

CHAPTER 4: POTENTIAL RECLAIMED WATER USERS AND DEMANDS

4.1 General

In order to determine the feasibility of any reclaimed water project, an analysis of potential customers is required. Potential reclaimed water users were identified through a combination of sources including the City of Fort Worth water customer database, survey data, meetings with potential reclaimed water users, and previous studies. The potential reclaimed water users were then compared and ranked based on the amount of reclaimed water that could potentially be supplied to each user. Potential users were then analyzed based on location to identify potential projects, or alternatives, for further analysis. The potential users and demands that have been identified are further described in this chapter. The development and evaluation of each alternative is included in Chapter 6.

4.2 Potential Reclaimed Water Use Categories

Potential reclaimed water users can be divided into several general categories. Water use characteristics for each user will vary depending upon the type of usage, or category. The typical characteristics include seasonal variations in water usage, and the frequency of water use – both daily and hourly. These characteristics were used to help define monthly, daily, and hourly peaking factors. Several assumptions were made regarding the peaking factors for each of the categories of water use, and are discussed in the following sections for each category. The equations used to determine the peak month, peak day, and peak hour water demands are as follows:

$$\text{Peak Month Demand} = (\text{Annual Average Demand}) * (\text{Peak Month Factor})$$

(The peak month demand is the average daily demand during the maximum month.)

$$\text{Peak Day Demand} = (\text{Peak Month Demand}) * (\text{Peak Day Factor})$$

(The peak day demand is the average hourly demand of the peak day during the maximum month.)

$$\text{Peak Hour Demand} = (\text{Peak Day Demand}) * (\text{Peak Hour Factor})$$

(The peak hour demand is the maximum hourly demand during the peak day of the maximum month.)

For all categories, except for the “commercial process” category, water usage is expected to increase during the summer months. This is because most of the potential reclaimed water use considered in this report is related to irrigation. Irrigation use typically peaks during the months of June through September, and may sometimes include May and October as well. The peak monthly reclaimed water demand is projected to be 22 percent of the annual reclaimed water demand volume. Thus, the monthly peaking factor is assumed to be equal to 2.64, unless specific data is available for individual users. The selection of this peaking factor is consistent with previous studies prepared for the City of

Fort Worth⁸. The monthly peaking factor is multiplied by the annual average irrigation demand to determine the peak monthly demand flows.

Although not always the case, the water usage for most commercial processes is not expected to increase during any particular time of year. Commercial process demands are assumed to be more constant throughout the year. Because of this somewhat constant demand, the monthly peaking factor is assumed to be 1.0.

4.2.1 Commercial Irrigation

There is a potential to provide reclaimed water for those business or commercial enterprises that utilize water for irrigation purposes. All customers identified in the commercial irrigation category were assumed to irrigate on a daily basis for a period of 4 hours per day, unless specific information was available. This results in a peak day factor of 1.0, and a peak hour factor of 6.0.

4.2.2 Commercial Processes

Commercial processes include those business or commercial enterprises that utilize water for their processes, such as cooling water, manufacturing or power generation purposes. All customers identified in the commercial processes category were assumed to use water on a continuous basis, or 24 hours per day on a daily basis, unless specific information was available. These customers are assumed to use the same amount of water regardless of the time of year or time of day. This results in a peak day factor, and peak hour factor, of 1.0.

This type of demand flow will help to ensure continuous operation of the system and reduce the need for flushing operations. However, many of the commercial process demands identified were small in comparison to the larger users in other categories.

4.2.3 Golf Course Irrigation

Golf courses are typically ideal places to initiate reclaimed water practices. Golf courses tend to be large water users due to heavy irrigation. Many of the courses have water features, or ponds, that could be used as storage facilities for reclaimed water to be used during irrigation. If existing ponds were used for reclaimed water storage, then the peaking factor for the reclaimed water system would be reduced. However, many courses would not allow significant variations in the water surface elevation of these ponds, as this could affect the aesthetics of the course. For this reason, ponds are not considered for storage in this analysis, and it is assumed that golf courses would be irrigated on a daily basis for 12 hours per day, unless specified otherwise. This results in a peak day factor of 1.0, and peak hour factor of 2.0. If it is determined by the City and the respective golf course, that its water features could be used as temporary storage, then the peaking factors could be adjusted, resulting in a more economical design.

⁸ Draft Mary's Creek Water Recycling Center Feasibility Study. Alan Plummer Associates, Inc. June 2004.

