D. UTILITIES ELEMENT

Introduction

The purpose of the Utilities Element is to provide guidance to the City to develop appropriate plans and polices to meet identified or projected deficits in the supply of utilities for the different economic sectors and needs in the community. The intent is to address the City's activities as well as to provide direction and assistance to the efforts of the private sector, as the private sector plans, designs, and constructs new buildings and subdivisions.

The utilities element consists of standards, plans, and principles to be followed in:

- The provision of utilities for all current and anticipated future residents of the city,
- The provision of specific utilities to address sanitary sewer, stormwater and stormwater management, potable water and natural ground water aquifer recharge needs, and solid waste.

Utilities Needs Summary

The following summarizes the Utilities Element:

Sanitary Sewer

- Rainfall during the rainy season exerts the greatest influence in producing peak wastewater flows or infiltration. The City has embarked on an extensive evaluation of the sanitary sewer system. The information for the evaluation will be included in a Master Plan which will direct the lining and replacement of the older sewer lines.

- The minimum level of service standard is an average of 127 gallons per person per day (GPCD).

- Clearwater's projected peak population in 2020 will be 164,356 permanent and seasonal residents and guests. Sewage flow rates projected for 2020 will utilize sixty-nine percent (69%) of the system capacity.

- Clearwater has adequate sewage treatment, collection capacity and system redundancy to serve existing and planned development. Current total design capacity is twenty-eight and a half (28.5) MGD; with four MGD allocated to the City of Safety Harbor through interlocal agreement.

- The City requires all new development to provide sanitary sewer systems to connect to appropriate sewage treatment districts. New septic tanks should not be permitted. Residents located in nearby unincorporated areas using septic tanks should connect to the City sewage system as sewer lines become available. Soil characteristics have moderate to severe limitations in areas where septic use has been identified.

- Currently there are four (4) private treatment plants in areas adjacent to the City. As these "package treatment plants" become inoperable the City should encourage those needing sanitary sewer service to connect to the City sewage system. The City should continue to require annexation into the City when connecting to the City sewer system.

- Clearwater has undertaken major pumping station replacement and upgrades for pumping stations located throughout the city. Upgrades to twenty four (24) additional pumping stations will be completed based on the recommendations from the Pump Station Capital Improvement Report. The remaining stations will be evaluated and a scheduled renewal and replacement program will be developed.

Solid Waste

- The City of Clearwater has entered into an interlocal agreement with Pinellas County to assist the County in accomplishing responsibilities emanating from the recycling program mandated by the State.

- Voluntary cooperation and participation in the residential curbside source separation program is imperative to the success of the program and depends on the willingness of City residents. Public awareness and education programs are important elements to motivate the citizenry to maintain their support and participation in the residential curbside separation program.

- The recycling of used office paper generated by City of Clearwater personnel will contribute to the preservation of natural resources and will continue to be a source of revenue for the City to help offset the cost of office paper.

- The necessity to monitor market fluctuations for the price of recyclable materials should be reviewed~~.~~ at all times; this should accompany a regular and continuous market evaluation to optimize revenue received.

- The solid waste level of service is based on a demand of seven and twelve one hundredths (7.12) pounds per capita per day.

- Clearwater residents should continue to partake in the utilization of the Pinellas County small quantity generator disposal site for hazardous/toxic waste materials for households and small generators of hazardous wastes. The City should also promote the Household Chemical Collection program that is held on an annual basis.

Stormwater Management

- The City of Clearwater will continue to monitor the stormwater management utility fee rate structure and amend it as required to remain competitive and maintain an adequate funding source to provide revenue for flood control, maintenance, retrofitting, and treatment of stormwater. In addition to the hydraulic improvements, this would improve the quality of stormwater discharging into surface waters, and will complement the measures proposed in the Surface Water Improvement and Management (SWIM) program and the Tampa Bay Estuary Program to improve surface water quality standards.

- The City of Clearwater needs to take advantage of any alternative funding opportunities that may become available from any State agency with regard to watershed management and/or general stormwater improvements.

- The City of Clearwater needs to continue to reduce flooding problems and strive for abatement of flood damage to houses and streets.

- The City of Clearwater needs to continue to coordinate stormwater management improvement efforts with Pinellas County and other incorporated areas adjacent to Clearwater City limits for both water quality and attenuation.

- The City of Clearwater needs to continue to maintain, correct deficiencies and improve, where necessary, current levels of service. Maintenance and improvement of the City stormwater management system must be recognized as a service provided by the City on a regular and continuous basis.

- The City of Clearwater needs to continue to prepare stormwater management plans which will identify and prioritize the implementation of programs to improve and enhance stormwater quality and quantity.

- Natural and man-made wetlands need to be utilized for stormwater storage and protected as natural resources. Wetlands provide a natural wildlife habitat and groundwater recharge functions which are pivotal characteristics of the natural and urbanized environment. Such features are firmly established within Clearwater's quality of life values.

- The City of Clearwater must continue to obtain appropriate permits from all environmental regulatory agencies prior to implementation of water resource projects.

- The City of Clearwater needs to research and develop new methods that are technically, environmentally, and economically viable of treating stormwater runoff before final discharge to improve and enhance local surface waters.

- Prospect Lake will continue to serve as a basin for stormwater attenuation and water quality management, as well as enhancing the aesthetic beauty of the downtown area.

- The City of Clearwater needs to continue to participate in the National Flood Insurance Program's Community Rating System (NFIP/CRS). Clearwater has been an active participant since 1990.

Potable Water and Natural Ground Water Aquifer Recharge Needs

- Clearwater has maintained an interlocal agreement with Pinellas County since 1955 with approximately forty percent (40%) of its water supply emanating from the County. The City also maintains a water use permit issued through the Southwest Florida Water Management District (SWFWMD) to pump an average of 14.3 million gallons daily (MGD) from its forty-four active wellheads. In 2011, the actual average pumpage from the City's wells was approximately 7.56 MGD (average through September 2015). The balance of the City's water demand is met through purchase from Pinellas County. In order to meet the city's future potable water supply needs in a fiscally responsible manner, several alternative actions must be explored and initiated both individually or in combination with other water supply source alternatives. The City's *Water Supply Plan - Capital Improvements Implementation Master Plan (Oct 2004),* as updated in 2008 and 2012, included projects based upon cost-benefit analysis that enabled the City to increase its local production of potable water to 7.5 MGD in 2015.

