4.8 Water

4.8.1 Infrastructure/Personnel Needs or Deficiencies

Performance Standard

The City recently adopted City Standards and Specifications for water facilities. The City Standard Details and Specifications were adopted by Holtville City Council Resolution No. 05-22 on June 13, 2005. The City of Holtville Water Master Plan, prepared by Kennedy/Jenks Consultants (Appendix "C" – 1998) was also used as a basis for the recommendations of the Water Section of this document. Performance standards and design criteria described below are based on recommendations set forth in the City of Holtville Water Master Plan.

The design criteria for the Water Master Plan consists of specific guidelines established by State regulatory agencies, professional standards and the City Standard Details and Specifications for the design and operation of an efficient and reliable water system. Such criteria conform with the set of guidelines recognized as appropriate for small community water systems similar to that of Holtville. The intent of the recommended design criteria is to design and operate water systems with sufficient capacity to satisfy both optimum and a worst case@ water demand and hydraulic conditions.

Transmission Mains

In accordance with the Minimum Standards for Design and Construction of Water System Facilities issued by the California State Department of Health, the California Section of American Water Works Association, and the Public Utilities Commission of the State of California, specific system pressures should be maintained under normal and peak demand conditions as follows:

- The normal operating pressure at service connections within a pressure zone shall be maintained between 40 psi and 75 psi.
- During periods of maximum hourly demand, the pressure at the time of peak seasonal loads may not be less than 40 psi.
- During periods of minimum hourly demand the pressure may not exceed 80 psi.
- In accordance with the City Fire Department requirements, the system pressure may not be less than 20 psi during fire flows.
- The design criteria for optimal pipe sizing are as follows:
  - Capacity to meet the greater of peak hour demand or maximum day demand plus fire flow.
  - Maximum velocity is 10 fps.
  - Head loss during average daily demand is three feet per 1,000 feet.

Booster Pumping Stations

The City of Holtville Water Treatment Facility Booster Pump Station currently provides the flow and pressure for the City of Holtville Water Distribution System. Booster pumping stations can be utilized to maintain system pressure to meet the performance standards identified above.

Storage Facilities

Storage of water in the City is required for four basic purposes:

- Operational Storage
- Fire Storage
- Emergency Storage
- System Operation Considerations

Operational Storage: If supply facilities are properly sized to meet the critical water requirement conditions of annual average and maximum day production, then operational storage is required in the system pressure zone for regulating the fluctuations in hourly demand.

To ensure sufficient storage capacity to meet extreme water requirements, operational storage is determined by the fluctuation in hourly demand during the maximum day demand. On the basis of daily hydrographs of water consumption for Southern California communities, this requirement varies from 25 to 30 percent of the maximum day demand. For the City, an operational storage criteria of at least 25 percent of maximum day demand is used.

Fire Storage: Storage for firefighting purposes should be provided to meet fire flow demands. The amount of storage required for the City is established in accordance with the recommendations of the Fire Department and the State Insurance Service Office. The fire flow and duration requirements under these recommendations are based on either land use or population criteria. These requirements are estimated in accordance with future population projections and land use plans.

Emergency Storage: Emergency storage criteria are established according to three primary factors of consideration:

- Temporary Service Interruptions - emergency storage volume should be sufficient to supply the service area in times of planned or unplanned equipment outage, such as pump failure, power failure, pipeline breakage, etc.

- Disaster - emergency storage should be available to provide service during major disasters such as earthquakes, or other catastrophic events.

- Reliability of Supply Sources - the third basis for sizing of emergency storage is the reliability of the supply sources. Because the City water system is totally dependent upon imported water supply, emergency storage is an important component of the water system.

An emergency reserve of at least 25 percent of maximum day demand is used to meet the above stated emergency storage criteria.

Water Treatment Plant

Proposed improvements to the water treatment plant will be implemented when the average daily flow at the treatment plant exceeds 80 percent of the peak design flow of 3.15 MGD at the treatment plant. An upgraded treatment plant will be capable of treating up to 6,000,000 gallons per day.

Inventory of Existing Facilities and Personnel

The existing water system for Holtville is owned and operated by the City. Currently, the City provides water to its customers by a means of 1,482 service connections through one (1) pressure zone. The City operates one (1) water treatment plant to produce an average daily flow of 1.5 million gallons of potable water per day. The booster pump station conveys the treated water from the water plant to the pipeline distribution system. The booster pump station provides the necessary flow and pressure to the pipeline distribution system. The City's raw water supply comes from the Imperial Irrigation District (I.I.D.), which imports surface water from the Colorado River via the All-American Canal and associated facilities.

