The Prior Engineering Cost Summary was prepared in December 1998 and sets forth improvements which were projected to provide Southlake with sufficient capacity through mid 2000. In consultation with R. H. Wilson, P.E. ("Engineer"), Southlake has used this information, costs of projects initiated but not completed prior to December 1998, forecasted growth, and revised cost estimates by the Engineer to prepare the Wastewater Schedule, which has been approved by the Engineer.

SOUTHLAKE UTILITIES, INC.

Water Division

Projected Utility Plant in Service Additions, Revised to Conform with CPH Engineers, Inc. Water System Facility Plan

Description	Acct. No.	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>Onsite:</b>										
Wells & Springs	307									
Phase 1 CPH Water Facilities Plan										
Upgrade Well A and connect			96,000							
Upgrade Well B			12,000							
Engineering and permitting			48,000							
Power Generation Equipment	310									
Emergency power system										
Pumping Equipment	311									
High service pumping facilities										
Water Treatment Equipment	320									
Ground storage system		56,000	374,000							
Chlorination upgrade,			50,000							
Phase 2 CPH Water Facilities Plan (see attached)			659,500	989,250	1,648,750					
Phase 3 CPH Water Facilities Plan					710,167	710,167	710,167			
Phase 4 CPH Water Facilities Plan							321,250	321,250		
Phase 5 CPH Water Facilities Plan									177,500	177,500
<b>Total Onsite Plant Additions</b>		<b>\$ 56,000</b>	<b>\$ 1,239,500</b>	<b>\$ 989,250</b>	<b>\$ 2,358,917</b>	<b>\$ 710,167</b>	<b>\$ 1,031,417</b>	<b>\$ 321,250</b>	<b>\$ 177,500</b>	<b>\$ 177,500</b>
Reserved capacity, MGD, including										
prepaid capacity (projected)		0.541	1.052	1.559	2.106	2.700	3.344	3.902	4.375	4.737
Plant capacity, MGD, maximum daily flow (projected)		1.075	2.448	3.456	3.456	5.184	6.912	6.912	8.640	8.640
Plant capacity, MGD, average daily flow (projected)		0.478	1.088	1.536	1.536	2.304	3.072	3.072	3.840	3.840
Actual flow maximum day, MGD (projected)		0.731	1.421	2.105	2.843	3.645	4.514	5.268	5.906	6.396
Reserve capacity, MGD (projected)		0.344	1.027	1.351	0.613	1.539	2.398	1.644	2.734	2.244
Onsite construction cost per gallon of capacity added		-	\$0.51	\$0.42	\$2.34	\$0.41	\$0.30	\$0.19	\$0.10	\$0.10

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**SOUTHLAKE UTILITIES  
WATER FACILITIES PLAN**

**CPH JOB NO. S7301.00**

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**FACILITIES PLAN STATEMENT**

I, Allen R. Baker, P.E., verify that the Southlake Utilities Water Facilities Plan, dated November 1998, is consistent with the Lake County, Florida Comprehensive Plan, amended April 28, 1998.

*Allen R. Baker*

Allen R. Baker, P.E.  
Conklin, Porter & Holmes Engineers, Inc.

*11-30-98*

Date

pneumatic tanks to the distribution system. The existing hydro pneumatic tanks will be used to control operation of the high service pumps.

#### **1.4 Future Conditions**

The projected service area population has been tabulated in five year increments through the year 2020. The service population for 2020 is projected to be 31,073. Future water demands, well requirements, water storage and treatment requirements, and high service pumping requirements have also been projected for the twenty year design period. It is projected that the service area will have an average daily flow of 3.30 MGD in 2020, plus a 3.0 MGD allowance for expected future water demands in Orange County. Future use of reclaimed water will reduce the service area water demand. Southlake Utilities will provide tertiary treatment to the service area wastewater to make it "public access quality" and useful for irrigation.

Recommendations have been made to help Southlake Utilities meet the future demands of the service area. The available alternatives are discussed in the report.

#### **1.5 The Selected Plan**

##### **1.5.1 Description**

The selected plan proposed improvements have been divided into phases. Phase 1 is the current improvements and Phase 2 through 5 will be the future improvements. The Phase 1 current improvements are being designed, and a construction permit application has been prepared and submitted to FDEP.

The current Phase 1 improvements include the construction of a 143,000 gallon ground storage tank, a high service pumping facility, expansion of the chlorination facility, and installation of a standby generator at Water Treatment Plant A. Well A will be equipped and connected to the water system. Well B will also be upgraded with the current improvements. Southlake Utilities will finance the Phase 1 current improvements.

