

**EVALUATION AND APPRAISAL REPORT
OF THE
INDIAN RIVER COUNTY
COMPREHENSIVE PLAN**

DRAFT

POTABLE WATER SUB-ELEMENT

2008

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List of Attachments

1. Indian River County 1995 Potable Water Service Areas
2. Indian River County 2006 Potable Water Service Areas
3. Goal, Objectives and Policies of the Potable Water Sub-Element
4. Water Supply Use, Source, and MGY (million gallons/year) in 2006
5. Five Year Capital Improvements Plan

-APPENDIX "A", Conditions at the Time of Last Major Plan Update (1998) and Existing Conditions (2006)

INTRODUCTION

The purpose of this section of the Indian River County Evaluation and Appraisal Report is to assess the success or failure of the Potable Water Sub-Element of the Comprehensive Plan. This assessment must identify changes in potable water conditions within the county, evaluate the achievement of objectives, and identify changes in state requirements affecting the Potable Water Sub-Element. Based on this evaluation and appraisal, the Potable Water Sub-Element may need to be updated and revised. This assessment contains the following components:

- Baseline Data
 - Potable Water conditions at the time of last major plan update (1998)
- Existing Conditions
 - Existing Potable Water conditions (2006/2007)
- Analysis of Potable Water conditions within the county
- Identification of problems related to sources of water and provision of potable water
- Evaluation of Potable Water Sub-Element objective achievement
- Assessment of Potable Water Sub-Element policy implementation
- Identification of water supply alternatives and conservation/reuse programs
- Identification of future actions
- Identification of anticipated amendments

BASELINE DATA

The summary of potable water conditions within the county at the time of the last major plan update is provided in appendix A. These baseline data will enable the county to compare changes in conditions within the county and make appropriate revisions to the Potable Water Sub-Element as needed.

When the Indian River County Comprehensive Plan was updated in 1998, the Potable Water Sub-Element described conditions and facilities that existed in 1995. That information was provided by the Indian River County, the City of Fellsmere, and the City of Vero Beach Utilities Departments. These data, shown in Appendix A, must be compared to more recent data to assess changes in conditions regarding the provision of potable water within the county.

In 1995, there were four public regional water treatment plants operating in the county. Two of those plants, the South County Reverse Osmosis Facility and the North Beach Reverse Osmosis Facility, were operated by the Indian River County Utilities Department; a third plant was operated by the City of Vero Beach, and a fourth plant was operated by the City of Fellsmere.

At that time, the county's adopted level of service standard was 250 gallons/residential unit/day, while the City of Vero Beach's adopted level of service standard was 351 gallons/residential unit/day, and the City of Fellsmere's adopted level of service standard was 200 gallons/residential unit/day. Combined, the design capacity of those plants was 22,150,000 gallons/day, an amount sufficient to accommodate the combined average daily demand of 10,890,000 gallons/day. For the county, the regional potable water system design capacity was 9,500,000 gallons/day, while demand was 4,400,000 gallons/day. There were 29 privately owned water treatment plants in the county in 1995.

The plants operated by the county Utilities Department used the Floridan Aquifer as their primary water source, while the City of Vero Beach plant used both the Surficial and Floridan Aquifers. The City of Fellsmere plant used the Surficial Aquifer only.

Because water drawn from the Floridan Aquifer contains impurities, that water must be treated to make it potable. For water drawn from the Floridan Aquifer, the type of treatment used by both the city and county plants was reverse osmosis. For water drawn from the Surficial Aquifer, the City of Vero Beach used a lime softening treatment process. All public potable water systems in the county met or exceeded the federal safe drinking water standards in 1995.

A by-product of the reverse osmosis process is brine, which is water with a high concentration of impurities. In 1995, this brine was treated prior to being discharged into the Indian River Lagoon.

In 1995, the service areas of the four public water treatment plants included substantial portions of the urban area of the county. As indicated in the attached map of the 1995 service area (Attachment 1), water lines extended to much of the urban area of the county. In 1995, there were 33,365 residential units in the unincorporated portion of the county; 15,681 (47%) of those units were connected to the county water supply system.

At the time of the last major comprehensive plan update, the county provided potable water service not just to the unincorporated area, but also to the City of Sebastian, the Town of Orchid, and a portion of the Town of Indian River Shores. Including both the unincorporated and municipal service areas, the total number of customers at that time was 20,500. In 1995, the per capita water use was approximately 61.6 gallons a day. Between 1990 to 1995, the Department of Health issued an annual average of 388 well permits for domestic water use. At that time, 72 of 183 undersized residential subdivisions were served by the county potable water system.

EXISTING CONDITIONS

Information on current potable water system conditions is provided in Appendix "A". The information for existing potable water system conditions will be compared to the data provided in the adopted Potable Water Sub-Element (conditions at the time of the last major plan update) to assess changes in potable water conditions within the county from the time that the comprehensive plan was last updated to the present.

In 2006, 30,402 (63.09%) of the unincorporated county's 48,188 residential units were connected to the regional potable water system. At that time, all customers of the county's system, including those living in municipalities, totaled 40,300. This reflects the significant expansion of the County's potable water system that occurred during the previous ten years. During that time, expansion of the county's water system was extensive in terms of increased geographic area served and in terms of new customers.

Currently, every new subdivision within the Urban Service Area is required to connect to the regional water system if the development meets either of the following criteria.

- It is within one-quarter of a mile of existing water lines; or
- It contains 25 or more lots.

The existing regional potable water system serves commercial/industrial development as well as residential development. Since plan adoption, the regional potable water system has been expanded to serve most of the commercial/industrial areas in the county, including the three I-95 commercial/industrial nodes. Because most of the main water lines referenced in the 2004 Master Plan have been installed, centralized potable water service is now available to most of the county's urban service area. As a result of that expansion, the development potential of land within the Urban Service Area (USA) has greatly increased for both residential and commercial projects (Attachment 2).

Currently, there are four public regional water treatment plants operating in the county. Two of those plants are operated by the Indian River County Utilities Department; a third plant is operated by the City of Vero Beach, and a fourth plant is operated by the City of Fellsmere. The county's North Beach water plant was decommissioned in 1998, when the North County plant came on line.

At this time, the City of Vero Beach provides potable water service to the Town of Indian River Shores as well as to the unincorporated parts of the south barrier island and to other unincorporated areas around the city limits. Besides providing water service to the unincorporated area, the county provides potable water service to the City of Sebastian, the Town of Orchid, and the northern portion of the Town of Indian River Shores. In addition, the county has an agreement with the City of Fellsmere to provide emergency water if needed.

Combined, the design capacity of the four public water treatment plants is 24,720,000 gallons/day, an amount sufficient to accommodate the existing combined average daily demand of 15,990,000 gallons/day. In 2006, the design capacity of the county's regional potable water system was 12,070,000 gallons/day, while demand was 9,700,000 gallons/day. At that time, per capita water use was approximately 104 gallons a day. At present, there are four privately owned treatment plants within the county.

Currently, the plants operated by the county Utilities Department use the Floridan Aquifer as their primary water source, while the City of Vero Beach uses both the Surficial and Floridan Aquifers. The City of Fellsmere uses the Surficial Aquifer only.

For both the county and the City of Vero Beach, the water treatment process is the same now as it was in 1995. Both the County and the City use reverse osmosis to treat water drawn from the Floridan Aquifer, while the City uses a lime softening process to treat water from the Surficial Aquifer. As in 1995, the reverse osmosis process still produces brine as a by-product. At the water treatment plants, an aeration and chlorination process treats the brine by-product. The aeration removes hydrogen sulfide and other volatile contaminants, such as gross alpha particles and ammonia, prior to the brine being discharged into the Indian River Lagoon.

Presently, the county is working with the state Department of Environmental Protection to redirect the brine by-product from the north county water treatment plant into the Grand Harbor Spoonbill Marsh Site. The Spoonbill Marsh site is generally located on the west shore of the Indian River Lagoon, south of 63rd Street. At this site, the brine water will be mixed with brackish water from the Indian River Lagoon and further treated through a saltwater marsh treatment system prior to flowing into the Lagoon. This high marsh site is expected to further remove suspended solids, phosphorous and nitrogen through evapotranspiration prior to the brine flowing into the Indian River Lagoon.

In the County's system, the south county plant and north county plant are interconnected; therefore, treated water can now be circulated throughout the system from either plant. The service areas of these plants now include substantial portions of the urban area of the county, including the north barrier island area. Pursuant to Intergovernmental Agreements, the county provides potable water service to the Town of Orchid, the City of Sebastian, and the northern portion of the Town of Indian River Shores. The County also has an Intergovernmental Agreement to provide emergency water supply to the City of Fellsmere. As indicated in the attached map of the 2006 service area, water lines currently extend to much of the county's Urban Service Area, including all three of the commercial/industrial nodes along I-95.

Although the regional potable water system service area has been greatly expanded since 1995, there are still several existing subdivisions with undersized lots (subdivisions with lots less than one half acre that do not meet the Environmental Health Department's requirements for separation distance between wells and septic tanks), that are not yet served. One such area is Vero Lake Estates, a large platted subdivision in the north part of the county. In 2006, the County Public Works Department and the County Utilities Department proposed several new infrastructure projects, including the construction of potable water and sanitary sewer lines in Vero Lake Estates. Because of the anticipated assessment charges, residents declined to enter

into an agreement with the County. Since then, however, the county utilities department, under direction of the Board of County Commissioners has expanded approximately 7 ¼ miles of master planned water main lines with fire hydrants throughout Vero Lake Estates. In 2006, 94 of 183 residential subdivisions with undersized lots were served by the county potable water system.

According to the St. Johns River Water Management District (SJRWMD), there are 1,657 permitted wells that are 6 inches in diameter or greater in Indian River County. In 2006, the total permitted water withdrawal was approximately 72,659,360,000 gallons per year. Of the total permitted water withdrawals in 2006, potable water supply accounted for approximately 8%. Agriculture, including livestock, nurseries, and aquaculture, accounted for 82.3% of total permitted withdrawals, while golf course, landscape irrigation, recreation and other uses utilized the remainder of the total withdrawals. The table below summarizes this information, while Attachment 4 lists all of the permitted water withdrawals in 2006 by water usage class and water source.

**2006 Water Withdrawal Table
Indian River County**

USE	Million Gallons/Year	Percentage of Total Permitted Withdrawals
Potable Water	5,819.63	8.01%
Agricultural (includes nurseries, livestock, aquaculture)	59,808.99	82.31%
Rec., Golf, Commercial/Industrial, Other	7,030.74	9.68%
Total	72,659.36	100%

While 72.7 billion gallons of groundwater were permitted for withdrawal in 2006, that does not account for private wells that exist, but are not subject to permitting by SJRWMD. It is also possible that there are a significant number of wells that were put in place prior to the county's or SJRWMD's permitting requirements. These wells have never been regulated and may be in need of substantial repairs to ensure that old well casings are not leaking untreated water from the Floridan Aquifer into the Surficial Aquifer.

Currently, the Department of Health permits wells that are 2 inches or less in diameter. Between 1995 and 2006, the Department of Health issued 12,065 well permits, 4,272 of which were domestic water supply wells; the remaining permits were for irrigation wells. Over the last 5 years, the number of permits for domestic wells decreased by approximately 20%, to an annual average of 310 permits. This is due largely to the expansion of the county's regional potable water supply system.

At this time, potable water quality in all regional systems meets or exceeds safe drinking water standards. Since the time of the last major plan updates, there have been no reported instances of privately owned or public water plant failures in the county.

