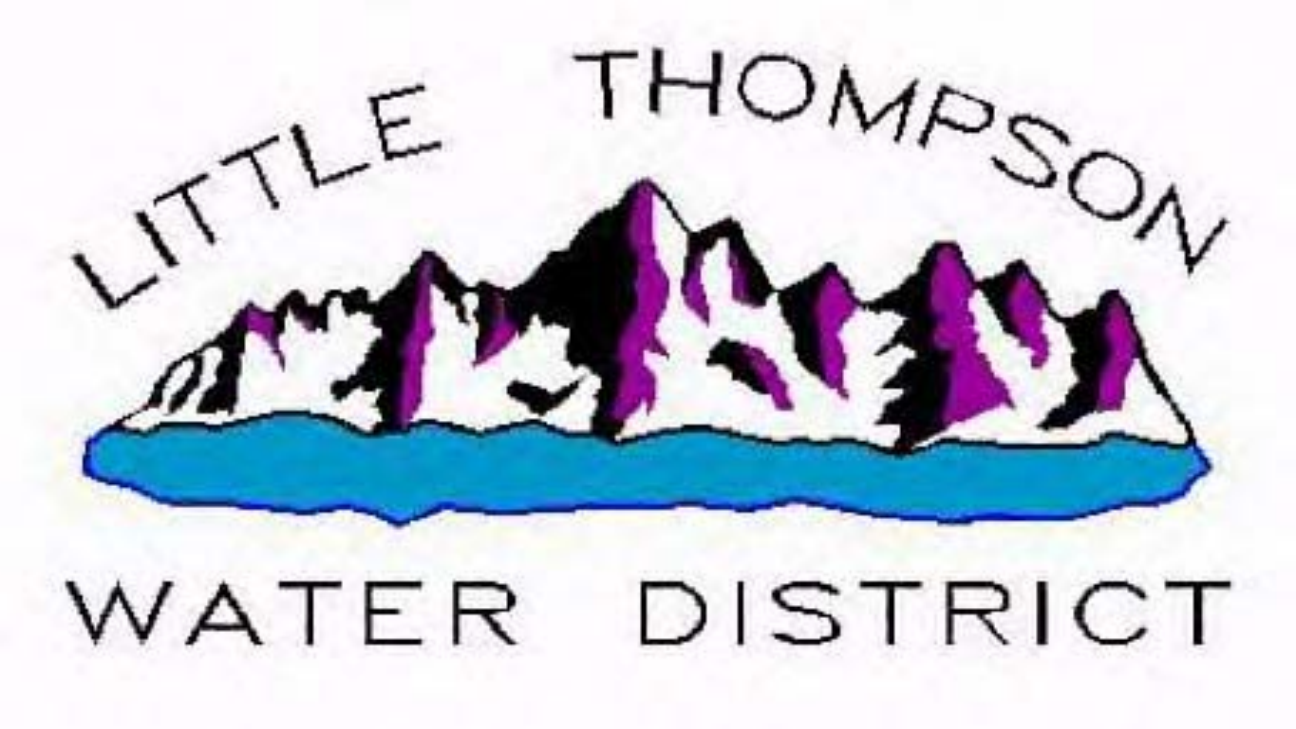

WATER EFFICIENCY MANAGEMENT PLAN

May 2012

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EXECUTIVE SUMMARY

E.1 Description

The Little Thompson Water District (District) was formed as a Colorado Special District in 1960 and began serving domestic water to a 250 square-mile area in Larimer, Weld and Boulder counties, Colorado by 1962. The District, a registered Colorado Public Water System, PWSID # CO0135477, now provides non-potable, potable and fire protection water to a service area that encompasses nearly 300 square miles. The service area is generally bounded by the City of Loveland on the North, the City of Longmont on the South, the City of Greeley, the South Platte River and the St. Vrain River on the East and the foothills of the Front Range on the West. The District serves approximately 20,000 people in and around ten municipalities, nine fire districts and three counties.

The mission of the District is to provide safe and reliable water to its customers in an economical, efficient and responsible manner now and in the future. Water efficiency can provide many benefits toward maintaining supply, infrastructure upgrades and customer satisfaction. In addition, high growth rates on the northern Colorado Front Range are creating more competition for existing water sources and an increased expectation of sustainability. To meet these water challenges, the District has developed a Water Efficiency Management Plan in accordance with the Water Conservation Act of 2004 and to meet the provisions of Colorado Revised Statute section 37-60-126.

This Water Efficiency Management Plan is an update to the 1996 Little Thompson Water District Water Conservation Plan. Since the completion of the previous plan, the District has experienced periods of significant tap growth, accelerating tap requests, significant infrastructure improvements, significant changes in development activity, and most recently, a significant decrease in economic activity. This report summarizes these changing conditions and outlines efficiency measures and programs the District will incorporate to help meet the water demands of the future. Water rights, raw water storage, and other non-finished water issues are not addressed in this report.

E.2 Water Efficiency Goals

The District's objective is to implement a Water Efficiency Management Plan that will increase water use efficiency, and thereby reduce water demands. The District will attempt to accomplish this without adversely affecting continued population and economic growth. The District's goals include reducing the loss and waste of water, improving efficiency in the use of water, extending the life of current water supplies, and identifying means to support water reuse.

The goals established for this Water Efficiency Management Plan are based on discussions with District Staff and Board. The District will continue to utilize existing and new programs and measures to increase its water efficiency with a goal of reducing

system losses by 25%, residential demand by 5%, and non-residential demand by 1% over the next seven years. The quantifiable goal for this water efficiency programs is to reduce the total projected water supply requirements by over 480 AFT of water annually.

E.3 Evaluation of Efficiency Measures and Programs

District Staff reviewed numerous resources in an effort to develop a list of water efficiency measures and programs that could be considered for implementation in order to reach the efficiency goals established in the Water Efficiency Management Plan. After attending several water conservation workshops, reviewing several templates, CWCB guidance documents, and approved plans, Staff determined that the Colorado WaterWise document, "Guidebook of Best Practices for Municipal Water Conservation in Colorado", provided the best and most current review of water efficiency measures and programs to consider.

The "Guidebook of Best Practices" identifies 14 Best Practices for municipal water users. The District relied upon the Guidebook for the initial high level elimination of programs that might not be appropriate to consider. The District further evaluated the 14 Best Practices to determine which of the programs made sense for this water system and could be supported politically and financially in the region.

These multifaceted Best Practices are the foundation for the measures and programs incorporated in this Water Efficiency Management Plan. While reviewing the Best Practices presented, Staff confirmed that the District has been implementing some of the Best Practices for a number of years and has been evaluating additional programs for implementation. Staff also determined that the District is not capable of implementing many of the proposed strict regulatory controls. However, there are still areas that can be improved upon or expanded to further promote water conservation and efficiency.

E.4 Selection and Implementation of Efficiency Measures and Programs

The Guidebook was an invaluable tool to help evaluate and rank the initial list of Best Practices. The District thoroughly reviewed and considered each of the foundational, informational, and operational measures. The District also applied additional screening criteria based on Board and Staff input. Each Best Practice was further evaluated using the following criteria:

1. Statutory requirement - Several water conservation measures noted as Best Practices in the Guidebook are programs that are already mandated by Colorado State statute or are now required to be implemented for this plan to be approved. While Colorado's Water Conservation Planning requirement (CRS 37-60-126) does mention several plan elements that are to be considered, not all of them are required to be implemented. The District identified in the screening which of the Best Practices are required to be implemented.

2. System Applicability – The District is a very unique water system. The nature of the service area, the historical layout of the infrastructure, the water resources currently used, and the makeup of the customers all provide obstacles to the direct implementation of some of the recommended Best Practices.

3. Board Direction - The District Board of Directors provided input and guidance for the implementation of this Water Efficiency Management Plan. In general, direction was given to meet statutory conservation requirements while continuing to meet the needs of our customers by increasing District operational efficiencies, continuing public outreach, and implementing some new targeted conservation programs.

4. Financial Impacts – The District Board and Staff are concerned about the financial impacts of implementing an overly restrictive efficiency plan. Providing quality water to customers at a fair and reasonable price is the District's reason for existence. All of the measures, or Best Practices, considered are evaluated not only by the cost of implementation but also for the potential for lost revenue. Any decrease in water usage correlates directly to a reduction in revenue and will likely lead to increased rates.

Based upon the screening criteria the following Best Practices were chosen for implementation in the District Water Efficiency Management Plan:

1. **Metering Programs including Customer, Master and System Meters**
2. **Demand Monitoring**
3. **System Water Loss Control**
4. **Conservation Oriented Equitable Rates**
5. **Tap Connection Fees**
6. **Billing System Customer Categorization**
7. **Integrated Resource Planning (IRP)**
8. **Goal Setting**
9. **Public Information and Education**
10. **High Efficiency Fixture and Appliance Replacement**
11. **Targeted Water Efficiency Surveys and Evaluations**

The selected programs and measures for implementation are based on which of the programs made sense for this water system and could be supported politically and financially in the region. All of the programs are planned for implementation beginning in 2011 as resources allow.

CHAPTER 1 – INTRODUCTION

The Little Thompson Water District (District) was formed as a Colorado Special District in 1960 and began serving domestic water to a 250 square-mile area in Larimer, Weld and Boulder counties, Colorado by 1962. The District, a registered Colorado Public Water System, PWSID # CO0135477, now provides non-potable, potable and fire protection water to a service area that encompasses nearly 300 square miles. The service area is generally bounded by the City of Loveland on the North, the City of Longmont on the South, the City of Greeley, the South Platte River and the St. Vrain River on the East and the foothills of the Front Range on the West. Figure 1.1 on the following page shows the District boundaries and surrounding entities.

In the past, the District served rural acreages, low-density subdivisions, dairies and feedlots, farmsteads, mobile home parks and a few small industrial parks. But its proximity to growth areas for ten municipalities including Berthoud, Evans, Firestone, Greeley, Johnstown, Longmont, Loveland, Mead, Milliken and Windsor and the Interstate 25 corridor has changed the nature of the District. It is becoming more of an urban water provider serving low, medium and high-density subdivisions as well as more retail and service oriented commercial customers.

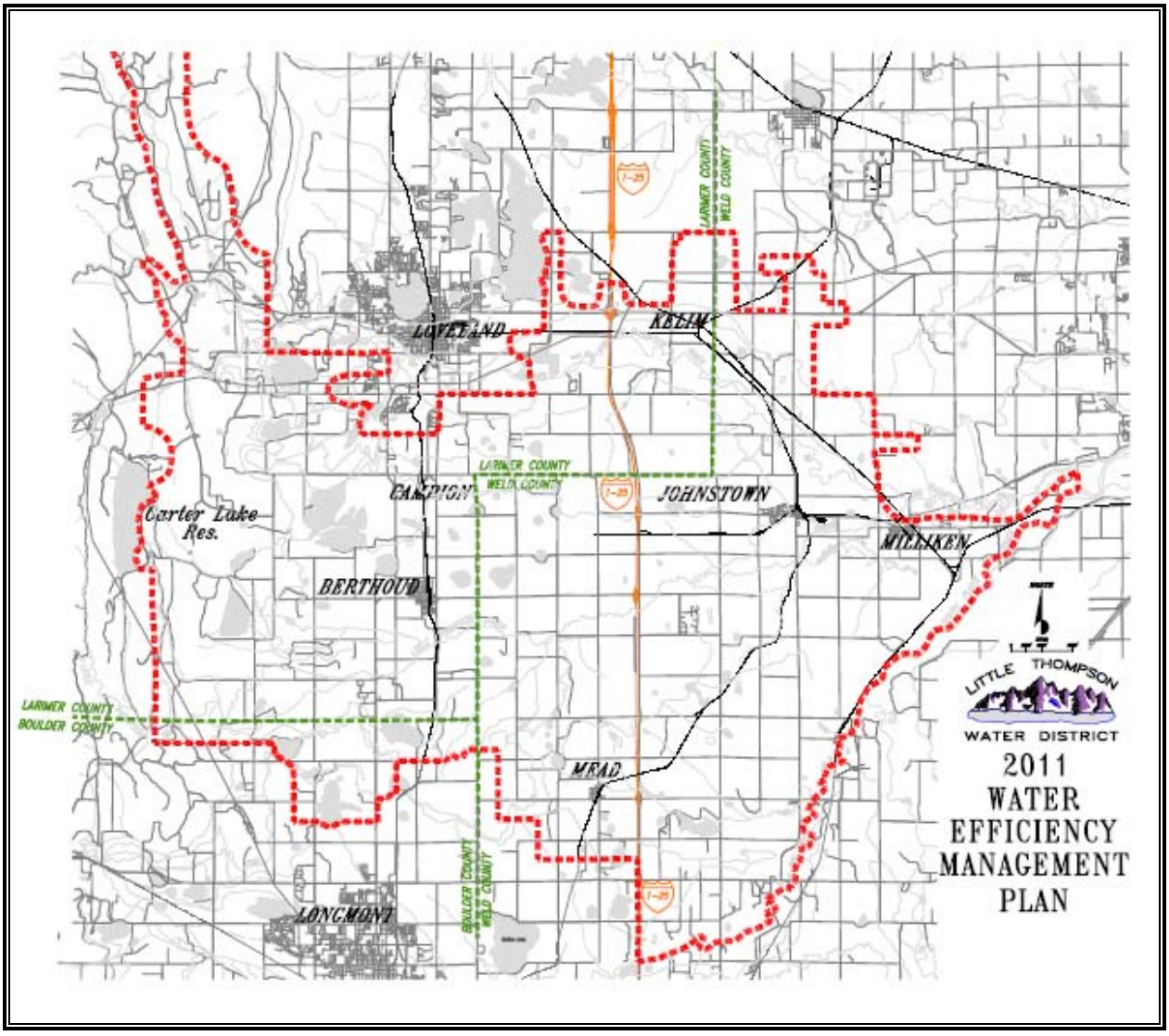
The District currently provides service to nearly 7,300 active water taps in and around the ten municipalities, nine fire districts and three counties. To provide potable water service, the District owns and operates jointly, with the Central Weld County Water District (CWCWD), the Carter Lake Filter Plant (CLFP) and Dry Creek Reservoir. Through this partnership, the District is in a position to participate in cooperative water system projects, which lowers the incremental cost for both participants through economies of scale. The District also owns and maintains multiple treated water storage tanks and pumping stations, as well as over 536 miles of transmission and distribution pipelines throughout its large service area.

The District relies on one primary source of water, the Colorado-Big Thompson (CBT) Project. CBT water is diverted from the Colorado River Basin through the Adam's Tunnel to the east side of the continental divide. The CBT water is delivered through Carter Lake to the District's jointly owned water treatment plants located below Carter Lake. The recently completed Dry Creek Reservoir project provides the District with additional emergency and operational raw water storage. The District owns multiple local, native ditch water rights, but has no current means of treating and delivering this water to customers. The native water is either rented to irrigators or traded to irrigators for CBT water seasonally depending on the water year conditions. The District is also in the process of acquiring water in the Windy Gap Project along with storage in the Windy Gap Firming Project (WGFP).

As the population grows in Northern Colorado, limited water supplies are becoming more valuable and difficult to obtain. This provides a strong argument for water purveyors to incorporate efficient water management. In addition, in the Water Conservation Act of 2004, water providers delivering over 2,000 acre feet are required

to have a State-approved water conservation plan on file with the Colorado Water Conservation Board (CWCB). All entities seeking funding from the CWCB or the Colorado Water Resources and Power Development Authority must have a State-approved water conservation plan on file prior to being considered for funding.

FIGURE 1.1 – DISTRICT SERVICE AREA



Water conservation is an important part of efficient water management; therefore, it is included as part of the District's water supply planning process. The District understands the value of conserving water in order to maximize the effectiveness of its current service and to delay future needs to invest in additional water sources and infrastructure expansions or replacement. A meaningful and effective water efficiency management plan is a key component to addressing these needs.

As with anything of value, there are challenges associated with water conservation. These challenges include potential lost revenue, potential inequities across customer

classes and the cost of implementation. The District recognizes these challenges and is determined to implement a water efficiency management plan that is fair and feasible. The District has made many proactive conservation efforts to date and will continue this commitment into the future. The planning horizon for this plan is seven years, from 2012 to 2018.

CHAPTER 2 – PROFILE EXISTING WATER SYSTEM

2.1 Physical Characteristics of the District Water System

2.1.1 Service Area and Population

Within the nearly 300 square mile service area, the District provides water to a population of approximately 20,000 people in and around portions of Berthoud, Evans, Firestone, Greeley, Johnstown, Longmont, Loveland, Milliken, Windsor and all of the Town of Mead. In addition, the District delivers water to rural Boulder, Larimer and Weld County residences, businesses, agricultural, and livestock operations.

The District population is difficult to determine precisely because it provides service to many different governing entities. Census data can be obtained for counties, municipalities, and even regions, but not specifically for special districts. In an effort to estimate the household and total population for the District, 2010 Census data was obtained from the Department of Local Affairs (DOLA) for each of the three Counties served. The District average household occupancy was determined by weighting the 2010 Census data by the number of services in each County. The average of 2.6 people per household was calculated and used for this study as a representation of the customer characteristics within the District's service area.

The District also has wholesale customers who are water providers. These wholesale customers, including the Town of Berthoud, Longs Peak Water District (LPWD) and North Carter Lake Water District (NCLWD), turn over their water raw annually to the District for treatment and delivery. The District does not retain authority over the customers living within the wholesale service areas. This situation is important to consider when constructing the water efficiency management plan.

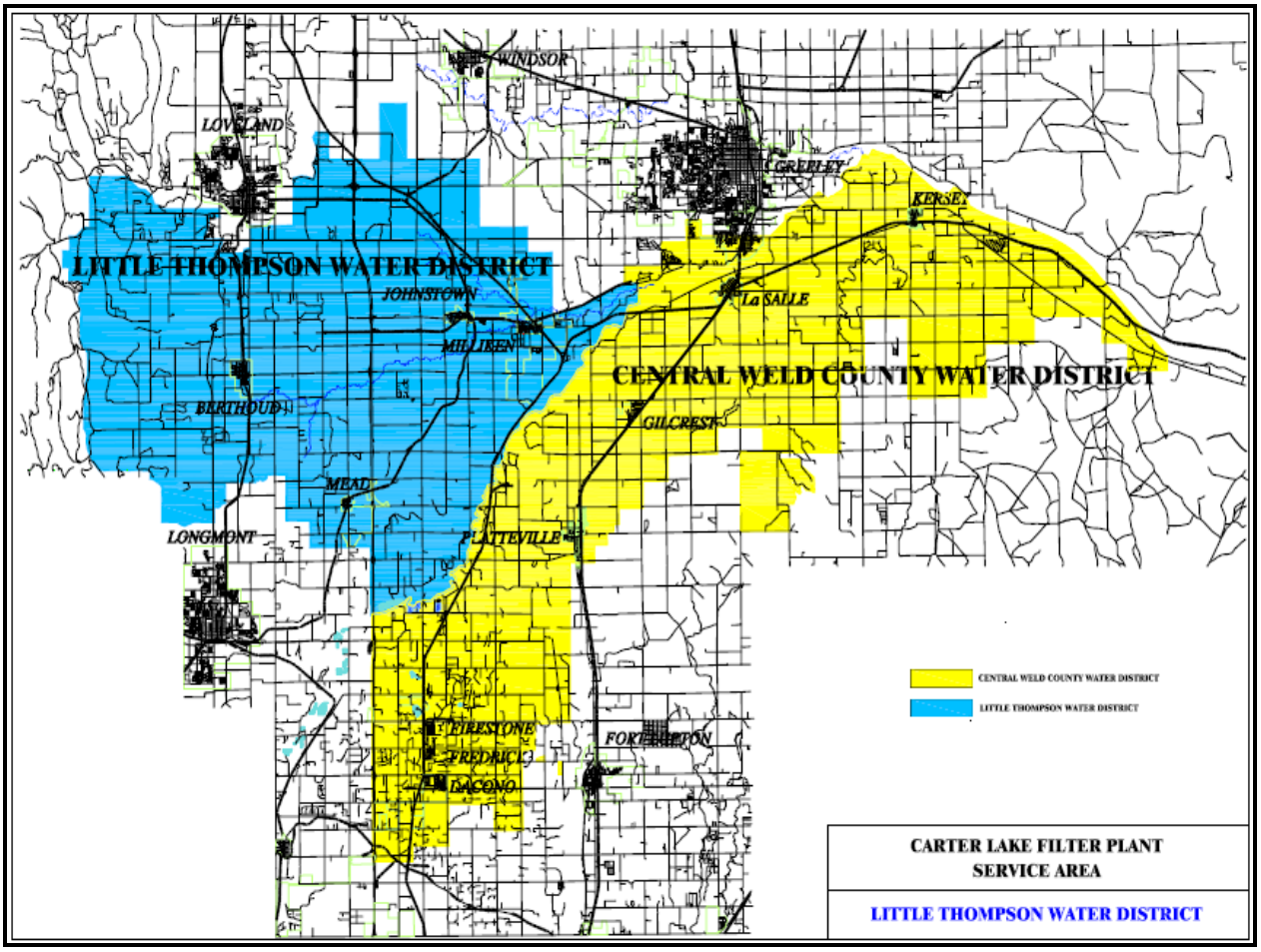
2.1.2 Transition from Rural to Urban Water Supplier

The District was originally formed to help meet water supply needs for rural customers struggling with local groundwater quality and quantity issues. The majority of early customers included agricultural users that needed water for operations including feedlots and dairies. The District added residential and non-residential accounts starting in the 1960's and continuing into the 1980's. In the early 1990's the District began providing water to a growing residential community of large country estates. During this period the average, annual and peak water demands grew and changed significantly. In the 2000's the District is now experiencing another shift in demand toward smaller, more urban-sized residential lots with shared parks and open space. Although the majority of the District's service area is still zoned for agriculture, the trend of increasing residential and commercial zoning is expected to continue.