The proposed Phase 2 improvements will include the construction of Water Treatment Plant B. The future Water Treatment Plant B will have a 300,000 gallon ground storage tank, a high service pumping facility, chlorination facility, and standby generator and provision for the addition of polyphosphate and fluoride to the water system. The proposed improvements include the installation of a 1,200 gpm well pump at Well E, connection of Well E to the water system, and installation of two (2) 1,200 gpm wells at Water Treatment Plant B.

Phase 2 distribution system improvements include a 16-inch water main extended westerly from U.S. 27 to Water Treatment Plant B, and a 20-inch water main extended westerly from Water Treatment Plant B to County Road 545 in Orange County.

Phase 2 improvements at Water Treatment Plant A include installation of a new chlorination facility and provision for the addition of fluoride and polyphosphate.

Phase 3 improvements will include two (2) 1,200 gpm wells at the future Water Treatment Plant B and one (1) additional 1,200 gpm well at Water Treatment Plant A. The proposed improvements will also include the installation of a 250,000 gallon elevated storage tank. A fourth 1,350 gpm high service pump at Water Treatment Plant A, and a 3,000 gpm high service pump will be installed at Water Treatment Plant B.

Phase 3 distribution system improvements include a 16-inch water main extended southerly along County Road 545 approximately 1.3 miles to a County Road, and a 12-inch water main extended westerly along the County Road to connect to an existing 12-inch water main in the Summer Bay development near the southeastern corner of Southlake Utility service area.

Phase 4 improvements include installation of two additional 1,200 gpm wells and one 3,000 gpm high service pump at Water Treatment Plant B.

Phase 5 improvements include installation of one additional 1,200 gpm well and one additional 3,000 gpm high service pump at Water Treatment Plant B.

### 1.5.2 Total Cost for Selected Plan

The total cost for the selected plan is summarized in Table 1-1.

Table 1-1 Total Cost of Selected Plan		
Phase	Construction Cost	Total Project Cost
1	*	*
2	\$2,638,000	\$3,297,500
3	\$1,704,000	\$2,130,500
4	\$514,000	\$642,500
5	\$284,000	\$355,000
<b>Total</b>	<b>\$5,140,000</b>	<b>\$6,425,500</b>

\* Current Improvements are to be financed by Southlake Utilities

Based on the above information, population projections have been calculated in Table 5-2. Population projections have been formulated based on the assumption of 2.5 persons per multi-family unit and 3.5 persons per single-family unit.

Table 5-2 Population Projections for Service Area							
Development	1998	2000	2005	2010	2015	2020	Population per Development
Clear Creek	49	861	861	861	861	861	861
Woodridge	840	1,155	1,155	1,155	1,155	1,155	1,155
Sarah's Place	500	825	825	825	825	825	825
Glenbrook single family	0	0	938	938	938	938	938
Glenbrook multi-family	0	895	895	895	895	895	895
High Grove	0	175	560	560	560	560	560
Southlake proposed single family	0	350	2,100	3,850	6,300	8,750	8,750
Southlake proposed multi-family	0	250	1,498	1,498	1,498	1,498	1,498
Southlake existing multi-family	1,085	1,085	1,085	1,085	1,085	1,085	1,085
Southlake future multi-family	0	250	1,500	2,750	5,000	7,500	7,500
Walker Heights multi-family	0	250	935	935	935	935	935
Walker-Heights single family	0	0	1,001	1,001	1,001	1,001	1,001
Summer Bay	325	700	1,793	2,885	3,978	5,070	5,070
<b>Total Population</b>	<b>2,799</b>	<b>6,796</b>	<b>15,146</b>	<b>19,230</b>	<b>25,031</b>	<b>31,073</b>	

<b>Year</b>	<b>Population</b>	<b>Fire Flow (gpm)</b>
1998	2,799	1,259
2000	6,796	1,943
2005	15,146	2,858
2010	19,230	3,206
2015	25,031	3,634
2020	31,073	4,028

**5.4.2 Raw Water Supply Requirements in Five Year Increments for a Twenty Year Planning Period**

When storage for ten hours of fire flow is provided, the raw supply must be of sufficient capacity to supply the maximum day. For utilities, such as Southlake, that do not have storage for fire flow demands, the raw water supply must be sufficient to supply the maximum day demand plus the fire flow demand. A normal design procedure is to provide sufficient wells to meet these two demands with one well out of service.

The projected raw water supply requirements are listed in Table 5-7.

<b>Year</b>	<b>1998</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Average Day</b>	195	485	1,654	2,499	3,436	4,377
<b>Max Day</b>	439	1091	3,722	5,623	7,731	9,847
<b>Fire Flow</b>	2,000 <sup>1</sup>	2,000 <sup>1</sup>	2,858 <sup>2</sup>	3,206 <sup>2</sup>	3,634 <sup>2</sup>	4,028 <sup>2</sup>
<b>Total</b>	<b>2,439</b>	<b>3,091</b>	<b>6,580</b>	<b>8,829</b>	<b>11,365</b>	<b>13,875</b>

<sup>1</sup> Southlake Utility fire flow minimum standard.