ANALYSIS

Since the last major update of the comprehensive plan, there have been two significant changes regarding the provision of potable water. The first change has been the substantial increase in the customers served by centralized potable water systems. The second change is the reduction in the number of private water treatment plants operating in the county.

In the last 10 years, the county's potable water system has expanded and now serves all urbanized areas of the county, including major commercial and industrial nodes. During that time, the county's potable water system adequately met the potable water demand from new residential and nonresidential developments. There are, however, some existing residential developments with undersized lots that are not connected to the county potable water system.

Presently, 30,402, or 63% of the existing 48,188 residential units in the unincorporated area of the county, are connected to the county's potable water supply system. Consistent with the county's potable water master plan, the potable water system will be expanded within the USA in the future. This expansion will involve providing service to subdivisions with undersized lots.

Between 1995 and 2006, 22 undersized residential subdivisions were connected to the county potable water system. In most of these cases, the cost of connecting those subdivisions to the regional potable water system was funded through assessments paid by the property owners benefiting from the expansion. While the county plans to continue to use this method for future expansions, residents of many of those subdivisions are unwilling to pay the assessment costs associated with connection to the potable water system. For that reason, a number of subdivisions with undersized lots may not get connected to the county's potable water system.

A review of the county utilities department assessment projects indicates that most residents of existing unconnected residential subdivisions would like to be connected to the county potable water system, but they are not willing or able to pay for the connection. In the past, the county has utilized Community Development Block Grants (CDBG) to connect several low income neighborhoods in the Wabasso area to the county potable water system. The CDBG program, however, is a competitive funding source and is available only to low and moderate income neighborhoods. In the future, the county may, whenever the opportunity becomes available, apply for CDBG or other federal or state grants to connect homes in existing residential neighborhoods to the county potable water system.

- ***Subdivisions With Undersized Lots***

There are two major problems with subdivisions with undersized lots (those with lots less than one half acre in size that are not connected to a centralized water system). These problems are health and safety. With small lots and on-site septic systems, small lot subdivision residents can experience health problems if wells are contaminated by septic tanks. The solution to this problem is connection of undersized subdivisions to the centralized water system. This solution also resolves safety problems by providing fire hydrants in these areas.

At this time, the county has sufficient capacity in the regional potable water system to serve these subdivisions if they were to connect. In the future, the county will need to connect subdivisions with undersized lots to the regional potable water system. Two ways to pay for such connections are by assessing benefiting lot owners or by utilizing federal or state grants.

- ***Private Wells***

Within the last few years, the number of annual average domestic well permits issued by the Department of Health decreased by approximately 20% to 310 permits. As the county's water supply service is extended to more subdivisions within the urban service area, the number of domestic well permits is expected to decrease to fewer than 300 per year by 2010. Overall, the quality of the regional potable water system is better than domestic wells, and there is also less chance that the regional system will become contaminated.

- ***Privately Owned Water Treatment Plants***

As the county has expanded its potable water system, all but 3 of the privately owned public water supply treatment plants that existed in 1995 have been decommissioned. This provides residents with better quality water and decreases the chance of drinking water contamination. Those three (3) remaining private water treatment plants are the Countryside north mobile home park, the Fellsmere Management Corporation plant, and the Sun Agriculture facility. Recently, the Lakewood Village mobile home park was connected to the county water system.

Currently, the county is working on connecting the Countryside north mobile home park to the regional system. At this time, the facilities at the Fellsmere Management Corporation and the Sun Agriculture treatment plants are not in violation of any safe drinking water regulations and will be allowed to continue operation.

The focus of the County Utilities Department was on potable water treatment and distribution. Public water supply was not a major issue of concern. Public water supply was not an issue in the past because the Floridan aquifer, which is and has been the county's principal source of potable water supply, had been considered to be an almost unlimited source of potable water. For a number of reasons, that is not the case now. Consequently, this analysis must address potable water supply as well as potable water treatment and distribution.

- ***Treatment and Distribution***

Since the last major update of the comprehensive plan, there has been a significant increase in the number of potable water customers in the county and also a significant increase in per capita water usage. From 1995 to 2006, per capita/per day potable water use rose 40%. This could be due to any number of reasons. One such reason could be an increase in the number of homes, subdivisions, and commercial developments using potable water for irrigation purposes. According to the county utilities department, at least 50% of all water usage is attributed to irrigation. Another reason could be the increase in the number of residential units with pools. Also, the increase in water usage may be attributed to an increase in the number of commercial and industrial users in the county since 1995.

Currently, the county's potable water system meets all federal and state regulations for safe drinking water. To ensure that safe drinking water standards are maintained, the county performs regular testing of drinking water.

- ***Brine Discharge***

At this time, the County Utilities Department is implementing the Spoonbill Marsh initiative, an innovative project that will treat brine from the North County RO plant in a coastal marsh system and reduce impacts on the lagoon. This project is being undertaken because FDEP would not renew the county's permit to discharge brine directly into the lagoon. Although brine from the North County water plant will soon be treated in a coastal marsh system, brine from the south county RO plant will continue to be discharged into the south relief canal.

Because the county has active permits from FDEP to discharge brine into the south relief canal, there are no plans to implement any alternative method of discharging brine from the South County RO plant. In the future, however, FDEP may not renew the South County RO plant's permit to discharge brine into the south relief canal. In that case, several options for the south county brine disposal can be considered. These options are: creating another marsh treatment system, establishing a county deep well injection system, or entering into a partnership with the City of Vero Beach for deep well injection in the city's deep wells. Given the probability of the county having to address the South County R.O. plant brine discharge, the county should adopt a policy to evaluate each of the referenced options.

- ***Water Conservation***

Generally, an increase in per capita potable water use is not a good trend. Such an increase could deplete water supply sources faster. To conserve water supply sources, the county needs to ensure that water is used more efficiently. One way to do that is to emphasize use of reclaimed water and treated stormwater for irrigation purposes. If more stormwater is retained on development sites and used for irrigation, groundwater supplies will be recharged, and stormwater flows to surface waterbodies will be reduced. In conjunction with common water conservation practices, utilizing stormwater and reclaimed water for irrigation purposes will enhance water resource preservation.

Recently, the St. Johns River Water Management District established a water conservation program called Florida Water Star. This program focuses on new residential construction and is intended to provide water-efficient options for homes and landscaping. This is a voluntary program that home builders may participate in. Since this program can enhance water conservation efforts, the county should adopt a policy to encourage home builders to participate in the program. That policy could provide builders an incentive to participate by expediting permit reviews for participating builders.

- ***Coordination***

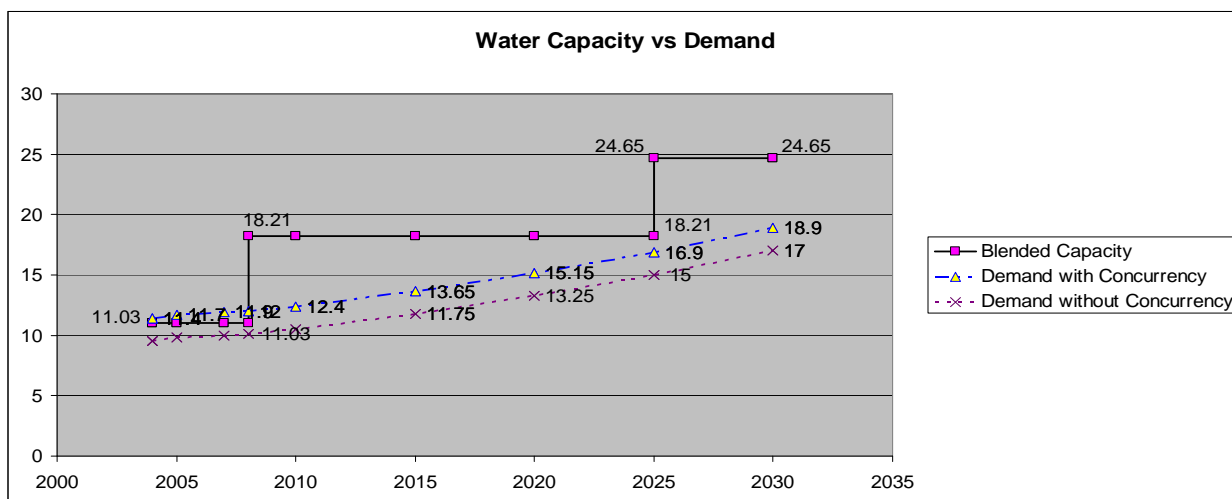
Because the City of Vero Beach provides potable water service to portions of the unincorporated county, the county coordinates with the City of Vero Beach to ensure that there is sufficient potable water capacity available to serve projects within the unincorporated county portion of the City of Vero Beach potable water service area. This coordination is accomplished by incorporating the City of Vero Beach Utility Department in the county's concurrency review system. Since this is an important activity, the county should adopt a policy indicating that the county will continue that practice.

- ***Capital Improvements***

Since the last plan update, the county has implemented all potable water capital improvements identified in the potable water sub-element. In the future, additional capital improvement projects will need to be undertaken. These include the extension of main water distribution lines, the expansion of treatment capacity, the construction of reuse water lines, and the construction of new intake surface water lines. The 5-year schedule of the capital improvements is provided in attachment #5.

As shown on the graph below, total 2030 potable water demand in the county, excluding the municipalities, will be 18.90 million gallons per day. At that time, the projected capacity of the county's water treatment plants, based on the county's potable water master plan, will be 24.65 million gallons per day. To achieve the 24.65 mgd capacity by 2030, the county has scheduled potable water plant expansions for each of the following years: 2008 and 2025. The water plant expansions will be: 7.17 mgd in 2008 and 6.44 mgd in 2025. These are shown in the chart below.

Almost all of the capital improvements needed for the 2025 expansion will be included in 2008 expansion. As part of 2008 expansion, all of the 2025 needed wells, all of the 2025 needed membrane skids, and all but one of the 2025 needed membranes will be in place. Therefore, the only needed capital improvement for the 2025 expansion will be addition of one membrane to an existing membrane skid. Since the county's water plants are interconnected, the utilities department has flexibility as to which plant is expanded to accommodate projected demand.



Presently, the County Utilities Department has a Consumptive Use Permit from SJRWMD that allows a maximum Floridan aquifer withdrawal of 13.79 million gallons per day by the year 2021. This permitted amount of water withdrawal is significantly less than the projected demand for that same time period. To remedy this situation, the County Utilities Department recently applied to SJRWMD for 3 additional wells at the north county water plant and is applying for a revised Consumptive Use Permit to allow more Floridan Aquifer water withdrawals to meet projected demand.

In response to the county’s request, the SJRWMD recommended that the county install 6 new wells. The district has indicated that the 6 wells will be permitted at a withdrawal rate lower than the 3 requested wells, and that dispersing the wells with a low withdrawal rate per well over a large area around the north county treatment plant will reduce the impact of water withdrawals from the Floridan Aquifer in the immediate area of the treatment plant. In addition, the SJRWMD requested that the county analyze the potential of using alternative water supply sources to reduce the amount of water withdrawn from the Floridan Aquifer. In response, the County Utilities Department hired a consultant to analyze alternative water supply sources as recommended by the water management district.

- **Public Water Supply**

In 2005, the Florida Legislature enacted Senate Bills 360 and 444. That legislation significantly changed Chapters 163 and 373, F.S. to require coordination of water supply and land use planning. In so doing, the legislation strengthened the statutory linkage between regional water supply plans prepared by the state’s water management districts and comprehensive plans prepared by local governments. Because Indian River County is included in the St. Johns River Water Management District’s regional water supply plan, the county must coordinate with the district to assess future water needs.