Transmission and Distribution System

Pipelines in the existing water system range in diameter from one inch to fourteen inches. Pipe materials include PVC, copper, AC and CIP pipe.

Transmission Lines: Transmission lines are identified as those pipelines that convey significant quantities of water to major areas of water consumption within a pressure zone. The City's transmission pipelines are generally 6-inches in diameter and larger. Transmission lines within the Holtville Water Distribution System include a 12-inch/14-inch/16-inch pipeline extending along Fourth Street from Olive Avenue to the alley between Walnut and Maple Avenues. A 12-inch transmission line extends along Pine Avenue from Fourth Street to Fifth Street. A 12-inch diameter transmission line extends from a point west of Olive Avenue along Fifth Street to Grape Avenue. A transmission line segment extends along Olive Avenue from Fourth Street to Eighth Street. A transmission pipeline extends along Seventh Street from a point west of Olive Avenue to Beale Avenue. A transmission line extends along Ninth Street from Melon Avenue to a point west of Towland Road.

Distribution Lines: Distribution lines are those pipelines that convey water from a transmission pipeline to customers. **Table 4.8-1** is an inventory of existing distribution pipes by diameter and pipe type.

Reservoirs

The City of Holtville maintains three (3) raw water storage ponds which accept flow from the Imperial Irrigation District canal network. The three (3) raw water storage ponds contain 11.3 million gallons. A raw water pump station is located at the downstream end of the three (3) reservoirs. The raw water pump station conveys the raw water to the water treatment plant through a 1,685 lineal foot, 16-inch diameter PVC forcemain.

Water Treatment Plant

The City of Holtville Water Treatment Facility is located along the southerly boundary of the City at 180 E. Fourth Street along the west side of Fern Avenue. The water treatment plant consists of two (2) Greenleaf filters, a clear water containment structure, clear water transfer pumps, a 1.5 million gallon clear water storage reservoir and a variable frequency drive booster pump station. Support systems for the water treatment plant include an in-line static chemical mixer, a chemical system for coagulation and disinfection of the water, a laboratory building, an electrical system with a back-up generator, a wash water recovery basin and sludge drying beds. The water treatment plant can produce 3 million gallons of treated water per day. The booster pump station of the water treatment plant transmits the treated water to the pipeline distribution system of the City of Holtville.

Table 4.8-1
Pipeline Inventory

Pipe Diameter	PVC	Steel	Copper	ACP	CIP	AIP	Plastic	Length (feet)
1 inch		Ψ						70
1.5 inch	Ψ							700
2 inch		Ψ						800
2 inch			Ψ					1,170
Subtotal 2 inch:								1,970
3 inch				Ψ				1,990
4 inch				Ψ				8,930
4 inch					Ψ			2,970
4 inch							Ψ	650
Subtotal 4 inch:								12,010
6 inch				Ψ				40,810
6 inch					Ψ			9,070
6 inch						Ψ		600
Subtotal 6 inch:								50,480
8 inch				Ψ				13,170
8 inch	Ψ							1,650
Subtotal 8 inch:								14,820
10 inch				Ψ				7,440
10 inch					Ψ			130
Subtotal 10 inch:								7,570
12 inch				Ψ				14,300
14 inch				Ψ				2,400
TOTAL ALL PIPE:								**106,850**

Note: Excludes the 16" water supply line to the treatment plant.

Personnel

The City maintains a staff of four full-time water works employees. These include a Water Works Supervisor, Maintenance Worker II (meters), and Water Treatment Plan Lead Operator III and Operator II.

Inventory of Approved Facilities/Personnel

The City has immediate plans for the construction of a 2.5 million gallon Water Storage Tank to be located on the City's existing water treatment plant site, adjacent to the existing clear water storage tank, and the construction of 37,040 lineal feet of distribution pipeline in the City's northern sphere of influence. The projects were identified in the Water Master Plan and additional recommended improvements from the Water Master Plan will be approved by the City as needed to accommodate future growth. No need for additional staff has been identified to meet existing service demands.