4.2.4 Parks and Recreational Facilities

The “parks and recreational facilities” category includes public and private parks, and recreational areas, such as sport complexes. These areas usually have a lot of green space that requires irrigation to maintain public areas and sports fields. Parks and recreational areas, similar to golf courses, are usually excellent locations to implement reclaimed water projects. Parks and recreational areas are assumed to irrigate once every three days for a period of 8 hours, unless specific information was available. This results in a peak day factor of 3.0, and a peak hour factor of 3.0.

4.2.5 Public Facilities

Public facilities are considered to be City-owned facilities, such as public libraries or courthouses. This category does not include City-owned parks or golf courses, which are included in separate categories. The public facilities are assumed to irrigate once every three days for a period of 8 hours, unless specific information was available. This schedule is similar to the parks and recreational areas, however the annual average water demand is typically much less. This results in a peak day factor of 3.0, and peak hour factor of 3.0.

4.2.6 Residential Irrigation

Installation of a reclaimed water system in a previously developed residential area would be a costly endeavor. However, installing a dual water system during initial development could result in a very feasible application. The City has had previous discussions with developers in the Mary’s Creek Basin regarding installation of a dual water system during development. In these areas, the residential irrigation was based on the total acreage of residential areas. Residential areas are assumed to irrigate on a daily basis for a period of 4 hours per day, unless specific information was available. This results in a peak day factor of 1.0, and peak hour factor of 6.0. These assumptions are made based on considering the entire residential area as a whole, rather than individual home owners. While an individual homeowner may reasonably irrigate once every three to five days for a period of 2 hours, not every homeowner irrigates on the same exact day at the same time.

4.2.7 Schools and Universities

Potential reclaimed water customers will also include schools and universities, where reclaimed water could also be used for irrigation purposes. Schools are assumed to irrigate once every three days for a period of 8 hours, unless specific information was available. This results in a peak day factor of 3.0, and a peak hour factor of 3.0.

4.2.8 Gas Well Drilling

Recent advances in gas drilling technology have allowed the natural gas industry to tap into gas deposits in the Barnett Shale, located in Fort Worth, Tarrant County and several surrounding counties. As part of the drilling operations, water is used to break up the rock and shale so that the deposits of natural gas can be released. The water used for this process, referred to as “frac water”, does not need to be potable. Both the Texas Railroad Commission and the TCEQ have approved use of reclaimed water for hydraulic fracturing. Approximately 2.5 million gallons of water are required during the fracturing process. This water is typically stored in “frac ponds” on site. The City has had some initial discussions with drillers regarding the use of reclaimed water for their operations. As js

discussed in Section 4.3, some frac water usage has been included in the projected demands for the Northern Service area. In addition, the City is currently constructing a facility just north of Village Creek WWTP, from which trucks can obtain reclaimed water for use in fracturing operations.

4.2.9 Summary

The typical peaking factors for monthly, daily, and hourly water demands are summarized in Table 4-1. These peaking factors are used unless specific information is available for a particular customer.

Table 4-1: Peaking Factors

Category	Peak Month Factor	Peak Day Factor	Peak Hour Factor
Commercial Irrigation	2.64	1.0	6.0
Commercial Process	1.0	1.0	1.0
Golf Courses	2.64	1.0	2.0
Parks and Recreational Facilities	2.64	3.0	3.0
Public Facilities	2.64	3.0	3.0
Residential Irrigation	2.64	1.0	6.0
Schools and Universities	2.64	3.0	3.0

4.3 Potential Reclaimed Water Users and Demands

This section provides a summary of potential reclaimed water users and demands identified during the course of this study.

4.3.1 Historical Data Analysis

The City of Fort Worth provided metering data for the top 100 water customers located within the City's service area. These data were contained in a spreadsheet that included customer name, address of service, meter type, and monthly water usage for the year 2004. The meter type classifications listed were "commercial", "commercial apartments", "commercial monitored", "industrial", "industrial monitored", "departmental billing", and "not for profit" meters. Additional metering information was provided for those few customers with a secondary irrigation meter.

However, not all of the customers reported are potential reclaimed water users. It can be reasonably assumed that a portion of the water usage is for potable uses. The data were reviewed to identify potential irrigation and process water demands. For the customers without irrigation meters, the monthly water usage records were consulted to determine irrigation practices. Water usage during the summer months (typically June through September) was compared to usage during the winter months. Significant increases during summer months are indicative of the irrigation practices for each user. Commercial and commercial apartment meters represent approximately 40 percent and 10

percent of the historical data, respectively. Irrigation practices could be observed in many of these users.

