Special Publication SJ2004-SP11

Identification of Favorable Sites for Feasible Seawater Demineralization Task C.4.

for the Seawater Demineralization Feasibility Investigation

Identification of Favorable Sites for Feasible Seawater Demineralization - Task C.4.

For the

Seawater Demineralization Feasibility Investigation
Contract SE459AA

by

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FINAL

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September 17, 2003

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Executive Summary

As part of the St. Johns River Water Management District (SJRWMD) Water Resource Development Program, seawater demineralization is being examined as a potential means to provide future water supply within SJRWMD. SJRWMD has contracted with R. W. Beck to perform an analysis of the feasibility of seawater demineralization. Recently, seawater demineralization has proven to be economically feasible when co-located with other facilities such as power plants. Within SJRWMD, sites have been identified that may offer potential co-location opportunities. SJRWMD wants to examine potential sites and identify up to five preferred sites for seawater demineralization. This report discusses the methodology applied to develop the list of five preferred sites. This report also includes the results of the intermediate screening steps and identifies the five preferred sites.

Preferred site identification is a multi-step process consisting of data gathering, screening to at least 20 potential sites, and subsequent ranking of those sites. Data gathering includes qualitative and site specific data useful in developing the screening and ranking criteria.

The following previously issued documents address the qualitative data:

- Seawater Demineralization Annotated Bibliography – Task B.1
- Applicable Rules and Regulations for Seawater Demineralization - Task B.6.
- Demineralization Treatment Technologies – Task B.7

A summary of this information is included in this report.

Site-specific data includes information pertinent to identifying site features affecting the siting of a seawater demineralization facility.

A brief summary of the site-specific data is included in this report. Site-specific data is also included in an Access database and GIS computer files previously provided to SJRWMD.

Application of macro screening criteria to site-specific data was used to develop a list of potentially viable sites. Macro screening criteria included:

- Adequate access to an ample seawater source
- Access to an adequate energy source
- Access to a water transmission system
- Priority water resource caution areas
- Acceptable means for demineralization concentrate management

Of the original 56 sites being considered, the sites meeting the macro screening criteria are:

FACILITY NAME	FACILITY TYPE
Canaveral Port Authority	Undeveloped Site
Field Street Generating Plant	Power Plant
Smith Street Generating Station	Power Plant
W. E. Swoope Generating Station	Power Plant
Cape Canaveral	Power Plant
Indian River	Power Plant
Ormond Beach, City Of	Waste Water Treatment Plant
Port Orange, City Of	Waste Water Treatment Plant
Cocoa Beach, WRF	Waste Water Treatment Plant
Cocoa/Jerry Sellers	Waste Water Treatment Plant
Rockledge, City Of	Waste Water Treatment Plant
Daytona Beach/Bethune Point	Waste Water Treatment Plant
SJCUD - Anastasia Island WWTF	Waste Water Treatment Plant
BCUD/South Beaches	Waste Water Treatment Plant
Melbourne/Grant Street	Waste Water Treatment Plant
BCUD/South Central Regional	Waste Water Treatment Plant
Titusville South/Blue Heron	Waste Water Treatment Plant
New Smyrna Beach	Waste Water Treatment Plant
West Melbourne/Ray Bullard	Waste Water Treatment Plant
BCUD/Sykes Creek Regional WWTF	Waste Water Treatment Plant
Palm Bay WWTP	Waste Water Treatment Plant

A ranking matrix was used to identify the five most preferred sites. Generally, the ranking criteria represent a subset of the major criteria developed under the macro screening with the addition of criteria for resource constraints (such as habitats etc). The ranking matrix combines specific criteria with various weightings to derive a weighted score. A higher weighted score represents a more desirable site.

The ranking resulted in the following sites being identified as the most promising:

1. Indian River Power Plant (Owner: Reliant, Inc)
2. Cape Canaveral Power Plant (Owner: FPL)
3. Daytona Beach/Bethune Point Waste Water Treatment Plant (Owner: City of Daytona Beach)
4. BCUD/South Beaches Waste Water Treatment Plant (Owner: Brevard County)
5. W. E. Swoope Generating Station Power Plant (Owner: City of New Symrna Beach)
6. BCUD/Sykes Creek Regional Waste Water Treatment Facility (Owner: Brevard County

Though the report was to identify the top 5 most preferred sites, sites 5 and 6 had equal scoring and are both presented here.

A subsequent report will present evaluations of these sites including the development of a concept design for five of the facilities and a comparative cost estimate.

R. W. Beck, Inc. is performing this study in conjunction with Parson Brinkerhoff Quade and Douglas, Inc. and PBSJ, Inc.

Introduction

Background/ Purpose

As part of the St. Johns River Water Management District (SJRWMD) water resource development program, SJRWMD is exploring various alternative water supply strategies. The overall objective of the water resource development program is to explore and implement options to increase the quantity or amount of water resources available for the purpose of satisfying the future water needs of SJRWMD.

With the recent success of seawater demineralization in the United States, SJRWMD has identified seawater demineralization as a potentially significant source of water supply to meet projected 2020 demands and beyond. Recent applications of seawater demineralization have demonstrated the benefits of collocating these facilities with other facilities such as power plants.

SJRWMD has contracted with R. W. Beck to perform a study to examine the viability of seawater demineralization with an emphasis on finding sites that offer distinct advantages through collocation with other facilities. The study, a multi-step process, included:

- Development of site selection criteria to use in developing a preliminary list of up to 20 candidate sites for seawater demineralization facilities. Sites considered included those that offered opportunities for collocation with existing facilities, such as power or wastewater treatment plants. Undeveloped sites were also considered when there were apparent economic, environmental or social advantages to these locations.
- Development of a ranking matrix to prepare a final site list for up to five seawater demineralization facilities deemed most feasible.
- Preparation of concept level design and a Comparative Project Cost estimate for each of the five sites.

For the purposes of this study, seawater is defined as having in excess of 20 parts per thousand (ppt) salinity.

This document also presents the results of the screening and ranking process for identifying feasible sites for seawater demineralization and includes:

- How and what data was gathered as part of this study including:
  - Qualitative data to help make decisions and
  - Site specific and study area data
- Development of and rationale for macro screening criteria
- Application of the macro screening criteria to the prospective sites
- Sites screened using the macro screening criteria

- Development of ranking criteria
- Application of ranking criteria to the screened sites
- The top five ranked preferred sites
- The next steps in the project

Methodology for Identification of Favorable Sites

Identification of favorable sites for seawater demineralization was a multi-step process consisting of data collection, followed by the macro screening of sites and creation of a ranking matrix. Figure 1 shows the process used to identify preferred sites.

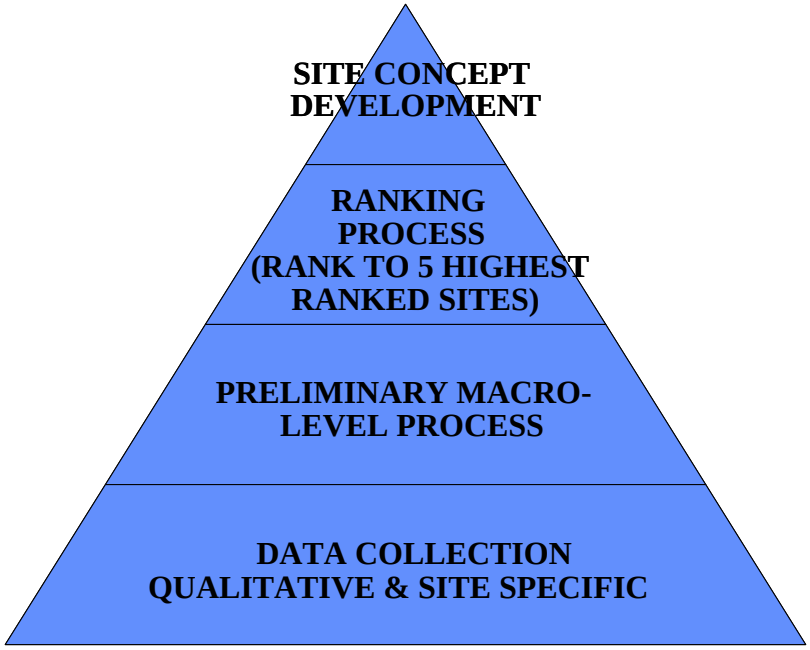

Figure 1. Site Screening Process

Data Collection

The data gathered consists of qualitative and site-specific data. Qualitative data for this study is the data used to help make decisions for screening of the potential sites. Site-specific data consists of site and study area characteristic used for screening and ranking of alternatives.

Qualitative Data

The qualitative data includes:

- Seawater Demineralization Annotated Bibliography – Task B.1
- Applicable Rules and Regulations for Seawater Demineralization - Task B.6.
- Demineralization Treatment Technologies – Task B.7.

This information has been addressed in previously issued documents and is summarized below.

Seawater Demineralization Annotated Bibliography

The bibliography is the result of a literature search and review of existing publications, papers, reports, articles, and other literature specifically related to demineralization technology in the United States. Over 140,000 references relating to desalination were reviewed. Of these information sources, the most relevant documents were added to the annotated bibliography. The titles of publications and papers that were considered applicable in the U.S., or relevant to Florida and recent enough to still be pertinent were included in the bibliography. Those with available abstracts were entered in the electronic database in their entirety. For those without available abstracts, the author's name, publication title, and date were entered in the "without abstracts" reporting category. Each article was given a subject category code so that entries can be found in the electronic database by searching various categories.

The bibliography was developed using Microsoft Access software. Included in this annotated bibliography are 285 entries most relevant to today's desalination technology and related issues. 209 of the articles have abstracts. Each bibliographic entry contains the name of the author, the title of the publication, the date and an abstract (where available) of the document. The abstracts used are those written by the author of the publication.

The bibliographic database is a sortable matrix, based on a system of 8 topics (subject areas), whose corresponding code numbers can be tracked. Each bibliographic entry has been annotated with up to three of these subject codes that best represent its content. The code representing the most significant subject area is shown first; the second most significant subject area is shown second and so on for the third subject area. Through queries and report functions of the database, the user may search the database and create summary tables of bibliographic entries containing specific codes. Because many of the documents are associated with multiple codes, they can be easily cross-referenced, allowing the user to find articles based on a variety of relevant subjects.

The annotated bibliography is included in a document titled "Annotated Bibliography – Task B.1" dated November 20, 2002.

Applicable Rules and Regulations for Seawater Demineralization

Rules and regulations applicable to the permitting of seawater demineralization plants in SJRWMD in Florida include those promulgated by:

- Federal
- State
- Regional

- Local
- Other Entities

A summary of the regulatory or other agencies with jurisdiction affecting the siting of seawater demineralization plants are identified in Table 1.

Table 1. Regulatory Agencies

Responsible Entity	
Federal	United States Environmental Protection Agency Region IV
	United States Army Corps of Engineers
	United States Coast Guard
	United States Fish and Wildlife Service
	National Marine Fisheries Service
	Occupational Safety and Health Administration
State	Florida Department of Environmental Protection (Primary Agency**)**
	Florida Department of Transportation
	Florida Fish and Wildlife Conservation Commission
Regional	St. Johns River Water Management District
Local	Environmental Resource Management or Natural Resource Management Departments
	City/County Building Departments
	City/County Engineering Departments
	City/County Planning or Zoning Departments
Other Entities	CSX Railroad Corporation
	Public Service Commission
	Florida Inland Water Navigation District
	Power companies

A summary of permits that will typically be required for a seawater demineralization facility are summarized in Table 2. Components of a seawater demineralization facility can be generally broken down into the following five physical project elements:

1. Raw water intake
2. Water pretreatment
3. Plant facility
4. Concentrate disposal
5. Product water conveyance

Various rules, regulations and permits are applicable to each element of the facility but may differ depending upon the final chosen configuration for a particular facility.

Tables 2 and 3 in this section include matrices of permit and notification submittals that may be required for each of the respective project elements.

Table 2. Summary of Permits Required

Region	Agency	Permit	Affected project element
Federal	Environmental Protection Agency	Notice of Intent for storm water discharge	3
		National Pollution Discharge Elimination System Permit (oversight)	4
	Army Corps of Engineers	Dredge and Fill	1, 3, 5
	Fish and Wildlife Service		
	National Marine Fisheries Service		
State	Florida Department of Environmental Protection	National Pollution Discharge Elimination System Permit	4
		Public water system construction	3
		Major sources of air pollution	3
		Aquatic plant control permit	1
		Wastewater Facility and Activities Permit	3
		Ground water permit	4
	Florida Department of Transportation	Utility Permit	5
	Florida Department of Health	On-Site Sewage Disposal System Construction Permit	3
Regional	St. Johns River Water Management District	Environmental Resources Permit	1,3,5
Local	County	Tree Permit	3
		Use Permit	5
		Building Permit	3
		Potable Drinking Water Facility Permit	1,2,3,4,5
	City	Building Permit	3
		Tree Removal Permit	3
		Erosion Permit	3
		Right-of-Way Use	5
Other	CSX and/or Florida East Coast Railways	Pipeline Crossing Over/Under Property and Tracks	5

Project Elements:
1. Raw water intake
2. Water pretreatment
3. Plant Facility
4. Concentrate Disposal
5. Product water conveyance

Table 3. Summary of Notifications/Plan Reviews/Monitoring/Reporting Required

Region	Agency	Notification/Review	Affected Project Element
Federal	Environmental Protection Agency	Risk Management Plan	3
	Fish and Wildlife Service	Notification	1, 3
	National Marine Fisheries Service	Notification	1
State	Florida Department of Environmental Protection	Quality Assurance	1, 2, 3, 4, 5
		Groundwater monitoring	4
		Drinking water monitoring and reporting	2, 5
		Surface Water Monitoring	4
	Florida Fish and Wildlife Commission	Notification	1
Local	County	Site Plan Review	3
		On-site wastewater treatment facility plan review	
	City	Site Plan Review	3
Other	Public Service Commission	Application for Original Certificate for a Proposed or Existing System Requesting Initial Rates and Charges	2
	Florida Inland Navigation District	Notification	1, 3
	Power companies	Notification	3, 5

Project Elements:
1. Raw water intake;
2. Water pretreatment;
3. Plant facility;
4. Concentrate disposal; and
5. Product water conveyance

Additional rules and regulatory information are included in a previously issued document titled "Applicable Rules and Regulations for Seawater Demineralization – Task B.6." dated November 20, 2002.

Demineralization Treatment Technologies

The most common desalination technologies that have experienced commercial success include:

Thermal Desalination Processes such as:

- Multi-stage Flash Distillation
- Multi-effect Distillation and
- Vapor Compression

Membrane Desalination processes such as:

- Electro dialysis and
- Reverse Osmosis Membranes

A brief description of these processes is provided in the following section.

Thermal Desalination Processes

In a thermal process, water is heated, creating a vapor that is condensed to form fresh water. Thermal processes are traditionally high-energy systems and have high operational costs, unless low-cost steam energy is available. To keep energy requirements down, distillation is usually accomplished by conducting boiling in multiple successive vessels operating at a low temperature and low pressure.

Multi-stage Flash Distillation

Most of the thermal plants in the world use a multi-stage flash (MSF) distillation process. In MSF, seawater is heated inside a vessel called a brine heater. Seawater that passes through the vessel in a bank of tubes is condensed and flows to another vessel or "stage", where the ambient pressure is lower, thus causing the water to boil. When heat is added into this stage, water boils rapidly and instantly "flashes" into steam. However, only a small portion of the water is converted to steam, depending on the operational pressure. MSF plants have been built since the 1950's and can have up to 25 stages, which makes them costly and complex to operate. Operating the plant at temperatures higher than 110^{o}F can increase the system's efficiency, but also increases the formation of scale and potential corrosion.

Multi-effect Distillation

The first multi-effect distillation (MED) processes were submerged tube evaporators used aboard ships to produce drinking water and boiler make-up water during long sea voyages. These plants were determined to have more scale build up than MSF plants and commercial usage has since decreased. The basic MED process consists of multiple vessels that undergo condensation and evaporation to produce water, similar to the MSF process. However, in the MED process, the feed water is added to various stages (or effects) by spraying water onto heated tubes filled with steam. The vapor from the outside of the tubes passes from the boiling chamber through a wire mesh mist eliminator to a condensing chamber. The mist eliminator coalesces droplets of concentrate in the vapor stream and returns them to the boiling chamber. The remaining vapor is almost pure water. In the condensing chamber, the vapor condenses on the outside of tubes. The product water pump extracts the condensed vapor as distilled product water. In this process, the vapor generated in the first effect becomes the heating steam in a second effect and so on. The process design uses large temperature differences to enhance the heat transfer in the submerged tube evaporator. The thermal efficiency of the process depends on the number of effects. Lower operating temperatures reduce the potential for scale formation. Therefore, the limited operating temperature range and the large

temperature difference required by the submerged tube evaporator process limits the number of effects that can be used in multi-effect evaporators.

Vapor Compression

Another distillation technology known as vapor compression (VC) is used for smaller-scale desalination facilities. This process is based on the Carnot refrigeration cycle, in which a mechanical compressor (rather than a heat source) is used to compress the vapor from the evaporator to a higher pressure. As the compressed vapor condenses on one side of the tube heat transfer surface, seawater boils on the other side creating more vapor. This process uses electric energy rather than steam. The VC evaporator is more efficient than the previously described steam driven evaporators, but electric power is significantly more expensive than steam energy. VC evaporators operate either at atmospheric pressure (215ºF) or under a vacuum (140ºF) depending on the design. The lower temperature evaporators must be larger to accommodate the higher specific volume of water vapor at lower temperatures.

Membrane Technology

Desalination using membranes was introduced in the 1960s as an alternative to distillation. A membrane process is a physical separation process, where salt is separated from seawater or brackish water to produce drinking water. These membrane processes include electrodialysis (ED) and reverse osmosis (RO). These processes produce the same result, however, ED uses voltage to separate the salts, where RO operates under pressure for the separation process.

Electrodialysis

Electrodialysis is a voltage driven process that uses an electrical current to move salts through the membrane, leaving behind freshwater that is collected as the product water. ED is common in brackish water demineralization systems, where most of the dissolved salts are ionic in nature.

After years of operating ED processes, an electrodialysis reversal (EDR) process was developed. In an EDR process, the polarity of the electrodes is reversed causing the flows in the product and brine channels to be switched. The reversal process helps to breakup and flushes out any scaling material that develops on the cells, minimizing membrane fouling. The ED and EDR processes have a high recovery of product water and are capable of treating waters with high-suspended solids. These systems also have low chemical usage. The required energy is dependent on the desired salt removal.

Reverse Osmosis Membranes

The RO membrane separation process separates freshwater from saltwater under high pressure. The freshwater passes through the membrane layer while the salt content remains outside the membrane. This is the opposite of ED, where the demineralization concentrate passes through the membrane and the freshwater stream remains outside the

membrane and is collected. The amount of freshwater produced varies from 30% to 80% depending on the salt content of the water, pressure, and the type of membranes used. Brackish water membrane systems typically have higher recoveries and operate under lower pressures, ranging from 225 psi to 375 psi. Seawater RO systems typically have lower recoveries due to the higher salt content and their operating range is typically 800 psi to 1200 psi.

The majority of the reverse osmosis plants in the U.S. are brackish water treatment systems. By the early 1980's, the world's largest brackish water membrane treatment system was installed in Yuma, Arizona. There are more than 50 brackish water systems located in Florida and hundreds more in California, Arizona, and Texas.

Multi-Stage Flash Vs. Seawater Reverse Osmosis

The most prevalent means of seawater demineralization include multi-stage flash and seawater RO.

The choice between multi-stage flash and seawater RO needs to be based on a number of site-specific factors. The inherent advantage of RO is that it has much higher energy efficiency. Since the cost of energy is usually the major cost of producing water, RO will usually be preferred, but some factors may overrule this.

First is the feed water quality. As the total dissolved solids (TDS) concentration in the seawater increases, RO becomes more costly because of the increased osmotic pressure required to separate the salts. Additionally, if the source water is high in suspended solids, colloidal material, organic material, or dissolved metals, it would require extensive pretreatment if RO was used. This could be cost prohibitive in some cases.

The second factor that influences the choice of MSF vs. RO is the availability of low cost energy. If there is an abundance of low cost steam available to operate the desalination plant, the energy-efficiency advantage of RO becomes less important. This can be seen in a dual-purpose power and water plant (or co-generation facility) where exhaust steam from the power plant is used to operate a desalination plant to produce high quality water.

One last factor to consider is the availability of skilled operators. While skilled operators are important for both MSF and RO plants, the relative fragility of RO membranes requires more skillful attention by the operators to protect the investment cost of the RO plant. MSF evaporators are relatively hardy and can usually be restored in spite of negligent operation.

Based on the water supply needs in SJRWMD, the following conclusions and recommendations are provided for consideration in the feasibility investigation of demineralization on the northeast coast of Florida:

1. Seawater desalination using RO can be cost-effective for larger municipal water supplies (>5 mgd).

2. Collocation with power generation facilities should be considered for dilution of concentrate from the desalination process. The possibility for negotiating-lower energy rates should also be investigated.

Additional demineralization treatment technologies information is included in a previously issued document titled "Technical Memorandum B.7. Demineralization Treatment Technologies" dated December 31, 2002.

Site Data

Site-specific data was gathered to characterize sites so they could be screened and ranked. The site data is contained in both an Access Data Base and GIS data sets. Data sets gathered include:

- Collocation with existing or proposed power plants
- Collocation with wastewater treatment plants
- Water supply demand centers, projected 2020 demands
- Undeveloped sites with characteristics favorable to seawater demineralization plant siting
- Resource constraints

The following represents a list of data contained in each of the data sets. The database is contained in the document titled "Database - Task B.3. The data is also contained in an Arcinfo GIS format. Data that could not be represented in an Access format is contained solely in the GIS files.

Data gathered consists of the following (as available) for each data set:

Collocation with Existing or Proposed Power Plants

- Name of generating plant
- Address and telephone number of plant
- Name, address, and telephone number of owner (where available)
- Name, address, and telephone number of point of contact for plant operations
- Type, description of power generation units, date of operation, and capacity
- Location by county and by latitude and longitude
- Date plant became or is scheduled to become operational
- Existing and proposed plant capacity
- Description of cooling process and if applicable the source water by name of source-water body, location of withdrawal in latitude and longitude, rate of withdrawal in million gallons per day (mgd)

- Description of cooling water process, description of treatment process, name of receiving water body, location of point of discharge to receiving water body in latitude and longitude
- Pertinent environmental permit information for each discharge including permit or application number, name of permitting agency, summary of permit conditions, status of permit, and status of pending applications
- Description of permitting issues encountered

Collocation with Wastewater Treatment Plants

- Name of system
- Name, address, and telephone number of owner
- Name, address, and telephone number of point of contact for operations
- Description of wastewater system treatment system and characteristics of effluent
- Plant location by county and by latitude and longitude
- Existing (where available) and permitted discharge capacity
- Description of treatment process, name of receiving water body, permitted discharge in million gallons per day (mgd), location of point of discharge to receiving water body in latitude and longitude (where available)
- Pertinent environmental permit information for each discharge including permit or application number, name of permitting agency, summary of permit conditions, status of permit, and status of pending applications
- Description of permitting issues encountered and
- Description of wastewater disposal processes including the reuse of reclaimed water.

