

**OFFICE OF THE CITY COUNCIL**

**RESEARCH DIVISION**

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**CITY COUNCIL SPECIAL COMMITTEE ON RESILIENCY**

**SUBCOMMITTEE ON ENVIRONMENTAL PLANNING**

**Virtual meeting via Zoom – no physical location**

**October 8, 2020**

**4:00 p.m.**

**Location:** Virtual meeting via Zoom – no physical location

**In attendance:** Subcommittee members Matt Carlucci and Randy DeFoor; Subject matter experts Brooks Andrews Adam Hoyles, Sarah Boren, Ashantae Green, Bruce Fouraker, Kevin O’Halloran, Joshua Rosenberg, Adam Rosenblatt, Guillermo Simon, Steve Swann, Quinton White

**Also**: Council Member Joyce Morgan; Citizen subject matter expert John Sapora; Jeff Clements, Yvonne Mitchell – Council Research Division; Steve Cassada, Eric Grantham and Melanie Wilkes – Council Support Services; Susan Grandin and Kealey West – Office of General Counsel; Paul McElroy, Kurtis Wilson, Wayne Young, Hai Vu and Brian Roche – JEA; Nick Primrose – Jaxport; Sean Lahav – North East Florida Regional Council; Susan Kelly – Planning and Development Department; Melissa Long– Environmental Quality Division; James Richardson – Environmental Protection Board

**Meeting Convened**: 4:02 p.m.

Council Member Randy DeFoor convened the meeting and turned the meeting over the Brooks Andrews. Mr. Andrews thanked Ms. DeFoor, Ashantae Green and Todd Sack for their participation in WJCT’s Adapt virtual forum last evening, which was very informative. Mr. Andrews introduced the JEA personnel in attendance for today’s primary presentation.

JEA review of environmental issues and solutions

Hai Vu, Interim GM for Water and Wastewater, discussed septic tanks and water quality issues. The City has about 65,000 septic tanks and they are one of the most common sources of fecal coliform bacteria in the river, a major pollutant. Jacksonville’s sandy soil does not treat septic tank effluent as well as more organic soils and the effluent flows rapidly through the sandy soil to water bodies. A joint effort by the City, JEA and the Health Department prioritized septic tank problem areas and phase-out rankings. The system was tweaked in recent years to include community considerations (median home values, dependence on well water, number of undeveloped lots in the area and economic development potential) in addition to environmental and technical considerations. The top three phase-out priorities (Biltmore C, Beverly Hills East and West) are in various stages of design and construction. Addressing a fourth priority area – Christobel – will depend on the amount of funding left after the top three projects are completed. Phasing out septic tanks in favor of gravity sewer mains is very expensive, so JEA has a consultant study underway to look at new technologies and less expensive options for dealing with septic tanks. The results of a literature and best practices study will lead to pilot program testing in several areas based on what options are determined to be feasible. Some of the waste treatment alternatives under consideration include small scale treatment facilities, on-site treatment options, low pressure vacuum systems, and others, and they will be evaluated on the basis of technical feasibility, construction cost long-term maintenance cost, community impacts, and others factors. Phase 1 of the consultant sreport is due by the end of the year and a master plan for which technologies would work best in different septic tank phase-out areas should be developed by May of 2021.

Mr. Vu showed a chart of JEA’s nitrogen reductions over the last 20 years. This year JEA will discharge 299 tons of nitrogen into the river, less than half of its permitted cap of 720 tons. That has been achieved through an Integrated Water Resource Planning process (the “one water” concept) that seeks the maximum reuse of all water resources. He showed another table of potential water supply sources and their costs, ranging from $0.62 per 1000 gallons of water drawn from the Floridan Aquifer to as much as $6.10 per thousand gallons for potable water reuse (injection of highly treated wastewater back into the aquifer for later use). He noted that over the last several decades a majority of Jacksonville’s growth has occurred south/east of the St. Johns River which is the area that has less supply than the north/east side, so pipelines have been constructed to carry water from the north grid to the south grid to meet supply needs. A potable reuse pilot project is underway at two wastewater treatment plants to test the injection of reuse water into the aquifer. A brackish groundwater desalination/purification system is also being considered. Collection and treatment of stormwater from FDOT and other retention ponds for irrigation purposes is also being considered to relieve use of potable water for that purpose. Mr. Vu noted that state regulations on treatment of stormwater for reuse differs for private property owners versus public utilities like JEA (which must meet a more stringent standard).

