SECTION 7

SANITARY SEWER, SOLID WASTE, STORMWATER DRAINAGE, POTABLE WATER AND AQUIFER RECHARGE

1. PURPOSE.

The purpose of this section is to provide for analysis and review of present facilities which provide services for sanitary sewer, solid waste, stormwater drainage and potable water in order to plan for projected growth. The existing sewer system is shown on Exhibit 6; and Exhibit 7 shows the existing water system.

2. UTILITIES SUB-ELEMENTS.

A. Sanitary Sewer Sub-Element

Current and Future Conditions

Panama City Beach sanitary sewer facilities are comprised of three components which perform the basic functions of collection, treatment and disposal of sewage. The collection system is composed of a network of collection lines which transport wastewater to the treatment facility. The collection network is shown on Exhibit 6.

The treatment plants are the component of the sanitary sewer facility which function to remove solid and organic materials from the wastewater prior to disposal.

Disposal of effluent from Wastewater Treatment Plant Number 1 is into the Class III waters of West Bay. The 0.5 mgd Bay Pointe Wastewater Treatment Plant provides effluent disposal through reuse distribution to Bay Point Country Club golf courses. The accumulated solid residue is disposed at Bay County's Steelfield landfill.

In addition to the City's wastewater treatment plants, there are two private package treatment plants within the service area. Package treatment plants are essentially small treatment systems which have a collection network, treatment plant and disposal system. Package plants can be designed to provide many levels of treatment, but plants providing secondary treatment are most commonly used.

The City currently has an engineering consultant that is designing and permitting a 4 mgd expansion to its existing 10 mgd wastewater treatment plant, which will enable the plant to treat 14 mgd on a maximum month basis. However the Department of Environmental Protection will only allow the discharge of 7 mgd of treated effluent into West Bay on an annual average basis. Annual average flows have historically been approximately 70% of the maximum month flows,

which would indicate a limiting flow of approximately 10 mgd max month average for treatment plant operations. The new reclaimed water system has decreased effluent flows to West Bay by an average of 1.5 to 2.0 mgd per month which provides additional discharge capacity. The planned 4 mgd plant expansion is projected to give the City available capacity through the year 2020. Currently the City treats 2.7 to 5.5 mgd monthly average flows depending on the time of year, with the month of July being the highest due to the peak tourism season. Presently the City has the necessary capacity to handle the peak demand and the design and permitting of an 18 mgd capacity effluent disposal system via receiving wetlands is underway. Construction is expected to begin in mid 2008 and be completed by early 2010.

Based on historic growth rates of wastewater generation, it is anticipated that there will be a 4% yearly growth in wastewater generation within the City's service area (from the Hathaway Bridge to the West Bay Bridge to the Phillips Inlet Bridge). Accordingly, the City has planned for facilities to be upgraded to coincide with the increased demand.

Septic tanks used to be a widely used method of wastewater disposal in the City. Six areas which used septic tanks as a means of wastewater disposal included: El Centro, Gulf Highlands I, Gulf Highlands II, Bid-A-Wee, Bahama Beach and Open Sands Subdivision. All of these subdivisions have been retrofitted by the City with sanitary sewer and reclaimed water. The improvements were funded by a grant from the State of Florida.

The City has the operational responsibility for the collection treatment and disposal of wastewater generated in the City which does not flow into privately-owned package plants. The geographic service area of the City wastewater treatment system serves areas predominantly populated with residential and commercial establishments. The predominant commercial uses are motels, restaurants, nightclubs and amusements. Light industrial use is small but growing at this time. There is no heavy industry use.