Water Demand Centers – Projected 2020 Demands

- Name, address and telephone number of plant(s) owner
- Plant location(s) by county, latitude and longitude
- Plant treatment/production capacities
- Projected 2020 water demand (as provided by SJRWMD)
- Projected groundwater deficit for 2020 (as provided by SJRWMD)
- Current actual annual and permitted annual water production capacity (as permitted by the FDEP) and
- Consumptive Use Permit conditions placed upon annual withdrawal quantities authorized for each facility

Undeveloped Sites with Characteristics Favorable to Seawater Demineralization Plant Siting

- Owner's name, address, and phone number
- Site location in longitude and latitude
- Site size
- Zoning and
- Site characteristics

Resource Constraints

- Water quality data
- Water classifications
- Impaired waters and
- Locations of sensitive habitats or preserves or other protected lands

Preliminary Screening of Sites

Purpose and Scope

Preliminary screening of sites was accomplished using preliminary (macro-level) screening measures for siting seawater demineralization facilities within the coastal areas of the SJRMD. The macro-level screening criteria previously presented were adjusted as actual screening of the sites proceeded to reflect local conditions. The modified criteria is presented and applied in this document.

Use of the criteria is a rational approach to performing a preliminary screening to identify up to 20 preferred sites for further consideration as potential demineralization plant locations.

The macro-screening process represents the first step in a multi-step process of site identification. It does not include a "ranking" of the sites but rather identifies whether a site has features compatible with plant development. The next step in this process will be to rank up to 20 potentially feasible sites using more detailed and comprehensive criteria.

This section discusses:

- The Macro-level Screening Criteria
- Application of the Macro-level Screening Criteria and
- Results of Macro-level Screening

Preliminary (Macro-Level) Screening Criteria

The five primary criteria for the preliminary (macro-level) screening are:

- Adequate access to an ample seawater source
- Access to an adequate energy source
- Proximate access to a water transmission system
- Priority water resource caution areas and
- Acceptable means for management of the demineralization concentrate

The remainder of the project feasibility criteria are those that are typical for an infrastructure project, and include site accessibility for construction, availability of off-site utilities and minimal environmental impact from on-site and off-site project improvements.

The following sections include a description of the application of each of the five primary macro-level criteria. Table 4 reflects a summary of the macro-level criteria.

Adequate Access to an Ample Seawater Source

One desirable characteristic of a potential site is ready access to a sufficient supply of clean seawater. For the macro-level screening, the term "clean seawater" is defined by the characteristics associated with various FDEP water classifications as deemed acceptable for seawater demineralization.

Distinct advantages of access to clean seawater include significant reductions in capital and operations and maintenance (O&M) costs, environmental impacts, permitting requirements and project duration.

Project impacts that may be incurred if an adequate seawater source is not in close proximity include:

- Increased capital and O&M costs due to additional pretreatment requirements, pipelines, and pump stations
- Environmental impacts resulting from the construction of pipelines and pumping facilities, including the need for additional permitting
- Public opposition to construction disturbances
- Additional project costs associated with property acquisition and possible condemnation
- Longer project development schedule and
- Exposure of the public to navigation hazards, open excavations, traffic disruptions, etc.

Using these screening criteria, the characteristics of a preferred site include:

- Availability of a high quality seawater source. Class 2 and 3 waters are preferred. Class 1 waters, while of high quality, are defined as fresh waters and not applicable to this study. (Water Classifications are defined in Appendix A)
- Location within five miles of an existing once-through cooled power generating plant with a seawater intake and
- Location within five miles of the ocean coastline or if present the closest boundaries of the Indian River Lagoon and St. Johns River for areas with salinities within the study.

The five-mile criterion is based on site-specific location data for the area of study and experience with feasibility and costing analyses for demineralization plant siting studies, such as the "Gulf Coast Desalination Plant Site Selection Study," February 2002. In that study, numerous sites were considered with intake distances from 1000 feet to 11 miles. Because the intake pipelines can be twice the size of the product water transmission pipelines, the distance of the plant from the source water is an important cost consideration. The five-mile maximum distance for the intake was determined to be

reasonable based on actual conditions in the study area, particularly considering the water deficit areas along the Atlantic coastline.

Access to an Adequate Energy Source

Seawater demineralization technologies require approximately 10 to 17 kW-hr of electric power (dependent on salinity and temperature) per 1,000 gallons of product water. A seawater demineralization facility needs access to an adequate energy source of either steam and/or electricity. Larger seawater demineralization plants may require an electric distribution substation specifically dedicated to the facility. When an evaporative process is used, collocating the facility immediately adjacent to a steam power plant reduces energy losses associated with the transmission of steam used in the demineralization process.

The increasing trend in seawater demineralization has been the use of Reverse Osmosis ("RO") membrane technology. This specific technology requires large amounts of electricity to produce the roughly 1,000 pounds per square inch (psi) pressure needed for the seawater RO membrane process.

If an adequate energy source is not available or in close proximity, onsite power generation facilities or a major extension of high voltage transmission lines will be needed. Other possible adverse impacts include:

- Public opposition to facility siting
- Need to acquire and/or condemn property
- Increased cost to provide power to the facility
- Increased permitting complexity and cost and
- Extended project development schedule

Considering these screening criteria, the characteristics of a preferred site include:

- Location within 4 miles of a major power generation facility and
- Location within 4 miles of heavily developed urban areas (Since the scope of this project does not include the identification of specific electrical substations, another indicator of the strong likelihood of electrical substations would be proximity to urban areas).

The four-mile distance to a power station or substation is based on experience with demineralization plant siting studies, such as the "Gulf Coast Desalination Plant Site Selection Study," February 2002, "Desalination for Texas Water Supply", and other demineralization feasibility cost analyses performed by PB Water. It was determined in these studies that the further the site is located from a power station or major source of power such as a substation, the more expensive it is to bring to the site the large quantity of power required for a demineralization plant.

Proximate Access to a Water Transmission System

All potable water utilities generally include water sources, water treatment facilities, and water transmission and distribution components. A seawater demineralization facility typically only provides the source and treatment of the potable water. The water transmission and distribution pipelines of a water utility usually account for a majority of the utility's invested capital expense. Consequently, when new and perhaps previously unanticipated sources of water supply become available, the ability of the existing utility transmission infrastructure to receive, treat, blend and retransmit the demineralized water is a major economic factor. This feasibility investigation study includes a review of water needs, by water system (for systems with a capacity greater than 5 mgd), as projected by SJRWMD and others through 2020.

For the purposes of this study, the location of water demand and transmission is defined as water treatment plant locations. Generally, product water is conveyed from one or more water treatment facilities. Other acceptable locations for water transmission may be possible, but would require identification and selection by local water purveyors, which is beyond the scope of this project.

An absence of existing utility transmission infrastructure could potentially result in additional secondary project costs to upsize or parallel major backbone utility transmission infrastructure. Additional adverse impacts could include:

- Environmental impacts of construction and operation
- Public opposition to siting and
- Need to acquire and/or condemn property.

The characteristics of a preferred site include site location within twenty miles of the projected water deficits (or demands).

The 20-mile criterion is based upon a general review of site-specific location data for water supply demands and deficits and possible demineralization plant sites within the study area.

Priority Water Resource Caution Areas

The need for water supply in a particular area is crucial for the success of a seawater demineralization facility. SJRWMD Priority Water Resource Caution areas are an indicator of water supply needs within SJRWMD. Priority Water Resource Caution Areas are defined by SJRWMD as "areas where existing and reasonably anticipated sources of water and conservation efforts may not be adequate (1) to supply water to for all existing legal uses and reasonably anticipated future needs and (2) to sustain the water resources and related natural systems." These areas indicate needs for alternative water supplies such as seawater demineralization or other means.

The inability to satisfy this criterion could potentially result in construction of a facility that has excess capacity, leading to:

- Failure to repay financing and
- Use of limited environmental resources/impact areas and capital resources

The characteristics of a preferred site include those located in draft SJRWMD's Priority Water Resource Caution Areas as defined by SJRWMD for water supply planning efforts (May, 2003).

Acceptable Means for Demineralization Concentrate Management

A major requirement for the development of a successful seawater demineralization project is the ability to dispose of the byproduct, demineralization concentrate, in an environmentally acceptable manner.

An inability to satisfy this requirement could potentially result in:

- Higher disposal costs for concentrate
- Difficulty in permitting of the facility and
- Negative environmental impacts

For the disposal of concentrate from membrane demineralization facilities, SJRWMD is conducting a study entitled "Demineralization Concentrate Management Project." The draft report, Technical Memorandum C.2. – Demineralization Concentrate Management Plan, dated November, defined the following characteristics as more suitable for the disposal of concentrate from a seawater demineralization facility:

- Close proximity to existing suitable injection wells or areas defined as suitable for injection wells* and
- Close proximity to the coast (ocean or intracoastal) and the potential for a new ocean outfall. Consideration of the length of the outfall may make this option prohibitively expensive. For macro screening the potential length of an outfall is not considered.

The following are also characteristics of a preferred site. Note, however the use of existing facilities may require modifications to existing permits or require extensive studies for permitting and environmental impacts.

- Access to an existing permitted wastewater outfall and
- Blending with an existing high volume cooling water outfall from a power generating plant with once-through cooling

For evaluation, a site that is within ten miles to a potential means for concentrate disposal is considered.

* *Areas defined as suitable for injection wells are identified in the study report entitled "Technical Memorandum C.2. – Demineralization Concentrate Management Plan"* and subsequent documents issued by REI and approved by SJRWMD

The ten-mile criterion is based upon a general review of site-specific location data for water supply demands and deficits and possible demineralization plant sites within the vicinity of existing wastewater treatment plants and power stations in study area. The ten-mile criterion appears to be reasonable for this project considering the likely favorable demineralization plant sites will be in close proximity to the coastline.

Table 4. Summary of Macro Criteria for Site Screening

Main Criteria	Sub Criteria
Adequate Access to an Ample Seawater Source	• Availability of a high quality seawater source. Class 2 and 3 waters are preferred. (Water Classifications are defined in Appendix A) • Located within five miles of an existing once-through cooled power generating plant with a seawater intake • Located within five miles to the sea shoreline (including the intracoastal)
Access to an Adequate Energy Source	• Location within 4 miles of a major power generation facility • Location within 4 miles of urban areas
Proximate Access to a Water Transmission System	• Site location within twenty miles of the water demand
Priority Water Resource Caution Areas	• Site located within SJRWMD Priority Water Resource Caution Area
Acceptable Means for Demineralization Concentrate Management	• Disposal to existing suitable injection wells or areas defined as suitable for injection wells (within ten miles) • Within ten miles of the coast (potential for new ocean outfall). Consideration of the length of the outfall may preclude this option • Access to an existing permitted wastewater outfall within ten miles • Blending with an existing high volume cooling water outfall from a power generating plant with once-through cooling within ten miles

Preliminary Screening

Initial Screening/ Boundaries of the Study

Initial screening consists of deferring demineralization project boundaries within the District's physical boundaries and the development of an initial site list. The Project boundaries are shown on Figure 2. Acceptable areas for siting a demineralization project meet the following criteria:

- Source waters located within SJRWMD and
- Source waters with a salinity greater than 20,000 ppt.

Using salinity data provided by SJRWMD, combined with our knowledge of salinity concentrations (average salinity of 32,500 mg/l) along coastal Florida, the extent of the source waters to be considered for seawater demineralization are established as shown in Figure 2 within the Study Area Limits. The source waters as shown, which are included in this study, represents coastal waters with a salinity greater than 20,000 mg/l including the St. Johns River and Indian River lagoon with a 5 mile buffer measured from the shoreline inward. The 5 mile buffer represents one of the criteria applied to the screening and ranking of the sites. The water demand centers in this study only represent those with capacities greater than 5 mgd and with potential facility deficits between 2 and 20 mgd.

Figure 2 shows the prospective sites being considered for application of macro-screening criteria. The sites include wastewater plants, power plants, and undeveloped sites.

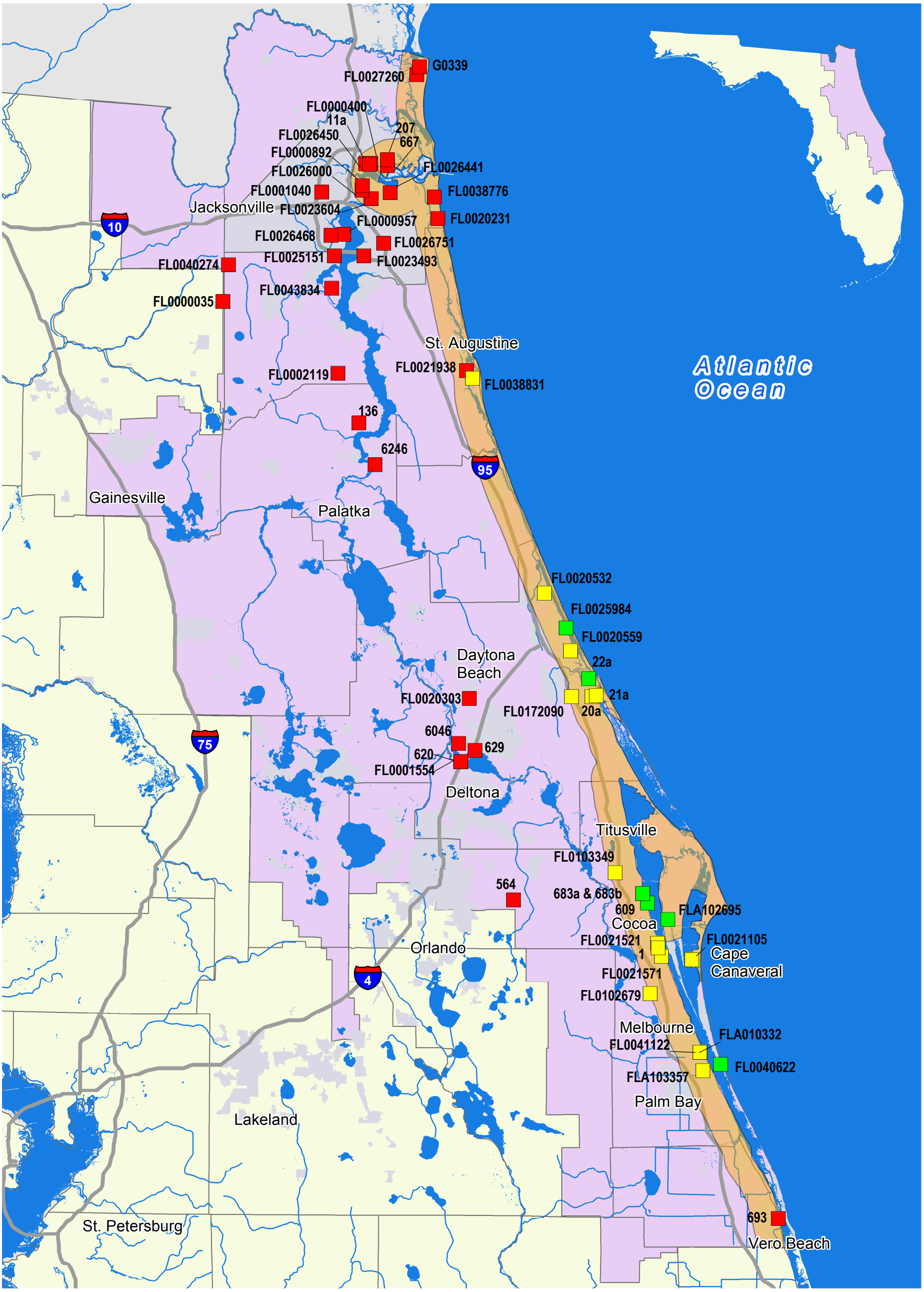

Figure 2
Sites Being Considered for Application of Macro Screening Criteria

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Wastewater plants being considered include only those that may have potential capacity for disposal of concentrate. Considering this site feature only wastewater plants with a permitted capacity of 3 mgd or greater were included in the evaluation. It is assumed that approximately 2/3 of the permitted capacity of a wastewater facility is currently used for wastewater disposal.

Power plants considered on the prospective site list include existing plants and proposed new plants that have a reasonable probability of being constructed. It has been brought to the study team's attention that many power plants have been planned throughout Florida including the area encompassed by SJRWMD. It is not clear at this time that there is a reasonable probability that these facilities will be constructed. The chance that these power plants will actually be built is questionable and often the exact locations are still being determined by the power plant developers. It is also doubtful, in light of recent environmental regulation that these facilities will use once through cooling.

Undeveloped sites included in the list of prospective sites were identified by SJRWMD as having potential for other reasons.

Fifty-five prospective sites are candidates for evaluation using the macro screening criteria.

Application of Macro Screening Criteria/ Results of Macro Screening

Application of the macro screening criteria consists of the use of GIS data bases to determine whether a particular site meets the macro criteria or not. The various sub criteria are applied on a "yes" and "no" basis. Depending upon the presence of a site feature, a proximity circle is applied to the feature to determine if the criteria are met, or if a site falls within the acceptable distance from such a feature.

Adequate Access to an Ample Seawater Source

Figure 3 represents the application of the "Adequate Access to an Ample Seawater Source Criteria." It has been determined that all waters in the Study Area meet the criterion of being a Class 2, or 3 water. Thus the proximity criterion is governing in determining whether or not a site meets the criteria. Table 5 identifies the listing of the perspective sites and whether or not the site meets these macro-screening criteria. Thirty-six sites meet the macro-screening criteria for "Adequate Access to an Ample Seawater Source."

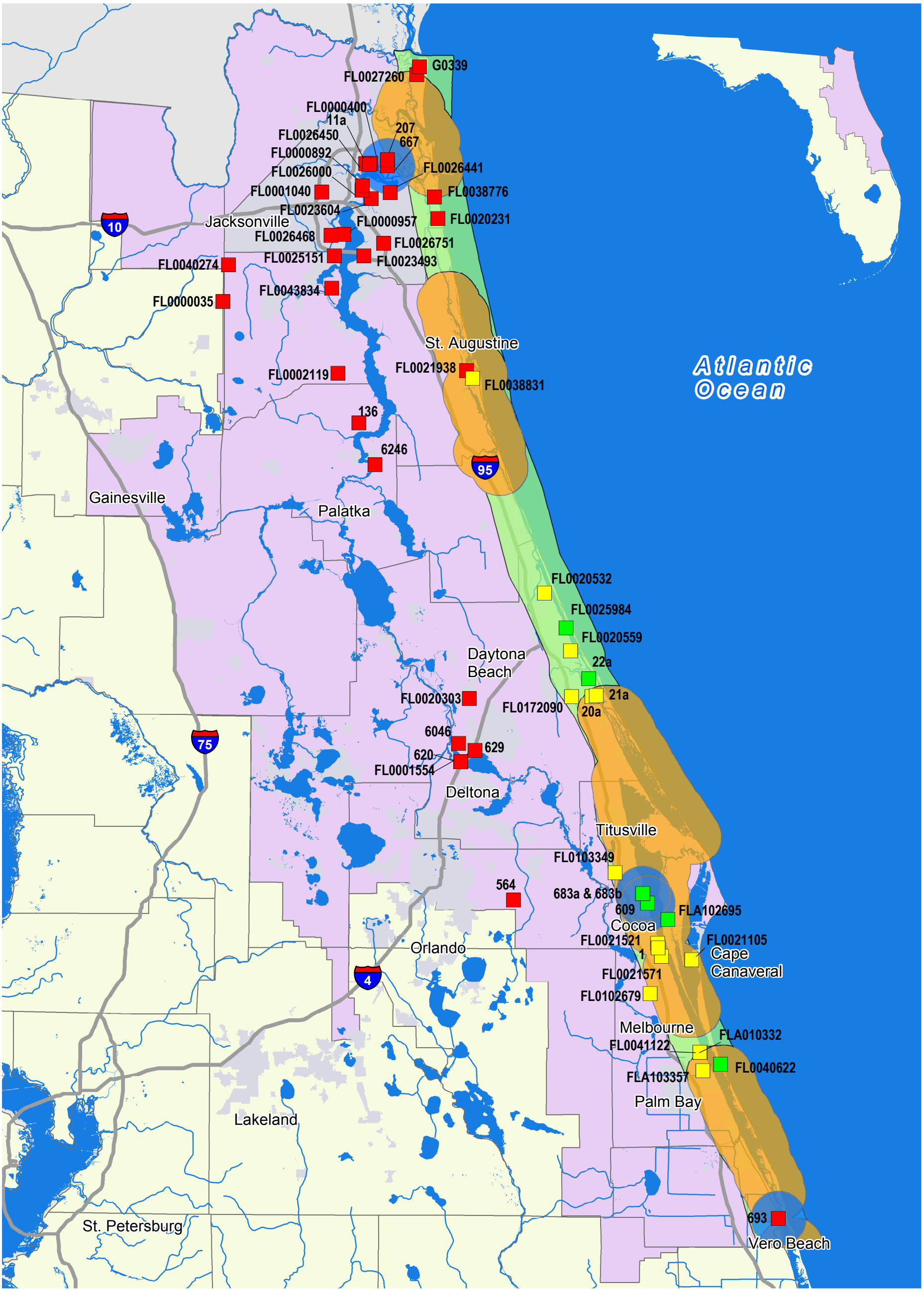

Figure 3
Adequate Access to Ample Seawater Source

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Table 5. Macro-level Screening Criteria - Adequate Access to an Ample Seawater Source

Facility Name	Facility Type	Facility ID	Availability of a High Quality Seawater	Located Within Five Miles of a Once Through Cooled Power Plant	Located Within Five Miles To the Sea Shoreline	Meets Criteria Under This Category?
Atlantic Beach - Main WWTF	Waste Water Treatment Plant	FL0038776	YES	NO	YES	YES
BCUD/South Beaches	Waste Water Treatment Plant	FL0040622	YES	NO	YES	YES
BCUD/South Central Regional	Waste Water Treatment Plant	FL0102679	YES	NO	YES	YES
BCUD/Sykes Creek Regional WWTF	Waste Water Treatment Plant	FLA102695	YES	YES	YES	YES
Canaveral Port Authority	Undeveloped Site	1	YES	NO	YES	YES
Cape Canaveral	Power Plant	609	YES	YES	YES	YES
CCUA - Fleming Island WWTF	Waste Water Treatment Plant	FL0043834	NO	NO	NO	NO
CCUA - Miller Street WWTF	Waste Water Treatment Plant	FL0025151	NO	NO	NO	NO
Cedar Bay Power Plant	Power Plant	11a	YES	YES	YES	YES
Cocoa Beach, WRF	Waste Water Treatment Plant	FL0021105	YES	NO	YES	YES
Cocoa/Jerry Sellers	Waste Water Treatment Plant	FL0021521	YES	NO	YES	YES
Daytona Beach/Bethune Point	Waste Water Treatment Plant	FL0025984	YES	NO	YES	YES
Debary Power Plant	Power Plant	6046	NO	NO	NO	NO
Deland/Wiley Nash	Waste Water Treatment Plant	FL0020303	NO	NO	NO	NO
E I Dupont De Nemours - Highland Mine	Waste Water Treatment Plant	FL0000035	NO	NO	NO	NO
E I Dupont De Nemours - Maxville Mine	Waste Water Treatment Plant	FL0040274	NO	NO	NO	NO
Fernandina Beach WWTF	Waste Water Treatment Plant	FL0027260	YES	NO	YES	YES
Field Street Generating Plant	Power Plant	20a	YES	NO	YES	YES
FPL Sanford Power Plant	Waste Water Treatment Plant	FL0001554	NO	NO	NO	NO
GE Turner Power Plant	Power Plant	629	NO	NO	NO	NO
Iluka Resources, Inc (FKA RGC Mineral Sands, Inc)	Waste Water Treatment Plant	FL0002119	NO	NO	NO	NO
Indian River	Power Plant	683	YES	YES	YES	YES
International Flavors And Fragrances (FKA Bush Boake Allen)	Waste Water Treatment Plant	FL0001040	NO	NO	NO	NO
Jacksonville Beach WWTF	Waste Water Treatment Plant	FL0020231	YES	NO	YES	YES
JEA – Arlington WWTF	Waste Water Treatment Plant	FL0026441	YES	YES	YES	YES
JEA – Buckman WWTF	Waste Water Treatment Plant	FL0026000	YES	NO	YES	YES

