LAW OFFICES
ROSE, SUNDSTROM & BENTLEY, LLP
2548 BLAIRSTONE PINES DRIVE
TALLAHASSEE, FLORIDA 32301

(850) 877-6555

CHRIS H. BENTLEY, P.A.
F. MARSHALL DETERDING
MARTIN S. FRIEDMAN, P.A.
JOHN R. JENKINS, P.A.
STEVEN T. MINDLIN, P.A.
JOSEPH P. PATTON
DAREN L. SHIPPY, LL.M. TAX
WILLIAM E. SUNDSTROM, P.A.
DIANE D. TREMOR, P.A.
JOHN L. WHARTON

MAILING ADDRESS
POST OFFICE BOX 1567
TALLAHASSEE, FLORIDA 32302-1567

TELECOPIER (850) 656-4029

ROBERT M. C. ROSE
OF COUNSEL

March 21, 2001
VIA HAND DELIVERY

Ms. Blanca Bayo, Director
Division of Records and Reporting
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Re: D.R. Horton Custom Homes, Inc.; PSC Docket No. 981609-WS
Emergency Petition to Eliminate Service Availability & AFPI Charges of Southlake Utilities

D.R. Horton Custom Homes, Inc.; PSC Docket No. 980992-WS
Investigation into Service Availability and AFPI Charges of Southlake Utilities
Our File No. 33083.01

Dear Ms. Bayo:

In accordance with the request of the staff, I am refiling 15 copies of the testimony of James C. Boyd, P.E. in order to correct the margins and the reference to various tables which were originally included within the text of his testimony. No substantive changes result from this revised version of Mr. Boyd's testimony, it is simply being submitted to correct an error with regard to the margins, and to remove the tables from the text and insert them as a separate Exhibit JCB-28.

Please replace all versions of the prefiled direct testimony of Mr. Boyd, P.E. filed on February 22, 2001, with this revised version. All of Mr. Boyd's exhibits as submitted on February 22, 2001 remain the same and should be retained from the original filing. Only the testimony text needs to be replaced and the new JCB-28 (attached) added to the end of the originally filed set of exhibits.

Should you have any questions in this regard, please let me know.

Sincerely,

ROSE, SUNDSTROM & BENTLEY, LLP

F. Marshall Deterding
For The Firm

FMD/tmg
cc: Samantha Cibula, Esq.
Jim Ade, Esq.
drhorton\4bayo.ltr

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 981609-WS and 980992-WS

(REVISED) DIRECT TESTIMONY OF JAMES C. BOYD, P.E.
ON BEHALF OF D.R. HORTON CUSTOM HOMES, INC.

Q. Please state your name and professional address for the record.

A. My name is James Boyd. My professional address is Boyd Environmental Engineering, Inc., 166 Lookout Place, Suite 200, Maitland, Florida 32751.

Q. Have you been retained by D.R. Horton Custom Homes, Inc. to provide testimony and assist in the preparation of exhibits in this proceeding?

A. Yes.

Q. Please provide a brief resume of your training and experience as it relates to this proceeding.

A. I have attached hereto as **Exhibit JCB-27** a recent resume outlining my professional background, training, and experience related to water and sewer engineering. A great deal of my experience is related to private water and sewer systems regulated by the Florida Public Service Commission.

Q. What is the purpose of your testimony here today?

A. To respond to some of the assertions made and positions taken by the witnesses for Southlake Utilities, as outlined in their prefiled testimony and exhibits.

Q. What is the first area you would like to address with your testimony?

A. The first issue I would like to address is the use of the cost estimates prepared by CPH - Engineers, Inc.

In Exhibit JFG-2, Schedules C and C.2 of Mr. John F. Guastella's testimony, cost estimates prepared by CPH-Engineers, Inc. ("CPH") are used for determining required water treatment plant expansion costs. These costs were originally derived in a report entitled "Southlake Utilities, Water Facilities Plan, November 1998" as authored by CPH (Exhibit JFG-7, the "CPH Report"). As summarized in Table 7-2 of the CPH Report, CPH recommended the

following expansion phases and associated costs:

Phase 2 - $3,297,500

Phase 3 - $2,130,500

Phase 4 - $642,500

Phase 5 - $355,000

A Phase 1 expansion is also discussed by CPH in the report. However, since the Phase 1 expansion was intended to be financed by Southlake Utilities, CPH did not provide a cost estimate for the Phase 1 improvements.

