



Date: Wednesday, Aug. 17, 2011

Time: 6:00 – 6:30 p.m. – Open House
6:30 – 7:00 p.m. – Presentation
7:00 – 8:00 p.m. – Questions and Answers

Location: Whitney Laboratory at Marineland
9505 Ocean Shore Blvd., St. Augustine, FL 32080

Notice: Eighth-page displays ads:
Daytona Beach News-Journal (7/17/11; 8/8/11)
St. Augustine Record (7/17/11; 7/31/11; 8/10/11; 8/15/11)
Palm Coast Observer (8/4/11; 8/11/11)

Project website announcements, Twitter, and direct email

News coverage or calendar listings:
St. Augustine Record (8/17/11)

Residents in

Attendance: Approximately 50; 35 signed in.

Meeting Overview:

The meeting started with an open house session during which residents viewed display boards and talked with project team members. At 6:30 p.m., attendees moved into Whitney Laboratory's auditorium for a presentation that focused on work done in Phase 2A on facility siting, a coastal depth survey and the Marineland wells investigation. The presentation also discussed completion of Phase 2A activities and the rescheduling of Phase 2B, which has been postponed to 2014 or later.

Comments and questions were taken after the presentation. Before the meeting adjourned at 8:00 p.m., residents were encouraged to complete a comment form and were told that the project website and Twitter feed would remain active during the project's hiatus. Comment forms were collected at the meeting as well as by fax, mail or email through Aug. 24, 2011.

Questions and Answers Summary:

Following is a summary of questions and answers discussed during the meeting as well as questions asked via comment form. Included in the responses herein is expanded information where appropriate.

1. How far does the intake need to be from the discharge?

The distance between the intake and the discharge has yet to be determined as it depends on modeling results. In the next phase of the project, a computer model will be run that simulates ocean currents, wind, tides and other variables to determine the distance between a direct ocean intake and discharge.

2. How does the aquifer from which the beach wells would take water differ from the freshwater aquifer?

The aquifer from which beach wells would withdraw saltwater is separate from the freshwater aquifer that provides drinking water. Wells located on the beach ridge would have radial arms that collect water from the saltwater aquifer beneath the ocean. Additional aquifer testing is recommended in the next phase of the project to determine the potential yield of beach wells and to quantify the costs and benefits of this intake option. Should beach wells be the preferred intake method, monitoring wells would be installed to ensure there are no adverse impacts on the freshwater aquifer.

3. What is the cost difference between using beach wells for the intake versus using an intake pipeline?

Using beach wells for the desalination plant's intake would yield both construction and operation cost savings over a direct ocean intake, but the exact savings is not yet known. The benefits of tapping high-quality saline groundwater include:

- Lower construction costs since an intake pipeline and structure on the ocean floor are eliminated,
- Lower capital costs since high-quality saline groundwater requires less pretreatment systems,
- Lower operating costs since less pretreatment is required,
- Reduced impacts to marine life associated with construction and direct intake, and
- Easier construction for onshore wells versus an offshore pipeline and intake.

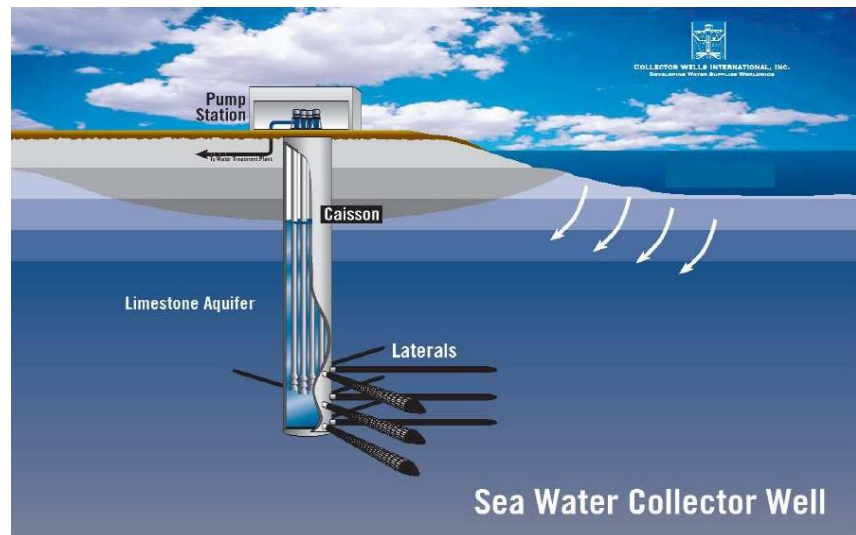
4. Is the salinity in the beach wells the same as a direct intake? How does that affect the operating costs?