Approximately 33 percent of the historical data represented industrial meters. Many of these customers are involved in food and beverage processing, and were considered to be unlikely candidates for reclaimed water. However, this group also includes industries that could potentially use reclaimed water in various production processes, such as cooling water.

A summary of the Top 100 customers, as provided by the City, is presented in Appendix A. Water usage data provided by the City was measured in CCF (100 cubic feet). For the reader's convenience, the annual volume has been converted to million gallons (MG) as well.

4.3.2 Customer Surveys and Meetings

To supplement the information obtained from the historical data analysis, the City surveyed several potential reclaimed water users. The City requested additional information from these water users regarding estimated water usage for irrigation or other purposes. The City then met with those customers to discuss potential reclaimed water demands. As a result of these efforts, more reliable data were obtained regarding potential reclaimed water demands for several customers. Some of the customers contacted by the City warrant further discussion, as provided in the following sections.

4.3.3 Non-Wholesale Customers and Surrounding Cities

The Cities of Euless and Arlington are not potable water customers of the City of Fort Worth. However, both cities expressed interest in participating in a regional reclaimed water project to meet some of their water demands. City of Fort Worth staff met with each city to determine feasible locations where reclaimed water could be used and the reliable water demand. The locations and reclaimed water demands identified are included in Table 4-2. The total water demand for each city was determined by the respective city; however, certain assumptions were made to distribute the water demand to specific users. For Euless, the peak hour demand was calculated based upon the peaking factors listed in Table 4-1. Based upon the information received from Arlington, it is assumed that Arlington would provide storage capacity in order to meet peak hour demands. This could be achieved through the use of existing ponds or construction of new storage tanks.

4.3.4 Alliance Area Development in North Tarrant County

The Hillwood Properties are being developed in northern Tarrant County. The existing development is primarily located in the Alliance Gateway Phase 1 area near Hwy 377 and Hwy 170. Future expansion will include additional phases of the Alliance Gateway, as well as expansion along either side IH-35W between Hwy 170 and SH 114. These areas are projected to reach build-out by the year 2020. Reclaimed water could be used in these areas for commercial irrigation and for evaporation makeup water in several area ponds and water features. City staff met with the Hillwood Properties developers to discuss implementation of a reclaimed water supply. In response, the developer projected reclaimed water demand, based on projected growth. The developer also identified potential pond sites to store reclaimed water to be used for irrigation. The projected annual average reclaimed water demand is listed in Table 4-3. The peak demands were then calculated based upon the peaking factors listed in Table 4-1. The developer also identified potential pond sites to store reclaimed water to be used for irrigation. Therefore, it is assumed that the identified ponds would

provide adequate storage capacity to meet peak day and peak hour demands, and that only the peak month demand would be supplied to storage ponds.

Table 4-2: Non-Wholesale Customers Projected Water Demands

Wholesale Water Customer	Annual Average Demand (MGD)	Peak Day Demand (MGD)
City of Arlington:		
<i>Chester Ditto Golf Course</i>	<i>0.17</i>	<i>0.5</i>
<i>JW Dunlop Sports Center</i>	<i>0.01</i>	<i>0.1</i>
<i>River Legacy Park</i>	<i>0.04</i>	<i>0.4</i>
<i>Total City of Arlington</i>	<i>0.22</i>	<i>1.0</i>
City of Euless:		
<i>Softball World</i>	<i>0.02</i>	<i>0.17</i>
<i>Texas Star</i>	<i>0.21</i>	<i>0.67</i>
<i>Texas Star Golf Course</i>	<i>0.52</i>	<i>1.67</i>
<i>Total City of Euless</i>	<i>0.75</i>	<i>2.5</i>

Table 4-3: Hillwood Properties Projected Water Demands

Hillwood Properties	Annual Average Demand (MGD)
<i>Alliance Center East Association</i>	<i>0.36</i>
<i>Alliance Center West Association</i>	<i>1.12</i>
<i>Alliance Lone Star Association</i>	<i>0.43</i>
<i>Alliance Gateway Phase 1 Association</i>	<i>0.24</i>
<i>Alliance Gateway Phase 2 Association</i>	<i>0.44</i>
<i>Alliance Gateway Phase 3 Association</i>	<i>0.56</i>
<i>Circle T Ranch / Westlake</i>	<i>0.96</i>
<i>Frac Water (for natural gas drilling)</i>	<i>0.05</i>
Total Development	4.16