Table 5. Macro-level Screening Criteria - Adequate Access to an Ample Seawater Source

Facility Name	Facility Type	Facility ID	Availability of a High Quality Seawater	Located Within Five Miles of a Once Through Cooled Power Plant	Located Within Five Miles To the Sea Shoreline	Meets Criteria Under This Category?
JEA – Mandarin WWTF	Waste Water Treatment Plant	FL0023493	NO	NO	NO	NO
JEA - Monterey WWTF	Waste Water Treatment Plant	FL0023604	YES	NO	YES	YES
JEA - Northeast WWTF (FKA District II WWTF)	Waste Water Treatment Plant	FL0026450	YES	YES	YES	YES
JEA - Royal Lakes WWTF	Waste Water Treatment Plant	FL0026751	NO	NO	NO	NO
JEA – Southwest WWTF	Waste Water Treatment Plant	FL0026468	NO	NO	NO	NO
Jefferson Smurfit	Power Plant	G0339	YES	NO	YES	YES
Jefferson Smurfit Corp - JAX	Waste Water Treatment Plant	FL0000892	YES	NO	YES	YES
Melbourne/Grant Street	Waste Water Treatment Plant	FL0041122	YES	NO	YES	YES
New Smyrna Beach	Waste Water Treatment Plant	FL0172090	YES	NO	YES	YES
Northside	Power Plant	667	YES	YES	YES	YES
Ormond Beach, City Of	Waste Water Treatment Plant	FL0020532	YES	NO	YES	YES
Palm Bay WWTP	Waste Water Treatment Plant	FLA103357	YES	NO	YES	YES
Port Orange, City Of	Waste Water Treatment Plant	FL0020559	YES	NO	YES	YES
Putnam Power Plant	Power Plant	6246	NO	NO	NO	NO
Rockledge, City Of	Waste Water Treatment Plant	FL0021571	YES	NO	YES	YES
Saint Augustine WWTF	Waste Water Treatment Plant	FL0021938	YES	NO	YES	YES
Sanford Power Plant	Power Plant	620	NO	NO	NO	NO
Seminole Generating Station	Power Plant	136	NO	NO	NO	NO
SJCUD - Anastasia Island WWTF	Waste Water Treatment Plant	FL0038831	YES	NO	YES	YES
Smith Street Generating Station	Power Plant	21a	YES	NO	YES	YES
St. Johns River Power Park	Power Plant	207	YES	YES	YES	YES
Stanton Energy Complex	Power Plant	564	NO	NO	NO	NO
Stone Container Corporation	Waste Water Treatment Plant	FL0000400	YES	YES	YES	YES
Titusville South/Blue Heron	Waste Water Treatment Plant	FL0103349	YES	NO	YES	YES
USN - Naval Air Station Jacksonville WWTF	Waste Water Treatment Plant	FL0000957	NO	NO	NO	NO
Vero Beach Municipal	Power Plant	693	YES	YES	YES	YES
W. E. Swoope Generating Station	Power Plant	22a	YES	NO	YES	YES
West Melbourne/Ray Bullard	Waste Water Treatment Plant	FLA010332	YES	NO	YES	YES

Access to an Adequate Energy Source

Figure 4 represents the application of the criteria for "Access to an Adequate Energy Source." This figure identifies urban areas as identified by the U.S. Census Bureau and identifies the location of power plants. The figure also shows proximity borders or "bubbles" of areas considered as meeting the proximity screening criteria from these site features. The proximity screening designates that a potential site be within 4 miles of a preferred feature. Table 6 identifies the listing of the prospective sites and whether, or not, the site meets this macro screening criteria. Fifty-one sites meet the macro screening criteria for "Access to an Adequate Energy Source."

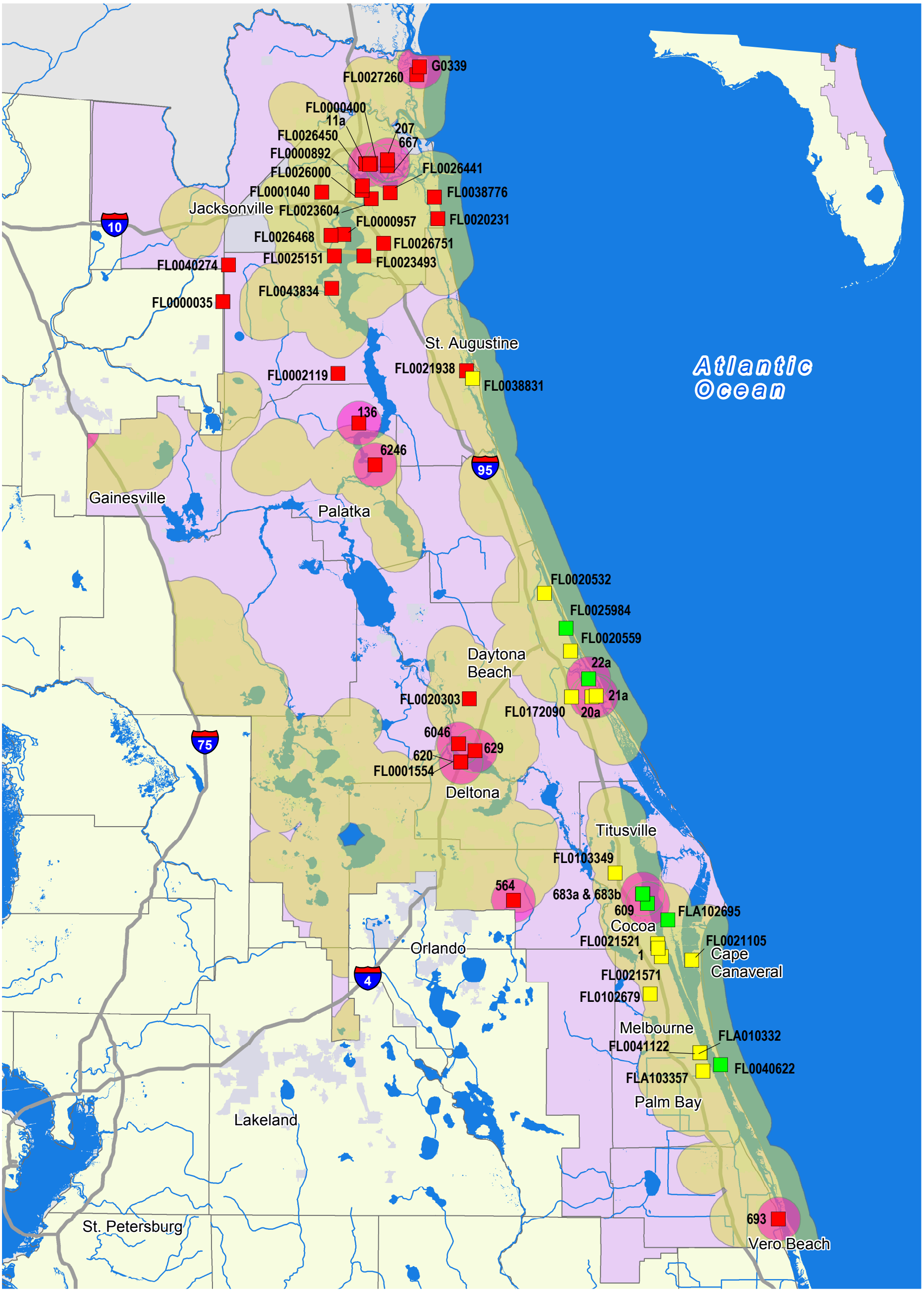

Figure 4
Access to an Adequate Energy Source

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Table 6. Macro-level Screening Criteria - Access to an Adequate Energy Source

Facility Name	Facility Type	Facility ID	Location Within 4 Miles of Power Plant	Location Within 4 Miles of Urban Area	Meets Criteria Under This Category?
Atlantic Beach - Main WWTF	Waste Water Treatment Plant	FL0038776	NO	YES	YES
BCUD/South Beaches	Waste Water Treatment Plant	FL0040622	NO	YES	YES
BCUD/South Central Regional	Waste Water Treatment Plant	FL0102679	NO	YES	YES
BCUD/Sykes Creek Regional WWTF	Waste Water Treatment Plant	FLA102695	NO	YES	YES
Canaveral Port Authority	Undeveloped Site	1	NO	YES	YES
Cape Canaveral	Power Plant	609	YES	YES	YES
CCUA - Fleming Island WWTF	Waste Water Treatment Plant	FL0043834	NO	YES	YES
CCUA - Miller Street WWTF	Waste Water Treatment Plant	FL0025151	NO	YES	YES
Cedar Bay Power Plant	Power Plant	11A	YES	YES	YES
Cocoa Beach, WRF	Waste Water Treatment Plant	FL0021105	NO	YES	YES
Cocoa/Jerry Sellers	Waste Water Treatment Plant	FL0021521	NO	YES	YES
Daytona Beach/Bethune Point	Waste Water Treatment Plant	FL0025984	NO	YES	YES
Debary Power Plant	Power Plant	6046	YES	YES	YES
Deland/Wiley Nash	Waste Water Treatment Plant	FL0020303	NO	YES	YES
E I Dupont De Nemours - Highland Mine	Waste Water Treatment Plant	FL0000035	NO	NO	NO
E I Dupont De Nemours - Maxville Mine	Waste Water Treatment Plant	FL0040274	NO	NO	NO
Fernandina Beach WWTF	Waste Water Treatment Plant	FL0027260	YES	YES	YES
Field Street Generating Plant	Power Plant	20A	YES	YES	YES
FPL Sanford Power Plant	Waste Water Treatment Plant	FL0001554	YES	YES	YES
GE Turner Power Plant	Power Plant	629	YES	YES	YES
Iluka Resources, Inc (FKA RGC Mineral Sands, INC)	Waste Water Treatment Plant	FL0002119	NO	NO	NO
Indian River	Power Plant	683	YES	YES	YES
International Flavors And Fragrances (FKA Bush Boake Allen)	Waste Water Treatment Plant	FL0001040	NO	YES	YES
Jacksonville Beach WWTF	Waste Water Treatment Plant	FL0020231	NO	YES	YES
JEA - Arlington WWTF	Waste Water Treatment Plant	FL0026441	NO	YES	YES
JEA - Buckman WWTF	Waste Water Treatment Plant	FL0026000	NO	YES	YES
JEA - Mandarin WWTF	Waste Water Treatment Plant	FL0023493	NO	YES	YES

Table 6. Macro-level Screening Criteria - Access to an Adequate Energy Source

Facility Name	Facility Type	Facility ID	Location Within 4 Miles of Power Plant	Location Within 4 Miles of Urban Area	Meets Criteria Under This Category?
JEA - Monterey WWTF	Waste Water Treatment Plant	FL0023604	NO	YES	YES
JEA - Northeast WWTF (FKA District II WWTF)	Waste Water Treatment Plant	FL0026450	YES	YES	YES
JEA - Royal Lakes WWTF	Waste Water Treatment Plant	FL0026751	NO	YES	YES
JEA - Southwest WWTF	Waste Water Treatment Plant	FL0026468	NO	YES	YES
Jefferson Smurfit	Power Plant	G0339	YES	YES	YES
Jefferson Smurfit Corp - Jax	Waste Water Treatment Plant	FL0000892	NO	YES	YES
Melbourne/Grant Street	Waste Water Treatment Plant	FL0041122	NO	YES	YES
New Smyrna Beach	Waste Water Treatment Plant	FL0172090	YES	YES	YES
Northside	Power Plant	667	YES	YES	YES
Ormond Beach, City Of	Waste Water Treatment Plant	FL0020532	NO	YES	YES
Palm Bay WWTP	Waste Water Treatment Plant	FLA103357	NO	YES	YES
Port Orange, City Of	Waste Water Treatment Plant	FL0020559	NO	YES	YES
Putnam Power Plant	Power Plant	6246	YES	YES	YES
Rockledge, City Of	Waste Water Treatment Plant	FL0021571	NO	YES	YES
Saint Augustine WWTF	Waste Water Treatment Plant	FL0021938	NO	YES	YES
Sanford Power Plant	Power Plant	620	YES	YES	YES
Seminole Generating Station	Power Plant	136	YES	NO	YES
SJCUD - Anastasia Island WWTF	Waste Water Treatment Plant	FL0038831	NO	YES	YES
Smith Street Generating Station	Power Plant	21A	YES	YES	YES
St. Johns River Power Park	Power Plant	207	YES	YES	YES
Stanton Energy Complex	Power Plant	564	YES	YES	YES
Stone Container Corporation	Waste Water Treatment Plant	FL0000400	YES	YES	YES
Titusville South/Blue Heron	Waste Water Treatment Plant	FL0103349	NO	YES	YES
USN - Naval Air Station Jacksonville WWTF	Waste Water Treatment Plant	FL0000957	NO	YES	YES
Vero Beach Municipal	Power Plant	693	YES	YES	YES
W. E. Swoope Generating Station	Power Plant	22A	YES	YES	YES
West Melbourne/Ray Bullard	Waste Water Treatment Plant	FLA010332	NO	YES	YES

Proximate Access to a Water Transmission System

Figure 5 represents the application of the criterion for "Proximate Access to a Water Transmission System." This criterion addresses the distance from a central water distribution point to a prospective site. The central water distribution point evaluated for this criterion is considered to be the location of the nearest water plant with a water deficit.

The facility water deficits are defined as the projected 2020 Facility deficit which is the amount of projected ADF (average daily flow) demand that cannot be met by existing facilities. This involves utilities that use ground water and/or other sources such as surface water or brackish ground water for water supply. Facilities deficits are published in the District Water Supply Plan (DWSP), Special Publication SJ2000-SP1, dated 2000 and, the Water 2020 Work Group reports with the exception of Work Group Areas I and II. Additional deficit information was provided by various utilities through a data request.

Table 7 identifies the listing of the prospective sites and whether or not the site meets this macro-screening criterion. Forty-nine sites meet the macro-screening criterion for "Proximate Access to a Water Transmission System."

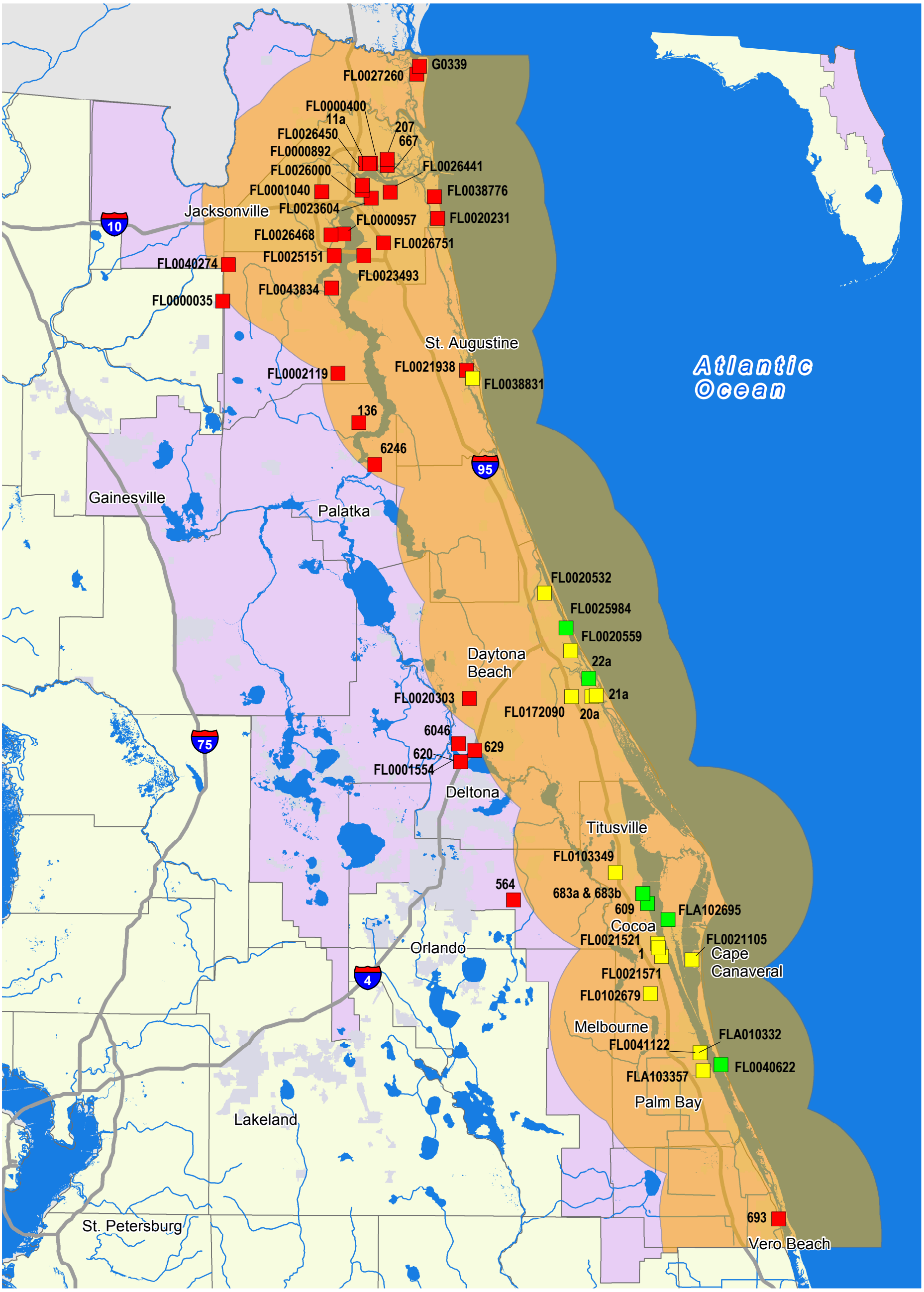

Figure 5
Proximate Access to a Water Transmission System

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St. Johns River Water Management District

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Table 7. Macro-level Screening Criteria – Proximate Access to a Water Transmission System

Facility Name	Facility Type	Facility ID	Site Location Within Twenty Miles of the Water Demand	Meets Criterion Under This Category?
Atlantic Beach - Main WWTF	Waste Water Treatment Plant	FL0038776	YES	YES
BCUD/South Beaches	Waste Water Treatment Plant	FL0040622	YES	YES
BCUD/South Central Regional	Waste Water Treatment Plant	FL0102679	YES	YES
BCUD/Sykes Creek Regional WWTF	Waste Water Treatment Plant	FLA102695	YES	YES
Canaveral Port Authority	Undeveloped Site	1	YES	YES
Cape Canaveral	Power Plant	609	YES	YES
CCUA - Fleming Island WWTF	Waste Water Treatment Plant	FL0043834	YES	YES
CCUA - Miller Street WWTF	Waste Water Treatment Plant	FL0025151	YES	YES
Cedar Bay Power Plant	Power Plant	11a	YES	YES
Cocoa Beach, WRF	Waste Water Treatment Plant	FL0021105	YES	YES
Cocoa/Jerry Sellers	Waste Water Treatment Plant	FL0021521	YES	YES
Daytona Beach/Bethune Point	Waste Water Treatment Plant	FL0025984	YES	YES
Debary Power Plant	Power Plant	6046	NO	NO
Deland/Wiley Nash	Waste Water Treatment Plant	FL0020303	YES	YES
E I Dupont De Nemours - Highland Mine	Waste Water Treatment Plant	FL0000035	NO	NO
E I Dupont De Nemours - Maxville Mine	Waste Water Treatment Plant	FL0040274	YES	YES
Fernandina Beach WWTF	Waste Water Treatment Plant	FL0027260	YES	YES
Field Street Generating Plant	Power Plant	20a	YES	YES
FPL Sanford Power Plant	Waste Water Treatment Plant	FL0001554	NO	NO
GE Turner Power Plant	Power Plant	629	NO	NO
Iluka Resources, Inc (FKA RGC Mineral Sands, Inc)	Waste Water Treatment Plant	FL0002119	YES	YES
Indian River	Power Plant	683	YES	YES
International Flavors And Frangrances (FKA Bush Boake Allen)	Waste Water Treatment Plant	FL0001040	YES	YES
Jacksonville Beach WWTF	Waste Water Treatment Plant	FL0020231	YES	YES
JEA - Arlington WWTF	Waste Water Treatment Plant	FL0026441	YES	YES
JEA - Buckman WWTF	Waste Water Treatment Plant	FL0026000	YES	YES
JEA - Mandarin WWTF	Waste Water Treatment Plant	FL0023493	YES	YES
JEA - Monterey WWTF	Waste Water Treatment Plant	FL0023604	YES	YES
JEA - Northeast WWTF (FKA District II WWTF)	Waste Water Treatment Plant	FL0026450	YES	YES
JEA - Royal Lakes WWTF	Waste Water Treatment Plant	FL0026751	YES	YES
JEA - Southwest WWTF	Waste Water Treatment Plant	FL0026468	YES	YES
Jefferson Smurfit	Power Plant	G0339	YES	YES
Jefferson Smurfit Corp - Jax	Waste Water Treatment Plant	FL0000892	YES	YES
Melbourne/Grant Street	Waste Water Treatment Plant	FL0041122	YES	YES
New Smyrna Beach	Waste Water Treatment Plant	FL0172090	YES	YES
Northside	Power Plant	667	YES	YES
Ormond Beach, City Of	Waste Water Treatment Plant	FL0020532	YES	YES

Table 7. Macro-level Screening Criteria – Proximate Access to a Water Transmission System

Facility Name	Facility Type	Facility ID	Site Location Within Twenty Miles of the Water Demand	Meets Criterion Under This Category?
Palm Bay WWTP	Waste Water Treatment Plant	FLA103357	YES	YES
Port Orange, City Of	Waste Water Treatment Plant	FL0020559	YES	YES
Putnam Power Plant	Power Plant	6246	YES	YES
Rockledge, City Of	Waste Water Treatment Plant	FL0021571	YES	YES
Saint Augustine WWTF	Waste Water Treatment Plant	FL0021938	YES	YES
Sanford Power Plant	Power Plant	620	NO	NO
Seminole Generating Station	Power Plant	136	YES	YES
SJCUD - Anastasia Island WWTF	Waste Water Treatment Plant	FL0038831	YES	YES
Smith Street Generating Station	Power Plant	21a	YES	YES
St. Johns River Power Park	Power Plant	207	YES	YES
Stanton Energy Complex	Power Plant	564	NO	NO
Stone Container Corporation	Waste Water Treatment Plant	FL0000400	YES	YES
Titusville South/Blue Heron	Waste Water Treatment Plant	FL0103349	YES	YES
USN - Naval Air Station Jacksonville WWTF	Waste Water Treatment Plant	FL0000957	YES	YES
Vero Beach Municipal	Power Plant	693	YES	YES
W. E. Swoope Generating Station	Power Plant	22a	YES	YES
West Melbourne/Ray Bullard	Waste Water Treatment Plant	FLA010332	YES	YES

Priority Water Resource Caution Areas

Figure 6 represents the application of the criterion for "Priority Water Resource Caution Areas." This criterion addresses the location of facility either within a "priority water resource caution area" or within a 10 mile proximity. The "priority water resource caution area" represents "areas where existing and reasonably anticipated sources of water and conservation efforts may not be adequate (1) to supply water to for all existing legal uses and reasonably anticipated future needs and (2) to sustain the water resources and related natural systems (DWSP 2000)." Table 7 identifies the listing of the prospective sites and whether or not the site meets this macro-screening criterion. Twenty-nine sites meet the macro-screening criterion for "Priority Water Resource Caution Areas."