TABLE 1
HISTORICAL WASTEWATER TREATMENT SYSTEM
MAXIMUM MONTH AVERAGE DAILY USE

YEAR	MGD
1985	3.25
1986	4.94
1987	4.59
1988	5.30
1989	4.60
1990	4.73
1991	4.96
1992	4.91
1993	5.43
1994	5.21
1995	5.41
1996	5.18
1997	5.28
1998	5.20
1999	5.95
2000	5.51
2001	6.05
2002	5.81
2003	5.70
2004	5.20
2005	5.10
2006	5.20
2007	5.50
2008	5.70

SOURCE: Panama City Beach Utility Department

TABLE 2
PROJECTED MAXIMUM MONTH AVERAGE DAILY WASTEWATER USAGE

	2015	2020
Permanent Residents:	17,464	21,233
Other Service Area Residents:	39,671	46,890
Tourist Population (daily avg):	16,561	18,284
Total Population:	73,696	86,407
Total Pop. Usage:	5.6 mgd	6.6 mgd
Non-Residential Usage:	1.5 mgd	1.8 mgd
Total Usage:	7.1 mgd	8.4 mgd
Remaining Capacity:	**6.9 mgd**	**9.6 mgd**

Notes: Unincorporated population estimates are based upon water billing accounts. Tourist population is based upon estimates from the Tourist Development Council. Estimates of the Tourist population growth are from the City Building and Planning Department. Remaining capacity utilizes the current capacity of 10mgd for 2008; 14 mgd for 2015; and, 18 mgd for 2020.

TABLE 3
PROJECTED PEAK DAILY WASTEWATER USAGE (in mgd)

	2008	2015	2020
Total Peak Daily Usage:	7.0	10.2	12.0
Capacity:	10.0	14.0	18.0
Remaining Peak Daily Capacity:	**3.0**	**3.8**	**6.0**

Existing Facility Conditions

The general performance of the existing wastewater treatment system is good. The collection system maintenance remains relatively low given the age of the collection lines. The City continues to refurbish pump stations as funds become available. The City recently completed improvements to upgrade the existing treatment facility to advanced wastewater treatment levels (AWT) and expanded the treatment capacity to 10 mgd. Effluent disposal to West Bay is limited to 7 mgd. A public access reuse system with an initial effluent disposal capacity of 0.20 mgd was completed in 2003.

Impact on Natural Resources

Presently, the system disposes treated effluent into an un-named stream which flows into Class III waters of West Bay. The advanced secondary treatment quality of the system produces effluent which is purer than that required by current Federal and State regulations for all categories except Copper. The City also disposes of up to 500,000 gallons on the golf courses of Bay Point Country Club. As part of the 3 million gallon per day expansion, the City has committed to disposing of the additional amount of effluent through a public access reuse system with wetland

disposal for wet weather conditions. The City has also committed to discontinuing disposal into West Bay for all effluent by 2010.

Expansion or Replacement

The City is currently upgrading its plant to treat an additional four million gallons per day. Planning and permitting for effluent disposal above 10 mgd is currently underway and the improvements for the disposal will be through the public access reuse system alternate wetland disposal.

Septic Tanks

Rule 64E-6, F.A.C., presently regulates the installation and use of septic tanks in the Panama City Beach area. This Rule outlines the suitability of soils and use of septic tanks. Using this criteria, the area contains soils which are suitable and unsuitable for septic tank systems. The General Soils Map Number 6 describes the soil types and characteristics. The Beach Service Area is composed of soil type 1 (Kureb, Resota, Mandarin), type 4 (Hurricane, Chipley, Albany), type 5 (Pottsburg, Leon, Rutlege), type 8 (Rutlege, Allanton, Pickney), and type 9 (Bayvi, Diregо). All five soil types are identified as being primarily unsuitable for septic tank systems. Properties and features that affect the absorption of the effluent are permeability, depth to seasonal highwater table, susceptibility to flooding and depth to hardpan. Also, excessive slope or gravel may not adequately filter the effluent. Failure of some septic systems were formerly reported in the Gulf Highlands I and II subdivisions which are located on the eastern and western sides of State Road 79 and north of Panama City Beach Parkway. These subdivisions have since been retrofitted with sanitary sewer and reuse.

In reviewing soil suitability standards, it is advisable that alternatives to septic tank installation and use should be investigated in all areas of the beach service area.

GOALS, OBJECTIVES AND POLICIES

GOAL: Provide adequate facilities required to meet wastewater needs in the Panama City Beach service area.

OBJECTIVE 1: City shall achieve and maintain the adopted level of service standards for sanitary sewer facilities.

POLICY 1.1: Panama City Beach hereby adopts 80 gallons per capita per day as a level of service standard that will be maintained for sanitary sewer facilities for permanent residents and 60 gallons per capita per day for seasonal visitors.