Senate bills 360 and 444 established two sets of requirements, one set for jurisdictions subject to a regional water supply plan and one set for jurisdictions not subject to a water supply plan. While Indian River County is not subject to a regional water supply plan, the county is still

required by state statutes to consider water supply requirements and assess the county's water supply needs as part of its Evaluation and Appraisal Report (EAR) process.

According to state requirements, the following comprehensive plan elements must be reviewed and revised in regards to water supply:

- The Infrastructure Element must be updated to address water needs and sources, water supply development, conservation, reuse, and cooperative planning efforts related to development of multi-jurisdictional water supply facilities, including development of alternative water sources to supplement traditional sources of groundwater and surface water supplies.
- The Conservation Element must be updated to include an assessment of current and projected water needs and sources for at least a 10-year period, considering the applicable District Water Management Plan.
- The Intergovernmental Coordination Element must be updated to address cooperative efforts with other local governments, public and private utilities, regional water supply authorities, special districts, and water management districts with regard to potable and reuse water service delivery.

Alternative Water Supply

Recently, the SJRWMD concluded that the UFA (Upper Floridan Aquifer) groundwater resources in Indian River County can sustain continued development through 2025. Beyond 2025, however, there may not be sufficient capacity in the UFA to sustain continued development. This information is based on the SJRWMD's 2003 water supply assessment. In 2008, the SJRWMD will complete a new assessment. If that assessment indicates that the UFA cannot sustain proposed withdrawals through 2030, then the County will be identified as a priority water resource caution area and will become a focus of the next District (SJRWMD) Water Supply Plan.

In 2007, Indian River County prepared an Alternative Water Supply Master Plan. According to that plan, surface water may serve as an alternative to, or a supplement to, the Floridan Aquifer as the county's future potable water supply source. For surface water to be a practical alternative supply source, however, there needs to be a viable surface water storage system. Any such surface water storage system would need to be created in coordination with the SJRWMD. Among its responsibilities, the district has been legislatively authorized to provide funding for alternative water supply projects. Besides planning for alternative water supply sources, the County Utilities Department is also analyzing water conservation and reuse programs.

In its 2007 Alternative Water Supply Master Plan, the county assessed the following three alternative sources of water supply:

- Surficial Aquifer

- Seawater Desalination; and
- Fresh Surface Water/Reservoirs

Pros and Cons

The pros and cons associated with each of the three alternative water supply sources, as well as the Upper Floridan Aquifer (UFA), are shown in the Table below for comparison purposes.

Pros and Cons Associated with Alternative Water Supplies

	Surficial Aquifer	Seawater Desalination	Fresh Surface Water/Reservoirs	Use of UFA
Pros	<ul style="list-style-type: none"> Water is Available Potentially lower cost than current water Treatment Technology No anticipated impact on agricultural wells in the UFA 	<ul style="list-style-type: none"> Unlimited water availability 	<ul style="list-style-type: none"> Fresh surface water resources are abundant particularly at the boundary between the Upper Basin project and C-25 canal O&M costs are the lowest of all technologies Deep injection well not necessary Fellsmere Water Management Area (WMA) slated for development 	<ul style="list-style-type: none"> Groundwater is available Ability to meet immediate and short term demands Same treatment technology as currently in place Costs are similar to existing costs Add on to existing treatment plants A secure source
Cons	<ul style="list-style-type: none"> Different Membrane Treatment Technology Deep injection well for disposal Production rates are low requiring a large number of wells Land acquisition of large number of well sites Potential Wellfield Protection issues because of shallowness of wells – will Require Protection Variable water Quality High maintenance Potential impact on adjacent homeowner wells 	<ul style="list-style-type: none"> Most expensive membrane treatment technology-energy intensive Different membrane treatment technology Deep injection well for disposal If Boulder Zone is the source, then a study would be necessary to show feasibility Potentially a secure source if groundwater is the source; surface water source would be less secure 	<ul style="list-style-type: none"> Different membrane treatment technology Approximately 20 miles of pipeline required Safe yields of the St. Johns River and Upper Basin project have not yet been determined – minimum flows and levels in the St. Johns River must be met. Operational guidelines for the water conservation areas will be a constraint on available supply Timing of construction of Fellsmere WMA not determined Reconnection of the C-25 canal and the Upper Basin project is still in the discussion stage. Source water will require protection 	<ul style="list-style-type: none"> Potential interference with existing agricultural wells Deep injection well for disposal of concentrate Extension of well sites over greater distances to minimize drawdown impacts increases pipeline costs

Schedule for Implementation of Alternative Water Supplies

As indicated in the Table below, it will take a number of years to implement any of the water supply alternatives. In the table, the lower number of years represents the best case scenario with the assumption that the necessary permits would be processed routinely and that controversy or objections would not delay the project. The higher number of years represents the time that would be required to address potential permitting delays. The potential delaying activities that could occur are shown in the referenced table. As indicated, the interim expanded use of the UFA is the alternative that would require the least number of years to implement.

Schedule for Implementation of Alternative Water Supplies

	Surficial Aquifer	Seawater Desalination	Fresh Surface Water/Reservoirs	Interim Expanded Use of UFA
Number of Years to Implement from Authorization	6 to 8	6 to 10	6 to 10	2 to 4
Potential delaying factors	<ul style="list-style-type: none"> Resolution of drawdown impacts on wells of adjacent home owners Groundwater quality protection Acquisition of large number of well sites 	<ul style="list-style-type: none"> 404 permitting for crossing of the Indian River Lagoon Feasibility study for use of the Boulder Zone as a source of water 	<ul style="list-style-type: none"> SJRWMD's determination of the safe yield of selected water storage areas Availability of water from the St. Johns River due to minimum flows and levels restrictions 	<ul style="list-style-type: none"> Resolution of drawdown impacts on nearby agricultural wells

Costs of Alternative Water Supplies

In the table below, the cost estimates for each of the three different alternative water supply sources are presented. For comparison purposes, the cost of constructing new water treatment plants and developing new UFA wellfields is also presented. No land acquisition costs are included in any of the cost estimates. In the case of seawater desalination, only the treatment cost is included. The cost of an influent pipeline extending to the ocean is not included because of significant uncertainties associated with this determination.

The estimates include capital, operation and maintenance (O&M), and total production costs for the various potable water treatment technologies, treatment processes, and plant components. As shown, the cost estimates are provided for plant capacity increments of 5, 10, 15, and 20 million gallons per day (mgd) on a maximum day demand (MDD) basis. The table below presents a summary of the total production costs for each technology, including the annualized capital costs, the annual O&M costs for each production rate case, and an annual renewal and

replacement (R&R) fund deposit (which is not included under O&M costs).

Ranking of Alternative Water Sources

Although a strictly quantitative ranking of the alternative water supply options is not possible, it is possible to make practical judgments regarding the three alternatives. While all three alternative water supply sources are positive with respect to water availability, all three possess uncertainties and some level of risk. All three differ in cost, some significantly. While implementation schedules are similar, the implementation timeframe for any of the three would be a number of years.

At this point, seawater desalination is the least desirable alternative, because it is the most expensive technology and the most energy intensive. As an alternative to seawater, saline groundwater from the Boulder Zone may be feasible, but confirmation of this would be subject to a feasibility study that examines use of the Boulder Zone as a water source.

As a potable water supply alternative, the surficial aquifer presents some difficulties related to water quality protection, since all of the wells would be very shallow with the most productive zones in the central part of the County in the upper 50 feet of the aquifer. Water quality variability is also an issue. Because of low productivity, the surficial aquifer would require a large number of small wells producing small quantities of water. In addition, the impacts on adjacent users of the surficial aquifer could put the County in the same position as expanded use of the UFA with respect to agricultural wells. In the past, the County decided against using this source and elected to go to the UFA.

Summary of Probable Cost for Treatment Technologies Using Various Raw Water Sources

Raw Water Source! Treatment Method! Plant Capacity (mgd)	Raw Water Source	Concentrate Disposal	Capital Cost	Annual O&M Cost	Production Cost (\$/1000 gallons) ⁴
Current Costs of UFA Using Low Pressure RO - Actual Costs (FY 2007-2008)					
12.21 ¹	Groundwater	Surface Water Discharge	\$1,551,882	\$5,102,572	\$2.05
Fresh Surface Water Using Microfiltration/Ultra filtration					
5	Surface Water	N/A ²	\$14,191,000	\$1,078,000	\$2.10
10	Surface Water	N/A ²	\$24,397,000	\$1,720,000	\$1.57
15	Surface Water	N/A ²	\$33,064,000	\$2,289,000	\$1.36
20	Surface Water	N/A ²	\$41,025,000	\$2,841,000	\$1.22
Surficial Aquifer Using Nanofiltration					
5	Groundwater	Deep Injection Well (DIW)	\$24,178,000	\$1,646,000	\$3.42
10	Groundwater	DIW	\$33,576,000	\$2,836,000	\$2.34
15	Groundwater	DIW	\$41,573,000	\$3,913,000	\$1.95
20	Groundwater	DIW	\$50,188,000	\$4,992,000	\$1.75
Continued Use of UFA Using Low Pressure RO-New WTP and Wellfield					
5	Groundwater	DIW	\$34,693,000	\$1,758,000	\$4.41
10	Groundwater	DIW	\$48,579,000	\$3,181,000	\$3.04
15	Groundwater	DIW	\$64,086,000	\$4,526,000	\$2.65
20	Groundwater	DIW	\$79,077,000	\$5,910,000	\$2.42
Seawater RO Treatment					
5	Surface/ Ground Water ³	DIW	\$39,429,000	\$3,145,000	\$5.95
10	Surface/Ground Water ³	DIW	\$64,094,000	\$6,230,000	\$4.77
15	Surface/Ground Water ³	DIW	\$92,828,000	\$9,248,000	\$4.48
20	Surface/Ground Water ³	DIW	\$115,436,000	\$12,432,000	\$4.18

¹ 12.21 mgd is combined WTP capacity; actual average production for the FY2007-2008 is projected to be 8.89 mgd. Production cost based on actual average production estimate of 8.89 mgd (3,246 mgy)

²MF/UF do not produce a concentrate stream as with nanofiltration and RO systems. Residuals need to be removed from the backwash water and chemicals in the backwash solution may require neutralization prior to disposal.

³Costs include only treatment. Cost of an influent pipeline or deep well to the Boulder Zone as a source is not included. Deep Injection Well disposal would vary between \$5.5 million and \$11 million for the water treatment plant capacities presented.

⁴Annual O&M and production costs are based on average daily demand using a maximum daily demand/annual average daily demand ratio.

As a future long-range source of potable water, surface water located in western Indian River County represents a good first choice. In the western part of the county, surface water resources appear to be abundant, and treatment would not be as energy intensive as other technologies. After the initial construction of approximately 20 miles of pipeline that may

cost from \$10 million to \$20 million, the operating costs would be low. Currently, the SJRWMD is evaluating the availability of water from the St. Johns River. This evaluation will assess minimum flows and levels, and will determine water availability in the District's existing and proposed water management areas.

Preliminary analysis has shown that a significant amount of water is available in the C-25 canal basin and the adjacent Upper St. Johns basin. This water is currently discharged to tide. Recently, the SFWMD and the SJRWMD initiated discussions regarding construction of a reservoir in the area to capture currently wasted water. In addition, the proposed 10,000-acre Fellsmere Water Management Area (FWMA) is a potential significant additional source of fresh surface water.