- Conservation of potable water supplies is of paramount importance to the City. Clearwater will continue to support Pinellas County and participate in the immediate action to provide for new potable water supplies at a reasonable cost.

- Clearwater must continue to utilize and provide efficient use of reclaimed water for irrigation purposes for both public and private use. Furthermore, it must constantly evaluate its approach to the desalination of marine water using reverse osmosis technology to provide a form of potable water backup for periods of drought, and when natural groundwater levels drop to critically low levels.

- Clearwater shall continue to explore and participate proportionately in the regional/and or County desalination and/ or reverse osmosis alternative strategies.

- The City needs to continue to recognize potable water as a scarce resource and to continue to operate the water utility prudently in implementing both conservation and consumption objectives. The current water consumption rate is approximately seventy-six (76) gallons/person/day, which includes both the seasonal and permanent population of Clearwater and is inclusive of both City produced water and County purchased water.

- The City needs to continue to coordinate with SWFWMD in the study to determine surficial groundwater direction and flow at various depths. Groundwater data will continue to be needed to determine future well sites and conditions of subsurface transmissivity. This data will be an important tool for management of Clearwater's wellhead operation to determine the City's ability to continue to provide future water supplies.

- The City, in conjunction with the City's Water Use Permit, needs to continue to develop an ultimate well field management plan, including well configurations, pumping schedules, water quality monitoring and mitigation plans. This is needed to assure the continued supply of well withdrawal in accordance with the City's water use permit.

- The City needs to continue to implement the recommendations from the Alligator Creek study.

- The City needs to continue with its public education program to make the public aware of the value of reclaimed water use.

GOALS, OBJECTIVES AND POLICIES

SANITARY SEWER

D.1 GOAL - TO PROVIDE HIGH QUALITY, RELIABLE, AND EFFICIENT SANITARY SEWER SERVICE IN AN ENVIRONMENTALLY SOUND MANNER WHICH WILL PROTECT THE PUBLIC HEALTH AND SAFETY.

D.1.1 Objective - To maintain adequate Levels of Service for existing and future populations through the year 2020.

Policies

D.1.1.1 In determining the availability of facility capacity and the demand created by new development, the minimum level of service standard is an average of 127 gallons per person per day (GPCD).

D.1.2 Objective - The City shall continue to produce advanced wastewater treatment (AWT) improvements at all water pollution control facilities in accordance with Florida Department of Environmental Protection (DEP) and U.S. Environmental Protection Agency (E.P.A.) requirements.

Policies

D.1.2.1 Sewer services shall not be extended to properties outside the corporate limits of the City unless an agreement to annex or a petition to annex is filed and approved by the Clearwater City Council. Sufficient capacity must exist to serve the areas committed to City service, as well as those proposed for service.

D.1.2.2 Septic tanks and package treatment plants which are determined by the Pinellas County Health Department or the Florida Department of Environmental Protection (DEP) to have an adverse impact on the environment, shall hook up to the City sewer system after complying with all applicable City requirements when such connection can be made.

D.1.2.3 Should it appear likely that additional development will exceed the treatment capacity of a plant, the City Manager shall institute a method for temporarily limiting sewer hookups in the area, while concurrently making provisions to expand plant capacity, or capacity of the wastewater collection system to permit development.

D.1.2.4 Continue to develop a sewage treatment system which will minimize energy, water, and other resource needs in order to preserve these valuable resources.

D.1.2.5 Clearwater shall coordinate and cooperate with appropriate local, State, regional, and Federal agencies in implementing the sewer system plan.

D.1.2.6 Clearwater shall continue to develop qualified plant operators who meet applicable standards and certification in order to maximize the efficiency and effectiveness of the treatment process.

D.1.3 Objective - Provide and maintain minimum demand of sewer service to all customers within the corporate limits of the City.

Policies

D.1.3.1 Ensure that ordinances adequately address sewer provisions.

D.1.3.2 Annexation of developments which have deficient sewer systems is encouraged. Prior to annexation, a program for sewer system improvements shall be prepared by the City with estimated costs of these improvements to be submitted to the City Council at the time of annexation. The owner shall pay the costs of the improvements.

D.1.3.3 When new subdivisions are being developed, the developer shall provide internal sewer systems which are constructed to City specifications.

D.1.3.4 Continue to Develop and maintain a system inventory, by location and condition of underground sewer lines, to provide information for estimates of repair and replacement needs.

D.1.3.5 Extend force mains, lift station capacity and the gravity wastewater collection system to serve existing development as well as new infill development.

D.1.3.6 Continue the cleaning and lining of major interceptors to protect the integrity of the sewer system.

D.1.3.7 Continue to supply sewage treatment capacity to Safety Harbor at a rate not to exceed four (4) MGD.

D.1.4 Objective - To maintain equitable charges to support fiscal and capital programs and to provide efficient financial management for all sewer system funds. Sewer rates structure shall be reviewed each fiscal year.

Policies

D.1.4.1 The sewer system shall be a self-sustaining, utility enterprise, and rates should be based on sound engineering and economic principles.

D.1.4.2 Fees charged users of sewer services shall be adequate to cover system operating costs, repayment of capital costs, suitable coverage for payment of bonded indebtedness to maintain desirable bond rating and allow for repair and replacement of existing facilities.

D.1.4.3 Prioritization and scheduling of major sewer improvements should be done as a component of the capital improvements program.

D.1.4.4 Charges for sewer system usage shall reflect all operation costs consistent with the amount of waste water generated by each system user.