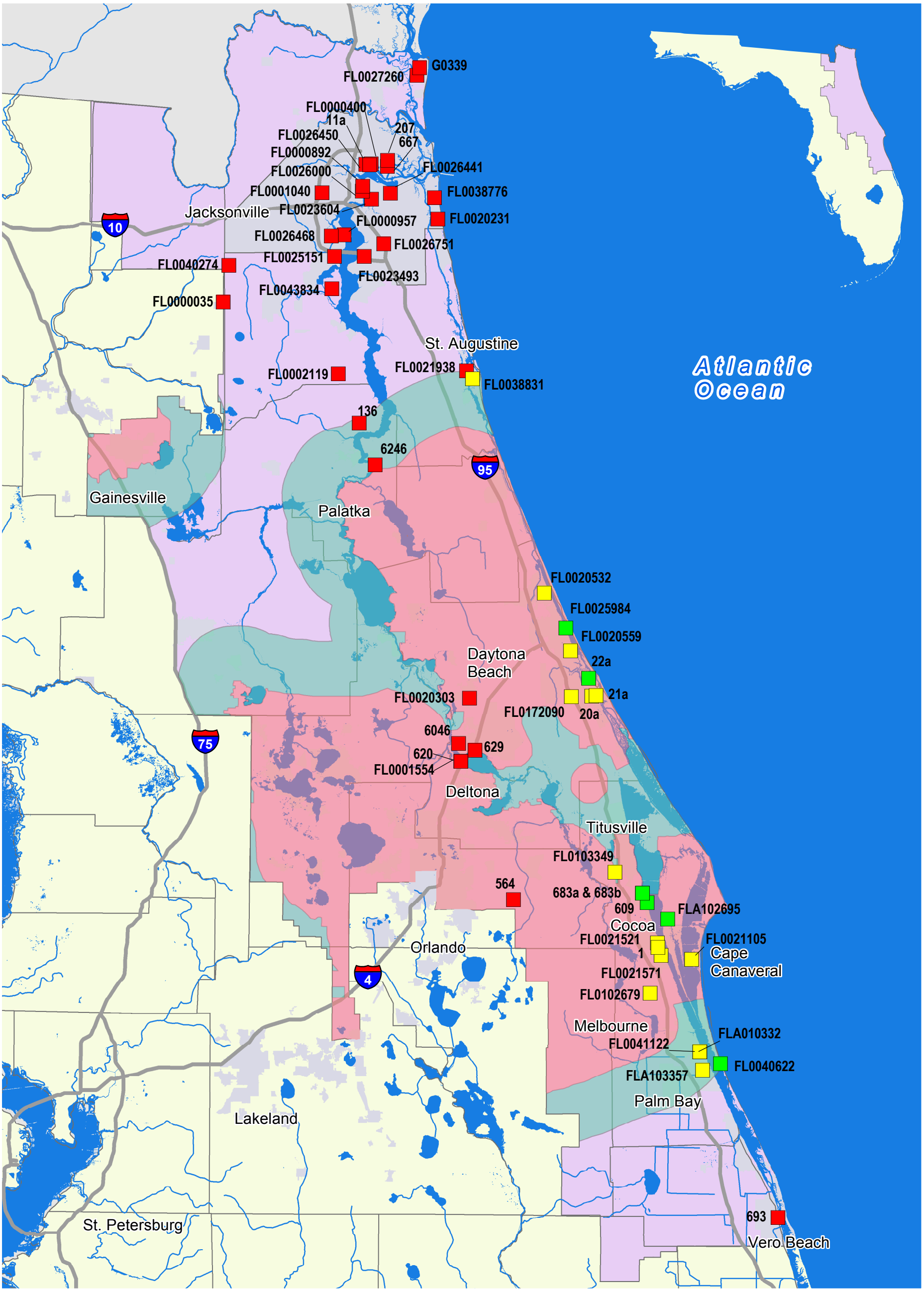

Figure 6
Priority Water Resource Caution Areas

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Table 8. Macro-level Screening Criterion - Priority Water Resource Caution Areas

Facility Name	Facility Type	Facility ID	Water Resource Caution Area
Atlantic Beach - MAIN WWTF	Waste Water Treatment Plant	FL0038776	NO
BCUD/South Beaches	Waste Water Treatment Plant	FL0040622	YES
BCUD/South Central Regional	Waste Water Treatment Plant	FL0102679	YES
BCUD/Sykes Creek Regional WWTF	Waste Water Treatment Plant	FLA102695	YES
Canaveral Port Authority	Undeveloped Site	1	YES
Cape Canaveral	Power Plant	609	YES
CCUA - Fleming Island WWTF	Waste Water Treatment Plant	FL0043834	NO
CCUA - Miller Street WWTF	Waste Water Treatment Plant	FL0025151	NO
Cedar Bay Power Plant	Power Plant	11a	NO
Cocoa Beach, WRF	Waste Water Treatment Plant	FL0021105	YES
Cocoa/Jerry Sellers	Waste Water Treatment Plant	FL0021521	YES
Daytona Beach/Bethune Point	Waste Water Treatment Plant	FL0025984	YES
Debary Power Plant	Power Plant	6046	YES
Deland/Wiley Nash	Waste Water Treatment Plant	FL0020303	YES
E I Dupont De Nemours - Highland Mine	Waste Water Treatment Plant	FL0000035	NO
E I Dupont De Nemours - Maxville Mine	Waste Water Treatment Plant	FL0040274	NO
Fernandina Beach WWTF	Waste Water Treatment Plant	FL0027260	NO
Field Street Generating Plant	Power Plant	20a	YES
FPL Sanford Power Plant	Waste Water Treatment Plant	FL0001554	YES
GE Turner Power Plant	Power Plant	629	YES
Iluka Resources, Inc (FKA RGC Mineral Sands, Inc)	Waste Water Treatment Plant	FL0002119	NO
Indian River	Power Plant	683	YES
International Flavors And Frangrances (FKA Bush Boake Allen)	Waste Water Treatment Plant	FL0001040	NO
Jacksonville Beach WWTF	Waste Water Treatment Plant	FL0020231	NO
JEA - Arlington WWTF	Waste Water Treatment Plant	FL0026441	NO
JEA - Buckman WWTF	Waste Water Treatment Plant	FL0026000	NO
JEA - Mandarin WWTF	Waste Water Treatment Plant	FL0023493	NO
JEA - Monterey WWTF	Waste Water Treatment Plant	FL0023604	NO
JEA - Northeast WWTF (FKA District II WWTF)	Waste Water Treatment Plant	FL0026450	NO
JEA - Royal Lakes WWTF	Waste Water Treatment Plant	FL0026751	NO
JEA - Southwest WWTF	Waste Water Treatment Plant	FL0026468	NO
Jefferson Smurfit	Power Plant	G0339	NO
Jefferson Smurfit Corp - Jax	Waste Water Treatment Plant	FL0000892	NO
Melbourne/Grant Street	Waste Water Treatment Plant	FL0041122	YES
New Smyrna Beach	Waste Water Treatment Plant	FL0172090	YES
Northside	Power Plant	667	NO
Ormond Beach, City Of	Waste Water Treatment Plant	FL0020532	YES
Palm Bay WWTP	Waste Water Treatment Plant	FLA103357	YES
Port Orange, City Of	Waste Water Treatment Plant	FL0020559	YES
Putnam Power Plant	Power Plant	6246	YES

Table 8. Macro-level Screening Criterion - Priority Water Resource Caution Areas

Facility Name	Facility Type	Facility ID	Water Resource Caution Area
Rockledge, City Of	Waste Water Treatment Plant	FL0021571	YES
Saint Augustine WWTF	Waste Water Treatment Plant	FL0021938	NO
Sanford Power Plant	Power Plant	620	YES
Seminole Generating Station	Power Plant	136	YES
SJCUD - Anastasia Island WWTF	Waste Water Treatment Plant	FL0038831	YES
Smith Street Generating Station	Power Plant	21a	YES
St. Johns River Power Park	Power Plant	207	NO
Stanton Energy Complex	Power Plant	564	YES
Stone Container Corporation	Waste Water Treatment Plant	FL0000400	NO
Titusville South/Blue Heron	Waste Water Treatment Plant	FL0103349	YES
USN - Naval Air Station Jacksonville WWTF	Waste Water Treatment Plant	FL0000957	NO
Vero Beach Municipal	Power Plant	693	NO
W. E. Swoope Generating Station	Power Plant	22a	YES
West Melbourne/Ray Bullard	Waste Water Treatment Plant	FLA010332	YES

Acceptable Means for Demineralization Concentrate Management

Figure 7 shows the results from applying the criteria for "Acceptable Means for Demineralization Concentrate Management." Table 9 identifies the listing of the prospective sites and whether or not the site meets this macro-screening criteria. To meet this criteria, a prospective site must have one of the four features for potential concentrate management. Ranking of the sites will be more favorable whether or not a site has several means of potential concentrate management. Forty six sites meet the macro-screening criteria for "Acceptable Means for Demineralization Concentrate Management."

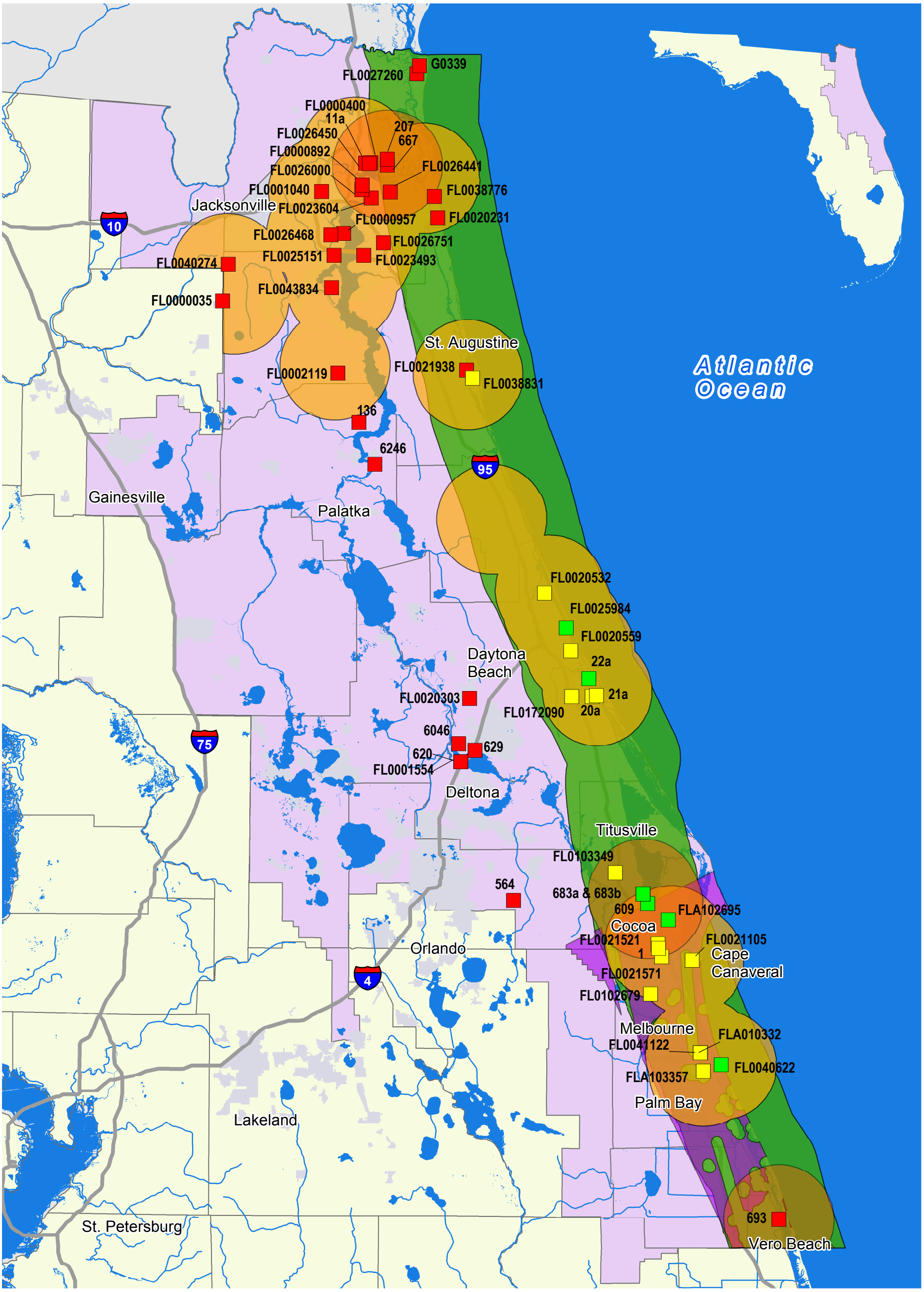

Figure 7
Acceptable Means for Demineralization Concentrate Management

Contract No. SE459AA
Seawater Demineralization Feasibility Investigation
St. Johns River Water Management District

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Table 9. Macro-level Screening Criteria - Acceptable Means for Demineralization Concentrate Management.

			Acceptable Means For Demineralization Concentrate Management				
Facility Name	**Facility Type**	**Facility ID**	**Site Location Within 10 Miles of Once Through Seawater Cooling Power Facility**	**Site Location Within 10 Miles of Permitted Wastewater Outfall**	**Site Location Within 10 Miles Of Coast**	**Site Location Within Injection Well Area**	**Meets Criteria Under This Category?**
Atlantic Beach - Main WWTF	Waste Water Treatment Plant	FL0038776	NO	YES	YES	NO	YES
BCUD/South Beaches	Waste Water Treatment Plant	FL0040622	NO	YES	YES	YES	YES
BCUD/South Central Regional	Waste Water Treatment Plant	FL0102679	NO	YES	YES	NO	YES
BCUD/Sykes Creek Regional WWTF	Waste Water Treatment Plant	FLA102695	YES	YES	YES	YES	YES
Canaveral Port Authority	Undeveloped Site	1	YES	YES	YES	YES	YES
Cape Canaveral	Power Plant	609	YES	YES	YES	NO	YES
CCUA - Fleming Island WWTF	Waste Water Treatment Plant	FL0043834	NO	YES	NO	NO	YES
CCUA - Miller Street WWTF	Waste Water Treatment Plant	FL0025151	NO	YES	NO	NO	YES
Cedar Bay Power Plant	Power Plant	11a	YES	YES	NO	NO	YES
Cocoa Beach, WRF	Waste Water Treatment Plant	FL0021105	NO	YES	YES	YES	YES
Cocoa/Jerry Sellers	Waste Water Treatment Plant	FL0021521	YES	YES	YES	YES	YES
Daytona Beach/Bethune Point	Waste Water Treatment Plant	FL0025984	NO	YES	YES	NO	YES
Debary Power Plant	Power Plant	6046	NO	NO	NO	NO	NO
Deland/Wiley Nash	Waste Water Treatment Plant	FL0020303	NO	NO	NO	NO	NO
E I Dupont De Nemours - Highland Mine	Waste Water Treatment Plant	FL0000035	NO	YES	NO	NO	YES
E I Dupont De Nemours - Maxville Mine	Waste Water Treatment Plant	FL0040274	NO	YES	NO	NO	YES

Table 9. Macro-level Screening Criteria - Acceptable Means for Demineralization Concentrate Management.

			Acceptable Means For Demineralization Concentrate Management				
Facility Name	**Facility Type**	**Facility ID**	**Site Location Within 10 Miles of Once Through Seawater Cooling Power Facility**	**Site Location Within 10 Miles of Permitted Wastewater Outfall**	**Site Location Within 10 Miles Of Coast**	**Site Location Within Injection Well Area**	**Meets Criteria Under This Category?**
Fernandina Beach WWTF	Waste Water Treatment Plant	FL0027260	NO	NO	YES	NO	YES
Field Street Generating Plant	Power Plant	20a	NO	YES	YES	NO	YES
FPL Sanford Power Plant	Waste Water Treatment Plant	FL0001554	NO	NO	NO	NO	NO
GE Turner Power Plant	Power Plant	629	NO	NO	NO	NO	NO
Iluka Resources, Inc (FKA RGC Mineral Sands, Inc)	Waste Water Treatment Plant	FL0002119	NO	YES	NO	NO	YES
Indian River	Power Plant	683	YES	YES	YES	NO	YES
International Flavors And Frangrances (FKA Bush Boake Allen)	Waste Water Treatment Plant	FL0001040	NO	YES	NO	NO	YES
Jacksonville Beach WWTF	Waste Water Treatment Plant	FL0020231	NO	YES	YES	NO	YES
JEA – Arlington WWTF	Waste Water Treatment Plant	FL0026441	YES	YES	YES	NO	YES
JEA – Buckman WWTF	Waste Water Treatment Plant	FL0026000	YES	YES	NO	NO	YES
JEA – Mandarin WWTF	Waste Water Treatment Plant	FL0023493	NO	YES	NO	NO	YES
JEA – Monterey WWTF	Waste Water Treatment Plant	FL0023604	YES	YES	NO	NO	YES
JEA - Northeast WWTF (FKA DISTRICT II WWTF)	Waste Water Treatment Plant	FL0026450	YES	YES	NO	NO	YES
JEA - Royal Lakes WWTF	Waste Water Treatment Plant	FL0026751	NO	YES	NO	NO	YES
JEA - Southwest WWTF	Waste Water Treatment Plant	FL0026468	NO	YES	NO	NO	YES
Jefferson Smurfit	Power Plant	G0339	NO	NO	YES	NO	YES

Table 9. Macro-level Screening Criteria - Acceptable Means for Demineralization Concentrate Management.

			Acceptable Means For Demineralization Concentrate Management				
Facility Name	**Facility Type**	**Facility ID**	**Site Location Within 10 Miles of Once Through Seawater Cooling Power Facility**	**Site Location Within 10 Miles of Permitted Wastewater Outfall**	**Site Location Within 10 Miles Of Coast**	**Site Location Within Injection Well Area**	**Meets Criteria Under This Category?**
Jefferson Smurfit Corp - JAX	Waste Water Treatment Plant	FL0000892	YES	YES	NO	NO	YES
Melbourne/Grant Street	Waste Water Treatment Plant	FL0041122	NO	YES	YES	YES	YES
New Smyrna Beach	Waste Water Treatment Plant	FL0172090	NO	YES	YES	NO	YES
Northside	Power Plant	667	YES	YES	YES	NO	YES
Ormond Beach, City Of	Waste Water Treatment Plant	FL0020532	NO	YES	YES	NO	YES
Palm Bay WWTP	Waste Water Treatment Plant	FLA103357	NO	YES	YES	NO	YES
Port Orange, City Of	Waste Water Treatment Plant	FL0020559	YES	YES	YES	NO	YES
Putnam Power Plant	Power Plant	6246	NO	NO	NO	NO	NO
Rockledge, City Of	Waste Water Treatment Plant	FL0021571	YES	YES	YES	YES	YES
Saint Augustine WWTF	Waste Water Treatment Plant	FL0021938		YES	YES		YES
Sanford Power Plant	Power Plant	620	NO	NO	NO	NO	NO
Seminole Generating Station	Power Plant	136	NO	NO	NO	NO	NO
SJCUD - Anastasia Island WWTF	Waste Water Treatment Plant	FL0038831	NO	YES	YES	NO	YES
Smith Street Generating Station	Power Plant	21a	NO	YES	YES	NO	YES
St. Johns River Power Park	Power Plant	207	YES	YES	YES	NO	YES
Stanton Energy Complex	Power Plant	564	NO	NO	NO	NO	NO
Stone Container Corporation	Waste Water Treatment Plant	FL0000400	YES	YES	NO	NO	YES
Titusville South/Blue Heron	Waste Water Treatment	FL0103349	YES	NO	YES	NO	YES

Table 9. Macro-level Screening Criteria - Acceptable Means for Demineralization Concentrate Management.

			Acceptable Means For Demineralization Concentrate Management				
Facility Name	**Facility Type**	**Facility ID**	**Site Location Within 10 Miles of Once Through Seawater Cooling Power Facility**	**Site Location Within 10 Miles of Permitted Wastewater Outfall**	**Site Location Within 10 Miles Of Coast**	**Site Location Within Injection Well Area**	**Meets Criteria Under This Category?**
	Plant						
USN - Naval Air Station Jacksonville WWTF	Waste Water Treatment Plant	FL0000957	NO	YES	NO	NO	YES
Vero Beach Municipal	Power Plant	693	YES	NO	YES	NO	YES
W. E. Swoope Generating Station	Power Plant	22a	NO	YES	YES	NO	YES
West Melbourne/Ray Bullard	Waste Water Treatment Plant	FLA010332	NO	YES	YES	YES	YES

Macro-Level Screening Results

Twenty-one sites satisfy all of the macro screening criteria as potential locations for seawater demineralization. These macro screened sites are further examined in the ranking process in the section titled "Site Evaluation and Ranking" for specific preferred site features. The sites represented as meeting the macro screen criteria meet the minimum requirements for siting of a seawater demineralization facility.

A summary of the results from the macro-level screening for all sites is in Table 10.