POLICY 1.2: When actual plus committed flow is 90% of the average annual daily flow permit and design capacity for the existing wastewater facility for Panama City Beach, the City will develop and implement an expansion program that will result in expansion of plant facilities or reconstruction to accommodate projected needs prior to the time the design capacity is reached.

POLICY 1.3: The City will track existing and committed capacities to ensure that capacity is available in the future at the level of service standard.

OBJECTIVE 2: The City will continue to address correcting any existing facility deficiencies.

POLICY 2.1: The City will address any existing facility deficiencies by investigating possible inflow and infiltration problems and refurbishing pump stations as needed in the existing wastewater collection lines.

OBJECTIVE 3: The City will address coordinating the extension of, or increase in, the capacity of facilities to meet future needs.

POLICY 3.1: The City will evaluate the sewer system on an annual basis and shall upgrade, expand, or replace its sewage facilities as determined by such evaluation to accommodate population demand and ensure operational efficiency.

OBJECTIVE 4: Upon adoption of this Plan, consider developing additional procedures for providing sewage capacity as a means of discouraging urban sprawl and promoting "in-fill" of vacant urban areas.

POLICY 4.1: The City shall provide sewage capacity as applicable to promote the redevelopment objectives of the Housing section and shall consider provision of sewer in these areas to be a priority activity.

OBJECTIVE 5: Maintain and operate the sewage system in an efficient and cost-effective manner.

POLICY 5.1: Through Land Development Regulations, the City shall require that developers provide sewage collection lines constructed to City standards as a part of proposed new developments and that such lines be connected to the Panama City Beach wastewater treatment system.

POLICY 5.2: Priorities for replacement, correction, or expansion of the facilities shall be as follows:

A. Correction of identified existing deficiencies;

B. Replacement of facilities to allow for continued operation or design efficiency;

C. Expansion of facilities.

OBJECTIVE 6: Upon adoption of this Plan, the City will coordinate the extension or increase in capacity of the facilities to meet future needs.

POLICY 6.1: All extensions of the sewer system shall be constructed in conformance with Chapter 17-6, F.A.C., as it may be revised and any applicable standards for facilities which are to be operated and maintained by the City.

POLICY 6.2: Average peak flow design capacity for the City collection system shall be as specified in Chapter 17-6, FAC, as amended or any applicable standards for facilities which are to be operated and maintained by the City.

POLICY 6.3: Average flow design capacity for the wastewater treatment system shall be as specified in the operating permit issued by the Florida Department of Environmental Regulation.

POLICY 6.4: By 2012, the City will complete a 4 million gallon per day expansion and an upgrade to Advanced Wastewater Treatment levels to the wastewater facility.

POLICY 6.5: Improvements to the wastewater treatment facilities will be funded through a combination of user fees, impact fees, bonds, state revolving funds, and grants.

OBJECTIVE 7: The City will continue to reduce the number of septic tanks currently in the city limits and limit the number of future septic tanks.

POLICY 7.1: Use of a septic system must discontinue pursuant to S. 381.0065, F.S., once a sanitary sewer system becomes available.

POLICY 7.2: The term ▪available• shall be that as defined in S. 381.0065, F.S.

POLICY 7.3: The extension of reuse lines and sanitary sewer lines into unsewered subdivisions will be funded by a combination of user fees, impact fees, bonds, state revolving loans, and grants.

POLICY 7.4: The City's reuse system will continue to be expanded as such projects become financially feasible in order to further the City's potable water conservation efforts. (February, 2011)

B. Solid Waste Sub-Element

Current Conditions

This section addresses the handling and disposal of solid waste. Solid waste includes the sludge from a wastewater treatment plant, garbage, rubbish, refuse, or other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from domestic, industrial, commercial, mining, agricultural, or governmental operations. This definition also includes hazardous waste defined as solid waste, or a combination of solid wastes, which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or may pose a substantial present or potential hazard to human health or the environment when improperly transported, disposed of, stored, treated or otherwise managed.