Prior to the county choosing surface water as an alternative water source, the SJRWMD will need to commit to the permissibility of fresh surface water in western Indian River County. To determine the optimum location for withdrawals and ensure a sustainable withdrawal even during dry/drought periods, a great deal of coordination with the SJRWMD will be necessary. In addition, the use of an Aquifer Storage and Recovery system may be necessary to ensure dry season water availability.

In terms of water supply, the UFA will continue to be the county's water supply source until an alternative water supply source, such as surface water, can come on-line. A conservative estimate of when an alternative water supply such as surface water could be on line is 2017. Given that this is the case, an interim expansion of withdrawals from the UFA will be necessary.

In 2017, raw water withdrawal is projected to be approximately 15.57 mgd. Current wellfield capacity is approximately 15.5 mgd (based on six wells at South County and three wells at North County). The North County RO plant expansion is currently underway. This expansion will increase the county's potable water capacity to 18.21 mgd by 2009.

Water Supply Plan

Because Indian River County is not currently in a SJRWMD Priority Water Resource Caution Area, the county is not required to complete a 10 year water supply facilities work plan at this time. Even though the county is not currently required to develop a water supply facilities work plan, the county should be pro-active in identifying and working toward establishing an alternative water supply source. For that reason, the county is coordinating with SJRWMD in the district's water supply assessment and in its water supply development-related initiatives that affect the county.

According to the county's alternative water supply analysis, a new water supply source could not be on line for another ten years (2017). That timeframe could be even longer if a surface water reservoir needs to be constructed. Given these constraints, another existing surface water alternative may be a better choice. That is to utilize water from the C-54 Canal. Regardless, the county will need to continue to utilize the UFA as a source to bridge the gap until the new source can be developed.

The C-54 strategy could be the most cost effective because the county would continue to utilize existing treatment plant technology and facilities even with surface water as a public water supply source. At such time as a new potable water supply source comes on line, the withdrawals from the UFA could be reduced if that is feasible.

Accordingly, the county's policy should be to:

- Continue using the UFA as an interim water supply source until such time as a surface water supply source can be brought on line.
- Coordinate with the SJRWMD to obtain authorization to utilize surface water from the District's existing water management and conservation areas. Specific target sources, water availability, permitting requirements, and pipeline routes should be addressed. Requirements for feasibility studies should be determined as required by the SJRWMD. If the source is a new reservoir, then ownership of the reservoir, costs of land, and financing should be addressed.
- Develop a preliminary schedule that addresses the annual steps needed to develop the new surface water supply by 2017.

Effects of Statutory and Rule Changes

Local government comprehensive plans must be consistent with state and regional growth management requirements, including Chapter 163, F.S., the State Comprehensive Plan, Rule 9J-5, F.A.C, and the applicable strategic regional policy plan. As stated in Subsection 163.3191(1), F.S., the intent of the EAR process is to "respond to changes in state, regional, and local policies on planning and growth management....". Therefore, this EAR includes an analysis of the effects of statutory and rule changes upon the Potable Water Sub-Element.

Consistency with Rule 9J-5, F.A.C

Section 9J-5.011, F.A.C., provides the minimum requirements for the Potable Water Sub-Element. Since the time of the last major plan update, only minor revisions have been made to Section 9J-5.011, F.A.C. The Potable Water Sub-Element remains consistent with Rule 9J-5, F.A.C.

Consistency with State Comprehensive Plan

The State Comprehensive Plan ([Ch. 187, F.S.](#)) has been revised since Indian River County adopted its comprehensive plan. The Potable Water Sub-Element of the Indian River County comprehensive plan is consistent with the changes in the state plan.

Consistency with Strategic Regional Policy Plan

The Potable Water Sub-Element is consistent with the Treasure Coast Strategic Regional Policy Plan.

Consistency with Ch. 163, Part II, F.S.

In 2005, the Florida Legislature adopted significant changes to Ch.163, F.S. to improve the coordination of water supply and land use planning by requiring local governments to demonstrate that there are adequate water supplies, public facilities and services to meet future demands. As required by Senate Bills 360 and 444 and discussed in the analysis section, the Potable Water Sub-Element must be revised to be consistent with Ch. 163.

EVALUATION OF OBJECTIVES

Following is an evaluation of the achievement of the Potable Water Sub-Element objectives. Except for objective 4, each of the objectives was achieved. The goals, objectives, and policies of the potable water sub-element are attached (attachment 3).

Under each objective, those policies associated with the objective were assessed to identify those that were implemented and those that were not implemented. Also, each policy was assessed to determine if it directly or indirectly contributed to meeting the corresponding objective. Then, each policy was assessed to determine if it needs to be maintained, revised, or deleted and the reason for revision or deletion.

OBJECTIVE 1 Service Concurrent with Development

Through 2020, there will be sufficient capacity in the regional potable water system to accommodate all new development within the urban service area.

MEASURE – DESIGN CAPACITY OF THE REGIONAL POTABLE WATER SYSTEM.

Since the target date of this objective is not until 2020, the objective cannot be fully evaluated at this time. Current projections, however, show that the 2020 design capacity of the county potable water system is projected to be 18.21 million gallons per day, while demand will be about 15 million gallons per day. In 2006, the design capacity of all county regional potable water treatment plants was 11.03 million gallons per day, and demand was 9.7 million gallons per day.

Objective 1 was achieved

Because the provision of potable water service is necessary to maintain the community's quality of life, this is an important objective and should be retained, but the target date of the objective should be changed to reflect that sufficient capacity should be provided on an on-going basis.

Policy Description (Refer To Plan For Actual Policy)	Action/Accomplishment	Was Policy Implemented?		Did This Policy Contribute To Meeting The Objective?		Was The Original Policy Appropriate?		Should This Policy Be Maintained, Deleted, Or Revised?
		Yes	No	Yes	No	Yes	No	
1.1) New development in the unincorporated area of the County shall be approved only when capacity is available to provide needed	All new development must meet the concurrency test to ensure that sufficient capacity	X		X		X		Revise to indicate water supply capacity and

EAR Potable Water Sub-Element

Policy Description (Refer To Plan For Actual Policy)	Action/Accomplishment	Was Policy Implemented?		Did This Policy Contribute To Meeting The Objective?		Was The Original Policy Appropriate?		Should This Policy Be Maintained, Deleted, Or Revised?
		Yes	No	Yes	No	Yes	No	
potable water service.	is available to serve the project							facilities
1.2) The county utilities department shall inspect private plants in the county on an annual basis.	Private plants were inspected annually	X		X		X		Maintain
1.3) The county adopts 250 GPD/ERU as the county's minimum Level of Service.	Minimum standards adopted	X		X		X		Maintain
1.4) The county shall utilize the concurrency management system to update facility demand and capacity information as development orders or permits are issued.	Computerized permit tracking and concurrency management system updates demand and capacity information as dev. Orders or permits are issued	X		X		X		Maintain
1.5) The Planning Division shall provide annual summary reports containing demand and capacity information for each facility within the county service area as needed.	Summaries provided through the automated concurrency management system as needed	X		X		X		Maintain
1.6) The county shall continue to allow the use of private wells in rural areas for single-family units and for small retail establishments where approved by regulatory agencies consistent with the water and wastewater connection matrix .	Under limited circumstances, new development is served by wells	X		X		X		Maintain

Each of these policies was implemented, contributed to meeting the objective, and should be maintained. Policy 1.1 should be revised to clearly indicate that the county will approve new development only when water supply capacity and facilities are available to provide needed potable water service.

New Policy

One new policy should be added under Objective 1. This new policy should recognize that the City of Vero Beach provides potable water service for development projects in the unincorporated portion of the county that are served by the City of Vero Beach potable water system and that the county will coordinate with the City utilities department in the review of such development projects to ensure that there is sufficient potable water capacity to serve the project. The proposed policy should state that no permit will be issued by the county for projects to be served by the City of Vero Beach Utilities Department until the city notifies the county that adequate water supplies and potable water facility capacity are available to accommodate the project.

Overall Assessment of Policies

Through the implementation of these policies, as well as the addition of the new policy for coordination with the City of Vero Beach regarding water supplies and potable water facility capacity availability for projects in the unincorporated county that are served by the City of Vero Beach Utilities Department, Objective 1 will continue to be achieved.

OBJECTIVE 2 Correction of Deficiencies

By 2005, at least 60% of all existing residential units in the county will be connected to a regional potable water system. This will be an increase from 47% in 1995.

MEASURE – TREATMENT PLANT WATER QUALITY.

In 2006, 30,402 residential units, or approximately 63% of the unincorporated county's 48,188 residential units, were connected to the regional potable water system.

Objective 2 was achieved

Since the objective is appropriate, it should be retained but revised. Since the 60% residential connection target was met, that target can be increased. An appropriate new target can be connecting 75% of residential units in the unincorporated part of the county to the regional potable water system by the year 2030.

Policy Description (Refer To Plan For Actual Policy)	Action/Accomplishment	Was Policy Implemented?		Did This Policy Contribute To Meeting The Objective?		Was The Original Policy Appropriate?		Should This Policy Be Maintained, Deleted, Or Revised?
		Yes	No	Yes	No	Yes	No	
2.1) The county shall continue to offer the utility assessment program to areas with private wells within the County Utilities Department service area.	Utility assessment program available	X		X		X		Maintain
2.2) The county shall continue to offer up to 10 year financing for all utility assessments.	Up to 10 yr. financing available for all assessments, not limited to low income areas	X		X		X		Maintain
2.3) The list of subdivisions having undersized lots within the County Utilities Dept. service area designated as requiring potable water service due to public health threats shall be updated through an annual review process. These subdivisions shall be	The list of sub-divisions having undersized lots w/in the County Utilities Dept. service area is updated annually & given	X		X		X		Maintain

Policy Description (Refer To Plan For Actual Policy)	Action/Accomplishment	Was Policy Implemented?		Did This Policy Contribute To Meeting The Objective?		Was The Original Policy Appropriate?		Should This Policy Be Maintained, Deleted, Or Revised?
		Yes	No	Yes	No	Yes	No	
given priority for the provision of public water service.	priority							
2.4) The county shall provide potable water service to areas determined to be public health threats. The county shall recover costs through those connected to the system and directly benefiting from the improvement.	Potable water service provided through assessments	X		X		X		Maintain
2.5) The County Utilities Dept. shall implement the programs and capital improvements identified in the Potable Water Sub-Element.	Expansion programs implemented on schedule	X		X		X		Maintain

Each of Objective 2’s policies was implemented, contributed to meeting the objective, and should be maintained.

Overall Assessment of Policies

Through the implementation of these policies, objective 2 will continue to be achieved. No new policies are necessary.

OBJECTIVE 3 Potable Water and Groundwater Quality

Through 2020, the county potable water system will continue to meet the standards of the Federal Safe Drinking Water Act, Public Law 93-523; the Florida Safe Drinking Water Act, Section 403.850-403.864, FS; Chapter 381, FS; and Rules 62-550, 40C-2, 40C-3, 17-22, and 64E-8, FAC.

MEASURE – TREATMENT PLANT WATER QUALITY

Objective 3 was achieved

Water from the county’s potable water system meets all safe drinking water standards.

The objective’s target date should be changed to indicate that drinking water standards should be met on an on-going basis.

