

## INFRASTRUCTURE - TABLE OF CONTENTS

I. PURPOSE .....	1
II. INTRODUCTION.....	1
III. DATA AND ANALYSIS .....	1
A. Sanitary Sewer.....	1
1. Background .....	1
2. Existing Conditions .....	2
3. Environmental Impacts.....	2
4. Projected Needs.....	3
5. Regulations.....	3
B. Solid Waste.....	4
1. Background .....	4
2. Existing Conditions .....	4
3. Projected Needs.....	5
4. Regulations.....	5
5. Shared Facilities and Proportional Capacity.....	6
C. Stormwater Management.....	6
1. Background .....	6
2. Existing Conditions .....	6
3. Projected Needs.....	8
4. Regulations.....	9
D. Potable Water .....	10
1. Background .....	10
2. Existing Conditions .....	10
3. Projected Needs.....	11
E. Natural Groundwater Aquifer Recharge .....	14
IV. FUTURE NEEDS STANDARDS.....	14
V. GOALS, OBJECTIVES, AND POLICIES .....	14
A. Introduction .....	14
B. Non-applicable Items.....	14
C. Local Goals, Objectives and Policies .....	14
GOAL 1.....	14
GOAL 2.....	18
GOAL 3.....	20
GOAL 4.....	20

I. PURPOSE

"The purpose of the Sanitary Sewer, Solid Waste, Stormwater Management, Potable Water and Natural Groundwater Aquifer Recharge (herein after referred to as the Infrastructure Element) is to provide for necessary public facilities and services correlated to future land use projections." Rule 9J-5.011, Florida Administrative Code

II. INTRODUCTION

The following section discusses the condition of the City's public services and facilities, specifically potable water, sanitary sewer (wastewater collection and treatment system) and solid waste. The analysis includes a description of current conditions and level of service and projected demand on these services and facilities based on population projections presented in the Future Land Use Element and as listed in the following table.

<b>Year</b>	
2000	11,910
2005	13,884
2010	14,958
2015	15,614
2020	16,015
2025	16,261

Future demand projections are based on population counts that include permanent residents; there is not a significant number of seasonal residents living in permanent housing. Population numbers do not include "commuter or functional" population that may utilize the infrastructure services of the City while at work.

III. DATA AND ANALYSIS

Pursuant to Section 9J-5.011(1), FAC, the following information represents the data collection and analysis of the infrastructure needs of the city of Oldsmar

A. Sanitary Sewer (Wastewater Collection and Treatment System)

1. Background

The City of Oldsmar owns and maintains the waste water collection system located within its municipal boundaries and other unincorporated areas including West Oldsmar. Waste water from the City is treated at the Oldsmar Water Reclamation Plant (WRP) located at 351 Lafayette Boulevard.

Local officials indicate that there is currently some inflow and infiltration problems with the sanitary sewer lines in the City although significant effort has been made to improve this problem as noted by the small increase over the past 5 years as compared to user increase. Oldsmar continues to improve its collection system by relining or replacing old sewer lines and manholes that have some inflow problems.

The service area of the facility includes not only those lands within the municipal boundaries of the City but also portions of unincorporated Pinellas County adjacent to the city. The unincorporated service area generates a sewage demand of approximately 0.25 mgd or 15.2% of total flow (11.1% of total plant capacity). The land uses served are a combination of residential, commercial, and industrial.

## 2. Existing Conditions

The Oldsmar Waste Water Treatment Plant is a 2.25-mgd Bardenpho five stage biological treatment plant. Primary treatment is provided by a headwork's containing bar screen, grit removal and odor removal. A flow splitter box controls the influent. Biological treatment begins with the fermentation process followed by first anoxic zones, aeration zones, second anoxic zones, and reaeration. Methanol feed is occasionally added for further nitrification/denitrification, followed by final settling in the clarifiers. Effluent from the clarifiers enters the deep-bed filtration and disinfectant systems. Post aeration and dechlorination occur prior to discharging the effluent into the surface waters. Effluent is also transferred to a 1.0 MG storage tank to be used for Public Access Irrigation within public right-of-way, parks, commercial, and residential developments. Excess effluent (surface water discharge) goes through the dechlorination/reaeration process prior to its discharge to an unnamed ditch that leads to Mobbly Bayou. The current average daily flow is 1.65 mgd or 73.3% of plant rated capacity. There are presently 5,241 wastewater connections in the service area with an estimated functional population of 18,482. Additionally, the city receives approximately 0.18 mgd of bulk flow from unincorporated Pinellas County and transfers 0.5 mgd of reclaimed water to the County, since the County is running out of reclaimed water capacity. The current level of service for the Oldsmar service area is 89.28 gpcpd.

The City regularly upon each 5 year permit renewal commissions a Capacity Analysis Study to determine and evaluate future flow projections. The study required by FDEP is designed to determine the capacity expansion necessary to comply with the City's treatment needs for the next ten (10) years. The report includes recommendations for expansion with a proposed planning and construction schedule.

Although City ordinances require all new development to be connected to the central waste water system, there are between 15 to 20 homes located in the southeastern portion of the City that use above ground sand filter septic tanks. These homes are being developed on one acre lots zoned "E- 1" (Estate Residential). The soils found in this area are Myakka fine sand, Oldsmar fine sand, Astor fine sand, Felda fine sand, ponded, and Elred fine sand. According to the Natural Resources Conservation Service (NRCS), all these soils exhibit severe constraints for septic tank absorption fields due to water table and flooding conditions. As used by the NRCS, severe constraints are those constraints where soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Clay or wet soils are poorly suited to use as septic tank absorption fields. Special feasibility studies may be required where the soil limitations are severe. City officials indicate that at the present time, there are no plans to extend sewer service to this area of the City.

The limited number of septic systems operating in the large estates is in good condition and has only minor impact on adjacent natural resources. The large amount of acreage devoted to open space and conservation combined with the right-of-way requirements associated with the estate lots give adequate percolation rates.

The regulation of sludge use and disposal practices are regulated by the US Environmental Protection Agency as outlined in the city's sludge permit number FL Lo 27651. Dewatered sludge from the WRF is hauled by a licensed hauling contractor and land applied at permitted agricultural use sites outside of Pinellas County. The WRF disposes of approximately 51,329 gallons of dewatered sludge per week.

## 3. Environmental Impacts

The City continues to develop a reclaimed water/effluent disposal system with a goal of maximizing its discharge to reuse. Installed reuse irrigation systems include a good majority of residential facilities in the City and Tampa Bay Park of Commerce as well as the City medians, parks and City facilities.

Reclaimed water use comprises approximately 0.833 mgd of the 1.65-mgd plant effluent generated. An Aquifer Storage and Recovery (ASR) project is in process to:

- ◆ Reduce or eliminate surface water discharge from the Waste Water Treatment Plant;
- ◆ Reduce the dependence upon potable water for irrigation and industrial use by substituting reclaimed water;
- ◆ Provide additional reclaimed water to residents for irrigation purposes and expand the reclaimed distribution system to serve all residents of the city;
- ◆ To have the ability to provide seasonal storage and recovery of reclaimed water for use during dry seasons.