As stated in Section 7.2 of the CPH Report, "The selected plan is the most cost effective and will meet the water service demands through the year 2020." In Table 5-4 of the CPH Report, the maximum daily demand in the year 2020 is projected to be 14,180,063 gallons per day (gpd). Hence, it is clear that the expansion recommendations contained in the CPH Report are intended to meet a maximum daily flow (MDF) of 14,180,063 gpd.

The construction phasing schedule recommended by CPH in Table 7-1 is included herein as Table 1 of **Exhibit JCB-28**.

A particular construction phase must be capable of providing adequate service until the next phase of construction is completed. For example, CPH estimates a Phase 3 construction date of 2005. This means that Phase 2 construction must be sufficient to accommodate MDF through the year 2005, thus enabling the MDF to be met while the plant is undergoing construction. Applying this logic, plant capacities associated with each phase are derived as reflected in Table 2 of **Exhibit JCB-28**.

This capacity derivation can be confirmed by considering high service pump capacities, which are presented in Table 6-9 of the CPH Report. In Section 6.1.6 of the report, CPH states that "The pumps should be sized to deliver the max daily flow and fire flow with one pump off-line." The sum of MDF and fire flow is presented in Table 5-8 of the report (the sum of MDF

and fire flow is typically referred to as "coincident draft"). Assuming the largest high service pump off-line, a comparison of coincident draft requirements and high service pumping capacity is presented in Table 3 of **Exhibit JCB-28**.

As indicated in Table 3 of **Exhibit JCB-28**, the proposed high service pumping capacity for each phase (largest unit off-line) equals or exceeds the projected coincident draft requirement. This confirms the derived design capacity for each phase, which is summarized in Table 4 of **Exhibit JCB-28** along with the estimated cost as projected by CPH.

It should be noted that it is necessary to determine a "derived plant capacity," since the CPH report did not specifically state the design capacity associated with each phase. However, the derived plant capacity is believed to be consistent with the information included in the report, as documented by the preceding analysis. Furthermore, as stated in Section 7.2 of the CPH Report:

> "In order to provide potable water and adequate fire protection for the service area, the Phase 1 through Phase 5 improvements have been proposed. These improvements have been phased to allow for the installation of the improvements as the demand of the service area increases. These Phases will be scheduled according to demands of the service area. The selected plan is the most cost effective and will meet the water service demands through the year 2020. The proposed upgrades are consistent with the existing system and are the most feasible."

In Table 5-4 of the CPH Report, the maximum daily demand in the year 2020 is projected to be 14,180,063 gpd. Hence, it is clear that the improvements are designed to provide a maximum daily flow capacity of 14,180,063 gpd.

The preceding analysis should not be considered an endorsement of the evaluations or conclusions of the CPH Report. Rather, the sole purpose for examining the CPH Report, and deriving the plant capacity associated with each phase, is to contrast this information to the information included in Schedules C and C.2 of Exhibit JFG-2. This comparison is presented in Table 5 of **Exhibit JCB-28**.

As evident by review of Table 5 of **Exhibit JCB-28**, the plant capacity information used in the

Exhibit **JFG-2** schedules does not match the plant capacity information derived from the CPH Report. Simply stated, CPH projected a total plant expansion cost (Phases 2 through 5) of $6,425,500, which was claimed to be adequate to meet the water service area demands through the year 2020 (MDF of 14,180,063 gpd). In the Exhibit JFG-2 schedules, the same total cost ($6,425,500) is associated with a total plant capacity of 8,640,000 gpd (MDF basis). The difference in capacity, in percentage terms, is 164 percent. This very significant inconsistency brings into question the validity of the plant expansion costs used in Exhibit JFG-2, which reportedly rely upon the findings of the CPH Report.

It should also be noted that the plant expansion scheduled for year 2001 in Schedule C of Exhibit JFG-2 is shown to have a capacity of 2.448 mgd (MDF basis). However, the associated FDEP permit for this expansion calls for a permitted capacity of 2.916 mgd (MDF basis). A copy of the applicable FDEP permit is attached as Exhibit JCB-1. This difference in capacity is equivalent to 594 ERCs, using the FDEP mandated conversion factor of 787.5 gpd per ERC (MDF basis).

I would summarize my opinion relative to this issue by stating that the plant expansion costs contained in Exhibit JFG-2 do not accurately reflect the basis for such costs, which is the CPH Report. The costs and associated capacities do not match. In addition, the capacity associated with the proposed year 2001 expansion does not match the capacity specified in the corresponding FDEP permit.