D.1.4.5 Maintain sufficient revenues to fund a portion of the capital improvements for repair and replacement on a pay-as-you-go basis.

D.1.4.6 Maintain periodic reevaluation of the sanitary sewer utility rate structure and annual notification to utility users of rate structure per requirements of the Florida Department of Environmental Protection (DEP) and U.S. Environmental Protection Agency (E.P.A.).

D.1.5 Objective - Continue current practices of effluent disposal, including outfall of tertiary-treated effluent, and spray irrigation on open spaces; establish a multi-modal approach to effluent disposal to insure that the most resource-efficient methods are used, consistent with environmental and economic considerations.

Policies

D.1.5.1 Continue to encourage long-term agreements with golf course operators and other individuals or groups to use reclaimed water for irrigation by offering reclaimed water.

D.1.5.2 Continue to develop the use of reclaimed water for irrigation of City parks, golf courses, ball fields, soccer fields and other appropriate land uses in an effort to conserve potable water.

D.1.5.3 Continue to provide for the best, cost-effective means of sludge disposal.

D.1.5.4 Continue to meet all E.P.A. and Florida (DEP) water quality standards for effluent discharge.

D.1.5.5 Expand the reclaimed water network to serve planned areas, in order to optimize potable water conservation efforts, while concurrently providing for optimum use for wastewater effluent.

D.1.5.6 Continue to evaluate reclaimed water rates with goals of user acceptance and cost recovery.

SOLID WASTE

D.2 GOAL - TO PROVIDE THE MOST RELIABLE, COST EFFECTIVE AND ENERGY EFFICIENT METHOD OF COLLECTING, RECYCLING, AND DISPOSING SOLID WASTES THROUGHOUT THE CITY OF CLEARWATER IN AN ENVIRONMENTALLY SOUND MANNER WHICH WILL PROTECT THE PUBLIC HEALTH AND SAFETY.

D.2.1 Objective - Continue To maintain adequate levels of service for existing and future populations through the year 2020.

Policies

D.2.1.1 The following levels of service standards have been established for the City of Clearwater and shall be used in determining the availability of facility capacity and the demand created by new development:

Service	Level of Service Standards
Solid Waste Facility	Average Solid Waste Generator Rate

7.12 pounds per capita per day

D.2.2 Objective - On an ongoing basis, continue to develop collection and transport strategies which minimize costs and use optimally located waste transfer facilities.

Policies

D.2.2.1 Collection services shall not be extended to properties outside the City limits unless sufficient capacity exists to serve the areas committed to City services, as well as the area proposed for service.

D.2.2.2 Collection services shall not be extended to properties outside the City limits except by interlocal or other type agreement.

D.2.2.3 Provide collection service to every residential and commercial location within the Clearwater City limits.

D.2.3 Objective - Continue to Provide sound fiscal management for solid waste collection, transport, disposal and recycling as it develops through State legislation.

Policies

D.2.3.1 Fees charged subscribers shall be adequate to cover system operating costs, repayments of capital costs, and allow for repair and replacement of existing facilities.

D.2.3.2 Utilize a sound statistical methodology for quantifying the impact on the solid waste stream of recycling programs.

D.2.3.3 Charges to each subscriber shall reflect the average costs incurred to service that subscriber.

D.2.3.4 Funds set aside for repair and replacement shall not be diverted to other uses.

D.2.3.5 Replacement of equipment and containers shall be scheduled on a basis that permits a uniform replacement rate and avoids irregular capital outlays of substantial amounts of revenue.

D.2.4 Objective - Continue to conserve natural resources used in the collection, disposal, and resource recovery systems.

Policies

D.2.4.1 Utilize recycling and disposal techniques to conserve resources and minimize adverse environmental impact by recycling aluminum and steel cans, newspaper, glass, plastics, cardboard, office paper, other metals and yard waste.

D.2.4.2 Develop a solid waste collection, recycling disposal and recovery system that will, to the greatest degree possible, reduce the waste stream, conserve energy and minimize impact on natural resources.

D.2.4.3 Continue to reduce the solid waste stream through the recycling of aluminum, mixed paper, newspaper, plastic, steel, cardboard, office paper, other metals and yard waste.

D.2.4.4 Voluntary residential curbside source separation for both single-family homes and multi-family shall be the method used in the Clearwater recycling effort.

D.2.4.5 Commercial source separation shall continue to be used on an open competitive basis with registered private recovered materials dealers.

D.2.5 Objective - Continue to coordinate and cooperate with other governments to solve extraterritorial solid waste disposal problems.

Policies

D.2.5.1 Participate in the Pinellas County Solid Waste Disposal Recycling and Resource Recovery Programs.

D.2.5.2 Coordinate with other municipalities and cooperate in recycling and resource recovery programs to reduce the solid waste stream and dispose of solid waste in an efficient and environmentally sound manner.

D.2.6 Objective - Employ the most efficient strategies in the city's continuous effort to reduce the residential waste stream through curb-side source separation and to reduce disposal costs by using available markets to return materials to use through recycling.

Policies

D.2.6.1 Utilize available State grant funds to expand the processing capacity to provide a recycling center for residential, multi-family and commercial source separation; furthermore, the City should on a continuous basis conduct studies and develop methods for the most cost effective collecting, processing and marketing of recyclable materials.

D.2.6.2 Direct Clearwater citizens to authorized sites for disposal and transfer/temporary storage facilities located in Pinellas County for hazardous, household wastes.

D.2.6.3 Support and encourage the Household Chemical Collection Program provided by Pinellas County by assisting in notifying citizens of drop-off sites through the utility billing process.

D.2.6.4 The Clearwater Engineering Department and Pinellas County shall coordinate and manage manifest procedures with all applicable regulatory agencies for all City generated hazardous/toxic wastes as required by Federal and State laws.

D.2.7 Objective – Continue the implementation of a dumpster and recycling container screening program to support the visual appearance objectives of the City.

