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ORDINANCE NO. O-2015-275

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AN ORDINANCE OF THE TOWN COMMISSION OF THE TOWN OF HILLSBORO BEACH, FLORIDA, AMENDING THE TOWN'S COMPREHENSIVE PLAN TO PROVIDE FOR THE STATE MANDATED UPDATES TO THE WATER SUPPLY PLAN AND BY SPECIFICALLY AMENDING THE FUTURE LAND USE, INFRASTRUCTURE, CONSERVATION, CAPITAL IMPROVEMENTS AND INTERGOVERNMENTAL COORDINATION ELEMENTS AS SHOWN IN EXHIBIT "A"; PROVIDING FOR SEVERABILITY; PROVIDING FOR CONFLICTS; PROVIDING FOR CODIFICATION; PROVIDING FOR AN EFFECTIVE DATE.

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WHEREAS, The Town of Hillsboro Beach Water Supply Facilities Work Plan (WSFWP) identifies the water supply sources and facilities needed to serve existing and new development within the Town. Chapter 163, Part II, F.S., requires local governments to prepare and adopt Work Plans into their comprehensive plans within 18 months after the water management district approves a regional water supply plan or its update. The Lower East Coast Water Supply Plan Update was approved by the South Florida Water Management District on September 12, 2013. Therefore, the deadline for local governments within the Lower East Coast jurisdiction to amend their comprehensive plans to adopt a Work Plan is March 12, 2015; and

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WHEREAS, Residents of the Town of Hillsboro Beach obtain their water directly from the Town, which is responsible for ensuring that enough capacity is available for existing and future customers; and

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WHEREAS, According to state guidelines, the Work Plan and the comprehensive plan amendment must address the development of traditional and alternative water supplies, bulk sales agreements and conservation and reuse programs that are necessary to serve existing and new development for at least a 10-year planning period. This update to the Work Plan covers the period between 2015 and 2030. The 2030 horizon matches that of the most recently adopted 2013 Lower East Coast Water Supply Plan; and

WHEREAS, The Town's Work Plan is divided into the following sections:

- Introduction;
- Statutory Basis
- Background Information
- Data and Analysis
- Work Plan Projects/Capital Improvement Element/Schedule
- Goals, Objectives, Policies

1 The major portion of the Town's Work Plan is provided in the Town's Support Document of
2 the Comprehensive Plan as a sub element in the Infrastructure Element. The Goals,
3 Objectives and Policies, however, are incorporated in the adopted portion of the
4 Comprehensive Plan.

5
6 **WHEREAS**, all staff reports, minutes of meetings, findings of fact and support
7 documents are hereby incorporated by reference; and
8

9 **WHEREAS**, the Town Commission has considered the Work Plan in its entirety, staff
10 reports, minutes of meetings, findings of fact and support documents and determines the
11 request is in the best interests of the Town;
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13 **NOW, THEREFORE, BE IT ORDAINED BY THE TOWN COMMISSION OF**
14 **THE TOWN OF HILLSBORO BEACH, FLORIDA THAT:**
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16 **SECTION 1.** The foregoing "Whereas" clause is hereby ratified and confirmed as
17 being true and correct is are hereby made a part of this Ordinance.
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19 **SECTION 2.** That the Town Commission of the Town of Hillsboro Beach hereby
20 approves and adopts the proposed amendment to the Town's Comprehensive Plan that provides
21 for the State mandated updates to the Water Supply Plan by amending the Future Land Use
22 Element, the Infrastructure Element and the Conservation Element. The proposed text is
23 attached hereto and identified as Exhibit "A".
24

25 **SECTION 3.** That the Town Clerk is directed to transmit a certified copy of this
26 Ordinance to the Department of Community Affairs and required State Agencies for review
27 under the Alternative Review Process allowed by Chapter 163.
28

29 **SECTION 4.** If any section, subsection, sentence, clause or provision of this
30 Ordinance is held invalid, the remainder of this Ordinance shall not be affected by such
31 invalidity.
32

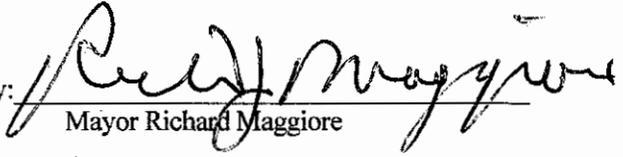
33 **SECTION 5.** That all ordinances or parts of ordinances and all resolutions or parts
34 of resolutions in conflict with this Ordinance are repealed to the extent of such conflict.
35

36 **SECTION 6.** This Ordinance shall be effective immediately upon its passage and
37 adoption by the Town Commission of the Town of Hillsboro Beach.
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39
40 **PASSED FOR TRANSMITTAL FOR STATE REVIEW BY THE TOWN**
41 **COMMISSION OF THE TOWN OF HILLSBORO BEACH, FLORIDA, ON FIRST**
42 **READING, THIS 7TH DAY OF JULY, 2015.**
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PASSED AND ADOPTED BY THE TOWN COMMISSION OF THE TOWN OF
HILLSBORO BEACH, FLORIDA, ON SECOND AND FINAL READING, THIS 6TH
DAY OF OCTOBER, 2015.

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By: 
Mayor Richard Maggiore

ATTEST:

By:

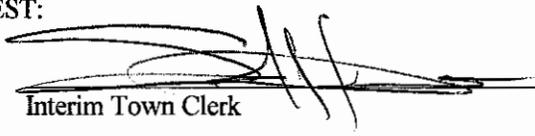

Interim Town Clerk

Exhibit A
Water Supply Facilities Work Plan (2015)

Introduction

The Town of Hillsboro Beach Water Supply Facilities Work Plan (WSFWP) identifies the water supply sources and facilities needed to serve existing and new development within the Town. Chapter 163, Part II, F.S., requires local governments to prepare and adopt Work Plans into their comprehensive plans within 18 months after the water management district approves a regional water supply plan or its update. The Lower East Coast Water Supply Plan Update was approved by the South Florida Water Management District on ~~February 15, 2007~~ September 12, 2013. Therefore, the deadline for local governments within the Lower East Coast jurisdiction to amend their comprehensive plans to adopt a Work Plan is ~~August 15, 2008~~ March 12, 2015.

Residents of the Town of Hillsboro Beach obtain their water directly from the Town, which is responsible for ensuring that enough capacity is available for existing and future customers.

The Town of Hillsboro Beach Water Supply Facilities Work Plan (hereinafter the Work Plan) will identify needed initiatives for the Town's 10 year Water Supply Facilities Work Plan. According to state guidelines, the Work Plan and the comprehensive plan amendment must address the development of traditional and alternative water supplies, bulk sales agreements and conservation and reuse programs that are necessary to serve existing and new development for at least a 10-year planning period. This update to the Work Plan covers the period between 2015 and 2030. The 2030 horizon matches that of the most recently adopted 2013 Lower East Coast Water Supply Plan.