<sup>2</sup> 75% of the computed fire flow tabulated in Table 5-6.



Wells B (500 gpm) and D (1,200 gpm) are currently used to supply the water supply for Southlake Utilities. The firm capacity (one well out of service) is 500 gpm and the total capacity is 1,700 gpm. Southlake Utilities plans to upgrade Well B to 1,200 gpm and to install a 1,200 gpm well pump in Well A, providing a firm raw water supply of 2,400 gpm and a total raw water supply of 3,600 gpm. This will provide a sufficient firm raw water supply for the maximum day until 2002 and a sufficient total raw water supply for the maximum day and the fire flow demand through the year 2000.

The proposed future improvements will include the addition of three (3) 1,200 gpm wells at the future Water Treatment Plant B. The proposed wells will be connected to the ground storage tank at the proposed water treatment plant. The three proposed wells at Water Treatment Plant B include existing Well E, which is owned by Worthwhile Development and is expected to be purchased by Southlake Utilities, and two additional wells. The well capacity with the proposed improvements will be increased to 7,200 gpm with all wells in service or 6,000 gpm with one well off-line.

The future well improvements will be phased according to the demands of the service area. The future improvements will include the addition of six (6) 1,200 gpm wells to the system. One of these wells will be installed as a standby well for the existing water treatment plant. The future improvements will increase the well capacity to 14,400 gpm with all wells in service and 13,200 gpm with one well off-line.

The Southlake Floridan potable water supply aquifer is a very high yield aquifer. The water table of the Floridan aquifer is approximately 118-ft. to 120-ft. Based on previous Floridan well pumping tests, a drawdown of 2-ft. to 10-ft. is expected at a pumping rate of 1200 gpm. It is expected that with location of all new wells approximately 1,000 feet apart, that the influence of the drawdown or interference of pumping well will be negligible on the adjacent wells. An aquifer performance test with construction of the next Floridan well will confirm the aquifer capacity.

#### **5.4.3 High Service Pumping Requirements During Planning Period**

Well pumps are currently used to pressurize the system and pump water from the wells to the hydro pneumatic tanks and the distribution system.

A ground storage tank with 143,000 gallons of effective storage will be constructed with the proposed Phase 1 improvements at Water Treatment Plant A. High service pumps will pump water from the ground storage tank to the hydro pneumatic tanks and to the distribution system and customers. A standby generator will be provided to supply power for the high service pumps and well pumps. High service pumps should be sized to pump the maximum hourly demand and fire flow. The maximum hourly demand and fire flow are displayed in Table S-8.

<b>Table 5-8 High Service Pumping Demands (gpm)</b>						
<b>Year</b>	<b>1998</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>
<b>Average Day</b>	195	485	1,654	2,499	3,436	4,377
<b>Max Day</b>	439	1,091	3,722	5,623	7,731	9,847
<b>Fire Flow</b>	2,000 <sup>1</sup>	2,000 <sup>1</sup>	2,858 <sup>2</sup>	3,206 <sup>2</sup>	3,634 <sup>2</sup>	4,028 <sup>2</sup>
<b>Total</b>	<b>2,488</b>	<b>3,213</b>	<b>6,580</b>	<b>8,829</b>	<b>11,365</b>	<b>13,875</b>

<sup>1</sup> Southlake Utility fire flow minimum standard.

<sup>2</sup> 75% of the computed fire flow tabulated in Table 5-6.

The total high service pumping demand is a sum of the maximum daily flow and the fire flow. High service pumping facilities are often designed to deliver the maximum hour flow plus the fire flow with one pump off-line. The proposed current improvements include installation of three (3) 1,350 gpm variable speed high service pumps at Water Treatment Plant A. Allowance will be made for the installation of a future fourth 1,350 gpm high service pump at Water Treatment Plant A. This will increase the high service pumping capacity at Water Treatment Plant A to 5,400 gpm with all pumps in service and 4,050 gpm with one pump off-line.

Future proposed improvements will include installation of a high service pumping facility at a future Water Treatment Plant B. The future plant will be provided three (3) 1,350 gpm high service pumps with provision for connection of additional future high service pumps at Water Treatment Plant B. The installation of future high service pumps will be phased according to the service area demands.

#### **5.4.4 Treated Water Storage Requirements in Five Year Increments for a Twenty Year Planning Period**

The current treated water storage consists of two 15,000 gallon hydro pneumatic tanks. Chlorine is added to the raw water prior to the hydro pneumatic tanks. Chlorination is the current treatment with 30 minutes of storage required after chlorination.