Expansion plans which include the development of an ASR system has been incorporated into the Capital Improvements Plan for the City.

#### 4. Projected Needs

The total 2005 functional population of Oldsmar was 16,478. Applying the generation rate of 89.28 gpcpd, the city produced 1.22 mgd of sewage or 73% of the current plant capacity. Based on the projections noted in Table 1 limited expansion should take place between the year 2010 and 2015.

Per the Potable Water Supply, Wastewater and Reuse Element, Pinellas County is essentially built-out County and the County's two regional treatment plants are designed for and expected to accommodate build out projections. Traditional numerical standards based on point-time calculations have not been provided. However, Pinellas County Utilities will continue to monitor conditions, as required by 62-600.405, F.A.C. and planning staff will continue to undertake the annual concurrency assessment and prepare an annual concurrency test statement to ensure that there is ample time to plan for capacity enhancements should unplanned development result in the potential for a capacity deficiency.

The Oldsmar Water Reclamation Division has indicated it will have adequate capacity to serve the City's needs for approximately the next ten (10) years. The existing WRF has the capability for expansion to an ultimate capacity of 3.5 mgd.

Adequate land has been allotted for the future expansion of the WRF adjacent to the present facility as discussed in the Future Land Use Element. The city has also purchased additional land as a buffer.

#### 5. Regulations

The City has adopted comprehensive regulations on its waste water service. All structures are required to connect to the City's sewer system if service is available to the site. If service is not available, the developer must extend the waste water collection system to his development. Grease, oil, and sand interceptors are required in certain instances. Discharge of storm water, surface water, groundwater, roof runoff, subsurface drainage, uncontaminated cooling water, or unpolluted industrial process water into the waste water collection system is also prohibited. The City has a comprehensive Industrial Wastewater Pre-Treatment Program in order to regulate the discharge of these objectionable wastes that exceed the established local limits.

The City requires the reuse or disposal of effluent for all new residential and commercial industrial development. The developer is required to reuse/dispose of an amount of effluent equal to the amount of waste water that the development generates. The system for reuse/disposal must promote potable water conservation and conform to FDEP standards. The developer is responsible for obtaining the necessary permits from FDEP and developing, installing and maintaining the system. The reuse/disposal system must be engineered and approved prior to a building permit being issued.

B. Solid Waste

1. Background

Solid waste collection for the residents of the City of Oldsmar with the exception of residential recycling is provided by contract. The city pays the outside contractor and bills its residents a collection fee.

2. Existing Conditions

The City's solid waste is disposed of at the Pinellas County Waste-to-Energy plant site. The city does not have a specific allocation of the capacity of the plant or the adjacent landfill.

Pinellas County has an ordinance that requires all refuse generated in the County to go to the resource recovery plant unless the county has issued a permit for another disposal means. The geographic service area of the plant is the entire county with the exception of the city of Tarpon Springs. The 750-acre resource recovery plant site is located at 3001 114th Avenue North. It includes both the plant and a county landfill.

While Pinellas County owns the plant, Veolia Pinellas, Inc operates it. The operator has a 17-year contract effective January 2007. Under the terms of the contract, the operator is required to burn at least 950,000 tons per year and to guarantee 85 percent availability.

The resource recovery plant was presented to the public as a solution to the household refuse problem. The importance of such a facility can be seen in the fact that presently Pinellas County generates 1.0 million tons of solid waste per year with a capacity to burn 3,150 tons of waste every day. Per Pinellas County Utilities, this process can produce up to 75 megawatts per hour of electricity, which it sells about 60 megawatts to Progress Energy for distribution within the community, and the remainder powers the plant itself.

Approximately one million tons of household solid waste is incinerated at the resource recovery plant per year, or 87% of the design capacity. Since the plant has additional capacity, other burnable refuse, including construction debris and yard trimmings, are also sent to the facility. Any burnable non-Class 1 refuses above capacity or nonburnable debris is disposed of in the landfill located on site. Ash produced by the plant is used on site as roadbeds, interior site berms and landfill cover. Recoverable metals, separated from the ash are sold to steel mills and smelters for recycling. The present refuse-to-energy facility has minimal impacts on adjacent natural resources. A bentonite slurry wall connected to impervious clay strata creates a zero zone of discharge. The runoff collected by the clay wall is used for the plant's cooling system. There is no migration of groundwater from the site, vertically or horizontally. The county conducts an extensive surface and groundwater monitoring program at the site. Construction, design, and monitoring of the facility comply with all Environmental Protection Agency (EPA) and state of Florida regulations.

Air quality around the site meets acceptable federal and state levels. Monitoring is conducted according to EPA Prevention of Significant Deterioration permitting requirements. Downwind and downwash impacts are monitored continuously at two site locations for sulfur

dioxide and Total Suspended Particulates (TSP). In addition, a modified permit has been received in order for an annual compliance test on stack emissions of sulfur dioxide, TSP, and other emissions to be performed.

Early in 1987, a study to measure the dioxin and heavy metal emissions from the facility was conducted by a consortium of local governments and agencies. The study indicated that the plant operates with acceptable emission levels although the state of Florida has not set any safety standards. The emission stacks' design complies with the original permitting requirements in that electrostatic precipitators are utilized to control ash and particulate lead. Acid-gas scrubbers were not required when the facility was constructed. Control room monitors are utilized to maintain burning efficiency, which reduces sulfur dioxide emissions. In 2000 the emissions control devices at the resource recovery facility were retrofitted to reduce particulate matter and to add additional emission control devices to further minimize gaseous emissions.

Pinellas County also operates an artificial reef program. Large construction items, ship hulls, and old barges are among the objects that are anchored at approved sites in the Gulf of Mexico and Tampa Bay. This program provides habitats for marine life while extending the life of the existing county landfill.

### 3. Projected Needs

The city generated over 12,000 tons of solid waste per year. The city's solid waste generation is generally from residential land uses, although commercial and industrial land uses can also be found in the community. The county land uses are similar to the city. Assuming the same generation rate, the permanent population would produce the yearly tonnage shown in Table 2.

In 1987, the Pinellas County Resource Recovery Plant operated at the maximum design capacity of 930,000 tons per year. From 1989 to 1994, the plant incinerated an average of 827,442 tons per year. This reduction in annual operating tonnage can be attributed to two factors. First, Pinellas County expanded the operational capacity of the Bridgeway Acres Landfill - the only class 1 landfill in Pinellas County. Presently, the annual average refuse being diverted to the landfill is over 1 million tons. Pinellas County estimates the useful life of the Bridgeway Acres landfill at 30 years under current conditions, and taking in the projected recycling rate. Second, Pinellas County estimates that the recycling countywide is presently 31%. The importance of this program in reducing the waste stream has greatly enhanced the life of resource recovery facility.