The Town's Work Plan is divided into the following sections:

- Introduction;
- Statutory Basis
- Background Information
- Data and Analysis
- Work Plan Projects/Capital Improvement Element/Schedule
- Goals, Objectives, Policies

The major portion of the Town's Work Plan is provided in the Town's Support Document of the Comprehensive Plan as a sub element in the Infrastructure Element. The Goals, Objectives and Policies, however, are incorporated in the adopted portion of the Comprehensive Plan.

Statutory Basis

History

The Florida Legislature enacted bills in the 2002, 2004, ~~and 2005~~ and 2011 sessions to address the state's water supply needs. These bills, especially Senate Bills 360 and 444 (2005 legislative session), significantly changed Chapter 163 and 373 Florida Statutes (F.S.) by strengthening the statutory links between the regional water supply plans prepared by the water management districts and the comprehensive plans prepared by local governments. In addition, these bills established the basis for improving coordination between local land use planning and water supply planning.

Statutory Requirements

The following highlights the statutory requirements:

- (1) Hillsboro Beach shall coordinate appropriate aspects of its comprehensive plan with the appropriate water management district's regional water supply plan, [163.3177(4)(a), F.S.]
- (2) Ensure that its future land use plan is based upon availability of adequate water supplies and public facilities and services, [s.163.3177(6)(a), F.S., effective July 1, 2005.] Data and analysis demonstrating that adequate water supplies and associated public facilities will be available to meet projected growth demands must accompany all proposed Future Land Use Map amendments submitted to the Department for review. ~~The submitted package must also include an amendment to the Capital Improvements Element, if necessary, to demonstrate that adequate public facilities will be available to serve the proposed Future Land Use Map modification.~~
- (3) Ensure that adequate water supplies and facilities are available to serve new development no later than the date on which the local government anticipates issuing a certificate of occupancy and consult with the applicable water supplier prior to approving building permit, to determine whether adequate water supplies will be available to serve the development by the anticipated issuance date of the certificate of occupancy. [s.163.3180(2)(a), F.S., ~~effective July 1, 2005.~~] ~~This "water supply concurrency" is now in effect, and local governments should be complying with the requirement for all new development proposals. In addition, local governments should update their comprehensive plans and land development regulations as soon as possible to~~

~~address these statutory requirements. The latest point at which the comprehensive plan must be revised to reflect the concurrency requirements is at the time the local government adopts plan amendments to implement the recommendations of the Evaluation and Appraisal Report (EAR).~~

- (4) Revise the Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Groundwater Aquifer Recharge Element (the “Infrastructure Element”), within 18 months after the water management district approves an updated regional water supply plan, to:
 - a) Identify and incorporate the alternative water supply project(s) selected by the local government from projects identified in the updated regional water supply plan, or the alternative project proposed by the local government under s. 373.0361(7) ~~709(8)(b)~~, F.S. [s. 163.3177(6)(c), F.S.];
 - b) Identify the traditional and alternative water supply projects, bulk sales agreements, and the conservation and reuse programs necessary to meet current and future water use demands within the local government’s jurisdiction [s. 163.3177(6)(c)3, F.S.]; and
 - c) ~~Include a~~ Update the water supply facilities work plan for at least a 10-year planning period for constructing the public, private, and regional water supply facilities identified in the element as necessary to serve existing and new development. [s. 163.3177(6)(c), F.S.] ~~Amendments to incorporate the water supply facilities work plan into the comprehensive plan are exempt from the twice a year amendment limitation. [s. 163.3177(6)(e), F.S.]~~
- (5) Revise the Five-Year Schedule of Capital Improvements to include any water supply, reuse, and conservation projects and programs to be implemented during the five-year period [s. 163.3177(3)(a)4, F.S.].
- (6) To the extent necessary to maintain internal consistency after making changes described in Paragraph 1 through 5 above, revise the Conservation Element to assess projected water needs and sources for at least a 10-year planning period, considering the appropriate regional water supply plan, the applicable District Water Management Plan, as well as applicable consumptive use permit(s). [s.163.3177(6)(d),

F.S.]. The plan must address the water supply sources necessary to meet and achieve the existing and projected water use for the established planning period, considering the regional water supply plan [s. 163.3167(9) F.S.].

~~If the established planning period of a comprehensive plan is greater than ten years, the plan must address the water supply sources necessary to meet and achieve the existing and projected water use demand for established planning period, considering the appropriate regional water supply plan. [s.163.3167(13), F.S.]~~

- (7) To the extent necessary to maintain internal consistency after making changes described in Paragraphs 1 through 5 above, revise the Intergovernmental Coordination Element to ensure coordination of the comprehensive plan with applicable regional water supply plans and regional water supply authorities' plans. [s.163.3177(6)(h)1., F.S.]
- (8) ~~Address in the EAR.~~ While an Evaluation and Appraisal Report (EAR) is not required, local governments are encouraged to evaluate, and as necessary, update comprehensive plans to reflect changes in local conditions. The evaluation could address the extent to which the local government has implemented the need to update their 10-year water supply facilities work plan, including the development of alternative water supplies, and determine whether the identified alternative water supply projects, traditional water supply projects, bulk sales agreements, and conservation and reuse programs are meeting local water use demands. [s.163.3191(2)(1), (3) F.S.]

Background Information

Overview

The Town of Hillsboro Beach is located on Broward County's barrier island adjacent to the cities of Deerfield Beach, Lighthouse Point and Pompano Beach. The boundaries of the Town are final and no other areas are available to be annexed.

The Town of Hillsboro Beach is essentially built-out as noted in the Comprehensive Plan. ~~The 2006 Evaluation Appraisal Report (EAR) estimated the 2005~~ The 2010 Census estimated the resident population to be 2,344 1,875 residents. Population projections provided by Traffic Analysis Zone by Broward County had the population increasing to 2,699 in 2015 2,271 by 2030. This relatively minor population growth (~~1721%~~ in 10 20 years) is reflective of the fact that the

Town is substantially built-out, with future development potential and population growth generated by infill and minor redevelopment and ~~small increases~~ minor changes in the household size. ~~Most recent population estimates however by the University of Florida Bureau of Economic and Business Research (BEER) suggest the Town has lost resident population. The April 1, 2009 BEER estimate for the Town's resident population was 2,236, a 3% decrease from the 2005 EAR.~~

~~In 2005-2015, 198.7 acres~~ 294 parcels or ~~68-89.8%~~ of the total gross acreage parcels in the Town ~~was dedicated to~~ were residential including the 2 parcels that are in hotel/motel use. The remaining ~~gross acreages~~ parcels are allocated to non-residential uses (Federal, municipal and water) ~~such and classified~~ as community facilities (~~2.0~~ 1.2%) and ~~water~~ (23%). Approximately ~~6.7-8.9%~~, 29 parcels, ~~of in~~ the Town ~~is~~ are currently vacant. Because the Town is land locked, it is expected the land use characteristics will remain similar in the future. In the meantime, the residential growth is expected to occur through redevelopment at slightly higher densities than the existing development, but consistent with the Future Land Use Plan.