Q. What is the next area you would like to address?

A. The testimony of Mr. Robert L. Chapman concerning the date on which properties were first devoted to public service.

The testimony offered by Mr. Robert L. Chapman lists a chronology of events associated with the water and wastewater treatment plant properties. At issue is when these properties were devoted to public use. In his testimony, Mr. John F. Guastella provided the following synopsis

of Mr. Chapman's testimony concerning this matter (beginning with Line 14 of Page 6):

> "The land for the utility treatment plant site should be considered to be devoted to public use in 1993. As Mr. Chapman describes, it was not established that the water and sewer utility service would be provided by an investor-owned utility until 1993. In 1990 one of the options was for the establishment of an investor-owned utility, for which an agreement (valid for one year) to lease a 10 acre site for a wastewater treatment plant was made in the event the investor-owned option was selected. The investor-owned option, however, was not selected at that time, but, instead, a municipal operation was pursued. It was not until 1993, after rejecting the option to have Polk County provide these utility services, did the investor-owned option become established. Accordingly, in August of 1993 a new lease was entered into for the water and wastewater sites. Thus, the investor-owned utility devoted the land to public use in 1993."

The above chronology of events would appear to be inconsistent with the permitting history of the Southlake water and wastewater facilities. The following exhibits are attached:

Exhibit JCB-2: Individual Consumptive Use Permit Application, Southlake Utilities, Inc. as applicant, dated December 4, 1991.

Exhibit JCB-3: Consumptive Use Permit No. 2-069-0010NM, issued to Southlake Utilities, Inc. by the St. Johns River Water Management District, February 11, 1992.

Exhibit JCB-4: Water Well Construction Permit Application, Southlake Utilities, Inc. as applicant, January 24, 1992.

Exhibit JCB-5: Well Construction Permit Number 3-069-3119P, issued to Southlake Utilities, Inc. by the St. Johns River Management District, March 24 1992.

Exhibit JCB-6: Correspondence from William A. Mattick, President, KRM Properties, dated August 13, 1992, concerning septic tank relocation adjacent to the water plant site.

Exhibit JCB-7: Application to Construct a Public Drinking Water System, Robert L. Chapman as applicant, March 25, 1992.

Exhibit JCB-8: Permit Number WC35-210970 for construction of the Southlake Water Treatment Plant, issued to Southlake Utilities, Inc. by the Florida Department of Environmental Regulation, September 25, 1992.

Exhibit JCB-9: Request for Letter of Release to Place Water Supply System into Service,

Permit Number WC35-210970, submitted by R.H. Wilson & Associates to the Florida Department of Environmental Protection, March 18, 1994.

Exhibit JCB-10: Application to Construct a Domestic Wastewater Facility, Robert L. Chapman as applicant, February 19, 1992.

Exhibit JCB-11: Application to Construct a Reuse/Land Application System, Robert L. Chapman as applicant, February 19, 1992.

Exhibit JCB-12: Correspondence from Christianne C. Ferraro, Florida Department of Environmental Regulation, dated August 18, 1992.

Exhibit JCB-13: Correspondence for Robert L. Chapman, President, Southlake Development Group, dated August 18, 1992.

Exhibit JCB-14: Correspondence from R.W. Makemson Jr., P.E., Matrix Systems, Inc., dated August 20, 1992.

Exhibit JCB-15: Permit Number DC35-210971 for construction of the Southlake WWTP, issued to Southlake Development Group by the Florida Department of Environmental Regulation, September 28, 1992.

Exhibit JCB-16: Notification that a Domestic Wastewater Facility Will Be Placed Into Operation, Construction Permit Number DC35-210971, submitted by R.H. Wilson & Associates to the Florida Department of Environmental Protection, March 18, 1994.

The permitting activity represented by the above exhibits certainly indicates an intention to construct water and wastewater facilities on the properties in question well before August 1993. It is assumed that the applicant had adequate legal ownership authority to permit the subject properties for utility use upon submittal of the initial permit applications. In the case of the water treatment plant site, the initial application submittal date was December 4, 1991 (Exhibit JCB-2). In the case of the wastewater treatment facility site, the initial application submittal date was February 19, 1992 (Exhibits JCB-10 and JCB-11).

Q. What is the next area of concern that you have with the testimony of witnesses for Southlake Utilities?

A. I am also concerned with the ERC calculations based on wastewater treatment plant capacity as contained within the testimony of Mr. Guastella.

On Page 12 of his testimony (beginning with Line 9), Mr. John F. Guastella states:

> "Schedules C and D show, by year, the projected plant capacity in gallons per day and the capacity in terms of ERC's using the design factors of 787.5 GPD for water and 300 GPD for wastewater, consistent with FDEP requirements."

