

**CITY OF BELLEVUE
ENVIRONMENTAL SERVICES COMMISSION
MEETING MINUTES**

Thursday
April 1, 2021
6:30 p.m.

Zoom

1. CALL TO ORDER:

The meeting was called to order by Vice Chair Strom at 6:30 p.m.

ROLL CALL

COMMISSIONERS PRESENT: Diann Strom (Vice Chair), Neal Hines, Anne Howe, Negin Khanloo, Ken Wan

COUNCIL LIAISON: Conrad Lee

COMMISSIONERS ABSENT: Vanja Knezevic (Chair), Ling Zhuang

OTHERS PRESENT:

Brian Bartle, Utilities Deputy Director; Lucy Liu, Utilities Resource Management and Customer Service Assistant Director; Linda De Boldt, Utilities Engineering Assistant Director; Joe Harbour, Utilities Operations and Maintenance Assistant Director; Jo Liu, Utilities Fiscal Manager; Tony Marcum, Utilities Operations Manager; Chad Beck, Utilities Smart Utility Program Manager; Cherish Jackson, Utilities Director's Office Senior Administrative Assistant; and Laurie Hugdahl, Minutes Taker.

2. TEMPORARY SUSPENSION OF BYLAWS

Vice Chair Strom and Deputy Director Brian Bartle read an introductory statement regarding online meetings and procedures.

3. APPROVAL OF THE AGENDA

The agenda was approved unanimously (5-0).

4. ORAL AND WRITTEN COMMUNICATION

None.

5. COMMUNICATION FROM CITY COUNCIL, COMMUNITY COUNCIL, BOARDS AND COMMISSIONS

Councilmember Lee reported that the country has seen a lot of unfortunate anti-Asian incidents, and it is important for residents to be aware that no crime or hate will be tolerated. He acknowledged the police department for the welfare of the community as a whole.

6. STAFF REPORTS

None

7. APPROVAL OF MINUTES

a) 3/4/21 MINUTES

Motion made by Commissioner Wan, seconded by Commissioner Hines, to approve the 3/4/21 minutes. Upon a roll call vote, the motion passed unanimously (5-0).

8. UNFINISHED BUSINESS

a) Water Main Breaks – How does Bellevue compare?

Tony Marcum, Operations Manager, Water, Wastewater, and Operations, followed up on a question posed at the March 4 ESC meeting. He noted it is very difficult to compare jurisdictions because of differences in age, pipe material, soil condition, etc., but Bellevue's performance is better than most. A study by the Water Research Foundation showed that break rates jumped 27% from 2012 to 2018 among 308 survey participants in the United States and Canada with overall break rates of approximately 14 per 100 miles of pipe. The latest American Water Works Association's nationwide benchmarking survey found an average of approximately 9 breaks per 100 miles of pipe per year. This is consistent with the City of Seattle's break rate over the past 15 years, but Bellevue has averaged just 3.5 breaks per 100 miles per year over the past 10 years.

Bellevue has averaged approximately 21 breaks in total per year. Nearly 75% of these are from Asbestos Cement (AC) Pipe even though this pipe makes up approximately 40% of the system. The national average is trending upward, but Bellevue's break rate has remained consistent since a comprehensive analysis was conducted between 1997 and 2005. This is likely due a strong AC Main Replacement CIP. Mr. Marcum stressed that having zero breaks would be completely cost prohibitive. In summary,

Bellevue compares very favorably from a national standpoint and even with Seattle Public Utilities.

There were no comments or questions.

b) Republic Services Action Plan Follow Up

Assistant Director Lucy Liu followed up on Republic Services' Action Plan to meet Satisfaction Requirements on Annual Customer Surveys.

She explained that the types of information available for the Commission to receive on a quarterly basis are the number of missed pickups, the number of missed pickups subject to performance fee, and the satisfaction with response time following missed collection from customer surveys conducted by Republic Services. She solicited the Commission's direction.