Solid waste generated in Panama City Beach is transported to the Bay County Resource Recovery Plant or the landfill for disposal (Steelfield Landfill). The 600 acre landfill (155 acres permitted of which 37 acres are filled and 23 acres are in operation) has a life expectancy of 46 more years for Class I waste "ash" and 23 more years for Class III waste "non burnable waste". According to officials at the landfill the facility has the potential to handle triple the current capacity. The Bay County Commission approved the closure of the Beach Transfer Station located on North Gulf Boulevard. The closure does not impact solid waste capacity of the area but does require citizens to drive several more miles in order to dispose of waste. It is hoped that another solution will be found soon since the increased traffic to the landfill has caused State Road 79 to become littered with trash and debris and illegal dumping is expected to increase. In Fiscal Year 2002/2003, Bay County acquired 305 acres to provide additional waste disposal capacity and to serve as a buffer to surrounding properties.

The County Resource Recovery Plant handles solid waste for all of Bay County and limited amounts of other surrounding counties waste. Solid waste generated by Bay County makes up 85% of the facilities maximum capacity of 500 tons of garbage each day. The facility usually operates at 100% capacity with Bay County's waste having first priority. The following table shows the expected demands and remaining capacity of the solid waste system.

TABLE 4
PROJECTED AVERAGE DAILY SOLID WASTE USAGE

	2008	2015	2020
Permanent Residents:	12,187	17,464	21,233
Other Service Area Residents:	23,972	39,671	46,890
Tourist Population (daily avg):	15,000	16,561	18,284
Total Population:	51,159	73,696	86,407
Total Pop. Usage:	140.7 tons	202.7 tons	237.6 tons

Notes: Unincorporated population estimates are based upon water billing accounts. Tourist population is based upon estimates from the Tourist Development Council. Estimates of the Tourist population growth are from the City Building and Planning Department.

It is difficult to establish the remaining solid waste capacity for the City since Bay County handles solid waste for the entire area. However, as indicated above, Bay County states that there is adequate capacity for solid waste for the entire area for the next 46 years. There have been no level of service deficiencies for solid waste during the planning period nor are any anticipated during the next planning period.

The historical data of solid waste tonnage received at the Beach transfer station shows that after peaking in 1985 at 21,057 tons, solid waste has remained relatively constant at approximately 14,000 tons. Table 5 reflects this data:

TABLE 5
SOLID WASTE TONNAGE RECEIVED
AT BEACH TRANSFER STATION

YEAR	TONS RECEIVED
1984	20,972
1985	21,057
1986	17,411
1987	12,132
1988	16,753
1989	18,994
1990	14,543
1991	16,720
1992	15,102
1993	13,693
1994	14,871
1995	14,955
1996	11,289
1997	10,793
1998	15,183
1999	14,996
2005	Transfer Station Closed

SOURCE: Bay County Solid Waste Department

From 1985 to the present, the solid waste generation rate for the Bay County population as a whole ranges from 2 to 6.5 pounds of solid waste per person per day. To be consistent with the LOS standard set by Bay County, 5.5 pounds of solid waste per person per day will be considered as the current level of service which will be maintained into the future.

GOALS, OBJECTIVES AND POLICIES.

GOAL: Provide adequate facilities for the disposition of solid waste.

OBJECTIVE 1: The City shall maintain a level of service based on historical data to project future needs for planning adequate facilities for disposition.

POLICY 1.1: Panama City Beach hereby adopts the level of service standard of 5.5 pounds of solid waste per capita per day.

OBJECTIVE 2: Panama City Beach shall coordinate with Bay County to ensure the availability of solid waste disposal facilities based on the City's adopted level of service standard.

POLICY 2.1: Panama City Beach shall coordinate with Bay County, through an interlocal agreement, for the handling and disposal of solid waste through the Bay County Resource Recovery System.

POLICY 2.2: The City shall coordinate the extension of, or increase in the capacity of, facilities to meet future needs if, upon annual review, the available capacity of the City's current solid waste disposal allocation reaches 90% of its capacity.

POLICY 2.3: The City shall utilize the level of service standard to evaluate facility capacity for issuance of Development Permits. The level of service shall be applied as part of the development review and approval process to each application for development approval to determine whether adequate facility capacity exists to serve the proposed development concurrent with the impacts of such proposed development.