Table 10. Ability to Meet Macro-Level Screening Criteria

			DOES FACILITY MEET CRITERIA UNDER THE FOLLOWING CATEGORIES?					
			#1	*#2*	*#3*	*#4*	*#5*	
Facility Name	**Facility Type**	**Facility ID**	**Adequate Access to Ample Seawater Source**	**Access to Adequate Energy**	**Proximate Access to Water Transmission System**	**Priority Water Resource Caution Area**	**Acceptable Means for Demineralization Concentrate Management**	**Meets Macro Criteria**
Atlantic Beach - Main WWTF	Waste Water Treatment Plant	FL0038776	YES	YES	YES	NO	YES	NO
BCUD/South Beaches	Waste Water Treatment Plant	FL0040622	YES	YES	YES	YES	YES	YES
BCUD/South Central Regional	Waste Water Treatment Plant	FL0102679	YES	YES	YES	YES	YES	YES
BCUD/Sykes Creek Regional WWTF	Waste Water Treatment Plant	FLA102695	YES	YES	YES	YES	YES	YES
Canaveral Port Authority	Undeveloped Site	1	YES	YES	YES	YES	YES	YES
Cape Canaveral	Power Plant	609	YES	YES	YES	YES	YES	YES
CCUA - Fleming Island WWTF	Waste Water Treatment Plant	FL0043834	NO	YES	YES	NO	YES	NO
CCUA - Miller Street WWTF	Waste Water Treatment Plant	FL0025151	NO	YES	YES	NO	YES	NO
Cedar Bay Power Plant	Power Plant	11a	YES	YES	YES	NO	YES	NO
Cocoa Beach, WRF	Waste Water Treatment Plant	FL0021105	YES	YES	YES	YES	YES	YES
Cocoa/Jerry Sellers	Waste Water Treatment Plant	FL0021521	YES	YES	YES	YES	YES	YES
Daytona Beach/Bethune Point	Waste Water Treatment Plant	FL0025984	YES	YES	YES	YES	YES	YES
Debary Power Plant	Power Plant	6046	NO	YES	NO	YES	NO	NO
Deland/Wiley Nash	Waste Water Treatment Plant	FL0020303	NO	YES	YES	YES	NO	NO
E I Dupont De Nemours - Highland Mine	Waste Water Treatment Plant	FL0000035	NO	NO	NO	NO	YES	NO
E I Dupont De Nemours - Maxville Mine	Waste Water Treatment Plant	FL0040274	NO	NO	YES	NO	YES	NO
Fernandina Beach WWTF	Waste Water Treatment Plant	FL0027260	YES	YES	YES	NO	YES	NO
Field Street Generating Plant	Power Plant	20a	YES	YES	YES	YES	YES	YES

Table 10. Ability to Meet Macro-Level Screening Criteria

			DOES FACILITY MEET CRITERIA UNDER THE FOLLOWING CATEGORIES?					
			#1	*#2*	*#3*	*#4*	*#5*	
Facility Name	**Facility Type**	**Facility ID**	**Adequate Access to Ample Seawater Source**	**Access to Adequate Energy**	**Proximate Access to Water Transmission System**	**Priority Water Resource Caution Area**	**Acceptable Means for Demineralization Concentrate Management**	**Meets Macro Criteria**
FPL Sanford Power Plant	Waste Water Treatment Plant	FL0001554	NO	YES	NO	YES	NO	NO
GE Turner Power Plant	Power Plant	629	NO	YES	NO	YES	NO	NO
Iluka Resources, Inc (FKA RGC Mineral Sands, Inc)	Waste Water Treatment Plant	FL0002119	NO	NO	YES	NO	YES	NO
Indian River	Power Plant	683	YES	YES	YES	YES	YES	YES
International Flavors And Frangrances (FKA Bush Boake Allen)	Waste Water Treatment Plant	FL0001040	NO	YES	YES	NO	YES	NO
Jacksonville Beach WWTF	Waste Water Treatment Plant	FL0020231	YES	YES	YES	NO	YES	NO
JEA – Arlington WWTF	Waste Water Treatment Plant	FL0026441	YES	YES	YES	NO	YES	NO
JEA – Buckman WWTF	Waste Water Treatment Plant	FL0026000	YES	YES	YES	NO	YES	NO
JEA – Mandarin WWTF	Waste Water Treatment Plant	FL0023493	NO	YES	YES	NO	YES	NO
JEA – Monterey WWTF	Waste Water Treatment Plant	FL0023604	YES	YES	YES	NO	YES	NO
JEA - Northeast WWTF (FKA District II WWTF)	Waste Water Treatment Plant	FL0026450	YES	YES	YES	NO	YES	NO
JEA – Royal Lakes WWTF	Waste Water Treatment Plant	FL0026751	NO	YES	YES	NO	YES	NO
JEA – Southwest WWTF	Waste Water Treatment Plant	FL0026468	NO	YES	YES	NO	YES	NO
Jefferson Smurfit	Power Plant	G0339	YES	YES	YES	NO	YES	NO
Jefferson Smurfit Corp - Jax	Waste Water Treatment Plant	FL0000892	YES	YES	YES	NO	YES	NO
Melbourne/Grant Street	Waste Water Treatment Plant	FL0041122	YES	YES	YES	YES	YES	YES
New Smyrna Beach	Waste Water Treatment Plant	FL0172090	YES	YES	YES	YES	YES	YES
Northside	Power Plant	667	YES	YES	YES	NO	YES	NO
Ormond Beach, City Of	Waste Water Treatment Plant	FL0020532	YES	YES	YES	YES	YES	YES
Palm Bay WWTP	Waste Water Treatment Plant	FLA103357	YES	YES	YES	YES	YES	YES
Port Orange, City Of	Waste Water Treatment Plant	FL0020559	YES	YES	YES	YES	YES	YES

Table 10. Ability to Meet Macro-Level Screening Criteria

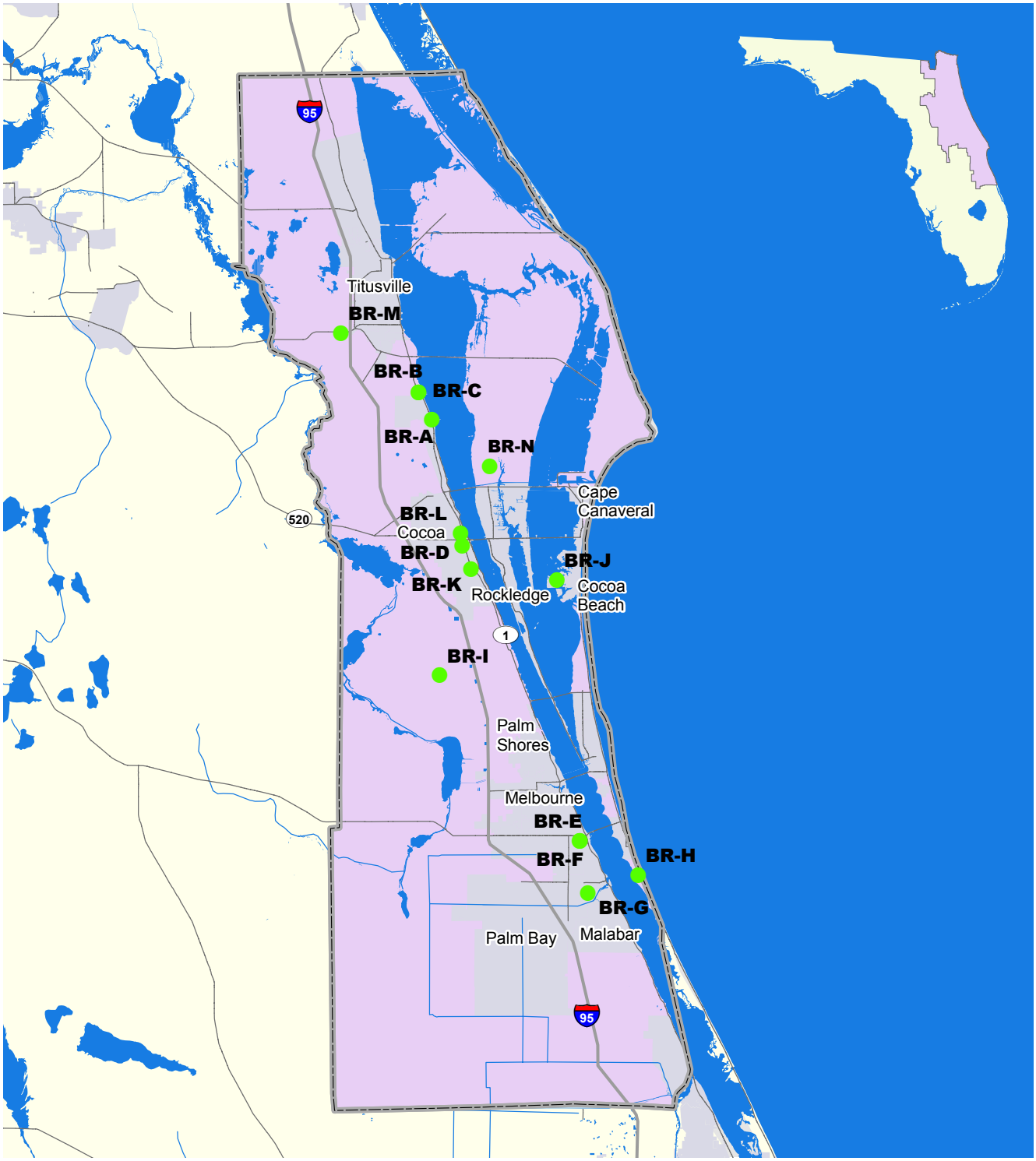
			DOES FACILITY MEET CRITERIA UNDER THE FOLLOWING CATEGORIES?					
			#1	*#2*	*#3*	*#4*	*#5*	
Facility Name	**Facility Type**	**Facility ID**	**Adequate Access to Ample Seawater Source**	**Access to Adequate Energy**	**Proximate Access to Water Transmission System**	**Priority Water Resource Caution Area**	**Acceptable Means for Demineralization Concentrate Management**	**Meets Macro Criteria**
Putnam Power Plant	Power Plant	6246	NO	YES	YES	YES	NO	NO
Rockledge, City Of	Waste Water Treatment Plant	FL0021571	YES	YES	YES	YES	YES	YES
Saint Augustine WWTF	Waste Water Treatment Plant	FL0021938	YES	YES	YES	NO	YES	NO
Sanford Power Plant	Power Plant	620	NO	YES	NO	YES	NO	NO
Seminole Generating Station	Power Plant	136	NO	YES	YES	YES	NO	NO
SJCUD - Anastasia Island WWTF	Waste Water Treatment Plant	FL0038831	YES	YES	YES	YES	YES	YES
Smith Street Generating Station	Power Plant	21a	YES	YES	YES	YES	YES	YES
St. Johns River Power Park	Power Plant	207	YES	YES	YES	NO	YES	NO
Stanton Energy Complex	Power Plant	564	NO	YES	NO	YES	NO	NO
Stone Container Corporation	Waste Water Treatment Plant	FL0000400	YES	YES	YES	NO	YES	NO
Titusville South/Blue Heron	Waste Water Treatment Plant	FL0103349	YES	YES	YES	YES	YES	YES
USN - Naval Air Station Jacksonville WWTF	Waste Water Treatment Plant	FL0000957	NO	YES	YES	NO	YES	NO
Vero Beach Municipal	Power Plant	693	YES	YES	YES	NO	YES	NO
W. E. Swoope Generating Station	Power Plant	22a	YES	YES	YES	YES	YES	YES
West Melbourne/Ray Bullard	Waste Water Treatment Plant	FLA010332	YES	YES	YES	YES	YES	YES

The following figures and tables show the location of sites that meet the macro-level criteria by county:

- Figure 8 - Brevard County
- Figure 9 - St. Johns County
- Figure 10 - Volusia County
- Table 11- Brevard County
- Table 12 – St. Johns County and
- Table 13 – Volusia County

The screened facilities typically represent those in areas of water need that are near the coast.

A nomenclature system is applied to each site. Each macro screened site is identified on the figures by a county designation and identifying subletter.



N

0 5 10 Miles

Approximate scale in miles

Legend

- Sites Passing Macro Screening
- Water Bodies
- Cities
- Brevard County

Figure 8
Potential Seawater Demineralization Locations
Brevard County, Florida

Contract No. SE459AA
Seawater Demineralization Feasibility Investigation
St. Johns River Water Management District

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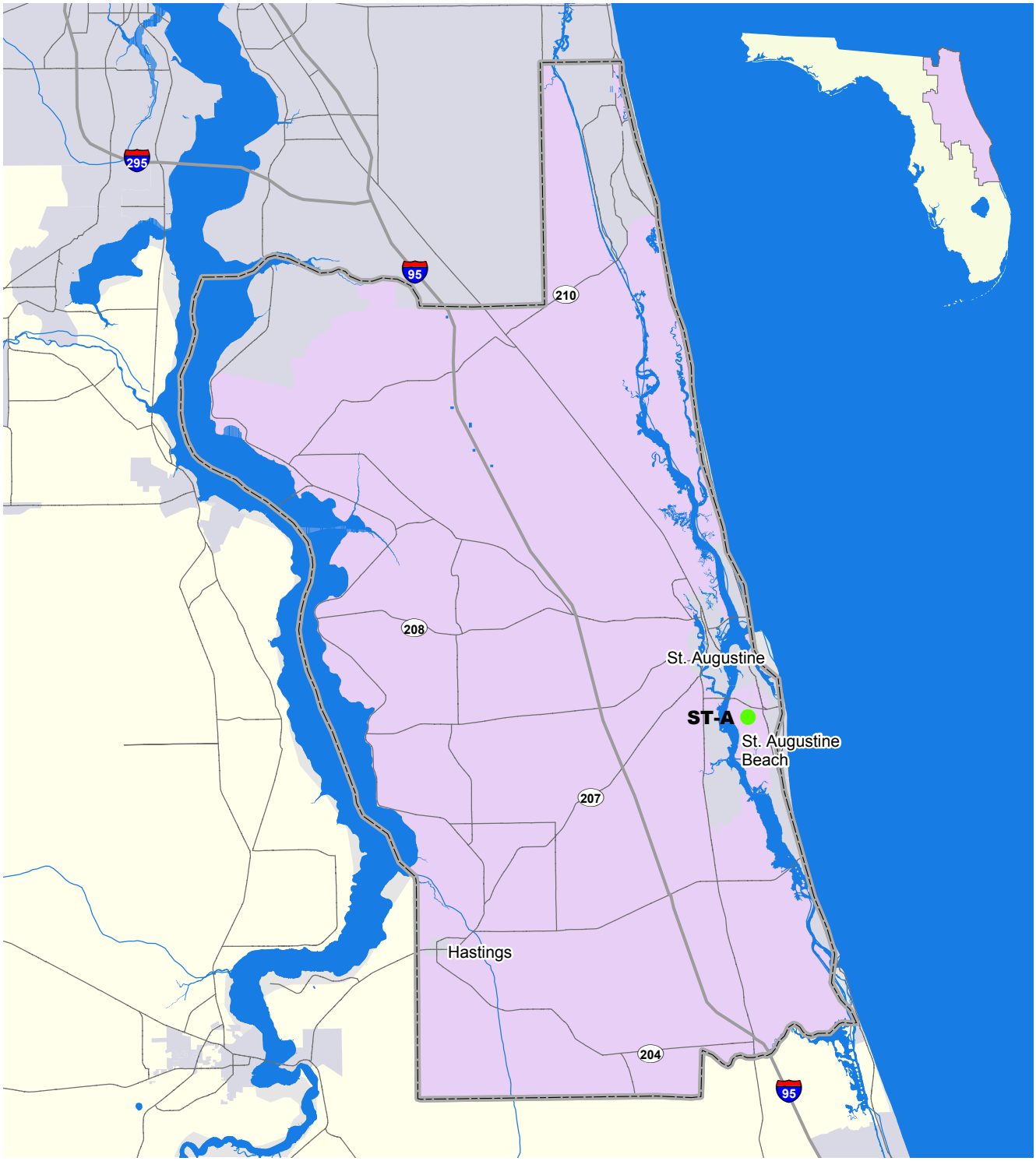
Table 11. Brevard County Macro Screened Sites

Facility Name	Facility Type	Facility ID	GIS ID	City	Site Address
Cape Canaveral	Power Plant	609	BR-A	Cocoa	6000 North US Hwy 1
Indian River	Power Plant	683a	BR-B	Titusville	7800 South US Hwy 1
Indian River	Power Plant	683b	BR-C	Titusville	7800 South US Hwy 1
Canaveral Port Authority	Undeveloped Site	1	BR-D	Cocoa	
Melbourne/Grant Street	Waste Water Treatment	FL0041122	BR-E	Melbourne	2300 S Grant St
West Melbourne/Ray Bullard	Waste Water Treatment	FLA010332	BR-F	Melbourne	1415 Henry Ave
Palm Bay WWTP	Waste Water Treatment	FLA103357	BR-G	Palm Bay	1105 Troutman Boulevard, NE
BCUD/South Beaches	Waste Water Treatment	FL0040622	BR-H	Melbourne Beach	2800 South SR A-1-A
BCUD/South Central Regional	Waste Water Treatment	FL0102679	BR-I	Rockledge	10001 Wickham Rd West PF I-95
Cocoa Beach, WRF	Waste Water Treatment	FL0021105	BR-J	Cocoa Beach	1600 Minuteman Causeway
Rockledge, City Of	Waste Water Treatment	FL0021571	BR-K	Rockledge	1700 S Garden Rd
Cocoa/Jerry Sellers	Waste Water Treatment	FL0021521	BR-L	Cocoa	375 N Cocoa Blvd
Titusville South/Blue Heron	Waste Water Treatment	FL0103349	BR-M	Titusville	4800 Deep Marsh Rd



N

0 5 10 Miles

Approximate scale in miles

Legend

- Sites Passing Macro Screening
- Water Bodies
- Cities
- St Johns County

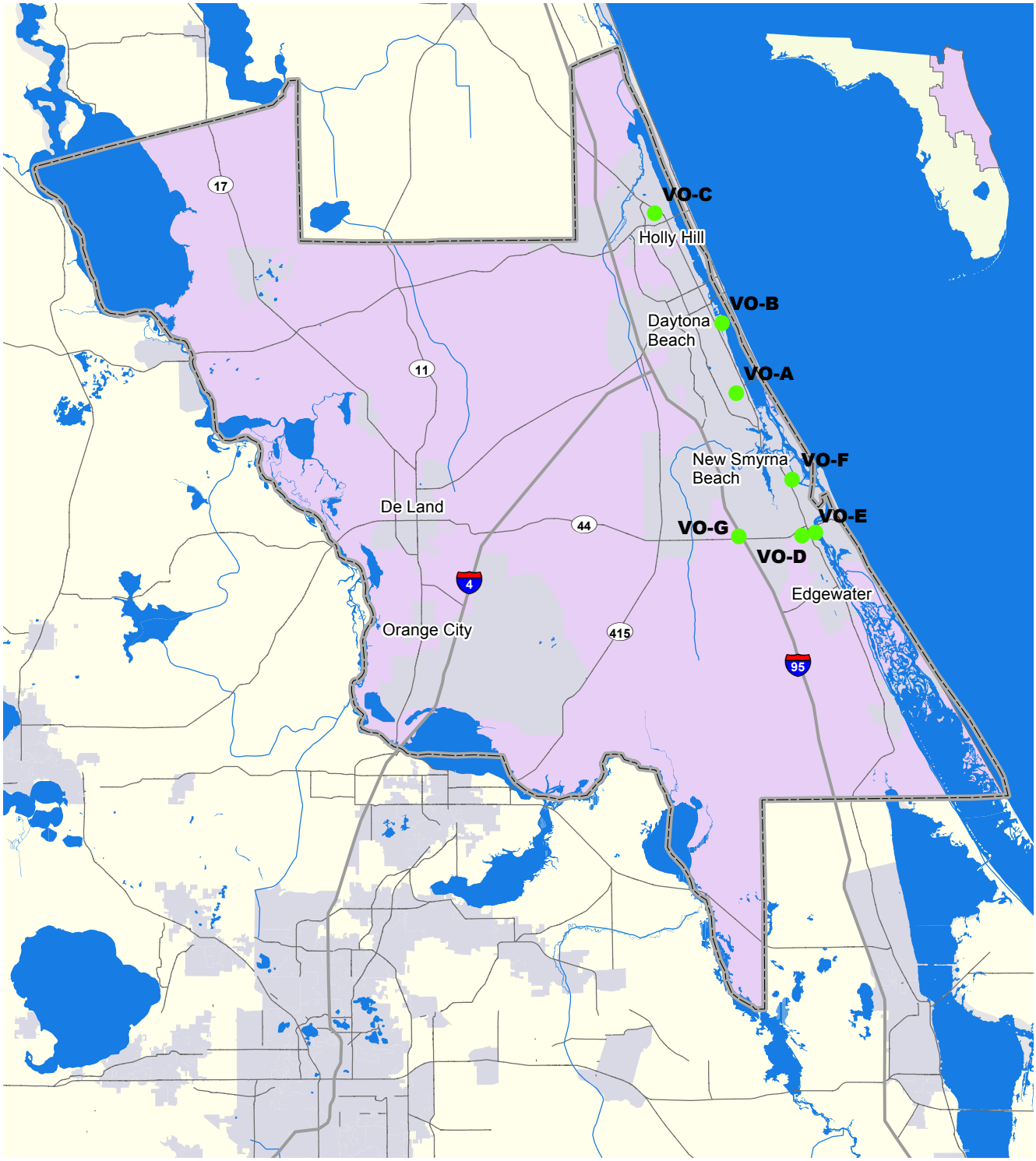
Figure 9
Potential Seawater Demineralization Locations
St Johns County, Florida

Contract No. SE459AA
Seawater Demineralization Feasibility Investigation
St. Johns River Water Management District

RW BECK

Table 12. St. Johns County Macro Screened Sites

Facility Name	Facility Type	Facility ID	GIS ID	City	Site Address
SJCUD - Anastasia Island WWTF	Waste Water Treatment	FL0038831	ST-A	St. Augustine	860 West 16th Street



N

0 5 10 Miles

Approximate scale in miles

Legend

- Sites Passing Macro Screening
- Water Bodies
- Cities
- Volusia County

Figure 10
Potential Seawater Demineralization Locations
Volusia County, Florida

Contract No. SE459AA
Seawater Demineralization Feasibility Investigation
St. Johns River Water Management District

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Table 13. Volusia County Macro Screened Sites

Facility Name	Facility Type	Facility ID	GIS ID	City	Site Address
Port Orange, City Of	Waste Water Treatment	FL0020559	VO-A	Port Orange	817 Oak Street
Daytona Beach/Bethune Point	Waste Water Treatment	FL0025984	VO-B	Daytona Beach	1 Shady Place
Ormond Beach, City Of	Waste Water Treatment	FL0020532	VO-C	Ormond Beach	550 N Orchard St
Field Street Generating Plant	Power Plant	20a	VO-D	New Smyrna Beach	1000 Field Street
Smith Street Generating Station	Power Plant	21a	VO-E	New Smyrna Beach	305 Smith Street
W. E. Swoope Generating Station	Power Plant	22a	VO-F	New Smyrna Beach	2495 North Dixie Freeway
New Smyrna Beach	Waste Water Treatment	FL0172090	VO-G	New Smyrna Beach	NW Corner Of Int of SR 44 I-95

Site Evaluation and Ranking

Purpose and Scope

The ranking of the sites represents the second step in the screening process. A ranking matrix is applied to the macro-screened sites to establish a list of five preferred sites for seawater demineralization facilities. The ranking matrix previously presented was adjusted during the ranking of the sites.

The criteria developed for the ranking matrix represents an expansion of the initial criteria developed for the macro-level screening plus additional secondary site-specific criteria and a criteria weighting system. Scoring of the various criteria, when combined with the weighting system establishes an overall ranked score for each site.

The section discusses:

- The ranking criteria
- Application of the ranking criteria and
- Results of site ranking

Ranking Criteria

Weighting and Criteria Scoring

The ranking of the initial list of sites is based on a combination of weighting and scoring of specific criterion. The higher the cumulative score, the higher the site will be ranked. The weighted criteria score for each site is tabulated by multiplying a criterion score times a weighting factor. The sum of the weighted criteria scores makes up the total score for a particular site.

Each criterion is scored from a maximum of four, based upon the site's ability to meet each criterion. A score of four indicates a more preferred site characteristic while a lower score indicates a less preferred characteristic. A description of the proposed criteria follows this section.

The criteria are also assigned a weighting factor based on its level of importance, from most important to marginal, in the consideration of the site being used for a demineralization facility. The weighting factors used are presented below:

- Most important (weighting factor of 3)
- Important (weighting factor of 2) and
- Marginal (weighting factor of 1)

A matrix has been developed that contains the basis of the scoring for each criterion, and the criterion specific weighting factors (Table 14).

The following section describes each criterion used in the site evaluation. Additionally, an explanation is given as to how each criterion will be evaluated.

Criteria Ranking

The development of the criteria represents a joint effort by the project team to "distill" what is important in each criterion. The project team's efforts include the establishment of criteria scores based upon site characteristics and their importance, and the weighting or significance of each criterion. The scoring and weighting is qualitative, based upon R. W. Beck's experience in the permitting, design, and construction of seawater demineralization facilities. The ranking matrix establishes a score or numeric value representative of the presence of preferred site features.