Year 2020 Demand for Facilities/Personnel

Buildout demand for water is expected to amount to approximately 1.3 million gpd for residential land uses and approximately .5 million gpd for non-residential uses, for a total of approximately 1.9 million gpd. This represents a net increase of 778,948 gpd. As buildout flows are based on the estimated 2020 population values, total projected water demand for the year 2020 of 1.9 million gallons per day is directly proportional to projected increases in population and commercial development. **Table 4.8-2** shows the Year 2020 water demand estimates.

The following discussion outlines existing and future system deficiencies and proposes system improvements to correct these deficiencies.

Transmission Main Capacities

Deficiencies: An 8-inch pipeline currently extends several thousand feet from the City of Holtville Water Distribution System to the Barbara Worth Country Club. The fire flow and residual pressures at the Barbara Worth Country Club are not adequate. The current booster pump station at the Holtville Water Treatment Plant is sufficient to meet the current and future demands of the City of Holtville. The current booster pump station at the City of Holtville Water Treatment Plant operates on a variable frequency drive system whereby the booster pumps speed up or slow down to maintain a set point downstream pressure.

Improvements: The water distribution system at the Barbara Worth Country Club is not capable of meeting a minimum fire flow and residual pressure. It is recommended that a 1 million gallon ground storage reservoir with a booster pump station be constructed within the area of the Barbara Worth Country Club. The reservoir would to fill with water during the low demand evening hours. The booster pump station would be designed to convey the stored water into the Barbara Worth Distribution System during day time hours when water consumption within the Country Club Area is high or during times of fire flow.
Improvements to overcome the City's existing pressure deficiencies are as follows:

- Increase the six-inch diameter pipe serving Holtville Union High School to eight-inch diameter pipe.
- Increase the four-inch diameter pipe serving Finley Elementary School to six-inch diameter pipe.
- Increase the six-inch diameter pipe serving the eastern end of Fifth Street to eight-inch diameter pipe.

Three eight-inch diameter PVC transmission mains are proposed to accommodate areas of future development. These new pipelines are shown on Plate 1 in Appendix C of the Water Master Plan. One transmission main should be located at the north side of the City and generally described as parallel to Eleventh Street and connected to the existing distribution system via connectors along Olive Avenue and Sequoia Street. The second pipeline should be located at the southeastern border of the City and extend outward towards Bonds Corner Road before heading eastward. The length of this pipeline will increase as development in the area warrants. The third pipeline heads due south and runs along Orchard Road.

Table 4.8-2
Year 2020 Water Demand

Land Use Designations	Sphere of Influence Acres	DU/ A	FAR	Building Sq. Ft. Per Acre	Ultimate DUs	Population SCAG (a)			Water		
						pph	Water Total	Sewer Total	Water Use (b) (gpcd)	Water Use (c) (Gal/Net Ac/Day)	Average Water Use (gpd)
Residential											
Agricultural	329	0.2	--	--	66	3.73	245	--	148	--	36,324
Rural Residential	276	1	--	--	276	3.73	1,029	1,029	148	--	152,363
Low Density Residential	322	2.2	--	--	708	3.73	2,642	2,642	148	--	391,065
Medium Density Residential	73	7.7	--	--	562	3.73	2,097	2,097	148	--	310,302
High Density Residential											
Subtotal	67	13.2	--	--	884	3.73	3,299	3,299	148	--	488,224
	1,067				2,497		9,313	9,067			1,378,278
				Sq. Ft. Per Acre							
Non-Residential											
Commercial	84	--	0.24	10,454	878,170				--	1,620	136,080
Industrial	245	--	0.22	9,583	2,347,88				--	1,485	363,825
Community Facilities (Schools)	67	--	0.2	8,712	4				--	368	24,656
Open Space/Recreation	78	--	0.05	2,178	583,704				--	368	28,704
Subtotal	474				169,884						553,265
					3,979,64						
					2						
TOTAL	1,541										1,931,543

Notes:
(a) SCAG Ultimate pph values are based on year 2010 population of 6,876 with 1,844 households, or 3.73 pph.
(b) City of Holtville Monthly Water Account Records (October 1997)
(c) Commercial water use is increased 20% and Industrial water use is increased 10% from Existing Land Use values.

Cast Iron Piping

Deficiencies: Much of the City's water supply piping is made of cast iron pipe (CIP) and was installed between the years of 1920 to 1950. CIP deteriorates over time, especially in the alkaline soils of Holtville, and several pipeline failures have occurred in previous years. Mineral deposits in the interior of the pipe effectively reduce pipe diameter as well.