In Permit Number WC35-0080599-010 (Exhibit JCB-1), FDEP clearly establishes an ERC conversion factor of 787.5 gpd per ERC, since the 2.916 mgd permitted plant capacity (MDF basis) is stated to be equivalent to 3,702 ERCs. However, concerning wastewater treatment plant capacity, FDEP will allow utility's to establish a design flow per ERC based on historical flow and connection data. This understanding was confirmed by Mr. H. Lee Miller, Section Supervisor, Domestic Waste Permitting, FDEP Central District Office (see Exhibit JCB-17 for confirmation letter).

The existing wastewater treatment plant would be over-capacity if each ERC was actually generating 300 gpd. In Schedule D.1 of Exhibit JFG-2, 1999 year end sewer ERCs are shown to be 1,102. Applying an ERC conversion factor of 300 GPD per ERC would result in a flow of 330,600 gpd, which would have exceeded the 300,000 gpd permitted plant capacity. In contrast, the annual average daily flow during 1999 was approximately 146,000 gpd, or roughly one-half of the 300 gpd per ERC factor.

The use of a 300 gpd per ERC conversion factor clearly understates the capacity of the wastewater plant in terms of ERCs. This was pointed-out by Southlake Utilities in its response to the Staff's Second Data Request, dated July 15, 1999. In the fourth paragraph of the utility's response to Question 1(a), the utility makes the following observations:

> "The use of the 300 GPD/ERC ratio has greatly understated the capacity of the

wastewater plant in terms of ERCs. Southlake Utilities had an annual average daily flow for 1998 of 89,003 GPD (32,486,000 gallons ÷ 365 days = 89,002.7 GPD) and 541.25 average meter equivalents (Start of Year (520.0) + End of Year (562.5) ÷ 2 = 541.25 – see page S-3), resulting in a 164 GPD/ERC ratio (89,003 GPD ÷ 541.25 ERCs = 164.4 GPD/ERC). This ratio is based on actual flow data and is approximately ½ of the ratio used in the Order to restate the remaining capacity into ERCs (164 ÷ 300 = 0.55). If the 300 GPD/ERC ration was accurate, Southlake Utilities would have exceeded its 549 ERC plant capacity at the end of 1998 with its 562.50 meter equivalents (164,750 GPD ÷ 300 GPD/ERC = 549 ERCs). Instead, Southlake Utilities was at approximately 64% of its wastewater plant capacity in December of 1998 (106,000 GPD ÷ 164,750 GPD = 64.3%).

In the above analysis, Southlake calculated a wastewater flow per ERC of 164 gpd. On page 11, Line 19 of Mr. John F. Guastella's testimony, a figure of 130 gpd per ERC is noted for year 2000. Finally, in Order No. PSC-00-0917-SC-WS, the Florida Public Service Commission (PSC) stipulated a wastewater treatment demand of 217 gpd per ERC. Obviously, there is an opportunity for Southlake Utilities to determine a realistic wastewater ERC conversion factor for consideration and approval by FDEP and PSC. This exercise would increase available wastewater plant capacity on an ERC basis. It would also require a re-evaluation of the capacity and demand factors used in Schedule D of Exhibit JFG-2.

Q. Please provide us your thoughts concerning Mr. Guastella's testimony and exhibits on wastewater treatment plant capacity and the expansion projections related thereto.

A. Schedules D, D.1, D.2 and D.3 in Exhibit JFG-2 of Mr. John F. Guastella's testimony deal with sewer system projections, while Exhibit JFG-8 presents a summary of plant expansion cost estimates. The plant expansion cost estimates were prepared by R.H. Wilson & Associates Engineers.

Table 6 of **Exhibit JCB-28** uses plant expansion projections for years 2000 and 2001 as included in Schedule D of Exhibit JFG-2. For purposes of this analysis, only costs in the "treatment/disposal" category are considered.

As indicated in Table 6 of **Exhibit JCB-28**, the proposed year 2002 expansion has an associated cost per gallon that is much higher than the prior year cost. Much of this cost

increase is apparently attributable to proposed upgrades associated with the production of reclaimed water, i.e., implementation of a reuse system. The items and costs assumed attributable to the proposed reuse system are outlined in Table 7 of **Exhibit JCB-28**.