The primary ranking criteria are the same as were used for the macro-level screening with the addition of project site specific environmental constraints:

- Adequate access to an ample seawater source
- Access to an adequate energy source
- Proximate access to a water transmission system
- Areas of projected deficit
- Acceptable means for demineralization concentrate management and
- Environmental constraints for plant, pipeline and intake sites

A description of the scoring and weighting of each of the primary criteria, and their sub criteria follows. Table 14, the Ranking Matrix is a summary of the criteria and weighting factors to be applied to each of the screened sites.

Adequate Access to an Ample Seawater Source

One desirable characteristic of a potential site is adequate access to a sufficient supply of clean seawater. Distinct advantages of adequate access include significant reductions in capital and operation and maintenance (O&M) costs, environmental impacts, permitting requirements and project duration.

The following represent sub criteria that impact the siting of a seawater demineralization facility.

Existing Seawater Intake

The existence of a seawater intake minimizes construction and permitting. A significant amount of effort during construction of a seawater demineralization facility is often expended on permitting and construction of new intake structures. The permitting of a

new intake may significantly lengthen the project schedule and may include mitigation requirements. A high score is assigned under this criterion to sites that have existing seawater intakes. This criterion was determined to be very important for its potential impact on permitting and construction of an intake, which is a key component of the facility (weighting = 3).

Class of Source Water

Surface waters in the state are designated into classes by the FDEP. The class designation of source water is indicative of the water quality of that source water. Classes of surface water are defined by FDEP regulation and are presented in Appendix A. Uses of any source water must be consistent with FDEP regulations for management of water quality. Source waters with high number classifications tend to require additional or more advanced levels of treatment. Under the macro screening, source waters classified as Class 4 or greater are not considered a preferred site feature, thus sites with Class 4 or higher waters would not be considered in the top 20 sites that are being ranked. Waters classified as lower than Class 4 are considered treatable but with the level of treatment dependent on to specific water quality characteristics. Class 1 waters are also not considered to be preferred since the basic definition of Class 1 waters are for freshwater sources and exclude seawater. The criterion was determined to be marginal (weighting = 1) since the classification of a source water (2 or 3) does not significantly affect the siting of facilities.

Impaired Waters

This criterion applies a numerical score to the presence of impaired waters. Source water that is classified as impaired may be indicative of a lower water quality that requires additional treatment and construction cost. Waters that may be defined as "impaired" may be treatable thus this criterion was determined to be marginal (weighting = 1).

Close Proximity to Source Water

This criterion applies a numerical score to the potential length of raw water pipelines. This criterion was determined to be very important due to its potential impact on permitting and construction cost (weighting = 3).

Temperature of Source Water

Heating of source water can provide a technical advantage that reduces energy required for demineralization. The presence of heated water is considered to be advantageous. This criterion was determined to be important for its potential impact on costs associated with construction and operation of the facility (weighting = 3).

Salinity of Source Water

This criterion applies a numerical score to the salinity of source water. The lower the salinity, the easier it is to demineralize the raw water, reducing construction, operating

and permitting time and costs. This criterion was determined to be important for its potential impact on the overall facility construction, permitting and operation. (weighting = 2).

Access to an Adequate Energy Source

Seawater demineralization technologies require approximately 10 to 17 kW-hr of electric power (dependent on salinity and temperature) per 1,000 gallon of permeate water produced. A seawater demineralization facility needs access to an adequate energy source of either steam and/or electricity.

Site Location Distance from a Power Plant

This criterion applies a numerical score to the potential distance to a power source. This criterion was determined to be very important for its potential impact on permitting and construction cost (weighting = 3). This criterion is considered more important than proximity to an urban area considering the potential use of other power plant byproducts such as steam.

Site Location Distance from an Urban Area

This criterion applies a numerical score to an urban area. The proximity to an urban area is a rough indicator that there is a likelihood of power substations and access to power. Additional facility planning, not included in this scope, by host communities, is required to determine the exact locations of power sources including power substations. This criterion was determined to be important for its potential impact on permitting and construction (weighting = 2).

Proximate Access to a Water Transmission System

Site Location Distance from Water Distribution System

This criterion applies a numerical score to the potential length of a product water transmission pipeline. The target location for product water delivery is assumed to be the location of a central water distribution point or a water treatment facility. Perhaps the key determinant in establishing the cost of any necessary modifications to the receiving water utility is the ability to deliver the demineralized water to a location that can receive, store, treat and distribute the water with little additional cost. The most cost effective situation is when the demineralized product water can be delivered to a major pump station or water treatment plant. Additional facility planning by host communities, not included in this scope of work, is required to determine the optimal location of water delivery. This criterion was determined to be very important for its potential impact on permitting and construction costs associated with a product water pipeline (weighting = 3).

Length of Potential Water Body Pipeline Crossings

One significant impact on the cost, permitting and construction schedule for transporting product water is the length of pipelines crossing bodies of water. This criterion evaluates the length of the crossings needed to deliver water to a water transmission point. Excessive crossing lengths can impact a project's feasibility. This criterion was determined to be marginal for its potential impact on permitting and construction (weighting = 1).

Acceptable Means for Demineralization Concentrate Management

One of the major requirements for the development of a successful seawater demineralization project is the ability to provide for management of the byproduct of the process, demineralization concentrate, in an environmentally, economically, and technically feasible manner. These criteria review the ability to acceptably manage the concentrate. The criteria examine several of the methods identified in the report titled "Demineralization Concentrate Management Plan" (prepared by Reiss Environmental for SJRWMD, November, 2002). The scoring under these criteria favors sites that have been identified as having several flexible means for concentrate management. This makes a site more preferable because it gives the facility developer options for addressing this requirement. The following sub criteria are representative of preferred site features.

Existing Outfall Present: Blending Ratio

The concentrate discharge blending ratio is the product of the volume of a discharge through a pre-existing outfall divided by the volume of concentrate that would be discharged from a collocated seawater demineralization facility. A higher blending ratio is advantageous since it dilutes the concentrate, minimizing environmental impacts. The higher the dilution, the more favorably it will be looked upon by permitting agencies. A higher score for the criterion is reflective of a higher dilution rate. This criterion was determined to be very important for its potential impact on permitting and on the application of an existing outfall for concentrate disposal (weighting = 3).

Surface Water Classification at Discharge

The surface water classification at the point of discharge may affect the permitting of the facility. A higher surface water classification is associated with lower water quality requirements. Thus a higher score is representative of a higher surface water classification and less stringent discharge standards. Though a site with lower water classifications may be still considered appropriate for surface water discharge, the permitting and possibly construction costs may be more extensive. For this screening criterion a score of zero is applied to Class 1 and waters designated as "Outstanding Florida Waters" since these designations may make it difficult or impossible to permit a new discharge. If other means of concentrate management are not available for a particular site other than surface water discharge and the surface water is defined as a Class 1 or an "Outstanding Florida Waters", the site will be removed from further

consideration. This criterion was determined to be marginal for its potential impact on permitting of the facility (weighting = 1).

Identification As Suitable For Injection Well

One of the concentrate management strategies identified in the document titled "Demineralization Concentrate Management Plan" (prepared by Reiss Environmental for SJRWMD, November, 2002) is the use of injection wells as a means for concentrate management. A higher score is reflective of the ability to use an injection well for concentrate disposal as identified in "Demineralization Concentrate Management Plan." This criterion was determined to be very important for its potential impact on disposal of concentrate (weighting = 3).

Potential Ocean Outfall Pipeline Length

The length of a potential ocean outfall contributes significantly to permitting and construction costs. Using criteria established in the "Demineralization Concentrate Management Plan" (prepared by Reiss Environmental for SJRWMD) an estimate of the length will be used to apply a numerical value. A higher ranking is indicative of a shorter pipeline length. This criterion was determined to be very important for its potential impact on permitting and construction of the facility (weighting = 3).

Environmental Constraints for Plant, Pipeline, Discharge and Intake Sites

The following specific site environmental constraints represent additional sub criteria that would impact the siting of a demineralization facility.

Presence of Protected Habitat (sea grass, other wetlands, uplands) within Plant, Pipeline or Intake Footprint

The presence of these habitats would inhibit or limit the use of the site or areas intended for intake or discharge. Additional acreage for mitigation or alternative acreage that may already be at a premium may be required. It may be feasible to mitigate these impacts through the permitting process, however, the mitigation methods may impact construction schedules and impact project costs. A higher score indicates absence of these habitats and no need for mitigation. This criterion was determined to be important for its potential impact on permitting and construction of the facility (weighting = 2).

Proximity to Conservation Land, Aquatic Preserves, National/State Parks

The close proximity of a facility to Conservation Land, Aquatic Preserves, and National/State Parks may affect these land uses by subjecting them to undesirable secondary impacts including noise and loss of a habitat buffer. It may be feasible to mitigate these impacts through the permitting process, however, the mitigation methods tend to impact construction schedules and increase project costs. A higher score is

reflective of the absence of these features. This criterion was determined to be important for its potential impact on permitting and construction of the facility (weighting = 2).

Existence of Protected or Economically Important Species (Manatee, Sea Turtle, Bald Eagle, Scrub Jay, Gopher Tortoise, Fish/ Shellfish, etc.) within Site, Pipeline, and Intake Footprint

The presence of these species would inhibit or limit the use of the site. It may be feasible to mitigate these impacts through the permitting process; however, the mitigation methods may impact construction schedules and impact project costs. A higher score is reflective of the absence of these species. This criterion was determined to be important for its potential impact on permitting and construction of the facility (weighting = 2).

Table 14. Ranking Matrix

Weighting	Criteria Score	Criteria Ranking	Justification	Weighting Times Score (Maximum Values)
		ADEQUATE ACCESS TO AN AMPLE SEAWATER SOURCE		
3		Existing Seawater Intake: Yes =4; No=0	Required To Produce Water	12
1		Class of Source Water: Class 1 =4; Class 2 =3; Class 3= 2; Class 4 = 0	Class 1 Is Potable Water; RO Is Feasible For All Types; This May Affect Process Considerations	4
1		Impaired Waters: Yes = 2; No = 4	Weighting Factor Low Since Impaired Status May Be For Non Public Health Reasons	4
3		Close Proximity (Proposed Length) To Source Water: 0- <2 Miles = 4; 2-<5 Miles =3; 5-<10 =2; 10-<15 = 1; 15 Or Greater = 0	Use 15 Miles As Cutoff	12
3		Temperature Of Source Water: Heated = 4; Nonheated =2	Above Natural Conditions; Temp. In Water Bodies Are Generally Consistent	12
2		Salinity Of Source Water (In 1,000's); 20-<25 = 4; 25-<30 = 3; 30-<35 = 2; 35- <38 =1; 38-45 = 0	Lower Salinity Less Expensive To Treat	8
		ACCESS TO AN ADEQUATE ENERGY SOURCE		
3		Site Location Distance From A Power Plant: On Site =4; 1 - <2 Miles = 3; 2 - <4 = 2; > Or =4 = 1	Distance Of 2 Miles Increases Costs Of Power Transmission	12
2		Site Location Distance From An Urban Area (Substation Indicator) On Site =4; 1 - <2 Miles = 3; 2 - <4 = 2; > Or = 4 = 1	Distance Increases Costs Of Power Transmission	8

Table 14. Ranking Matrix

Weighting	Criteria Score	Criteria Ranking	Justification	Weighting Times Score (Maximum Values)
		PROXIMATE ACCESS TO A WATER TRANSMISSION SYSTEM		
3		Site Location From Water Distribution System: < 5 Miles = 4; 5 - <10 = 3; 10 - <15 = 2; 15 - <20 = 1	Upper Limit Of 20 Miles Reasonable	12
1		Length Of Potential Water Body Pipeline Crossings >3 Miles = 0; 1-3 = 1; 0.5 To <1 = 2; 0.1 - <0.5 = 3; <0.1 = 4	Crossing Of St. Johns River Is Greater Than 3 Miles And Is Not Acceptable. Shorter Lengths Desirable	4
		ACCEPTABLE MEANS FOR DEMINERALIZATION CONCENTRATE MANAGEMENT		
3		Existing Outfall Present: Blending Ratio < 10:1= 0; 10:1 = 1; 10 - <15:1 = 2; 15 - 20: 1 = 3; > 20:1 = 4	Dilution Factor Required For Permitting By FDEP	12
1		SURFACE WATER CLASSIFICATION AT DISCHARGE (0 - OFW, O- Class I 2- Class II, 3 - Class III, 4 - Class IV Or Greater)	OFW Most Difficult To Permit Due To FDEP Antidegradation Policy	4
3		Identification As Suitable For Injection Well: Yes=4, No = 1	G-4 Class Groundwater For IW	12
3		Potential Ocean Outfall Pipeline Length (Distance To 30 Feet Underwater Depth Contour) >10 Miles= 0; 10 - >5 Miles = 1; 5 - >3 = 2; 3 - >0 Miles= 3; 0 Miles= 4	New Ocean Disposal, 5 Miles Or Less May Work	12

Table 14. Ranking Matrix

Weighting	Criteria Score	Criteria Ranking	Justification	Weighting Times Score (Maximum Values)
		ENVIRONMENTAL CONSTRAINTS FOR PLANT, PIPELINE, DISCHARGE AND INTAKE SITES		
2		Presence Of Protected Habitat (Seagrass, Other Wetlands, Uplands) Within Plant, Pipeline, Or Intake Footprint (1 - Yes, 4 - No)	Greater Acreages Of Natural Habitats Increase Permitting Complexity And Cost For Mitigation	8
2		Proximity To Conservation Lands, Aquatic Preserves, National/State Parks (0 - Within Conservation Land, 1 - Within 100 Ft., 2 - Within 500 Ft., 3 - 500-1000 Ft.; >1000 = 4)	Close Proximity To Conservation Lands May Be Undesirable Due To Secondary Impacts (Noise, Loss Of Habitat Buffer)	8
2		Existence Of Protected Or Economically Important Species (Manatee, Sea Turtle, Bald Eagle, Scrub Jay, Gopher Tortoise, Fish/Shellfish, Etc.) Within Site, Pipeline, And Intake Footprint (1 - Present, 4 - Absent)	Presence Of Protected Species Increases Permitting Complexity, May Restrict Construction Schedules During Nesting Season, Increase Costs Due To Mitigation Requirements	8

Application of the Ranking Matrix/ Results of the Ranking Matrix

The candidate sites that passed the macro screening are evaluated under the criteria established for the ranking matrix. The top five ranked sites are considered the most favorable sites.

Application of the raking matrix consists of the use of GIS applications to determine particular information regarding particular sites. The information gleaned from the GIS can be equated to a numerical score. In some cases, the GIS information is numerical while other information represents the validation of a particular site type feature. The numerical score is multiplied by a weighting that is assigned to each of the criterion. The summation of the weighted scores represents the overall score. The higher the score, the more preferable a site is. Assumptions made regarding specific criterions described in the following sections.

Adequate Access to an Ample Seawater Source

Table 15 identifies the listing of the prospective sites and the tabulated weighted score for "Adequate Access to an Ample Seawater Source". All source waters within the study area are either designated as Class 2 or Class 3 waters. Facilities that employ once through cooling were considered to have heated source water. All other sites and facilities were considered to be nonheated. Facilities also with once through cooling were considered to have an existing seawater intake. To analyze the salinity criterion, information was used from the various monitoring stations and where monitoring information was not available, it was assumed that ocean salinity is 32,000 ppm. Salinity used for this criterion represents the average salinity for a subject area. For sites near multiple monitoring points, salinity data represents the closest point.

Table 15. Ranking Matrix - Adequate Access to an Ample Seawater Source

					Adequate Access To An Ample Seawater Source						
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Existing Seawater Intake: Yes =4; No=0	Class of Source Water: Class 1 =4; Class 2 =3; Class 3= 2; Class 4 = 0	Impaired Waters: Yes = 2; No = 4	Close Proximity (Proposed Length) To Source Water: 0- <1 Miles = 4; 1-<2 Miles =3; 2-<3 =2; 3-<5 = 1; 5 Or Greater = 0	Temperature Of Source Water: Heated = 4; Nonheated =2	Salinity Of Source Water (In 1,000's); 20-<25 = 4; 25-<30 = 3; 30-<35 = 2; 35- <38 =1; 38-45 = 0	Sub Score
				WEIGHTING	3	1	1	3	3	2	
BCUD/Sykes Creek Regional WWTF	Waste Water Treatment	FLA102695	BR-N	**PARAMETER ANALYSIS**	NO	2	YES	1.11	NONHEATED	23.00	
				SCORE	0	3	2	3	2	4	
				WEIGHTED SCORE	0	3	2	9	6	8	28
New Smyrna Beach	Waste Water Treatment	FL0172090	VO-G	**PARAMETER ANALYSIS**	NO	3	YES	4.47	NONHEATED	33.00	
				SCORE	0	2	2	1	2	2	
				WEIGHTED SCORE	0	2	2	3	6	4	17
SJCUD - Anastasia Island WWTF	Waste Water Treatment	FL0038831	ST-A	**PARAMETER ANALYSIS**	NO	2	NO	1.40	NONHEATED	32.00	
				SCORE	0	3	4	3	2	2	
				WEIGHTED SCORE	0	3	4	9	6	4	26
Cape Canaveral	Power Plant	609	BR-A	**PARAMETER ANALYSIS**	YES	2	YES	0.04	HEATED	25.00	
				SCORE	4	3	2	4	4	3	
				WEIGHTED SCORE	12	3	2	12	12	6	47
Indian River	Power Plant	683	BR-B	**PARAMETER ANALYSIS**	YES	2	YES	0.14	HEATED	25.00	
				SCORE	4	3	2	4	4	3	
				WEIGHTED SCORE	12	3	2	12	12	6	47
Field Street Generating Plant	Power Plant	20a	VO-D	**PARAMETER ANALYSIS**	NO	2	YES	3.79	NONHEATED	33.00	
				SCORE	0	2	2	1	2	2	
				WEIGHTED SCORE	0	2	2	3	6	4	17

Table 15. Ranking Matrix - Adequate Access to an Ample Seawater Source

					Adequate Access To An Ample Seawater Source						
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Existing Seawater Intake: Yes =4; No=0	Class of Source Water: Class 1 =4; Class 2 =3; Class 3= 2; Class 4 = 0	Impaired Waters: Yes = 2; No = 4	Close Proximity (Proposed Length) To Source Water: 0- <1 Miles = 4; 1-<2 Miles =3; 2-<3 =2; 3-<5 = 1; 5 Or Greater = 0	Temperature Of Source Water: Heated = 4; Nonheated =2	Salinity Of Source Water (In 1,000's); 20-<25 = 4; 25-<30 = 3; 30-<35 = 2; 35- <38 =1; 38-45 = 0	Sub Score
Smith Street Generating Station	Power Plant	21a	VO-E	**PARAMETER ANALYSIS**	NO	2	YES	3.50	NONHEATED	33.00	
				SCORE	0	3	2	1	2	2	
				WEIGHTED SCORE	0	3	2	3	6	4	18
W. E. Swoope Generating Station	Power Plant	22a	VO-F	**PARAMETER ANALYSIS**	NO	3	YES	1.47	NONHEATED	33.00	
				SCORE	0	2	2	3	2	2	
				WEIGHTED SCORE	0	2	2	9	6	4	23
Canaveral Port Authority	Undeveloped Site	1	BR-D	**PARAMETER ANALYSIS**	NO	2	YES	3.60	NONHEATED	25.00	
				SCORE	0	3	2	1	2	3	
				WEIGHTED SCORE	0	3	2	3	6	6	20
Melbourne/Grant Street	Waste Water Treatment Plant	FL0041122	BR-E	**PARAMETER ANALYSIS**	NO	2	YES	4.66	NONHEATED	21.00	
				SCORE	0	3	2	1	2	4	
				WEIGHTED SCORE	0	3	2	3	6	8	22
West Melbourne/Ray Bullard	Waste Water Treatment Plant	FLA010332	BR-F	**PARAMETER ANALYSIS**	NO	2	YES	4.69	NONHEATED	21.00	
				SCORE	0	3	2	1	2	4	
				WEIGHTED SCORE	0	3	2	3	6	8	22
Palm Bay WWTP	Waste Water Treatment Plant	FLA103357	BR-G	**PARAMETER ANALYSIS**	NO	2	YES	2.13	NONHEATED	22.00	
				SCORE	0	3	2	2	2	4	
				WEIGHTED SCORE	0	3	2	6	6	8	25

Table 15. Ranking Matrix - Adequate Access to an Ample Seawater Source

					Adequate Access To An Ample Seawater Source						
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Existing Seawater Intake: Yes =4; No=0	Class of Source Water: Class 1 =4; Class 2 =3; Class 3= 2; Class 4 = 0	Impaired Waters: Yes = 2; No = 4	Close Proximity (Proposed Length) To Source Water: 0- <1 Miles = 4; 1-<2 Miles =3; 2-<3 =2; 3-<5 = 1; 5 Or Greater = 0	Temperature Of Source Water: Heated = 4; Nonheated =2	Salinity Of Source Water (In 1,000's); 20-<25 = 4; 25-<30 = 3; 30-<35 = 2; 35- <38 =1; 38-45 = 0	Sub Score
BCUD/South Beaches	Waste Water Treatment Plant	FL0040622	BR-H	**PARAMETER ANALYSIS**	NO	2	YES	1.55	NONHEATED	22.00	
				SCORE	0	3	2	3	2	4	
				WEIGHTED SCORE	0	3	2	9	6	8	28
BCUD/South Central Regional	Waste Water Treatment Plant	FL0102679	BR-I	**PARAMETER ANALYSIS**	NO	2	YES	4.93	NONHEATED	24.00	
				SCORE	0	3	2	1	2	4	
				WEIGHTED SCORE	0	3	2	3	6	8	22
Cocoa Beach, WRF	Waste Water Treatment Plant	FL0021105	BR-J	**PARAMETER ANALYSIS**	NO	2	YES	3.34	NONHEATED	24.00	
				SCORE	0	3	2	1	2	4	
				WEIGHTED SCORE	0	3	2	3	6	8	22
Rockledge, City Of	Waste Water Treatment Plant	FL0021571	BR-K	**PARAMETER ANALYSIS**	NO	2	YES	2.81	NONHEATED	23.00	
				SCORE	0	3	2	2	2	4	
				WEIGHTED SCORE	0	3	2	6	6	8	25
Cocoa/Jerry Sellers	Waste Water Treatment Plant	FL0021521	BR-L	**PARAMETER ANALYSIS**	NO	2	YES	2.77	NONHEATED	25.00	
				SCORE	0	3	2	2	2	3	
				WEIGHTED SCORE	0	3	2	6	6	6	23
Titusville South/Blue Heron	Waste Water Treatment Plant	FL0103349	BR-M	**PARAMETER ANALYSIS**	NO	3	YES	3.95	NONHEATED	27.00	
				SCORE	0	2	2	1	2	3	
				WEIGHTED SCORE	0	2	2	3	6	6	19

Table 15. Ranking Matrix - Adequate Access to an Ample Seawater Source

					Adequate Access To An Ample Seawater Source						
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Existing Seawater Intake: Yes =4; No=0	Class of Source Water: Class 1 =4; Class 2 =3; Class 3= 2; Class 4 = 0	Impaired Waters: Yes = 2; No = 4	Close Proximity (Proposed Length) To Source Water: 0- <1 Miles = 4; 1-<2 Miles =3; 2-<3 =2; 3-<5 = 1; 5 Or Greater = 0	Temperature Of Source Water: Heated = 4; Nonheated =2	Salinity Of Source Water (In 1,000's); 20-<25 = 4; 25-<30 = 3; 30-<35 = 2; 35- <38 =1; 38-45 = 0	Sub Score
Port Orange, City Of	Waste Water Treatment Plant	FL0020559	VO-A	**PARAMETER ANALYSIS**	NO	3	YES	1.91	NONHEATED	32.00	
				SCORE	0	2	2	3	2	2	
				WEIGHTED SCORE	0	2	2	9	6	4	23
Daytona Beach/Bethune Point	Waste Water Treatment Plant	FL0025984	VO-B	**PARAMETER ANALYSIS**	NO	3	YES	0.92	NONHEATED	32.00	
				SCORE	0	2	2	4	2	2	
				WEIGHTED SCORE	0	2	2	12	6	4	26
Ormond Beach, City Of	Waste Water Treatment Plant	FL0020532	VO-C	**PARAMETER ANALYSIS**	NO	3	YES	2.00	NONHEATED	32.00	
				SCORE	0	2	2	2	2	2	
				WEIGHTED SCORE	0	2	2	6	6	4	20

Under this analysis, the prospective sites that had the highest scores were those that had existing access to a seawater source. A major benefit was also to have a heated source of seawater. These sites include the once through cooled power plants, Cape Canaveral and Indian River. These facilities are located immediately adjacent to a seawater source and have existing intakes used for cooling water purposes. Sites that score low under these criteria include those that are not located adjacent to source waters and do not have the site features of heated water or existing intakes. Two sites that scored the lowest under these criteria include the Field Street and Smith Street Generating Station. These facilities are not located immediately adjacent to the coast and are not once through cooling power plants.

