City of Tampa PURE Project
Continuing Issues and Concerns
Prepared by the Sierra Club Tampa Bay Group, Friends of the River, and the League of Women Voters of Hillsborough County
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This past year the Florida Legislature passed a bill that requires utilities to discontinue the discharge of treated wastewater to surface water if that reclaimed water can have a beneficial use, including potable supply (human consumption). The City of Tampa intends to comply with this legislation, as it is similar to the City's previous plans of implementing the Tampa Augmentation Project (TAP), which involved using highly treated wastewater for potable supply.

The City Staff has revised the previously cancelled TAP plan and rebranded it as PURE, which stands for Purify Usable Resources for the Environment. Under PURE, the City will redirect up to 50 million gallons per day (mgd) of highly treated reclaimed water from the City's Howard F. Curren Advanced Wastewater Treatment Plant that would otherwise be discharged into Hillsborough Bay, as it has been permitted to do for years. The reclaimed water will be treated to exceed federal and state drinking water standards and repurposed for beneficial use.

City staff has indicated that these are the three main purposes of PURE

1. Complying with new state legislation that restricts discharges into Hillsborough Bay.
2. Securing Tampa's drinking water source by increasing the reliability of the drinking water supply.
3. Designing sustainable, long-term solution to maintain minimum flow to Hillsborough River.

Proposed Legislation Change

PURE Community stakeholder groups who have been meeting the City staff for nearly one year have recommended language for an amendment to the state legislation. This language would allow utilities to have flexibility in meeting the average quantity of treated wastewater that must be eliminated from surface water discharge in order to open up alternatives for more effective resource management.

Tampa Water Supply - Current Situation

Currently, most of Tampa's drinking water is provided by the Hillsborough River Reservoir (HRR), which is primarily fed by the river and is supplemented with water from the Tampa Bypass Canal (TBC). The City also utilizes an Aquifer Storage and Recovery (ASR) System and can also purchase finished water from Tampa Bay Water (TBW).

Water in the reservoir contains a certain amount of naturally occurring constituents and some contaminants, hence the need for treatment before it is considered safe for drinking. However, wastewater from residential and industrial users contains additional and more highly concentrated contaminants, including "forever" chemicals. There are scientifically proven water treatment methods available to eliminate or reduce the concentrations of these chemicals, but they are expensive. The best treatment available is Reverse Osmosis, currently used in existing wastewater-to-drinking- water systems such as in Orange County, CA. Promising, but as yet unproven, is Ion Exchange. Anything less is not likely to remove these harmful chemicals and other pathogens out of our drinking water.

Regarding minimum flows, since the mid 1970s increasing water demands from the reservoir have caused prolonged periods of no flow to the Lower Hillsborough River, below the dam, with significant adverse impacts to ecological health of the lower river. As part of the settlement of a legal challenge filed in 2000 by Friends of the River, the City must provide up to 15.5 mgd of freshwater equivalent to reduce the salinity, improve the water quality, and benefit the biological communities below the dam. The main source for the minimum flows is the diversion of water from Sulphur Springs to the base of the dam. However, the water in Sulphur Springs is becoming saltier. Using treated wastewater in addition to or instead of Sulphur Springs could provide a continuous source of fresh water to provide the needed flow below the dam. However, there are concerns about the concentrations of nutrients and other chemicals in the PURE water that could affect the water quality and biology of the lower river, and the PURE water should only be used for minimum flows if it can be clearly demonstrated it will not adversely affect the health of the lower river.

PURE Concerns and Unanswered Questions

The idea behind PURE is not necessarily a bad one, but, as with every idea, it depends on execution. Several environmental groups, Friends of the River, the Sierra Club and the League of Women Voters have been wondering how the City was going to do that. For the past 12 months, these groups have had regular meetings about the proposed project with city officials. Discussions have ranged from the need for finding alternatives, qualifications of the scientists who would do an initial evaluation, final cost (and who would pay for it), whether there is a need for 50 mgd of recycled wastewater (61% of the total the City is now permitted to withdraw from the reservoir), the need for a pilot test program, and what treatment processes would be needed remove the forever chemicals and other dangerous substances.

The City hired a consultant to explore several alternative uses for the reclaimed wastewater and the consultant's scoring system resulted in four numbered Combinations. Those will be referred to below by COMB followed by the numbers that the consultant assigned to them. The Alternatives' Analysis is available on the City's website.

After the groups most recent discussion with the City, unfortunately too many open, unanswered questions remain. Questions that must be answered before the project proceeds further, or has gone so far that it becomes irreversible because of the money invested. In January, the City must ask City Council for its vote to continue on its current chosen path, and to hire the consultant who will execute the project. To ensure Tampa's citizen can support the proposal and City Council can vote, some definite answers and commitments are required.

1. Safety

We need a firm commitment as to the treatment methods the City intends to use to remove contaminants. The river's health and your health should be the primary concern in any project like this. Illnesses resulting from drinking water that hasn't been treated sufficiently may not come to light for a very long time. The statement: "Treating it to exceed State and Federal drinking water standards", without more detail, is not very reassuring. Florida doesn't have its own drinking water standards and Federal standards do not regulate many of the harmful chemicals that occur in wastewater. The City needs to commit to the best treatment method available. At the moment we understand that to be Reverse Osmosis.

The City must also commit to building a prototype system to demonstrate that the proposed treatment will work on Tampa's reclaimed water and not add additional contaminant levels to the river, reservoir, and aquifer.