Relevant Regional Issues

As the state agency responsible for water supply in the Lower East Coast planning area, the South Florida Water Management District (SFWMD) plays a pivotal role in resource protection, through criteria used for Consumptive Use Permitting. As pressure increased on the Everglades ecosystem resource, the Governing Board initiated rule-making to limit increased water withdrawal allocations ~~dependent on~~ that would negatively impact the Everglades system. As a result, the Regional Water Availability Rule was adopted by the Governing Board on February 15, 2007 as part of the SFWMD's Consumptive Use Permit Program. This reduced reliance on the regional system for future water supply needs, mandates the development of alternative water supplies, and increasing conservation and reuse.

The main regional issue affecting Hillsboro Beach is the potential for salt water intrusion reaching the Town's water supply wells. Monitoring wells have been established and are tested monthly to measure salinity. The current saltwater lense is roughly located adjacent to US 1 and has not yet reached the Town's wellfield drawdown area. The monitoring of this condition will continue through this planning horizon.

Regional issues identified in Chapter 5, Evaluation of Water Source Options, in the 2013 LEC Water Supply Plan Update include the following:

- Increased withdrawals from both the Surficial Aquifer System and surface water from Lake Okeechobee are limited. – The Town is not requesting increased withdrawals and thus will

not be exacerbating this regional issue.

- Conservation continues to be relied on to reduce water use and as a means to potentially delay or perhaps avoid adding capacity. – The Town has adopted a strict water conservation ordinance and enforces that ordinance to ensure water is conserved within the Town. The Town will not be requesting any additional water withdrawal capacity in this planning horizon due to conservation efforts and no significant population growth.
- Use of reclaimed water continues to be an important alternative source in the region and helps meet requirements of the 2008 Leah G. Schad Ocean Outfall Program. – The Town does not treat their own wastewater. All wastewater treatment services are provided by Broward County. The County does not have reclaimed water accessible to the Town at this point in time.

Data and Analysis

Population Information

The Town's existing and future population figures are derived the Broward County Traffic Analysis Zones and Municipal Forecasts Update, 2014 ~~from an analysis of vacant land, redevelopment potential~~ and population characteristics from the ~~2000~~ 2010 US Census. The ~~2000~~ 2010 US Census is the most current data on population characteristics of the Town. ~~since the American Community Survey is not available and the Bureau of Economic and Business Research (BEBR) of the University of Florida does not provide population projections. BEBR bases the current population estimate on 2000 Census characteristics, number of units and electric meters.~~

~~In 2000~~ According to 2010 Census data, approximately ~~60~~51% of the Town's residential dwelling units were occupied by year round residents. ~~Of~~ The remaining units, ~~37~~46%, were used by seasonal residents, leaving 3% of the units vacant. Occupied resident dwelling units had an average household size of ~~1.69~~ 1.66 persons. In ~~2000~~ 2010, the majority of the Town's residential dwelling units (97%) were multiple family dwellings. Because of this, population estimates are based on all dwelling units, not by dwelling unit type. Peak seasonal population estimates are based on 85% occupancy with 1.8 persons in residences and 1.5 persons in hotel type units. Table 9-4 provides 2000 2010 US Census data for the Year 2010 and Broward County TAZ data for the year 2025. All other figures are interpolated, calculated or held constant. These projections are consistent with the 2015 Hillsboro Beach Barrier Island Water Transmission and Distribution System Evaluation report prepared by Chen-Moore & Associate, Inc.

Table 9-4 – Town Population Estimates (Entire Table has been revised)

Dwelling Unit Type	% / pph	2010	2015	2020	2025	2030
Resident DU's	51%	1,132	1,163	1,191	1,221	1,221
Seasonal DU's	46%	1,019	1,049	1,075	1,101	1,101
Vacant DU's	3%	73	68	70	72	72
Hotel/Motel DU's		320	320	320	320	320
Resident + Seasonal +		2,224	2,280	2,336	2,394	2,393
Total DU's (+H/M)		2,544	2,600	2,656	2,714	2,714
Resident Population		1,875	1,931	2,115	2,299	2,243
Resident Persons per DU		1.66	1.66	1.78	1.88	1.83
Seasonal & H/M Occ. %	85%					
Seasonal Population	1.8	1,559	1,605	1,645	1,685	1,685
H/M Population	1.5	490	490	490	490	490
Peak Population		3,842	4,026	4,250	4,474	4,418

Sources: U.S. Census – 2010, Broward County TAZ projections and RMA, Inc.

~~The BEBR 2009 resident population estimate for the Town is 2,236 persons. This estimate reflects an increase in total units since the 2000 US Census with a slightly lower household size.~~

The Town is essentially built out except for two (2) multi-family parcels (lots 1175 and 1210) totaling 11.7 acres. These parcels are expected to develop within the next ten (10) years due to the attractive beachfront location and account for two-thirds of the future unit growth. Three (3) parcels (lots 1207, 1212, and 1225) have the potential to redevelop within the next ten (10) years due the age of the units and the additional units that could be realized in redevelopment. The redevelopment of these parcels will add approximately 60 additional units. The percentage of resident dwelling units and household size are expected to increase slightly in the future. The new units and redevelopment are projected to increase the resident population to ~~2,543~~ 1,931 in 2015 and ~~2,764~~ 2,115 in 2020. Population growth is not expected after 2020 without changes in the Future Land Use Map. Table ~~2-3~~ 9-4 shows the population and housing projections for the ~~2009-2020~~ 2015-2030 period for both the permanent and seasonal categories.

Map of Current and Future Areas Served

The Town provides potable water service only within the Town limits as shown on Figure 9-1 which also illustrates the generalized land uses in the Town.