Per the Pinellas County Solid Waste and Resource Recovery Element, the future level of service for solid waste disposal through 2015 will be 1.06 tons per capita per year, which is below the adopted level of service standard of 1.3 tons per capita per year. In addition, Pinellas County adopted a policy in 1993 (Policy 4.6.3; P.C. Ord 93-107) that requires the county to monitor the plant capacity, and schedule any necessary improvements in its Capital Improvements Element.

### 4. Regulations

DEP and the EPA regulated solid waste disposal. Both agencies issue permits for the operation of resource recovery plants and the DER permits landfill facilities. In 1975, the Florida Legislature passed the Pinellas County Solid Waste Disposal and Resource Recovery Act. This Act designated the Pinellas County Board of County Commissioners as the responsible party for solid waste disposal in Pinellas County. Municipalities, however, are responsible for the collection of solid waste within their jurisdictions.

The City of Oldsmar currently performs its own residential recycling program and collects at curbside the following recyclable materials: newspaper and miscellaneous paper, all metal to include aluminum, plastics. Currently, this collection is throughout the single-family residential portions of the city and City facilities. At present, a monthly average of 4,050 homes was collected. Commercial involvement in recycling is handled on an individual basis.

5. Shared Facilities and Proportional Capacity

Rule 9J-5.011(1-c), FAC requires for shared facilities that “each local government shall indicate the proportional capacity of the system allocated to serve its jurisdiction. While the Pinellas County waste-to-energy system is a shared facility, it is not necessary to break out the proportional capacity for each of the 24 municipalities and the unincorporated areas because of existing inter-local agreements between Pinellas County and each of the 24 municipalities to dispose of all municipal refuse at the waste-to-energy plant. For additional information see the Pinellas County Solid Waste Resource and Recovery Element of the Comprehensive Plan.

C. Stormwater Management (Stormwater Master Plan)

1. Background

The City of Oldsmar wraps around the northeastern shore of Safety Harbor and Mobbly Bayou and extends northwards along the Pinellas/Hillsborough County line for approximately 5 miles. The City of Oldsmar, with its proximity to the bay, lies within the level lowlands region of eastern Pinellas County. The level lowlands are dominated by the flat topography, and watercourse features within these regions are influenced by tidal fluctuations. The climate in the watershed in general can be characterized as subtropical.

The City of Oldsmar has seven distinct drainage outfall systems or watersheds within its limits. (See Drainage Basins map in the Appendix). The seven watersheds include the Brooker Creek, Moccasin Creek, Tarpon Canal, Safety Harbor, Double Branch, State Street and Mobbly Bayou basins. These systems in conjunction handle the majority of the stormwater conveyance within the City.

There are several large wetland areas and tidally influenced marshes. The wetlands tend to occur as loosely connected depressional areas north of Tampa Road with tidal marshes along the shores of Safety Harbor and Mobbly Bayou where the topography is generally lower. Land uses within the watershed boundaries are diverse and include large wetland/lake areas, major and minor roadways, residential subdivisions and industrial complexes.

In 2002 the City in cooperation with the Southwest Florida Water Management District finalized a Stormwater Management Plan Final Report. The objectives of this study were to develop an existing condition model for the drainage within the City of Oldsmar and to develop an overall Stormwater Management Plan. These objectives were achieved.

2. Existing Conditions

Per the City of Oldsmar Stormwater Management Final Report by URS Corporation Southern, June 2002, the city of Oldsmar is located within seven drainage basins or watersheds (see Drainage Basins map in the Appendix). The seven watersheds include the Brooker Creek, Moccasin Creek, Tarpon Canal, Safety Harbor, Double Branch, State Street and Mobbly Bayou basins. Land uses within the watershed boundaries are diverse and include large wetland/lake areas, major and minor roadways, residential subdivisions and industrial complexes. The Moccasin Creek watershed is located in the western part of the

City. This watershed is primarily bounded on the east by Forest Lakes Boulevard, with the exception of two sub-basins that contribute flow from the Tampa Bay Skating Academy and the Fountainview / Lakeview subdivision. This watershed extends from Safety Harbor on the south to a Florida Power Corporation transmission line easement to the north. The western portion of this area extends to the boundary between the Eastlake Oaks subdivision and the Harbor View subdivision.

The Tarpon Canal watershed consists of several separate systems that all drain to the canal. The combined systems cover the western part of the City. The Lake Tarpon Canal is a man-made canal that allows Lake Tarpon to outfall to Safety Harbor. This canal has several control structures that regulate water levels in Lake Tarpon and prevent saltwater intrusion. These control structures are operated and maintained by the Southwest Florida Water Management District.

The Safety Harbor System can be divided into three sub-basins that drain almost directly to Tampa Bay, the City storm sewer systems south of State Street, and the Salt Creek system. The combined systems provide conveyance to older part of the City.

The Double Branch system is located in the northeastern part of the City. This watershed is comprised of large interconnected wetlands that generally drain from north to south and from west to east. The branches of this system discharge into Hillsborough County at several locations under Racetrack Road.

The State Street Outfall Drainage Basin can be subdivided into three distinct areas. The northerly portion of the drainage basin (Sub-basin A) lies primarily to the north of the CSX Railroad. It is an area, which is primarily zoned, commercial or industrial, and is referred to as the Cypress Lake Industrial Park. Much of the runoff which is generated from this portion of the drainage basin is collected either by means of roadside swales, drainage ditches or closed drainage systems, and is conveyed from the northwest to the southeast and into a large wet bottom stormwater pond. This pond is equipped with an outfall control structure which discharges to the south, below. The second distinct area within the State Street Outfall Drainage Basin is located between the CSX Railroad and State Street (Subbasins H, I, J, K). This area has both commercial/industrial and residential development. The third distinct area, which makes up the State Street Outfall Drainage Basin, is located within the approximate bounds of State Street, Lafayette Boulevard, and Washington Avenue. This area is primarily zoned residential, with the western portion being virtually developed to date.

The Mobbly Bayou system is comprised of a series of smaller sub-basins that drain directly to the bayou. Mobbly Bayou is an area comprised of channels and tidal saltwater marshes located north of Mobbly Bay. The sub-basins are located along the northeastern and west edges of the bayou. Those sub-basins to the northeast are bounded by Racetrack Road to the east and generally do not have stormwater ponds. Runoff is conveyed to the bayou by shallow ditches and tidally influenced culverts under various roadways.

The Brooker Creek system within the northwest limits of study area is a small portion of the overall watershed that extends from east of Lake Keystone in Hillsborough County to Lake Tarpon to the west. The portion within the City limits contains approximately 750 acres of the over 25,600 acres watershed area. This area is almost entirely contained within the Brooker Creek Preserve.

Due to the fact that it is subject to tidal surges and does not have any defined outfalls, the sub-basin of the Possum Basin that includes portions of the city was not included in the drainage study.



The Public Works Department of the City of Oldsmar has operational responsibility for all public drainage facilities within the City with the exception of State and County roads. The developer of record provides maintenance in the DRI areas.