A storage facility with a minimum of 143,000 gallons of storage is included with the proposed current improvements at Water Treatment Plant A. Based on the 30-minute required detention, this tank will provide 30 minutes detention time after chlorination with a pumping rate of 4,767 gpm. The two (2) existing 15,000 gallon hydro pneumatic tanks will provide storage for an additional 756 gpm of pumping, for a total of 5,523 gpm.

Proposed future improvements will include construction of a 300,000 gallon ground storage tank at the future Water Treatment Plant B. This proposed ground storage tank will provide 10,000 gpm of finished water at 30 minutes detention time for chlorination. The two proposed ground storage tanks at Water Treatment Plant A and B will have sufficient storage to provide 30 minutes chlorination detention with a pumping rate of 14,767 gpm. Two (2) 15,000 gallon hydro pneumatic tanks will be installed at the Future Water Treatment Plant B to control operation of the high service pumps. With the additional storage provided by the existing and proposed hydro pneumatic tanks (1512 gpm), the chlorination water storage requirement will be met for the twenty year planning period.

Future improvements will include the installation of one (1) 250,000 gallon elevated storage tank. The elevated storage tank will help pressurize the system and equalize peak flow demands. The elevated storage tank will be located in the northern portion of the service area. The ground storage and the elevated storage tanks will significantly reduce the distribution system losses during periods of domestic peak demand and or fire demand by supplying water to the distribution system from three separate points.

The total storage provided by the system improvements is tabulated in Table 5-9.

<b>Location</b>	<b>Description</b>	<b>Storage Volume (gallons)</b>
Current System	Two (2) 15,000 gallon hydro tanks	22,600
Water Treatment Plant Site A	Concrete Ground Storage Tank	143,000
Future Water Treatment Plant B	Two (2) 15,000 gallon hydro tanks	22,600
Future Water Treatment Plant B	Concrete Ground Storage Tank	300,000
Elevated Tower 1	Elevated Storage Tank	250,000
<b>Total</b>		<b>738,200</b>

## **5.4.5 Future Water Treatment**

### **5.4.5.1 Current Water Treatment**

The Floridan water quality at Southlake is very good and chlorination is the only treatment that is currently provided. However, water quality and treatment requirements can change and the water treatment plant design must be suitable to accommodate the addition of additional treatment processes.

150 lb. cylinders are currently used to provide gas for chlorination of the water supply. The amount of chlorine currently being used is small enough that the amount of chlorine gas stored is less than the threshold limit of 1,500 lbs. that will require a Risk Management Plan and chlorine scrubber facilities.

### **5.4.5.2 Proposed Water Treatment**

The Phase 2 water treatment will include the addition of fluoride and polyphosphate to the water supply at Water Treatment Plant A, and also at Water Treatment Plant B. The water supply has approximately 0.09 mg/l of fluoride, and it has been determined that the addition of fluoride to a public water supply, to provide approximately 1 mg/l of fluoride, will significantly reduce the amount of dental caries for small children.

The Florida Department of Environmental Protection has developed lead and copper corrosion control regulations that limit the amount of lead and copper that can be present in a public water supply. These regulations have been published as Chapter 62-551 of the Florida Administrative Code. In many cases, the amount of lead and copper in the water supply does not exceed the allowable limits at the point of entry, or the source of the water supply. However, the limits may be exceeded at the customer's tap, indicating that lead and/or copper have been leached out of the piping in the distribution system, or the customer's piping. The addition of a small amount of polyphosphate is a treatment method often used to control the amount of lead and copper leached out of the distribution system. It is proposed to add polyphosphate at Water Treatment Plants A and B.

As the water system demands increase, the chlorine demands will increase to a level, that the use of 150 lbs. of chlorine cylinders is not practical. The Phase 2 improvements will include construction of an enclosed chlorine storage facility for chlorine ton cylinders, and scrubbing of the chlorine gas, in case of a chlorine leak.

### **5.4.5.3 Future Water Treatment**

Gases, such as carbon dioxide or hydrogen sulfide are not sufficiently present, that an aerator needs to be included with the proposed improvements. However, the ground storage tank design should be suitable to accommodate the future addition of an aerator to aerate the raw water before storage.

### **5.4.6 Distribution System Requirements in Five Year Increments for a Twenty Year Planning Period**

The distribution system has been extended to provide service to residential and commercial areas as each of these areas is developed. Generally, the developer provides the distribution system within the development and extends a main to connect to the existing distribution system. In many cases, the individual developments are adjacent to existing developments and the connecting mains can be looped with the existing water system.