2.1.3 Regional Cooperation

The District jointly owns the CLFP, a regional water treatment facility, with CWCWD. The CLFP provides treated water to the service areas of both water districts along with their multiple wholesale customers. Figure 2.1 shows the combined 500+ square mile service area of the two districts that own the CLFP. The two districts also jointly own and operate Dry Creek Reservoir, a 10,000 acre-foot raw water storage reservoir located west of Berthoud, providing water for emergencies and operational adjustments at the CLFP.

FIGURE 2.1 – DISTRICT AND CWCWD COMBINED SERVICE AREA



In addition to the wholesale customers of Berthoud, LPWD and NCLWD, the District maintains several other emergency and/or supplemental wholesale waterline connections to nearby water utilities including CWCWD, the Fort Collins-Loveland Water District, Loveland, Johnstown and Milliken. The District has intergovernmental agreements with Berthoud, Johnstown and Loveland identifying boundaries and opportunities for future water service as growth occurs. The District also has an agreement with the Town of Mead to provide all water service in existing and future growth areas.

The District works hard to maintain strong, working relationships with additional regional partners including area fire districts in an effort to provide protection for its customers.

The District also works with irrigation ditch companies and agricultural and commercial irrigators to make beneficial use of all of its available water resources annually.

COWARN is a formalized system of Colorado utilities helping utilities in order to facilitate mutual aid during emergency situations. Its infrastructure includes a secure web-based event tracking system and a practical mutual aid agreement designed to reduce bureaucratic red tape when emergencies happen and help is needed. The District is proud to be a member of this critical regional emergency action organization.

2.1.4 Water Treatment System

The District's jointly owned water treatment plant is located at the south end of Carter Lake, in the foothills west of the Town of Berthoud. The original plant, built in 1961 and capable of delivering up to 16 million gallons of treated water per day (MGD), was recently replaced by a new facility capable of delivering 28 MGD of treated water. The new treatment process utilizes micro filtration membrane technology. The second filter plant, built in 1994 and expanded in 2000, is a direct filtration plant rated at 20 MGD. Both treatment plants currently recycle and re-filter the water used to "backwash" the filter beds. The District relies on 50% of the total 48 MGD treatment capacity of the CLFP. Combined water demand for the District and CWCWD in 2010 ranged from a low of 5.6 MGD in November to a high of 28.1 MGD in August.

2.1.5 Potable Water System

Currently, the District maintains over 536 miles of potable water pipeline. The District distribution system has 9 treated water storage tanks located throughout the service area with a total capacity over 13 MG. The system also maintains over 60 pressure reducing valves to regulate pressure in over 45 different pressure zones. Seven pump/booster stations are used in addition to gravity to move the water through the system. The following table shows the length of each diameter of pipe, ranging from one inch to 42 inches, that the District maintains.

The various types of water line mains installed include steel, cast iron, copper, ductile iron, HDPE, PVC and transite. The larger diameter pipe is all gasket joint pipe, while many of the smaller water lines (including some four and six-inch diameter pipe) are glued joint pipe. In addition, more than 7500 copper, polyethylene and polybutylene service lines have been installed.

Individual service connections at each tap include a copper meter setter, double check valve, pressure regulator, shutoff valve and a water meter with a remote readout. The District uses radio frequency meters that can be read while driving by the meter. The District works hard to provide reliable water flow and pressure to its customers by utilizing these components.

The District has 23 interconnections with adjacent water providers, eight with Loveland, six with CWCWD, two each with Fort Collins-Loveland Water District, Longs Peak

Water District, Berthoud and Milliken, and one each with North Carter Lake Water District and Johnstown. Some of the interconnections are used for regular water supply and some are used for emergency purposes only.

TABLE 2.1 – DISTRICT WATERLINES

Diameter (in)	Length (ft)	Length (mi)
1	46,053	8.7
1.25	53,038	10.0
1.5	83,732	15.9
2	221,523	42.0
2.5	103,921	19.7
3	84,261	16.0
4	208,848	39.6
6	1,004,522	190.3
8	456,402	86.4
10	88,931	16.8
12	202,057	38.3
16	30,452	5.8
18	27,819	5.3
20	1,529	0.3
24	130,736	24.8
30	13	0.0
42	88,947	16.8
Total	2,832,783	536.5

Unaccounted water through the District's distribution system has varied significantly from 3.4% in 2007 to 13.4% in 2010. The potable system maintenance program includes annual flushing of water lines, pressure reducing valve maintenance and prompt leak repair. Along with the preventive maintenance program, the District also has a program directed at replacing and upgrading the small lines in the District. The District's 2010 Water Distribution System Master Plan identifies and proposes infrastructure upgrades necessary to address current service and quality problems as well as proposed future service demands.

2.1.6 Non-potable Water System

The District currently does not own or operate any non-potable water systems. However, the District has taken steps to encourage the installation and use of non-potable systems for irrigation demands in new subdivisions. The District is currently providing potable water credits of up to 50% for developers who install non-potable systems. The District has also committed to owning and operating non-potable water systems and corresponding water rights in new subdivisions wherever it can provide quality, reliable service.

As part of this commitment, the District is currently working with a developer to design and construct a non-potable water system that will provide irrigation service to over 5,100 residential and commercial taps utilizing fully consumable water resources and onsite water storage facilities. The District is excited and proud to be part of such a large water and resource conservation development project.

2.1.7 Customer Characteristics & Water Use

The Little Thompson Water District's customer population of approximately 20,000 people is spread throughout its nearly 300 square mile service area. In 2010, the District delivered 5,425 acre-feet of water to its 7,290 active water taps. This represents a decrease of over 6% in delivered water compared to the 5,794 acre-feet delivered in 2000 for the 5,901 taps served then. Water delivered in 2000 was the highest total in a calendar year since the District was formed. The 25% reduction in average per tap usage for 2010 compared to 2000 has been attributed to the significant permanent changes in customer usage related to recent drought impacts as well as progressive water rates and conservation incentives.

Monthly water usage at the District varies greatly due to the high percentage of water that is used for residential and agricultural purposes. The figures below depict the wide range in output from the CLFP. The District's demand currently varies from a low of 200 acre-feet per month, to highs of nearly 900 acre-feet per month. This difference in the range of seasonal use is the result of the increasing sector of urban residential customers and the demand for such things as lawn watering in the summer.

FIGURE 2.2 – DISTRICT MONTHLY WATER USAGE

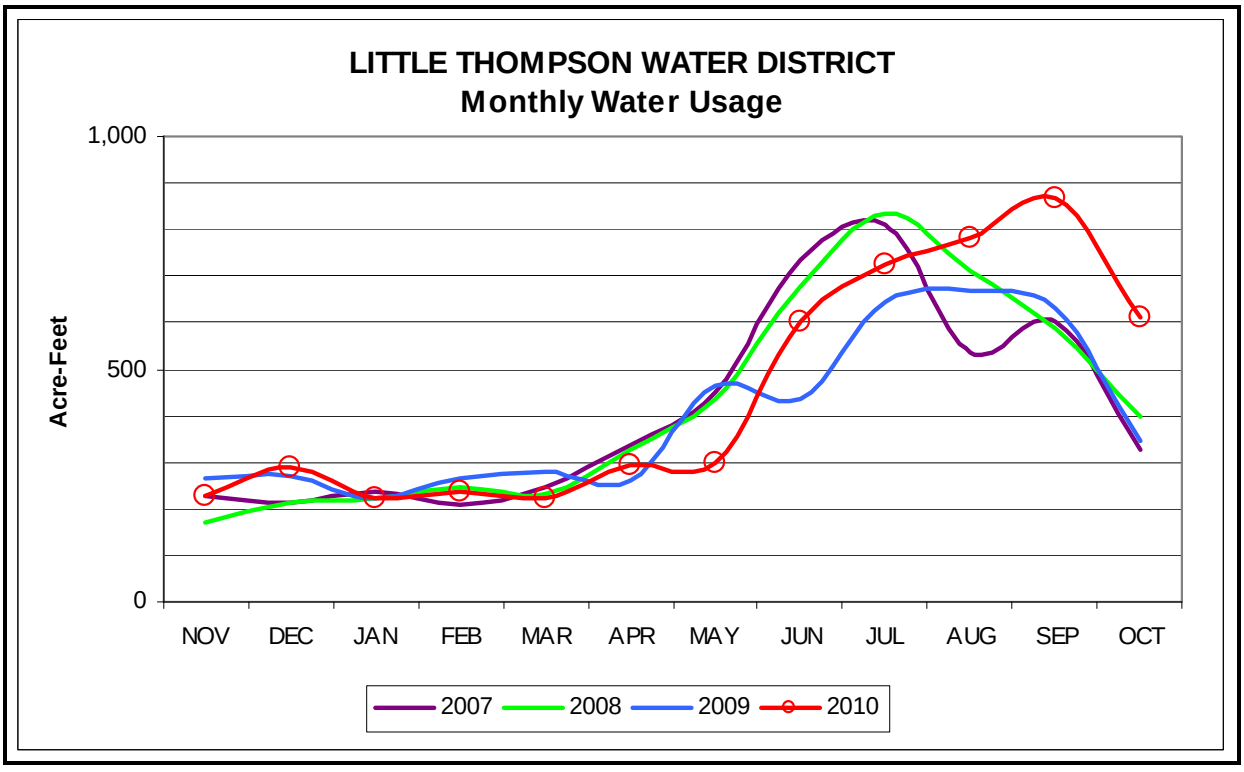
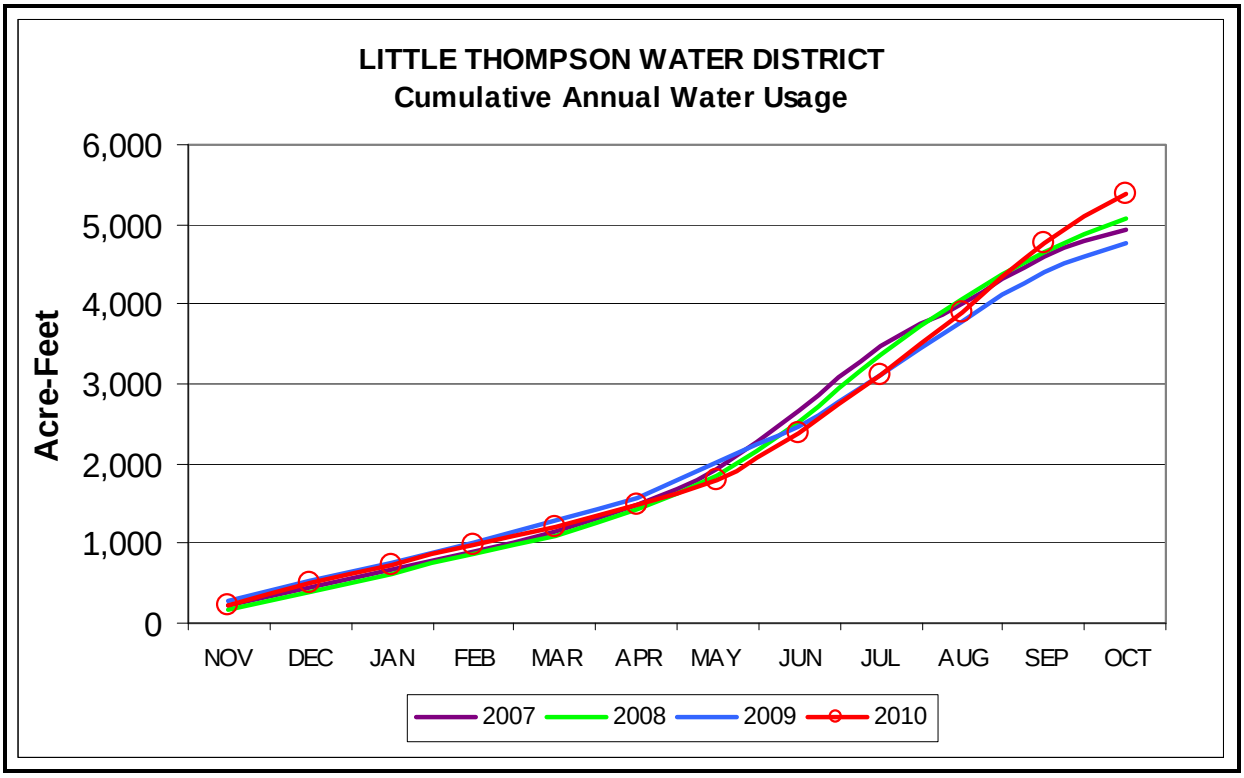


FIGURE 2.3 – DISTRICT ANNUAL WATER USAGE



Figures 2.4 and 2.5 show the number of active taps and the water use for each customer category in 2010. The purpose of these figures is to show side by side how the number of taps in a category can differ from the relative water use in that category.

The Standard Residential 5/8" water users represent 96 percent of the taps and 66 percent of the water use. Likewise, the Master Meters represent 0.2 percent of the taps and 16.6 percent of the water use. This information is helpful in setting water conservation goals for the different water user categories.

FIGURE 2.4 – DISTRICT CUSTOMER WATER USAGE

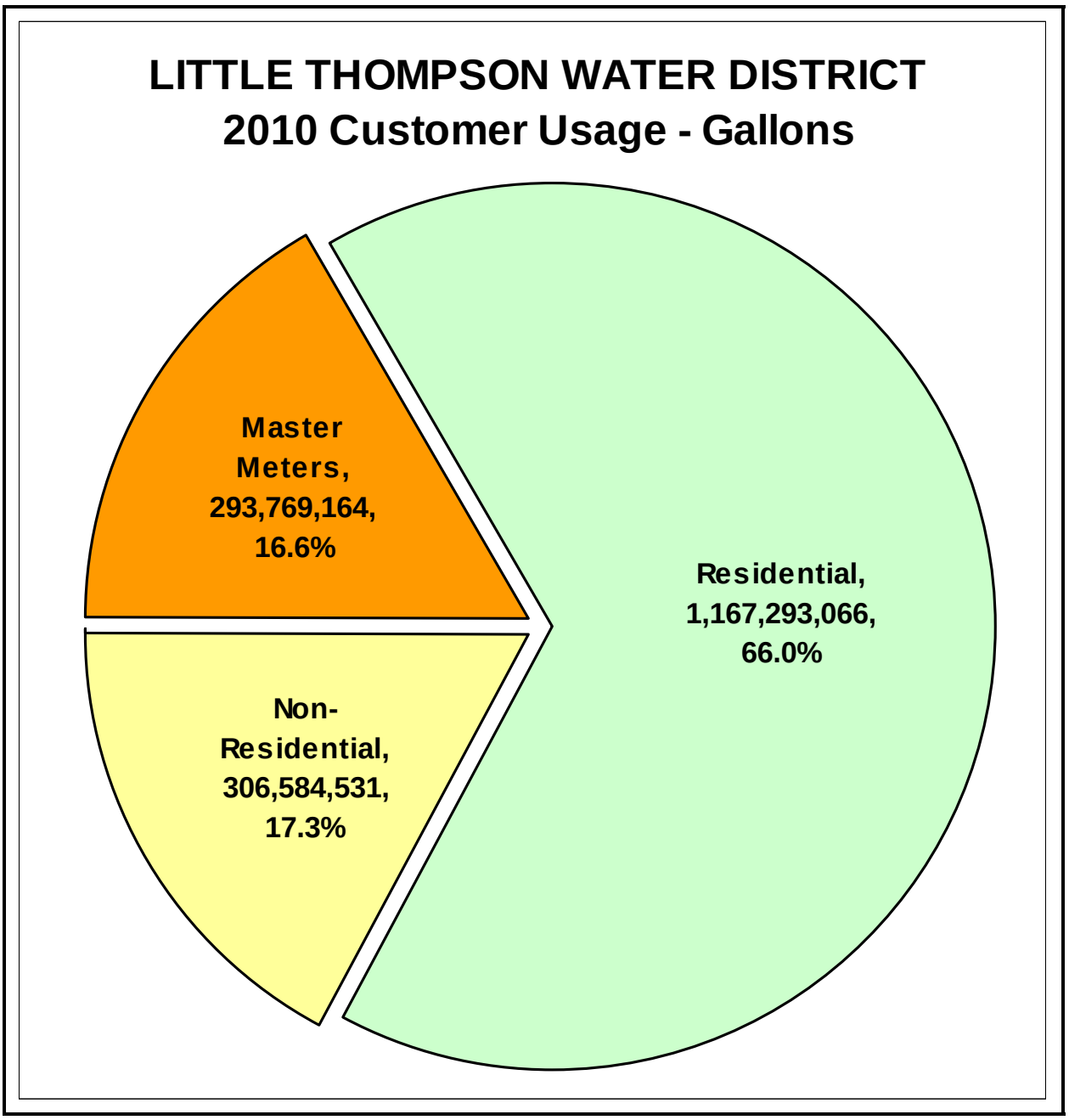
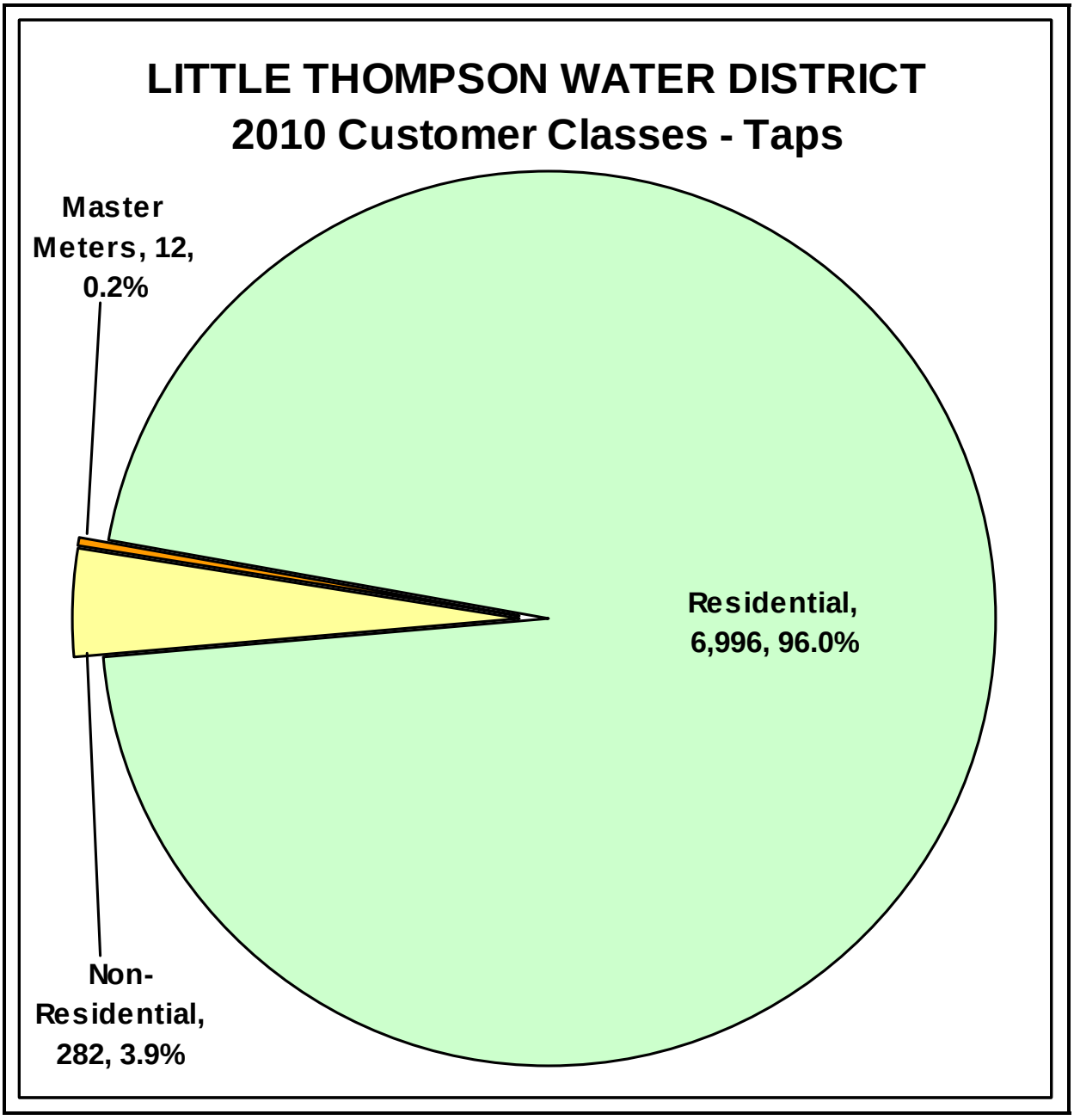


FIGURE 2.5 – DISTRICT 2010 CUSTOMERS BY CLASS



2.2 Sources of Water Supply

The water supplies for the District include trans-basin and native water rights. The trans-basin sources include CBT and Windy Gap water, which divert water from the Colorado River Basin. The native sources divert primarily from the Big Thompson and St. Vrain River Basins. Some of the non-potable water sources owned by the District are rented out annually to agricultural irrigators or exchanged with irrigators for the use of their CBT water, which is then used for deliveries to District customers.