Aquifer testing at Marineland indicated similar salinity between the saline groundwater in the area and the Atlantic Ocean. However, the saline groundwater contained less particles, thanks to the filtering properties of the ocean floor, so it would require less pretreatment, which lowers capital and operating costs.

5. **Are beach wells installed directly on the beach? What size are the wells and what would they look like?**

Beach wells would not be installed directly on the beach, but rather on the beach ridge.

Above ground, would be a caisson that is approximately 13 feet in diameter. A caisson is a watertight chamber that would surround the wells. A caisson can be camouflaged to fit into its surroundings. From the caisson, lateral arms would be installed under the beach.



6. **How far inland could you economically build the desalination plant?**

The 14 short-listed site sub-areas range from 1-5 miles from the Atlantic Ocean. There are economic trade-offs associated with siting a facility closer to shore and further inland. If a facility is closer to the shore, there is less cost associated with intake and discharge pipelines, but the facility must be hardened to withstand hurricanes and other natural disasters. If a facility is further inland, costs to harden go down, but there is more cost associated with longer intake and discharge pipelines.

7. **Have you approached Wall Street financing agencies and is that why the project is postponed?**

No. The Coquina Coast project partners have decided to slow the project's schedule to save money during this difficult economic time. Pushing the next phase of work out for approximately two years allows time for the economy to stabilize, which will provide a better indication of future water needs.

8. **How much energy will the plant use, who will provide the power, and does that provider have surplus energy available or will a nuclear plant have to be built to power the desalination facility?**

At the projected initial capacity of 10-15 million gallons per day, the proposed desalination plant would require approximately 8-10 megawatts of power. At a capacity of 25 million gallons per day, the plant would use approximately 15 megawatts. During initial discussions with Florida Power & Light, it indicated that there is sufficient power generating capacity in the region to serve such a demand, so there would not be a need to construct a new power plant to serve the Coquina Coast Desalination Plant.

9. Are there economies of scale in building and operating a desalination plant?

Yes. Essentially, the larger the plant, the lower the unit cost of desalinated water. The reason is that there are costs that are relatively constant, no matter how much water a plant produces, e.g. permitting, land, intake and discharge construction, etc. Also, larger plants can take advantage of more efficient energy recovery devices to reduce power costs.

10. Will the pipelines associated with this project be above or below ground?

Pipelines would be installed below ground, though there may be some above-ground valves or appurtenances.

11. What is the federal government's role in this large scale project?

The first way in which the federal government would be involved in the proposed desalination project is through permitting. The project team has had preliminary discussions with the U.S. Environmental Protection Agency as well as Florida Department of Environmental Protection, which oversees the state's water management districts. In addition, the project team has met with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, the U.S. Coast Guard, National Marine Fisheries, and other agencies to discuss this project and identify permitting and other requirements to assure the project is completed in the most environmentally responsible manner possible.

The second way in which the federal government could be involved is through funding. The project team has identified a number of possible funding sources, which will likely be pursued further in the next phase of the project.

12. Have any public-private partnerships been formed for this project?

No, not at this time. Plant ownership is not yet known. The facility could be owned by a local utility or utilities, privately owned and operated, owned by a local utility and operated by a private entity, or some other arrangement. Ownership and operating options will be fully explored in Phase 2B.

13. How many desalination plants like this are operating in the United States?

The only large-scale seawater desalination plant currently operating in the United States is the Tampa Bay Seawater Desalination Plant near Apollo Beach. That plant can produce up to 25 mgd. There are other desalination plants being built in California and Texas. Across the globe, brackish water and seawater desalination plants in municipal, military and industrial applications produce a combined daily capacity of more than 18 billion gallons. Large-scale seawater desalination plants are currently operating in Spain, Trinidad, Israel, Singapore, Chile, Australia, China and Saudi Arabia.