Improvements: Given the risk of water outages and property damage caused by CIP failure, the City is beginning a program to replace all CIP with PVC pipe. Plate 1 in Appendix C shows the CIP to be replaced. Approximately 2,970 feet of 4 inch CIP pipe that located primarily along Ninth Street, at Holtville Union High School, and parallel to Maple Avenue has been replaced in recent years as well as nearly 9,070 feet of six-inch CIP pipe located primarily along Fifth Street and along the north/south and in the alley between Olive Avenue and Palm Avenue. Still requiring replacement is roughly 130 feet of 10-inch CIP that is located between Fern Avenue and Orange Avenue.

Aged Pipelines, Water Valves, and Fire Hydrants

Deficiencies: In addition to the need for the replacement of cast iron pipeline, the City has known valve and fire hydrant deficiencies.

Improvements: Based on the findings of the recent field investigation conducted for the City's Water Mater Plan as well as the need to provide for routine pipeline replacement activity, the City will budget for annual replacement of aged and defective infrastructure.

Booster Pumping Stations

Deficiencies: An 8-inch pipeline currently extends several thousand feet from the City of Holtville Water Distribution System to the Barbara Worth Country Club. The fire flow and residual pressures at the Barbara Worth Country Club are not adequate. The current booster pump station at the Holtville Water Treatment Plant is sufficient to meet the current and future demands of the City of Holtville. The current booster pump station at the City of Holtville Water Treatment Plant operates on a variable frequency drive system whereby the booster pumps speed up or slow down to maintain a set point downstream pressure.

Improvements: The water distribution system at the Barbara Worth Country Club is not capable of meeting a minimum fire flow and residual pressure. It is recommended that a 1 million gallon ground storage reservoir with a booster pump station be constructed within the area of the Barbara Worth Country Club. The reservoir would to fill with water during the low demand evening hours. The booster pump station would be designed to convey the stored water into the Barbara Worth Distribution System during day time hours when water consumption within the Country Club Area is high or during times of fire flow.

Storage Facilities

Deficiencies: The existing 11.3 million gallon raw water storage ponds are adequate at the present time. It may be necessary to increase the capacity of the raw water storage ponds as the population grows in the upcoming years and the raw water demand increases. The 1.5 million gallon clear water storage reservoir at the Holtville Water Treatment Plant is inadequate in terms of volume and system operation. Two (2) clear water reservoirs would allow for clear water storage redundancy. It would allow one reservoir to be removed from service, drained, inspected and maintained periodically. The existing 1.5 million gallon clear water reservoir is in need of maintenance and repair at this time. The fire flow at the Barbara Worth Country Club is currently viewed as deficient. Any significant residential, commercial or motel expansions at the Barbara Worth Country Club area will require the installation of a 1 million gallon ground storage reservoir and booster pump station to provide adequate water volume and pressure within the Barbara Worth Pump Station area for domestic and fire flow purposes.

Improvements: It is recommended that the two (2) earth-lined raw water storage reservoirs be lined with either a P.C.C. concrete or HDPE liner system. The most upstream of the raw water reservoirs was lined with concrete in the year 2002. The placement of an HDPE liner in the remaining two (2) raw water ponds will reduce the turbidity within the raw water entering the water treatment plant and increase the efficiency of the water treatment process.

It is recommended that an additional 2.5 million gallon clear storage reservoir be installed at the Holtville Water Treatment Plant. The 2.5 million gallon clear water reservoir will increase the fire and domestic storage volumes to adequate levels. The additional clear water storage reservoir will also provide redundancy to allow the reservoirs to be periodically maintained.
It is recommended that a 1 million gallon ground storage reservoir and booster pump station be constructed at the Barbara Worth Pump Station if substantial growth occurs within the Barbara Worth Country Club area.

Water Treatment Plant

Deficiencies: The City of Holtville Water Treatment Facility was constructed and placed in service in 1992. The water treatment plant facility is in fair to good condition. The following maintenance items are to be addressed within the near-term future:

- 1.5 MGD clear water storage reservoir is to be taken out of service and repaired.
- An emergency power transfer switch is to be installed for the raw water electrical distribution panel.