The predominant type of land use served by the drainage facilities has been thoroughly discussed in the Future Land Use Element (see Future Land Use Map in Appendix).

The design capacity of the city's drainage facilities is described in the Land Development Code. Streets (retention ponds) are designed to meet the 25 year, 24 hour rainfall storm.

The current demand on the drainage capacity is difficult to determine. Major drainage improvements included Park Boulevard drainage improvement, and the State Street Burbank drainage project which encompassed over 600 acres. The ability and speed of the drain off in the older part of the City is dependent upon the tide level in Safety Harbor. The northern and newer sections of Oldsmar have been adequately engineered for proper drainage, unfortunately all the runoff must traverse the already overflowed older portions of the city, therefore making the problem worse.

The City has analyzed the situations by preparing updated drainage mapping to pinpoint the problems and flow patterns. The City has adopted a 10 year 24 hour storm level of service for streets and has programmed new improvements to accommodate all runoff associated with such a storm. The City has also adopted a 25 year 24 hour duration storm level of service for drainage for all homes and structures in the corporate limits.

The City of Oldsmar currently uses treated wastewater effluent in the City reclaimed water system. Reclaimed water is distributed to several areas of the City to provide a supplemental source of irrigation water and to reduce discharges of treated effluent to Tampa Bay. Water in a reclaimed water system used for irrigation purposes must meet both primary and secondary drinking water standards and must receive a high level disinfection. Stormwater runoff as a supplement to the treated wastewater effluent will require: oil separation (at a pond), filtration and high-level disinfection prior to use as reclaimed water.

The City of Oldsmar, 10 years ago, signed an agreement with Pinellas County to transfer 0.5 mgd of reclaimed water to the County from the City of Oldsmar, since the County is running out of reclaimed water capacity. Since the City of Oldsmar has excess capacity to transfer out, it is unlikely that additional reclaimed water capacity will be required in the near future.

### 3. Projected Needs

The City of Oldsmar wastewater treatment plant (WWTP) is currently rated at 2.25 million gallons per day (mgd). The WWTP filters are rated at 2.4 mgd and disinfection system at 3.0 mgd. The WWTP build out flow is projected to be 2.15 mgd. Therefore, 0.25 mgd of stormwater runoff could be sent to the plant for treatment without impacting the WWTP required buildout capacity. Also, the filters could be upsized to 3 mgd and 0.85 mgd of stormwater could be treated. Finally, both could be expanded further as necessary to meet the desired flows.

Another option would be to install pumping and treatment units at the specific treatment ponds. Treatment would consist of pressure filters and in-line UV disinfection. Treated stormwater could be pumped into the transmission system or to the existing reclaimed water storage tank at the WWTP site.

Although the Pinellas County's drainage plan had been adopted, no implementing regulations have been approved for Oldsmar nor has a County available drainage improvement fund been established. Goals, objectives, and policies established for the city's comprehensive plan

Capital Improvements Element and drainage section of the Infrastructure Element consider and address, as appropriate, the implementation of the Pinellas County Master Drainage Plan, but more specifically the City of Oldsmar Stormwater Management Plan as it affects the City of Oldsmar.

The City has many drainage improvements currently planned. As noted previously, the City has mapped its drainage features and identified its drainage needs from the now completed drainage maps and detailed in the Stormwater Management Plan.

The City is continues to maintain and significantly improve its drainage facilities throughout the next five years. Numerous drainage improvement projects are designated and earmarked for funding in the capital improvements program (as discussed in the Capital Improvements Element).

The overall drainage level of service will be maintained or significantly improved during the remaining five years in the planning period. It also allowed for this projected demand at current local level of service standards and the future development permitted by the city.

In general, the City's drainage facilities are adequate for the adopted level of service. However, overall performance did improve as the listed improvements are completed. The facilities are in good condition but improving and with proper maintenance will last indefinitely. Stormwater runoff into Safety Harbor, Old Tampa Bay and Mobbly Bay does have limited negative environmental impact. However, compared to the more heavenly urbanized areas around Pinellas and Hillsborough County the pollution is minor.

One of the major problems with the natural drainage systems in Oldsmar is the lack of a gradient. This problem is compounded by the CSX Railroad dissecting the city. The RR bed creates a barrier for the natural drainage for most of Forest Lakes and Cypress lakes DRI areas. The existing culverts are inadequate and are slated to be improved.

#### 4. Regulations

The City coordinates with Pinellas County for the stormwater management permit requirements of the National Pollutant Discharge Elimination System (NPDES) under the Florida Department of Environmental Protection Agency. The SWFWMD has delegated to Pinellas County the authority to issue permits for most stormwater projects. The County coordinates stormwater management issues with the local governments through the County's Watershed Management program.

- a. The City of Oldsmar has enacted regulations related to flooding and drainage. The intent and purpose of these regulations is to preserve water resources and ensure flood prevention and proper storm drainage. The Land Development Code states that “protection of water resources is critical to the health, safety, and welfare of the public. Innovative approaches to stormwater management shall be encouraged and the concurrent control of erosion, sedimentation, and flooding shall be mandatory. No site alteration shall adversely affect the existing surface water flow pattern. No site alteration shall cause siltation of wetlands, pollution of downstream wetlands, or reduce the natural retention of filtering capabilities of wetlands. All stormwater management proposals shall meet the Southwest Florida Water Management District (SWFWMD) requirements and the provisions of LDC”.

The City's regulations are applicable to all instances of land subdivision and are implemented through a plat approval process that is contained in the Land Development Code. The LDC deals with culverts, storm sewers, outfall ditches and canals, retention/detention basins, underground seepage systems, and system wide design criteria.

The City also regulates drainage through its Land Development Code. The drainage plan requirements provide for the adequate disposal of storm waters and protection of adjoining properties from damage due to storm water runoff.

The existing regulations protect natural drainage features from degradation. Streams and drainage passages are protected by the Land Development Code in the Preservation category. Every subdivision and commercial/industrial building project is scrutinized by SWFWMD. They are the permitting agency.

D. Potable Water

1. Background

The City of Oldsmar owns and maintains its own potable water distribution system. The system is in good condition. Potable water is supplied by the Pinellas County Utility System (PCUS). Oldsmar's potable water distribution system serves the entire city plus West Oldsmar. The type of land use has been adequately described in the Future Land Use Element and is depicted in the Present and Future Land Use Map. The City also has a Water Reclamation Facility which generates reclaimed water from the effluent.

2. Existing Conditions

The Pinellas County Utility Service supply potable Water as of October 2006. An interlocal agreement between the City and Pinellas County is in effect which assures an adequate supply of potable water for distribution to the City's citizens. Pinellas County Utilities' customers receive potable water from sources managed by Tampa Bay Water. Approximately 1.5 million gallons per day of potable water is purchased from Pinellas County and delivered through a separate master meter to an independent distribution system. The City of Oldsmar owns, maintains and operates its own water distribution system which includes the maintenance of all water distribution piping, metering and backflow devices, pumping and storage facilities, and all meter reading and billing functions (See Potable Water Services Areas in Appendix).