- Commissioner Wan requested the available information on a quarterly basis so they are not surprised at the end of the year again.
- Commissioner Howe also spoke in support of regular, timely data from Republic. She noted the Action Plan said Republic would be conducting training of their staff. She wondered if Republic could report back to Bellevue staff on how often they are doing this training. Assistant Director Liu affirmed that this was possible.
- Commissioner Hines also spoke in support of the quarterly tracking of this information.
- Vice Chair Strom agreed with all of the above.

Motion made by Commissioner Khanloo, seconded by Commissioner Hines, to request quarterly data updates from staff. Motion passed unanimously (5-0).

9. NEW BUSINESS

a) SCADA Master Plan Implementation Update

Chad Beck, Smart Utility Program Manager, gave an update on the SCADA (Supervisory Control and Data Acquisition) Master Plan implementation. He explained that Bellevue has a large number of sites connected to the SCADA system (32 water sites, 48 wastewater sites, and 11 storm/surface water sites). The data is gathered and stored for system feedback and analysis. Goals of SCADA Master Plan upgrades were to increase critical infrastructure resiliency and redundancy; ensure critical infrastructure cybersecurity in alignment with federal and state regulations

and industry best practices; maintain and improve the quality of Utility services; and advance Bellevue's 'Smart City' vision within the Utilities Department.

Four phases of the SCADA Master Plan will take the City through 2025. These phases include Process Control & Communication; Security & Resiliency; Intelligent Field Sensors; and Analytic & Business Intelligence:

- Phase 1: Process Control & Communication revolves around converting from analog to digital and upgrading the communications network to communicate via the secure cellular network. The cellular network configuration is complete. The City has set up a private cellular network between remote sites and SCADA servers via a secure VPN "tunnel". Mr. Marcum gave an update on completion rates for remote computer and cellular upgrades for Water, Wastewater, and Storm.
- Phase 2: Security & Resiliency – Currently there is no physical redundancy. The system must be down to do software updates and security patches. There will be two complete sets of PLCs (Programmable Logic Controller) and Servers at City Hall and Bellevue Service Center. This will mitigate the risk of failures, provide the ability to load security patches without impact to live server, and reboot server without SCADA system downtime. Hybrid topology will allow data to flow from all sites into the master unit, but remote sites can communicate when necessary which will improve resiliency.
- Phase 3: Intelligent Field Sensors – Smart Motor Sensors have been installed on some of the pump stations as Capital Improvement Projects, but the intention is to put them on all 90 motor pump assemblies. Once this is complete, they will be able to monitor pumping efficiency, calculate the cost of pumping, and automatically order replacement when performance indicates pending failure. Another part of the intelligent field sensors is flow & pressure monitoring.
 - o Commissioner Hines asked what the sensor is monitoring. Mr. Beck replied it is measuring heat, frequency, RPMs, and vibrations.
- Phase 4: Analytics & Business Intelligence – This is the phase that will allow implementation of the Smart City initiatives. In this phase the City will be able to incorporate and pilot software programs that provide: Machine Learning & Artificial Intelligence, Predictive Simulation, Self-healing Systems, and Just-in-Time Asset Replacement. This will save the utility money over time as it becomes a more efficiently run system.

Mr. Beck reviewed the investment plan for this implementation. There will be heavy investment right away into the Sewer stations because those are actively operated stations that are much further behind than the Water Utility when it comes to sensors, digital controls, and other things needed to make them Smart systems. The Water system still has some improvements to do, but the Wastewater has far more. Storm will be invested in later and these investments will ramp up in the last two years of the six-year window. By the end of 2027 the majority of the recommendations from the Master Plan are expected to be achieved. Phase 4 software packages are yet to be determined.