Improvements: The following improvements are recommended to provide a sufficient finish water storage and distribution pumping capacity in the short-term future. Improvements required to operate and maintain the existing water treatment facility for the near-term future are as follows:

- Install a 2,500,000-gallon ground storage reservoir.
- Install interconnecting piping between the new 2,500,000-gallon ground storage reservoir and the existing 1,500,000-gallon reservoir.

- After the new 2,500,000-gallon reservoir is constructed and placed in service, the 1,500,000-gallon reservoir is to be removed from service. The 1,500,000-gallon reservoir is to be inspected, repaired and coated.

Improvements required to increase the water treatment capacity to 6,000,000 gallons per day in the year 2020 are listed below. Each improvement must comply with a specific set of design criteria. These criteria are provided in Appendix C of this document.

- Install two pulsator clarifier units.
- Install four additional filters utilizing the AGreenleaf@ filter design.
- Install an additional washwater recovery basin with washwater recovery pump station.
- Install additional sludge drying beds
- Install an additional chemical system and chemical system building enclosure.
- Install an additional sludge decant pump station.
- Install additional raw water pump and p.c.c. wet well at the raw water ponds.
- Install caustic soda, sodium hypochlorite and alum chemical tanks in containment structure in enclosed building.

Personnel

The City has not identified the need for additional personnel to maintain water facilities needed to meet estimated Year 2020 demand as identified in the 1998 Water Master Plan. However, should development of the planning area exceed that projected in the Water Master Plan, additional personnel may be required.

4.8.2 Financing Constraints and Opportunities

The existing system distribution improvements include increasing the size of distribution piping to correct system fire flow deficiencies as well as the replacement of CIP pipe with PVC pipe. In addition, a proactive annual pipeline, valve, and fire hydrant replacement program will be implemented. The City plans to annually replace 1 percent to 2 percent (approximately 1,000 feet) of the aged pipelines and the identified valve/hydrant deficiencies. The estimated cost of this annual distribution system improvement program is approximately $200,000. **Table 4.8-3** shows a prioritized breakdown of these costs.

Table 4.8-3
Existing Distribution System Improvements

Existing Improvement Need	Estimated Cost (2006 Dollars)
1. Hydraulic Improvements	$250,000
2. CIP Main Replacement	$600,000
3. Hydrant/Valve Replacement	$225,000
TOTAL	$1,075,000

Future Distribution System Improvements to Meet Year 2020 Flows

Improvements to accommodate future water demands on the distribution system consist primarily of a one MGD storage reservoir near Barbara Worth Country Club, a booster pump station at this reservoir, and installation of new eight-inch diameter PVC pipe to increase the water service area to outlying areas of the City. **Table 4.8-4** shows the breakdown of these costs.

Table 4.8-4
Distribution System Improvements
to Meet Year 2020 Flows

Project	Quantity	Unit	Cost (2006 Dollars)
1. MGD Reservoir	One	Lsum	$1,300,000
2.50 HP Booster PS	One	Lsum	$500,000
TOTAL			$1,800,000

Water Treatment Plant Facility Improvements

Increasing the water storage capacity of the existing system by constructing a 2.5 million gallon reservoir at the water treatment plant is estimated to cost approximately $2,540,000. Table 4.8-5 shows a breakdown of these costs.

Table 4.8-5
Improvements for Fiscal Year 2002

Future Improvement Need	Estimated Cost (2006 Dollars)
2,500,000 Gallon Ground Storage Reservoir with all appurtenances	$2,000,000
Install interconnecting piping between the new and existing reservoir and existing distribution pump station.	$190,000
Install two (2) 2,000 GPM, 180 feet TDH Centrifugal Pumps. Install Variable Frequency Drive Control System. Perform required electrical modifications. Install power and control circuitry.	$350,000
TOTAL	$2,540,000

Water Treatment Plant Facility Upgrades and Expansion to Meet Year 2020 Flows

Improvements to the water treatment plant to increase capacity and handle large flows are estimated to cost approximately $4,424,400. Table 4.8-6 shows a breakdown of these costs.

Internal Financing

Internal financing is a commonly used pay-as-you-go financing method used by many communities to fund capital improvements. The following represent common internal financing methods utilized by communities to fund capital projects:

User Charges

User charges are applied to customers for use of service provided by the utility and generally provide most or all of a utility's revenue. Charges are collected through an established set of rate schedules based on a combination of costs of providing service and on local policies related to financial inducements for water conservation and other community goals. As of FY 2000, water rates were set at $22.44 for the first 15,000 gallons, with a charge of $2.24 for each additional 1,000 gallons.