14. Why are you considering desalination when there is water available from the St. Johns River?

The St. Johns River Water Management District, which is a funding partner in the Coquina Coast project through Phase 2A, has examined a number of alternative water supply options for utilities within the District. Surface water, brackish water and desalination were all examined. After additional study, the City of Palm Coast decided to pursue seawater desalination due to its proximity to the coast. However, several other municipalities are considering using water from the St. Johns River.

15. Why are there Ex Officio members?

Two types of project “memberships” were developed for this project: suppliers and Ex Officio members. Suppliers, which provide the majority of the funding, drive the project and make project decisions. The Ex Officio category has a much lower funding commitment and was created as an affordable way for interested municipalities to be at the table and provide input into the project.

16. Does Flagler County need this water before the other members?

The project team worked with the project participants in an effort to predict future water needs. The analysis included estimates of water savings due to additional conservation efforts. Based on that analysis, the first project participants to need additional water supplies are Palm Coast and Deland, both of which are expected to need approximately 4 million gallons per day of new water by 2020. However, that demand projection could change based on the economy.

17. Have any governments dropped out of the project?

Originally, the project partners included the cities of Palm Coast, DeLand, Mount Dora, Leesburg, Bunnell and Flagler Beach; the Water Authority of Volusia; Flagler, Marion and St. Johns counties; Dunes Community Development District and the St. Johns River Water Management District. The Water Authority of Volusia disbanded. Partners continuing the project in Phase 2A include the cities of Palm Coast and Leesburg as well as Deland and St. Johns County. The St. Johns River Water Management District is a funding partner through the end of the current phase.

18. What will you do to minimize corrosion in the intake and discharge pipelines? Will you be using a chemical coagulant in the intake or discharge pipelines?

Non-corrosive pipe materials, such as high-density polyethylene, would be used for the intake and discharge pipelines to prevent corrosion. No anti-corrosion chemical additives are being considered for the intake and discharge pipelines.

19. Will you be using hexavalent chromium to control corrosion in the intake and discharge pipelines?

No. The pipelines will be made of a non-corrosive material.

20. What alternative energy types have you looked into? Have you considered the Bloombox?

The project team is very interested in renewable energy sources that can help reduce project costs and carbon dioxide emissions. Several renewable energy sources have been assessed for their applicability in the proposed Coquina desalination facility, including solar power, wind energy, wind-solar hybrid systems as well as the Bloombox device, waste-to-energy co-location and energy recovery devices. (The Bloombox device uses a solid oxide fuel cell technology to generate electricity at the point of consumption. Each Bloombox can provide 100 kilowatts of power with a footprint the approximate size of a parking space.)

Renewable energy technologies are rapidly changing, and may offer new opportunities when the project resumes in 2014.

21. Have you considered a demonstration project?

Yes. A pilot plant is planned for Phase 2B of the project. The pilot facility will have the ability test different pre-treatment options using different source waters of varying quality. The pilot plant will also test the reverse osmosis process and post-treatment process with water from the different pre-treatment processes to ensure treatment methods selected for the full-scale plant will meet the participants' objectives.

Comments

1. Using beach wells lends itself to having several smaller desalination treatment plants instead of one big plant. Several smaller plants are better than one large plant because it would be safer, provide more reliability, provide better security for the public's water supply and would be easier to build.
2. Siting the plant east of I-95 makes no sense due to the risk of hurricanes and tsunamis. Plus, those areas would generate higher tax revenues for the city. The airport location is ideal.
3. Your cost analysis is flawed if it is based only on discussions with FPL. The state has the power to order other power companies to wheel power to you; you should contact other power providers.
4. This project is a technological turkey. We need to conserve more water.
5. Good posters and well done.
6. I am a proponent of the quest for alternative water supplies for this region, but do have cost-benefit concerns for desal technologies at this point.

Public Meeting Comment Form

On a scale of 1-5, where 1 was “not at all” and 5 was “very,” attendees were asked to rate the meeting and the information received from the project team. Below is an average response to each objective. These responses indicate that the 10 attendees who completed the comment form felt the meeting and information disseminated were both very helpful.

The overall meeting was helpful and informative.	4.9
The information received during the open house was helpful.	4.6
The presentation/question and answer session was informative.	4.8
Were your questions/concerns addressed? <ul style="list-style-type: none">• 9 Yes• 1 No	