The Coquina Coast Ocean Desalination Project is one water supply alternative being aggressively promoted by the St. Johns River Water Management District as a way to complement traditional groundwater sources in Flagler, Volusia, St. Johns, Marion and Lake County, Florida.

The latest reports on this desalination project by Malcolm Pirnie, the consultant investigating the feasibility of building the 80 million gallon per day (MGD) facility, raise many questions about the project, however. Here are five major reasons why officials in the area should be wary of supporting this project:

1. Desalination will be expensive.

Desalination is a capital-intensive source of water because it requires heavy industrial machinery and lots of energy. Malcolm Pirnie estimates the final desalination facility will cost $1.3 billion to build and $60 million a year to operate. Based on the preliminary funding scenarios put together by Malcolm Pirnie, the capital and operating costs of building the initial 50 MGD plant could increase the average customer water bill by $94 to $158 a year (see table 2).

2. Financing the project will be difficult.

The financing plan proposes funding sources that will be very difficult to acquire. For instance, it anticipates that more than $200 million in federal government funds will be available to help finance the project. Qualifying for several of these proposed federal funds may be a challenge. Utility managers and local officials should be concerned that water rates may become unmanageable should any of the funding sources fall through.

A simple analysis of three potential funding sources shows just how difficult financing this project may be.

*Drinking Water State Revolving Fund (SRF):* The financing initiative plan estimates that the SRF program can con-
tribute $50 million to the desalination project. Drinking Water SRF monies, however, usually go to utility projects that address water quality — not supply — problems, and in 2009, only $56 million was available to assist large public water systems. The underfunded Florida SRF program, whose largest single loan last year was $6 million, already approved dozens of projects that are still waiting for funds. It is unlikely that this desalination project would rise to the top of this waiting list and receive $50 million.

Water Resource Development Act (WRDA): The financing plan projects that WRDA can contribute $100 million to a future facility. Projects approved under WRDA, however, must go through a separate and lengthy congressional appropriations process. Furthermore, the desalination project would be competing for WRDA funds with a backlog of more than 500 projects that have already been authorized. Notably, Rep. Jon Micah has requested $5 million for the project through WRDA but is still waiting for that money to be approved and appropriated. It seems unlikely that the project would receive $100 million through WRDA.

Interest-Free Bonds: Malcolm Pirnie estimates that more than $600 million in bonds can be designated as “interest-free” bonds by way of federal tax credit programs. The financing plan mentioned only one mechanism by which this can occur: the Clean Renewable Water Supply Bond Act. While the bill was introduced in 2009, it was only being discussed at committee level, as of the end of February 2010. Even if the bill passed, however, it seems unlikely that the federal government would provide tax credits to pay the interest on $600 million in bonds.

Table 1. Key Figures: Coquina Coast Desalination Project to Full Build-Out at 80 MGD

| Present value of total project cost | $1,346,544,000 |
| Annual operation and maintenance cost | $59,768,400 |


Table 2. Preliminary Funding Scenarios for Coquina Coast Desalination Plant at 50 MGD (not full build-out)

<table>
<thead>
<tr>
<th>Private Bank Loan</th>
<th>Interest-Free Bond</th>
<th>Mixed Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total project cost</td>
<td>$1,000,000,000</td>
<td>$1,000,000,000</td>
</tr>
<tr>
<td>Grants and other assistance</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>WRDA</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other sources</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Loans and bonds</td>
<td>Interest</td>
<td>Term</td>
</tr>
<tr>
<td>Private bank loan</td>
<td>5.50%</td>
<td>30</td>
</tr>
<tr>
<td>Interest free bond</td>
<td>0.00%</td>
<td>40</td>
</tr>
<tr>
<td>Drinking Water SRF</td>
<td>3.00%</td>
<td>20</td>
</tr>
<tr>
<td>USDA- RD</td>
<td>2.75%</td>
<td>40</td>
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<tr>
<td>Municipal bond</td>
<td>5.00%</td>
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</tr>
<tr>
<td>Annual financing cost</td>
<td>$68,805,390</td>
<td>$25,000,000</td>
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<tr>
<td>Annual operation and maintenance cost</td>
<td>$38,205,400</td>
<td>$38,205,400</td>
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<tr>
<td>Total annual cost</td>
<td>$107,010,790</td>
<td>$63,205,400</td>
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<tr>
<td>Average annual cost per customer (assuming 675,465 customers)</td>
<td>$158.43</td>
<td>$93.57</td>
</tr>
</tbody>
</table>