The Pinellas County Utility Service (PCUS) service area includes all of the city of Oldsmar and includes most of the county except Clearwater Beach, Tarpon Springs, St. Petersburg, Clearwater and Sand Key. Based on current service area population, maximum demand is estimated at 117.38 mgd which includes a 10 percent safety factor (accounting for emergencies, future growth etc.).

According to the Tampa Bay Water Special District Public Facilities Report dated March 1, 2007 the PCUS wellfields are part of a Consolidated Permit, Wellfield Water Use Permit. As of January 1, 2003, the eleven Consolidated Permit Wellfields Water Use Permits compliance is assessed on a 12 month running average basis for all facilities of 121 mgd, with compliance assessed on the first day of each calendar month following December 21, 2003. The permit expires December 31, 2010 and the permittee is Tampa Bay Water (See Tampa Bay Water Master Water Plan map in Appendix).

According to the Pinellas County Potable Water, Wastewater and Refuse Element dated October 16, 2007; over 709,202 residents are served by the PCUS as of 2006 which is approximately 63.67% of the estimated countywide total population of 1,113,907. Despite the increase, wellfield production and per capita demand has decreased. Because of the reduction in per capita service demand due to increased water conservation awareness and effluent reuse, Pinellas County's adopted level of service standard has been amended and reduced from 135 gallons per capita per day (gpcpd) to 1995 to 125 gpcpd in 2000, 120

gpcpd in 2005 to 2015 and 115 gpcpd in 2020 to 2025. In 2006 the average daily demand was 85.1 mgd with a maximum daily demand of 119.14.

In projecting the City water needs, functional population is tracked by the municipal services area which includes all users of the system. The City of Oldsmar's "functional population" (resident and other users) totaled 16,478 persons in 2006. Based on this estimate of the PCUS' 2005 level of service of 120 gpcpd, Oldsmar demanded approximately 1.9% of the WDPA's average daily demand.

<b>Potable Water Demand, 2006</b>		
	<b>Pinellas County WDPA</b>	<b>City of Oldsmar</b>
Functional Population	709,202	16,478
Level of Service	120 gpcpd	81.62 gpcpd
Average Daily Demand	85.1 mgd	1.58 mgd

As detailed within the Pinellas County Comprehensive Plan, the potable water supply will adequately serve populations until the year 2025. Even though population in Pinellas County is increasing (although slowly), both overall water consumption and per capita water consumption continue to decrease. However, the most dramatic reductions have likely been achieved already as the County has a mature and multi-faceted water conservation program and is already maximizing use of its reclaimed water resource, etc.

The northern section of the City has a portion of the Pinellas County Wellhead Protection Zone is in northeast Pinellas, and bounded by Pasco County on the north; Hillsborough County on the east; East Lake Road on the west; and the Florida Power right-of-way on the south. (See County Wellhead Protection Zone Map in Appendix).

3. Projected Needs

To project water demand, the Pinellas County Planning Department divided the county into water demand planning areas (WDPA) which includes the retail and wholesale customers of Pinellas County Utilities and the Cities of Oldsmar, Clearwater and Tarpon Springs service areas.

Population projections for the WDPA included three basic components; permanent residents, seasonal residents and visitors which was forecasted for each Traffic Analysis Zone. As the County depletes its vacant developable land, Pinellas County's permanent population growth has slowed, and is clearly not growing at the same rate as the rest of the Region.

<b>2007 Estimated and Projected Population of the Pinellas County Water Demand Planning Area (WDPA and Associated Percent of Total County Population)</b>			
<b>Year</b>	<b>Estimated or Projected Total County Population</b>	<b>Population Served by Pinellas County WDPA</b>	<b>As Percent of Total County Population</b>
2006	1,113,907	709,202	63.67%
2010	1,136,176	714,180	62.86%
2015	1,153,111	719,158	62.37%
2020	1,165,771	724,136	62.12%
2025	1,176,116	729,115	62.00%
Source: Pinellas County Planning Department, 02/07 Projection Methodology/Updated Pop Projections by Sector final 082604			

Another factor affecting the demand in the County may be the development of individual water systems by municipal customers of PCU. If the trend continues, PCU demand is likely to decrease further but the decrease will be offset by municipal water consumption.

The population of Oldsmar will continue to grow at a modest rate as per the discussion in the Future Land Use Element. This population growth will continue to require the expansion of the potable water distribution system. Almost all of the new growth, for future infrastructure needs, will occur in the redevelopment area and infill within the industrial area. Adequate water flow reserves are still available from the Pinellas County Water System that services that portion of Oldsmar.

Water supply and the utilization of reclaimed water and storage have been identified as a major issue for the City. The City owns, maintains, and operates its own water distribution system which includes the maintenance of all water distribution piping, metering and backflow devices, pumping and storage facilities, and all meter reading and billing functions. Approximately 1.5 million gallons per day (MGD) of potable water is currently purchased from Pinellas County; delivered through a separate master meter to an independent distribution system. Previously the City had purchased potable water wholesale as a “Consecutive System”, from both the City of St. Petersburg and Pinellas County at a ratio of approximately 70 / 30. This purchased water is a combination of blended ground, surface, and desalinated water, which is disinfected with chloramines.

The City also owns and operates a high service pumping station, 1 million gallon (MG) ground storage tank, and a re-chlorination facility for the distribution system located along Commerce Boulevard adjacent to the designated future Reverse Osmosis. Water Treatment Plant (ROWTP) site. As previously indicated, Pinellas County provides wholesale water to the City through a master meter at a pressure that requires no additional pumping or storage. The City has completed piping modifications to allow the Pinellas County water to also be piped to the ground storage tank.

With extensive experience in independently and efficiently operating a 2.25 MGD Advanced Wastewater Treatment Facility, the Oldsmar City Council developed an initiative in 1997 to explore opportunities for developing its own water supply and treatment system. In 1997, the City conducted a feasibility study for developing its own brackish water production and treatment system. In 2002, the City continued more detailed analysis. The City’s initiative to develop its own water supply and treatment system using a brackish ground water source and modern reverse osmosis (RO) treatment technology that provides local and regional benefits is being pursued.

This Project is proposed to utilize brackish quality groundwater produced from the upper Floridian aquifer and provide advanced water treatment through reverse osmosis (R.O.) membrane technology. Phase I of the City’s Project was cooperatively funded through the Southwest Florida Water Management District (SWFWMD) and completed by Boyle Engineering Corporation (Boyle) in October 1998. This phase included a preliminary feasibility study which reviewed water demand, water supply options, regulations; evaluated water quality, treatment, and potential costs; assessed project feasibility and developed an implementation plan. The desktop study concluded that the Project was economically feasible and recommended technical evaluation through the construction of test pilot wells and a treatability assessment.