Policies

D.2.7.1 Where not impracticably constrained by site design features, all dumpster and recycling containers in the City shall continue to be screened.

STORM WATER

D.3 GOAL - PROVIDE THE MOST COST EFFECTIVE AND EFFICIENT PROVISION OF STORMWATER MANAGEMENT INCLUDING THE IMPROVEMENT AND ENHANCEMENT OF STORMWATER QUALITY DISCHARGING INTO LOCAL RECEIVING WATERS, AND PROVIDE MAXIMUM PRACTICAL PROTECTION TO PERSONS, PROPERTY, AND THE NATURAL ENVIRONMENT.

D.3.1 Objective - To maintain adequate levels of service for existing and future populations through the year 2020.

Policies

D.3.1.1 The following level of service standards have been established for the City of Clearwater and shall be used in determining the availability of facility capacity and the demand created by new development and shall be applied to all new development, redevelopment, and for all City facilities through 2020.

Service	Level of Service Standards
Stormwater Management Facilities	Design storm 10 - year storm frequency for all new street development using the rational design method. 25 - year storm frequency with positive outfall for major storm systems with basin time of intensities controlling the duration.* 50 - year storm frequency when no outfall and discharge is to street right-of-way.* 100 - year storm frequency when no outfall and discharge is across private property.*

* Design standards for stormwater quality treatment/storage quantity shall conform to the current SWFWMD requirement [Presently being the SCS Unit Hydrograph design method, using the design storm frequency and a twenty-four (24) hour duration for sites ten (10) acres or more, and the rational design method for sites under ten (10) acres].

D.3.2 Objective -The City of Clearwater shall continue to develop watershed management plans which should seek to identify, evaluate and implement the most cost effective and cost efficient programs for stormwater management, including stormwater quantity and quality. These plans should also address any projects included in the Pinellas County Surface Water Management Plan for the implementation of all stormwater management, as well as recommended funding sources.

Policies

D.3.2.1 Coordinate and cooperate with appropriate local, State, regional, and Federal agencies implementing the Pinellas County and City of Clearwater stormwater management plans.

D.3.2.2 Continue to Provide a stormwater management system throughout the City that will afford the most economically feasible protection to residents and property.

D.3.2.3 All stormwater management improvements should seek to meet applicable goals, guidelines, and regulations established to provide flood protection and pollution abatement.

D.3.2.4 Participate in interlocal agreements to study and evaluate stormwater quality and stormwater runoff management issues consistent with the National Pollutant Discharge Elimination System (NPDES).

D.3.2.5 Coordinate and cooperate with Southwest Florida Water Management District policies and regulations.

D.3.2.6 Continue to require new development to detain water on site and control quantity, quality, and rate of flow being released into the receiving drainage systems.

D.3.3 Objective - Lower high water profiles during storm events, as necessary, to reduce house flooding occurrences and to lessen the resulting adverse effects on public health, the natural environment, public and private property.

Policies

D.3.3.1 Continue to provide a program of regular maintenance to the stormwater management system to ensure maximum efficiency and performance. Ensure that stormwater management plans include measures to remove trash, sedimentation and other debris which impede flow and incorporate structural and non-structural measures to reduce or eliminate the discharge of oil, grease, heavy metals, and other suspended particles into the stormwater management systems.

D.3.3.2 Natural and man-made wetlands shall be considered as a means to provide stormwater management wherever possible and shall be maintained for hydrologic purposes. The efficiency of natural and man-made systems to convey stormwater runoff shall be protected through the provision of routine water quality maintenance schedules overseen by city inspections.

D.3.3.3 Continue to provide multiple use facilities, such as recreational open space uses, with open channel stormwater management systems, when appropriate.

D.3.3.4 Development and redevelopment activities shall comply with all stormwater management design standards and criteria.

D.3.3.5 Structural Development shall be prohibited where it is determined that such development will have an adverse impact on stormwater storage areas, increase flood prone areas, significantly increase rates of runoff, or cause other unfavorable drainage conditions. Both man-made and natural systems shall be treated on an equal basis as a sensitive preservation area; no distinction shall be made between a natural system and a man-made or man altered hydrologic system.

D.3.3.6 Limit development that will result in building(s) constructed within/or over stormwater retention/detention ponds, streams or channels. All wetlands, streams, channels, or other hydrologic features, whether wetlands, ponds or bodies of water having intrinsic hydrologic, biologic and zoological functions with no distinction made in regard to its status to whether it is man-made or natural shall be considered for a Preservation Land Use Plan classification to ensure protection from development.

D.3.3.7 Continue active participation and cooperation with the National Flood Insurance Program and the Florida Emergency Management Agency for the purpose of recognizing flood prone areas, and establishing abatement programs that endeavor toward a reduction in damages and losses due to flooding.

D.3.3.8 Continue the established requirement of a twenty-five foot setback from the tops of a bank from all wetlands whether natural or man-made, and require minimum finished floor elevations in areas adjacent to lakes, bays, creeks, the Gulf of Mexico, Tampa Bay and Old Tampa Bay, and other flood prone areas.

D.3.4 Objective Continue the implementation of the most cost effective and efficient plan to reduce the occurrence of street flooding where safety issues and traffic problems exist as prioritized and set forth in the Capital Improvement Element, and listed in the stormwater management plans.

Policies

D.3.4.1 Identify areas where inadequate stormwater management easements exist, and obtain proper access to stormwater management channels, structures and appurtenances for maintenance purposes.

D.3.4.2 Improve all street stormwater management systems where deficiencies exist as articulated in the City's annual budget document.

D.3.5 Objective - Protect and enhance the quality of receiving waters by the use of "Best Management Practices" in accordance with the adopted watershed management plans.

Policies

D.3.5.1 The use of "best management practices" shall be required before, during, and after construction activities to prevent water pollution resulting from erosion and siltation.

D.3.5.2 Vegetated swales, sodding, and appropriate landscaping will be required as components of the drainage system for natural filtration before final discharge into receiving waters.