4.3.5 Mary's Creek Basin

As discussed in Chapter 2, the City has recently conducted a study in the Mary's Creek Basin⁹ in western Tarrant County. The draft report, prepared by APAI, identified existing and future developments planned in the Mary's Creek Basin, and projected reclaimed water demands for the years 2010, 2020, and 2030. These developments include Walsh Ranch, Brown Ranch, and others. City staff met with the developers in this area, who have indicated that they would install a dual water system for the implementation of reclaimed water supplies, if the City would make reclaimed water available. The inclusion of a dual water system during initial development increases the feasibility of a reclaimed water system by expanding service to many small water customers, in addition to large water customers. This is typically not feasible in an existing development due to the cost of retrofitting the potable water system and replacement of infrastructure. The potential customers identified in the Mary's Creek Basin study include residential, commercial, public facilities, schools, golf courses, and parks. The reclaimed water demands obtained from the draft report are included in Appendix B, and a summary is provided in Table 4-4. It is assumed that each of the users in the Mary's Creek Basin would not have their own storage, so the distribution system should be capable of delivering peak hour demands and at sufficient pressures. However, due to elevation changes across the Mary's Creek Basin, booster pump stations and storage tanks will be required. The booster pump stations and storage tanks will have sufficient capacity to supply peak hour demands to users. This will allow the main pump station and pipelines to be sized for the lesser peak month demands, thereby saving cost.

Table 4-4: Mary's Creek Basin Projected Water Demands for Year 2030

Mary's Creek Basin	Annual Average Demand (MGD)	Peak Day Demand (MGD)
Blue Haze Elementary	0.01	0.05
Lost Creek Golf Course	0.18	0.47
Leonard Golf Links	0.05	0.38
New Commercial	0.14	0.38
New Golf Course	0.74	1.94
New Public Facility	0.04	0.29
New Park	0.20	1.57
New Residential	2.07	5.47
New School(s)	0.13	1.02
Other Development	0.23	1.82
Tannahill Intermediate	0.01	0.10
Total Development	3.79	13.48

⁹ Draft Mary's Creek Water Recycling Center Feasibility Study. Alan Plummer Associates, Inc. June 2004.

4.3.6 Trinity River Vision Central City Project

The Trinity River Vision Central City Project is currently in the planning stages and includes a major flood control project in downtown Fort Worth, which will also isolate a portion of the current river and establish an urban lake to be used for a variety of boating and water activities. City staff met with Trinity River Vision Project staff and consultants to discuss the potential for providing reclaimed water to the Central City Project. Preliminary information provided to the City indicated that the planned Central City Project could require a 0.75-MGD water supply (annual average) to offset evaporative losses from the project. During the summer months, this demand could increase to 2.5 MGD. There is also a potential to supply reclaimed water for irrigation within the Central City Project. However, estimates of this demand were not available at the time of this report.

4.3.7 City of Fort Worth – Parks and Community Services Department

The Parks and Community Services Department (PACSD) was consulted to determine the viability of reclaimed water at many city-owned facilities. The PACSD provided historical information and projected annual average water demands for city-owned parks and recreational facilities. A summary of the data provided is included in Table 4-5. Peak demands were then calculated based upon the peaking factors in Table 4-1. It is assumed that storage will not be available, and thus peak hour demands must be provided to each user.

4.3.8 Other Sources of Information

As described in Chapter 2, an earlier study by Freese & Nichols, Inc. (FNI) (Technical Memorandum No. 12¹⁰) identified and evaluated the feasibility of several reclaimed water alternatives. This memorandum identified several potential reclaimed water customers and their respective annual and peak water demands. However, the information from this report was used only to supplement the data from the other sources. In the event that two sources of information reported differing amounts of projected water demand, the most recent information was considered to be more accurate.

4.3.9 Proposal to Obtain Additional Information

The City of Fort Worth has made efforts to meet with some of the potential reclaimed water customers. However, not all potential customers included in the recommended alternatives were contacted. Prior to implementation of any of the recommended projects, reliable information should be obtained by contacting those customers, through telephone contacts, meetings or by standard letter and questionnaire. A standard transmittal letter and questionnaire have been developed, and are included in Appendices C and D, respectively. Analysis of the responses to the questionnaire will provide a more reliable basis for identifying viable reclaimed water customers and quantifying potential usage.

¹⁰ Technical Memorandum No. 12 – Effluent Reuse Alternative Identification and Feasibility Analysis. Freese and Nichols. November 1996.