Phase II, which started in September 2001 after additional SWFWMD Cooperative funding was secured, included performing a well field siting analysis, developing a field testing program, the design and construction of two pilot production wells, performing a R.O. pilot treatment study after the construction of the wells to evaluate treatability and by-product characteristics, and an engineering evaluation of well field, transmission pipelines, treatment,

and by-product disposal. The result of these findings was a plan for a cost-effective, environmentally sound Project that balances water supply, treatment, and by product disposal.

Phase II, completed in July 2003, and provided an informed basis for the City's decision to proceed with the additional phases that include the design, permitting, and construction of the City's own, independent water supply.

Now especially in the last few years, the purchased wholesale water costs from the City source have increased significantly. Pinellas County, a member of Tampa Bay Water (TBW), is estimating significant increases in its cost to purchase wholesale water from TBW as well as experiencing major increases in its overall operating costs. It is known that the increase in rates from TBW and a portion of Pinellas County's capital improvement and operating costs would naturally be passed on to the Consecutive System customers such as the City. Therefore based on the City's initiative and Phase I and II favorable technical and economic findings, the City is confident that completion of this project will insure it can maintain for an extended period, a consistent water quality at a reasonable, controllable cost.

The successful completion of this alternate water source would be a benefit not only to Oldsmar but also to surrounding counties and cities. The City having its own supply relieves the regional system of Oldsmar's potable water demand, allowing more of the regional resource/system to be used to meet regional needs. Also, in the event of water shortages or emergencies, the City of Oldsmar would be available to share its resources with other Tampa Bay Utilities.

The City's initiative to develop its own water supply and treatment system using a brackish ground water source and RO treatment technology provides a number of local and regional benefits. The proposed brackish water treatment facility when completed will provide water from a previously unused source, supplementing the Tampa Bay Regional Water System and offsetting the City's dependence on the regional system by approximately 2 MGD. Additionally, as an independent water system operator, the City will have greater control over the quality and cost of water provided to its customers. In the past, changes in source water and disinfection procedures from Tampa Bay Water and the Consecutive Systems wholesale suppliers have had a negative impact on local water quality. The City now receives a combination of blended ground, surface, and desalinated water, partially treated and disinfected with chloramines. Completion of this project will insure that the City can maintain for an extended period, a consistent water quality at a reasonable cost.

The SWFWMD Regional Water Supply Plan was approved on December 1, 2006. According to Pinellas County Comprehensive Plan and the SWFWMD Plan, water supply will be adequate to meet 2025 demands through development of both traditional and alternative water supply sources and increased conservation. This Plan includes the City of Oldsmar Alternative Water Supply Plan under Water Supply Projects Under Development. The City and its consultants are working closely with SWFWMD to assure that its alternative water supply plan is in keeping with the regional plan. In addition, an interlocal agreement exists that provides for the County to be on a standby status for the provision of potable water, at the point in time that potable water can be provided by the City.

The SWFWMD Regional Water Supply Plan states that since withdrawals in the North Tampa Bay (NTBWUCA) tend to result in more localized impacts, it may be possible for a water user to obtain a permit to withdraw brackish ground-water from the Upper Floridian aquifer. If the requested quantities are projected to impact a lake or wetland, or degrade water quality in the aquifer affecting a nearby user, the request would need to be modified to determine a withdrawal quantity that would not result in such impacts. The City of Oldsmar is included in the NTBWUCA and has been actively working to obtain the appropriate

permits in support of its Alternative Water Supply Plan. The Water Use Permit was received in April 2006.

In addition to pursuing the Alternative Water Supply Plan, Oldsmar will continue to reduce its per capita potable water demand by expanding its reclaimed water program. This system should eventually reduce demand by 10% by reusing treated water from the WWTP for lawn irrigation in the city.

E. Natural Groundwater Aquifer Recharge

The West Coast Regional Supply Water Authority identified the area around the City of Oldsmar as falling in two recharge areas; very low and moderate. Furthermore, the Southwest Florida Water Management District supports these findings as noted in Prime Recharge: Technical Information, Series 87-2. SWFWMD concluded that "...along the coast of Florida [Aquifer] is under confined conditions, receives little or no local recharge, and contains water that is so highly mineralized that in some areas it is unsuitable for any use without expensive treatment."

According to the SWFWMD's groundwater resource availability inventory for Pinellas County, it appears that recharge to the Florida Aquifer is along the uplands of the Pinellas ridge and Northeastern Pinellas County. The area east of Lake Tarpon is influenced to a certain extent by draw down from the Elridge-Wilde wellfield. This recharge area is separated from the Clearwater/Dunedin recharge area by Lake Tarpon and the Lake Tarpon outfall canal. Lake Tarpon is probably a part of a discharge area due to its connection with the Floridian Aquifer. The Lake Tarpon outfall canal is a relatively recent addition to the hydrologic system.

There are no prime (high) aquifer recharge areas within Pinellas County.

IV. FUTURE NEEDS STANDARDS

Estimates of the future needs for the provisions of public utilities, as defined by this element, for the City of Oldsmar are based on the following:

- **Sanitary Sewer:** 100 gpcpd; City of Oldsmar Public Works Department
- **Solid Waste:** 1.3 tons/capita/year; Pinellas County Solid Waste Resource Recovery Element.
- **Drainage:** DEP Chapter 17-25, FAC, "Regulation of Stormwater Discharge" and as applicable, SWFWMD's Chapter 4OD-4, as amended or superseded
- **Potable Water:** 100 gpdpc, City of Oldsmar Public Works

V. GOALS, OBJECTIVES, AND POLICIES

A. Introduction

Pursuant to Section 163.3177(6)(c), FS, and Section 9J-5.011(2), FAC, the following represents the Sanitary Sewer (Wastewater), Solid Waste, Drainage (Stormwater), Potable Water (and Reclaimed water), and Natural Groundwater Aquifer Recharge Goals, Objectives and Policies of the City of Oldsmar, Florida.

B. Non-applicable Items

All apply.

C. Local Goals, Objectives and Policies

GOAL 1

THE CITY SHALL ENSURE THAT NEEDED WASTEWATER, SOLID WASTE AND POTABLE AND RECLAIMED WATER SERVICES BE PROVIDED BY A SAFE AND EFFICIENT SYSTEM WHICH MAINTAINS ADEQUATE FACILITIES AND PROVIDES FOR ORDERLY GROWTH AND EXPANSION.

**Objective 1.1**

**The City of Oldsmar shall enforce procedures to ensure that development permits are issued only when adequate facility capacity is available to serve the development.**

Policy 1.1.1

The level of service standards for residential shall be:

Facility	Level of Service Standards
Sanitary Sewer	117 gpdpc
Solid Waste	8.9 pounds per day per dwelling unit
Potable Water	120 gpdpc

The level of service standards for non-residential will vary depending on use.

Policy 1.1.2

The expansion, replacement or modification of infrastructure facilities shall be compatible with the City's level of service standards.