Potable Water Level of Service Standard

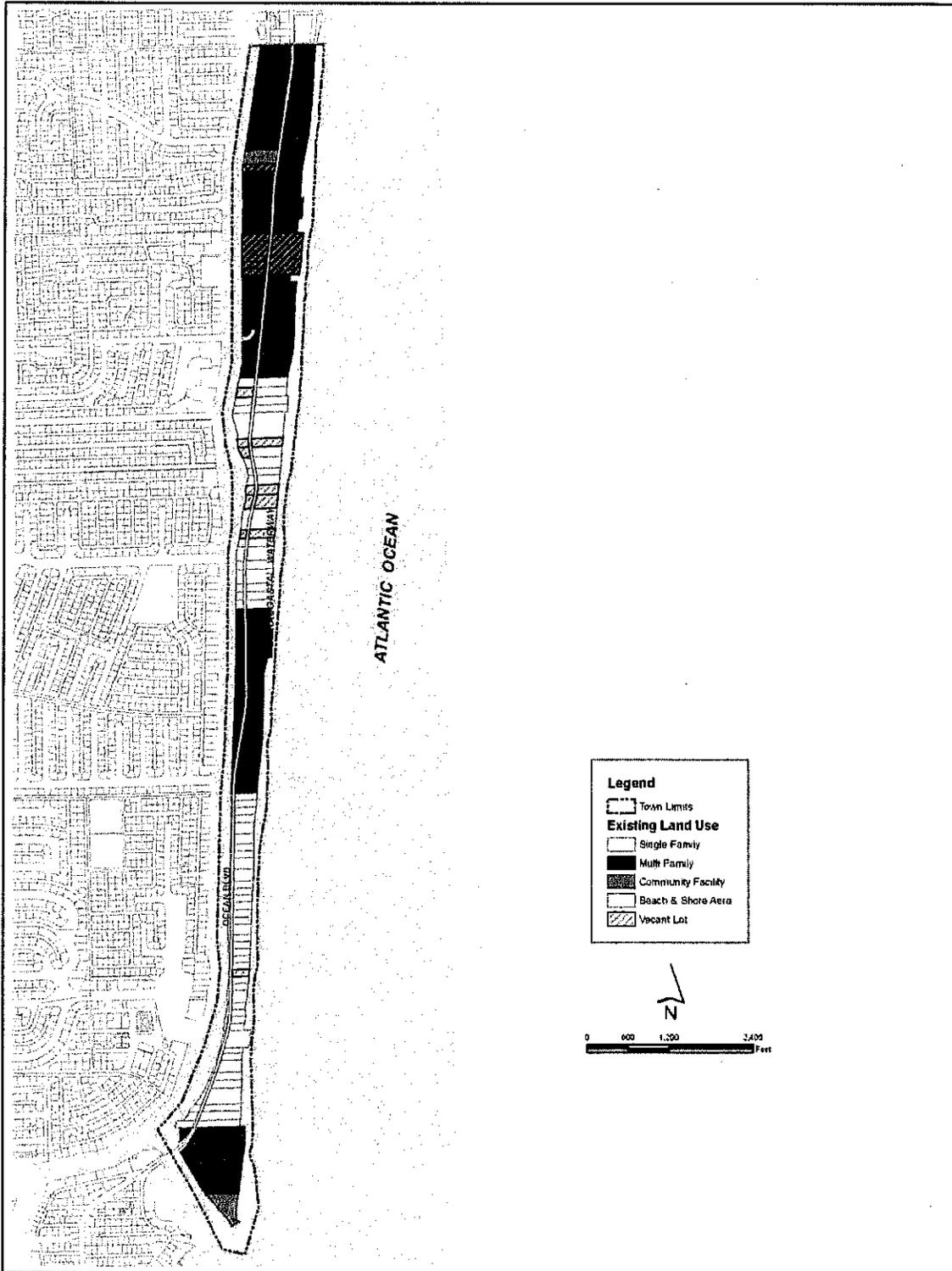
The Level of Service Standard for potable water according to the adopted 1993 2010 Comprehensive Plan is ~~275~~ 203.5 gallons per day per capita (gpdpc) based on peak population and total average maximum monthly treated water over the period of 2004-2009. The Town's 2010 Consumptive Use permit utilizes 187 gpcpd based on maximum population and an assumption for continued water conservation, primarily being derived from irrigation conservation practices.

Information from the LEC Water Supply Plan ~~2005-2006~~ 2013 Update indicates a 2010 LOS of ~~435~~ 351 GPD per capita use rate for finished water based on annual average water use and permanent population recorded prior to 2010. As shown in Table 9-5, the average 2012-14 per capita finished water demand estimate is 312.7 gpcpd based on average annual water use and permanent population and 156.2 gpcpd based on average annual water use and maximum population. These calculations clearly show the Town has been successful at implementing water conservation strategies. It must be noted, however, that 60% of the Town's water use is irrigation which doesn't vary significantly with changes in population. For this reason, the per capita use rate of 203 gpcpd will continue to be used in the Comprehensive Plan for concurrency purposes. ~~With the mandatory water restrictions imposed in 2007 by the SFWMD, the Level of Service for potable water has significantly decreased. Information developed by CH2M Hill as part of the Town's Water Use Permit Extension Request indicates average day finished water flow of 0.79 MGD between 2005 and 2009. The highest flow occurred in 2006 (1.00 MGD) with the lowest flow in 2007 (0.70 MGD). In 2009, the flow rate was 0.73 MGD. Because of the large amount of seasonal dwelling units in the Town (36.7% in 2000 US Census), it is appropriate to use total population for the LOS determination. With the 5 year average flow of 0.79 MGD and the 2009 total population estimate 3,808, the Town's LOS is 203.5 GPD. The reduced demand and resulting LOS is generally consistent with water use during the mandatory water restrictions and will allow the Town to stay within its current allocation.~~

**Table 9-5
Total Treated Water and Per Capita Use Rate Calculations**

Total Treated Water Leaving Water Treatment Plant based on Monthly Operation Reports (MG) and Per Capita Use Rates						
	2012	2013	2014	Average	Min	Max
January	22.00	19.52	20.78	20.77	19.52	22.00
February	19.86	17.34	19.39	18.86	17.34	19.86
March	20.80	21.66	21.19	21.22	20.80	21.66
April	18.38	19.67	19.97	19.34	18.38	19.97
May	16.45	16.03	19.39	17.29	16.03	19.39
June	15.65	15.62	17.68	16.32	15.62	17.68
July	18.55	17.26	17.13	17.65	17.13	18.55
August	17.98	18.55	17.81	18.11	17.81	18.55
September	16.57	17.55	17.03	17.05	16.57	17.55
October	16.91	20.00	16.80	17.91	16.80	20.00
November	18.35	21.46	19.08	19.63	18.35	21.46
December	18.82	20.48	18.84	19.38	18.82	20.48
Total	220.34	225.11	225.09	223.51	220.34	225.11
Average	18.36	18.76	18.76	18.62	18.36	18.76
Permanent Population	1,938	1,960	1,981	1,960	1,938	1,981
LOS Based on Permanent Population	311.5 gpcpd	314.7 gpcpd	311.3 gpcpd	312.7 gpcpd	311.3 gpcpd	314.7 gpcpd
Peak Population	3,876	3,920	3,962	3,919	3,876	3,962
LOS Based on Peak Population	155.7 gpcpd	157.3 gpcpd	155.6 gpcpd	156.2 gpcpd	155.6 gpcpd	157.3 gpcpd

Figure 9-1 Town Limits and Generalized Land Uses



Population and Potable Water Demand Projections by Each Local Government or Utility

A combination of information from Chen-Moore and Associates in the Water Transmission and Distribution System Evaluation report and permanent and maximum annual population estimates a variety of sources was utilized to project future water demand for the Town. For the 2000, US Census resident population and average finished water demand from the LEC Water Supply Plan Update are presented. The 2009 total population estimate (resident and seasonal) was developed by Walter H. Keller, Inc (see prior Table 2-3) and the 5 year average finished water demand as determined by CH2M Hill and provided in the 2010 Water Use Permit documentation. The 2009 2012-14 resulting per capita demand is 203.5 312.7 gallons per day based on demand divided by permanent population and 156.2 gpcpd based on demand divided by peak population. For water supply concurrency purposes, future water demand projections for 2015 2020 and 2020 2030 are based on maintaining the 2009 2012-14 average per capita water demand of 156.2 gpcpd which shows the impact of water conservation compared to the Consumptive Use Permit LOS of 203.5 187 gpcpd level of service. Table 9-6 provides projections for population and water demand for the Town based on both peak and permanent population per capita demand multipliers.