Policy Description (Refer To Plan For Actual Policy)	Action/Accomplishment	Was Policy Implemented?		Did This Policy Contribute To Meeting The Objective?		Was The Original Policy Appropriate?		Should This Policy Be Maintained, Deleted, Or Revised?
		YES	NO	YES	NO	YES	NO	
3.1) The county shall continue to use the Floridan Aquifer as the primary source of potable water. The county will provide customers with good quality water that meets the Federal Safe Drinking Water Act and the Florida Safe Drinking Water Act.	Treatment levels maintained; State and Federal standards met.	X		X		X		Maintain
3.2) The county, through the County Public Health Dept. shall monitor and evaluate the private water treatment plants.	Environmental health monitors and evaluates private wells	X		X		X		Maintain

Both of Objective 3's policies were implemented, contributed to meeting the objective, and should be maintained.

Overall Assessment of Policies

Through the implementation of these policies, objective 3 will continue to be achieved. No new policies are necessary.

OBJECTIVE 4 Water Conservation

By 2000, the county's per capita water use will be less than the 1995 level of 70 gallons/day.

MEASURE - PER CAPITA WATER USE IN THE COUNTY.

The county's per capita water use increased from 61.60 gallons/day in 1995 to 104 gallons/day in 2006. Most likely, the increase was due to increased landscaping in new subdivisions and new commercial projects, an increase in the number of customers using potable water for irrigation, an increase in the number of residential units with pools, and an increase in the number of commercial and industrial uses.

Objective 4 was not achieved

As the county grows, the importance of water conservation will increase. For that reason, the objective should be retained. Since the target date has passed, a new target date should be set at 2020, and the target should be changed to less than the 2006 level of 104 gallons/day.

Policy Description (Refer To Plan For Actual Policy)	Action/Accomplishment	Was Policy Implemented?		Does This Policy Contribute To Meeting The Objective?		Was The Original Policy Appropriate?		Should This Policy Be Maintained, Deleted, Or Revised?
		Yes	No	Yes	No	Yes	No	
4.1) The county shall require the use of irrigation quality effluent, including developer construction of necessary effluent reuse lines, for irrigation in certain areas.	Land Development Regulations adopted	X		X		X		Maintain
4.2) The county shall continue to apply Chapter 926 requirements, which require the use of drought tolerant vegetation, efficient irrigation systems, preservation of native vegetation.	County applies Ch. 926 requirements	X		X		X		Maintain
4.3) The county shall use either manual or automatic systems with sensors for irrigating county facilities.	Manual system or sensor used	X		X		X		Maintain
4.4) The county shall renew its annual contract with the SJRWMD to identify and require owners to plug or valve free flowing artesian wells.	The county coordinates with the SJRWMD regarding well plugging	X		X		X		Maintain
4.5) The county shall require new structures to install water saving devices to be implemented thorough the county's building/plumbing codes.	Done through building code	X		X		X		Revise to reference Florida Water Star Program
4.6) The county's water pricing system shall be equitable and shall continue to charge an exponentially increasing unit rate for high volume residential users.	Pricing scale implemented	X		X			X	Maintain
4.7) The county shall continue to efficiently respond to any leakage by continuing to implement is leak detection program.	Leak detection has not been implemented		X		X	X		Maintain

All of Objective 4's policies, except policy 4.7, were implemented. While each policy contributed toward meeting the objective, the objective was not achieved. All policies except for policy 4.5 should be maintained. Policy 4.5 should be revised to encourage home builders to participate in the SJRWMD's Florida Water Star Program for water conservation. The county should encourage this by providing expedited permit review for participating builders.

New Policies

Several new policies should be adopted under Objective 4. These new policies should require subdivision projects of 25 or more lots and major non-residential projects that are within a ¼ mile from an effluent reuse line to connect to the effluent reuse line; revise current pricing plans to further discourage excessive water use; provide incentives to customers for saving water; and require use of water from retention ponds for irrigation instead of water from wells.

Overall Assessment of Policies

Through the implementation of these policies, as well as the addition of the new water conservation policies, objective 4 will be achieved.

OBJECTIVE 5 Capital Improvements

By 2010, the county will have completed improvements to the potable water facilities as outlined in Table 3.B.11 of the Potable Water Sub-Element.

MEASURE - COMPLETION OF IMPROVEMENTS CONSISTENT WITH FIGURE 3.B.11 OF THE POTABLE WATER SUB-ELEMENT

All planned improvements were completed or modified as needed.

Objective 5 was achieved

Objective 5 should be revised to reflect a new target date and to reference a new updated CIP table which maximizes the use of existing facilities and discourages urban sprawl.

Policy Description (Refer To Plan For Actual Policy)	Action/Accomplishment	Was Policy Implemented?		Did This Policy Contribute To Meeting The Objective?		Was The Original Policy Appropriate?		Should This Policy Be Maintained, Deleted Or Revised?
		Yes	No	Yes	No	Yes	No	
5.1) The county shall maintain a 5-year schedule of capital improvements needs for public facilities.	5-year schedule of capital improvements needs for public facilities maintained & properly updated	X		X		X		Maintain
5.2) Proposed capital improvement projects shall be ranked according to certain priority level guidelines.	Guidelines used to rank proposed projects	X		X		X		Maintain
5.3) To guarantee provision of more than the minimum LOS, the county must follow certain steps for design, permitting, and construction of facilities as identified in the policy.	Met specific guidelines for design and permitting of plants expansion	X		X		X		Maintain
5.4) The county shall treat potable water provision as an enterprise system which is financially self-supporting.	Provision of pot-able water is self-supporting	X		X		X		Maintain
5.5) The county shall fund potable water capital improvements and expansions through user fees, impact fees, developer's agreement, and other	Various fees charged and collected	X		X		X		Maintain

Policy Description (Refer To Plan For Actual Policy)	Action/Accomplishment	Was Policy Implemented?		Did This Policy Contribute To Meeting The Objective?		Was The Original Policy Appropriate?		Should This Policy Be Maintained, Deleted Or Revised?
		Yes	No	Yes	No	Yes	No	
appropriate fees.								
5.6) The county shall pursue state and federal sources of funding available for the improvement and expansion of utility services.	Funding sources pursued	X		X		X		Maintain
5.7) Provision of potable water services shall be limited to specific areas	Service provided within USA or other area as identified in policy 5.7	X		X		X		Maintain

All policies under Objective 5 were implemented and contributed to meeting the objective. All of these policies should be maintained as structured.

Overall Assessment of Policies

Through the implementation of these policies, objective 5 will continue to be achieved. No new policies are necessary.

OBJECTIVE 6 Privately Owned Public Plants and Private Wells

Through 2020, there shall be no instances of Privately Owned Public Water Plant failures or breakdowns.

MEASURE – NUMBER OF PRIVATELY OWNED PUBLIC WATER PLANT FAILURES.

The number of private water treatment plans decreased from 29 in 1995 to 3 in 2006. Therefore, the possibility of failures has substantially decreased.

Objective 6 was achieved

This objective should be maintained; however, the objective’s target date should be changed to indicate that the objective should be met on an on-going basis.

Policy Description (Refer To Plan For Actual Policy)	Action/Accomplishment	Was Policy Implemented?		Did This Policy Contribute To Meeting The Objective?		Was The Original Policy Appropriate?		Should This Policy Be Maintained, Deleted, Or Revised?
		Yes	No	Yes	No	Yes	No	
6.1) Limits use of on-site water treatment systems.	Since 1995 the county took over and decommissioned 25 on-site water treatment plants	X		X		X		Maintain
6.2) Issuance of development orders or permits for on-site water treatment systems where county facilities are not available, shall be conditioned upon compliance with federal, state and local permit requirements.	The county ensures that all permits meet all federal, state, and local requirements	X		X		X		Maintain
6.3) The county shall require that issuance of permits for replacement or expansion of existing privately owned treatment plants be conditioned upon compliance with DER, HRS and SJRWMD regulatory requirements and Federal & State water quality standards.	The county ensures that any expansion or replacement of private water plants meets all regulatory requirements	X		X		X		Maintain
6.4) The county shall inspect all privately owned public water treatment plants on an annual basis to ensure proper maintenance and operation.	Inspections are done by IRC Utilities Department	X		X		X		Maintain
6.5) The county shall require all new privately owned public water treatment plants to be built according to the current federal, state, and county requirements. Developers must obtain a state permit demonstrating compliance with state and federal regulations.	Implemented	X		X		X		Maintain
6.6) The county will require that any new private water treatment plants be dedicated to the county for operation and maintenance.	County requires that all new private treatment plants be dedicated to the county	X		X		X		Maintain
6.7) The county shall require all future connections to the regional potable water system to be consistent with the water and wastewater connection matrix.	Land Development Regulations Chapter 918	X		X		X		Maintain

All of Objective 6's policies were implemented, contributed to meeting the objective, and should be maintained.

Overall Assessment of Policies

Through the implementation of these policies, objective 6 will continue to be achieved. No new policies are necessary.

OBJECTIVE 7 Intergovernmental Coordination

By 2010, the number of new private wells permitted annually will not exceed 300.

MEASURE – NUMBER OF PRIVATE WELLS PERMITTED

Although the number of private well permits issued decreased from 388 in 1995 to 310 in 2006, the objective’s target was not achieved as of yet due to an increase in construction on lots in existing subdivisions, such as Vero Lake Estates, that are not connected to the centralized potable water system. The objective, however, is not due until 2010.

Objective 7 is not due until 2010.

The objective’s target date should be changed to 2020.

Policy Description (Refer To Plan For Actual Policy)	Action/Accomplishment	Was Policy Implemented?		Did This Policy Contribute To Meeting The Objective?		Was The Original Policy Appropriate?		Should This Policy Be Maintained, Deleted, Or Revised?
		Yes	No	Yes	No	Yes	No	
7.1) The county shall limit the use of new private wells to residences no more than 200 feet from any county water line; residential project consisting of less than 25 units; and non-residential project that consume 2,000 or less gallons per day.	Use of private wells limited	X		X		X		Maintain
7.2) The county shall ensure that, prior to the issuance of development orders, applicants must receive a Florida Department of Health permit.	Done through computer permitting system	X			X		X	Maintain
7.3) The county shall require permits for replacement of existing wells.	Required	X		X		X		Maintain
7.4) The county in coordination with Environmental Health Department, shall establish public education programs.	Evaluation program provided	X			X		X	Maintain

All policies under Objective 7 were implemented, contributed toward meeting the objective and should be maintained.

Overall Assessment of Policies

Through the implementation of these policies, the county will achieve the revised objective. No new policies are necessary.

New Objective 8: Alternative Water Supply

Because Indian River County is not in a SJRWMD Priority Water Resource Caution Area, the county is not required to complete a 10-year Water Supply Facilities Work Plan at this time. Regardless, the county should be pro-active in identifying and working toward identifying and developing an alternative water supply source.

For that reason, a new objective 8 and corresponding policies should be added to address public water supply. This objective and policies should correspond to the recommendations of the Alternative Water Supply Master Plan. As such, the new objective should indicate that, by 2018, the county will obtain up to 18 mgd of its water from surface water sources (a surface water reservoir or the C-54 Canal) or saline groundwater from the boulder zone. Such an objective could state that:

By 2018, the county will utilize alternative water supply sources for at least 18 mgd of demand. The alternative water source will supplement water obtained from the UFA.

Policies under this objective may include the following actions:

- By 2010, the county shall study and identify a viable alternative water source.
- By 2012, the county shall obtain all necessary permits to construct the associated infrastructure related with the alternative water support facilities.
- By 2013, the county shall complete all construction plans and specifications associated with alternative water supply facilities.
- By 2015, the county shall complete the construction of all infrastructure associated with the alternative water supply facilities.