POLICY 2.4: Properties for replacement, correcting existing facilities, and facility expansion shall be as follows in priority order:

A. Correctly identify deficiencies through repair or upgrades;

B. Replacement of obsolete or worn out equipment;

C. Expansion or extension of services and equipment.

OBJECTIVE 3: The City shall implement a program to reduce generation of solid waste.

POLICY 3.1: The City shall continue to cooperate with Bay County, who has the exclusive franchise for Solid Waste by Special Act of the Florida Legislature, to establish programs intended to reduce overall solid waste in Bay County.

C. Drainage Sub-Element

Current Conditions

This section addresses stormwater drainage for purposes of reducing pollution caused by stormwater runoff. The predominant land uses in the area to be served by the drainage system are commercial (motels, restaurants, nightclubs and amusements) and residential. The City completed a stormwater master plan in September, 2007. The process involved identifying and

correcting existing deficiencies, establishing priorities for drainage facilities and replacement based on an adopted level of service standard. Currently the City regulates the review of drainage plans for new developments and redevelopments. The City adopted a stormwater ordinance in 1994 which regulates the quantity and quality of runoff. The level of service for stormwater quantity is: Peak post development runoff shall not exceed peak pre-development runoff rates based upon the 25-year critical duration storm if the development provides a positive direct discharge into a public stormwater system with sufficient capacity. It must be proven that the public stormwater system has sufficient capacity in excess of a 25 year critical storm event. Otherwise attenuation of the 100 year critical duration storm must be taken into account. The level of service standard for water quality is: The stormwater treatment systems must provide a level of treatment within 72 hours for the stormwater runoff from the first 1 inch of rainfall for projects and drainage basins of 100 acres or more, or as an option for projects with drainage basins less than 100 acres, the first ½ inch of runoff.

GOALS, OBJECTIVES AND POLICIES.

GOAL: Provide a drainage program which will reduce stormwater pollution and provide reasonable protection from flood damage to public and private property.

OBJECTIVE 1: The Stormwater Management Master Plan is hereby incorporated and adopted as part of this Comprehensive Plan.

POLICY 1.1: The City will implement the strategies, objectives, and recommendations of the Stormwater Management Master Plan.

POLICY 1.2: Funding for implementing the strategies, objectives, and recommendations of the Stormwater Management Plan will come from the City's General Fund, grants, assessments, and tax increment financing through the Front Beach Road Community Redevelopment Plan.

OBJECTIVE 2: The City shall achieve and maintain the stormwater management level of service standard upon adoption of the Comprehensive Plan.

POLICY 2.1: Stormwater discharge facilities shall be designed to achieve the water quantity and quality standards outlined below. A stormwater discharge facility means the designed features of the property which collect, convey, channel, hold, inhibit or divert the movement of stormwater. Water quantity and quality standards may be achieved by utilization of stormwater discharge facilities which include approved swales, landscape buffers, detention basins, filtration systems, or retention basins to ensure that the following standards are achieved. Stormwater treatment facilities shall be evaluated by the Florida Department of Environmental Regulation prior to approval of development permits by the City.

A. Level of Service Standards

1. Water quantity.

All development not exempt from the requirements of Chapter 26, Stormwater Management of the City Code of Ordinances, shall provide for flood attenuation as follows:

(a) At a minimum, facilities shall be provided to attenuate a 25-year frequency storm event of critical duration so that the postdevelopment stormwater peak discharge rate shall not be greater than the predevelopment peak discharge rate. In addition, development which cannot demonstrate a positive, direct discharge into a receiving wetland or a public easement or right-of-way, each with sufficient capacity to accept stormwater runoff from a 100-year frequency storm event of critical duration without adversely affecting other development or property, shall attenuate a 100-year frequency storm event of critical duration. The critical duration shall be defined as the storm event that when routed through the proposed facility results in the greatest post-development discharge rate. The FDOT 1-hour, 2-hour, 4-hour, 8-hour and 24-hour rainfall distribution shall be used to determine the critical duration. Off-site contributions shall be exempt from the foregoing attenuation requirements, provided that they are conveyed through the site and discharged at the same location as prior to development. The analysis of pre-development run-off shall presume the site to be in a natural and undeveloped condition, except that the analysis of pre-development run-off for a public roadway redevelopment project shall use the current site conditions. A public roadway redevelopment project is a roadway project proposed by a governmental entity, or a non-governmental entity if the roadway project is required as an off-site improvement by a development order or permit, that involves the redevelopment of an existing roadway classified as a principal or minor arterial or an urban or rural collector.