Policy 1.1.3

The City shall continue to improve existing wastewater collection systems by replacement or relining to further reduce groundwater infiltration and reduce wastewater per capita flow.

Policy 1.1.4

The City shall continue to maintain a database (including potential annexation areas showing the amount of demand and service capacity of the wastewater treatment facilities, and water distribution system owned and maintained by the City. The database shall include the following:

- Wastewater treatment demand by the city.
- Current capacity of the city's wastewater treatment facilities to meet the demand.
- Projected use and demand based on anticipated population increase in one year and five-year increments.
- The location, age, condition, life expectancy of treatment facilities and water and sewer lines.

Policy 1.1.5

The cost to expand infrastructure facilities shall be equitably shared by the development generating the service demand.

Policy 1.1.6



The City shall provide cost estimates and develop assessment procedures for eliminating septic tanks and hook up to the central system.

Policy 1.1.7

The city shall only issue development permits when infrastructure capabilities are available concurrent with any impacts of developments equal to adopted level of service.

Policy 1.1.8

Support the establishment and implementation of Total Maximum Daily Loads (TMDLs) for those surface waters that do not meet applicable water quality standards (impaired waters) after implementation of technology –based effluent limitations. Implementation of TMDLs includes the combination of regulatory, non-regulatory, or incentive-based actions that attain the necessary reduction in pollutant loading.

Policy 1.1.9

To determine whether adequate potable water is available for a development or redevelopment project, the City of Oldsmar, as a wholesale customer, will utilize Pinellas County’s annual concurrency test statement and adopted level of service standards as stated in the Potable Water Supply, Wastewater and Reuse Element of the Pinellas County Comprehensive Plan.

Measure

Adopted level of service standards  
Elimination of septic tanks

**Objective 1.2**

**The City shall coordinate the extension of, or increase in the capacity of, facilities to meet future needs.**

Policy 1.2.1

The City shall coordinate through its capital improvements program and its professional engineering of all future improvements of the water distribution system.

Policy 1.2.2

The City shall coordinate through its capital improvements program and its professional engineering studies all future drainage improvements.

Policy 1.2.3

The City shall require all new construction to connect with the existing potable water system before allowing new subdivisions.

Measures

Coordinate extension and expansion of future facilities.

**Objective 1.3**

**The City shall continue to pursue ways that maintain per capita potable water demand and wastewater generated in the city.**

Policy 1.3.1

The City shall continue to extend its reclaimed (re-use) irrigation system and pursue other measures such as storage facilities to provide citywide service.

Policy 1.3.2

The City shall establish priorities for replacement and expansion of potable water facilities based upon anticipated growth and development plans.

Measure

Reduction in potable water demand and wastewater generation  
Extension of wastewater irrigation system

**Objective 1.4**

**The City shall continue to institute programs that reduce its per capita generation of solid waste.**

Policy 1.4.1

The City shall continue to institute solid waste recycling program throughout the City.

Policy 1.4.2

The City shall continue to encourage residents to separate their refuse into recyclable and nonrecyclable solid waste, particularly newsprint, miscellaneous paper and metals.

Measures

Reduction in solid waste  
Participation in recycling program

**Objective 1.5**

**The City shall continue to enforce its hazardous waste ordinance.**

Policy 1.5.1

The City shall provide educational information using mailings and public meetings to inform residents of procedures to safely store and dispose of household and commercial hazardous material and of procedures to follow in emergencies.

Policy 1.5.2

"Amnesty Days" and Annual Hazard Waste Collection Days shall be used to encourage the collection and disposal of household and commercial hazardous material.

Measure

Adopt and implement hazardous waste and disposal ordinance

## GOAL 2

AN EFFICIENT MASTER DRAINAGE SYSTEM WHICH PROTECTS HUMAN LIFE, MINIMIZES PROPERTY DAMAGE AND IMPROVES STORMWATER QUALITY AND ON-SITE RETENTION SHALL BE PROVIDED.

### Objective 2.1

**The City shall implement the Stormwater Management Plan designed to manage the 25 year storm event.**

#### Policy 2.1.1

The following stormwater runoff criteria shall be met in all water management system designs:

- Treatment of stormwater runoff
- On-site percolation
- Street drainage
- Retention/detention
- Disposition of stormwater runoff
- Storm drainage into natural water bodies
- Inlet spacing
- Natural watercourses

#### Policy 2.1.2

The City shall correct existing drainage facility deficiencies through planned improvements listed in the Capital Improvements Element and Stormwater Management Plan.

#### Policy 2.1.3

The City shall establish priorities for replacement and expansion of drainage facilities based upon anticipated growth and development plans.

#### Policy 2.1.4

The design of drainage facilities shall comply with the ambient water quality standards of SWFWMD, FDEP, and Chapter 17-25 as well as other applicable water quality regulations for discharge; and the redevelopment of older areas shall protect and not further degrade receiving surface water bodies.

#### Policy 2.1.5

Encourage the use of low impact development techniques in site design to store, infiltrate, and evaporate stormwater runoff on the site. General performance criteria, which eliminate wetland impacts and minimize stormwater infrastructure needs include:

- Disturbing no more land than is necessary to provide for the desired use;
- Preserving indigenous vegetation to the maximum extent possible; and
- Minimizing impervious cover in all land development activities.

#### Measure

Implementation of stormwater management drainage plan designed to manage the 25-year storm event

## **Objective 2.2**

**The City shall cooperate with Pinellas and Hillsborough Counties to fully implement the planned improvements of the Pinellas and Hillsborough Counties Master Drainage Plan, as amended.**

### Policy 2.2.1

The implementation of the Counties Master Drainage Plans shall be in cooperation with those local governments within the city of Oldsmar drainage basins.

### Policy 2.2.2

Any assessment to pay for the construction, operation and maintenance of the required drainage improvements, for the City's drainage basin, shall be proportionate to the amount of stormwater runoff directly attributable to the local governments within the basin.

### Policy 2.2.3

The City shall require that all new development and redevelopment meet the drainage requirements of the 25-year frequency, 24-hour storm event. Post development runoff shall not exceed pre-development drainage rates.

### Policy 2.2.4

At the time of the implementation of the County Master Drainage Plan the City shall adopt the 25 year frequency, 24-hour storm event as the level of service standard for existing neighborhoods, all new development, and redevelopment in the City.

### Measures

Continued implementation of drainage improvements  
Proportionate and equitable assessment of drainage improvement costs  
Additional drainage basin plan  
Level of Service standards adopted

## **Objective 2.3**

**The City of Oldsmar shall coordinate the extension of, or increase the capacity of, solid waste facilities with Pinellas County, when necessary.**

### Policy 2.3.1

The City shall work with the Pinellas County solid waste authority in planning any extension or increases in capacity of the county's solid waste facilities, when necessary.

### Policy 2.3.2

The City shall coordinate with the county in establishing priorities for future solid waste facilities.

### Measures

Encourage maximum use of existing facilities.