The total assumed cost attributable to the reuse system ($1,263,250) represents approximately 62% of the total year 2002 expansion cost of $2,035,802. Based on this information, the utility is apparently committed to providing reclaimed water service to its territory, and this commitment will require a sharp increase in the cost per gallon of capacity. However, this apparent commitment is inconsistent with the utility's recent consumptive use permitting history with St. Johns River Water Management District (SJRWMD). As detailed below, the utility's commitment to provide reclaimed water service is apparently contingent upon future economic evaluations.

In correspondence dated May 6, 1998 from the utility's consultant (Yovaish Engineering Sciences, Inc.), the utility responded to a SJRWMD inquiry concerning the provision of reclaimed water to its service area. (See response to Question No. 11 in Exhibit JCB-18.)

> "It is our contention that the most efficient use of the reclaimed water is to facilitate recharge to the surficial and Floridan aquifers via the percolation ponds. The deep, permeable sands and relatively deep water table provide for an environment in which the water recharged in the ponds is less susceptible to evaporation/evapotranspiration than if the reclaimed water is applied for irrigation of common areas, etc."

However, in spite of the utility's stated position, the SJRWMD continued to press for an evaluation of reuse potential in subsequent correspondence (See Exhibit JCB-19, Comment No. 7 and Exhibit JCB-20, Comment No. 1). In correspondence dated July 29, 1999 from Yovaish Engineering Sciences, the utility made the following statement (see Exhibit JCB-21, Attachment C, Proposed Water Conservation Plan, Item C.2, Re-Use Feasibility):

> "The utility currently plans to increase the level of treatment for the wastewater plant within the next three years. The net result will be that reclaimed water will be available for those projects where it is economically feasible to provide the transmission facilities."

In a technical staff report dated March 30, 2000 (see Exhibit JCB-22), the SJRWMD staff required the utility to formally evaluate reuse feasibility via the inclusion of Special Condition No. 12:

> "Reclaimed water from the Southlake WRF must be used as irrigation water whenever an irrigation demand exists and such reuse is feasible pursuant to District rules. Ground water resources may not be used for green space or common area irrigation. The permittee must conduct a comprehensive reuse feasibility study to evaluate all potential reuse alternatives within two years of permit issuance. A report detailing the results of the comprehensive reuse feasibility study must be submitted to the District for approval at least six months prior to the permit expiration date."

The consumptive use permit was issued to the utility by the SJRWMD on April 11, 2000. The permit expires three years from the date of issuance, or April 11, 2003. Therefore, the utility has until October 11, 2002 to submit the reuse feasibility report to the SJRWMD. It would appear that findings of this future feasibility study are crucial to utility's proposed wastewater expansion program as summarized in Exhibit JFG-8. The future feasibility study will presumably address the following issues:

1. At what locations within the service area is it economically feasible to extend reclaimed water transmission facilities? (This issue has apparently not yet been addressed by the utility, since the line item costs in Exhibit JFG-8 do not include any funds for reclaimed water transmission piping.)

2. Which specific <u>existing</u> projects within the service area are already equipped with internal reclaimed water distribution piping? In addition, which specific <u>future</u> projects within the service area will be required to install reclaimed water distribution piping? This will have a significant impact on the economic feasibility of the reuse program, since it is more expensive to retrofit reclaimed water distribution piping within existing developed areas than it is to install piping concurrent with development.

3. Based on an evaluation of Items 1 and 2 above, what is the estimated amount of reclaimed water demand within areas to be served by the reuse system? This will help establish the capacity of reclaimed water unit processes at the wastewater treatment facility. If only a fraction of the wastewater treatment plant capacity is required to meet the projected reclaimed water demand, then it may not make economic sense to size the reclaimed water unit processes (such as filtration) for the entire plant capacity. The expansion program summarized in Exhibit JFG-8 appears to assume that reclaimed water unit processes will be installed to handle the entire plant capacity.

4. How will the utility pay for the cost of providing reclaimed water service? Will separate capacity and usage charges be established?

It is also assumed that the reuse feasibility study will help address the following significant issues:

1. Effect of reclaimed water supply on potable water demand. If reclaimed water is used to augment customer irrigation requirements, then there should be a corresponding decrease in potable water capacity requirements. This would have an effect on the projections included in Schedules C, C.1, C.2 and C.3 of Exhibit JFG-2. The irrigation component of potable water demand is very high. For example, the average daily potable water demand in year 2000 was approximately 714,000 gpd, while the corresponding wastewater flow was approximately 202,000 gpd. This indicates that approximately 70% of the potable water demand in year 2000 was attributable to outdoor uses such as irrigation.