Access to an Adequate Energy Source

Table 16 identifies the listing of the prospective sites and the tabulated weighted score for the criterion "Access to an Adequate Energy Source." The distance scored represents the distance of the site to the particular feature (urban area or power plant). For "Site Location from a Power Plant," the closest power plant to a prospective site is considered. For "Site Location from an Urban Area," the closest urban area to a prospective site is considered. Prospective sites that are near an urban area and near a power plant receive weighted scores resulting from the combined benefit of both features.

Table 16. Ranking Matrix - Access to an Adequate Energy Source

					Access To An Adequate Energy Source		
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		**Site Location Distance From A Power Plant: On Site =4; 1 - <2 Miles = 3; 2 - <4 = 2; > Or =4 = 1**	**Site Location Distance From An Urban Area (Substation Indicator) On Site =4; 1 - <2 Miles = 3; 2 - <4 = 2; > Or = 4 = 1**	**Sub Score**
				WEIGHTING	3	2	
BCUD/Sykes Creek Regional WWTF	Waste Water Treatment	FLA102695	BR-N	**PARAMETER ANALYSIS**	4.78	0.22	
				SCORE	0	3	
				WEIGHTED SCORE	0	6	6
New Smyrna Beach	Waste Water Treatment	FL0172090	VO-G	**PARAMETER ANALYSIS**	3.69	0.99	
				SCORE	2	3	
				WEIGHTED SCORE	6	6	12
SJCUD - Anastasia Island WWTF	Waste Water Treatment	FL0038831	ST-A	**PARAMETER ANALYSIS**	22.15	0.13	
				SCORE	0	3	
				WEIGHTED SCORE	0	6	6
Cape Canaveral	Power Plant	609	BR-A	**PARAMETER ANALYSIS**	0.00	0.00	
				SCORE	4	4	
				WEIGHTED SCORE	12	8	20
Indian River	Power Plant	683	BR-B	**PARAMETER ANALYSIS**	0.00	0.01	
				SCORE	4	3	
				WEIGHTED SCORE	12	6	18
Field Street Generating Plant	Power Plant	20a	VO-D	**PARAMETER ANALYSIS**	0.00	0.00	
				SCORE	4	4	
				WEIGHTED SCORE	12	8	20
Smith Street Generating Station	Power Plant	21a	VO-E	**PARAMETER ANALYSIS**	0.00	0.00	
				SCORE	4	4	
				WEIGHTED SCORE	12	8	20

Table 16. Ranking Matrix - Access to an Adequate Energy Source

					Access To An Adequate Energy Source		
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		**Site Location Distance From A Power Plant: On Site =4; 1 - <2 Miles = 3; 2 - <4 = 2; > Or =4 = 1**	**Site Location Distance From An Urban Area (Substation Indicator) On Site =4; 1 - <2 Miles = 3; 2 - <4 = 2; > Or = 4 = 1**	**Sub Score**
W. E. Swoope Generating Station	Power Plant	22a	VO-F	**PARAMETER ANALYSIS**	0.00	0.00	
				SCORE	4	4	
				WEIGHTED SCORE	12	8	20
Canaveral Port Authority	Undeveloped Site	1	BR-D	**PARAMETER ANALYSIS**	8.38	0.00	
				SCORE	0	4	
				WEIGHTED SCORE	0	8	8
Melbourne/Grant Street	Waste Water Treatment Plant	FL0041122	BR-E	**PARAMETER ANALYSIS**	28.80	0.00	
				SCORE	0	4	
				WEIGHTED SCORE	0	8	8
West Melbourne/Ray Bullard	Waste Water Treatment Plant	FLA010332	BR-F	**PARAMETER ANALYSIS**	28.78	0.00	
				SCORE	0	4	
				WEIGHTED SCORE	0	8	8
Palm Bay WWTP	Waste Water Treatment Plant	FLA103357	BR-G	**PARAMETER ANALYSIS**	30.23	0.00	
				SCORE	0	4	
				WEIGHTED SCORE	0	8	8
BCUD/South Beaches	Waste Water Treatment Plant	FL0040622	BR-H	**PARAMETER ANALYSIS**	29.98	0.00	
				SCORE	0	4	
				WEIGHTED SCORE	0	8	8
BCUD/South Central Regional	Waste Water Treatment Plant	FL0102679	BR-I	**PARAMETER ANALYSIS**	16.47	2.31	
				SCORE	0	2	
				WEIGHTED SCORE	0	4	4
Cocoa Beach, WRF	Waste Water Treatment Plant	FL0021105	BR-J	**PARAMETER ANALYSIS**	13.10	0.00	
				SCORE	0	4	
				WEIGHTED SCORE	0	8	8

Table 16. Ranking Matrix - Access to an Adequate Energy Source

					Access To An Adequate Energy Source		
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		**Site Location Distance From A Power Plant: On Site =4; 1 - <2 Miles = 3; 2 - <4 = 2; > Or =4 = 1**	**Site Location Distance From An Urban Area (Substation Indicator) On Site =4; 1 - <2 Miles = 3; 2 - <4 = 2; > Or = 4 = 1**	**Sub Score**
Rockledge, City Of	Waste Water Treatment Plant	FL0021571	BR-K	**PARAMETER ANALYSIS**	9.97	0.00	
				SCORE	0	4	
				WEIGHTED SCORE	0	8	8
Cocoa/Jerry Sellers	Waste Water Treatment Plant	FL0021521	BR-L	**PARAMETER ANALYSIS**	7.54	0.00	
				SCORE	0	4	
				WEIGHTED SCORE	0	8	8
Titusville South/Blue Heron	Waste Water Treatment Plant	FL0103349	BR-M	**PARAMETER ANALYSIS**	6.30	0.80	
				SCORE	0	3	
				WEIGHTED SCORE	0	6	6
Port Orange, City Of	Waste Water Treatment Plant	FL0020559	VO-A	**PARAMETER ANALYSIS**	6.02	0.00	
				SCORE	0	4	
				WEIGHTED SCORE	0	8	8
Daytona Beach/Bethune Point	Waste Water Treatment Plant	FL0025984	VO-B	**PARAMETER ANALYSIS**	10.05	0.00	
				SCORE	0	4	
				WEIGHTED SCORE	0	8	8
Ormond Beach, City Of	Waste Water Treatment Plant	FL0020532	VO-C	**PARAMETER ANALYSIS**	17.51	0.00	
				SCORE	0	4	
				WEIGHTED SCORE	0	8	8

Under this analysis, the prospective sites that had the highest scores were those that had onsite power generation and were immediately located in an urban area. Sites that scored the highest include power plants located in urban areas. These sites potentially offer the most choices for power supply to a perspective facility developer. Sites that had the lowest scores were those that did not have power generation and were located in more remote locations. However the most influencing factor in this analysis is onsite power generation. Northeast coastal Florida is highly developed and the majority is classified as "urban" areas thus the score for being in an urban area is almost uniformly applied to all prospective sites and the main differential is onsite power generation.

Proximate Access to a Water Transmission System

Table 17 identifies the listing of the prospective sites and the tabulated weighted score for "Proximate Access to a Water Transmission System." For "Site Location from a Water Distribution System," the closest water distribution system to a prospective site is considered. For "Length of Potential Water Body Pipeline Crossings," a cumulative distance to the largest potential user water transmission systems served was used for these criteria.

Table 17. Ranking Matrix. Proximate Access to a Water Transmission System

					Proximate Access To A Water Transmission System		
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Site Location from Water Distribution System: < 5 Miles = 4; 5 - <10 = 3; 10 - <15 = 2; 15 - <20 = 1	Length Of Potential Water Body Pipeline Crossings >3 Miles = 0; 1-3 = 1; 0.5 To <1 = 2; 0.1 - <0.5 = 3; <0.1 = 4	Sub Score
				WEIGHTING	3	1	
BCUD/Sykes Creek Regional WWTF	Waste Water Treatment	FLA102695	BR-N	**PARAMETER ANALYSIS**	10.13	3.40	
				SCORE	2	0	
				WEIGHTED SCORE	6	0	6
New Smyrna Beach	Waste Water Treatment	FL0172090	VO-G	**PARAMETER ANALYSIS**	13.68	0.00	
				SCORE	2	4	
				WEIGHTED SCORE	6	4	10
SJCUD - Anastasia Island WWTF	Waste Water Treatment	FL0038831	ST-A	**PARAMETER ANALYSIS**	7.04	0.40	
				SCORE	3	3	
				WEIGHTED SCORE	9	3	12
Cape Canaveral	Power Plant	609	BR-A	**PARAMETER ANALYSIS**	11.06	0.00	
				SCORE	2	4	
				WEIGHTED SCORE	6	4	10
Indian River	Power Plant	683	BR-B	**PARAMETER ANALYSIS**	9.10	0.00	
				SCORE	3	4	
				WEIGHTED SCORE	9	4	13
Field Street Generating Plant	Power Plant	20a	VO-D	**PARAMETER ANALYSIS**	2.36	0.00	
				SCORE	4	4	
				WEIGHTED SCORE	12	4	16
Smith Street Generating Station	Power Plant	21a	VO-E	**PARAMETER ANALYSIS**	3.13	0.23	
				SCORE	4	3	
				WEIGHTED SCORE	12	3	15

Table 17. Ranking Matrix. Proximate Access to a Water Transmission System

					Proximate Access To A Water Transmission System		
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Site Location from Water Distribution System: < 5 Miles = 4; 5 - <10 = 3; 10 - <15 = 2; 15 - <20 = 1	Length Of Potential Water Body Pipeline Crossings >3 Miles = 0; 1-3 = 1; 0.5 To <1 = 2; 0.1 - <0.5 = 3; <0.1 = 4	Sub Score
W. E. Swoope Generating Station	Power Plant	22a	VO-F	**PARAMETER ANALYSIS**	4.74	0.82	
				SCORE	4	2	
				WEIGHTED SCORE	12	2	14
Canaveral Port Authority	Undeveloped Site	1	BR-D	**PARAMETER ANALYSIS**	13.95	0.06	
				SCORE	2	4	
				WEIGHTED SCORE	6	4	10
Melbourne/Grant Street	Waste Water Treatment Plant	FL0041122	BR-E	**PARAMETER ANALYSIS**	3.33	0.00	
				SCORE	4	4	
				WEIGHTED SCORE	12	4	16
West Melbourne/Ray Bullard	Waste Water Treatment Plant	FLA010332	BR-F	**PARAMETER ANALYSIS**	3.35	0.00	
				SCORE	4	4	
				WEIGHTED SCORE	12	4	16
Palm Bay WWTP	Waste Water Treatment Plant	FLA103357	BR-G	**PARAMETER ANALYSIS**	0.16	0.00	
				SCORE	4	4	
				WEIGHTED SCORE	12	4	16
BCUD/South Beaches	Waste Water Treatment Plant	FL0040622	BR-H	**PARAMETER ANALYSIS**	3.28	1.88	
				SCORE	4	1	
				WEIGHTED SCORE	12	1	13
BCUD/South Central Regional	Waste Water Treatment Plant	FL0102679	BR-I	**PARAMETER ANALYSIS**	5.87	0.20	
				SCORE	3	3	
				WEIGHTED SCORE	9	3	12

Table 17. Ranking Matrix. Proximate Access to a Water Transmission System

					Proximate Access To A Water Transmission System		
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Site Location from Water Distribution System: < 5 Miles = 4; 5 - <10 = 3; 10 - <15 = 2; 15 - <20 = 1	Length Of Potential Water Body Pipeline Crossings >3 Miles = 0; 1-3 = 1; 0.5 To <1 = 2; 0.1 - <0.5 = 3; <0.1 = 4	Sub Score
Cocoa Beach, WRF	Waste Water Treatment Plant	FL0021105	BR-J	**PARAMETER ANALYSIS**	13.17	4.91	
				SCORE	2	0	
				WEIGHTED SCORE	6	0	6
Rockledge, City Of	Waste Water Treatment Plant	FL0021571	BR-K	**PARAMETER ANALYSIS**	12.46	0.06	
				SCORE	2	4	
				WEIGHTED SCORE	6	4	10
Cocoa/Jerry Sellers	Waste Water Treatment Plant	FL0021521	BR-L	**PARAMETER ANALYSIS**	14.74	0.06	
				SCORE	2	4	
				WEIGHTED SCORE	6	4	10
Titusville South/Blue Heron	Waste Water Treatment Plant	FL0103349	BR-M	**PARAMETER ANALYSIS**	4.75	0.00	
				SCORE	4	4	
				WEIGHTED SCORE	12	4	16
Port Orange, City Of	Waste Water Treatment Plant	FL0020559	VO-A	**PARAMETER ANALYSIS**	1.98	0.00	
				SCORE	4	4	
				WEIGHTED SCORE	12	4	16
Daytona Beach/Bethune Point	Waste Water Treatment Plant	FL0025984	VO-B	**PARAMETER ANALYSIS**	4.28	0.00	
				SCORE	4	4	
				WEIGHTED SCORE	12	4	16

Table 17. Ranking Matrix. Proximate Access to a Water Transmission System

					Proximate Access To A Water Transmission System		
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Site Location from Water Distribution System: < 5 Miles = 4; 5 - <10 = 3; 10 - <15 = 2; 15 - <20 = 1	Length Of Potential Water Body Pipeline Crossings >3 Miles = 0; 1-3 = 1; 0.5 To <1 = 2; 0.1 - <0.5 = 3; <0.1 = 4	Sub Score
Ormond Beach, City Of	Waste Water Treatment Plant	FL0020532	VO-C	**PARAMETER ANALYSIS**	0.98	0.00	
				SCORE	4	4	
				WEIGHTED SCORE	12	4	16

Under this analysis, prospective sites that had potential recipients of water that were the most distance away and required lengthy water body pipeline crossings received the least scores. Potential recipients of the water reviewed under these criteria only consider the recipient with the largest water needs. Generally sites located in more central areas of communities would require less transmission pipeline length. It was not perceived as a disadvantage if a potential site had potential for multiple users. Only one potential pipeline routing to the largest potential user was considered for this criteria rather than all potential users. Generally sites the most distant from a potential user of the water also had longer water body pipeline crossings.

Acceptable Means for Demineralization Concentrate Management

Table 18 is a listing of the prospective sites and the tabulated weighted score for "Acceptable Means for Demineralization Concentrate Management." The blending ratio was calculated by dividing the rate of withdrawal for power plants or total permitted discharge for waste water plants divided by the cumulative water deficit (rounded up to the nearest 5 mgd). The cumulative water deficit represents sum of the deficits of potential water uses that may be served by a facility.

Information used to represent suitability for an injection well for concentrate management was derived from the Reiss Report (dated November 2002 and revised July 2003) and depicts the highest suitable injection zone areas for sites meriting further consideration for demineralized concentrate injection into the Lower Floridan aquifer. These areas lie mainly within Indian River and Brevard counties.

Table 18. Ranking Matrix. Adequate Acceptable Means for Demineralization Concentrate Management

					Acceptable Means For Demineralization Concentrate Management				
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Existing Outfall Present: Blending Ratio < 10:1= 0; 10:1 = 1; 10 - <15:1 = 2; 15 - 20: 1 = 3; > 20:1 = 4	Surface Water Classification At Discharge (0 - OFW, O- Class I 2- Class II, 3 - Class III, 4 - Class IV Or Greater)	Identification As Suitable For Injection Well: Yes=4, No = 1	Potential Ocean Outfall Pipeline Length (Distance To 30 Feet Underwater Depth Contour) >10 Miles= 0; 10 - >5 Miles = 1; 5 - >3 = 2; 3 - >0 Miles= 3; 0 Miles= 4	Sub Score
				WEIGHTING	3	1	3	3	
BCUD/Sykes Creek Regional WWTF	Waste Water Treatment	FLA102695	BR-N	**PARAMETER ANALYSIS**	0.60	OFW	YES	7.86	
				SCORE	0	0	4	1	
				WEIGHTED SCORE	0	0	12	3	15
New Smyrna Beach	Waste Water Treatment	FL0172090	VO-G	**PARAMETER ANALYSIS**	1.40	OFW	NO	6.73	
				SCORE	0	0	1	1	
				WEIGHTED SCORE	0	0	3	3	6
SJCUD - Anastasia Island WWTF	Waste Water Treatment	FL0038831	ST-A	**PARAMETER ANALYSIS**	0.20	OFW	NO	2.84	
				SCORE	0	0	1	3	
				WEIGHTED SCORE	0	0	3	9	12
Cape Canaveral	Power Plant	609	BR-A	**PARAMETER ANALYSIS**	72.00	2	NO	12.46	
				SCORE	4	2	1	0	
				WEIGHTED SCORE	12	2	3	0	17
Indian River	Power Plant	683	BR-B	**PARAMETER ANALYSIS**	31.00	2	NO	14.03	
				SCORE	4	2	1	0	
				WEIGHTED SCORE	12	2	3	0	17
Field Street Generating Plant	Power Plant	20a	VO-D	**PARAMETER ANALYSIS**	0.00	OFW	NO	3.25	
				SCORE	0	0	1	2	
				WEIGHTED SCORE	0	0	3	6	9

Table 18. Ranking Matrix. Adequate Acceptable Means for Demineralization Concentrate Management

					Acceptable Means For Demineralization Concentrate Management				
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Existing Outfall Present: Blending Ratio < 10:1= 0; 10:1 = 1; 10 - <15:1 = 2; 15 - 20: 1 = 3; > 20:1 = 4	Surface Water Classification At Discharge (0 - OFW, O- Class I 2- Class II, 3 - Class III, 4 - Class IV Or Greater)	Identification As Suitable For Injection Well: Yes=4, No = 1	Potential Ocean Outfall Pipeline Length (Distance To 30 Feet Underwater Depth Contour) >10 Miles= 0; 10 - >5 Miles = 1; 5 - >3 = 2; 3 - >0 Miles= 3; 0 Miles= 4	Sub Score
Smith Street Generating Station	Power Plant	21a	VO-E	**PARAMETER ANALYSIS**	0.00	OFW	NO	2.46	
				SCORE	0	0	1	3	
				WEIGHTED SCORE	0	0	3	9	12
W. E. Swoope Generating Station	Power Plant	22a	VO-F	**PARAMETER ANALYSIS**	0.00	OFW	NO	2.34	
				SCORE	0	0	1	3	
				WEIGHTED SCORE	0	0	3	9	12
Canaveral Port Authority	Undeveloped Site	1	BR-D	**PARAMETER ANALYSIS**	0.00	OFW	YES	8.48	
				SCORE	0	0	4	1	
				WEIGHTED SCORE	0	0	12	3	15
Melbourne/Grant Street	Waste Water Treatment Plant	FL0041122	BR-E	**PARAMETER ANALYSIS**	1.20	OFW	YES	3.42	
				SCORE	0	0	4	2	
				WEIGHTED SCORE	0	0	12	6	18
West Melbourne/Ray Bullard	Waste Water Treatment Plant	FLA010332	BR-F	**PARAMETER ANALYSIS**	0.96	OFW	YES	3.45	
				SCORE	0	0	4	2	
				WEIGHTED SCORE	0	0	12	6	18
Palm Bay WWTP	Waste Water Treatment Plant	FLA103357	BR-G	**PARAMETER ANALYSIS**	1.04	OFW	NO	4.13	
				SCORE	0	0	1	2	
				WEIGHTED SCORE	0	0	3	6	9

Table 18. Ranking Matrix. Adequate Acceptable Means for Demineralization Concentrate Management

					Acceptable Means For Demineralization Concentrate Management				
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Existing Outfall Present: Blending Ratio < 10:1= 0; 10:1 = 1; 10 - <15:1 = 2; 15 - 20: 1 = 3; > 20:1 = 4	Surface Water Classification At Discharge (0 - OFW, O- Class I 2- Class II, 3 - Class III, 4 - Class IV Or Greater)	Identification As Suitable For Injection Well: Yes=4, No = 1	Potential Ocean Outfall Pipeline Length (Distance To 30 Feet Underwater Depth Contour) >10 Miles= 0; 10 - >5 Miles = 1; 5 - >3 = 2; 3 - >0 Miles= 3; 0 Miles= 4	Sub Score
BCUD/South Beaches	Waste Water Treatment Plant	FL0040622	BR-H	**PARAMETER ANALYSIS**	1.80	OFW	YES	0.69	
				SCORE	0	0	4	3	
				WEIGHTED SCORE	0	0	12	9	21
BCUD/South Central Regional	Waste Water Treatment Plant	FL0102679	BR-I	**PARAMETER ANALYSIS**	1.10	2	NO	10.14	
				SCORE	0	2	1	0	
				WEIGHTED SCORE	0	2	3	0	5
Cocoa Beach, WRF	Waste Water Treatment Plant	FL0021105	BR-J	**PARAMETER ANALYSIS**	0.60	OFW	YES	2.32	
				SCORE	0	0	4	3	
				WEIGHTED SCORE	0	0	12	9	21
Rockledge, City Of	Waste Water Treatment Plant	FL0021571	BR-K	**PARAMETER ANALYSIS**	0.45	OFW	YES	7.85	
				SCORE	0	0	4	1	
				WEIGHTED SCORE	0	0	12	3	15
Cocoa/Jerry Sellers	Waste Water Treatment Plant	FL0021521	BR-L	**PARAMETER ANALYSIS**	0.45	2	YES	8.71	
				SCORE	0	2	4	1	
				WEIGHTED SCORE	0	2	12	3	17
Titusville South/Blue Heron	Waste Water Treatment Plant	FL0103349	BR-M	**PARAMETER ANALYSIS**	0.40	OFW	NO	15.79	
				SCORE	0	0	1	0	
				WEIGHTED SCORE	0	0	3	0	3

Table 18. Ranking Matrix. Adequate Acceptable Means for Demineralization Concentrate Management

					Acceptable Means For Demineralization Concentrate Management				
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Existing Outfall Present: Blending Ratio < 10:1= 0; 10:1 = 1; 10 - <15:1 = 2; 15 - 20: 1 = 3; > 20:1 = 4	Surface Water Classification At Discharge (0 - OFW, O- Class I 2- Class II, 3 - Class III, 4 - Class IV Or Greater)	Identification As Suitable For Injection Well: Yes=4, No = 1	Potential Ocean Outfall Pipeline Length (Distance To 30 Feet Underwater Depth Contour) >10 Miles= 0; 10 - >5 Miles = 1; 5 - >3 = 2; 3 - >0 Miles= 3; 0 Miles= 4	Sub Score
Port Orange, City Of	Waste Water Treatment Plant	FL0020559	VO-A	**PARAMETER ANALYSIS**	1.20	OFW	NO	2.42	
				SCORE	0	0	1	3	
				WEIGHTED SCORE	0	0	3	9	12
Daytona Beach/Bethune Point	Waste Water Treatment Plant	FL0025984	VO-B	**PARAMETER ANALYSIS**	4.00	3	NO	1.41	
				SCORE	0	3	1	3	
				WEIGHTED SCORE	0	3	3	9	15
Ormond Beach, City Of	Waste Water Treatment Plant	FL0020532	VO-C	**PARAMETER ANALYSIS**	0.60	OFW	NO	2.34	
				SCORE	0	0	1	3	
				WEIGHTED SCORE	0	0	3	9	12

Sites with more potential multiple options for concentrate management received higher scoring. Many of the sites are adjacent to Outstanding Florida Waters (OFW) which may be more difficult to permit for discharge of concentrate and thus reducing a site's potential score. Sites that scored well under these criteria generally have two site features favorable to concentrate management such as an existing outfall with good mixing properties, suitability for an injection well or a shorter sub aqueous distance required for an outfall. Generally, sites that received higher ranking include once through cooled power plants and wastewater facilities located nearer to steeper sub aqueous inclines or that are located in an area with potential for discharge of concentrate to injection wells.