2.2.1 C-BT

In 1960, when the District was formed, most of region's river and reservoir water rights had already been acquired. Some senior water rights were claimed as early as the 1860's by cities, private irrigators and mutual ditch companies. The only reliable and affordable source of water available to the District was from the CBT Project. To-date, all of the potable water used by the District has been CBT water delivered through Carter Lake.

The CBT Project, the largest trans-basin water diversion project in the State, diverts water from the western slope of Colorado to the Front Range to supplement the region's native water supply. The CBT Project was constructed by the Bureau of Reclamation between 1938 and 1957 and is maintained by the Northern Colorado Water Conservancy District (Northern Water).

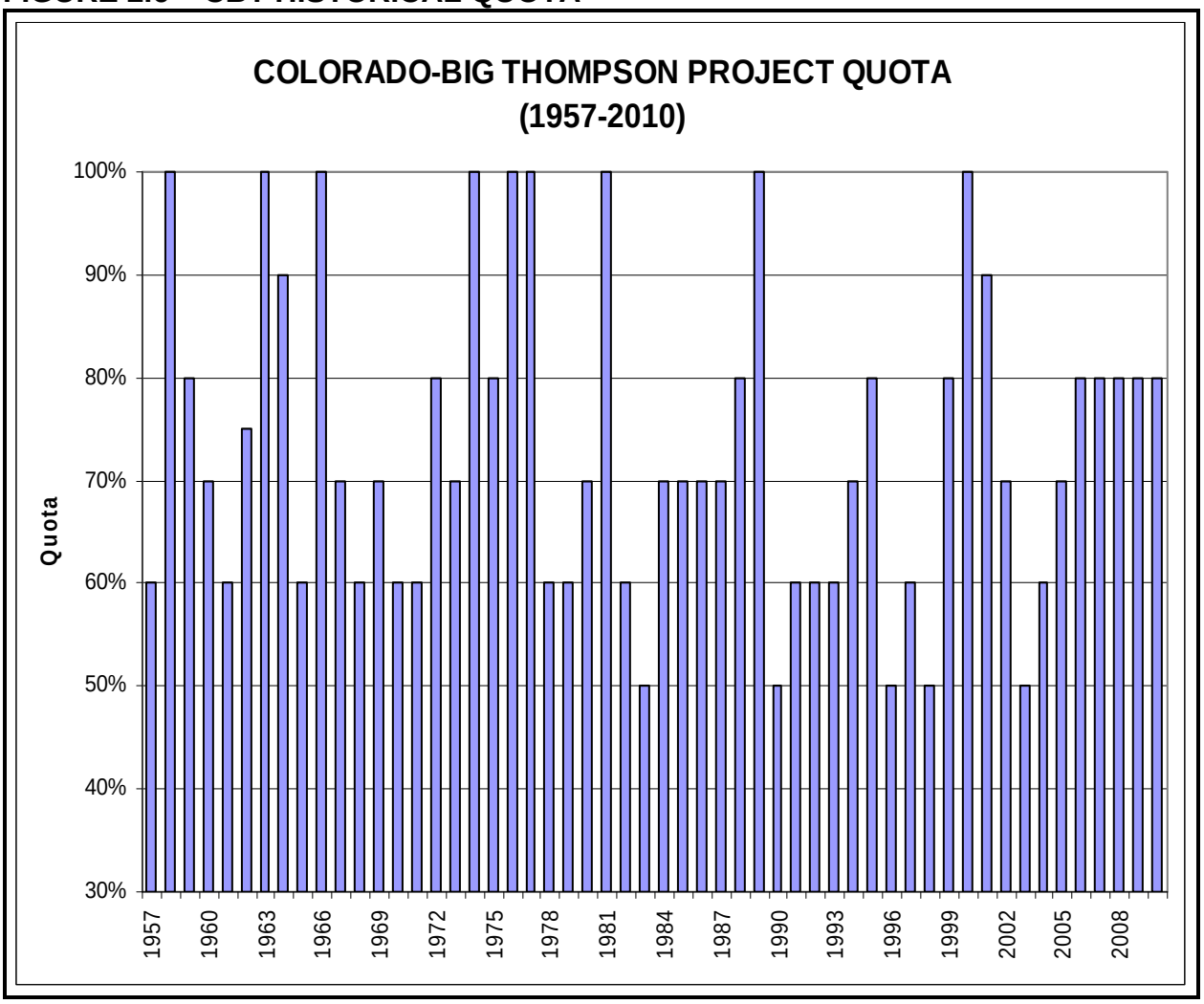
Northern Water allocates and distributes water for the 310,000 C-BT units with an average delivery of more than 220,000 acre-feet per year. The yield of CBT units is established each year by the Northern Water Board through the quota setting process. The Northern Water Board examines the region's native supply and local storage before declaring a quota that meets the region's supplemental water needs. The quota, shown in Figure 2.6, is often lower in wet years because native supplies are plentiful and local reservoirs are full, so less CBT water is required to satisfy water demands. The quota represents the percent that each CBT AFT unit will yield in a given year.

The District, with 9,846 units of C-BT water to-date, is one of the ten largest owners in the CBT water system. This represents 3% of the total available C-BT units. As the District's raw water needs increase, the District will continue to obtain additional CBT water units. However, with more than 60% of the C-BT units now owned by municipal and/or industrial users, the District's ability to acquire CBT water is becoming harder.

At the current rate of acquisition by cities and water districts, it is projected that very few CBT units will be available for acquisition by the year 2020. However, the construction of other regional projects such as the Windy Gap Firming Project (WGFP) and the Northern Integrated Supply Project (NISP) may take some pressure off of the C-BT system. If so, CBT supplies could be available through 2025 or 2030.

Because of the limited C-BT unit supply available, CBT restrictions on use, ongoing contentious issues on the Colorado River, and the pressure from Denver metro area water users to take northern Colorado water, the District updated its raw water policy in 2003 to allow for the acceptance of other local, native water resources in order to diversify and protect its water portfolio reliability.

FIGURE 2.6 – CBT HISTORICAL QUOTA



2.2.2 Windy Gap

The Windy Gap Project, another trans-basin water diversion project, was planned and built between 1969 and 1985. Six C-BT stakeholders – Greeley, Loveland, Fort Collins, Longmont, Boulder, and Estes Park – cooperated to form a Municipal sub-district to construct and oversee the Windy Gap Project. The Windy Gap Project delivers water to Lake Granby, and relies on the CBT system to convey the water to Windy Gap customers on the Front Range. Windy Gap water provides the benefit of being fully consumable. This means that the water, if captured correctly, can be used multiple times until it is completely consumed.

One constraint with the Windy Gap Project is that it does not regularly deliver its full potential. In dry years, senior water rights limit Windy Gap diversions. And in wet years, the CBT system has limited capacity to store or move Windy Gap water to the East Slope.

To help mitigate this constraint, the Windy Gap Firming Project (WGFP) was started in the early 2000's. The WGFP will incorporate a new reservoir on the Front Range that is designed to store Windy Gap water when available and then deliver the water to Windy Gap customers consistently through wet or dry periods. The WGFP is currently in the environmental permitting phase with the expectation that design will begin in 2013 and construction in 2014. Chimney Hollow Reservoir, the proposed 90,000 acre-foot East Slope reservoir, is the preferred alternative for the WGFP. The District has subscribed to 4,850 acre feet in this reservoir.

The District has a lease/purchase contract with the City of Greeley to acquire 12 units of Windy Gap water. The District will exercise its purchase of the Windy Gap units upon completion of the WGFP permitting and in the interim will receive delivery of Windy Gap water when available.

This water is proposed to primarily serve a large growth area located in the southeast portion of the District's service area. Both domestic and irrigation water needs will be met through primary and secondary water systems that incorporate onsite water storage and reuse of the treated water.

2.2.3 Native Water Supplies

The District owns agricultural water rights, running rights, storage rights and a junior water right that are located within the District's service area. The junior water right is located on the Buckhorn Creek and is decreed for municipal use. The junior water right was filed in 1984 and only yields water in above average years. The storage rights include 50% ownership in Dry Creek Reservoir constructed west of Berthoud in the foothills. Although this storage capacity is currently only used for C-BT and Windy Gap water, future operation may include storage of locally available water supplies.

The District's agricultural water rights include shares in the following mutual companies: the Big Thompson Ditch and Manufacturing Company, Consolidated Home Supply Ditch Company and Handy Ditch Company in the Big Thompson River basin; the Highland Ditch Company and the Supply Ditch Company in the St. Vrain River basin. These water rights are decreed for agricultural uses only and are rented out by the District to agricultural users seasonally. When dry conditions exist, these agricultural water rights are exchanged with irrigators for CBT water that the District can treat and deliver to its customers.

In the future, the District will work through the water court process to change these agricultural water rights to uses such as municipal, industrial and irrigation. Some of the

District's agricultural water rights will also be used to satisfy return flow obligations and depletions to the rivers associated with the changed water rights.

In 2003, the District made the decision to actively pursue native water rights as a means of diversifying its water right portfolio and eliminating its sole reliance on the CBT project for water. The District also chose to pursue other regional water resource projects that provide local water supplies for future demand and that help to keep the native water rights in this region. In order to make beneficial use of these native resources, the District plans to incorporate distributed water treatment plant technology throughout the service area.

The water rights currently owned by the District and the approximate yield of the water rights are listed in Table 2.2.

TABLE 2.2 – DISTRICT WATER RIGHTS PORTFOLIO

Water deliverable to Carter Lake Filter Plant			
Source	Quantity	Total Average Yield (AFT)	Total Firm Yield (AFT)
C-BT Class C Fixed Quota Units	4,964	3,474.8	2,482.0
C-BT Class C Variable Quota Units	4,782	3,443.0	2,391.0
C-BT Class D Griep Farm Units	100	72.0	50.0
Windy Gap Units	12	480.0	0.0
	Total Acre-Feet	7,469.8	4,923.0
Water not deliverable to Carter Lake Filter Plant			
Source	Quantity	Total Average Yield (AFT)	Total Firm Yield (AFT)
Big Thompson Ditch and Mfg. Company	0.33	33.3	0.0
Buckhorn Creek Water Rights	0.22cfs	0.0	0.0
Consolidated Home Supply Ditch Company	33.75	337.5	0.0
Handy Ditch Company	9.5	57.0	0.0
Highland Ditch Company	2	80.0	0.0
Supply Ditch Company	9.5	95.0	0.0
	Total Acre-Feet	602.8	0.0

2.3 System Limitations and Challenges

As part of the water efficiency management process it is important to review the current and potential system limitations. Along with areas of high water use, system limitations can provide insight into how and where to set the water management goals. Ideally,

conservation can help mitigate a portion of the limitations and improve the reliability and efficiency of the system.

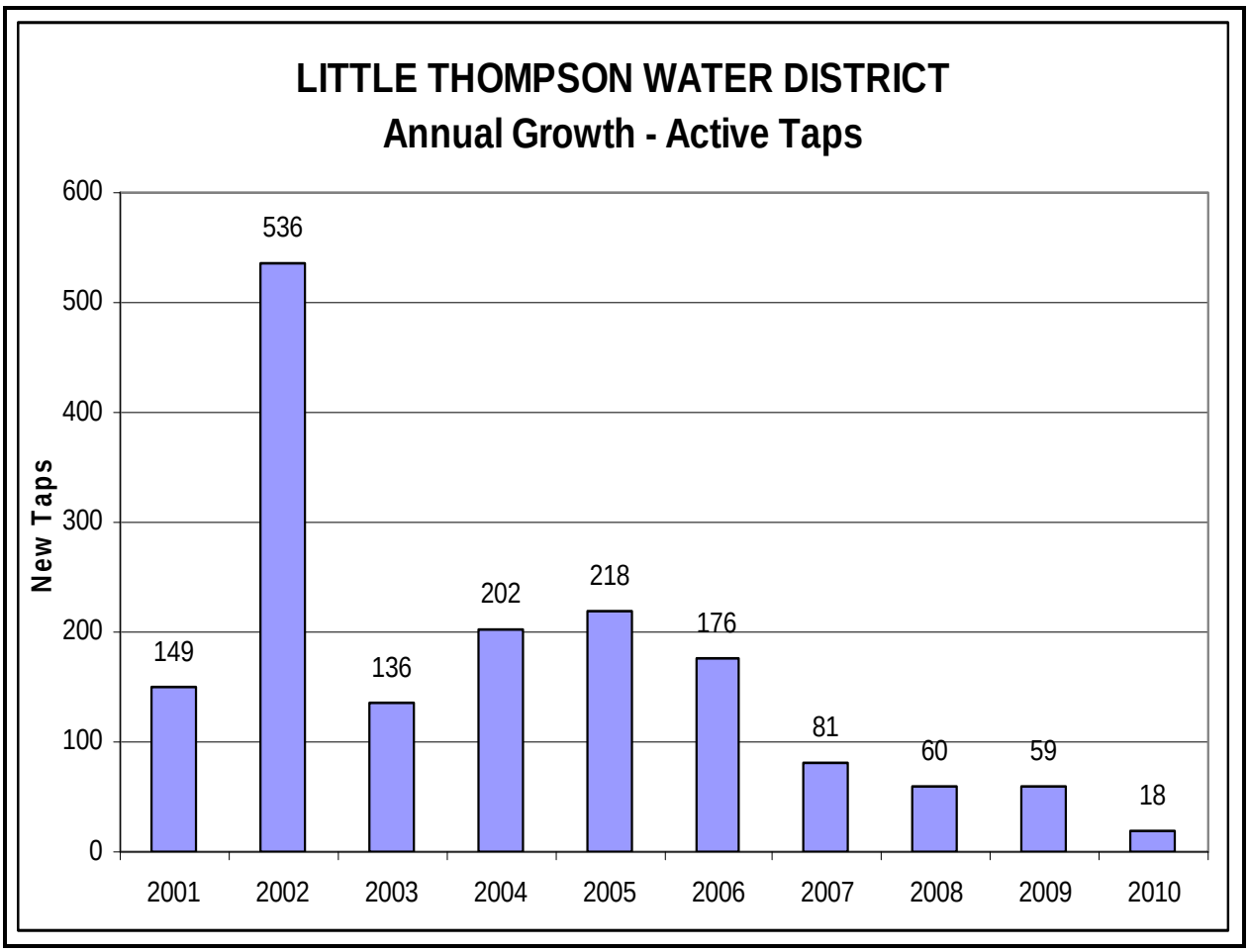
2.3.1 Growth

The historical growth in the number of taps served by the District for the period of 1980 to 2010 is 3.5% per year. During this time, annual tap count growth ranged from a low of 0.4% (2009) to a high of 9.3% (2002 when the Town of Mead was added to the system). Yearly tap growth can be erratic, ranging from very low to very high.

To estimate more reasonable sustainable long-term growth rates, it was useful to look at maximum growth rates occurring over a number of consecutive years. Evaluating the District's historic growth rates over 5-year time periods, maximum and minimum annual rates were better indicators of multi-year growth trends. The historic maximum 5-year growth rate experienced by the District has been 6.4% per year (1997- 2002). Similarly, the historic minimum 5-year growth rate has been 1.7% (2004-2009).

Figure 2.7 illustrates the number of active taps (taps in active service) and the variability of the annual tap sales. Notably, the large number of taps incorporated in 2002 were due to the incorporation of the Town of Mead (October 2002) into the District. In addition, a 2002 policy change increased the volume of water required of developers from 1.0 CBT unit to 1.4 CBT units for each standard residential tap. This resulted in a larger-than-normal demand for taps in 2002 due to developers pre-purchasing taps in advance of development. Subsequent years' (2003 and 2004) tap sales were notably lower than anticipated due to this tap pre-purchasing. More recently, tap sales have diminished due to the economic downturn and housing market crash.

FIGURE 2.7 – DISTRICT ACTIVE TAPS BY YEAR

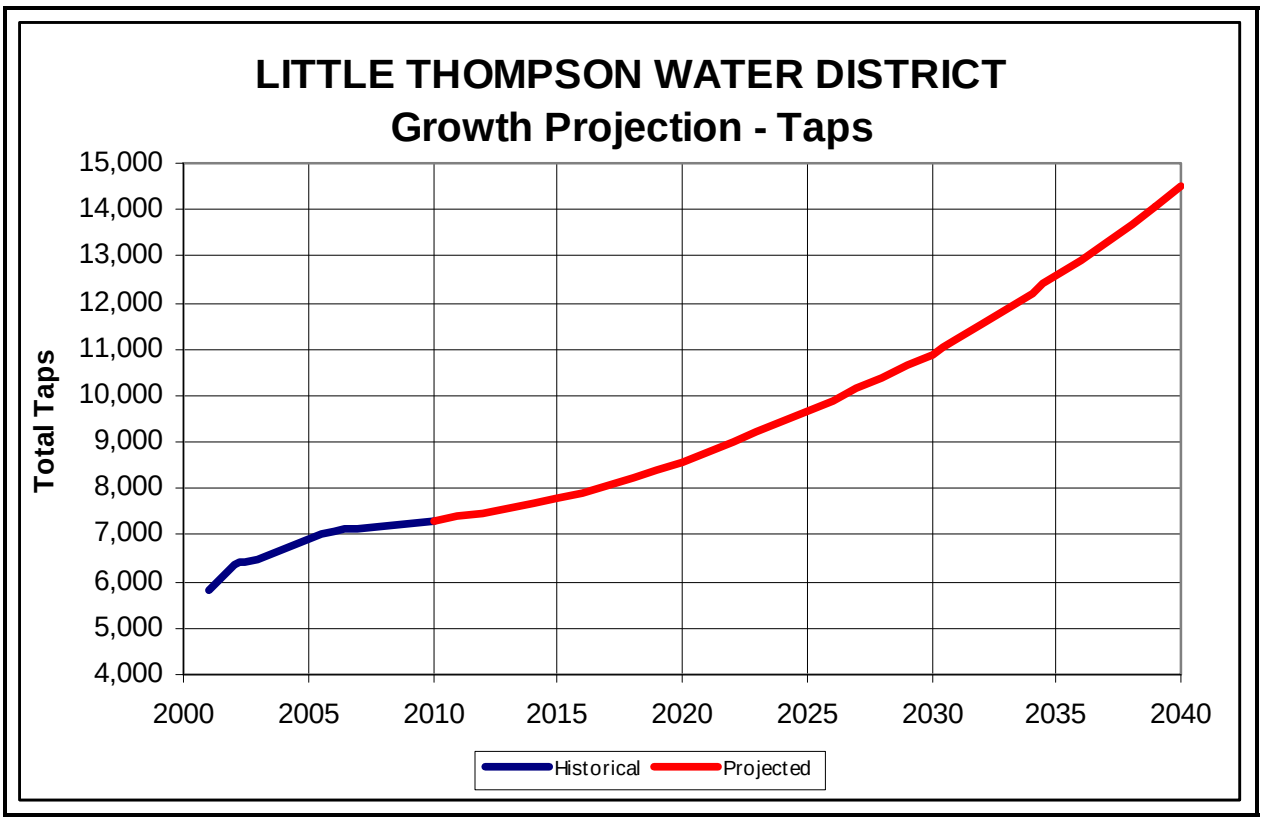


In the future, as the economy picks back up, a higher rate of growth is expected to occur in the southeast corner of the District as well as the areas along Interstate 25 and on the east side of the City Loveland. The average projected growth rate for the District for the period of 2011 through 2040 is 2.45%. The specific growth rates for phases of this period are shown in Table 2.3 and depicted in Figure 2.8. These rates are based on planned developments and the planning efforts of the all the entities served by the District as evaluated in the 2010 District Water Distribution System Master Plan.