Table 4-5: Parks and Community Services Department

City-Owned Facilities	Annual Average Demand (MGD)
Buck Sansom Park	0.007
Delga Park	0.005
Gateway Park	0.051
Hallmark Park	0.014
Handley Park	0.007
Harmon Park	0.022
LeBlanc Park	0.014
Northside Park	0.007
North Park	0.051
Oakland Lake Park	0.007
Rockwood BB	0.014
Rolling Hills Soccer Complex	0.154
Sycamore Park	0.036
Silversage Park	0.007
Summerfield Park	0.008
West Park	0.029
Z. Boaz South Park	0.697
Meadowbrook Golf Course	0.074
Sycamore Golf Course	0.031
Z. Boaz Golf Course	0.075

4.4 Top 125 Potential Reclaimed Water Users

The potential reclaimed water users, identified in Section 4.3, were ranked based on their projected annual average reclaimed water demand, with the largest user being ranked first. The largest 125 potential reclaimed water users were then plotted on a map to show their general location. A summary of the 125 largest potential reclaimed water users is included in Table 4-6, and the locations of these customers are shown in Figure 4-1. An analysis of the largest users and the development of alternatives for reclaimed water systems is presented in Chapter 6.

Table 4-6: Top 125 Potential Reclaimed Water Users

Rank #	Customer Name	Facility Type	Annual Average	Peak Month	Peak Day	Peak Hour	Source
			(MGD)	(MGD)	(MGD)	(MGD)	
1	Texas Utilities Handley Plant	Industrial	2.740	2.740	2.740	2.740	a
2	D/FW International Airport	Irrigation	1.530	4.560	4.560	12.180	b
3	Alliance Center West Assoc.	Irrigation	1.120	2.960	2.960	17.750	b
4	Circle T Ranch / Westlake	Irrigation	0.960	2.530	2.530	15.190	b
5	Trinity River Vision	Irrigation	0.760	2.500	2.500	7.500	b
6	City of Euless	Park	0.750	2.390	2.500	7.500	b
7	South Z Boaz Park	Park	0.697	1.840	5.519	16.557	c
8	Alliance Gateway Phase 3 Assoc.	Irrigation	0.560	1.480	1.480	8.900	b
9	Pecan Valley Park	Park	0.535	1.412	4.236	12.707	a
10	Alliance Gateway Phase 2 Assoc.	Irrigation	0.440	1.170	1.170	7.030	b
11	Alliance Lone Star Association	Irrigation	0.430	1.130	1.130	6.770	b
12	Alcon Laboratories	Industrial	0.379	1.000	1.000	3.000	b
13	Alliance Center East Assoc.	Irrigation	0.360	0.950	0.950	5.730	b
14	Diamond Oaks GC	Golf Course	0.247	0.651	0.651	1.302	a
15	Pecan Valley GC	Golf Course	0.247	0.651	0.651	1.302	a
16	Riverside GC	Golf Course	0.242	0.638	0.638	1.276	a
17	Alliance Gateway Phase 1 Assoc.	Irrigation	0.240	0.620	0.620	3.730	b
18	City of Arlington	Park	0.220	0.670	1.000	2.500	b
19	Great Southwest GC	Golf Course	0.212	0.560	0.560	1.120	a
20	Greenwood Cemetary	Cemetary	0.208	0.550	1.649	4.947	a
21	Forest Park	Park	0.206	0.544	1.632	4.895	a
22	Marion Samson Park	Park	0.204	0.538	1.614	4.843	a
23	Shady Oaks GC	Golf Course	0.192	0.508	0.508	1.015	a
24	Miller Brewing Company	Food/Bev	0.190	0.250	0.250	0.250	b
25	Cobb Park	Park	0.167	0.440	1.319	3.958	a
26	Rolling Hills Soccer Complex	Park	0.154	0.406	1.217	3.652	c
27	Carswell GC (Hawk's Creek)	Golf Course	0.153	0.404	0.404	0.807	a
28	Fossil Creek GC	Golf Course	0.148	0.391	0.391	0.781	a
29	Rolling Hills GC	Golf Course	0.148	0.947	0.947	1.894	a
30	Fort Worth Botanical Gardens	Park	0.134	0.353	1.059	3.177	a
31	Mount Olivet Cemetary	Cemetary	0.132	0.281	0.842	2.525	a
32	Lockheed Martin Tactical A/S	Industrial	0.131	0.345	0.345	1.036	d
33	Walnut Creek GC	Golf Course	0.131	0.345	0.345	0.690	a
34	Willow Springs GC	Golf Course	0.131	0.345	0.345	0.690	a
35	Iron Horse GC	Golf Course	0.131	0.345	0.345	0.690	a
36	Carter Park	Park	0.129	0.341	1.024	3.073	a
37	Laurel Land Cemetary	Cemetary	0.123	0.325	0.976	2.929	a
38	Tandy Hills Park	Park	0.115	0.245	0.736	2.209	a
39	Oakmont Park	Park	0.112	0.295	0.885	2.656	a
40	Shady Valley GC	Golf Course	0.110	0.701	0.701	1.403	a
41	Rockwood GC	Golf Course	0.108	0.286	0.286	0.573	a
42	Heritage Park	Park	0.099	0.260	0.781	2.343	a
43	Mrs. Bairds Bakeries	Food/Bev	0.097	0.097	0.097	0.097	d
44	Woodhaven GC	Golf Course	0.090	0.579	0.579	1.157	a
45	Glen Garden GC	Golf Course	0.086	0.228	0.228	0.456	a
46	Shannon Rose Hill Cemetary	Cemetary	0.082	0.175	0.526	1.578	a
47	Mira Vista GC	Golf Course	0.081	0.215	0.215	0.430	a
48	Southwestern Baptist Seminary	School	0.079	0.208	0.623	1.869	d
49	Z Boaz Golf Course	Golf Course	0.075	0.864	0.864	1.728	c
50	Marine Creek Linear Park	Park	0.061	0.162	0.486	1.458	a