Coordinate extension or expansion of solid waste facilities

### GOAL 3

THE NATURAL GROUNDWATER AQUIFER RECHARGE AREAS WITHIN THE CITY SHALL BE PROTECTED AND MAINTAINED.

#### Objective 3.1

**The City shall continue to implement procedures to provide protection for the natural groundwater aquifer and prime recharge areas located within the city.**

##### Policy 3.1.1

Areas with the greatest recharge potential, and which are undeveloped, shall be classified as prime recharge areas, and they shall be considered as candidates for designation as preservation areas on the City's Future Land Use Map.

##### Policy 3.1.2

Areas of prime recharge within the City not designated as preservation areas shall be regulated by limiting impervious surface, water quality monitoring, and other regulations which limit intense development, and shall be included in the master drainage plan to require retention of the 25-year frequency, 24-hour storm event on-site to allow for maximum recharge.

##### Policy 3.1.3

Areas of prime water recharge shall be buffered from wastewater or solid waste products.

##### Policy 3.1.4

Implementation of corrective measures.

##### Measure

Protection of prime groundwater recharge areas

### GOAL 4

THE CITY SHALL ASSURE THAT AFFORDABLE AND QUALITY WATER IS AVAILABLE

#### Objective 4.1

**The City will maintain a Ten Year Workplan that includes the relevant recommendations of the SWFWMD Regional Water Supply Plan, which pertains to the City.**

##### Policy 4.1.1

The City shall work with SWFWMD and other entities in preparation and adoption of its ten year water supply plan.

## Objective 4.2

**The development of an Alternative Water Supply Facility (Reverse Osmosis Water Treatment Plant) will include environmental monitoring and reporting as required for Water Use Permits with potential for significant adverse impacts to environmental features associated with the water resources of the SWFWMD. An Environmental Monitoring Report will be developed and implemented by the City of Oldsmar to incorporate the agreed upon Performance Standards with the SWFWMD.**

### Policy 4.2.1

The following Performance Standards are required by SWFWMD for the City of Oldsmar to reduce the potential for significant adverse impacts

- Wet season water levels shall not deviate from their normal range as a result of withdrawals from the City's wellfield;
- Wetland hydroperiods shall not deviate from their normal range and duration to the extent that wetlands plant species composition and community zonation are adversely impacted as a result of withdrawals from the City's wellfield;
- Wetland habitat functions, such as providing cover, breeding and feeding areas for obligate and facultative wetland animals shall be temporally and spatially maintained, and not adversely impacted as a result of withdrawals from the City's wellfield; and
- Habitat for threatened or endangered species shall not be altered to the extent that utilization by those species is impaired, as a result of withdrawals from the City's wellfield.

In the event that the SWFWMD determines that withdrawals from the City's wellfield are causing significant adverse impacts to wetlands in the vicinity of the wellfield, the City proposes the following:

- Adjustments will be made to the pumping cycle at the wellfield in an effort to reduce drawdown within the surficial aquifer surrounding the wellfield. Monitoring of piezometers at the wetland monitoring sites will be performed twice weekly during the altered pumping cycle to evaluate the effect on surface and/or ground-water levels within the wetlands;
- Supplemental hydration of wetlands from alternative water sources to prevent significant harm to affected wetlands. The need for supplemental hydration to the wetlands will be minimized to the greatest extent practical and supplemental flow to the wetlands will be monitored; or
- Ground-water withdrawal quantities will be reduced from the wellfield to a level that corresponds with a reduction in the drawdown of the surficial aquifer in an effort to reverse significant adverse impacts to wetlands in the vicinity of the wellfield. The resulting drawdown shall be determined using industry-standard ground-water flow models or analytical techniques, simulating the reduced ground-water withdrawal quantities. Monitoring of piezometers at the wetland monitoring sites will be performed twice weekly during the reduced withdrawal rates to evaluate the effect on surface and/or ground-water water levels in the wetlands.

### Policy 4.2.2

The City will implement standards from new wellhead protection ordinance when developed and implemented.

### Policy 4.2.3

The location of any new wellheads and or wellhead protection areas will be designated on the Future Land Use map when identified.

### Measure

Adoption and implementation of the City ten year water supply plan.  
Construction of Reverse Osmosis Water Treatment Plant

**Table 1**

<b>Wastewater Generated based on Projected Service Population</b>		
<b>Year</b>	<b>Population</b>	<b>City MGD</b>
2005	16,478	1.22
2010	17,779	1.60
2015	18,577	2.29
2020	19,068	NA
2025	19,370	NA

Source: Pinellas County Potable Water Supply, Wastewater and Reuse Element

**Table 2**

<b><i>Solid Waste Generation Based on Projected Service Population, 2005-2025</i></b>		
<b>Year</b>	<b>Service Population</b>	<b>Tons/Year</b>
2005	16,478	12,675
2010	17,779	13,676
2015	18,577	14,290
2020	19,068	14,667
2025	19,370	14,900

Source: Population projections per Pinellas County Planning Department, Rev. 2007  
Based on 1.3 tons per capita per year

**Table 3**

<b><i>Recycling Generation Based on Projected Permanent Population, 2005-2025</i></b>		
<b>Year</b>	<b>Population</b>	<b>Tons/Year</b>
2005	13,884	429
2010	14,958	464
2015	15,614	484
2020	16,015	496
2025	16,261	504

Population Projections reflect permanent (residential only) and does not include industrial or other such users as the City currently does residential recycling only. Recycling Generation based on .031 tons per year per person (2005 as base year).

**Table 4**

<b>Future Potable Water Supply Needs for Pinellas County Water Demand Planning Area (WDPA)</b>				
<b>Year</b>	<b>Level of Service for Planning Purposes (gpcpd)</b>	<b>Estimated and Projected Population</b>	<b>Average Daily Demand (MGD)</b>	<b>Maximum Daily Demand (MGD) (Avg. daily x 1.40*)</b>
2006	120	709,202	85.1	119.14
2010	120	714,180	85.7	119.98
2015	115	719,158	86.3	120.82
2020	115	724,136	83.3	116.60
2025	115	729,115	83.8	117.38

Source: Pinellas County Utilities, 2007  
 The 1.40 figure is based on a comparison of Maximum Daily and Average Day derived from a five-year span in previous years.

**Table 5**

<b>Projected Potable Water Demand 2005 - 2025</b>		
<b>Year</b>	<b>Functional/Service Population</b>	<b>Total Potable Demand</b>
2005	15,989	1.722
2010	17,070	1.787
2015	17,730	1.862
2020	17,865	1.875
2025	18,000	1.888

For consistency with the Alternative Water Supply Project, the population Projections in Table 5 are per the Projected Water use projections utilized in the City of Oldsmar Alternative Water Supply Plan, includes current and potential future users of system per this plan.

Population projections for years 2020 and 2025 based on 5 year average (2010 to 2015) of .76% increase

Potable Water Demand includes projections for Recreation, Fire Fighting, Water Utilities, Treatment Loss and other unaccounted waters.