**Table 9-6 – Population & Water Supply Demand Projections
(Table has been revised and replaced)**

Year	Peak (Permanent + Seasonal) Population	Per Capita Water Use Demand	Projected Finished Water Demand (MGD)
2015	4,026	156.2 gpcpd	0.63
2020	4,250	156.2 gpcpd	0.66
2025	4,474	156.2 gpcpd	0.70
2030	4,418	156.2 gpcpd	0.69

Year	Permanent Population	Per Capital Water Use Demand	Projected Finished Water Demand (MGD)
2015	1,931	312.7 gpcpd	0.60
2020	2,115	312.7 gpcpd	0.66
2025	2,299	312.7 gpcpd	0.72
2030	2,243	312.7gpcpd	0.70

In acknowledgement of the fact that the Town’s irrigation demand is relatively constant regardless of changes in population, the 203 gpcpd demand multiplier (LOS) currently established in the Comprehensive Plan for concurrency purposes, will continue to be used to measure the demand from population growth resulting from the development of additional residential units.

Water Supply Provided by the Town of Hillsboro Beach

The Town of Hillsboro Beach provides water service to the Town of Hillsboro Beach only. The Town's water treatment plant (WTP) is located approximately 2 miles west of the Town at 925 NE 36th Street in the City of Pompano Beach. The Town's WTP was constructed in 1970 and is located on a 20 acre site east of Dixie Highway and north of Sample Road. The site includes the Town's wellfield, the WTP, storage and pumping facilities. Figure 9-2 illustrates the Town's Service Area, WTP location, Beach Pumping Station and interconnections.

The Town recently ~~approved~~ completed repair and replacement work at the WTP in order to continue operation of the facility in future years. ~~Engineering plans are currently being prepared identifying needed capital improvements.~~ With continued maintenance ~~and of the recently completed improvements recommended in the WSEWP,~~ the WTP will operate well beyond the year ~~2020~~ 2030. The current level of service provided is more than adequate and with the proposed water treatment improvements current water losses ~~should be~~ have been reduced. ~~in the future.~~ Information on the Water Supply System follows.

Wellfield

Currently, the Town utilizes three (3) wells which draw raw water from the Biscayne Aquifer. Well No. 2 was previously abandoned due to water quality problems. The three (3) remaining wells are adequate to provide sufficient raw water to the Town based on existing and future demands and no new wells are required. Table 9-6 provides updated information on the Town's wells.

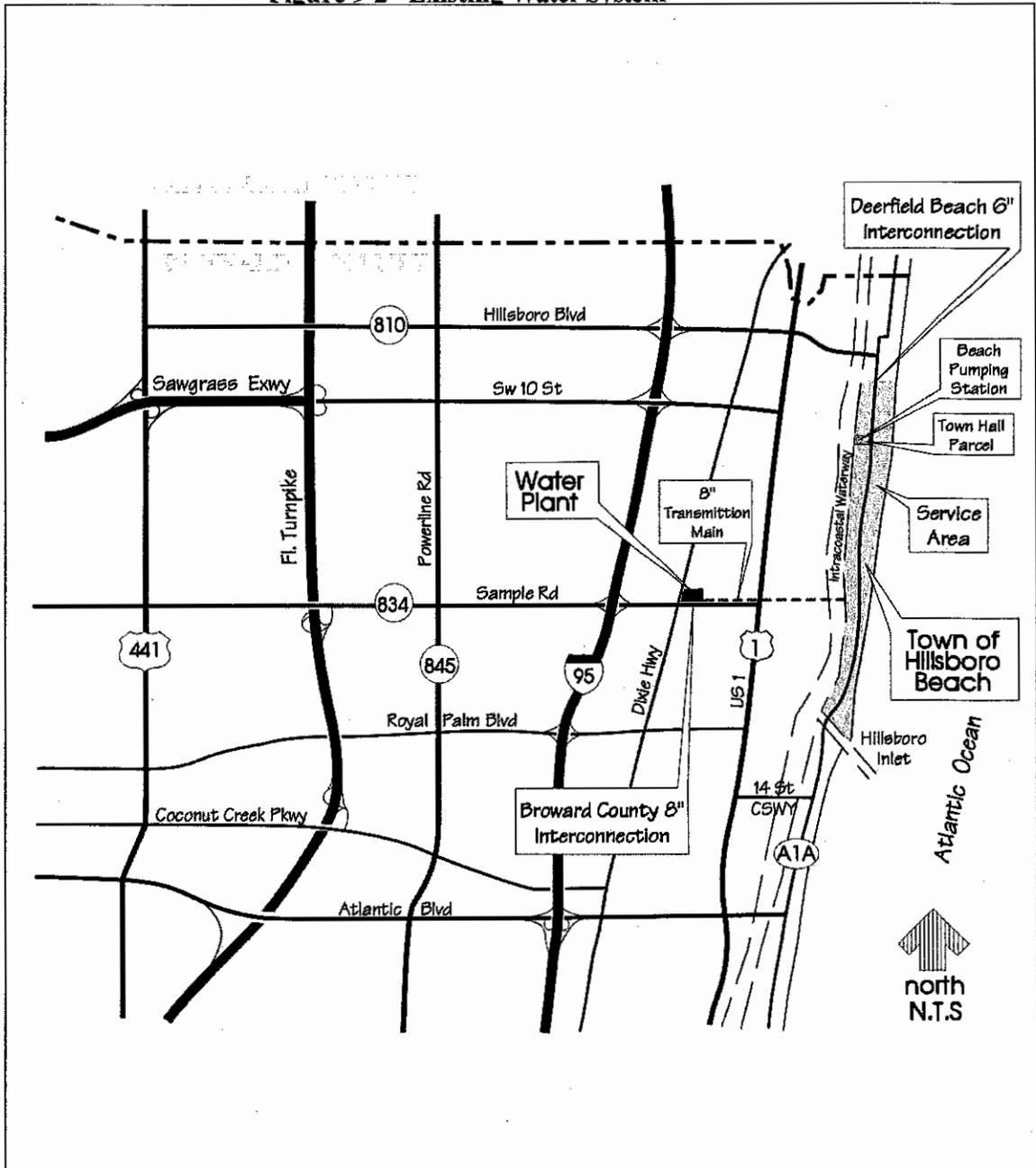
Table 9-6 – Well Information (Revised)

Well No.	Year Constructed	Diameter (inches)	Depth (feet)	Capacity (GPM)
1	1952	8	71	400
2				
3	1952	12	104	1,200
4	1967	12	138	1,250

Source: DEP Sanitary Survey Form, 2015

Notes: Well No. 2 was abandoned.