TABLE 2.3 – DISTRICT PROJECTED TAP GROWTH

Year	2011 - 2015	2016 - 2020	2021 - 2030	2031 - 2040
Average # Taps/Year	97	162	229	360
Average Annual % Growth	1.30%	2.00%	2.40%	2.90%
Total Taps at Period End	7,764	8,572	10,866	14,462

FIGURE 2.8 – DISTRICT PROJECTED TAP GROWTH



It is worth noting that in its current role, the District cannot control, or direct, the growth that occurs within its service boundaries. While the District assists developers in identifying and securing potential sources of supply, the developers themselves are responsible for securing the raw water necessary to meet the demands of their development.

Careful planning is required to provide adequate water supply for new growth. While the majority of the new demand will be for residential use, supporting commercial and non-potable irrigation will be necessary to accommodate this growth. Conservation will play an important role in maximizing available water supplies to meet the expected growing water demands.

2.3.2 Change of Use

Conversion of the District's local, native water rights from agricultural to municipal use will require detailed engineering analyses and applications to the Colorado Water Court. The easiest change cases take three to five years before a decree is issued. The more complicated change cases can take as much as 10 years and cost thousands of dollars.

The engineering analyses, required in Water Court applications that change the use of agricultural water, focus on the historical consumptive use of the crops grown with the water right and return flows resulting from irrigation of those crops. Determination of the

consumptive use and identifying the amount, location and timing of return flows makes change cases increasingly complicated and costly. The District recently completed one exchange case before Water Court. Within the next few years, additional applications will be submitted to change the use of water rights owned by the District.

2.3.4 Infrastructure Limitations

The 2010 District Water Distribution System Master Plan recommends detailed system improvements for current distribution, 5, 10, 20 and 30-year upgrades. These recommendations are based on existing infrastructure and projected water demand. The original distribution system that delivered water to rural residents is gradually being replaced either with parallel pipelines or new larger ones.

The current system needs include small and large pipeline upgrades. Additional storage and treatment capacity is needed within the next 15 years. Efficient water management and conservation may delay some of these recommended system improvements.

2.3.5 Future Water Supply

In 2003, the Colorado General Assembly authorized the Colorado Water Conservation Board (CWCB) to implement the Statewide Water Supply Initiative (SWSI) as a result of growing pressure on water supplies in Colorado and the 2002 drought. The study identified current and future water demands, available water supplies, and existing and planned water supply projects in eight major river basins in the State.

The study was updated and refined in 2010 and reported a statewide water supply gap between 190,000 acre-feet and 630,000 acre-feet by 2050 between projected demands and fully implemented water supply processes and projects, which is between 32% and 60% of the projected 2050 demand. The gap in the South Platte Basin, where the District is located, is between 36,000 acre-feet and 170,000 acre-feet or over 20% of the 2050 demand.

The District's decision in 2003, to diversify its water right portfolio in order to provide additional reliability to its customers and help to keep local, native water rights in this region, has positioned the District to be proactive in securing water for the future.

Most of the District's future water supply will be obtained through developer dedications. The District requires developers to dedicate water rights sufficient to supply the anticipated demands within their development. The District also provides the opportunity for developers and/or new customers to pay cash-in-lieu of water dedication so that the District can purchase larger blocks of water rights on the open market.

Many new developments within the District's service area are occurring on farms that have historically used local, native water for irrigation. The District anticipates accepting those native water rights in partial satisfaction of its development requirements.

2.3.6 Raw Water Storage

The District and CWCWD rely on the recently completed 10,000 acre-foot Dry Creek Reservoir located east of the Carter Lake Filter Plant against the foothills. This new reservoir is currently used to store C-BT and Windy Gap water for drought protection as well as daily operational changes at the Carter Lake Filter Plants.

The District's participation in the construction of Chimney Hollow Reservoir, as part of the WGFP, will provide an additional 4,850 acre-feet of storage for the District to firm the yield of its 12 Windy Gap Project units. When a permit is obtained for the project, the District will pay its pro-rata cost for the design and construction of the 90,000 acre-foot reservoir project.

The District has also relied upon the CBT Carryover Program offered by Northern Water. This program allows CBT owners to store water and carry it forward to the next year using CBT Project facilities. The maximum amount of storage available is equal to 20% of the CBT units owned. In the District's case, this equates to nearly 1,950 acre-feet of additional storage capacity. This water storage opportunity is evaluated and voted upon annually by the Northern Water Board. In some years the Carryover Program has not been available due to limitations with the CBT Project. Therefore, the District does not rely on the Carryover Program as a regular storage component.

Variability in the yield of CBT units and native water rights, and variability in the reliability of the CBT Carryover Program, will keep the District looking for additional opportunities to develop raw water storage for the following purposes: 1) to store water during peak river flow months (May, June and July) for use in months when the District's native water rights yield little or no water, 2) to store water in years of surplus for use in years when a water supply deficit occurs, and 3) to store the historic return flow component of agricultural water rights converted to municipal use for year-round releases required to meet court-imposed return flow obligations.

2.4 Water Costs, Billing Practices, Pricing and Revenue

All things being equal, reduced water usage will cause a loss in District revenue, but help to extend the life of existing infrastructure and water supplies. Conversely, higher use of water may yield increases in District revenues, but cause an increase in demand on infrastructure and water supplies. Since these decisions involve benefit-cost scenarios, understanding the District's rate structures, water revenues and costs of raw water acquisition is an important part of the water efficiency planning process.

The District strives to provide the highest quality drinking water at the lowest possible price. Tap fees and system impact fees have been structured to ensure that new developments pay their own way and, if necessary, pay for off-site improvements to minimize the impact of new development on water service to existing customers. The District takes great pride in the fact that in its 50-year history, there has never been a mill levy assessed by the District.

2.4.1 Charges for Water Service

When customers buy a water tap from the District, they pay fees not only according to the size of the tap but also according to the proposed water use. The tap fee includes a raw water fee, a plant investment fee, and a connection and installation fee. Upon Board approval, water can be dedicated in lieu of the raw water fee. Table 2.4 shows the fees per tap size and classification. If necessary, charges may also be collected for infrastructure improvements off-site.

TABLE 2.4 – DISTRICT WATER TAP FEES

Meter Size	Plant Invest Fee	Install Fee	Water Rights Acre-Feet	Current Water Rights Value	Total Cost
5/8" Conservation	$11,000	$1,500	0.7	$5,250	$17,750
5/8"	$11,000	$1,500	1.4	$10,500	$23,000
3/4"	$16,500	$2,250	2.1	$15,750	$34,500
1"	$27,500	$3,750	3.5	$26,250	$57,500
1 1/2"	$55,000	$7,500	7	$52,500	$115,000
2"	$88,000	$12,000	11.2	$84,000	$184,000

2.4.2 Rate Structure

As learned in the 2002 drought, the most effective way to encourage efficient water use is through water rates. Water rates for the District are based on the traditional objectives in rate structure design including: 1) basing the rates on the actual cost of service, 2) providing adequate and stable revenues, 3) providing fairness or equitability among customer classes and volume users, and 4) ease of implementation and administration.

For many years the District rate structure was a declining block rate structure applied to quarterly water usage. In 2002, the District rate structure was changed to an increasing block rate format applied monthly with allocated volume based on the size of the service connection. The District completed a rate study analysis in 2008 to determine if the rate structures are equitable for all classes of users and if the rates encourage efficient water use.

The current water usage rates for the District are shown in Table 2.5. These rates are adequate for the current level of water use within the District. However, an increase in water conservation may produce a direct reduction in revenue. The District's rate structure will be evaluated annually to consider actual and potential water savings as well as actual and potential lost revenue due to the progressive rate structure.

TABLE 2.5 – DISTRICT MONTHLY WATER USAGE RATES

Tap Size	Monthly Base Charge	Gallons Used	Rate per Thousand Gallons
5/8" Conservation	$23.94	0 - 6,000 6,000 - 12,000 >12,000	$2.20 $2.75 $11.00
5/8" Residential	$23.94	0 - 6,000 6,000 - 30,000 30,000 – 60,000 >60,000	$2.20 $2.75 $3.03 $3.58
5/8" Non Residential	$23.94	0 - 6,000 6,000 - 30,000 30,000 – 60,000 >60,000	$2.20 $2.75 $3.03 $3.30
3/4" Non Residential	$25.94	0 - 9,000 9,000 - 45,000 45,000 – 90,000 >90,000	$2.20 $2.75 $3.03 $3.30
1" Non Residential	$33.11	0 - 15,000 15,000 - 75,000 75,000 - 150,000 >150,000	$2.20 $2.75 $3.03 $3.30
1 1/2" Non Residential	$62.29	0 - 30,000 30,000 - 150,000 150,000-300,000 >300,000	$2.20 $2.75 $3.03 $3.30
2" Non Residential	$75.43	0 - 48,000 48,000 - 240,000 240,000 – 480,000 >480,000	$2.20 $2.75 $3.03 $3.30

2.4.3 Billing Practices

The District mails (direct or email) bills to each customer based upon their billing cycle each month. The District has four billing cycles in its service area. Current charges shown on the bill are due 25 days from the billing date. Any balance due from prior months is shown as a delinquent balance. Delinquent balances are overdue and are subject to late charges at an annual percentage rate of 12 percent.

The District sends a disconnect notice if payment is not received after 30 days past due. If the past due amount is not received within the two week time period, water is shut off and a $50 fee is assessed. Landlords that provide contact information will receive notification of an overdue balance owed by their tenants. The District averages 100 shut-off notices per month and, due to aggressive follow-up efforts, ends up only interrupting service on approximately 10 accounts per month.

2.4.4 Revenue from Metered Water Sales

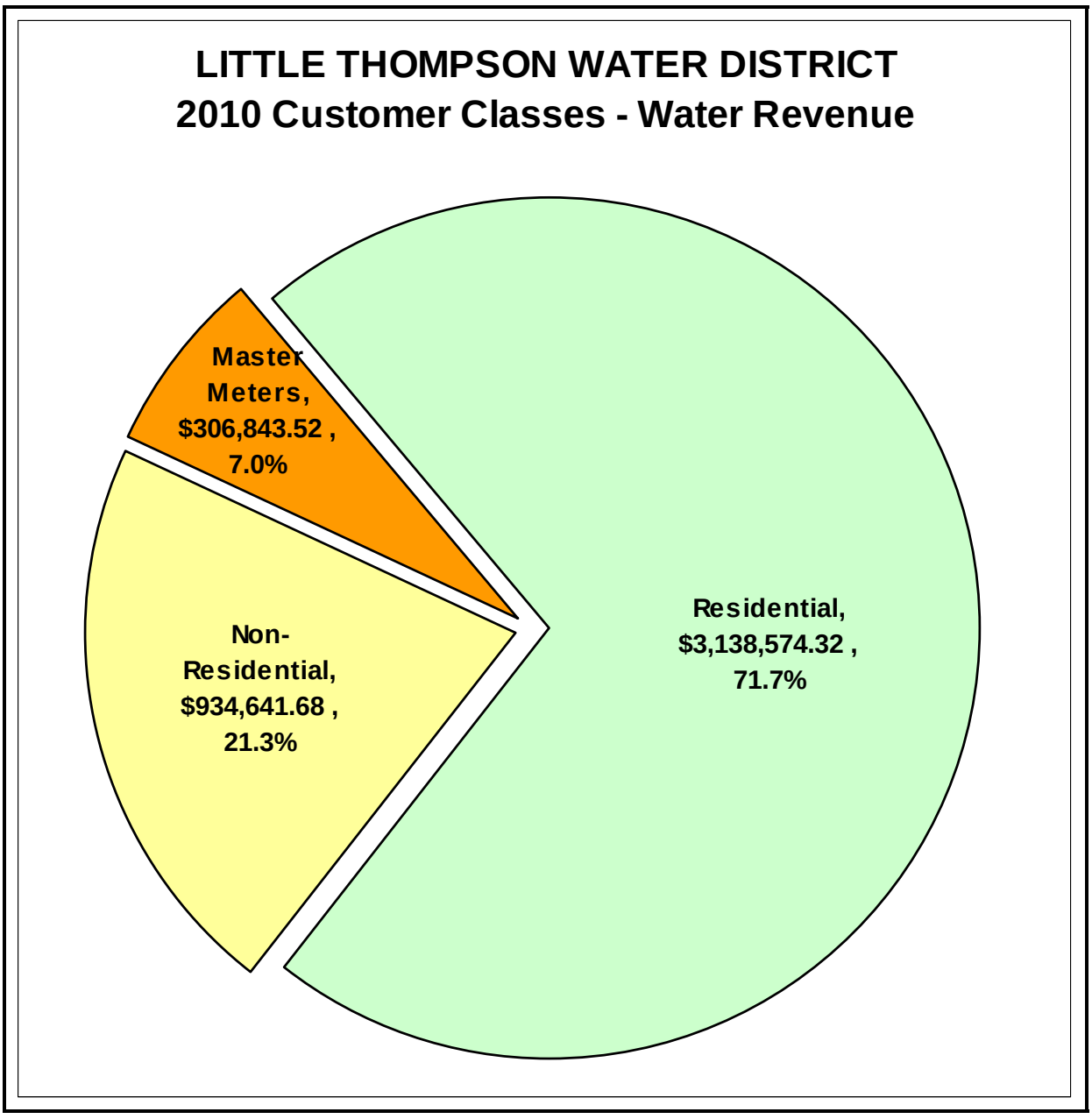
All accounts in the District system are metered. Most accounts are equipped with a rotating disk, positive displacement meter and an individual pressure regulator for accurate measurement of the water delivered. Larger services incorporate a pressure reducing device and a magnetic meter. All meters are read and billed monthly.

In 2010, metered water consumption sales (not including base fee) for the District totaled $4,380,059.51. The amount of water use revenue collected from the customer categories served is shown in TABLE 2.6 and Figure 2.9.

TABLE 2.6 – DISTRICT 2010 WATER REVENUE BY CLASS

Customer Class	No. Taps	% Taps	Usage Revenue	% Use Revenue	Base Fee Revenue	% Base Revenue
Residential	6,996	96.0%	$3,138,574.32	71.7%	$2,210,456.16	95.1%
Non-Residential	282	3.9%	$934,641.68	21.3%	$113,614.44	4.9%
Master Meters	12	0.2%	$306,843.52	7.0%	$0.00	0.0%
Total	7,290		$4,380,059.51		$2,324,070.60	

FIGURE 2.9 – DISTRICT 2010 WATER REVENUE BY CLASS



2.5 Current Policies Affecting Water Use

The District currently encourages customers to reduce outdoor water usage to periods between 6:00 pm and 10:00 am daily. The District has regulations designed to encourage water use efficiency, curtail and restrict water usage during times of system-wide emergency, as outlined in the Water Shortage Contingency Plan (WSCP), based upon available water supply. The objectives of this plan are to:

- Conserve the available water supply in times of drought and emergency.
- Maintain supplies for domestic water use, sanitation, and fire protection.
- Protect and preserve public health, welfare and safety.
- Minimize the adverse impacts of water supply shortages.
- Minimize the adverse impacts of emergency water supply connections.

The District enacted higher water rates for the drought conditions in 2002. These rates are reserved for drought emergencies and were effective in reducing the water use.

The District's Board of Directors retains full discretion with respect to upgrading and expanding the water system based on the ability to serve, technical evaluation and current policy. Policies are in place to ensure the efficient operation of the District in terms of finances, infrastructure and water sources.

Water taps purchased are subject to appropriate engineering/technical review fees to avoid risk to the existing system and ensure consistent standards. Raw water or cash-in-lieu is required at the time of tap purchase according to the type of service to be provided. The amounts are established by the District and are reviewed and updated from time to time. The District currently accepts CBT units and other water sources subject to Staff review and recommendation, and Board approval. Historic use affidavits and dry-up covenants are required for native water supplies in preparation for future Water Court proceedings to change the historic use of the water.

Taps are assigned to specific parcels and are classified according to the land use plan of the prevailing entity responsible for the land use. Tap ownership remains with the property owner.

2.6 Planning Initiatives

As mentioned previously, the District completed a 2010 Water Distribution System Master Plan. This plan focused on infrastructure and system capacity needs to meet future growth. This plan identified capital improvement projects within the District and the timing for those projects by utilizing a hydraulic distribution system model and specific documentation of the conditions of the existing distribution system.

The District is participating in the WGFP environmental permitting process. This project evaluation included a general look at water supplies, projected demands and water conservation activities currently existing for each of the participating entities. Since the

WGFP is a regional project, the purpose of this evaluation was to show the need for additional water supplies in the region. The evaluation did not make recommendations for when and where those supplies should be obtained.

The District's WSCP was developed to counter the effects of the 2002 drought. The contingency plan includes four levels of shortage: mild, moderate, severe and extreme with subsequent restrictions for each level. Triggers that indicate the different levels of shortage focus on the projected supply versus amount of water in storage, average annual demand, total daily demand, and projected demand. The first stage relies on volunteer restrictions with the following stages relying more and more on mandatory restrictions for residential and commercial customers and the District itself. All levels are accompanied with education sent through mailers and the website. The goal of the plan was and is to ensure adequate water delivery to tap holders during times of water shortage and is independent from the Water Efficiency Management Plan.

This Water Efficiency Management Plan is another planning document that will enable the District to systematically plan and implement water efficiency measures and track the impacts on customer water use.

2.7 Current Water Conservation Activities

The District has historically encouraged water conservation through its rates and development policies. Since the drought of 2002, the District has taken a more aggressive approach toward water conservation. The programs currently promoted by the District are summarized below:

2.7.1 Water Rates

The District's increasing block water rate structure is in place to encourage efficient water use. The inclining rate structure is utilized for all customer classification, but is specifically aggressive for residential customers. The District's water rates have proved to be the most effective conservation tool and have helped reduce the need to impose and enforce strict outdoor watering schedules or monthly water use budgets.

2.7.2 Water Service Options

The District's Conservation Water Tap was developed in 2009 to provide a water service alternative for customers who are committed to efficient outdoor water use. Water dedication and water rates for the Conservation Water Tap reflect normal inside water use, but encourage significantly lower outside use as compared to the standard residential customer. Customers who choose this option are rewarded with a significant up front cost savings on the purchase of their tap. This water service option also fits well with those developments that incorporate non-potable secondary water systems for outside water demands.

2.7.3 Public Education

The District has a small annual budget for public education. The District provides information promoting voluntary upgrades to water-efficient fixtures, low water use landscaping, efficient irrigation, and other water efficiency measures in their bill inserts, newsletters and website. The District has also purchased and made available remote meter readers that allow customers to view their usage "real time" in order to evaluate their water devices and usage habits.

Through grant funding from the Colorado Water Conservation Board, the District has assembled a large collection of xeric landscape and water conservation books and made them available to the public through the Berthoud Public Library. The District also coordinates annually with Northern Water to promote to its customers the summertime water conservation and landscape seminars hosted at the Northern Water Conservation Gardens.

2.7.4 Leak Detection

The District's current leak detection program uses customer meters, pressure reducing valves, Supervisory Control and Data Acquisition (SCADA) communications and the billing database to track water use and leaks in the system. All known leaks in distribution lines are repaired in a timely manner and any leaks found on customer service lines are promptly reported to the customer.