Table 4-6: Top 125 Potential Reclaimed Water Users (continued)

Rank #	Customer Name	Facility Type	Annual Average	Peak Month	Peak Day	Peak Hour	Source
			(MGD)	(MGD)	(MGD)	(MGD)	
51	Meadowbrook Golf Course	Golf Course	0.061	0.864	0.864	1.728	c
52	Trinity Park	Park	0.060	0.157	0.472	1.416	d
53	Wildwood Park / Camp Joy Park	Park	0.059	0.156	0.469	1.406	a
54	Stratford Park	Park	0.055	0.117	0.351	1.052	a
55	Mosque Point Park	Park	0.055	0.145	0.434	1.302	a
56	Windswept Circle Park	Park	0.053	0.139	0.417	1.250	a
57	Gateway Park	Park	0.051	0.135	0.406	1.217	c
58	North Park	Park	0.051	0.135	0.406	1.217	c
59	Lake Como Park	Park	0.050	0.133	0.399	1.198	a
60	Harris Methodist Hospital	Hospital	0.050	0.050	0.050	0.050	d
61	Fort Worth Water Gardens	Park	0.045	0.117	0.117	0.235	d
62	Greenbriar Park	Park	0.044	0.116	0.347	1.042	a
63	Overton Park	Park	0.044	0.116	0.347	1.042	a
64	The Meridian Apartments	Apartment	0.040	0.105	0.105	0.316	d
65	Sycamore Park	Park	0.036	0.095	0.284	0.852	c
66	FW Zoological Association	Commercial	0.036	0.094	0.094	0.282	d
67	American Airlines	Commercial	0.033	0.087	0.087	0.521	d
68	Sycamore Creek GC	Golf Course	0.031	0.083	0.083	0.165	c
69	Bell Helicopter Textron	Industrial	0.031	0.031	0.031	0.093	d
70	West Park	Park	0.029	0.076	0.227	0.682	c
71	Union Pacific Railroad	Industrial	0.027	0.072	0.072	0.217	d
72	Texas Motor Speedway	Commercial	0.027	0.071	0.214	0.641	d
73	American Airlines	Commercial	0.027	0.071	0.071	0.212	d
74	US Bureau of Engraving	Industrial	0.026	0.026	0.026	0.026	d
75	Motorola Inc.	Industrial	0.026	0.068	0.068	0.205	d
76	Harmon Field Park	Park	0.022	0.057	0.170	0.511	c
77	Fortress Properties Ltd.	Industrial	0.021	0.057	0.057	0.170	d
78	City Center Development Co.	Commercial	0.020	0.054	0.054	0.162	d
79	Trammell Crow Company	Commercial	0.019	0.049	0.049	0.148	d
80	Cook Childrens	Hospital	0.018	0.018	0.018	0.053	d
81	Hallmark Park	Park	0.014	0.038	0.114	0.341	c
82	Rockwood Park	Park	0.014	0.038	0.114	0.341	c
83	LeBlanc Park	Park	0.014	0.038	0.114	0.341	c
84	Coca Cola Bottling	Food/Bev	0.014	0.014	0.014	0.014	d
85	CMD Realty Investors	Commercial	0.014	0.036	0.036	0.107	d
86	Tri Vest Cameron Creek Ltd.	Apartment	0.013	0.035	0.035	0.105	d
87	Tarrant County Junior College	School	0.013	0.035	0.105	0.314	d
88	MDC Parkcreek Residencys, Ltd.	Apartment	0.013	0.035	0.035	0.104	d
89	JPS Health Network	Hospital	0.012	0.032	0.032	0.095	d
90	Fort Worth Osteopathic Hosp. Inc.	Hospital	0.012	0.031	0.031	0.094	d
91	FMC - Carswell	Hospital	0.011	0.030	0.030	0.090	d
92	River Park Place Joint Venture	Commercial	0.011	0.029	0.029	0.086	d
93	Ridgmar Associates	Commercial	0.010	0.027	0.027	0.082	d
94	Synthetic Products Co.	Industrial	0.010	0.026	0.026	0.078	d
95	Alliance WE Ltd. Partnership	Apartment	0.009	0.024	0.024	0.073	d
96	Hospitality International Inc.	Hotel	0.008	0.022	0.022	0.065	d
97	Summerfield Park	Park	0.008	0.022	0.065	0.195	c
98	CWS Communities LP	Apartment	0.008	0.021	0.021	0.064	d
99	Will Rogers Memorial CN	Commercial	0.008	0.021	0.021	0.063	d
100	Goft Hotel Partners	Hotel	0.008	0.021	0.021	0.063	d