D.3.5.3 Monitor major stormwater management outfalls and receiving water bodies to identify the quality of stormwater runoff and the impact on receiving bodies.

D.3.5.4 Maximize water recharge potential in designing stormwater management improvements by utilizing natural wetland areas for stormwater storage.

D.3.5.5 Coordinate stormwater management improvements with other local governments to assist in solving stormwater management problems of an extraterritorial nature.

D.3.5.6 Continue to identify impaired bodies of water and prioritize them for improvement and enhancement.

D.3.5.7 Water resource projects shall be consistent with the policies of the Conservation Element and with adopted watershed management plans.

D.3.5.8 All stormwater management plan projects of the City of Clearwater shall comply with the Florida Surface Water Improvement and Management (SWIM) program and the National Estuary Program.

D.3.5.9 The City of Clearwater shall continue to upgrade and retrofit City-owned drainage system facilities and include stormwater treatment for water quality in accordance with the proposed stormwater management plan.

D.3.6 Objective - Continue to provide sound fiscal management of the stormwater management systems to include maintenance, operation, and construction in accordance with the watershed management plans and concurrent with its implementation.

Policies

D.3.6.1 Operation and maintenance of the stormwater management systems may be financed through revenues from the City's stormwater utility fee.

D.3.7 Objective - Provide economic development incentives that promote water resource protection and enhancement.

Policies

D.3.7.1 Methods of financing stormwater management system improvements and new stormwater infrastructure construction should be evaluated to determine the most feasible and equitable arrangement, both city-wide and in local problem areas.

D.3.7.2 The City of Clearwater shall continue to seek and be on notice of financial support for system improvements through grant programs administered by appropriate State and Federal agencies.

D.3.7.3 The City of Clearwater shall pursue a system of regional stormwater management which is both economically and environmentally sound.

D.4 GOAL - STORMWATER DISCHARGE SHALL BE MANAGED TO PROVIDE FLOOD PROTECTION FOR THE CITIZENS OF THE CITY OF CLEARWATER AND TO PRESERVE, PROTECT, AND ENHANCE THE WATER QUALITY OF RECEIVING WATERBODIES.

D.4.1 Objective - The protection, restoration, and enhancement of water quality associated with stormwater runoff will be considered a function of the City's overall stormwater management plans.

Policies

D.4.1.1 The City shall incorporate water quality protection and enhancement criteria into the City stormwater management plans.

D.4.1.2 The use of natural alternatives, the conservation of natural stormwater management systems, and the protection and improvement of the quality of receiving waters shall be a goal of the City's stormwater management plans.

D.4.1.3 Management plans shall continue to be developed on an ongoing basis for waterbodies with known or suspected water quality problems in the City to include Tampa Bay, Clearwater Harbor, Stevenson Creek, Allen's Creek, and Alligator Creek.

D.4.1.4 The City shall systematically and timely prepare watershed or waterbody specific management plans, and update them as necessary for waterbodies within the City. Such plans shall include both water quality and flood control considerations and recommended funding sources.

D.4.1.5 The City shall implement all City-approved watershed management plans.

D.4.1.6 All City stormwater management plan projects within watersheds of ~~T~~the City shall comply with applicable SWFWMD, State, and Federal requirements, including SWIM Plans for that waterbody or watershed.

D.4.1.7 The City shall continue to coordinate with and supplement the County's surface water monitoring program.

POTABLE WATER AND NATURAL GROUND WATER AQUIFER RECHARGE

D.5 GOAL - PROVIDE, DEVELOP, AND MAINTAIN A PERMANENT POTABLE WATER SUPPLY SYSTEM TO MEET ANTICIPATED DEMAND WHILE PROVIDING MAXIMUM PRACTICAL PROTECTION TO THE ENVIRONMENT AT A COST CONSISTENT WITH THE PUBLIC'S ABILITY AND WILLINGNESS TO PAY.

D.5.1 Objective - To maintain adequate Levels of Service for existing and future populations through the year 2018.

Policies

D.5.1.1 The following level of service standards have been established for the City of Clearwater and shall be used in determining the availability of facility capacity and demand created by new development:

Service Area	Level of Service Standards
Potable Water Facilities City and County Water	Average Water Consumption Rate

City Service Area	120 gallons per capita per day at a pressure of 40-45 psi.*

*Continue to maintain water consumption of one hundred twenty (120) GPCPD or less as per the conditions set forth by Clearwater's Water Use Permit.

D.5.2 Objective - Provide adequate quantity and quality of water service to all customers of the Clearwater service area. Current service level (May, 2017) is 45,168 customer accounts (potable, reclaimed and fire).

Policies

D.5.2.1 Ensure that land development regulations, building codes and City ordinances adequately address water system provisions by performing a thorough evaluation of City codes and by coordinating proposed provisions with the Southwest Florida Water Management District, Tampa Bay Water, Pinellas County, and the Florida Department of Environmental Protection.

D.5.2.2 Engineering shall analyze the condition and adequacy of any water distribution system that the City may inherit through annexation and prepare cost estimates for upgrading those systems to meet City requirements.

D.5.2.3 When new subdivisions are being developed, it shall be the responsibility of the developer to provide internal potable water and reclaimed water systems which are constructed to City specifications.

D.5.2.4 Continue to construct water system improvements which will provide adequate quantity, pressure, and duration of fire flows while meeting system user needs.

D.5.2.5 Continue to develop a system and construct improvements which will conserve energy, water, and other valuable resources.

D.5.2.6 The City shall continue to participate with and assist the Southwest Florida Water Management District, Tampa Bay Water, Pinellas County Health Department, and the U.S. Environmental Protection Agency in developing innovative techniques to augment existing water supplies to provide for future needs.