Water lines which show a history of leaks or require frequent repair are targeted for replacement; and older distribution lines are upgraded, as budget funds are available in order to provide improved service to the District's customers. All new water lines are pressure tested after installation and are only accepted and placed into service by the District when they are able to meet established guidelines for allowable water loss.

2.7.5 Billing and Meter Reading Practices

The District reads meters and sends bills monthly. The District uses rotating disk, positive displacement meters and an individual pressure regulator on service connections that need them to regulate pressure and accurately measure the water delivered to the customer.

Customer connections have been retrofitted with radio read meters that can be monitored more easily. Monthly customer consumption is compared to historic averages automatically by the District's billing software and flagged for investigation if it falls outside the expected range. The District will alert customers immediately to determine if leaks may exist beyond the customer meter.

Each water bill shows the monthly water use and corresponding charge by tier. The bill also includes a chart depicting the customer's water usage in each of the previous 12 months. This chart helps the customer track their water consumption and compare it to historic practices.

2.7.6 Meter Replacement

Customer meters are replaced to reduce meter reading errors due to meter slippage. The District has evaluated the top 10% of high-volume customers to determine the correct meter size for each. To remove this potential source of unaccounted water, meter sizes have been upgraded as necessary to eliminate meter slippage.

In 2009 the District removed a representative sample of all residential meters and had the meters bench tested for their accuracy, in accordance with AWWA standard for meter testing (M6). The results of the meter testing exercise indicated that the meters had an average accuracy of 99.31%. Based upon the AWWA Standards, meters are acceptable to a tolerance of +/- 1.5%. Therefore, the District is confident that its meter maintenance and replacement program is resulting in reliable customer water usage metering.

2.7.7 System Losses

As mentioned previously the District began aggressively evaluating the water distribution system losses in 2009. The District is relying on guidelines presented in the AWWA Water Audit and Loss Control Program M-36 manual and software to effectively manage the water delivery system. Using information from leak repairs, meter testing and reading, distribution system flushing, and hydraulic modeling the District is now more successful evaluating both apparent and real losses including accounting for metered and un-metered, billed and unbilled uses and losses.

2.7.8 Recycled Filter Backwash

The CLFP uses filters to remove organic solids from water in the treatment process. These filters become less efficient over time because of the solids that collect in them. Therefore, water is flowed backward through the filters periodically to remove the solids and restore the efficiency of the filters. The CLFP collects all of this backwash water in settling ponds adjacent to the plant. After settling, this water is returned to the filter plant for treatment. Approximately 1% of the total water production is recycled backwash water that has been treated.

2.7.9 Water Use Fixtures

Water efficient fixtures and appliances are required for all new construction and enforced through the uniform plumbing codes and building requirements adopted by the building permit authorities within the District's boundaries. These requirements are based upon the 2006 International Plumbing Code (IPC) for most cities and counties. The 2006 IPC requires low-flow water fixtures including 2.2 gallons per minute (gpm) lavatories, 2.5 gpm shower heads, 2.2 gpm kitchen sinks, 1 gallon per flush (gpf) urinals and 1.6 gpf toilets.

CHAPTER 3 – WATER USE AND DEMAND FORECAST

The characteristics of water use that are important in the design of a water system include the average-day demand, the maximum-day demand, the peak-hour demand, and the fire flows. The average-day demand is used primarily for water resource planning. The maximum-day demand is used to size the treatment plant, transmission lines, main pump stations, storage reservoirs, and the main distribution lines that deliver water from one reservoir to another. The peak-hour demands are used to size the distribution lines and booster pump stations that do not pump to a storage tank. Fire flows are also used in sizing the distribution lines as well as storage tanks. The average daily consumption is important for the management of the water system in that it is used to estimate the total annual usage and determine the adequacy of the raw water supply.

Water usage changes with the weather and with customer habits. During the drought of 2001-2002, water usage dropped as customers were reminded to try to reduce evaporation and waste. After the drought and water restrictions, people began to return to usage levels seen before the drought. However, weather in the summer of 2009 was wet and cool, resulting in lower demand from the District customers. In 2010, weather conditions were warm and dry from late summer through the fall creating an extended outdoor water use period.

Recent studies show that anywhere from 50 to 60% of the water demand experienced in water systems is due to irrigation demands for outdoor uses (residential lawn watering). This demand occurs over a fairly short calendar window (June, July, August, and September), yet accounts for nearly sixty percent of annual water use.

3.1 Current Water Use

The District supplied 5,425 acre-feet (1,767,647 gallons) of potable water in 2010 to 7,290 customers within its Residential, Non-Residential and Master Meter categories.

3.1.1 Water Use by Customer Category

3.1.1.1 Residential Water Use

The majority of the District's water use is for residential customers within the growth management areas of the surrounding communities. Residential customers make up over 96% (6,996) of the total customers served. This results in much higher summertime demand for landscape irrigation on individual lots as well as in neighborhood open spaces. The residential water use in 2010 was 66% (3,582 acre-feet) of the total water delivered to customers by the District. The average residential customer use was 0.51 acre-feet or 166,850 gallons in 2010.

3.1.1.2 Non-Residential Water Use

Non-Residential water users in the District include office buildings, hotels, schools, retail stores, restaurants, car washes, tree farms or nurseries, manufacturing and light industrial facilities, agricultural operations including dairies and feedlots, and some large irrigation taps. Non-Residential customers make up 4% (282) of the total customers served. Non-Residential water use is the second largest water use category in the District at just over 17% (941 acre-feet) of total water delivered to customers in 2010. The average non-residential customer use was 3.33 acre-feet or 1,087,000 gallons in 2010.

3.1.1.3 Master Meter Water Use

The District has multiple master meter accounts with adjoining water providers. It is the wholesale water provider for both the Longs Peak Water District and the North Carter Lake Water District as well as temporarily for the Town of Berthoud. In addition, the District has master meter connections with CWCWD, Fort Collins-Loveland Water District, Johnstown, Loveland, and Milliken. These connections accounted for 0.2% (12) of the customers served and 16.6% (901.5 acre-feet or 293,770,000 gallons) of the water delivered to customers in 2010.

3.1.1.4 Fire Hydrant Water Use

The District supplies water for firefighting and other temporary uses from hydrants such as construction. The District also operates hydrants as part of its active distribution system flushing program. The amount is highly variable year to year, depending primarily on demand for temporary use of water for construction. In 2010 the District began metering all distribution system hydrant flushing, in addition to the already metered construction use, to more accurately track previously unaccounted for use. Total metered fire hydrant use for 2010 was 6.7 acre-feet or 2,192,000 gallons.

3.1.1.5 Unaccounted Water Use

Water production is typically slightly higher than the amount of water billed due to system losses. System losses can be attributed to all unmetered uses including fire flows, flushing lines, illegal taps, pipe leaks, and theft. A good goal for system losses is 10% or less. However, many systems have water losses between 10 and 15%.

The District has been working for many years to reduce the real system losses. Regular valve maintenance, pipeline upgrades and prompt leak repair are standard operating procedures. The entire system is metered and the water users are monitored monthly for high water use and contacted when identified. High water users have been evaluated and updated for correct meter sizing to avoid meter slippage. Several master meters have been installed in the system in strategic locations to create smaller areas to monitor for possible leaks. A SCADA system has been installed throughout the system and is used for real time monitoring.

Even with all of these measures the District has continued to experience high variability in annual losses. Therefore, the District has recently taken steps to better account for the system efficiency. One step included a thorough review and update of the monthly water accounting between the CLFP, CWCWD and the District for water entering the District. Another step included incorporating distribution system efficiency accounting tools provided by the American Water Works Association (AWWA) in their Water Audit and Loss Control Program M-36 manual and software. These changes took effect in January 2009. Table 3.1 shows the difference in metered water treated and metered water delivered to District customers.

On average over the last seven years, 6.1% of all water delivered into the distribution system did not reach the customers. However, the District implemented more reliable accounting for its losses starting in 2009. Relying on the more accurate accounting, the District identified losses in 2010 greater than 13.3%.

TABLE 3.1 DISTRICT WATER LOSS

Year	Gallons Produced	Gallons Delivered	Gallons Lost	% Loss
2004	1,662,334,378	1,512,804,906	149,529,472	9.00%
2005	1,808,741,882	1,692,272,772	116,469,110	6.44%
2006	2,101,551,830	1,980,940,490	120,611,340	5.74%
2007	1,876,602,969	1,813,913,009	62,689,960	3.34%
2008	2,006,645,975	1,861,171,165	145,474,810	7.25%
2009	1,832,717,328	1,873,762,235	-41,044,907	-2.24%
2010	2,102,011,227	1,821,287,703	280,723,524	13.35%

3.1.1.6 Non-Potable Water Use

The District has no current non-potable water service. However, the District has determined to provide non-potable water system operation and service wherever possible. The District is currently working closely with some area developers in an effort to bring online large scale secondary water supply systems that will utilize fully consumable water the District is working to secure.

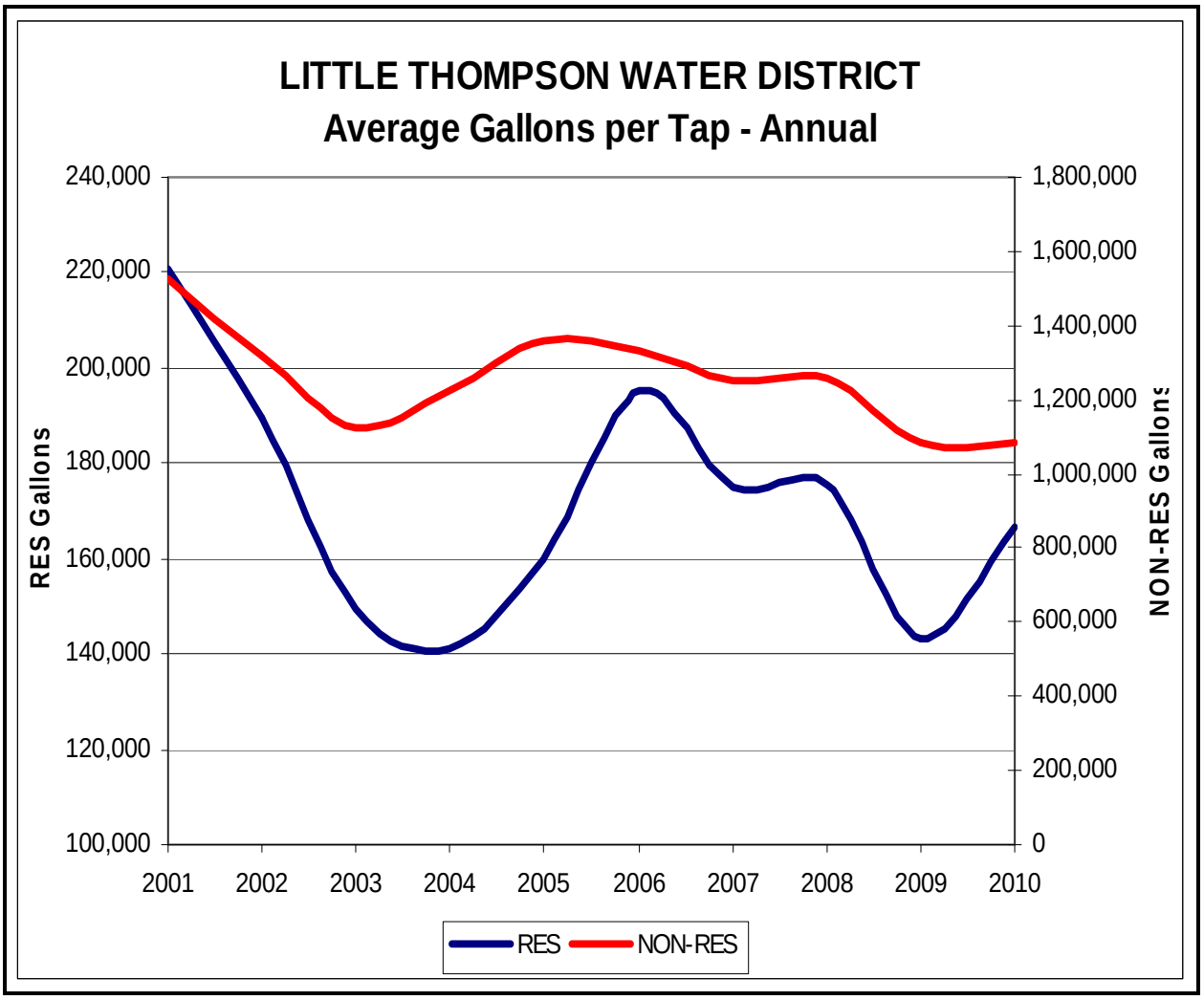
3.1.2 Water Use Trends

In 1996, the District completed and submitted its first water conservation plan to CWCB to satisfy the requirements of the Water Conservation Act of 1991. Since that time there has been a downward trend in water use per tap from the gradual conversion of rural water users to urban water users in both the residential and commercial categories.

The 1996 Water Conservation Plan focused mainly on system loss measures and public education. This was a good introduction to the District's customers to water conservation at a time when the Front Range was becoming more aware of the constraints on the region's water supply. The benefit of conservation is sometimes difficult to measure, but the District has seen a downward trend in its water use in recent years.

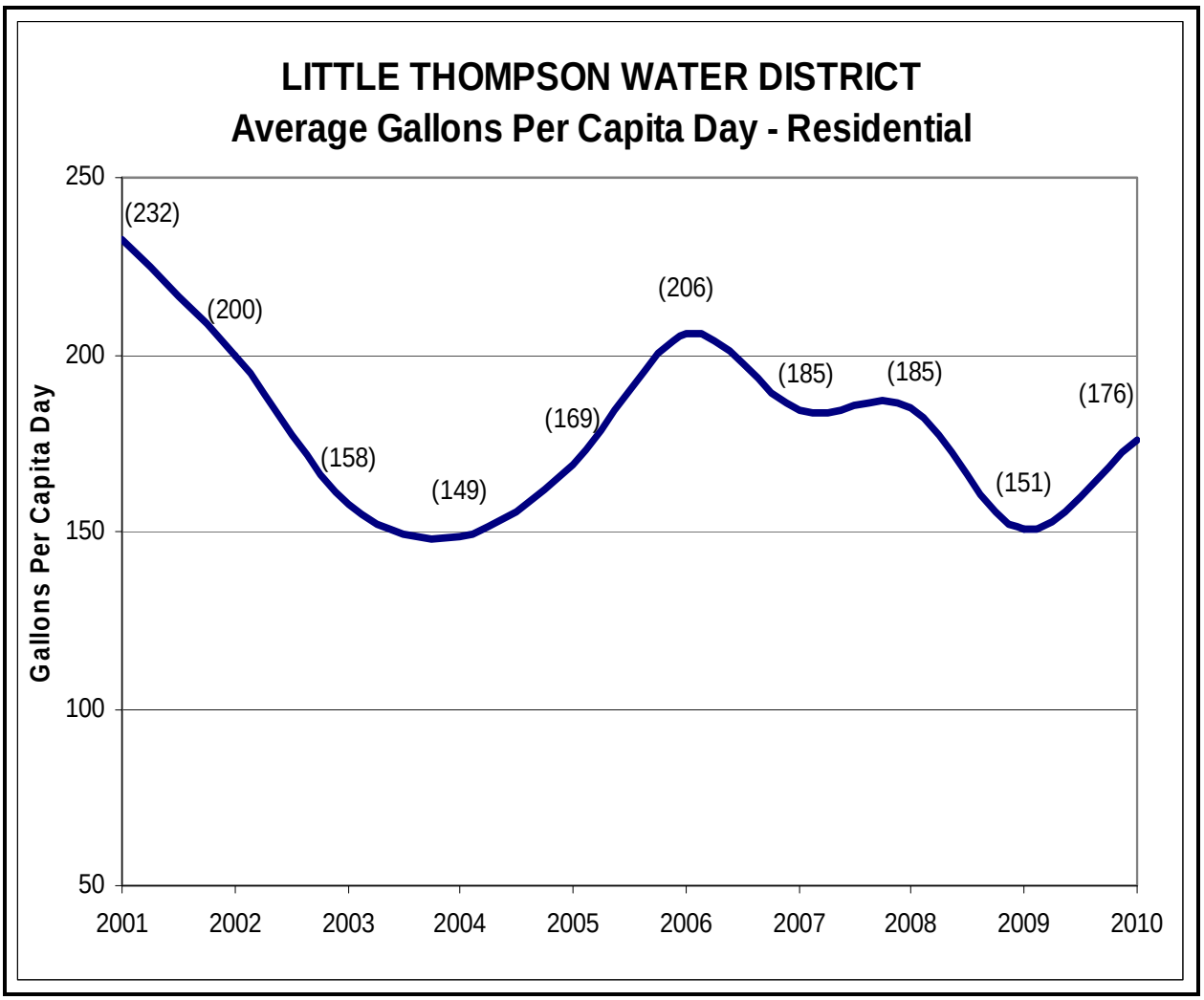
Figure 3.1 shows the annual water use by customers in the two retail categories served by the District: 1) Residential, and 2) Non-residential. Table 4.1 shows that per-capita water use decreased significantly during the drought years of 2002 and 2003. Water use reductions during drought years resulted from imposition of outdoor water use restrictions and extensive media coverage of drought conditions. Customers continued to conserve water through 2004 despite the removal of outdoor water use restrictions by the District.

FIGURE 3.1 – DISTRICT AVERAGE WATER USE PER TAP



The District average occupancy of 2.6 people per household was combined with customer water usage to calculate the gallons per capita day (GPCD) for residential customers. Per-capita water use has rebounded slightly since 2004, but remains well below what it was before 2002.This is depicted in the following Figure 3.2.

FIGURE 3.2 – DISTRICT AVERAGE RESIDENTIAL WATER USE



3.2 Water Demand Forecast

In order to plan for infrastructure upgrades and capital improvement projects, the District had a water demand summary prepared as part of the 2010 Water Distribution System Master Plan. Estimates of the District's future water demands were needed for the distribution system hydraulic model in order to size the capacity of planned upgrades.

For water demand planning purposes, developments within the District service area were identified and ranked based on their approval status within local jurisdictions to estimate future growth rate and location within the District. The list included 118 approved developments with 791 residential and 40 commercial in-fill lots to provide service to, as well as 42 future developments with approximately 9,525 residential and commercial lots within Weld County, Larimer County, Mead, and Loveland. Some assumptions regarding land use, density, and service area were used to generate the population and demands for the District. Assumptions were based on:

1. Existing service agreements between the District and Cities/Towns.
2. Growth management areas as currently defined.
3. Land use maps as provided by the Cities/Towns.
4. Density of taps per acre based on zoning information.
5. Current water usage per equivalent tap.
6. Growth rates.
7. Population per household based on census data.

A ranking system was assigned to the developments in order to set forth a schedule for construction and tap sales that the District may anticipate. The developments were further adjusted in their growth rates based upon four other weighting factors; location, the planning and zoning entity, the developer, and the availability of existing infrastructure. The sum of the weighting factors set forth the adjustment for development speed.

The projection of demands through master meters was evaluated only to identify the potential impact to the system should any entities request that service, but the master meter demand results were not incorporated in this analysis. The entities that would request the service are not currently willing to comment on the need or the size of the potential service. And the District does not control growth or water demand for these customers.