Table 4.8-6
Improvements Required to Meet the 2020
Projected Flow Requirement of
6.0 Million Gallons Per Day

Future Improvement Need	Estimated Cost (2006 Dollars)
Install 2 Pulsator Clarifier Units	$1,320,000
Install 4 additional filters utilizing the AGreenleaf@ filter design	$1,320,000
Install an additional washwater recovery basin with washwater recovery pump station	**$228,000**
Install three (3) additional sludge drying beds	**$183,200**
Install site piping	**$110,000**
Install an additional chemical system including pumping units, controllers, building enclosure, storage tanks and chemical containment structure	**$366,000**
Install an additional sludge decant pump station	**$67,200**
Install an additional raw water pump and p.c.c. wet well at the raw water pump station. Perform all required piping, modifications to connect to existing upstream and downstream piping. Install motor control center unit, electrical circuitry and disconnect switch.	**$290,000**
Perform required electrical and control improvements to accommodate the new facilities at the water treatment facility.	**$540,000**
TOTAL	**$4,424,400**

Property Taxes

County ad valorem (property) taxes are appropriated by many utilities. Taxes are collected from users in proportion to the assessed property value. Although the assessed property value bears little relationship to the cost of providing basic water and wastewater services to a user's property, property-based taxes may be used to fund capital projects wherein a user's property value may be increased by the improvements. However, no California utilities rely heavily on tax funds to cover utility operating and capital costs, and appropriations are subject to variations by the State government. The state-wide trend is presently to fund utility operations through larger proportions of user charges.

Capital Facility Charges

These fees, also known as front footage fees, connection fees, line extension fees and contributions in aid of construction, are sources of capital project funds which can be provided by new customers requesting service. These moneys cannot be used for operating expenses, and based on applicable state law must be segregated from other fund reserves. Design of appropriate fees and contributions

may reflect the cost of providing facilities or may reflect a policy of encouraging service area development.

Based on applicable state law, a capital facility fee can compensate the utility for the cost of a new customer's demand on the projected and available system capacity to provide service, but cannot exceed the cost that the new customer places on an existing system. Contributions in aid of construction can be requested from customers or developers causing a large capital investment to be made on-premise or off-premise for their specific benefit.
Capital facility fee revenues, like capital project expenditures, are capital-asset based and should be treated as changes in asset type rather than utility revenues. As such, these fees are excluded from annual financial reporting revenue and expenditure statements for the same reason that capital expenditures are not shown in the revenue and expenditure statement. However, most utilities prefer to include these revenues in their revenue and expenditure statements

Capital Reserve Funds and Interest Earnings

Funds for capital improvements are accumulated from user charges or other income sources and retained in a reserve fund in advance of construction. This method is commonly called pay-as-you-go financing, and is supported by budgeting depreciations as a non-cash expense. Capital reserve funding eliminates interest costs incurred for financing and earns interest on funds deposited.

Development Impact Fees

The City charges development impact fees to new development to help defray the cost of growth. Fees are charged on a per-unit or square footage basis by land use type (**Table 4.8-7**).

Table 4.8-7
Development Impact Fee Schedule
Water

Land Use	Fees
Residential (per dwelling unit)	
Single-family/duplex	$5,020
Multifamily	$2,703
Mobile Home	$3,475
Non-residential (per 1,000 square feet)	
Retail	$2,700
Restaurants	
Sit-down	$5,842
Fast food	$4,384
Motel (per room)	$2,427
Laundromat	$4,058
Office	$1,799
General industrial	$1,930
Water-intensive industrial	$6,724

Source: City of Holtville, 2006.

Development impact fees charged to new development are necessary to offset the costs incurred by the City to provide water treatment and distribution service to new development. The City's fee schedule reflects the different costs associated with different land uses. The City adopted new water and waste water fees in 2004 that require new development to pay fees proportional to their impact on water facilities.

External Financing

External financing is a commonly used financing method to fund capital improvements under a pay-as-you-use approach. Unlike internal financing, this approach is based on the repayment of debt on borrowed capital over the life of the asset. As such, external financing methods employ a pay-as-you-go strategy. The primary benefit of external financing is that projects need not be pre-funded through a long period of sinking fund-based cash accumulation. The disadvantages are that there are limited grant monies available for utility projects, low interest loans from government agencies require significant and time consuming documentation, and financially insecure projects have high interest rate assessments by the financial markets.