Figure 9-2 – Existing Water System



Water Treatment Plant

The WTP has a permitted capacity of 2.016 MGD and utilizes lime softening and filtration treatment to treat the raw water in order to arrive at a potable (finished) water condition. Lime is introduced to the raw water and undergoes treatment in a Spiractor where mineral hardening properties are removed along with other undesirable minerals leaving the settled water softened. This settled water is then sent to four (4) monoscour gravity filters, each capable of filtering 243 gallons per minute (gpm) on average or 972 gallons per minute (gpm) as a total unit to produce a finished water. After filtration, the finished water is then sent to the clearwell which consists of a 100,000 gallon steel storage tank where sodium hypochlorite (chlorine), phosphate, and fluoride are added to the finished water. The sodium hypochlorite (chlorine) is added for disinfection, the phosphate is added as a corrosion inhibitor, and fluoride is added as an additive to help against tooth decay. The clearwell also allows ample contact time for chemicals to be thoroughly dispersed throughout the finished water making it ready for distribution. From the clearwell, the finished water is pumped using two (2) alternating 50hp high service pumps to distribution as well as to the beach pump station's storage tank where the finished water is stored and used during high demand. The elevated storage tank at the WTP is currently out of service, however it is used at times to provide finished water for the WTP during times of maintenance. For auxiliary power, the WTP has a 250kw fully automated generator that is on standby for periods of power outages. The generator comes equipped with an automatic power transfer switch and a 5,700 gallon diesel fuel tank. Table 9-7 provides WTP finished water information for the 2014 year of operation. Table 9-8 highlights the potable water storage facilities for the Town. The WTP is also interconnected via an 8" inch pipe to Broward County Water Services for emergency use. Figure 9-3 provides an aerial photograph of the WTP and well locations.

**Table 9-7 – WTP Operations Total Finished Water (MG)
(2014)**

Month of 2014	Average	Minimum	Maximum
January	20.77	19.52	22.00
February	18.86	17.34	19.86
March	21.22	20.80	21.66
April	19.34	18.38	19.97
May	17.29	16.03	19.39
June	16.32	15.62	17.68
July	17.65	17.13	18.55
August	18.11	17.81	18.55
September	17.05	16.57	17.55
October	17.91	16.80	20.00
November	19.91	18.35	21.46
December	19.65	18.82	20.48

Source: Chen-Moore & Associates, Inc. from Monthly Operational Report Data

Table 9-8 – Potable Water Storage Facilities

Location	Type	Capacity (Gallons)
Water Treatment Plant Clearwell	Steel Tank	100,000
Water Treatment Plant Elevated Storage Tank(1)		100,000
Beach Pump Station	Aboveground-Concrete	<u>750,000</u>
Total Potential Storage Capacity		950,000

Source: ~~CH2M Hill (Nov 2008 Final Report)~~ Chen-Moore & Associates, Inc.
Note (1): The elevated tank is currently out of service.

Figure 9-3 – Water Treatment Plant & Well Locations



Water Transmission and Distribution System

A 16" inch water transmission main is used to transport potable water from the WTP to the Town. The transmission main is located within the Sample Road (NE 36th St) right of way and travels east from 925 NE Sample Road (NE 36th St) to 3111 NE 36th St, Lighthouse Point, FL. where it then crosses the Intracoastal Waterway via an underground 12" HDPE (High-Density polyethylene) water transmission main. The water transmission main's POE (point of entry) on the barrier island is located at 1035 Hillsboro Mile where it then tee's to the north and south. To the south, the water transmission main ends at 900 Hillsboro Mile and to the north, the water transmission main provides finished water to the beach pump station's storage tank and ends at 1238 Hillsboro Mile. Located at 1210 Hillsboro Mile, is the Town's beach pump station and beach pump station's 750,000 gallon ground storage tank, both constructed in 1967. The storage tank is an above ground, pre-stressed concrete tank, designed and built by the Crom Corporation. The beach station's tank is filled with finished water from the WTP during non-peak demand hours using a fully automated altitude valve, stored, and pumped for distribution during periods of high demand using two (2) alternating 100hp high service pumps located in the beach pump station house. There is also a third high service pump located in the beach pump station house that is operated via a diesel engine capable of providing water service to the distribution system during periods of power outages or other emergencies. This diesel engine comes equipped with a 500 gallon diesel fuel storage tank.

Consumptive Use Permit

~~The Town's Consumptive Water Use Permit (06-00101-W) limits current water withdrawals to 0.99 MGD per day 323 MG on an average annual basis and 4.53 32.8639 MGD on a maximum day monthly basis which equates to approximately 1.06 MGD. The current permit was issued in 1993 2010 and the Town is currently working to extend the permit for a 20 year period will expire in November 2030. The Town experienced a 20 ± percent reduction in water demand during the SFWMD mandatory water restrictions in 2007 2008 (when comparing the 2005 LEC demand vs 2008 CH2M HILL demand) and believes a water conservation ordinance can continue to provide a reduced water demand so that~~ Based on current water demand projections for 2030 of 0.7 MGD, additional finished water increases above its current limitations will not be required. Because the Town's future water demand is not expected to exceed the current allocation ~~and with the WTP improvements water losses will be reduced,~~ alternative water sources are not necessary.

Conservation

The Town ~~will~~ has implemented efforts to conserve potable water resources. On September 13, 2010, the Town adopted Chapter 10-6 of the Water Regulations in the City's Code which addresses: Efforts to be addressed include adopting the water rate structure, education programs, maximum flow rates and consumption for plumbing fixtures; promoting "Florida Friendly" landscaping design; restricts lawn and ornamental irrigation time and regulates irrigation system design and maintenance. The Town will implement a Water Conservation Ordinance incorporating the conservation provisions in the land development regulations. The Town implements and enforces the Mandatory Year Round Landscape Irrigation Conservation Measures as detailed in 40E-24, FAC and Chapter 10-6 through code enforcement efforts. As shown on Table 9-6, the Town is using 16% less water than projected in the 2010 Consumptive Use permit as a result of these conservation efforts. Future conservation efforts include possible increases in water rates for large irrigation users; rain harvesting requirements for all new development and possibly for roof replacement permits; and consideration of the addition of a contract position for code compliance to focus on landscaping and water conservation requirements.

The Town will continue to coordinate future water conservation efforts with the SFWMD to ensure that proper techniques are applied. In addition, the Town will continue to support and expand existing goals, objectives and policies in the comprehensive plan that promote water conservation in a cost-effective and environmentally sensitive manner. The Town will continue to actively support the SFWMD in the implementation of new regulations or programs that are designed to conserve water during the dry season.