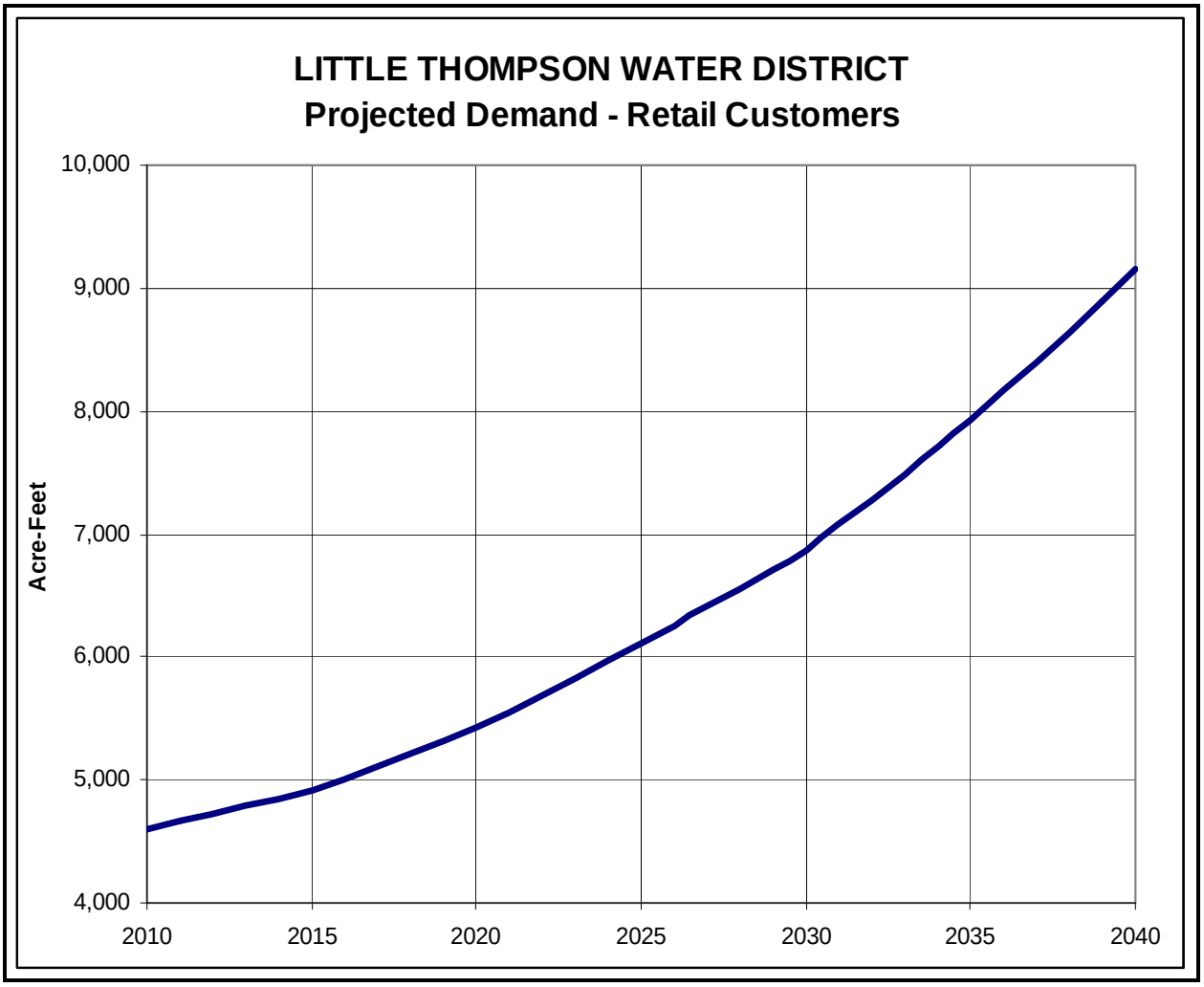
Retail customer demands through 2015 include an overall growth of 0.5% throughout the District service area, a portion of the approved, platted lots with infrastructure in front of them for immediate service, and a small portion of development due to known future subdivisions. The growth projected between 2015 and 2020 includes additional growth in those areas already developed with available infrastructure, a larger portion of the future subdivisions, and a continuing 0.5% system-wide growth. Projections for retail growth and corresponding water demand are included in Table 3.2 and Figure 3.3.

TABLE 3.2 – DISTRICT RETAIL GROWTH AND WATER DEMAND

Retail Customers	2011 - 2015	2016 - 2020	2021 - 2030	2031 - 2040
Average # Taps/Year	97	162	229	360
Average Annual % Growth	1.30%	2.00%	2.40%	2.90%
Total Taps at Period End	7,764	8,572	10,866	14,462
Total Demand at Period End	4,912 AFT	5,423 AFT	6,875 AFT	9,150 AFT

It is important to understand that there are limitations to water demand projections, and it is important to recognize that external factors such as growth rate can impact the projections. Projections are intended to be approximate forecasts that demonstrate general trends and not to be interpreted as exact targets or absolute predictions of what will occur.

FIGURE 3.3 – DISTRICT PROJECTED RETAIL WATER DEMAND



CHAPTER 4 – PROPOSED FACILITIES

4.1 Identification of Future Needs

The current firm yield of the District's water supplies in a dry year is 4,873 AFT assuming no CBT water is available for exchange of the native supplies. This could lead to some watering restrictions to meet the current water demand. The average yield of the District's current CBT units is just over 6,900 AFT and would provide water out to 2016 under normal conditions.

Within the planning period of this water efficiency management plan, 2012 to 2018, the water demand could be up to 250 AFT more than the firm yield of the District's current water supplies. This shortage could be met by a combination of developer water transfers, District water purchases and water conservation. Any water saved could be water that would not have to be purchased. The current average price for domestic water is approximately $10,000 per ac-ft, so the benefit of saving water could add up quickly.

4.1.1 Participation in Regional Projects

The District has historically planned and constructed projects cooperatively with other water providers in the Front Range. The schedule for those projects is driven by the collective needs of all participants rather than the needs of any one entity. The advantages of combining resources and constructing single projects at one time rather than several projects over an extended period of time far outweigh the cost of funding improvements sooner than they would otherwise be required.

The District's participation in the WGFP is to secure additional water storage capacity for Windy Gap units that the District is working to acquire. The WGFP is currently in the permitting phase and is proposed to begin construction around 2014. The District's participation in the WGFP should provide the District with up to 1,200 acre-feet of reliable, fully consumable water annually.

The District continues to pursue opportunities to work on new projects with area water providers with potential mutual benefits for meeting water storage, treatment and delivery needs.

4.1.2 Water Rights

The District's water portfolio includes CBT units and a number of local, native water rights. In the past, developers have been required to transfer CBT water to the District to meet their water requirements. That policy relieved the District and its customers from the risk and responsibility associated with competing on the open market for water rights needed to serve development.

In 2003 the District adopted a policy to diversify its water portfolio in an effort to protect its customers from problems that could occur from a dependency on a single source of water. Since that time, the District has continued to require dedication of water for service, but accepts both CBT and local, native water rights, and the opportunity to pay cash in lieu of dedicated water. With the cash-in-lieu funds collected through tap sales, the District has been acquiring primarily local, native water rights to meet future needs.

As additional native water rights are acquired, they will be processed through Water Court in order to receive approval to use the water for beneficial purposes by the District. This process can take a considerable amount of time; therefore, the District has started now with the acquisition and analysis of these water rights.

The District will continue to require development to meet its water needs, whether that is through CBT, native water or cash. Development will likely dictate where the local, native water will come from as water is removed from formerly irrigated properties to serve urban growth.

By keeping the responsibility on the developer, the District is able to focus its resources on improving the reliability and quality of water service to existing customers while simultaneously planning for the treatment, transmission and raw water storage needs of new customers.

4.1.3 Water Treatment Capacity

Water delivered to the District is treated at the CLFP. Both the District and CWCWD own an equal share of the CLFP, and have historically funded expansions and improvements based on the combined water needs. The water treatment capacity demands of the two Districts were projected in the District's 2010 Water Distribution System Master Plan. In the study report, it was determined that the CLFP will reach its 48 MGD capacity by the year 2025. Expansion options of 10 MGD up to 24 MGD would provide treated water for the needs of the two districts well past 2030 in a worst case scenario.

A treatment plant expansion was originally planned sooner, but will now be delayed a number of years due to the recent economic slowdown and postponed increased demand. In addition, both districts are pursuing other treated water opportunities independently. The District's current use of the shared facilities is approximately 40% of the treatment capacity. If the District utilizes all of its currently available, owned treatment capacity, it will not need additional capacity until 2045. However, if the District plans for master meter connections with adjoining water providers, it may reach its 50% treatment capacity of 24 MGD as early as 2025.

As the District contemplates future water treatment, it hopes to make use of more local, native water rights by treating these waters through small distributed treatment plants located strategically near water sources and water transmission lines.

4.1.4 Water Transmission Capacity

Water is delivered to the District from the CLFP through three transmission lines: the 18" line; the 24" line; and the 42" line. The 18" line serves the north portion of the District service area with demands up to 5.2 MGD during peak flow. The 24" line is connected to the treatment plant and travels near the southern boundary of the District with capacity up to 13.3 MGD during peak flow. The 42" Central line has a centrally located route and eventually serves the I-25 corridor and is shared with CWCWD for water service further east with a combined peak capacity of 50 MGD. The 42" line provides substantial water delivery capacity and serves as the predominant method for satisfying future water demands along the I-25 growth corridor and central region of the District. These three transmission lines provide the backbone for water service in the District service area. See Figure 4.1 below.

The 18" line is operating near capacity and is an old steel line with significant maintenance requirements. Therefore this line is currently scheduled to have upgrades and replacements where necessary. Improvements to this line are a top priority and will take place as the budget allows. Modeling indicates that both the 24" and 42" transmission lines will continue to meet demands through 2035.

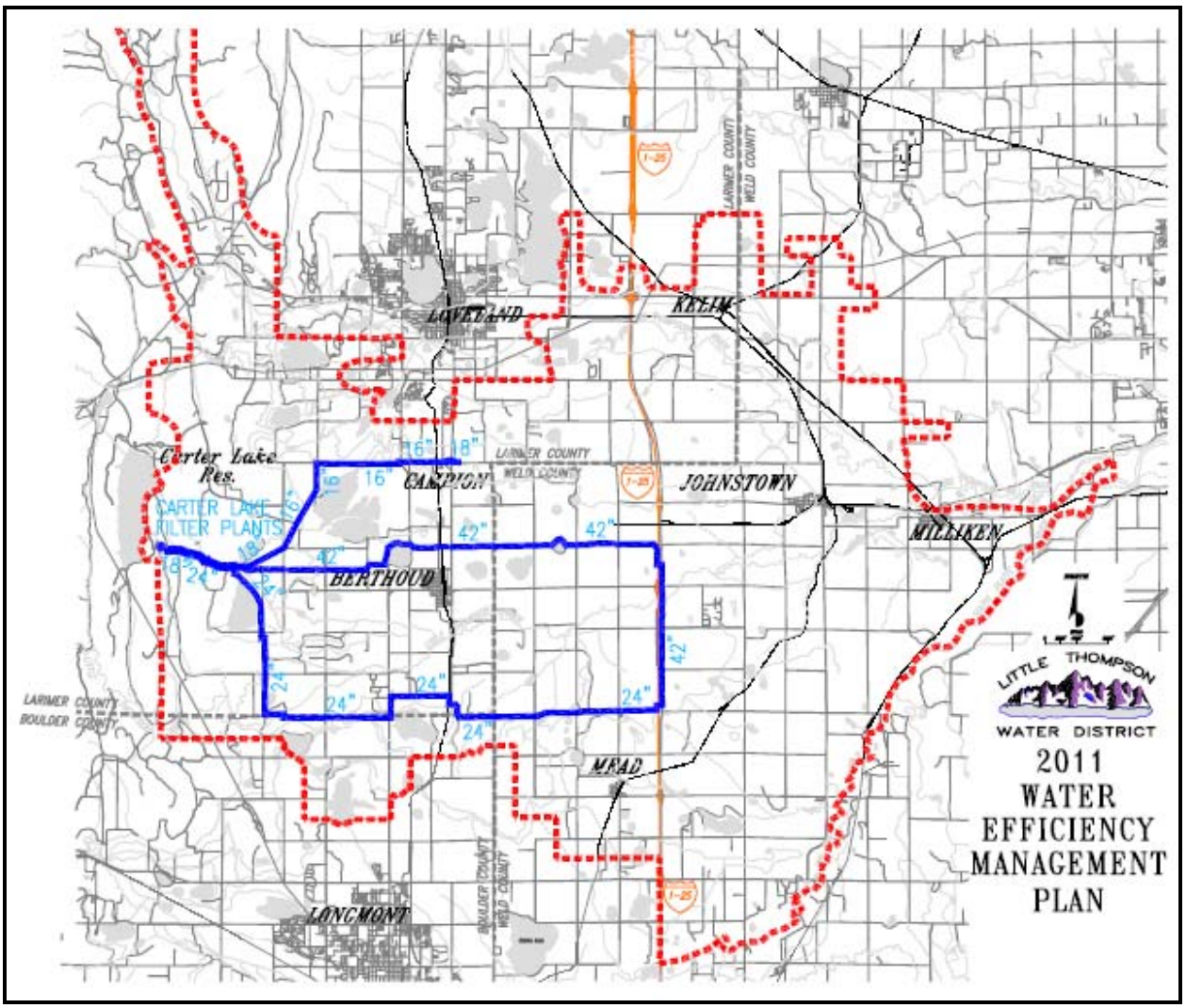
4.1.5 Raw Water Storage

The District has historically relied upon the Northern Water CBT Carryover Program. This program has allowed the District to carry some excess water over from one accounting water year to the next. For many years the District made an attempt to put any extra water left over at the end of the water year into its designated carryover space.

Over time there have been discussions related to the Carryover Program going away or the designated percentages changing annually. In order for the District to provide reliable supply and emergency and drought protection for its customers, the Dry Creek Reservoir was constructed and completed in 2007. This reservoir is used primarily for emergency supply and drought protection along with daily operational flexibility for the CLFP. The District quickly filled its half of the reservoir and has maintained it at capacity. The amount of water stored for the District is nearly a year's supply for customers.

In addition to the District's ownership in Dry Creek Reservoir and its participation in the Windy Gap Firming Project, the District will continue to pursue other opportunities to store water in an effort to develop a more reliable supply. The acquisition of many native water rights also provides additional incremental storage for the District through ownership in local ditch and reservoir companies.

FIGURE 4.1 – DISTRICT TRANSMISSION LINES



CHAPTER 5 – WATER EFFICIENCY GOALS

5.1 Water Efficiency Goals

The District's objective is to implement a Water Efficiency Management Plan that will increase water use efficiency and thereby reduce water demands. The District will attempt to accomplish this without adversely affecting continued population and economic growth. The District's goals include reducing the loss and waste of water, improving efficiency in the use of water, extending the life of current water supplies, and identifying means to support water reuse.

Establishing water conservation goals is an iterative process that begins with quantifying the future demand for water based on current water-use habits and identifying areas water use can feasibly and effectively be reduced. Reduction of future water demand through water conservation will potentially delay planned water supply acquisition and the need for infrastructure improvements.

The District's total water demand in 2010 was approximately 5,425 AFT. The District's largest users are Residential, Non-Residential, and Master Meters. The goals established for this Water Efficiency Management Plan are based on discussions with District Staff and Board, and the water demands for these customers.

5.1.1 Residential Goals

The Residential water use is targeted to be reduced by 5%. This is the District's largest water-use category with the majority of the water being used outdoors. The per-tap water usage trend for Residential taps from 2007 - 2010 was 171,000 gallons. With 2.6 persons-per-tap, this equates to 180 GPCD. The goal for this category is to reduce the per-tap usage to 162,450 gallons per year or 171 GPCD. Much of this reduction is anticipated to come from increased communication and promotion of the existing measures. The 2017 goal is to reduce the projected water use in this category by over 220 AFT per year.

Demand Side Measure – Reducing the seasonably variable demands of this customer class will help to postpone treatment plant and distribution system capital improvements. This water savings will be tracked in the future by dividing the measured water use by the total number of Residential taps.

5.1.2 Non-Residential Goals

The Non-Residential category includes office buildings, hotels, schools, retail stores, restaurants, car washes, tree farms or nurseries, manufacturing and light industrial facilities, agricultural operations including dairies and feedlots, and some large irrigation taps. The Non-Residential category is quite diverse and represents many different types of water users. The overall water demand is projected to increase in this area because of the increasing commercial development and number of services within the I-

25 corridor. The growth in this area may also bring higher water-use industries than there have been in the past.

With limited software tracking capabilities, and diversity of the customers within the category, the District will start with a target of 1% reduction in the average per-customer water use of the Non-Residential category in this planning period. The District will use this planning period to continue to audit high usage and promote existing conservation measures. And, with the incorporation of a new billing software system, the District will work to classify Non-Residential customer categories in order to develop water usage class baselines that can be used for future water efficiency planning and programs.

Demand Side Measure – Reducing the seasonably variable demands of this customer class will also help to postpone treatment plant and distribution system capital improvements. This water savings will be tracked in the future by dividing the measured water use by the total number of Non-Residential taps.

5.1.3 Master Meter Goals

The contracts that the District has with its wholesale and master meter customers limits the District's ability to impose conservation measures on those entities and relieves the District of the responsibility for obtaining water rights for those customers. The District's wholesale customers transfer their own water rights to the District annually to meet their water demands. Without authority to enforce conservation measures within the service areas of its wholesale customers, and no obligation to secure water rights for them, the water use of the District's master meters is excluded from analysis in this report.

5.1.4 Unaccounted Water Goals

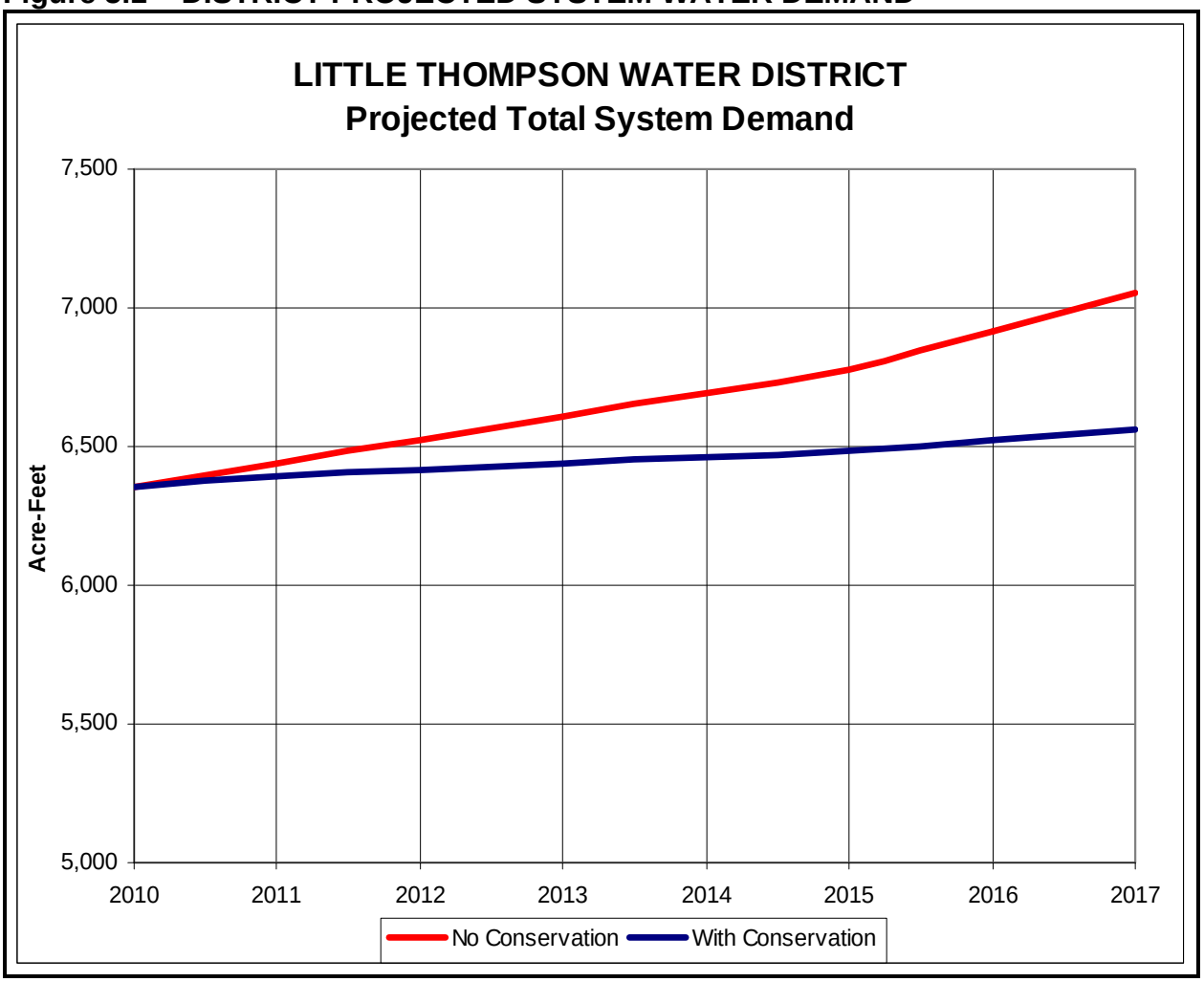
Unaccounted-for Loss is calculated as the difference between the water produced by the District's sources and the water delivered at the District's customer meters. Real losses due to leakage have been a focus for the District for a long time, especially in the last ten years. Meters have been installed and updated on all taps and pressure reducing valves along with a SCADA system are in place to monitor pressures that could lead to leakage. Leaks are monitored and repaired in a timely manner. The District's unaccounted-for water loss was 13.35% in 2010. Although this loss percentage may be within the acceptable range for most water systems, the District will strive to reduce system losses to below 10% (25% reduction), or an additional 260 AFT per year by the end of this planning period.