Table 4-6: Top 125 Potential Reclaimed Water Users (continued)

Rank #	Customer Name	Facility Type	Annual Average	Peak Month	Peak Day	Peak Hour	Source
			(MGD)	(MGD)	(MGD)	(MGD)	
101	All Saints Hospital	Hospital	0.008	0.008	0.023	0.069	d
102	Buck Sansom Park	Park	0.007	0.019	0.057	0.170	c
103	Handley Park	Park	0.007	0.019	0.057	0.170	c
104	Northside Park	Park	0.007	0.019	0.057	0.170	c
105	Oakland Lake Park	Park	0.007	0.019	0.057	0.170	c
106	Silversage Park	Park	0.007	0.019	0.057	0.170	c
107	Kettle Cooked Foods	Food/Bev	0.007	0.007	0.007	0.007	d
108	Burnett Plaza Associate	Commercial	0.007	0.018	0.018	0.055	d
109	Fort Tower One Assoc.	Commercial	0.007	0.018	0.018	0.053	d
110	Trisept Inc. Property Management	Commercial	0.006	0.016	0.016	0.049	d
111	Plaza Medical Center	Hospital	0.006	0.016	0.016	0.048	d
112	Beltex Corp.	Food/Bev	0.006	0.006	0.006	0.017	d
113	Quail Run / Heritage Financial	Apartment	0.005	0.014	0.014	0.042	d
114	Delga Park	Park	0.005	0.014	0.041	0.122	c
115	Ball Metal Container Corp.	Industrial	0.005	0.005	0.005	0.015	d
116	Chez Orleanais DBA	Industrial	0.005	0.013	0.013	0.038	d
117	Fort Worth Club	Commercial	0.005	0.012	0.012	0.036	d
118	Broadway Plaza at Cityview	Commercial	0.004	0.011	0.011	0.034	d
119	Premium WC Inc.	Industrial	0.004	0.011	0.011	0.033	d
120	Puson GCH, LPDI	Commercial	0.004	0.011	0.011	0.032	d
121	Thomas Turner DBA Ridgecrest	Apartment	0.003	0.008	0.008	0.024	d
122	Southwestern Bell Telephone Co.	Commercial	0.003	0.008	0.008	0.024	d
123	Southwest Regional Library	Irrigation	0.002	0.005	0.005	0.014	d
124	Seminary South Branch Library	Irrigation	0.000	0.000	0.000	0.001	d
125	Ridglea Library	Irrigation	0.000	0.000	0.002	0.005	c