Environmental Constraints for Plant, Pipeline, Discharge and Intake Sites

Table 19 identifies the listing of the perspective sites and the tabulated weighted score for "Environmental Constraints for Plant, Pipeline, Discharge and Intake Sites."

The scores for proximity to various types of lands shown at the right of the table are used to reach the score for this category. For each of the proximity type features a score is applied to reflect the site distance from the feature. The lowest score of all the feature scores is used as the overall score to reflect the proximity criteria.

Table 19. Ranking Matrix - Environmental Constraints for Plant, Pipeline, Discharge and Intake Sites

					Environmental Constraints For Plant, Pipeline, Discharge And Intake Sites			
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Presence Of Protected Habitat (Seagrass, Other Wetlands, Uplands) Within Plant, Pipeline, Or Intake Footprint (1 - Yes, 4 - No)	Proximity To Conservation Lands, Aquatic Preserves, National/State Parks (0 - Within Conservation Land, 1 - Within 100 Ft., 2 - Within 500 Ft., 3 - 500-1000 Ft.; >1000 = 4)	Existence Of Protected Or Economically Important Species (Manatee, Sea Turtle, Bald Eagle, Scrub Jay, Gopher Tortoise, Fish/Shellfish, Etc.) Within Site, Pipeline, And Intake Footprint (1 - Present, 4 - Absent)	Sub Score
				WEIGHTING	2	2	2	
BCUD/Sykes Creek Regional WWTF	Waste Water Treatment	FLA102695	BR-N	**PARAMETER ANALYSIS**	NO	4	YES	
				SCORE	4	4	1	
				WEIGHTED SCORE	8	8	2	18
New Smyrna Beach	Waste Water Treatment	FL0172090	VO-G	**PARAMETER ANALYSIS**	NO	0	YES	
				SCORE	4	0	1	
				WEIGHTED SCORE	8	0	2	10
SJCUD - Anastasia Island WWTF	Waste Water Treatment	FL0038831	ST-A	**PARAMETER ANALYSIS**	YES	0	YES	
				SCORE	1	0	1	
				WEIGHTED SCORE	2	0	2	4
Cape Canaveral	Power Plant	609	BR-A	**PARAMETER ANALYSIS**	YES	3	YES	
				SCORE	1	3	1	
				WEIGHTED SCORE	2	6	2	10
Indian River	Power Plant	683	BR-B	**PARAMETER ANALYSIS**	YES	4	YES	
				SCORE	1	4	1	
				WEIGHTED SCORE	2	8	2	12
Field Street Generating Plant	Power Plant	20a	VO-D	**PARAMETER ANALYSIS**	YES	0	YES	
				SCORE	1	0	1	
				WEIGHTED SCORE	2	0	2	4
Smith Street Generating Station	Power Plant	21a	VO-E	**PARAMETER ANALYSIS**	YES	0	YES	
				SCORE	1	0	1	
				WEIGHTED SCORE	2	0	2	4

Table 19. Ranking Matrix - Environmental Constraints for Plant, Pipeline, Discharge and Intake Sites

					Environmental Constraints For Plant, Pipeline, Discharge And Intake Sites			
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Presence Of Protected Habitat (Seagrass, Other Wetlands, Uplands) Within Plant, Pipeline, Or Intake Footprint (1 - Yes, 4 - No)	Proximity To Conservation Lands, Aquatic Preserves, National/State Parks (0 - Within Conservation Land, 1 - Within 100 Ft., 2 - Within 500 Ft., 3 - 500-1000 Ft.; >1000 = 4)	Existence Of Protected Or Economically Important Species (Manatee, Sea Turtle, Bald Eagle, Scrub Jay, Gopher Tortoise, Fish/Shellfish, Etc.) Within Site, Pipeline, And Intake Footprint (1 - Present, 4 - Absent)	Sub Score
W. E. Swoope Generating Station	Power Plant	22a	VO-F	**PARAMETER ANALYSIS**	YES	0	YES	
				SCORE	1	0	1	
				WEIGHTED SCORE	2	0	2	4
Canaveral Port Authority	Undeveloped Site	1	BR-D	**PARAMETER ANALYSIS**	YES	0	YES	
				SCORE	1	0	1	
				WEIGHTED SCORE	2	0	2	4
Melbourne/Grant Street	Waste Water Treatment Plant	FL0041122	BR-E	**PARAMETER ANALYSIS**	YES	0	YES	
				SCORE	1	0	1	
				WEIGHTED SCORE	2	0	2	4
West Melbourne/Ray Bullard	Waste Water Treatment Plant	FLA010332	BR-F	**PARAMETER ANALYSIS**	YES	0	YES	
				SCORE	1	0	1	
				WEIGHTED SCORE	2	0	2	4
Palm Bay WWTP	Waste Water Treatment Plant	FLA103357	BR-G	**PARAMETER ANALYSIS**	YES	0	YES	
				SCORE	1	0	1	
				WEIGHTED SCORE	2	0	2	4
BCUD/South Beaches	Waste Water Treatment Plant	FL0040622	BR-H	**PARAMETER ANALYSIS**	YES	0	YES	
				SCORE	1	0	1	
				WEIGHTED SCORE	2	0	2	4

Table 19. Ranking Matrix - Environmental Constraints for Plant, Pipeline, Discharge and Intake Sites

					Environmental Constraints For Plant, Pipeline, Discharge And Intake Sites			
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Presence Of Protected Habitat (Seagrass, Other Wetlands, Uplands) Within Plant, Pipeline, Or Intake Footprint (1 - Yes, 4 - No)	Proximity To Conservation Lands, Aquatic Preserves, National/State Parks (0 - Within Conservation Land, 1 - Within 100 Ft., 2 - Within 500 Ft., 3 - 500-1000 Ft.; >1000 = 4)	Existence Of Protected Or Economically Important Species (Manatee, Sea Turtle, Bald Eagle, Scrub Jay, Gopher Tortoise, Fish/Shellfish, Etc.) Within Site, Pipeline, And Intake Footprint (1 - Present, 4 - Absent)	Sub Score
BCUD/South Central Regional	Waste Water Treatment Plant	FL0102679	BR-I	**PARAMETER ANALYSIS**	NO	0	YES	
				SCORE	4	0	1	
				WEIGHTED SCORE	8	0	2	10
Cocoa Beach, WRF	Waste Water Treatment Plant	FL0021105	BR-J	**PARAMETER ANALYSIS**	YES	0	YES	
				SCORE	1	0	1	
				WEIGHTED SCORE	2	0	2	4
Rockledge, City Of	Waste Water Treatment Plant	FL0021571	BR-K	**PARAMETER ANALYSIS**	YES	0	YES	
				SCORE	1	0	1	
				WEIGHTED SCORE	2	0	2	4
Cocoa/Jerry Sellers	Waste Water Treatment Plant	FL0021521	BR-L	**PARAMETER ANALYSIS**	YES	2	YES	
				SCORE	1	2	1	
				WEIGHTED SCORE	2	4	2	8
Titusville South/Blue Heron	Waste Water Treatment Plant	FL0103349	BR-M	**PARAMETER ANALYSIS**	YES	0	YES	
				SCORE	1	0	1	
				WEIGHTED SCORE	2	0	2	4
Port Orange, City Of	Waste Water Treatment Plant	FL0020559	VO-A	**PARAMETER ANALYSIS**	NO	0	YES	
				SCORE	4	0	1	
				WEIGHTED SCORE	8	0	2	10

Table 19. Ranking Matrix - Environmental Constraints for Plant, Pipeline, Discharge and Intake Sites

					Environmental Constraints For Plant, Pipeline, Discharge And Intake Sites			
Facility Name	**Facility Type**	**Facility ID**	**GIS ID Code**		Presence Of Protected Habitat (Seagrass, Other Wetlands, Uplands) Within Plant, Pipeline, Or Intake Footprint (1 - Yes, 4 - No)	Proximity To Conservation Lands, Aquatic Preserves, National/State Parks (0 - Within Conservation Land, 1 - Within 100 Ft., 2 - Within 500 Ft., 3 - 500-1000 Ft.; >1000 = 4)	Existence Of Protected Or Economically Important Species (Manatee, Sea Turtle, Bald Eagle, Scrub Jay, Gopher Tortoise, Fish/Shellfish, Etc.) Within Site, Pipeline, And Intake Footprint (1 - Present, 4 - Absent)	Sub Score
Daytona Beach/Bethune Point	Waste Water Treatment Plant	FL0025984	VO-B	**PARAMETER ANALYSIS**	NO	0	YES	
				SCORE	4	0	1	
				WEIGHTED SCORE	8	0	2	10
Ormond Beach, City Of	Waste Water Treatment Plant	FL0020532	VO-C	**PARAMETER ANALYSIS**	YES	0	YES	
				SCORE	1	0	1	
				WEIGHTED SCORE	2	0	2	4

Since the majority of sites are located near or adjacent to the shore, many sites are within protected areas and are designated as protected. Additionally many of the coastal sites also have the presence of protected species. Sites that scored the highest under these criteria were those located inland and in urban areas.

Identification of Five Most Favorable Sites for Further Evaluation

The five most favorable sites are:

1. Indian River Power Plant (Owner: Reliant, Inc)
2. Cape Canaveral Power Plant (Owner: FPL)
3. Daytona Beach/Bethune Point Waste Water Treatment Plant (Owner: City of Daytona Beach)
4. BCUD/South Beaches Waste Water Treatment Plant (Owner: Brevard County)
5. W. E. Swoope Generating Station Power Plant (Owner: City of New Symrna Beach)
6. BCUD/Sykes Creek Regional Waste Water Treatment Facility (Owner: Brevard County)

Though the report was to identify the top 5 most preferred sites, sites 5 and 6 had equal scoring and are both presented here.

Aerial photos representing the approximate locations of each of the six most favorable sites are provided as Figures 11, 12, 13, 14 & 15, 16.

Table 20 shows the tabulation of the weighted scores.

Table 20. Tabulation of the Weighted Scores

Rank	Facility Name	Facility Type	Facility ID	GIS ID Code	City	County	Site Address	Ranked Score
1	Indian River	Power Plant	683	BR-B	Titusville	Brevard	7800 South US Hwy 1	107
2	Cape Canaveral	Power Plant	609	BR-A	Cocoa	Brevard	6000 North US Hwy 1	104
3	Daytona Beach/Bethune Point	Waste Water Treatment Plant	FL0025984	VO-B	Daytona Beach	Volusia	1 Shady Place	75
4	BCUD/South Beaches	Waste Water Treatment Plant	FL0040622	BR-H	Melbourne Beach	Brevard	2800 South SR A-1-A	74
5	W. E. Swoope Generating Station	Power Plant	22a	VO-F	New Smyrna Beach	Volusia	2495 North Dixie Freeway	73
6	BCUD/Sykes Creek Regional WWTF	Waste Water Treatment	FLA102695	BR-N	Cocoa	Brevard	3630 N. Courtenay Parkway	73
7	Smith Street Generating Station	Power Plant	21a	VO-E	New Smyrna Beach	Volusia	305 Smith Street	69
8	Port Orange, City Of	Waste Water Treatment Plant	FL0020559	VO-A	Port Orange	Volusia	817 Oak Street	69
9	West Melbourne/Ray Bullard	Waste Water Treatment Plant	FLA010332	BR-F	Melbourne	Brevard	1415 Henry Ave.	68
10	Melbourne/Grant Street	Waste Water Treatment Plant	FL0041122	BR-E	Melbourne	Brevard	2300 S Grant St	68
11	Field Street Generating Plant	Power Plant	20a	VO-D	New Smyrna Beach	Volusia	1000 Field Street	66
12	Cocoa/Jerry Sellers	Waste Water Treatment Plant	FL0021521	BR-L	Cocoa	Brevard	375 N Cocoa Blvd	66
13	Rockledge, City Of	Waste Water Treatment Plant	FL0021571	BR-K	Rockledge	Brevard	1700 S Garden Road	62
14	Palm Bay WWTP	Waste Water Treatment Plant	FLA103357	BR-G	Palm Bay	Brevard	1105 Troutman Boulevard, NE	62
15	Cocoa Beach, WRF	Waste Water Treatment Plant	FL0021105	BR-J	Cocoa Beach	Brevard	1600 Minuteman Causeway	61
16	SJCUD - Anastasia Island WWTF	Waste Water Treatment	FL0038831	ST-A	St. Augustine	St. Johns	860 West 16th Street	60

Table 20. Tabulation of the Weighted Scores

Rank	Facility Name	Facility Type	Facility ID	GIS ID Code	City	County	Site Address	Ranked Score
17	Ormond Beach, City Of	Waste Water Treatment Plant	FL0020532	VO-C	Ormond Beach	Volusia	550 N Orchard St	60
18	Canaveral Port Authority	Undeveloped Site	1	BR-D	Cocoa	Brevard		57
19	New Smyrna Beach	Waste Water Treatment	FL0172090	VO-G	New Smyrna Beach	Volusia	NW Corner of SR 44 & I-95 INT	55
20	BCUD/South Central Regional	Waste Water Treatment Plant	FL0102679	BR-I	Rockledge	Brevard	10001 Wickham Rd West PF I-95	53
21	Titusville South/Blue Heron	Waste Water Treatment Plant	FL0103349	BR-M	Titusville	Brevard	4800 Deep Marsh Road	48

N

0 500 1,000 Feet

Approximate scale in miles

Legend

- Top Ranked Sites

Figure 11
Indian River Power Plant (BR-C, BR-B)

Contract No. SE459AA
Seawater Demineralization Feasibility Investigation
St. Johns River Water Management District

RW BECK

N

0 500 1,000 Feet

Approximate scale in miles

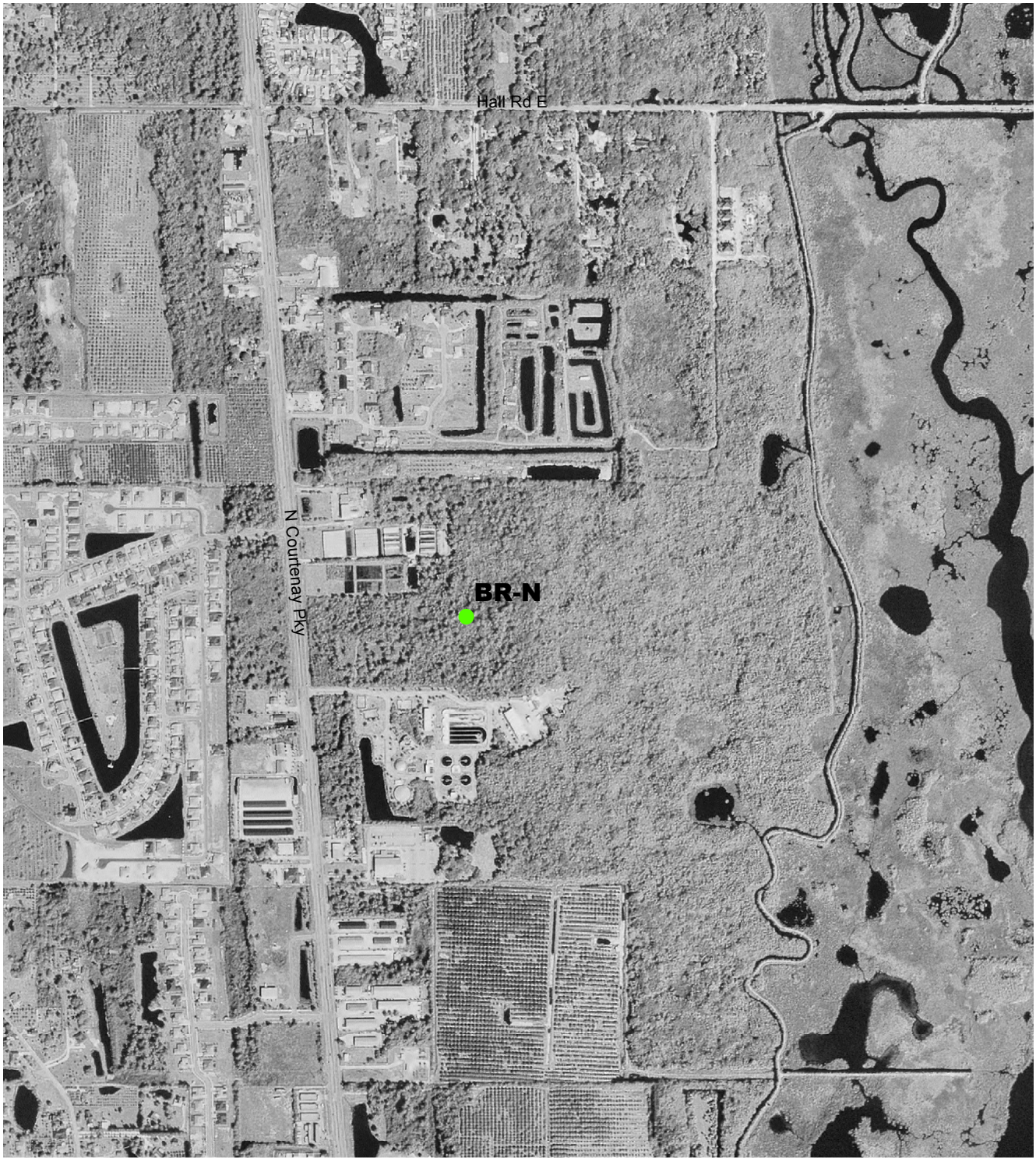
Legend

- Top Ranked Sites

Figure 12
Cape Canaveral Power Plant (BR-A)

Contract No. SE459AA
Seawater Demineralization Feasibility Investigation
St. Johns River Water Management District

RW BECK



N

0 500 1,000 Feet

Approximate scale in miles

Legend

- Top Ranked Sites

Figure 13
BCUD/Sykes Creek Regional WWTF (BR-N)

Contract No. SE459AA
Seawater Demineralization Feasibility Investigation
St. Johns River Water Management District

RW BECK

N

0 500 1,000 Feet

Approximate scale in miles

Legend

- Top Ranked Sites

Figure 14
W. E. Swoope Generating Station (VO-F)

Contract No. SE459AA
Seawater Demineralization Feasibility Investigation
St. Johns River Water Management District

RW BECK

N

0 500 1,000 Feet

Approximate scale in miles

Legend

● Top Ranked Sites

Figure 15
BCUD/South Beaches (BR-H)

Contract No. SE459AA
Seawater Demineralization Feasibility Investigation
St. Johns River Water Management District

RW BECK

N

0 500 1,000 Feet

Approximate scale in miles

Legend

- Top Ranked Sites

Figure 16
Daytona Beach / Bethune Point (VO-B)

Contract No. SE459AA
Seawater Demineralization Feasibility Investigation
St. Johns River Water Management District

RW BECK

Next Steps in Evaluation of Preferred Sites

To give host communities and cooperators an idea of the size and order of magnitude of a potential seawater demineralization project, R. W. Beck will develop a conceptual design and a comparative project cost for each of the five preferred sites.

The conceptual design, which will address the multiple water demands for each potential site, will include system elements and the approximate size of the facilities.

The comparative project cost estimate elements include:

1. Construction
2. Land
3. Non-construction capital cost
4. Total Capital Cost (1+2+3)
5. Annual O&M Cost at design capacity in $/ year
6. Equivalent annual cost ($/ year) and
7. Unit production cost ($/kgal)

The subsequent report titled “Final Report on the Five Most Probable Seawater Demineralization Project Sites” will present these findings.

Appendix A
Water Deficits and Source Information

Water Supply Demand Centers	Reported Deficit	Source	DWSP Page	Notes
Cocoa	3.05	SJRWMD DWSP	p.87	p. 87 ADD
Daytona Beach	3.00	Utility		
Edgewater				
Intercoastal Utilities Sawgrass	6.00	SJRWMD DWSP		p. 103 2020 avg needs= 6.09; p. 104 MDD = 7.40
Intercoastal Utilities Plantation				
JEA North Grid				
Jacksonville Naval Air Station at Roosevelt				
Melbourne	2.00	Utility		p.87 ADD = 2.44
New Smyrna Beach				
Ormond Beach				
Palm Bay	2.24	SJRWMD DWSP	p.87	p. 87 ADD
Palm Coast	2.90	SJRWMD DWSP	p.97	p. 97 ADD
Port Orange Garnsey WTP				
St. Augustine, City of	3.91	SJRWMD DWSP	p.103	Used 2020 avg needs; p. 104 MDD = 0
St. Augustine - St. John County Utilities	13.50	SJRWMD DWSP	p.103	Used 2020 avg needs; p. 104 MDD =15.59
Titusville Morning Dove	2.45	SJRWMD DWSP	p.87	p. 87 ADD
Vero Beach				
Jacksonville Naval Air Station at Mayport				
Fernandina Beach				
Jacksonville St. Johns Service Grid				
Jacksonville United Water Royal Lakes	3.84	SJRWMD DWSP	p. 104	p. 104 MDD= 7.67, split
Jacksonville United Water Arlington	3.84	SJRWMD DWSP	p. 104	p. 104 MDD= 7.67, split
JEA South Grid	20.00	Utility		
Indian River County, South RO				
JEA North Grid Main Street				
JEA North Grid McDuff				
JEA North Grid Lakeshore				
JEA North Grid Norwood				
JEA North Grid Highlands				
JEA North Grid Marietta				
JEA North Grid Southwest				
JEA North Grid Hendricks				

Water Supply Demand Centers	Reported Deficit	Source	DWSP Page	Notes
JEA North Grid Riveroaks				
JEA North Grid Lovegrove				
JEA North Grid Arlington				
JEA North Grid Oakridge				
JEA South Grid Ridenour				
JEA South Grid Southeast				
JEA South Grid Brierwood				
JEA South Grid Community Hall				
JEA South Grid Deerwood III				
JEA North Grid Total	13.70	Utility		
Total of 42 Utilities	**80.43**			

Notes:

DWSP – District Water Supply Plan
13 Utilities have deficits
ADD = Average Day Deficit
MDD = Maximum Day Deficit