Supply Side Measure – Reducing system losses will help the District save unnecessary water treatment and delivery costs in addition to saving water. This water savings will be tracked in the future by comparing the total measured water supplied to the total measured water used.

Figure 5.1 shows the District's projected total system water demand from 2011 to 2017, both with and without the stated conservation goals. By the time the conservation plan

is fully implemented, it is estimated that the projected annual system water demand will be reduced by a total of 480 AFT due to District and customer efficiency improvements.

Figure 5.1 – DISTRICT PROJECTED SYSTEM WATER DEMAND



5.2 Goal Development Process

The development of water-savings goals for the District was a collaborative process involving the District Staff and Board. Information was gathered from billing records and existing planning documents to properly characterize the system, resources and water use for the District. Development of this data showed the District's highest water use customers, system limitations and losses.

The largest water demand categories were evaluated to determine where potential conservation could be implemented. Once the largest water use categories were identified, staff discussed water conservation goals and the potential methods to reach those goals. Initial reduction percentages were established and a list of measures and programs were compiled for consideration. These goals were based on what had the

largest impact and the highest probability of success, considering all factors such as costs, control and public acceptance.

The District Board and Staff chose to address both customer and District water efficiency goals. The Residential customer class has the highest variability in annual water use and is the largest customer class. The water demand by this group has the largest impact on treatment plant and transmission capacity needs. By targeting this customer class and reducing water use variability, the District will be able to delay some of its projected capital projects. Likewise, system losses incurred by the District have a direct impact on the water supply necessary to meet demands. By operating the distribution system more efficiently, and reducing the amount of unused treated water, the District will be able to save both water and money for its customers.

CHAPTER 6 – EVALUATION OF EFFICIENCY MEASURES AND PROGRAMS

6.1 Water Efficiency Measures and Programs

District Staff reviewed numerous resources in an effort to develop a list of water efficiency measures and programs that could be considered for implementation in order to reach the efficiency goals established in the Water Efficiency Management Plan. After attending several water conservation workshops, reviewing several templates, CWCB guidance documents, and approved plans, Staff determined that the Colorado WaterWise document, "Guidebook of Best Practices for Municipal Water Conservation in Colorado", provided the best and most current review of water efficiency measures and programs to consider.

Chapter 1 of the "Guidebook of Best Practices" has the following summary of how to use the Guidebook:

The Guidebook of Best Practices for Municipal Water Conservation in Colorado is intended to be a reference manual for water providers and others developing or seeking to improve their water conservation program. It is envisioned that the Best Practices Guidebook will be used by water professionals throughout the state including water providers, local governments, consultants, building managers, design engineers, etc. to help select the most sensible and cost effective water conservation measures and programs to implement. The Best Practices Guidebook emphasizes practicality, costs and benefits, water savings, implementation procedures, as well as evaluation methods. Utilities can use the Best Practices Guidebook to help select water conservation program options to include in their conservation plans to be submitted to the CWCB.

The "Guidebook of Best Practices" identifies 14 Best Practices for municipal water users. These multifaceted Best Practices are the foundation for the measures and programs incorporated in this Water Efficiency Management Plan. While reviewing the Best Practices presented, Staff confirmed that the District has been implementing some of the Best Practices for a number of years and has been evaluating additional programs for implementation. Staff also determined that the District is not capable of implementing many of the proposed strict regulatory controls. However, there are still areas that can be improved upon or expanded to further promote water conservation and efficiency.

6.2 Screening Criteria

The District relied on the Guidebook for an initial screening of the entire universe of measures, programs, and practices that exist and have been tested. Even the 226 page Guidebook only presented 14 Best Practices for initial consideration. Other practices, not able to be considered and evaluated in detail, were presented in the Guidebook's Appendix A.

The Guidebook incorporated the Best Practices into several categories for consideration including:

1. Water System and Utility Best Practices (BP 1 – 6)
2. Outdoor Landscape and Irrigation Best Practices (BP 7 – 10) and
3. Indoor Residential and Non-Residential Best Practices (BP 11 – 14)

The measures were also evaluated to determine if the CWCB minimum required water conservation plan elements were addressed. The CRS 37-60-126(4) required CWCB elements include:

1. Water-efficient fixtures and appliances, including toilets, showerheads, and faucets.
2. Low water use landscapes, drought resistant vegetation, removal of phreatophytes, and efficient irrigation.
3. Water-efficient industrial and commercial water use processes.
4. Water reuse systems.
5. Distribution system leak identification and repair.
6. Dissemination of information regarding water use efficiency measures, including by public education, customer water use audits, and water-saving demonstrations.
7. Water rate structures and billing systems designed to encourage water use efficiency in a fiscally responsible manner.
8. Regulatory measures designed to encourage water conservation.
9. Incentives to implement water conservation techniques, including rebates to customers.

The Guidebook was an invaluable tool to help evaluate and rank the initial list of Best Practices. The District thoroughly reviewed and considered each of the foundational, informational, and operational measures. The District also applied additional screening criteria based on Board and Staff input. Each Best Practice was further evaluated using the following criteria:

1. Statutory requirement - Several water conservation measures noted as Best Practices in the Guidebook are programs that are already mandated by Colorado State statute or are now required to be implemented for this plan to be approved. While Colorado's Water Conservation Planning requirement (CRS 37-60-126) does mention several plan elements that are to be considered, not all of them are required to be implemented. The District identified in the screening which of the Best Practices are required to be implemented.

2. System Applicability – The District is a very unique water system. The nature of the service area, the historical layout of the infrastructure, the water resources currently used, and the makeup of the customers all provide obstacles to the direct implementation of some of the recommended Best Practices.

3. Board Direction - The District Board of Directors provided input and guidance for the implementation of this Water Efficiency Management Plan. In general, direction was

given to meet statutory conservation requirements while continuing to meet the needs of our customers by increasing District operational efficiencies, continuing public outreach, and implementing some new targeted conservation programs.

4. Financial Impacts – The District Board and Staff are concerned about the financial impacts of implementing an overly restrictive efficiency plan. Providing quality water to customers at a fair and reasonable price is the District's reason for existence. All of the measures, or Best Practices considered are evaluated not only by the cost of implementation but also for the potential for lost revenue. Any decrease in water usage correlates directly to a reduction in revenue and will likely lead to increased rates.

6.3 List of Measures and Programs Considered

Each of the 14 Best Practices was screened with the above criteria in mind and the results are presented below in Table 6.1.

TABLE 6.1 – COLORADO WATERWISE BEST PRACTICES

			Reasons for Inclusion or Exclusion					
	Best Practices Considered	Existing	Statutory requirement	System applicability	Board direction	Financial impacts	Further Evaluation	Comments
1	Metering	Yes	Yes				Yes	100 % metered connections, CRS 37-97-103.
	Conservation-oriented rates	Yes	Yes				Yes	Increasing block rate, CRS 37-60-126 (4) (a)(VII).
	Tap fees	Yes	No				Yes	Based on water demand and meter size.
	Customer categorization within billing system	Yes	No				Yes	Not NAICS compliant, some potential billing system limitations.
2	Integrated resources planning	No	Yes				Yes	Required for this plan, CRS 37-60-126.
	Goal setting	No	Yes				Yes	Required for this plan, establish both supply and demand side efficiency goals.
	Demand monitoring	Yes	Yes				Yes	Currently monitor demand, will use to track efficiency gains from implementing this plan.
3	System water loss control	Yes	Yes		Include		Yes	Currently monitor water balance, and repair leaks, CRS 37-60-126 (4) (a)(V).
4	Conservation coordinator	Yes	No	Exclude		Exclude	No	Currently a shared staff responsibility with a designated contact point, small system high cost.
5	Water waste ordinance	Yes	No			Exclude	No	Currently recommended watering times, Water Shortage Contingency Plan covers forced restrictions. Best handled by local building Codes, City and/or County implementation.
6	Public information and education	Yes	Yes		Include		Yes	CWCB water conservation literature grant, bill stuffers, newsletters, website, seminars.
7	Landscape water budgets	No	No	Exclude		Exclude	No	Use the increasing block rate to limit use, large lots and agricultural uses provide obstacles for budgeting.
8	Rules and regulations for landscape design and installation and certification of landscape professionals	No	Yes		Exclude	Exclude	No	Best handled by local building Codes, City and/or County implementation. No staff or funds to regulate the professionals and /or designs.
9	Water efficient design, installation, and maintenance practices for new and existing Landscapes	No	Yes		Exclude	Exclude	No	Best handled by local building Codes, City and/or County implementation. No staff or funds to regulate the professionals and /or designs.
10	Irrigation efficiency evaluations	No	No			Include	Yes	May include links to audit tools in public information, no funds to implement this program.
11	Rules for new construction, residential and non residential	Yes	No		Exclude		No	Best handled by local building Codes, City and/or County implementation.
12	High-efficiency fixture and appliance replacement for residential and non residential sector	No	No		Include		Yes	Plan to offer limited, targeted rebates to replace fixtures in the future, as budgets allow.
13	Residential water surveys and evaluations, targeted at high demand customers	No	No			Include	Yes	May include links to audit tools in public information, no funds to implement this program.
14	Specialized nonresidential surveys, audits, and equipment efficiency Improvements	No	No			Include	Yes	May include links to audit tools in public information. No staff or funds to implement this program or regulate the professionals and /or designs.

6.4 Initial Screening of Efficiency Measures and Programs

Based upon the initial screening criteria the following Best Practices were evaluated further for consideration and implementation the District:

Guidebook Best Practice	Best Practice Description
1	Metering
1	Conservation-oriented equitable rates
1	Tap fees
1	Customer categorization within billing system
2	Integrated resources planning
2	Goal setting
2	Demand monitoring
3	System water loss control
6	Public information and education
12	High-efficiency fixture and appliance replacement for residential and non residential sectors
13	Targeted high demand water efficiency surveys and evaluations for residential and non residential sectors

CHAPTER 7 – SELECTION AND IMPLEMENTATION OF EFFICIENCY MEASURES AND PROGRAMS

Each of the Best Practices selected for implementation at the District are expected to either increase District water conveyance efficiency or decrease customer water demand. A description of each of these Best Practices is presented below with some insight in to how each of the measures and programs will work as a part of the overall District Water Efficiency Management Plan. A summary of the selected water efficiency measures is also included in Table 7.1.

7.1 Metering Programs

7.1.1 Customer Meters

The District currently has a customer meter testing and replacement program. The District's customer meter program includes bench testing representative samples of meters to verify their accuracy. Recent test results indicated that the customer meters were well within manufacturer's specification, regardless of age. Continuing to provide timely and reliable information about water usage is essential for the District and its customers to make good decisions about their water use. This testing and replacement program is ongoing.

7.1.2 Master Meters and System Meter Upgrades

The District has 37 master meters and intermediate system metering points where water flow is now measured or could be measured and compared to the cumulative water usage downstream. Installing and maintaining these meters at strategic points in the distribution system will provide a comparison of water produced verses water sold. By isolating specific geographic areas and monitoring measured water in and water out the District will be better equipped to decrease system losses through systematic leak detection. This is an ongoing program that will require additional future budget funding.

7.1.3 Additional SCADA / Telemetry Sites

The District currently has over 40 radio telemetry sites spread out over the nearly 300 square mile service area. The telemetry sites have been installed in each new or upgraded master meter vault, pressure regulating valve vault or pump station over the past 18 years. The District has several additional sites that do not have telemetry. Installation of telemetry at these additional sites will provide more timely information and notification of distribution system problems or failures. This information will lead to better service for customers and more responsive leak identification and repair. The District has budgeted in the past for the upgrade of at least 1 additional telemetry site per year with a goal of achieving full implementation of the SCADA system. The District's current capital budget does not provide funds for this program; and any additional installation of telemetry is subject to budget constraints. As development occurs and tap sales recover this budget item will be reinstated.

7.2 Demand Monitoring

The Colorado WaterWise "Guide Book of Best Practices" said it best, "Demand monitoring provides regular feedback on consumption patterns in a utility. Tracking demands over time is essential for determining if a conservation program is achieving the desired results. Without demand monitoring there is no way to determine if a conservation goal has been achieved." The District will review changes to the demand patterns annually in order to monitor the effectiveness of the water efficiency programs and determine if goals need to be revised.

7.3 System Water Loss Control

The District currently strives to identify and repair leaks as soon as they are found. In 2009 the District began a program to more closely evaluate real losses and apparent losses in the transmission and distribution system. District personnel from operations, engineering, management and customer service have worked on water accounting issues that may contribute to undocumented or apparent losses. The District is also evaluating the accuracy of existing master meters and system meters to determine if upgrades or replacements should be made in order to better track system efficiency. Operational guidelines are also being considered for the repair/replacement of aging customer service lines. The District currently has a high occurrence of problems with service lines made from Polybutylene. Work is ongoing to determine how best to address these problems and how to make repairs as needed.

7.4 Conservation Oriented Equitable Rates

The District has been utilizing an inclining block rate structure with a fixed monthly base rate since early 2002. Prior to 2002 the District relied on a fixed quarterly base rate and a decreasing block rate structure with an additional surcharge for the highest water users. District customers are primarily residential with variable demand. But a portion of the water used is by non-residential customers who have fairly high and fairly constant demands. The District has worked to set commodity rates at levels to encourage the residential customers to be more efficient summer irrigators without penalizing the non-residential customers.

LTWD will continue to evaluate the base fee, usage tiers and commodity rates as a part of the annual budgeting process. In 2012 the District will begin working on a Cost of Service water rate analysis to ensure that the established rates are sufficient to meet long term financial planning goals. The District will work to verify that water rates are designed for cost stabilization, building reserve funds, promoting conservation, and providing equity between customer classes for funding new construction and replacement programs. Upon approval of this Water Efficiency Management Plan by the CWCB the District will seek CWCB grant funds, if available, to help offset the cost of the rate analysis.

7.5 Tap Connection Fees

The District charges a tap connection fee that is based on a volume of deliverable water and the size of the connection and metering equipment. Water rates are based on the tap size and corresponding volume of water delivered. The fees charged for a tap are directly related to the use of system infrastructure and the raw water resources needed to meet the water demand. The District offers several different size taps from the standard 5/8"X 3/4" residential size tap up to a 4" non-residential tap. The District works with new customers to help guide them to the correct size tap in order to suit their water needs.

In 2009 the District developed and began offering a Conservation Water Tap to provide a water service alternative for customers who are committed to efficient outdoor water use. Water dedication and water rates for the Conservation Water Tap reflect normal inside water use but encourage significantly lower outside use as compared to the standard residential customer. Customers who choose this option are rewarded with a significant upfront cost savings on the tap connection fee. This water service option also fits well with those developments that incorporate non-potable secondary water systems for outside water demands. The District will continue tracking water use by Conservation Water Tap customers to evaluate the cost and resource savings this tap option provides.

7.6 Billing System Customer Categorization

The District is in the final stage of selecting a new customer billing and database program that will be able to provide additional functionality and better information for tracking customer classifications and water usage. The District does currently have some customer categorization functions in place to help set different commodity rate tiers for residential and non-residential customers. Better tracking information will also provide the District with a way to monitor progress toward meeting the water efficiency goals outlined in this plan. The District has budget funds available in 2012 to acquire and begin the implementation of a new customer service/ billing system.

7.7 Integrated Resource Planning (IRP)

The District has historically worked through a cycle of comprehensive planning looking at both supply and demand. Some of the evaluations are part of the annual budget and rate setting process and some of the reviews are included in the cyclical master planning for District water resources, water shortage contingency, vulnerability assessment, treatment plants, transmission lines and distribution system. This Water Efficiency Management Plan will provide a base line for evaluation of the District customer water demand and system losses to be used with the corresponding planning tools.

The District does and will continue to review system demands and losses annually in order to evaluate progress toward the water efficiency goals. The results of the annual

reviews will determine how frequently the water efficiency plan will need to be updated. A comprehensive update of the Water Efficiency Management Plan is scheduled for 2018.

7.8 Goal Setting

Goal setting is a part of the Integrated Resource Planning process. The District has established goals for the Water Efficiency Management Plan that are realistic, achievable, and financially sustainable. The goal to reduce system losses down to 10% (or less) over the next 7 years is a 25% reduction in supply side losses. Residential customers will also be encouraged to reduce their water demand by 5% over the next 7 years, measured by a reduction in the Gallons Per Capita per Day (GPCD) from 180 GPCD to 171 GPCD. Non-Residential customers will also be encouraged to reduce their water demand by 1% over the same period. The District will evaluate its progress and adjust goals and/or programs to better fit the system as needed.

7.9 Public Information and Education

The District has several existing avenues for communicating with customers and will continue to deliver a strong message on water conservation. Avenues such as updates on the printed water bills, traditional bill stuffers, newsletters, as well as the District website (www.ltwd.org) will continue to be used to let customers know about water efficiency opportunities and programs. The District has been able to partner with Northern Water by advertising for the annual summertime landscape and water efficiency seminars that are offered at Northern Water's Berthoud campus. The District will continue to promote water efficiency as a part of its ongoing communication with customers.

7.10 High Efficiency Fixture and Appliance Replacement

The District has considered offering a rebate program for the replacement of high flow toilets with more efficient low flow toilets and a budget line item has been included in past years. Unfortunately, recent economic conditions forced the District to make cuts to several programs and departments including the toilet exchange program. As economic conditions continue to stabilize and improve the District will be able to follow through with the residential toilet replacement program.

The District's toilet replacement program has been designed to target customers with the best likelihood of having high volume toilets. Rebate offers will be directed at customers whose services were installed prior to 1994, when low flow fixtures started to be installed. The District plan is to budget a fixed amount per year and offer rebates as long as funds are available. In order successfully implement and sustain this fixture replacement program, the District will seek CWCB grant funds, if available, to help offset the associated costs and to accelerate the program penetration.

In addition to actual savings generated through the replacement of high volume fixtures, the replacement program will also facilitate greater public awareness of the District's water efficiency commitment. For all new construction, the District will rely upon land use and building inspection departments of the Counties and Towns served to continue to require appropriate basic water efficiency measures.

7.11 Targeted Water Efficiency Surveys and Evaluations

The Best Practices attempt to incorporate elements of the minimum required statutory measures required by the CWCB. After a thorough screening of the Best Practices, the District determined that it must also address the following two statutory elements: 1). Low water use landscapes, drought resistant vegetation, removal of phreatophytes, and efficient irrigation; and 2). water-efficient industrial and commercial water use processes. The District believes that it can and will incorporate these statutory measures through a number of direct and indirect methods.

The District provides water service to properties within the planning areas of three counties and multiple municipalities who already make decisions regarding these standards and who enforce them through the local political agencies where land use decisions are made and ordinances are enacted. In addition, these agencies have the staff and code enforcement personnel to monitor and enforce these types of standards.

The District promotes the Conservation Gardens and Landscape Seminars made available through the nearby NCWCD. The District also encourages efficient irrigation practices through progressive tiered water rates, tap fees and products including the Conservation Water Tap, and water dedication credits offered for dual use water systems. Dual systems are designed to reduce treated water demands and sustain efficient non-potable irrigation practices. The District is currently working with a developer in Weld County on a 5,000+ residence community to incorporate all of the above items in an effort to significantly impact outdoor water use practices.

The District will use this planning period to evaluate Non-Residential water use practices by incorporating a new billing system that will allow the District to better classify and separate different commercial accounts in order to establish a baseline for future water efficiency goals. The District will also perform a Cost of Service investigation to ensure water is priced to encourage efficient use by Residential and Non-Residential water users.