New Objective 9: Brine Disposal

A new objective 9 and corresponding policies should also be added to address brine disposal. This new objective should state that, by 2015, all brine from county water plants will be safely disposed. Such an objective could state that:

By 2015, all reverse osmosis water treatment plant direct brine discharges into the Indian River Lagoon or into connecting tributaries to the Indian River lagoon will be eliminated.

Under this objective, several new policies should be added. These policies should indicate how the brine from the South County RO plant will be disposed of in the future. These brine disposal methods could be a new marsh treatment system; a deep well injection system in coordination with the City of Vero Beach; or a new deep well injection system in the county.

The new policies should indicate that:

- By 2010, the county shall identify a viable alternative brine discharge method and location for the South County RO Plant.
- By 2012, the county shall obtain all necessary permits to construct the associated infrastructure related with the brine disposal facilities.
- By 2013, the county shall complete all construction plans and specifications associated with the brine disposal facilities.
- By 2015, the county shall complete the construction of all infrastructure associated with the brine disposal facility for the south county RO plant, and the facility shall be operational.

OVERALL ASSESSMENT OF OBJECTIVES

With the proposed revisions and with the addition of the new objectives for water supply and brine disposal, the objectives of the Potable Water Sub-Element, are sufficient to meet the overall intent of the element.

FUTURE ACTIONS

The county must adopt EAR based amendments which update the tables, figures, text, and Goals, Objectives and Policies of the Potable Water Sub-Element. Much of that update involves the inclusion of new data.

ANTICIPATED AMENDMENTS

The following are anticipated amendments of the potable water sub-element.

TABLES AND FIGURES

Each of the Potable Water Sub-Element's tables and figures must be updated to reflect current conditions.

TEXT

Major portions of the text of the Potable Water Sub-Element must be revised with new data including existing conditions and projections.

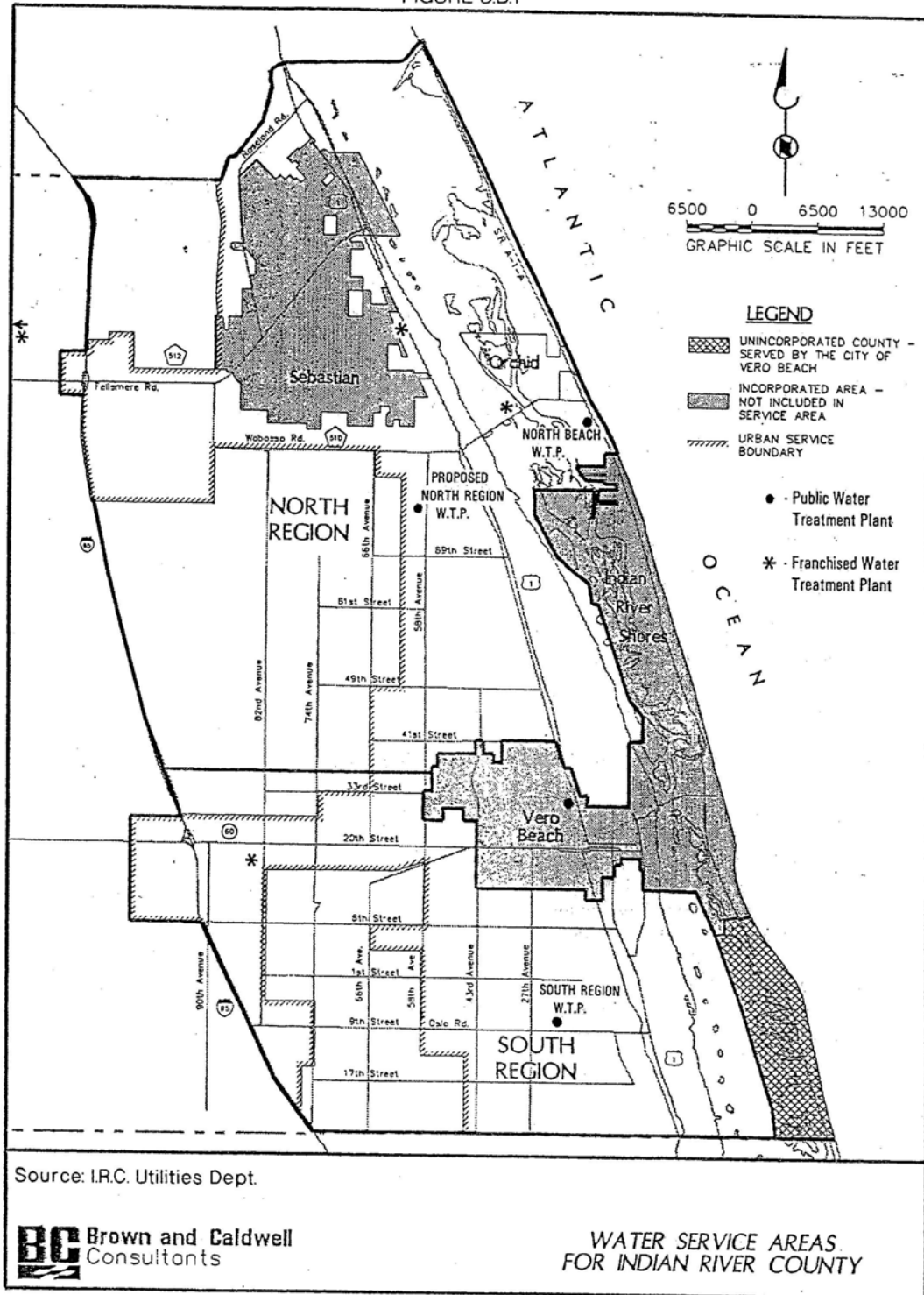
OBJECTIVES AND POLICIES

Anticipated amendments to the objectives and policies of the Potable Water Sub-Element are summarized below.

OBJECTIVE	POLICY	REVISION
1	-----	Revised target date
1	1.1	Revise to indicate water supply capacity and facilities
1	New Policy	Coordination with City of Vero Beach regarding water supply capacity to serve development projects in the unincorporated parts of the city's water service area.
2	-----	Revised objective's target and target date (75% residential connection by 2020).
3	-----	Revise the objective and objective's target date
3	New Policy	New policy 3.3 for south county RO plant brine disposal
4	-----	Revise the target and target date
4	4.5	Revise to encourage participation in the SJRWMD's Florida Water Star Program
4	New policies	Add new policies for water conservation
5	-----	Revise the target date
6	-----	Revise the target date
7	-----	Revise the target date
8	-----	New water supply objective
8	New Policies	New water supply policies
9	-----	New brine disposal objective
9	New Policies	New brine disposal policies

Attachment 1 (1995 Potable Water Service Area)

FIGURE 3.B.1



4.1

Attachment 3

GOAL, OBJECTIVES AND POLICIES**GOAL**

Indian River County shall have an efficient potable water system that prevents degradation of existing resources, promotes orderly growth and development, and meets existing and projected demands.

OBJECTIVE 1 Service Concurrent with Development

Through 2020, there will be sufficient capacity in the regional potable water system to accommodate all new development within the urban service area.

POLICY 1.1: New development within the unincorporated portion of the Indian River County shall be approved only when capacity is available, either on-site or off-site, to provide needed potable water service.

POLICY 1.2: The county utilities department, on an annual basis, shall inspect all private potable water plants in Indian River County.

POLICY 1.3: The county hereby adopts a potable water level of service standard of 250 gallons per day per equivalent residential unit. That standard shall be utilized for determining the availability of facility capacity and the demand generated by a development.

POLICY 1.4: Through its computerized permit tracking system and its concurrency management system, the county shall continue to implement procedures to update facility demand and capacity information as development orders and permits are issued.

POLICY 1.5: The Planning Division, on an as needed basis, shall provide summary reports containing capacity and demand information for each public potable water plant within the county service area.

POLICY 1.6: The county shall continue to allow the use of private wells in rural areas for single-family units and for small retail establishments. The use of private wells must be approved by the appropriate regulatory agencies and be consistent with the attached water and wastewater connection matrix.

OBJECTIVE 2 Correction of Deficiencies

By 2005, at least 60% of all existing residential units in the county will be connected to a regional potable water system. This will be an increase from 47% in 1995.

POLICY 2.1: The county shall continue to offer its utility line assessment program to areas with private wells within the County Utilities Department service area.

POLICY 2.2: The county shall continue to offer up to 10 year financing for all utility assessments.

POLICY 2.3: Within the County Utilities Department service area, the list of subdivisions having undersized lots and designated as requiring potable water service due to public health threats shall be updated through an annual review process. These subdivisions shall be given priority for the provision of public water service.

POLICY 2.4: The county shall provide potable water service to areas where the risk of private well contamination is determined by the Indian River County Environmental Health Department to be unacceptably high. The county shall recover costs through assessment of those landowners directly benefiting from the improvement.

POLICY 2.5: The County Utilities Department shall implement the programs and capital improvements identified in this element of the comprehensive plan.

OBJECTIVE 3 Potable Water and Groundwater Quality

Through 2020, the county potable water system will continue to meet the standards of the Federal Safe Drinking Water Act, Public Law 93-523; the Florida Safe Drinking Water Act, Section 403.850 - 403.864, FS; Chapter 381, FS; and Rules 62-550, 40C-2, 40C-3, 17-22, and 64E-8, FAC.

POLICY 3.1: The County shall continue to use the Floridan Aquifer as the primary source of potable water and use reverse osmosis as the principal raw water treatment method for its regional potable water system. With that water source and treatment method, the county will provide its customers with good quality water that meets the requirements of the Federal Safe Drinking Water Act, Public Law 93-523; the Florida Safe Drinking Water Act, Section 403.850 - 403.864, FS; Chapter 381, FS; and Rules 62-550, 40C-2, 40C-3, 17-22, and 64E-8, FAC.

POLICY 3.2: The county, through the Environmental Health Department, shall monitor and evaluate all private water treatment plants. The results of this evaluation shall be considered during the prioritization of potable water service expansion.

OBJECTIVE 4 Water Conservation

By 2000, the county's per capita water use will be less than the 1995 level of 70 gallons/day.

POLICY 4.1: The county shall require the use of irrigation quality (I.Q.) effluent for irrigation in parks and facilities having significant open space areas (golf courses,

medians, etc.) when those areas are located within the County Utilities Department service area and are within 1 mile of the nearest effluent reuse line. Reuse must be authorized by the appropriate regulatory agencies. When a project meets the above criteria, the developer shall be required to construct an effluent reuse line for treated wastewater to be used for spray irrigation.

POLICY 4.2: The county shall continue to apply the requirements of Chapter 926 of its land development regulations, which require the use of drought tolerant vegetation, the use of efficient irrigation systems, and the preservation of existing native vegetation.

POLICY 4.3: In order to eliminate irrigating during rain or when ground is saturated, irrigation systems at county facilities shall be either manually operated or utilize automatic systems with sensors.

POLICY 4.4: The county shall renew its annual contract with the SJRWMD to identify and require property owners to plug or valve free flowing artesian wells.

POLICY 4.5: The county shall require new structures to install water saving devices and appliances. This requirement shall be implemented through the county's building/plumbing codes.

POLICY 4.6: The county's water pricing system shall continue to be equitable, but shall continue to charge an exponentially increasing unit rate for high volume residential users (those using more than three times the Level of Service standard established in policy 1.3).

POLICY 4.7: To quickly and efficiently respond to any leakage, the county shall continue to implement its leak detection program.

OBJECTIVE 5 Capital Improvements

By 2010, the county will have completed improvements to the potable water facilities as outlined in Table 3.B.11 of the Potable Water Sub-Element.