D.5.2.7 Continue to identify, acquire, and develop sources of water supply and methods of water treatment to meet existing and future needs. Some ways this can be accomplished are through well rehabilitation projects and/or exploration and drilling of new wells. Some type of water treatment may be initiated. Additional volumes of water may be acquired from the Pinellas County Water System through Clearwater's intergovernmental water service agreement. The City's long range *Water Master Plan,* updated in 2012, and its *10-Year Water Supply Facilities Work Plan (2016-2026 Planning Period*) shall serve as guiding documents for water supply and treatment methods.

D.5.2.8 Ensure that water management projects are designed and operated to maintain and enhance natural systems, as well as man made systems, by working closely with the Southwest Florida Water Management District when proposing new projects and water management programs. The City's long range *Water Master Plan* outlines a work plan for continued coordination with the Southwest Florida Water Management District's Regional Water Supply Plan, adopted in November 2015.

D.5.2.9 Water service shall not be extended to properties outside the City's service area unless sufficient capacity and quality of water exists to serve the areas already committed to City service.

D.5.2.10 Water services shall not be extended except in those areas so designated for City of Clearwater by interlocal or other agreement.

D.5.2.11 Encourage the development of local and regional water supplies within the jurisdiction of the Southwest Florida Water Management to avoid transporting surface water across other district boundaries.

D.5.3 Objective - Continue to maintain the water system in a safe, sound, and efficient manner on a daily basis.

Policies

D.5.3.1 The Public Utilities Department, Water Division, shall monitor water quality and the operation of the water distribution system with the intent of repairing and replacing deficient portions of the system within the framework of the capitalized budgeting process.

D.5.3.2 Continue to provide a minimum operating pressure of 40-45 psi throughout the water distribution system.

D.5.3.3 Continue to provide adequate spacing of fire hydrants to provide optimum hose lays and fire flow.

D.5.3.4 Require at the time of application for connection to the public potable water system, that minimum fire flows and hydrant spacing be consistent with fire district standards. Also, require that proper size water pipes are installed to provide desired fire flow rates based on the most recent Insurance Service Office (ISO) Report.

D.5.4 Objective – Continue to Provide sound fiscal management for the operation and maintenance of potable water service in the City's service area

Policies

D.5.4.1 Fees charged users of water services shall continue to be adequate to cover system operating costs, repayments of capital costs, and allow for repair and replacement of existing facilities. The City shall also continue to evaluate new rate structures as necessary.

D.5.4.2 Prioritization and scheduling of major improvements associated with the water system should be accomplished as a component of the capital improvement program.

D.5.4.3 Funds set aside for repair and replacement of the water system shall not be diverted to other uses.

D.5.4.4 The City should continue to seek financial support of the water system through grant programs administered by appropriate State and Federal agencies.

D.5.4.5 The City shall continue to refine the inverted rate structure for residential water meters, lawn meters and all other water meters permitted by the Water Division of the Public Utilities Department.

D.5.4.6 Encourage partnerships among federal, state, local governments, and the private sector that would identify and build needed potable water facilities and allocate such facilities costs among the partners in proportion to the benefits accruing to each of them.

D.5.5 Objective – Continue to develop a potable water system that is compatible with the environment and seeks to conserve and protect sensitive natural resources.

Policies

D.5.5.1 Except for areas of the City where reclaimed water is available, shallow wells shall be recognized as a source of water for irrigation purposes. The City shall continue to require a City permit for shallow well installation.

D.5.5.2 The City's building code shall include the requirement for water conserving fixtures in newly constructed or remodeled buildings.

D.5.5.3 Manage the supply of water in quantities which would minimize significant adverse impacts on the natural system and protect the long term public interest.

D.5.5.4 Develop and modify rate structures and policies which encourage conservation of potable water.

D.5.5.5 The City shall maintain its current Water Restriction Ordinance.

D.5.5.6 Provide educational awareness to inform citizens of the need and opportunities for conserving potable water by visiting schools to speak with young children about water conservation practices.

D.5.5.7 Reclaimed water service will continue to be extended to private residences based on the Twenty (20) Year Reclaimed Water Master Plan.

D.5.5.8 When new subdivisions are being developed and/or redevelopment occurs, at locations where reclaimed water will be available within seven (7) years, the developer shall provide internal reclaimed water systems that are constructed to City specifications.

D.5.5.9 The City will continue to develop strategies aimed at reducing potable water consumption by means such as water conservation rates, conservation codes, operational measures, rebate and plumbing retrofit programs, landscape and irrigation efficiency programs, research and evaluation, and re-use alternatives.

D.5.5.10 The City will expand, in coordination with other stakeholders, educational programs to promote water conservation measures.

D.5.6 Objective – Continue to achieve effective coordination with other government agencies to solve problems of an extraterritorial nature with cooperation and in conjunction with the Southwest Florida Water Management District (SWFWMD).

Policies

D.5.6.1 The City shall continue to participate in regional and County-wide studies which are or may be formed to seek solutions of problems of an extraterritorial nature.

D.5.6.2 Continue to cooperate with the Southwest Florida Water Management District and Tampa Bay Water in developing environmental and hydrologic data that will identify safe and reliable potable water yields in existing and future well-fields.

D.5.6.3 Continue to coordinate with appropriate local, State, regional and Federal agencies in implementing the water system plan.

D.5.6.4 The City shall pursue a coordinated approach to interjurisdictional problems, by providing support of both staff and officials to participate in conservation efforts with Pinellas County and the Tampa Bay Regional Planning Council.

D.5.6.5 Ensure consistency with the actions defined within the Regional Water Supply Plan prepared by Southwest Florida Water Management District.

D.5.6.6 The City will maintain a Water Supply Facilities Work Plan that is consistent with the Southwest Florida Water Management District's Water Supply Plan by updating the work Plan within 18 months of an update to the District's Regional Supply Plan that affects the City.

D.5.7 Objective - Continue to protect all natural recharge areas having functional hydrological characteristics.

Policies

D.5.7.1 Recognize the importance of groundwater aquifer recharge in the hydrological process and the need for natural groundwater recharge as an integral component of the City's urban environment.