Distribution system planning includes extension of a major distribution system loop into Orange County to connect the Southlake southeastern distribution system with the Southlake Northern distribution system. This loop will connect dead-end mains providing a better flow of water significantly increasing the available distribution system pressure. Southlake Utilities will install this loop since it is expected that this connecting loop will be required before significant development can occur in Orange County. A 12-inch distribution system connecting to an existing 12-inch main in Summer Bay Development is to be extended along a County road to CR 545 in Orange County, then a 16-inch main is to be extended northerly along CR 545 approximately 1.3 miles, thence a 20-inch main is to be extended westerly to future Water Treatment Plant B, and then westerly to connect to water main on the east side of U.S. 27.

### **5.5 Projection of the Quantity of Residuals**

Residuals are not expected to be produced at the water treatment plant.

### **5.6 Anticipated Future Regulatory Requirements**

It is expected that regulatory trends will require additional monitoring of all Public Water Systems. Additional treatment technologies may be required to meet the criteria of the Lead and Copper Rule and regulations of disinfectants and disinfection byproducts.

The recently amended Safe Drinking Water Act has set new requirements for surface water treatment, disinfection, turbidity, coagulation, and disinfection by-products. The current level for turbidity is 0.5 NTU and is anticipated to be reduced to 0.2 NTU. This reduction in turbidity will help improve the disinfection process. The turbidity standard is not currently applied to ground water supplies. If the turbidity standard is applied to ground water

supplies, additional treatment may be required.

The Safe Drinking Water Act has been amended to improve finished water quality. The 1996 amendments to the Safe Drinking Water Act are expected to require systems to be in compliance by November 2001. Stage I of the Amendments establishes new maximum contaminant levels (MCLs) of disinfectant/disinfectant by-products. Levels for trihalomethanes (THMs), haloacetic acids, chlorite, and bromate have been reduced. Disinfectant by-product MCLs have been amended to reduce the total trihalomethane MCL from 100 ug/L to 80 ug/L and the total haloacetic acid MCL from 80 ug/L to 60 ug/L. Stage II of the amendments may require surface water supplies and groundwater supplies influenced by surface water to reduce the total trihalomethane MCL to 40 ug/L and the total haloacetic acid MCL to 30 ug/L. Southlake does not use surface water for its potable water supply therefore, Stage II rules should not apply to Southlake Utilities. If the stage II rules should apply, additional treatment may be required. There are also several disinfection by-products that could be regulated by the U.S. EPA including haloaceto-nitriles, haloaldehydes, haloketones, halopicrins, cyanogen halides, chloral hydrate, and chlorophenols.

Water systems that store amounts of chlorine above the threshold level will be required to meet future regulations under the U.S. EPA Risk Management Planning-Accidental Release Prevention. These regulations will require the enclosure of gas chlorination facilities and gas chlorine storage areas. The facilities must also be equipped with a chlorine gas scrubber capable of cleaning the entire contents of the largest tank on-site. A Risk Management Plan must be submitted by June 21, 1999. The amount of chlorine stored at each of the Southlake Utility Water Treatment Facilities is currently less than the threshold level, and gas scrubbing facilities are not currently required. However, the proposed Phase 2 improvements will include use of ton cylinders at Water Treatment Plant A and Water Treatment Plant B. The amount of chlorine gas stored at each location will exceed the threshold limit of 2,500 lbs., and chlorine scrubbers will be required.

Proposed regulations will also require separation of wells. The Florida Department of Environmental Protection Well Setback Requirements state that wells must be separated a minimum of 100-feet from reclaimed water application areas, restrooms, gravity sewers, sewage force mains, reclaimed water mains, wastewater treatment plants, and stormwater retention ponds, and domestic or industrial waste sprayfields.

FAC 62-521 implemented the wellhead protection program. The wellhead protection area is defined as a 500 foot radial setback distance around a potable water well where the most stringent measures are taken to prevent contamination of the ground water source.



## SECTION 6.0 WATER FACILITIES ALTERNATIVES

### 6.1 Description of Alternatives

#### 6.1.1 Water Supply Alternatives

The potable water supply for Southlake Utilities is currently obtained from the Floridan Aquifer. This water is of good quality and requires minimal treatment to meet the drinking water standards. Alternative sources of water supply are the surficial aquifer and surface water. The quantity of water available from the surficial aquifer is limited. Further, water obtained from the surficial and/or surface water bodies will require treatment with a Reverse Osmosis treatment unit. The surficial and the surface bodies of water are susceptible to contamination and are likely to contain organic materials which may form trihalomethanes (THMs) in excess of the allowable maximum contaminant levels. The cost for supply and Reverse Osmosis treatment of either a surficial or surface water supply will be approximately \$2.00 per gallon, which is much higher than the supply and treatment cost of a Floridan Aquifer Water Supply. Obtaining the potable water supply from the Floridan Aquifer is the most cost effective option for Southlake Utilities.