POLICY 5.1: In conformance with the review process for the Capital Improvements Element of this plan, the county shall maintain a five-year schedule of capital improvement needs for public facilities.

POLICY 5.2: Proposed capital improvement projects shall be evaluated and ranked according to the following priority level guidelines:

- Level One - whether the project is needed to protect public health and safety, to fulfill the county's legal commitment to provide facilities and services, or to preserve or achieve full use of existing facilities.

- Level Two - whether the project increases efficiency of use of existing facilities, prevents or reduces future improvement costs, provides service to developed areas lacking full service or promotes in-fill development.
- Level Three - whether the project represents a logical extension of facilities and services within a designated service area

POLICY 5.3: In order to guarantee provision of more than the minimum level of service, the county shall take the following steps:

- begin planning and preliminary design for expansion when a plant's Average Daily Demand is projected to equal or exceed its capacity within 5 years;
- prepare plans and specifications for expansion when a plant's Average Daily Demand is projected to equal or exceed its capacity within 4 years;
- submit a complete construction permit application to the Florida Department of Environmental Protection for expansion when a plant's Average Daily Demand is projected to equal or exceed its capacity within 3 years; and
- submit an application for an operation permit for the expanded facility to DEP when a plant's Average Daily Demand is projected to equal or exceed its capacity within 6 months.

POLICY 5.4: The county potable water system shall continue to operate as an enterprise system which is financially self-supporting.

POLICY 5.5: The county shall fund potable water capital improvements and expansions through user fees, impact fees, developer's agreements, assessments and other appropriate fees and funding mechanisms.

POLICY 5.6: The county shall pursue state and federal sources of funding available for the improvement and expansion of utility services.

POLICY 5.7: Consistent with the policies of the *Future Land Use Element* of this plan, provision of potable water service shall be limited to the following areas:

- Areas within the Urban Service Area;
- Areas where the county has legal commitments to provide facilities and services as of the date of adoption of this plan;

- Areas outside of the Urban Service Area where at least a portion of the site is contiguous to an Urban Service Area boundary as depicted on the Official Future Land Use Map. These areas are subject to the following provisions:
 - The maximum density of such land shall be as shown on the Official Future Land Use Map, and the provision of centralized potable water service shall not be justification for an increase in maximum density;
 - Potable water line extensions shall be limited to laterals and minor lines connecting land uses to main lines; and
 - In no case shall centralized potable water lines be permitted to extend more than 500 feet from the centerline of a roadway which is an Urban Service Area boundary, or more than 500 feet from the Urban Service boundary when the boundary is not a roadway.
- Development projects located outside of the Urban Service Area that meet the criteria of the policies of the *Future Land Use Element* for:
 - clustering of residential development within agricultural areas;
 - clustering of residential development within privately owned upland conservation areas;
 - clustering development within mixed use districts; or
 - traditional neighborhood design communities.
 - public facilities such as public schools.
- Areas where, consistent with Potable Water Sub-Element Policy 2.4, the risk of private well contamination is determined to be unacceptably high.
- Approved agricultural businesses where at least a portion of the development site is located within one mile of a public roadway which serves as an Urban Service Area boundary as depicted on the Official Future Land Use Map.

OBJECTIVE 6 Privately Owned Public Water Plants

Through 2020, there shall be no instances of Privately Owned Public Water Plant failures or breakdowns

POLICY 6.1: The county shall limit the use of Privately Owned Public Water Plants to areas that meet the following criteria governing connection to the county potable water system:

- Development served by existing Privately Owned Public Water Plants may continue to provide potable water in that manner until centralized service becomes available. At that time, all development within ¼ mile of a county water line shall connect to the county system. Developments whose potable water systems cause a public health problem must connect to the regional system regardless of the distance to water lines.
- Privately owned public water treatment plants shall be allowed in areas of development outside of the Urban Service Area when such development meets the criteria of policies of the Future Land Use Element for:
 - clustering of residential development within agricultural areas;
 - clustering of residential development within privately owned upland conservation areas;
 - clustering development within mixed use districts; or
 - traditional neighborhood design communities.

POLICY 6.2: The county shall ensure that, prior to the issuance of development orders or permits for privately owned public water treatment plants, the applicant has demonstrated that the project complies with the Federal Safe Drinking Water Act, Public Law 93-523; the Florida Safe Drinking Water Act, Section 403.850 - 403.864, FS; Chapter 381, FS; and Rules 62-550, 40C-2, 40C-3, 17-22, and 64E-8, FAC.

POLICY 6.3: The county shall require that issuance of permits for replacement or expansion of existing privately owned public water treatment plants be conditioned upon compliance with the most updated version of DEP regulatory requirements and Federal and State water quality standards as identified in the “Regulatory Framework” section of this sub-element.

POLICY 6.4: To ensure proper maintenance and operation, the Utilities Department shall inspect all privately owned public water treatment plants on an annual basis.

POLICY 6.5: The county shall require all new privately owned public water treatment plants to be built according to the current federal, state, and county requirements. In addition to a county permit demonstrating compliance with county regulations, any developer building and operating a privately owned public water treatment plant must obtain a state permit demonstrating compliance with state and federal regulations. Those regulations include but are not limited to the Federal Safe Drinking Water Act, Public Law 93-523; the Florida Safe Drinking Water Act, Section 403.850 - 403.864, FS; Chapter 381, FS; and Rules 62-550, 40C-2, 40C-3, 17-22, and 64E-8, FAC. Both state and county permits are required for the construction of a plant, and for any future expansion or modification of a plant.

POLICY 6.6: At the time the county approves privately owned public water treatment plants, the county will require that, at the time deemed appropriate by the county, the water treatment plant shall be dedicated to the county for operation and maintenance.

POLICY 6.7: The county shall require all future connections to the regional potable water system to be consistent with the attached water and wastewater connection matrix.

OBJECTIVE 7 **Private Wells**

By 2010, the number of new private wells permitted annually will not exceed 300.

POLICY 7.1: The county shall limit the use of new private wells to the following:

- Single-family residences located more than 200 feet from any county water line;
- Residential projects that consist of less than 25 units and are located more than ¼ mile from any county water line; and
- Non-residential projects that consume less than 2,000 gallons per day and are located more than ¼ mile from any county water line.

The county shall require all developments whose potable water system causes a public health problem to connect to the regional system regardless of the distance to water lines. All new developments utilizing private well systems shall be required to construct a dry line.

POLICY 7.2: The county shall ensure that, prior to the issuance of development orders or permits for projects served by private wells, the applicant has received a Florida Department of Health permit demonstrating that the project complies with the provisions of Rule 64E-8, FAC.

POLICY 7.3: The county shall require that issuance of permits for replacement of existing private wells be conditioned upon compliance with the most updated version of DEP regulatory requirements and Federal and State water quality standards as identified in the “Regulatory Framework” section of the sub-element.

POLICY 7.4: The county, in coordination with Environmental Health Department, shall establish public education programs on the proper use, inspection requirements, maintenance, and abandonment of private wells.

Attachment 4

Permits	Water Usage Class	Source	MGY (recorded)	MGY by Category
7	Asthetic	Surfacewater	4.000	
16	Asthetic	Groundwater	81.538	85.54
1	Ag Freeze protection (Citrus)	ditch/canal	0.000	
200	Ag Freeze protection (Citrus)	Groundwater	4,522.666	
77	Ag Freeze protection (Citrus)	Surfacewater	5,096.800	
8	Ag Freeze protection (Misc.)	Groundwater	18.380	
2	Ag Freeze protection (Misc.)	Surfacewater	0.000	
1	Ag Freeze protection (Misc.)	Reuse	0.000	9,637.846
1	Agricultural (Citrus)	Reuse	0.000	
212	Agricultural (Citrus)	Groundwater	14,625.596	
83	Agricultural (Citrus)	Surfacewater	21,866.720	
1	Agricultural (Citrus)	ditch/canal	18.120	
9	Agricultural (Misc.)	Groundwater	2,237.540	
4	Agricultural (Misc.)	Surfacewater	28.950	
18	Agricultural (Pasture)	Groundwater	3,676.840	
6	Agricultural (Pasture)	Surfacewater	7,633.520	50,087.286
2	Aquacultural	Groundwater	42.400	42.400
9	Commercial and industrial process	Groundwater	205.950	
1	Commercial and industrial process	Recycled	0.000	
2	Commercial and industrial process	Surfacewater	113.310	
1	Cooling and air conditioning	Groundwater	0.000	
1	Cooling and air conditioning	Surfacewater	0.000	319.260
20	Golf course	Groundwater	1,306.090	
9	Golf course	Reuse	928.210	
16	Golf course	Surfacewater	1,440.390	3,674.690
11	Household	Groundwater	56.690	
6	Household	Surfacewater	0.000	
1	Water utility	Groundwater	0.000	
2	Household	Reuse	0.000	
1	Surface Water Augmentation	Groundwater	0.860	57.550
22	Livestock	Groundwater	15.001	
6	Livestock	Surfacewater	0.000	15.001
3	Nursery (Misc.)	Groundwater	10.180	
1	Nursery (Misc.)	Reuse	16.280	
1	Nursery (Misc.)	Surfacewater	0.000	26.460
1	Outside	Groundwater	0.200	
1	Outside	Surfacewater	0.000	
8	Recreation area	Groundwater	112.060	
3	Recreation area	Reuse	0.000	
8	Recreation area	Surfacewater	78.800	
1	Reuse Supplementation	Groundwater	0.000	
1	Reuse Supplementation	Surfacewater	0.000	191.060
1	Urban landscape irrigation	ditch/canal	29.600	
44	Urban landscape irrigation	Groundwater	690.945	
2	Urban landscape irrigation	Reuse	834.200	

EAR Potable Water Sub-Element

Permits	Water Usage Class	Source	MGY (recorded)	MGY by Category
32	Urban landscape irrigation	Surfacewater	1,147.898	2,702.643
863	Note -One Permit May Include Multiple Wells/Pumps		66,839.73	66,839.73
	Total County /Municipal water W/D		5,819.63	
2006 Total water withdrawal MGY			72,659.37	

EAR Potable Water Sub-Element

Attachment 5
Five Year Capital Improvements Plan

Sanitary Sewer and Potable Water

Revenue	FY 2007/08	FY 2008/09	FY 2009/10	FY 2010/11	FY 2011/12
Fund 472	\$ 58,065,833.00	\$ 32,472,133.00	\$ 11,401,828.00	\$ 6,935,828.00	\$ (1,734,172.00)
Fund Balance	\$ 58,065,833.00	\$ 32,472,133.00	\$ 11,401,828.00	\$ 6,935,828.00	\$ (1,734,172.00)

Expenditures	FY 07/08	FY 08/09	FY 09/10	FY 10/11	FY 11/12	Revenue Source
North RO Integrated Water Resource/Spoonbill Marsh Mosquito Impoundment	\$ 1,304,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
Misc Water Improvements	\$ 250,000.00	\$ 250,000.00	\$ 250,000.00	\$ 250,000.00	\$ 250,000.00	Capacity Charges
Misc Sewer Improvements	\$ 175,000.00	\$ 175,000.00	\$ 175,000.00	\$ 175,000.00	\$ 175,000.00	Capacity Charges
North RO Plant Expansion to 14.3 MGD (Plant Only)	\$ 8,500,000.00	\$ 5,521,393.00	\$ -	\$ -	\$ -	Capacity Charges
West Reg WWTF Expansion 2.0 to 6.0 MGD	\$ 8,000,000.00	\$ 13,182,912.00	\$ -	\$ -	\$ -	Capacity Charges
6" FM 66th Av 33rd St to 41st St	\$ -	\$ -	\$ -	\$ 220,000.00	\$ -	Capacity Charges
Upgrade 8 " FM to 12" FM from 41st St to 45th along 58th Av	\$ -	\$ -	\$ 650,000.00	\$ -	\$ -	Capacity Charges
Convert Bent Pines LS to 58th Av FM	\$ 230,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
65th St E/o 58th Av & convert 8" FM to reuse main at Lat G canal(Crystal Falls)	\$ 119,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
West Wastewater Transmission System	\$ 1,300,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
12WM 27th Av to 43rd Av	\$ -	\$ 650,000.00	\$ -	\$ -	\$ -	Capacity Charges