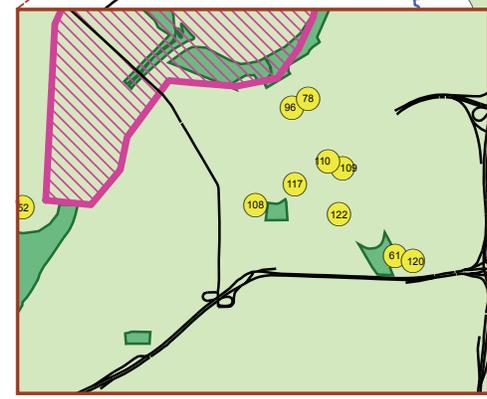
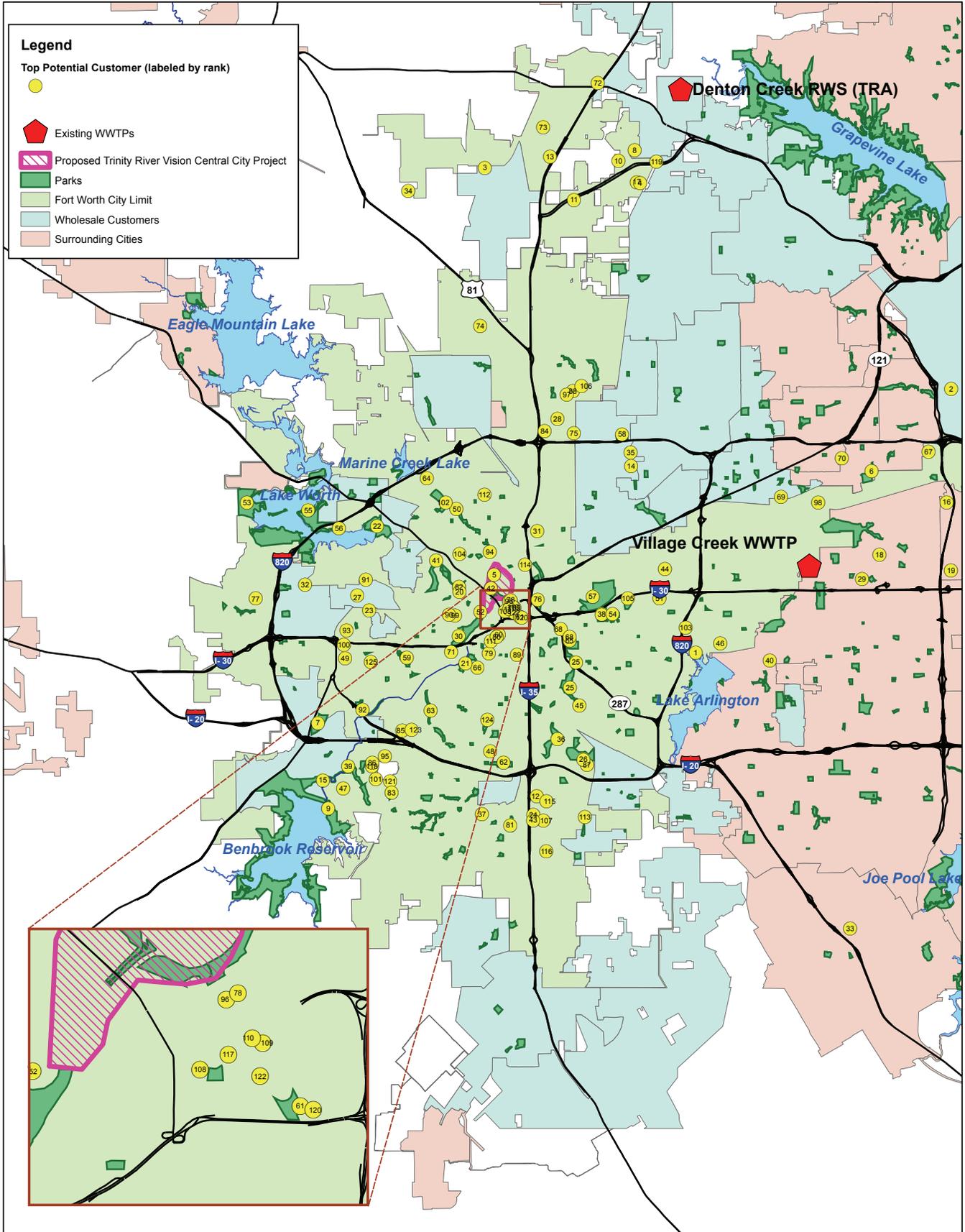
a – Technical Memorandum No. 12

b – Customer Input / Survey

c – City of Fort Worth Parks and Community Services Dept.

d – City of Fort Worth Water Accounts Billing History

**Figure 4-1
City of Fort Worth
Top Potential Reclaimed Water Customers**



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