The Phase 1 proposed current improvements will include upgrading Well B to produce 1,200 gpm and equipping Well A to produce 1,200 gpm. These improvements are expected to be paid for by Southlake Utilities. Future water supply improvements have been listed as Phase 2 through Phase 5.

The phased water supply improvements, the year that each phase is expected to be constructed, and the estimated cost of each are tabulated in Table 6-1.

Phase 2 will include construction of two Floridan wells at the Future Water Treatment Plant B and the equipping and connection of Well E at Sarah's Place to the future Water Treatment Plant B.

Phase 3 will include construction of an additional well to supply water to Water Treatment Plant A, and two additional wells to supply water to the Future Water Treatment Plant B.

Phase 4 will include two additional wells to supply water to Water Treatment Plant B.

Phase 5 will include construction of one additional well to supply water to Water Treatment Plant B.

Water 2020  
Work Group Area I: East - Central Florida  
Conceptual Water Supply Plan

by  
St. Johns River Water Management District  
and  
CH2M HILL



P.O. Box 1429  
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Palatka, Florida



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3011 S.W. Williston Road  
Gainesville, Florida

September 1999  
130581.RP.01



Table 2. Work Group Area I Public Supply Needs

Service area (Utility)	Needs - mgd			Growth ADD	
	1995	2020	2020 8m drought	1995	Percent
<b>Lake County</b>					
Bella Vista Golf and Yacht Club	0.00	0.85	0.91	0.85	na
Boll John	0.17	0.53	0.56	0.36	212%
Chateau Land Development	0.13	0.18	0.19	0.05	36%
Clermont	1.99	7.49	7.94	5.50	277%
Cottle, Robert G.	0.23	0.70	0.70	0.48	212%
Eustis	2.67	4.96	5.26	2.29	86%
Fruitland Park	0.59	1.04	1.10	0.45	76%
FWS Carlton Village	0.04	0.19	0.21	0.15	374%
FWS Silver Lake Estates	0.90	1.14	1.24	0.24	26%
Gary and Amon Baucom	0.01	0.78	0.83	0.77	7567%
Groveland	0.36	1.21	1.28	0.85	237%
JJS Mobile Homes	0.17	0.37	0.40	0.20	118%
Lady Lake	0.26	0.44	0.46	0.17	65%
Lake Grove Utilities	0.12	3.62	3.83	3.49	2812%
Lake Utility Services (Plant @ Leesburg)	0.52	0.58	0.61	0.05	10%
Leesburg	6.05	18.35	19.45	12.30	203%
Manufactured Homes	0.31	0.52	0.55	0.21	68%
Mascotte	0.25	0.36	0.38	0.11	42%
Mcnamara, John	0.20	0.83	0.88	0.63	324%
Minneola	0.39	1.50	1.59	1.11	285%
Montverde	0.15	0.31	0.33	0.16	104%
Montverde Mobile Home Subdivision A	0.06	0.08	0.08	0.02	36%
Mt. Dora	2.72	4.57	4.84	1.85	68%
Pennbrooke Utilities	0.11	0.38	0.40	0.27	238%
Southern States Utilities	0.18	0.99	1.05	0.81	446%
Southlake Utilities	0.07	4.55	4.82	4.48	6722%
Tavares	1.06	2.65	2.81	1.59	149%
UF	0.27	0.46	0.49	0.19	69%
Umatilla	0.79	0.95	1.00	0.16	20%