2. Cost

Obviously, **the cost of the project is of major concern**, because ultimately somebody has to pay for it. The State has not provided funding for this mandate and so it is very likely that utilities departments will have to

pay for it. These departments have two sources of income, your dollars, and (federal and state) grants. It is clear that at this moment the City does not know how much this project is going to cost, and they have stated they will not know the cost until Fall 2022. The City needs to develop a reasonable cost estimate before the project is approved. We need to have the City explain the 30-year cost of PURE, and where the sources of money for construction and operations comes from, not in general terms, but in clear, understandable commitments to the City's taxpayers.

Also, **the City has the option to buy water** (if demand by the City exceeds its daily permitted withdrawals from the Hillsborough River Reservoir system or when there are drought situations present) from regional supplier Tampa Bay Water. The City must work more closely with TBW on long-term regional solutions to ensure future sufficient water supplies. We believe working with TBW could be less expensive for Tampa water users than the proposed PURE project.

3. Risks

While the City has previously done aquifer storage and recovery on a much smaller scale (10 mgd), **PURE proposes to put up to 50 mgd into the aquifer under central Tampa. The effects of this have not been sufficiently studied** to assess the risks to the aquifer, or to model whether this would cause sinkholes or upconing - adverse impacts of proceeding too quickly without sufficient study.

Similarly, because the **City has not specified the treatment methods that will be involved with PURE**, **the impacts on using this water for minimum flows or to "drought proof" the reservoir, cannot be considered to be safe**, without extensive further study and use of prototypes in the field.

4. **Alternatives**

At the moment it seems there is **only one favored alternative** on the City's table, even though the independent panel of scientists recommended eight, and the consultant for the Alternatives Analysis recommended 2 solutions.

Not surprisingly, the **alternative currently being pursued is the same one that was originally favored by the City**. It does the following: After treating reclaimed water to exceed drinking water standards, 50 mgd would be injected into the aquifer via a series of recharge wells, 600 to 800 feet below Central Tampa. The water would be pumped out, as needed, via a series of shallower wells and added to the Hillsborough River Reservoir. All wells would be located on public properties. In general parlance it's called Aquifer Recharge and Recovery, "Combination 3", from the consultant's report. The City has been storing up to 10 mgd in aquifer storage for many years, but not at the depth proposed under COMB 3, and not up to 50 mgd, which has never been tried or fully studied. And the City has been injecting reservoir water, not treated wastewater.

We need to continue pursuing other alternatives, specifically "Combination 2" which recommends using recycled water for the minimum flow and selling the rest. The water for minimum flows would be only 15.5 mgd and may require lesser treatment than RO and would therefore be cheaper.

Other alternatives to be pursued are conservation education, reducing water use, and expanding the purple pipe system which uses reclaimed water for lawn irrigation.

The City put this project out for bids to design/build contractors. Out of three submissions, one contractor has been chosen to be recommended for approval by City Council and the Mayor. Two contractors submitted rather extensive proposals, PCL and Jacobs. During our most recent meeting with the City, they were rather vague as to the reasons why PCL was chosen over Jacobs. We strongly recommend that you question the choice of contractor and why, as well, that you ask the City to justify their decision. Our recommendation is more in line with Jacobs' proposal: to truly **study a variety of alternatives and not simply hone in on Combination 3, the City's preference.**

5. Tampa's True Water Needs

Tampa needs water to supply to the residents for drinking and to maintain minimum flows of the lower Hillsborough River. To meet these needs in the future, Tampa may need additional water, but certainly not all 50 mgd of reclaimed water that is available and currently legislated to be used. We are concerned that the City may have an exaggerated assessment of its needs (perhaps based on the state mandate). We believe that by working with TBW on a regional solution and relying more on conservation, the City will not need 50 mgd of additional supply. The city needs to determine what additional water is needed. Using all 50 mgd, if not needed, could have a negative health impact especially if the water is not treated properly, and will have a high cost and create unnecessary risk.

There is a long-standing desire to find additional sources to **meet the minimum flow for the Lower River** to alleviate demand on the three sources that are now used for that purpose (Sulphur Springs, the TBC and another spring - Blue Sink). At their current rate of use, the sources are not meeting the12.9 and 15.5 mgd freshwater equivalent requirement of the minimum flow rule.

The need for additional drinking water and drought-proofing is a longer-term concern. In a typical year, Tampa has more than enough water to meet its needs - by using only reservoir water and/or occasionally supplementing with purchased water from regional supplier Tampa Bay Water. In the past, only during a multi-year drought was there any concern for enough drinking water, and basic needs have always been supplied.

6. Alternative Solutions

As Tampa grows more water may be needed. Currently, Tampa is limited to 82 mgd withdrawal from HRR. Tampa has the option to **buy more water** from Tampa Bay Water or to renegotiate its limit. **Conservation** is a good option to slow growing need. More water is needed in drought years when water is scarce - using **reclaimed water for irrigation** will provide it when it is needed most. The project that is currently underway to replace all of the ancient leaking pipes in the City (for which water rates were increased within the last 3 years), is estimated to save 4 to 5 million gallons of water per day that is simply leaking from the old pipes.

Recommendations

Slow down. We have at least 10 years for compliance under the current legislation - more if it is amended.

We recommend other alternatives, specifically Combination 2, which would use some of the treated recycled water for the minimum flow and would sell the rest. Minimum flows would require less than the whole 50 mgd and may require lesser treatment than RO and would therefore be cheaper.

Other alternatives to ensure adequate supply would include promoting conservation education, reducing water use, and expanding the purple pipe system which uses reclaimed water for lawn irrigation.

Study what this quantity of water would do to the aquifer and river. Model what putting 50 mgd in the aquifer below central Tampa would do.

Study what the impact of contaminants would be on human and environmental health. Build a prototype using Tampa's reclaimed water to demonstrate the safety and efficacy of this unprecedented approach to supplementing minimum flows and supplying drinking water to Tampa's residents.

Provide detailed cost estimates and projected budget. Does staff anticipate an increase in utility rates?