Since the Town of Hillsboro Beach does not have its own wastewater utility and the Town is a retail customer of Broward County, the Town coordinates with Broward County, and indirectly, Pompano Beach, on certain water conservation efforts and programs.

TOWN'S WASTEWATER SUPPLIER'S CONSERVATION PROGRAMS

Broward County - The Broward County North Regional Wastewater Treatment Plant serves the Town of Hillsboro Beach. The Broward County Water and Wastewater Services Department implemented a water conservation program in 1991. The County believes that water conservation is an essential component of responsible water use and a pivotal element towards achieving long-term sustainability of water supplies. Some of the programs that promote and support the County's water conservation program are outlined below:

County Ordinances limiting irrigation hours; promoting xeriscaping; requiring water conservation

plumbing fixtures and low flow volume irrigation; and requiring rain sensor devices on irrigation

- Public Information Program

- Leak Prevention and Detection Program

- Conservation Rate Structure

- Metering of all Sources

In addition, the County launched the Conservation Pays Program in 2011 which is focused on water conservation and the distribution of rebates and other incentives. The County also has the NatureScape Irrigation Services and NatureScape Program which are focused on water conservation and using Florida-friendly landscape plants.

Pompano Beach - The Broward County North Regional Wastewater Treatment Plant outfall runs through the City of Pompano Beach and provides the source of effluent for the Pompano Beach reuse plant. The City of Pompano Beach water conservation program encourages both conservation of water and use of alternative water supplies including reuse water for irrigation. The City's program includes a combination of educational, financial, operational and regulatory initiatives to encourage efficient water use while remaining consistent with the overall mission, goals and objectives of the City of Pompano Beach, SFWMD and Florida Statutes. Pompano's water conservation program elements are outlined below:

- OASIS Program — reuse water for irrigation

- Public Information Program

- Leak Prevention and Detection Program

- Automatic Flushers

- Broward County Mobile Irrigation Lab

- City Conservation Ordinance

- Conservation Rate Structure

- Metering of all Sources and Water Efficiency Tracking

- System Maintenance

- Retrofit Program

- Restaurant Sprayers Conservation Program

Reuse

Water reuse is a practical and beneficial water conservation tool when resources are available. Both the City of Pompano Beach and Broward County District 2 have reuse water systems that are

operational. Though reuse water is not yet available for Hillsboro Beach, additional users could be added in the future. State law supports reuse efforts. For the past years, Florida's utilities, local governments, and water management districts have led the nation in implementing water reuse programs that increase the quantity of reclaimed water used and public acceptance of reuse programs. Section 373.250(1) F.S. provides that "water reuse programs designed and operated in compliance with Florida's rules governing reuse are deemed protective of public health and environmental quality." In addition, Section 403.064(1), F.S., provides that "reuse is a critical component of meeting the State's existing and future water supply needs while sustaining natural systems."

City of Pompano Beach Reuse Water Facilities

The City of Pompano Beach reuse water treatment facility is located at 1799 North Federal Highway in Pompano Beach. The facility operates under the Florida Department of Environmental Protection Permit No. FLA013581-004-DWIP and treats secondary effluent drawn from the Broward County North Regional Wastewater Treatment Plant outfall to the Atlantic Ocean. The City utilizes the reuse water in irrigating the Municipal Golf Course, Pompano Community Park, medians along Copans Road, North Federal Highway and other City medians and landscaping in residential areas. The City of Pompano Beach has a reuse water agreement with the City of Lighthouse Point and the City of Pompano Beach is negotiating an agreement with Broward County to serve the southeast part of Broward County's District 2 service area that is within the City of Pompano Beach. The City's reuse facility started operating in 1990 with a capacity of 2.5 mgd and was expanded in 2002 to 7.5 mgd with additional expansion possible to 12.5 mgd. The reuse system has 6 mg of in-plant storage capacity.

Broward County District 2 Reuse Water Facilities

The Broward County District 2 reuse water facility is located at 2401 North Powerline Road in Pompano Beach. The reuse water facility is associated with the Broward County North Regional Wastewater Treatment Plant and has a capacity of 10 mgd. In 2010, the annual average daily wastewater flow at the facility was 71.00 mgd. Approximately 4.40 mgd of the treated wastewater is reused at the facility or at adjacent facilities for irrigation, process, or cooling water.

Alternative Water Supply (AWS)

The Town does not yet have the need for an alternative water supply program since it is still able to obtain adequate water through its current water withdrawal permit and wellfield. The City will continue to coordinate with Broward County in their efforts to develop alternative water supply programs. A brief description of the Broward County alternative water supply projects is discussed

below.

Broward County District 2 AWS Program

The Broward County Water and Wastewater Service Department is proposing several AWS projects for District 2 between now and 2025 in order to meet the projected increase water demands of the District 2 service area. The County's projects include implementing an expanded reuse water irrigation project and expansion of Floridan Aquifer supply well and maintenance of the treatment plant.

Regional and County-wide Issues

The water reuse effort in the state is primarily led by utilities, local governments, the water management districts and state agencies. The intent of their efforts is to implement water reuse programs that increases the volume of reclaimed water used and promotes public acceptance of reclaimed water. In addition to the public and private efforts, there are two sections of the Florida Statutes (Secs.403.064(1) and 373.250(1) F.S.) that promote water reuse as a formal state objective. “These sections further conclude that water reuse programs designed and operated in compliance with Florida’s rules governing reuse are deemed protective of public health and environmental quality.” In addition, Section 403.064(1), F.S., concludes, “reuse is a critical component of meeting the state’s existing and future water supply needs while sustaining natural systems.”

The Town of Hillsboro Beach is in full support of the water reuse initiatives under consideration by the SFWMD. While the availability of reuse water is not expected in the time horizon of the Town’s Water Supply Facility Work Plan since Broward County provides sanitary sewer services, the Town will consider reuse implementation at Town facilities when reuse water is available.

Capital Improvements

~~As noted previously,~~ The Town recently ~~approved~~ completed repairs and replacement needs for the Water Treatment Plant and Water Supply System. The Town is currently reviewing the recommendations for improvements to the water distribution and storage aspects of the Town’s water infrastructure. Table 9-9 identifies proposed ~~Water Supply~~ improvements to the water distribution and storage system infrastructure.