D.5.7.2 The City shall include incentives in the Community Development Code for the protection of natural groundwater aquifer recharge areas as identified in the Conservation Element of the Clearwater Comprehensive Plan.

D.5.7.3 The City of Clearwater shall continue to protect groundwater quality by enforcing the Wellhead Protection Ordinance within the area specified on Map D-2. Guidelines and criteria for protection of potable water wellfields include:

1. Issuance of a Permit

(a) A wellhead protection permit shall be obtained from the engineering director for any new business, commercial, industrial

or other nonresidential activity on property within the city if any portion of the subject property is within 1,000 feet of a potable water well. New residential construction on property located within the city should also obtain a permit if any portion of the subject property is within 100 feet of potable water well.

2. Permit Requirements:

(a) Activities within a 1,000-foot radial distance around a potable water supply well shall conform to the requirements of Chapter 62-521, F.A.C., Wellhead Protection.

(b) Activities defined as potentially high risk to ground water quality in Chapter 62-555.312, F.A.C. shall not be permitted within 100 feet of an existing potable water supply well.

(c) Activities defined as a moderate risk to ground water quality in Chapter 62-555.312, F.A.C. shall not be permitted within 50 feet of an existing potable water supply well.

(d) If any contaminating material is proposed to be used or stored for any business, commercial, industrial or other nonresidential use within 1,000 feet of a potable water supply well, a protection-containment plan shall be submitted. If any contaminating material is proposed to be used or stored for residential use within 100 feet of a potable water supply well, a protection-containment plan shall be submitted.

(e) A wellhead protection permit application shall at a minimum include a location map of the potable water well and 1,000 feet surrounding the well, plans for the proposed development or expansion/change of an existing use (if applicable), the location and identification of existing uses in a 1,000-foot zone for a commercial use application or a 100-foot zone for a residential use application, a listing of any contaminating material to be used or stored on the site and a protection-containment plan if necessary.

3. Permit Review

(a) In reviewing a protection-containment plan submitted by an applicant for a wellhead protection permit, the following factors shall be considered when determining the sufficiency of the plan:

(1) The amount, character and intended use of the contaminating material involved;

(2) Storage, conveyance and handling techniques to be employed by the applicant;

(3) The extent of any propensity to spill, break, lose or discharge contaminating material;

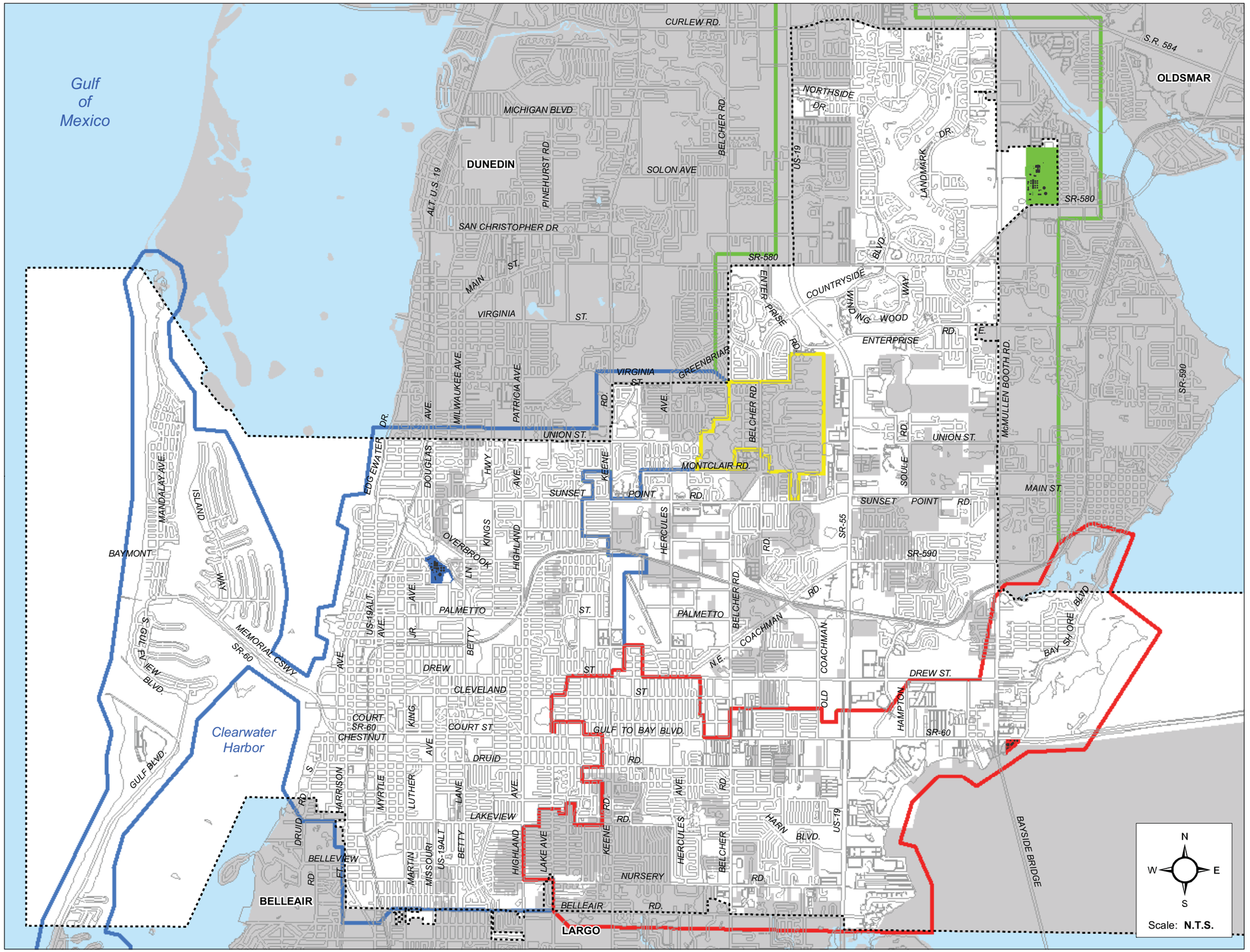
(4) The type of containment devices to be employed;

(5) The extent of employee safety training and practices; and

(6) Any other consideration appropriate to the protection of the wellhead.