EAR Potable Water Sub-Element

Sanitary Sewer and Potable Water

Revenue	FY 2007/08	FY 2008/09	FY 2009/10	FY 2010/11	FY 2011/12	
77th West of Kings (Tuscany Lakes)	\$ 425,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
Reuse line from 43rd Ave from 25th St SW to 1st St SW	\$ 560,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
Convert 8"FM to Reuse Lateral G Conversion	\$ 264,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
12WM & 6"FM on 65th St from Lat G to Old Dixie (High Pointe)	\$ 570,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
FM Wm and Reuse on 4th St from 82nd to 98th Ave and on 98th from 4th to 8th	\$ -	\$ -	\$ -	\$ 2,050,000.00	\$ -	Capacity Charges
8" WM and 6"FM 37th St West of 58th Av (Vero Village Developers Agreement)	\$ 72,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
Master Plan LS 90th Avenue and 510	\$ 1,000,000.00	\$ 350,000.00	\$ -	\$ -	\$ -	Capacity Charges
Bent Pine LS Modifications to Add Vero Lago and generators	\$ 82,700.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
58th Av 58th Circle WM Loop-Sylvan Lakes	\$ 40,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
91st Av to 79th St & 104th Av (VLE)	\$ 750,000.00	\$ 1,241,000.00	\$ -	\$ -	\$ -	Capacity Charges
8 "WM 58th Ave & 13th St SW (Southlakes/Diamond lakes)	\$ 45,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
WM Fm Reuse CR510 incl. Bridge	\$ 500,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
Alternative Surface Water Supply	\$ 62,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
CR510 at 61st St	\$ 720,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
Pelican Island Water Main and Hydrant	\$ 20,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
VLE Master planned WM Phase II 87th s of 99th Av w on 87th St and 104th Av	\$ 1,225,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges

EAR Potable Water Sub-Element

Sanitary Sewer and Potable Water

Revenue	FY 2007/08	FY 2008/09	FY 2009/10	FY 2010/11	FY 2011/12	
VLE Master planned WM on 79th St from 101st to 101 Av (pulled from #07516)	\$ 155,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
VLE Master planned WM Phase II 87th s of 99th Av w on 87th St and 104th Av	\$ 1,225,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
53rd St 58th Ave to 66th Av 12" WM	\$ -	\$ -	\$ 500,000.00	\$ 250,000.00	\$ -	Capacity Charges
16" Effluent Main NWWTF to N Beach River Crossing	\$ -	\$ 600,000.00	\$ -	\$ -	\$ -	Capacity Charges
16" Effluent Main, CR510 from A1A to Bridge	\$ 500,000.00	\$ -	\$ -	\$ -	\$ -	Capacity Charges
12" WM on 27th Av from 13th St SW to 17 th St SW (Madera Isles & Echo Lake)	\$ -	\$ -	\$ 341,000.00	\$ -	\$ -	Capacity Charges
12" Eff IR Blvd from 49th to City of VB	\$ -	\$ -	\$ -	\$ -	\$ 300,000.00	Capacity Charges
65th St E/O Kings Hwy 12"WM Highpoint	\$ -	\$ 100,000.00	\$ 200,000.00	\$ -	\$ -	Capacity Charges
16" WM 69th ST E/O Kings highway	\$ -	\$ -	\$ -	\$ 300,000.00	\$ 600,000.00	Capacity Charges
Brine Disposal So RO	\$ -	\$ -	\$ 1,500,000.00	\$ 1,000,000.00	\$ -	Capacity Charges
24" reuse along 82nd WWTF to N WWTF	\$ -	\$ 500,000.00	\$ 1,300,000.00	\$ -	\$ -	Capacity Charges
58th Av 65th St to 69th St & along 61st and 69th St	\$ -	\$ -	\$ 50,000.00	\$ 500,000.00	\$ 450,000.00	Capacity Charges
Purchase Site & construct RIB for central Reg'l WWTF Effluent Disposal	\$ -	\$ -	\$ -	\$ 1,500,000.00	\$ 500,000.00	Capacity Charges
16th St 16" WM to ease peak hour flow & pressure requirements	\$ -	\$ -	\$ -	\$ 1,000,000.00	\$ 250,000.00	Capacity Charges
Misc non master plan Wm & FM extensions	\$ 500,000.00	\$ 500,000.00	\$ 500,000.00	\$ 500,000.00	\$ 500,000.00	Capacity Charges
N of Windsor & Polo Club Extension	\$ -	\$ -	\$ -	\$ -	\$ 225,000.00	Capacity Charges
Svce Transmission Lines Oslo Pk, Villages of VB	\$ -	\$ -	\$ -	\$ -	\$ 700,000.00	Capacity Charges

EAR Potable Water Sub-Element

Sanitary Sewer and Potable Water

Revenue	FY 2007/08	FY 2008/09	FY 2009/10	FY 2010/11	FY 2011/12	
Gardens						
Parallel FM to Oslo Rd	\$ -	\$ -	\$ -	\$ 500,000.00	\$ 250,000.00	Capacity Charges
Vista Gardens Effluent Main Connection	\$ -	\$ -	\$ -	\$ 225,000.00	\$ 200,000.00	Capacity Charges
Vista Royale Effluent Main Connection	\$ -	\$ 250,000.00	\$ 200,000.00	\$ -	\$ -	Capacity Charges
24" Reuse 82nd Av from WWTF to NWWTF	\$ -	\$ -	\$ 500,000.00	\$ 500,000.00	\$ 500,000.00	Capacity Charges
Construct RIB for Central WWTF	\$ -	\$ -	\$ -	\$ 1,500,000.00	\$ 500,000.00	Capacity Charges
16" Effluent Main a A1A from CR510 to City of VB Interconnect	\$ -	\$ -	\$ 800,000.00	\$ 700,000.00	\$ -	Capacity Charges
Wetlands Expansion Effluent #15	\$ -	\$ 750,000.00	\$ -	\$ -	\$ -	Capacity Charges
Total Expenditures	\$ 28,593,700.00	\$ 24,070,305.00	\$ 6,966,000.00	\$ 11,170,000.00	\$ 5,400,000.00	

Comparison of Expenditures to Revenue	FY 2007/08	FY 2008/09	FY 2009/10	FY 2010/11	FY 2011/12	Total
Total Revenue	\$ 58,065,833.00	\$ 32,472,133.00	\$ 11,401,828.00	\$ 6,935,828.00	\$ (1,734,172.00)	\$ 107,141,450.00
Total Expenditures	\$ 28,593,700.00	\$ 24,070,305.00	\$ 6,966,000.00	\$ 11,170,000.00	\$ 5,400,000.00	\$ 76,200,000.00
Annual Balance	\$ 29,472,133	\$ 8,401,828	\$ 4,435,828	-\$ 4,234,172	-\$ 7,134,172	\$ 30,941,444

Appendix A
 Comprehensive Plan Evaluation and Appraisal Report
 Conditions at the time of last major plan update (1995) and Existing Conditions (2006)
 Sub-Element: Potable Water
 Indian River County

DATA ELEMENT	CONDITIONS IN 1995	EXISTING CONDITIONS- 2006	COMMENTS
South County Plant Source of water Began operation No. of wells operating entity geographic service area design capacity (GPD) demand (GPD) level of service projected facility needs (2030)	Floridan Aquifer 1981 6 Indian River County SE Mainland, SR 60 Corridor, & Bent Pine 8.5 MGD 4 MGD 250 GPD/ERU 12.06 MGD	Floridan Aquifer 1981 6 Indian River County SE Mainland, S.R. 60 corridor 8.57 MGD 6 MGD 250 GPD/ERU 13.1 MGD	SJRWMD consumptive use permit indicates an avg. w/d of 6.4 MGD by 2021
City of Vero Beach Plant Source of water No. of wells operating entity geographic service area design capacity (GPD) demand (GPD) level of service projected facility needs (2030)	Floridan and shallow aquifer 36 Vero Beach Vero Beach, Indian River Shores, Gifford, Hospital Node, South Barrier Island 12.0 MGD 6.2 MGD 351 GPD/ERU 8.6 MGD	Floridan and shallow aquifer 36 Vero Beach Vero Beach, Indian River Shores, South Barrier Island 12.0 MGD 6.2 MGD 351 GPD/ERU 12 MGD	
North County Plant Source of water Began operation No. of wells operating entity geographic service area design capacity (GPD) demand (GPD) level of service projected facility needs (2030)	At the time of the last major update, this plant was still in the permitting process. Plant was completed in 1998	Floridan Aquifer. 1998 3 Indian River County N.E. Mainland, City of Sebastian, N. Beach, Bent Pine, Hospital Node 3.5 MGD 3.5 MGD 250 GPD/ERU 17.1 MGD	County is currently working on obtaining permits for 6 additional wells and working w/ a consultant to design an alternative water supply project to match design capacity with projected demand up to 2030 SJRWMD consumptive use permit indicates an avg. w/d of 3.45 MGD by 2021

EAR Potable Water Sub-Element

DATA ELEMENT	CONDITIONS IN 1995	EXISTING CONDITIONS- 2006	COMMENTS
City of Fellsmere Plant Source of water Began operation No. of wells operating entity geographic service area design capacity (GPD) demand (GPD) level of service projected facility needs (2030)	Surficial Aquifer 1994 4 City of Fellsmere City Limits .65 MGD .29 MGD 200 GPD/ERU 3.85 MGD	Surficial Aquifer 1994 4 City of Fellsmere City Limits .65 MGD .29 MGD 200 GPD/ERU 3.85 MGD	
North Beach Plant operating entity geographic service area design capacity (GPD) current demand (GPD) level of service projected facility needs (2010)	Indian River County Part of North Barrier Island; Town of Orchid 1 MGD .4 MGD 250 GPD/ERU 1 MGD	Decommissioned 1998	
Total Design Capacity (MGD)	22.15	24.72	9.7 (2006 County plants only)
Total Demand (MGD)	10.89	15.99	12.07 (2006 County plants only)
County Plants Design Capacity (MGD)	9.5	12.07	
County Plants Demand (MGD)	4.4	9.7	
2030 Capacity (MGD)		24.65	
2030 Demand (MGD)		18.90	
number of "undersized" residential subdivisions in the county service area	183	183	
number of "undersized" residential subdivisions served by county potable water	72	94	
Number of residential units in unincorporated county	33,365	48,188	

EAR Potable Water Sub-Element

DATA ELEMENT	CONDITIONS IN 1995	EXISTING CONDITIONS- 2006	COMMENTS
Number of total residential units served by county potable water system (unincorporated county, City of Sebastian, Town of Orchid, and a portion of Town of Indian River Shores)	20,500	40,300	
Number of unincorporated county residential units served by the county potable water system	15,681 (47%)	30,402 (63%)	
Per capita water use/gallons/day	61.6	104	
Average number of private well permits issued for domestic water use per year	388	310	
Number of private water treatment plants for public use	29	3	

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