2. The cost-effectiveness and practicality of expanding the wastewater plant capacity every year from year 2000 through 2008 (as indicated in Schedule D

of Exhibit JFG-2). This constant state of construction activity for a nine-year period would presumably be difficult to administer and could be disruptive to plant operations.

I would summarize my opinion concerning this issue by stating that the wastewater plant expansion costs contained in Exhibit JFG-8, and used as a basis for projections in Exhibit JFG-2, apparently assume the implementation of a full-scale reclaimed water program. However, based on the SJRWMD permitting history, the Utility apparently has not yet committed to a full-scale program, and has not provided reasonable assurance that such a program is economically justified. Such assurance will not be available until the Utility completes an approved, comprehensive reuse feasibility study as mandated by the SJRWMD. Furthermore, assuming the implementation of a reuse program, the Utility has not considered the impact of such a program on potable water demand and associated plant expansion costs.

Q. Mr. Guastella also provides some testimony concerning unit growth within the year 2000. Please provide us with your comments and concerns regarding this testimony and its conclusions.

A. In testimony provided by Mr. John F. Guastella, unit growth within the year 2000 was reported to be 794 units, and the total number of units as of December 31, 2000 was reported to be 2,619. A breakdown of these 2,619 total units in terms of single-family, multi-family and commercial land uses was not provided in Mr. Guastella's testimony. However, in Southlake's response to the commission staff's first set of interrogatories (see Exhibit JCB-23), the utility provided "Schedule B" that presents a unit breakdown as of November 17, 2000. The total number of units shown in Schedule B is 2,587. The 32-unit difference between the total units reported by Mr. Guastella (2,619) and the total units shown in Schedule B (2,587) is presumably due to construction activity from November 18, 2000 through December 31, 2000.

Of the 2,587 total units shown in Schedule B of Exhibit JCB-23, 313 are attributable to Raintree Apartments, within the Sunrise Lakes PUD. (The Sunrise Lakes PUD was formerly referred to as Walker Heights as noted by Mr. Robert L. Chapman on page 7 of his testimony.)

Within Schedule B, these 313 units are noted as "construction in progress, meters set." Although the utility is claiming Raintree Apartments for inclusion in year 2000 growth, it should be noted that the apartments were not near a state of completion in year 2000. Exhibit JCB-24 contains several photographs of the Raintree Apartments as of February 14, 2001. As indicated in the photographs, the apartments are still under construction, and were not near a state of occupancy as of February 14, 2001. In addition, the project access road to Highway 27 has not yet been completed.

Given this preliminary state of development, it may be more appropriate to include Raintree Apartments in year 2001 unit counts. This would be consistent with the Capacity Analysis Report (CAR) prepared by the utility's engineer (R.H. Wilson & Associates Engineers) received by FDEP on November 21, 2000. (The CAR is attached as Exhibit JCB-25.) Within Section 2.3 of the CAR (Future Flow Projections), unit growth within Walker Heights (now known as Sunrise Lakes PUD containing Raintree Apartments) is shown to occur in year 2001.

If Raintree Apartments (and the associated clubhouse) were shifted to year 2001, the following unit growth would have occurred in year 2000 (through November 17), based on the information contained in Schedule B of Exhibit JCB-23:

Single Family Residential	111 units
Multi-Family Residential	330 units
Commercial	7 units
Total	448 units

This number of units can be converted to ERCs by use of the formula contained in Appendix A of Exhibit JFG-2:

Single Family Residential ERCs = (111 units)(1 ERCs/unit) = 111 ERCs

Multi-Family Residential ERCs = (330 units)(0.643 ERCs/unit) = 212 ERCs

Commercial ERCs = (7 units)(4 ERCs/unit) = 28 ERCs

Total ERCs = 351 ERCs (growth in year 2000, through November 17)

I would conclude my observations concerning this issue by stating that the reported growth rate for year 2000 (794 units) includes a sizable project (313 units) that perhaps should not be counted in year 2000. In fact, this specific project was not counted in year 2000 growth figures supplied by the Utility in the Capacity Analysis Report (Exhibit JCB-25). Therefore, inclusion of the 313-project (Raintree Apartments) may overstate actual growth in year 2000.

Q. As to growth projections, do you have any comments or testimony about the information provided by the Utility?

A. Yes. Growth projections for the Southlake service area are provided in the testimony of Mr. Patrick L. Phillips, President, Economics Research Associates (specifically in Exhibit PLP-2). As summarized in Exhibit PLP-2, the following data sources form the basis of the growth projections:

1. Unit absorption figures as projected by the Citrus Ridge Planning Council.

2. Building permit data for the Southlake area.

3. Projected development data in the Southlake area ("developer projections").

Projections provided by the following data sources were determined by Economics Research Associates ("ERA") to underestimate growth potential, and therefore were removed from further consideration:

1. Projections prepared by the University of Florida Bureau of Business and

Employment Research.