Brian Roche, JEA’s Chief Financial Officer, discussed the utility’s diversification of energy sources over the past 50 years. JEA has gone from being entirely fueled by oil in the early 1970s to a much more diversified portfolio now, including primarily natural gas and solar power and some coal and petroleum coke power, with nuclear power coming on line in a couple of years when Plant Vogtle in Georgia is completed. Coal powered plants have come and gone during that time. The trend to natural gas from oil and coal has reduced JEA’s carbon emissions considerably (about 60%) over the last couple of decades, and that trend will continue as more solar and nuclear power comes on line. Five 50-megawatt solar farms have been developed in Jacksonville in joint partnerships by JEA with a private solar power provider. Collectively they will provide about 5% of JEA’s power needs. He described the challenges of dealing with the limitations of solar power (power reduction due to cloud cover and the lack of robust battery storage capacity) and the need to have other generating capacity ready to fill in power needs when solar output drops due to weather conditions. JEA is considering a wide range of future power acquisition options, including new owned generation plants, joint ownership options, purchase power agreements, and is also looking at demand-side management and energy efficiency measures to reduce power needs. In the next 3 to 5 years the JEA will have to make some decisions about how to proceed with power supply for the following decade.

Questions and answers

Brooks Andrews noted that Miami-Dade County has done a study on septic tank impacts from sea level rise and wondered what are they doing that might be different from what JEA is considering. Mr. Vu said he was unfamiliar with their study so didn’t know what Miami-Dade might be considering. JEA’s consultant has looked at what’s going on around the state so should have that information as part of its study.

Mr. Andrews said the former St. Johns River Power Park property borders valuable wetlands and asked if there is anything JEA or the City could do to protect and enhance those wetlands and keep their value when the property is redeveloped for another use. Paul McElroy said there are 800 acres of wetlands in the 2,000 acre property and they will be preserved/maintained. He indicated JEA will put environmental restrictions in the sale contract to protect them.

Bruce Fouraker asked if the Northside 3 natural gas boiler could be changed out to a combined cycle heat exchanger. Brian Roche said JEA will be issuing an RFP looking for the best ideas for how to use that facility. Mr. Fouraker asked if the Brandy Branch generating station could be used for carbon capture and sequestration at a reserve in South Georgia. Ms. McElroy said carbon sequestration is a new technology on the east coast and needs to be approached very carefully given our region’s soil type and the presence of the Floridan Aquifer which supplies our drinking water. He cautioned that it would be expensive to pipe the liquified CO² 50 miles or more to Georgia.

Adam Hoyles asked about JEA’s timeframe to get to carbon neutrality and how the utility plans accomplish that. Mr. McElroy said JEA doesn’t really have a fixed deadline but will probably get there in the next couple of years with community input. The challenge to going beyond what’s been done already is the quality of battery storage needed for solar power to be truly viable. Hydrogen power might be feasible in 20 or 30 years. The industry generally is looking at 80% reduction as a goal – getting to 0 will be very difficult with current technology.

Mr. Hoyles asked how long it will take to get all septic tanks removed in Jacksonville and wondered if they being removed faster than new tanks are being installed. Mr. Vu said JEA does not have a plan to get rid of all of them; they are working on remediating the top rated problem areas with available funding and are looking at new technologies for reduced cost options for dealing with more areas. Mr. Hoyles said a lot of septic tanks require a pump and so are subject to power reliability issues in storms. Hurricane rains have caused septic system overflows, so that’s a real sore spot for resiliency. Mr. Vu said that since Hurricane Matthew JEA has installed many fixed and mobile generators and pumps to keep its pump stations working through power outages. An engineering firm is nearing the end of a comprehensive vulnerability study of JEA’s facilities and a list of implementation projects is being developed for the next 10 years.

Mr. Hoyles asked if undergrounding the overhead power transmission lines would help with reliability. Mr. McElroy said the answer is both yes and no. Undergrounding overhead lines would reduce the number of outages, but those outages that do happen take longer to find and repair and it’s more expensive to do. The cost has been estimated at $6 billion for JEA, AT&T and Comcast to put all their lines underground. He also cautioned that underground means underwater in many part of Jacksonville due to hour high water table, so that’s not good for electrical facilities. In parts of South Florida they shut down the electric systems during big storms to protect them from flooding damage. Undergrounding does help reduce wind damage.

Council Member Carlucci reported that Miami is replacing its bus fleet gradually with all-electric buses and felt Jacksonville should probably need to be looking at that as a carbon reduction mechanism. The cost of septic tank removal and connection to gravity sewer systems is high to participating households, so JEA’s alternatives study will be important.

Mr. Andrews invited members to pose additional questions for JEA to him for transmittal.

Working group reports were deferred to the next meeting because of the length of today’s presentations. Mr. Andrews expressed the hope that all of the groups would schedule meetings before the next subcommittee meeting to move the process along.

Council Member DeFoor thanked everyone for their active participation and thanked JEA for its presentations.

**Meeting adjourned:** 5:34 p.m.

Minutes: Jeff Clements, Council Research Division

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