(b) For those developments located within the basin of a regional stormwater plan, the stormwater facility shall consider the critical duration for the regional stormwater plan basin. The post-development discharge for the stormwater facility shall not exceed the pre-development rate for the event equal in duration to the critical event for the regional stormwater plan basin.

(c) All stormwater discharge facilities shall have sediment controls and skimming devices.

(d) Off-site discharge flows shall be limited to non-erosion velocities.

2. Water quality.

All development not exempt from the requirements of Chapter 26, Stormwater Management of the City Code of Ordinances, shall provide for stormwater treatment as follows:

(a) At a minimum, the first one-half inch of stormwater runoff shall be retained within drainage areas less than one hundred (100) acres. For areas one hundred (100) acres or more, the runoff from one inch (1") of rainfall shall be retained with the runoff coefficient being no less than 0.5. The total volume retained must percolate within seventy-two (72) hours.

(b) The retention and detention of a greater amount of stormwater may be acquired in areas of special concern as designated by the City.

(c) Except as described in paragraph b, all drainage and stormwater management systems shall comply with requirements of the Northwest Florida Water Management District as set forth in Chapter 62-346, FAC.

(d) All stormwater discharge facilities shall have sediment controls and skimming devices.

(e) Off-site discharge flows shall be limited to non-erosion velocities.

(f) Drainage and stormwater management systems which directly discharge to surface waters within Ecosystem Management Areas or Outstanding Florida Waters (OFW) shall include an additional fifty percent (50%) of treatment criteria specified in Section 62-25.035(1)(b) or Section 62-25.040 or Section 62-25.042, FAC (OFW standards).

POLICY 2.2: The City shall use the level of service standard for evaluating facility capacity and for issuance of Development Permits. The level of service standards shall be applied to each application for development approval as outlined above to make certain that adequate facility capacity exists to serve proposed development concurrent with the impacts of each development.

D. Potable Water Sub-Element

Current Conditions

This section is to address the potable water needs of the Panama City Beach service area with water originating from Deerpoint Lake. The potable water system within the City limits is shown on Exhibit 7.

The City provides potable water service for virtually all land uses from Phillips Inlet to Hathaway Bridge. This system consists of two water treatment plants and thirteen water wells.

In 1999, the City entered into an interlocal agreement with Bay County to construct a new potable water line from Deer Point Lake via County Road 388 to the City. The system became operational in March, 2002 and eliminated the water wells. The interlocal agreement states that 26.39 million gallons a day (mgd) is available to the City in 2010 with increasing amounts each

year up to 33.79 mgd in the year 2020. The current available pumping and transmission capacity is approximately 32.8 mgd and with planned capital improvements the capacity will be increased to 38.5 mgd. The contract with the County has been designed to increase each year by approximately 4% per year in order to continue to have capacity available for growth. Additionally, the City has completed construction of 7, 7, 5 and 2 million gallon storage tanks, which gives the City an additional 21 million gallons of working reserve for peak season and fire flow demand.

The daily average water demand from January 1, 2010 through July 31, 2010 was 9.14 mgd on a monthly average with a daily peak usage of 14.89. For the remainder of 2010, it is projected the potable water system will see a demand of a daily average of 11.58 mgd and a daily peak usage of 18.88. The County's available capacity to supply potable water to the City in 2010 is 26.4 mgd, which leaves an excess capacity of 14.82 mgd on a daily average and an excess capacity of 7.52 mgd on daily peak usage. Table 6 shows the historical potable water usage and capacity while Table 7 shows the projected usage and capacity from 2010 to 2020.

The City has also implemented a water reclaimed system that will make highly treated effluent from the wastewater system available for irrigation to new subdivisions and commercial developments. With the implementation of this reclaim system, it is estimated that the 20% of potable water usually used for irrigation in these new subdivisions will be replaced by reclaimed water. The following tables shows the historical and expected demands and remaining capacity of the potable water system.