2. Projections provided by CACI Information Systems, Inc.

Projections based on the number of telephone lines were considered by ERA to overestimate growth, and hence were also removed from further consideration.

In Table 4 of Exhibit PLP-2, the average annual growth rate for the Southlake area was calculated to be 21.5% for the years 2000 - 2005. This represents an averaging of the aforementioned three included data sources. According to the information presented in Table 3 of Exhibit PLP-2, a 10.6% annual growth rate is predicted by the Citrus Ridge Planning Council, while a 24% annual growth rate is predicted via developer projections. For building permit data, a 30% annual growth rate was determined based on the following historical information:

Building Permit Data in Southlake Area (From Table 3 of Exhibit PLP-2)

Year	Permits Issued
1995	116
1996	190
1997	267
1998	434
1999	398
2000	430

Annual Growth Rate = $(430/116)^{1/5} - 1 = 0.3 = 30\%$

As stated in Item No. 4 on Page 2 of Exhibit PLP-2:

"In 2000, 430 units are expected to be permitted."

As indicated by the above statement, the number of building permits in year 2000 was based on ERA's expectations, since the ERA report was prepared before year-end (report dated August 8, 2000). In order to verify this estimate based on actual historical

data, the number of building permits issued in year 2000 was obtained from Lake County Building Services. A copy of the raw data provided by Lake County is attached as Exhibit JCB-26. The geographical area included in the Lake County building permit data covers Sections 25, 26, 27, 35, and 36 of Township 24 South, Range 26 East. This corresponds to the Southlake service area as depicted in Exhibit RLC-2 of Mr. Robert Chapman's testimony. In fact, this geographical area is actually larger than the Southlake service area, since the service area includes only portions of Sections 25, 26, 27, and 35. A very small portion of Section 34 is shown within the Southlake service area, however, Lake County reports that no permits were issued within Section 34 in the year 2000.

The following table presents a summary of the number of building permits issued in year 2000 within each Section:

Section	No Permits
25	96
26	126
27	3
35	16
36	8
Total	249

Included within the above total are the following types of permits. These types of permits are included because they are assumed to represent new habitable structures:

AR Amusement/Social/Recreation

CD Nonresidential & Nonhousekeeping

FF Five or More Family Building

HM Hotel/Motel Accommodation

NR Other Nonresidential Building

PW Public Works/Utilities

SB Structures Other Buildings

SF Single Family Residence

SR Stores/Customer Services

Excluded from the above total are the following types of permits that were also issued within the aforementioned geographic area in the year 2000. These types of permits are excluded because they are not assumed to represent new habitable structures:

AL Alarm Systems

CC Concrete, Driveway/Patio

CP Commercial Pool

DM Demolition - Structure

EL Electrical Services

FS Fire Sprinklers

FT Fuel Tanks

GA Residential Additions Garages/Carports

MC Mechanical

PL Plumbing

RD Residential Additions/Alterations

RP Residential Pool

SN Signs

Based on the above analysis and supporting assumptions, it does not appear that a total of 430 "growth-type" building permits were actually issued within the Southlake area in the year 2000. Rather, the data analysis indicates that only 249 "growth-type" building permits were issued in the year 2000. This circumstance could significantly

reduce the 30% building permit growth rate as calculated by ERA. In fact, building permit issuance may actually be declining compared to 1998 data. However, it must be emphasized that the methodology used by ERA to quantify building permits in Table 3 of Exhibit PLP-2 may differ from the methodology stated herein. (No explanatory methodology was offered by ERA in its report relative to identifying included or excluded building permit types). Therefore, it is not possible to accurately compare the year 2000 data derived herein with the building permit data presented in Table 3 of the ERA report. However, the year 2000 building permit analysis does indicate that the 30% annual growth rate calculation requires further verification based on actual year 2000 historical data.