(b) No wellhead protection permit shall be issued unless the protection-containment plan and permit application fully addresses all contamination and safety matters to the satisfaction of the engineering director. A wellhead protection permit may be issued subject to conditions related to the protection of the public potable water supply.

City of Clearwater Comprehensive Plan 2008



Wastewater Treatment Facilities and Collection Districts

Map #: D-1

Date: 7/18/2008

Source: Clearwater Public Utilities / May 2008

Legend

Wastewater Treatment Collection Districts

- EAST
- MARSHALL
- NORTHEAST
- "ON TOP OF THE WORLD" DISTRICT (PRIVATE)

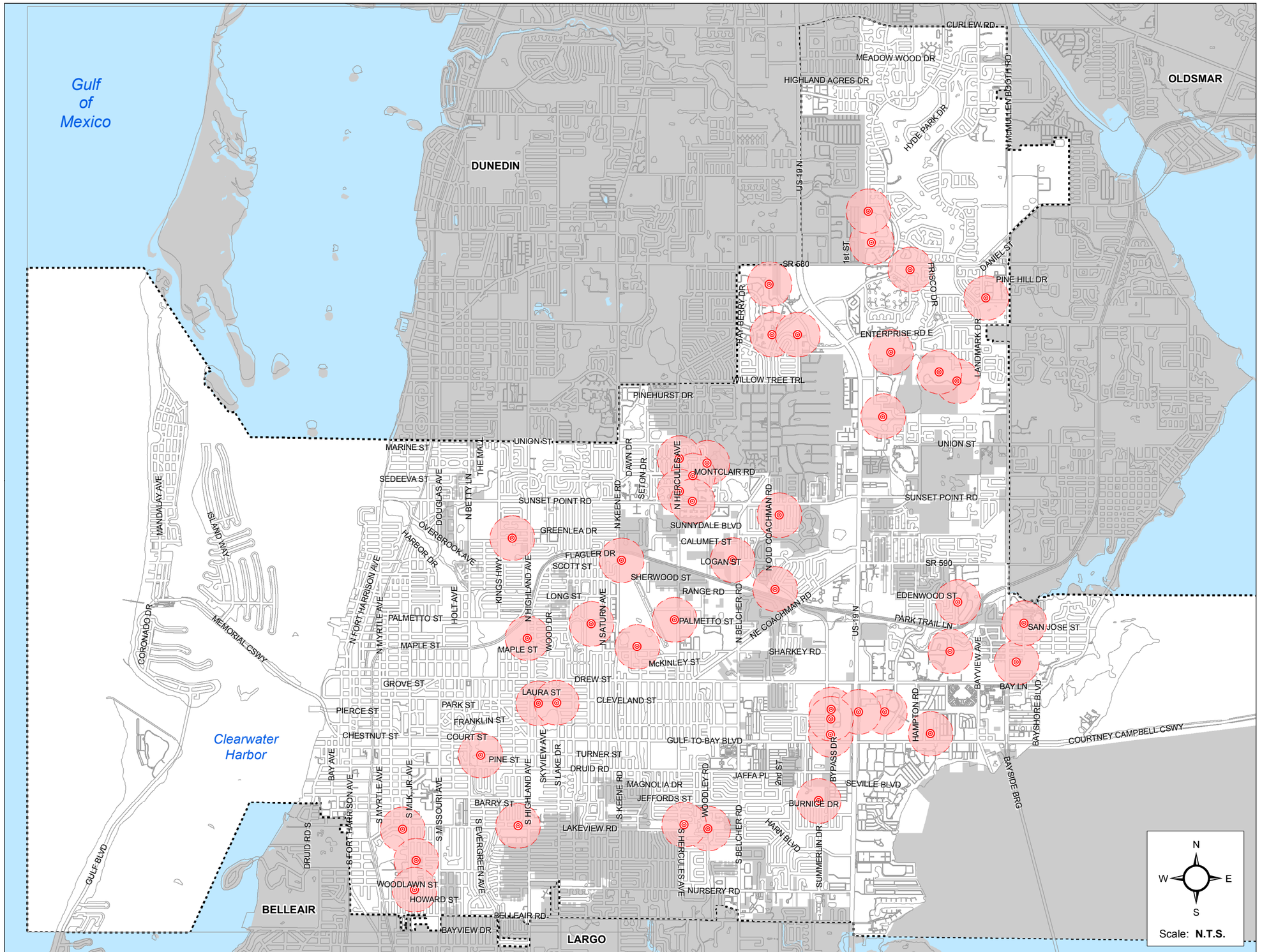
Wastewater Treatment Facilities

- WPC PLANT - EAST
- WPC PLANT - MARSHALL ST
- WPC PLANT - NE
- Clearwater Planning Area
- Outside Clearwater City Limits

CITY OF Clearwater

Prepared by:
Engineering Department
Geographic Technology Division
100 S. Myrtle Ave, Clearwater, FL 33756
Ph: (727)562-4750, Fax: (727)526-4755
www.MyClearwater.com

City of Clearwater Comprehensive Plan 2017



Potable Water Wells and Wellhead Protection Zones

Map #: D-2

Date: 6/14/2017

Source: Clearwater Engineering Dept / June 2017

Legend

- In Service Well
- Wellhead Protection Zone (1000' Buffer)
- Clearwater Service Area
- Outside Clearwater City Limits

Prepared by:
Engineering Department
Geographic Technology Division
100 S. Myrtle Ave, Clearwater, FL 33756
Ph: (727)562-4750, Fax: (727)526-4755
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Document Path: V:\GIS\Engineering\Location Maps\Potable_Wells_Buffer\2017_Comp_Plan_D-2_Potable_Wells_with_Buffers.mxd