TABLE 6

Historical Potable Water Usage (in mgd)

	2005	2008	2009	2014
Daily Average	12.23	11.47	11.25	11.15
Daily Peak	18.40	19.93	18.33	18.65
Capacity	23.10	25.00	25.69	26.40
Remaining Capacity (Daily Avg.)	10.87	13.53	14.44	15.25
Remaining Cap. (Daily Peak)	4.70	5.07	7.36	7.75

Source: Panama City Beach Water Consumption History and Projections, City of Panama City Beach Utilities Department.

(Ordinance 1341)

TABLE 7

Projected Daily Potable Water Usage (in mgd)

	2015	2020	2025
Total Average Daily Usage:	11.59	13.47	15.64
Total Peak Daily Usage:	18.88	21.78	25.30
Capacity:	29.86	33.79	33.79
Remaining Capacity (Daily Avg)	18.27	20.32	18.15
Remaining Capacity (Peak Daily)	10.98	12.01	8.49

Source: Panama City Beach Water Consumption History and Projections, 2015, City of Panama City Beach Utilities Department and the City of Panama City Beach Building and Planning Department.

Note: The data in Table 5 is derived from the population projections shown in Table 3.
(Ordinance 1341)

GOALS, OBJECTIVES AND POLICIES.

GOAL: Provide adequate water distribution capability to accommodate existing future demand.

OBJECTIVE 1: Establish a level of service for potable water within the service area.

POLICY 1.1: Panama City Beach adopts the following as its level of Service for the provision of potable water:

A. Level of service of 125 gallons per capita per day average.

B. Pressure: 30 psi at point of delivery.

POLICY 1.2: Priorities for replacement, correction of deficiencies, and facility expansion shall be as follows in priority order:

A. Correction of deficiency;

B. Replacement of facilities to allow for continued operation or design efficiency;

C. Expansion or extension of facilities.

POLICY 1.3: Continue to work with Bay County to wholesale water to the City for distribution.

OBJECTIVE 2: Maximize the use of existing water distribution facilities to reduce urban sprawl.

POLICY 2.1: The City shall encourage and allow development of land within the City which has access to potable water, thereby reducing the potential for urban sprawl in the unincorporated areas.

OBJECTIVE 3: Upon adoption of this Plan, require use of water conservation measures and techniques.

POLICY 3.1: The City shall enforce the use of water conservation plumbing fixtures and equipment, as required in 553.963 Fla.Stat.

POLICY 3.2: The City shall undertake emergency measures specified in the Northwest Florida Water Management District Water Shortage Plan in the event of a potable water emergency.

POLICY 3.3: The City shall pursue additional revenue sources to fund water supply and facility projects.

POLICY 3.4: The City shall regularly review the potable water impact fees to ensure they are adequate to fund system improvements for new development, redevelopment, and to maintain and repair the existing system.

POLICY 3.5: The City will continue to examine the extent to which interconnectivity is possible with water facilities of other local jurisdictions.

POLICY 3.6: The City will coordinate with the Northwest Florida Water Management District and Bay County to protect the water quality of Deer Point Lake and any new alternative water supply source.

POLICY 3.7: The City will conduct a rate study in 2016 and upon its conclusion will consider rate structures that improve water conservation such as: full cost rate structures, inclining block rates, and seasonal rates. **(Ordinance 1341)**

POLICY 3.8: The City will continue to encourage water conservation through land development regulations by requiring the preservation and use of native vegetation, when possible, as well as encouraging xeriscaping. **(Policies 3.3 - 3.8 added February, 2011)**

E. Groundwater Aquifer Recharge Sub-Element

According to the Northwest Florida Water Management District, the land surface activities on Panama City Beach are not prone to impact the Floridian Aquifer which is protected by a thick, confining unit of competent clays and other low permeability sediments.

OBJECTIVE 1: The City will protect against salt-water intrusion of the Floridan Aquifer.

POLICY 1.1: The City will coordinate with the Northwest Florida Water Management District and Bay County to protect the water quality of Deer Point Lake and any new alternative water supply source. **(Objective and Policy added February, 2011)**