Work Group Area I: Water-Supply Plan

**SOUTHLAKE UTILITIES, INC.**  
**Wastewater Division**  
**Projected Utility Plant in Service Additions**

Description	Acct. No.	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>On site:</b>										
<b>Structures &amp; Improvements</b>	<b>354</b>									
Operations building			27,155	26,947						
Shop building					29,030	31,509				
Sludge facility, transfer							34,229	29,667		
Sludge stabilization facility									25,129	19,270
			27,155	26,947	29,030	31,509	34,229	29,667	25,129	19,270
<b>Treatment &amp; Disposal Equipment</b>	<b>380</b>	849,510	1,587,296	1,594,694	1,751,253	1,891,503	2,000,746	1,734,107	1,468,827	1,126,354
Aeration basin air supply, headers, valves and fittings, risers, fine bubble diffusers		187,000		308,550	180,000	185,400	218,500		225,467	
Aerobic sludge residuals treatment expansion/anti-surge tank and system, plumbing			83,500		49,000	50,470		225,000	231,750	
Auxiliary generators			75,000					84,492		150,000
Chlorine contact chamber, yard piping			67,000		86,000	88,580		88,580		
Clarifier		449,280		507,681	296,000	304,880	505,000			
Clarifier, remove temporary, repipe			22,000							
Electrical service, systems, conduits, panels		9,200	27,000	32,400	18,900	19,500	32,400	72,000	32,400	33,372
Electronic equipment to meet FDEP limits on effluent quality, chlorine and turbidity analyser, pH monitors, etc.			125,000				170,450			125,400
Engineering and FDEP Permits		5,000		5,000	45,000	46,350		65,000		47,700
Equipment control room, C12 and turbidity monitoring			19,200						102,000	
Filters, backup			225,000		131,400	135,750		115,875		
Filters, primary		90,000	585,000		332,000	341,960	225,000		113,300	
Foundation and slab				130,500	92,000	94,760		220,000		130,500
Hydropneumatic tank, compressor				43,700			47,850		87,400	43,700
Percolation pond upgrades		25,000		109,583			109,640			112,870
Public access effluent lift stns.					180,000	185,400	185,400			190,862
Public access quality effluent pump str.				36,000	45,000	46,350	47,741			91,000
Pumps				38,000	38,500	38,655	40,765		93,500	40,850
Rotary blowers, controls, panels		77,800		132,280	78,092	80,470	128,000		132,280	75,000
Site clearing, grading landscaping		6,250		11,250				67,000		
Tanks, aeration, digestion, storage			289,596	131,000	125,000	128,750	290,000	650,000	425,000	

Technical coatings and finishes	38,000	22,800		25,000		72,000	25,750
Yard piping, reject water systems, chlorinated wear systems, filter backwash systems	31,000	66,400		72,000		74,100	65,000

Total on-site plant additions: \$ 848,510 \$1,814,461 \$ 1,421,841 \$1,748,283 \$1,923,028 \$2,002,375 \$1,766,174 \$1,766,000

Reserved capacity, MOD (projected)	0.378	0.576	1.298	1.788	1.387	2.045	1.288	0.888	
Plant capacity, MOD (projected)	0.300	0.580	1.000	1.300	1.300	2.000	2.200	1.300	
Actual flow ADF, MOD (projected)	0.227	0.400	0.754	1.044	1.357	1.820	2.140	2.000	
Reserve capacity, MOD (projected)	0.073	0.000	0.246	0.156	0.143	0.171	0.060	0.000	
Onsite construction cost per gallon of capacity added	NA	\$2.94	\$2.32	\$2.74	\$3.86	\$2.54	\$2.52	\$2.13	\$1.16



**R Wilson  
& associates engineers**

**SOUTHLAKE UTILITIES, INC. - LAKE COUNTY, FLORIDA  
WASTEWATER TREATMENT & EFFLUENT DISPOSAL FACILITY  
PROPOSED SYSTEM IMPROVEMENTS**

**A. UPGRADE TREATMENT UNIT 1**

1.	Remove temporary 165,000 GPD clarifier from aeration basin Lump Sum Fee (Including all associated influent/effluent & air supply piping)	\$	22,000
2.	Expand aerobic sludge/residuals treatment to include existing anti-surge tank and system. Re-direct flows and plumbing as required, plant to operate.	\$	83,500
3.	Wire brush, brush blast and prime and paint plant exterior, air headers, wastewater, sludge and effluent lines and pumps, valves and fittings.	\$	38,000
4.	Convert and Renovate existing chlorine contact facility, influent and yard piping for receipt of Reject Water for disposal in Evapo-Perco Ponds	\$	67,000
<b>SUB-TOTAL</b>		<b>\$</b>	<b>210,500</b>

**B. BRING TREATMENT UNIT 2 ON-LINE**

1.	FDEP Permit Application Fee To Modify and Operate for 5 years.	\$	5,000
2.	Upgrade existing 900,000 gallon aeration basin, Air supply distribution system, headers, valves and fittings, risers and fine bubble diffusers.	\$	187,000
3.	Three Rotary Blowers(two on-line, one as backup), controls and control panel.	\$	77,800
4.	Relocate Electrical Power Drop from FPC	\$	9,200
5.	Site clearing, grading and landscaping (1.6 acres @ \$3900/ac.)	\$	6,250
<b>SUB-TOTAL</b>		<b>\$</b>	<b>285,250</b>

**C. UPGRADE UNIT 1 AND UNIT 2 FOR Production Of Public Access Quality Effluent**

1.	Equipment Control Room/Building(20' X 16', air conditioned, bath room) Control Center for treatment plant operation, Cl2 & turbidity monitoring, automatic switch-over to reject pond, etc.	\$ 19,200
2.	Electronic equipment in control room and at plant for applicable FDEP limits on effluent quality, i.e., Chlorine and Turbidity analyzers, pH monitors, etc.	\$ 125,000
3.	4 (FOUR) 500,000 gpd tertiary filter units, 3 on line & one as backup. The facility must maintain CLASS I reliability.	\$ 900,000
4.	One 150 KW diesel electric generator with auto-switch electrical system	\$ 75,000
5.	Yard piping; Reject Water System; Chlorinated Water System; Filter backwash system.	\$ 31,000
6.	Electrical and electronic distribution systems, conduits, panels	\$ 27,000
<b>SUB-TOTAL</b>		<b>\$ 1,177,200</b>