In addition to the actions listed above, the District will also activate a water use survey and evaluation (audit) program that will target the District's highest water users in both the Residential and Non-Residential customer categories. This water use audit program will be directed at the District's highest water use customers in order to help them make efficiency improvements in their water practices. For Residential customers this audit program will primarily address outdoor water demands through landscape water efficiency improvements. For Non-Residential customers this audit program will address the unique aspects of each of the highest user's water practices specifically

related to their business (indoor, outdoor, manufacturing and process use). In order to successfully implement and sustain this water audit program, the District will seek CWCB grant funds, if available, to help offset the associated program costs and to accelerate the program penetration.

The District will continue to utilize existing and new programs and measures to increase its water efficiency with a goal of reducing system losses by 25%, residential demand by 5% and non-residential demand by 1% over the next seven years. The quantifiable goal for this water efficiency programs is to reduce the total projected water supply requirements by more than 480 AFT of water annually. The selected programs and measures for implementation are based on guidance from the Colorado WaterWise "Guidebook of Best Practices". The District relied upon the Guidebook for the initial high level elimination of programs that might not be appropriate to consider. The District further evaluated the 14 best practices in "Guidebook of Best Practices" to determine which of the programs made sense for this water system and could be supported politically and financially in the region. All of the programs in Table 7.1 will be planned for implementation beginning in 2012 as resources allow.

TABLE 7.1 – DISTRICT EFFICIENCY MEASURES AND PRACTICES

Best Practice for Implementation	Existing/New Program	Best Practices Guidebook Expected Savings	Efficiency Goal	Comments
Metering and Demand Monitoring				
Customer meter maintenance / replacement program	Existing/ Ongoing	10% to 40% range with 15% being a recent estimate of the expected reduction in demand.	Reduce residential customer demand by 5% over a seven year period.	Required by Statute, must be maintained for accurate billing and efficiency evaluation.
Master meter/ distribution system meter maintenance / replacements program	New 2012	Not addressed directly.	Reduce system losses by 25% over a seven year period.	Maintaining system meters allows the District to effectively monitor usage patterns and identify leaks.
SCADA/telemetry installation program	New 2012	Not addressed directly.	Reduce system losses by 25% over a seven year period.	Additional monitoring points will provide opportunities to monitor pressure, flow and usage throughout the system.
System Water Loss Control				
Evaluation of system losses with intermediate metering	New 2012	Not addressed directly.	Reduce system losses by 25% over a seven year period.	New program to geographically compare master and system meters with customer meters to identify areas with the highest losses.
Operational SOP's for problematic service line failure	New 2012	Not addressed directly.	Reduce system losses by 25% over a seven year period.	Procedures to address failure problems identified with certain types of service lines.
Conservation Oriented Equitable Rates				
Increasing block rate evaluation program	Existing/ Ongoing	10% to 30% estimate of the expected reduction in demand.	Reduce residential customer demand by 5% over a seven year period.	Evaluate and adjust the increasing block rate structure as necessary to encourage efficient usage by customers.
Tap Connection Fees				
Matching customer demand with the correct tap size	Existing/ Ongoing	Correct meter sizing can result in a 30% to 70% reduction in usage.	Reduce residential customer demand by 5% over a seven year period.	Offer a range of tap sizes with corresponding tap fees to encourage customers to purchase the correct tap for anticipated water usage.
Monitoring use and impact of the conservation water tap	New 2012	Not addressed directly.	Reduce residential customer demand by 5% over a seven year period.	Offer a conservation product to encourage customers to purchase the correct tap for anticipated water usage.
Billing System Customer Categorization				
New billing system customer categorization and tracking	New 2012	"does not save water by itself, but enables targeting of water conservation initiatives at the customers that have the greatest potential to save"	Reduce residential customer demand by 5% over a seven year period.	Acquire a new billing system that provides tools to evaluate customers usage patters based upon multiple classifications.
Integrated Resource Planning (IRP)				
Annual review of Water Efficiency Management Plan and incorporation into other planning tools	New 2012	The periodic review of the water supply and demand management options will help select cost effective solutions for water efficiency programs.	Reduce residential customer demand by 5% over a seven year period.	Conduct an annual review of District water supply and demand and make adjustments related to the goals of this plan.
Establishing water efficiency goals	New 2012	Part of the integrated resource planning process and provides the incentive to develop and implement programs.	Reduce residential customer demand by 5% over a seven year period.	This Water Efficiency Management Plan establishes specific and measurable goals to gauge the effectiveness of conservation efforts on an annual basis.
Demand monitoring	Existing/ Ongoing	"Without demand monitoring there is no way to determine if a conservation goal has been achieved".	Reduce residential customer demand by 5% over a seven year period.	Improvements in system metering and billing system over the next few years will enable better monitoring of customer usage.
Public Information and Education				
General public information disbursement	Existing/ Ongoing	" Don't determine the success of a water public outreach campaign based exclusively on measured changes in water use"	Reduce residential customer demand by 5% over a seven year period.	Continue to provide access to water efficiency information through the website, seminars and literature.
Targeted informational campaigns	Existing/ Ongoing	" Don't determine the success of a water public outreach campaign based exclusively on measured changes in water use"	Reduce residential customer demand by 5% over a seven year period.	Use monthly bills and inserts to communicate with customers.
Remote meter reading equipment	New 2012	" Don't determine the success of a water public outreach campaign based exclusively on measured changes in water use"	Reduce residential customer demand by 5% over a seven year period.	Make remote meter reading equipment available to customers for personal water use evaluation.
High Efficiency Fixture and Appliance Replacement				
Targeted rebates for high efficiency toilet retrofits	New 2012	"Replacing a 3.5 gpf toilet with a Water Sense labeled toilet can save 40,000 gal /household annually" " full retrofit of toilets… been shown to reduce indoor demand by approximately 30% to between 35 and 40 gpcd.	Reduce residential customer demand by 5% over a seven year period.	Plan to offer limited, targeted (pre 1994 construction) rebates to replace fixtures as revenue and budgets allow.
Targeted Water Efficiency Surveys and Evaluations				
Targeted audits for high use customers	New 2012	Eliminating inefficient water uses should be able to reduce annual consumption by 10% - 20% after implementing the recommendations of a carefully conducted site audit.	Reduce residential and non-residential demand by over a seven year period.	Plan to offer targeted water audits for residential and non-residential high water users (outdoor and process) as budgets allow.

CHAPTER 8 – FORECAST MODIFICATION AND RESOURCE INTEGRATION

Through the implementation of water efficiency programs, the District has benefited from a 20% reduction in residential water usage of 215,774 gallons per tap per year in 1996 to a current trend of 171,000 gallons per tap. Including all other industrial, commercial and institutional services, the District has realized a 7% reduction in water usage by all District customers since 1996.

8.1 Modified Demand Forecast

The District estimates that through the implementation of this program, an additional reduction in annual system water demand of 7% will be realized within the planning period. The projected water use, with the efficiency measures, is based on a savings of 5% for residential customers, 1% for non-residential customers and savings of 25% for unaccounted water loss. The effects of implementing the water conservation measures will last well beyond the planning horizon. Table 8.1 includes District water demand with and without water efficiency measures during the planning period.

TABLE 8.1 – DISTRICT WATER DEMAND COMPARISON

	2010	2011	2012	2013	2014	2015	2016	2017
Without Conservation – AFT								
Projected Customer Demand	5,506	5,578	5,651	5,724	5,798	5,874	5,991	6,111
Projected System Demand	6,355	6,437	6,521	6,606	6,692	6,779	6,914	7,053
With Conservation – AFT								
Projected Customer Demand	5,506	5,559	5,612	5,665	5,718	5,772	5,839	5,908
Projected System Demand	6,355	6,389	6,413	6,437	6,461	6,485	6,524	6,564

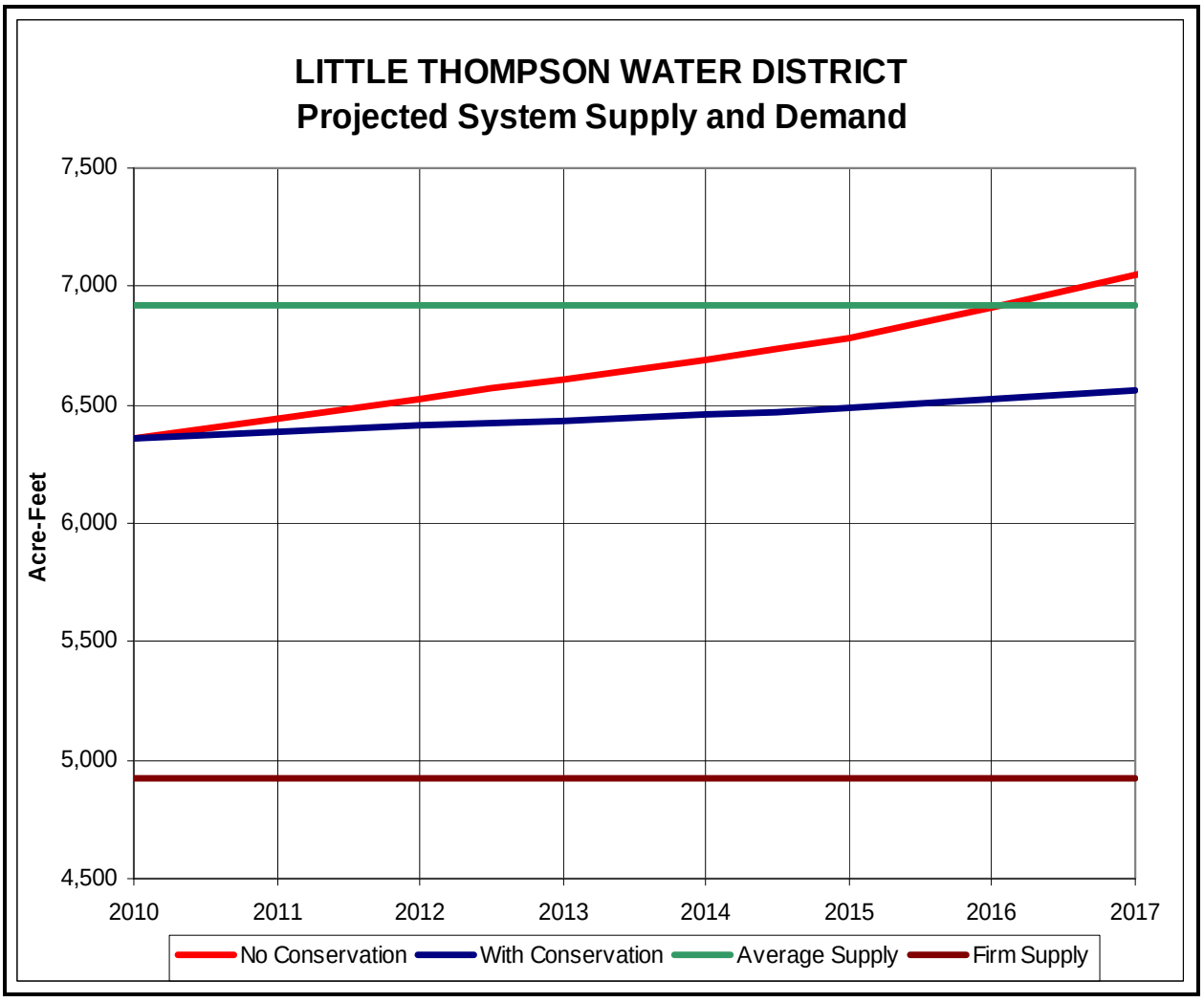
8.2 Modified Supply Forecast and Revenue Effects

Due to cooperative efforts for regional joint water treatment plant and raw water storage projects, lowering the average, peak and forecasted demand through water efficiency measures will not change the schedule of these projects. It will, however, extend the life of the District's existing water supplies and hopefully provide the District with some flexibility in the future depending on the actual growth and demand patterns.

Figure 8.1 depicts the District available supply verses projected demand. The District's current average (70% quota) CBT water yield is 6,918 AFT and the firm (50% quota) CBT water yield is 4,923 AFT. By 2018, if no water efficiency efforts are made, an

additional 4,260 CBT units would be needed under firm yield conditions with a projected demand of 7,053 AFT. If the Water Efficiency Management Plan is fully implemented, the number of CBT units required under firm yield conditions would be reduced to 3,282 for a projected demand of 6,564 AFT. That would reduce the 2018 CBT needs by 978 units. At today's price of approximately $7,500 per CBT unit, that equates to a savings of $7.3 million for water acquisition.

FIGURE 8.1 – DISTRICT SUPPLY AND DEMAND



Additional financial impacts include lost revenue due to reduced water sales and saved revenue due to reduced losses. The District base water rate is currently $2.20 per 1,000 gallons. Applying this base rate to the reduction in projected residential water use (220 AFT per year), the District may experience a loss in water revenue in the range of $158,000 per year. This basic calculation does not account for an increase in rates over the period of this plan. It also does not account for the fact that much of this water reduction will likely occur in the higher water rate tiers.

The District cost for water treatment is currently $0.32 per 1,000 gallons. Considering the projected reduction in losses by 2018 (260 AFT), the District may be able to save over $27,000 per year. This calculation also does not account for increasing treatment costs over the planning period.

CHAPTER 9 – PLAN OF IMPLEMENTATION AND MONITORING

9.1 Implementation Schedule

All of the proposed water conservation measures and programs will require Staff resources for planning and coordination before implementation. Water savings resulting from implementation of this plan will occur gradually as the District has the resources to implement each selected measure and program and the water users respond to that implementation. Details for implementation are included in Chapter 7.

9.2 Public Participation

One of the CWCB requirements for a Water Conservation Plan is to publish a draft plan, give public notice of the plan, make the plan publicly available, and solicit comments from the public for not less than a 60-day period.

Because the District has had a conservation program in place since 1996, the public has become familiar with the conservation concept and activities. The Districts public education program has contributed to this level of awareness. For this water planning process, the public was notified of the 60-day comment period from July 1, 2011 to August 31, 2011 and how to submit comments. Notifications were made in public places and in customer water bills. The plan was made available on the District's website and in its office for review. Written comments and responses to those comments are included in Appendix B.

9.3 Monitoring and Evaluation

Monitoring the success of this Water Conservation Plan includes measuring water use as well as money spent on the selected conservation measures and programs.

Looking at the water use per tap, as shown in Chapter 3, is one way to monitor water use per customer category. District population can be tracked according to tap equivalents and published people per household values. The GPCD can then be tracked from year to year to monitor progress. Per tap or tap equivalent usage can be calculated for each of the categories. Participants in the rebate and audit programs can be recorded and individual accounts tracked for specific water reductions.

Expenditures for conservation will be documented by District staff and reported to the Board on a regular basis. This will be valuable information in evaluating the benefit-cost ratio and to validate the success of implementing the selected conservation measures and programs. Since the programs will be implemented in phases, there will be time to evaluate and establish the appropriate method to monitor success of each program and measure. Table 9.1 identifies the tracking methods for each efficiency measure.

TABLE 9.1 – DISTRICT EFFICIENCY MEASURES TRACKING MATRIX

Best Practice for Implementation	Number of Rebates	Individual Customer Water use	Customer Class Water Use	Per Capita Water Use	Unaccounted for Water	Peak & Annual Treated & Total Water Demand
	(A)	(B)	(C)	(D)	(E)	(F)
Metering and Demand Monitoring						
Customer meter maintenance / replacement program		X		X	X	X
Master meter/ distribution system meter maintenance / replacements program					X	X
SCADA/telemetry installation program					X	X
System Water Loss Control						
Evaluation of system losses with intermediate metering					X	X
Operational SOP's for problematic service line failure					X	X
Conservation Oriented Equitable Rates						
Increasing block rate evaluation program		X	X	X		X
Tap Connection Fees						
Matching customer demand with the correct tap size		X	X	X		X
Monitoring use and impact of the conservation water tap		X	X	X		X
Billing System Customer Categorization						
New billing system customer categorization and tracking		X	X	X	X	X
Public Information and Education						
General public information disbursement						X
Targeted informational campaigns			X			X
Remote meter reading equipment		X				X
High Efficiency Fixture and Appliance Replacement						
Targeted rebates for high efficiency toilet retrofits	X	X	X	X		X
Targeted Water Efficiency Surveys and Evaluations						
Targeted audits for high use customers	X	X	X	X		X

Notes:

(A) The number of rebates and/or giveaways will be tracked for those installations that have been verified.
(B) Water use prior and post installation will be tracked to determine if savings have occurred.
(C) These measures affect specific customer classes that can be tracked to determine savings.
(D) A reduction in the Gallons per Capita Water Use will show an overall savings.
(E) These measures track uses that are not billed but are supply side related.
(F) Reductions in peak and annual water use will show an overall savings.

9.4 Plan Updates and Revisions

The required schedule for updating the Water Conservation Plan is seven years. The progress towards achieving the water savings goals will be monitored on an annual basis. The District will update this plan prior to seven years if implementation and actual water savings deviate too much. This deviation may be caused by several factors including higher than expected growth, less than anticipated participation or the inability to implement the plan due to lack of funding.

9.5 Plan Adoption and Approval

After the public comment period, the comments will be incorporated into the planning document as well as any additional revisions. The District Board will adopt the Plan and Staff will submit it to the CWCB. The CWCB will provide written notification of approval, conditional approval or disapproval within 90 days of submittal. Conditions for conditional approval or disapproval will be addressed if necessary.

APPENDIX A – DISTRICT BOARD PLAN ADOPTION

Little Thompson Water District
835 East Highway 56
Berthoud, Colorado 80513

RESOLUTION 2012 – 3

A RESOLUTION FOR THE ADOPTION
OF A WATER EFFICIENCY MANAGEMENT PLAN
FOR LITTLE THOMPSON WATER DISTRICT

WHEREAS,

the State of Colorado has declared that in view of the increasing competition and demand for water in the State of Colorado, it is the policy of the State to enhance the efficiency with which water is used to meet end uses, with the objective of making water available for all beneficial uses in Colorado; and

WHEREAS,

the State of Colorado enacted House Bill 91-1154 known as the "Water Conservation Act of 1991" and amended the bill through the "Water Conservation Act of 2004", §37-60-126 C.R.S, requiring publicly-owned entities with a legal obligation to supply, distribute or otherwise provide water at retail to domestic, commercial, industrial or public facility customers, and which have a total demand for such customers of two thousand acre-feet of more to develop, adopt, make publicly available and implement a water use efficiency plan; and

WHEREAS,

the Board of Directors of the Little Thompson Water District believes that it is in the best interest of the District and its customers to foster the conservation of the District's water by promotion and implementation of sound measures to enhance water use efficiency in order to serve all the water needs of the District, to assure the availability of adequate supplies for future uses and to assure that necessary water services are provided at a reasonable cost;

THEREFORE,

the Board of Directors of the Little Thompson Water District, Larimer, Weld, and Boulder counties, Colorado, formally adopts the Little Thompson Water District's "Water Efficiency Management Plan":

IN TESTIMONY WHEREOF,

the Board of Directors of the Little Thompson Water District, acting by and through its water activity enterprise, has caused this Water Conservation Plan to be signed by the facsimile signature of the President of the District, sealed with a facsimile of the seal of the District, and attested by the facsimile signature of the Secretary thereof, all as of the 17th day of May, 2012.

LITTLE THOMPSON WATER DISTRICT
LARIMER, WELD, AND BOULDER COUNTIES
STATE OF COLORADO

By: _____
President

ATTESTED:

By: _____
Secretary

[SEAL]

APPENDIX B – PUBLIC COMMENTS AND RESPONSE

For this water planning process, the public was notified of the 60-day comment period from July 1, 2011 to August 31, 2011 and how to submit comments. Notifications were made in public places and in customer water bills. The plan was made available on the District's website and in its office for review.

No written or verbal comments were received during the public comment period. However, the District will continue to make the Water Efficiency Management Plan available for public review and input and will incorporate comments into the Plan and the District's practices when appropriate.

The following notice was posted for the public input period:

"The Little Thompson Water District is pleased to announce the availability of the NEW Water Efficiency Management Plan for review and comment by our customers. This Water Efficiency Management Plan is currently available in hardcopy at the District office and online at www.ltwd.org. The Water Efficiency Management Plan will be submitted to the Colorado Water Conservation Board for approval upon completion of the public comment period and incorporation of public input. Your comments, concerns and questions can be directed to the District Water Resource Engineer, Erik Anglund, at 970-532-2096 x 110 or eanglund@ltwd.org. The public comment period will begin on July 1, 2011 and close on August 31, 2011."

The following notice was placed on customer water bills late June through August 2011:

"The District's NEW Water Efficiency Management Plan has been prepared for the State of Colorado as required. Public comments are welcome through the end of August. Review the plan at www.ltwd.org"