As previously discussed, the remaining two data sources used by ERA to calculate the 21.5% annual average growth rate included projections by the Citrus Ridge Planning Council (10.6%) and developer projections (24%). However, reliance on developer projections has proven to be a poor indicator of actual growth conditions within the Southlake area, as pointed out by Southlake in Section 2.1 (Wastewater Treatment Plant Flow Comparisons) of the Capacity Analysis Report (Exhibit JCB-25):

> "Wastewater flow projections from 1995 indicated a 2000 influent flow of 1.5 mgd. The 1995 flow projections were based on a developer survey in October 1995 and a copy is provided at the APPENDIX. The peak monthly flow for August 2000 was 0.245 mgd, one sixth of the projected flow. The major factor impacting flow projections has been the land developer completes a Land Zoning Change for a new Planned Unit Development (PUD) within this PSC Franchised Area. The actual sales of the internal land uses, i.e., multifamily units, single family units and commercial/tourist oriented development were much slower than the projections of the developers. The start of the permitting/construction also lagged. Today, actual construction is about 35% of 1995 projections."

Given the apparent uncertainty of the developer projections, it may be more prudent to base unit growth projections on historical data, adjusted as appropriate to reflect other reasonable growth indicators.

I would conclude my observations concerning this issue by stating that the ERA growth projections partially rely upon an assumed number of building permits (430) issued during year 2000. My independent research, based on actual historical data supplied by Lake County, did not corroborate the 430 assumed figure. Rather, my research indicated a much smaller number (249). Furthermore, the ERA growth projections partially rely upon developer projections which, by the Utility's own admission, have historically proven to be a poor indicator of actual growth in the Southlake area.

Exhibit JCB-28

Table 1

Phase	Construction Date
2	2000
3	2005
4	2010
5	2015

Table 2

Phase	Accommodate Flow Through Year	Derived Plant Capacity, gpd, Equivalent to Projected MDF (Table 5-4)
2	2005	5,358,375
3	2010	8,098,313
4	2015	11,133,000
5	2020	14,180,063

Table 3

Phase (Capacity Year)	Sum of Fire Flow and MDF, gpd (Table 5-8)	Total High Service Pump Capacity, gpd (Table 6-9)	Total High Service Pump Capacity, gpd (Less Largest Unit)
2 (2005)	9,475,200	11,664,000	9,720,000
3 (2010)	12,713,760	17,928,000	13,608,000
4 (2015)	16,365,600	22,248,000	17,928,000
5 (2020)	19,980,000	26,568,000	22,248,000

Table 4

Phase	Construction Date (Table 7-1)	Estimated Cost (Table 7-2)	Adequate Through Year	Derived Plant Capacity, gpd, Equivalent to Projected MDF (Table 5-4)
2	2000	$3,297,500	2005	5,358,375
3	2005	$2,130,500	2010	8,098,313
4	2010	$642,500	2015	11,133,000
5	2015	$355,000	2020	14,180,063

Table 5

Date of Construction		Expanded Plant Capacity (gpd)*		Plant Expansion Cost
JFG Schedules	CPH (Phase)	JFG Schedules	CPH **	
2002	2000 (Phase 2)	3,456,000	5,358,375	$3,297,500
2005	2005 (Phase 3)	5,184,000	8,098,313	$2,130,500
2007	2010 (Phase 4)	6,912,000	11,133,000	$642,500
2008	2015 (Phase 5)	8,640,000	14,180,063	$355,000
			Total Plant Expansion Cost	$6,425,500

* Maximum daily flow basis.

** Plant capacity derived from CPH Report as detailed herein.

Table 6

Year	Total Treatment/Disposal Account Balance / Increase in Account Balance From Prior Year (From Schedule D)	Total Treatment Plant Capacity / Increase in Capacity From Prior Year (gallons) (From Schedule D)	Derived Cost per Gallon of Total Capacity ($/gal)	Derived Cost per Gallon of Increased Capacity ($/gal)
2001	$1,633,536 / $659,760	755,000 / 455,000	2.16	1.45
2002	$3,669,338 / $2,035,802	1,000,000 / 245,000	3.67	8.31

Table 7

Item (Exhibit JFG-8)	Estimated Cost (Exhibit JFG-8)
Primary Filters, 3 @0.5 mgd (Eff. Fac.)	$585,000
Backup Filters, 1 @0.5 mgd (Eff. Fac.)	$225,000
Primary Filters Piping	$90,000
Filter Backwash System Yard Piping	$66,400
Electrical Service Panel, Reuse	$32,400
Treatment Structure, Foundation	$130,500
Reuse Hydro-Tank(s), 15,000 gal.	$43,700
Reuse Eff. Pump Station & Equipment	$74,000
Site Work, Reuse System	$11,250
Engineering & Permits, Reuse System	$5,000
Total Assumed Cost Attributable to Reuse System	$1,263,250