**D. REUSE WATER STORAGE AND PUMPING SYSTEM**

1.	FDEP Review and Operation Permit Application Fee	\$ 5,000
2.	Site clearing and grading (2.5 Ac. @ \$4,500 per acre)	\$ 11,250
3.	Foundation and slab for 1,000,000 Reuse Water Storage Tank, 9,000 SF slab with outer ring, under slab plumbing @ \$14.50 per SF.	\$ 130,500
4.	Outer Ring, reinforced, top channel; sand blasted, primed and painted	\$ 131,000
5.	Yard piping and 14" line to west R/W of US 27(valves & fittings included) 1,900' of 14" dia. PVC, C900 - \$36 per foot.	\$ 66,400
6.	20' X 30' CBS Pump House FOR Motor Control System & Panels 600 SF @ \$60 per SF.	\$ 36,000
7.	Pump electrical and control panel systems	\$ 23,900
8.	1 - 900 GPM pump @ \$ 17,000; 2 - 500 GPM pumps @ \$ 9,000 each; Base for second 900 GPM pump.	\$ 38,000
9.	Electrical Service from Florida Power Corp.	\$ 8,500
10.	15,000 Hydropneumatic tank, valves, fittings and air compressor	\$ 43,700
<b>SUB-TOTAL</b>		<b>\$ 494,250</b>

**COST SUMMARY - WWTP & EFFLUENT DISPOSAL IMPROVEMENTS**

A.	UPGRADE TREATMENT UNIT 1	\$ 210,500
B.	BRING TREATMETN UNIT 2 ON-LINE	\$ 285,250
C.	UPGRADE UNITS 1 AND 2 TO PRODUCE Public Access Quality Effluent	\$ 1,177,200
D.	REUSE WATER STORAGE AND PUMPING SYSTEM	\$ 494,250
<b>ESTIMATED TOTAL</b>		<b>\$ 2,167,200</b>

CERTIFIED BY:

*Ronald H. Wilson*  
 Ronald H. Wilson, - P. E.

FE Lic. # 9710

Date: 13 Oct 92

## QUESTION 2

Please provide the total number of equivalent residential connection (ERCs) for water and wastewater, each, that have been charged AFPI by the utility from January 1, 1999, through October 31, 1999. Include any "AFPI deposits" collected as defined by the utility in its response to question (1)(a) of Staff's Second Data Request.

See Schedule of Number of ERCs Charged for AFPI for the Period of January 1 through October 31, 1999.

**SOUTHLAKE UTILITIES, INC.**  
**Number of ERCs Charged for AFPI**  
**For the Period January 1 through October 31, 1999**

<u>Date</u>	<u>Payer</u>	<u>Reference</u>	<u>Water ERCs</u>	<u>Wastewater ERCs</u>
04/16/99	Wooldridge Homes	Lots 9, 17, 55 & 59	4.0000	4.0000
04/16/99	SFH Enterprises	Retail Store #1	0.3429	0.4000
05/07/99	First Federal Savings		2.5700	3.0000
05/14/99	SFH Enterprises	Post Office	2.1429	2.5000
05/18/97	Wooldridge Homes	Phase II A, Lot 22	1.0000	1.0000
06/15/99	Spur Gas Station	Partial Payment-Prorated	1.2340	1.4397
07/29/99	Spur Gas Station	Partial Payment-Prorated	0.5790	0.6755
09/07/99	Spur Gas Station	Partial Payment-Prorated	0.5790	0.6755
09/07/99	Publix	Super Market-True-up*	-	-
09/07/99	Publix	Retail Store #1-True-up*	-	-
09/07/99	Publix	Retail Store #2-True-up*	-	-
09/07/99	Publix	Retail Store #3-True-up*	-	-
09/07/99	Publix	Retail Store #4-True-up*	-	-
09/07/99	Publix	Retail Store #5-True-up*	-	-
09/07/99	Publix	Retail Store #6-True-up*	-	-
09/07/99	Publix	Retail Store #7-True-up*	-	-
10/04/99	Summer Bay Resort	Building 405-True-up*	-	-
<b>Total</b>			<u><u>12.4478</u></u>	<u><u>13.6907</u></u>

\* The true-up is an increase in the cost per ERC and not an increase in the number of ERCs.