3. The permitting process will be long and complex.

The size and scope of the desalination project will require an unusual level of permitting. An extra layer of permitting activity, for instance, will be necessary since the project is hoping to secure federal funding.

The project must complete a comprehensive environmental impact study as laid out in the National Environmental Policy Act. The scope of the project will make it necessary for several agencies, including the U.S. Environmental Protection Agency (EPA), the U.S. National Marine Fisheries Services, and the U.S Fish and Wildlife Services, to review this document. Further complicating this process is the fact that several endangered and threatened species can be found in the area.

The Army Corp of Civil Engineers, the EPA and the Florida Department of Environmental Protection (FDEP) will have to work together on issuing permits necessary to build needed water intake infrastructure and piping as well as issuing permits for ocean discharge byproducts.

Further complicating this permitting process is the fact that the FDEP has not permitted an ocean discharge of concentrated seawater and “there will be a bit of a learning curve,” according to Malcolm Pirnie.


This expensive and environmentally risky water supply alternative may ultimately preclude aggressive conservation from ever becoming a reality in Florida. Experts around the country have stated that conservation and efficiency programs can reduce demand for water and be cheaper than desalination.

As recently as 2009, the St. Johns River Water Management District said that a substantial portion of the area’s water needs could be met through aggressive conservation. According to district estimates from 2005, conservation practices in the counties involved in the Coquina Coast Project could save more water than the projected amount that the desalination plant would produce at half the cost.

![Image of water saving and cost comparison](image-url)
Desalination should not be pursued until significant reduction in water use is achieved through conservation and general public education.

5. Private interests drive water policy.

Veolia and Sinclair Knight Merz, the two companies currently working on this project with Malcolm Pirnie, are major multinationals that could benefit from the growth of the desalination industry in Florida.

In addition, Veolia and SKM’s track record raises red flags. In Australia, the companies worked on a controversial and problematic desalination plant, which The Courier-Mail reported had problems with “rusting pipework, cracking concrete, faulty valves and the leaching of contaminants.” Citizens in the area have pledged to never allow another desalination plant in their area.

Endnotes

2 This includes a $5 million federal legislative grant, $20 million USDA Rural Development grant, $40 million USDA Rural Development loan, $15 million U.S. Economic Development Administration Public Works grant, $50 million loan from the Drinking Water State Revolving Fund program and $100 million from the Water Resources Development Act. Ibid. at Appendix K: “Funding Initiative Plan.” October 2009 at 3-10.
3 Ibid. at 3-9
4 Ibid.
5 Florida Department of Environmental Protection. “Drinking Water State Revolving Fund Intended Use Plan For Use in Fiscal Year 2009 Capitalization Grant.” 2009 at 14 to 16 and 2.
6 Ibid. at 31 to 32.
7 Ibid. at 31 to 32.
8 Malcolm Pirnie, Inc. at Appendix K 3-10.
9 Ibid. at 3-5.
11 “Funding Initiative Plan.” at 3-10 and 3-6.
13 “Final Recommended Project Report.” at 8-1
15 Ibid. at “Final Recommended Project Report.” at 8-4 through 8-8.
16 Ibid. at 8-5 to 8-6.
19 Ibid. at 8; “Funding Initiative Plan.” at ES-4 and 1-1.

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