Table 9-9 – Recommended Water Supply Distribution System Capital Improvements

Water Distribution System - Preliminary Cost Estimate Start 2016 Completion in 18 months				
Item	Quantity	Unit	Unit Cost	Total
Abandon Existing Pipe	19,850	LF	\$8	\$158,800
Furnish and Install 6" HDPE Watermain (HDD)	7,070	LF	\$80	\$565,600
Furnish and Install 8" HDPE Watermain (HDD)	9,220	LF	\$90	\$829,800
Furnish and Install 10" HDPE Watermain (HDD)	5,300	LF	\$100	\$530,000
Furnish and Install 12" HDPE Watermain (Pipe Bursting)	9,130	LF	\$110	\$1,004,300
Furnish and Install 6" Valves	12	EA	\$1,200	\$14,400
Furnish and Install 8" Valves	12	EA	\$1,400	\$16,800
Furnish and Install 10" Valves	5	EA	\$2,000	\$10,000
Furnish and Install 12" Valves	9	EA	\$2,300	\$20,700
Furnish and Install Fire Hydrant Assembly	28	EA	\$5,000	\$140,000
Furnish and Install Water Service and Connections	214	EA	\$2,500	\$535,000
Connection to Existing Water Main	3	EA	\$5,000	\$15,000
Pavement Restoration	900	SY	\$40	\$36,000
			Subtotal	\$3,876,400
			10% MOT	\$387,640
			10% Mobilization	\$387,640
			Subtotal	\$4,651,680
			20% Construction Contingency	\$930,336
			Total Cost	\$5,582,016

Natural Groundwater Aquifer Recharge

Because of the adjacent Atlantic Ocean and Intracoastal Waterway, the entire Town is located in the salt-water intrusion zone. For this reason, there are no aquifer recharge areas within the Town. The principal aquifer recharge areas for Broward County are the Conservations Areas and the many existing fresh water canals and lakes located through-out the County that are located west of the salt water intrusion zone.

Goals, Objectives and Policies

The following goals, objectives and policies of the Town's Water Supply Facility Work Plan are included in the following Comprehensive Plan (see adoption document) Elements: Future Land Use; Conservation; Infrastructure; Intergovernmental Coordination; and, Capital Improvements, as follows:

Future Land Use

Policy 2.1.7 Coordinate future land use amendments with the Town's 2015 Water Supply Facilities Work Plan, which is hereby adopted by reference, to ensure the availability of water supply and water supply facilities.

Objective 2.5 Wellfield Protection

~~By 2010, complete the planning and engineering studies of~~ Continue to provide the required annual reporting and monitoring of the updated water supply and treatment system.

Policy

Policy 2.5.1 ~~These studies of~~ Continue regular sampling from the monitoring wells to ensure the wellfield area located in unincorporated Broward County ~~must assure~~ provides an on-going adequate protection of this area or result in an alternative water source.

Conservation

Objective 7.2 Water Quality

Maintain local surface and underground water quality within tolerable limits for recognized pollutants as defined by the Broward County Environmental Quality Control Board.

Policies

Policy 7.2.1 Utilize Broward County's areawide wellfield protection ordinance to protect the Town's wellfield located in the Sample Road corridor.

Objective 7.4 Water and Energy Conservation

Develop programs to encourage and promote recognized water and energy conservation strategies.

Policies

Policy 7.4.1 ~~Develop~~ Continue to implement the procedures developed in conjunction with the Lower East Coast Water Supply Update by the South Florida Water Management District, to notify Town residents of voluntary and mandatory water conservation requirements.

Policy 7.4.2 Distribute an informational brochure promoting standard water conservation

techniques.

Policy 7.4.3 Investigate the feasibility of ~~implementing a demonstration project to reduce the amount of water used for irrigation~~ modifying the water conservation rate structure to further encourage conservation of irrigation water; requiring rain harvesting be considered in all new development and roof replacement permitting; assigning a code enforcement officer to focus on landscaping and water conservation enforcement.

Policy 7.4.4 The Town shall conserve potable water resources, including the implementation of reuse programs (when appropriate) and potable water conservation strategies and techniques.

Policy 7.4.5 ~~Modify~~ Continue to implement the Land Development Regulations to require water conserving fixtures in all new development approvals and building permits. ~~within one year of Plan adoption.~~

Policy 7.4.6 ~~Modify~~ Continue to implement the Land Development Regulations to increase the amount of native landscaping and or the use of “xeriscape” and Florida Friendly landscaping techniques required in new development approvals. ~~within one year of Plan adoption.~~

Policy 7.4.7 ~~Adopt a~~ Continue to implement the adopted water conservation ordinance. ~~simultaneously with water use permit approval and modify the Land Development Regulations as appropriate within one year of Plan adoption.~~

Infrastructure

Objective 8.1 Level of Service Standards

Maintain the provision of local infrastructure services using Level of Service Standards:

- a. The sanitary sewer collection and treatment system must be able to accommodate at least the specified average flow per capita.
- b. The Town must be able to maintain at least the pick up frequency/per capita generation rate specified for solid waste.
- c. Storm drainage design criteria.
- d. The supply and distribution system must be able to provide at least the specified per capita consumption rate for potable water.

Policies

Policy 8.1.1 For concurrency purposes, meet the Level of Service Standards for basic urban services as outlined in the infrastructure sub-elements as follows:

- for sanitary sewer - 200 gallons per day per resident;
- for potable water – 203.5 gallons per day per capita total population;

- for fire flow - meet fire fighting demands;
- for solid waste – 2.87 pounds per dwelling unit per day with bi-weekly pickup;
- for building site drainage - accommodate run-off from a 100 year, 3 day storm;
- for roadway drainage - crown elevation at 10 year, 3 day storm
- for transportation – Broward County Transportation Concurrency Management System

Policy 8.1.2 Maintain the Level of Service standards of Policy 8.1.1, as appropriate, through perpetuation of the existing or future interlocal retail service agreements with Broward County and, where appropriate, private service providers.

Policy 8.1.4 Consider the long term feasibility of participating in County wellfield and water distribution system efforts.

Capital Improvements

Objective 9.6 Beach Re-nourishment and Water Supply

By 2010, develop a unified resident and Town Commission position on beach re-nourishment and ~~water treatment and supply, the two principal capital projects.~~

Intergovernmental Coordination

Objective 10.1 Information Exchange

Establish procedures to provide for the exchange of any necessary support information and guidance, when requested, to other government agencies regarding the Town's Comprehensive Plan or other local planning or regulatory efforts.

Policies

Policy 10.1.6 Coordinate with the South Florida Water Management District relative to the Lower East Coast Water Supply Plan and prepare updates to the Town's Water Supply Plan within 18 months of LEC approval.

Policy 10.1.8 Coordinate with the South Florida Water Management District in ~~renewing~~ meeting the requirements of the Town's 2030 Water Use Permit and in developing improvements needed to the Town's well field, water treatment plant, water storage system and water distribution system over the 2030 planning horizon.

Objective 10.2 Land Use Decisions in Adjacent Cities

~~Establish~~ Implement procedures to coordinate with the appropriate jurisdictions (Deerfield Beach and Pompano Beach), to provide for cooperative analysis and decision making inputs to proposed land use modifications or project development impacts with extraterritorial significance.

Policies

Policy 10.2.3 ~~Establish~~ Implement procedures to monitor development activities such as

rezonings, land use plan amendments, major development projects, etc., within and adjacent to the Town's well field cone of influence and formally request denials by Broward County, Pompano Beach or the appropriate regulatory agency of proposals which have the potential to negatively impact or contaminate the Town's water supply.