Several common debt financing instruments utilized to support capital project funding are provided in **Table 5-1** of Section 5. In addition to the programs listed, some growing utilities in urban communities have developed financing using special assessment bonds or Mello-Roos bonds approved by property owners in the utility service areas.

To summarize, various sources of revenue are available to finance water facilities and services. In general, sources of revenue available to finance water facilities include parcel tax, motor vehicle license fee, benefit assessment, and development impact fees and exactions.

Capital Improvement Plan (Near-Term)

The City commissioned a *Water and Wastewater Rate Study* in 2004 to identify potential modifications that could be made to water and wastewater user rates and capacity fees through FY 2010 to enable the City to continue to serve its customers well. A Capital Improvement Plan was developed during the formation of the rate study and identified the water treatment, storage, and distribution facilities slated for expansion to serve new developments and improve service to existing customers through 2010. The developed capital cost and estimated 10 percent annual inflation estimates are reflected in a Proposed Water Capital Improvement Plan as shown in **Table 4.8-8.**

4.8.3 Cost Avoidance Opportunities

Cross-utilization of maintenance workers between sewer and water functions is encouraged when an employee has certifications in both water and sewer. Only the Wastewater Plant Lead Operator II has certifications in both sewer and water. The City provides incentives to employees willing to cross-train.

4.8.4 Opportunities for Rate Restructuring

In 2000, water rates were set at $22.44 for the first 15,000 gallons, with a charge of $2.24 for each additional 1,000 gallons. For customers outside of the city limits, the rates are doubled; the flat rate is $44.88 for the first 15,000 gallons, and $4.49 for each additional 1,000 gallons. The City's water

rates are only subject to increase by resolution of the City Council and do not increase annually to keep pace with rising costs of energy, materials, labor, or expanded system needs.

Table 4.8-8
Proposed Water Capital Improvement Plan (Near-Term)

Project	2005 Estimated Price	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09 Beyond	Estimated Total Cost
Water Treatment Plant							
Raw Water Storage Ponds	$1,755,000	$135,000	$891,000	$980,000	--	--	$2,006,000
New Water Storage Tank	$1,986,903	$173,253	$1,995,000	--	--	--	$2,168,253
Rehab Existing Water Tank	$200,000	--	$220,000	--	--	--	$220,000
VFDs	$40,000	$40,000	--	--	--	--	$40,000
Replacement of Fire Hydrants	$250,000	--	$138,000	$151,000	--	--	$289,000
Estimated Cost	$4,231,903	$348,253	$3,244,000	$1,131,000	--	--	$4,723,253
Water Distribution System							
North-End Expansion	$733,000	$120,000	$674,000	--	--	--	$794,000
South-End Expansion	$2,500,000	--	--	--	--	$4,026,000	$4,026,000
Meter Replacement	$550,000	$100,000	$248,000	$272,000	--	--	$620,000
Waterline Rehab	$1,221,000	$200,000	$220,000	$242,000	$266,000	$293,000	$1,221,000
Water Fund	$1,750,000	$250,000	$300,000	$350,000	$400,000	$450,000	$1,750,000
Estimated Cost	$4,254,000	$670,000	$1,442,000	$864,000	$666,000	$4,769,000	$8,411,000
Total Estimated Cost	**$8,485,903**	**$1,018,253**	**$4,686,000**	**$1,995,000**	**$666,000**	**$4,769,000**	**$13,134,253**

Source: City of Holtville, Draft Water and Wastewater Rate Study, March 2005.

In 2004, the City commissioned a *Water and Wastewater Rate Study* to identify potential modifications that could be made to water and wastewater user rates and capacity fees through FY 2010 to enable the City to continue to serve its customers well. The City anticipates that the Imperial Irrigation District (IID) will significantly increase the costs for wholesale water. The City's *Water and Wastewater Rate Study* will assume that the cost of wholesale water will increase from $16 per acre-foot to $80 per acre-foot; a five-fold increase, beginning in FY 2006.

4.8.5 Opportunities for Shared Facilities

The City of Holtville is located miles from El Centro and the City of Imperial, the nearest urban communities. Currently, there are no waster treatment and treatment facilities shared with these cities and due to the geographical separation, there are not any plans or opportunities for future integration and sharing of facilities. The City's water facilities connect with the IID facilities at Pear Canal, which runs east to west north of Holtville.