Comments and Questions:

Vice Chair Strom asked if SCADA would be put in the storm water system. Mr. Beck replied that it would be, but so far none of the sites have been upgraded. He explained that the storm water systems are passively managed systems, and it is more important to add the programmable logic controller to actively-managed stations first. Vice Chair Strom referred to flooding in Factoria a couple years ago and asked about identifying priority sites for storm water to potentially prevent future incidents. Mr. Beck replied that they do have priority sites, but the improvements on the SCADA side probably would not have prevented the flooding in Factoria. This had more to do with the storm water infrastructure in that area, specifically from a capacity standpoint and the ability of the water to successfully flow out into Lake Washington. If the culverts aren't sized appropriately, knowing the flow will not help avoid the storm event. Planners are working to make sure that each part of the path of the stormwater is sufficiently sized to handle those larger storm events.

Linda DeBoldt concurred with Mr. Beck. She noted that there is a capital improvement project in the design phase right now in Factoria. The flood in the Factoria situation was a large storm event which was bigger than the culvert could handle. Staff is in the process of designing an improvement to the stormwater system in that area. This is planned to go to construction in 2022.

Commissioner Wan thanked Mr. Beck for the presentation. He referred to an incident where there was hacking of a water system in Florida and asked about the IT security of the system from remote access hacks. Mr. Beck generally discussed issues that can open the door to remote hacking. The City is making sure to follow safety standards that protect the system from attacks.

Commissioner Hines asked how the City plans for external risks as a whole to the system. Mr. Beck replied that copper lines have a lot of

issues. In the long-term they want to move to city-owned fiber because it is a more resilient system and one that the City can control. It is already being built out by Transportation, and Utilities will piggyback on that where and when available. In the meantime, Utilities will invest in cellular. He noted that the data that will be passed is low compared to the average cell phone user. Also, this type of system qualifies for a priority, critical-infrastructure system. He summarized that the City is utilizing both short-term and long-term strategies to mitigate the risks.

Commissioner Howe thanked Mr. Beck for the presentation. She asked if there are some stations in dead zones due to the topography. Mr. Beck commented that there are some troublesome ones, but on the water side they are able to get at least one carrier to work in each location. Utilities will be leveraging multiple carriers and also neighboring stations to make connections. It is expected that it will become less of a problem as they move to 5G.

b) 2020 Year End Financial Report – Water, Sewer, Storm & Surface Water, and Solid Waste Utility Funds

Fiscal Manager Jo Liu gave a briefing on the Utilities 2020 financial performance of Water, Sewer, Stormwater, and Solid Waste. She reported that all Utilities ended 2020 in positive financial condition with operating revenues exceeding operating expenses and fund balances above expectations. Any fund balances above expectations are transferred to the R&R (Renewal & Replacement) account until R&R funds are adequate to meet long-term needs.

Factors that impacted revenues for 2020 included the following:

- The City was prepared. The budget was developed anticipating a recession.
- 2020 was a drier-than-average year which encouraged consumption and resulted in higher revenues.
- COVID-19 only had moderate impacts to revenues. Commercial revenues dipped, but residential revenues increased due to customers working from home which helped to offset the commercial dip.

The Water Utility started the year with \$6M more fund balance than anticipated. Revenue was \$1.3M above budget due to the anticipated recession, drier weather, and moderate COVID-19 impact. Expenditures were \$1.3M lower than budget because of cost-containment measures such as holding open personnel vacancies and operational under-expenditures. The ending fund balance was \$3.2M above budget which will help fund

future funding of asset replacement and future replacement of billing and asset management software systems.

The Sewer Utility started 2020 with \$3.4M over budget due to exceptional sales and cost-savings in 2019. 2020 revenues were \$1M higher than anticipated due to higher water consumption. 2020 expenses were about \$0.6M lower than planned. This was largely driven by cost-containment measures such as operational under-expenditures. The ending fund balance was \$3.4M above budgeted levels which will help fund future replacement of billing and asset management software systems.

The Storm Utility began 2020 with \$1M above budget due to operational savings in 2019. Revenues were on-budget, and expenses were about \$90,000 lower than planned due to cost-containment measures such as savings from personnel vacancies. The ending fund balance was \$1.1M above budget and will go to fund future replacement of billing and asset management software systems.

The Solid Waste Utility began 2020 with \$0.2M above budget due to unearned performance bonus revenues by Republic Services. Expenditures were \$0.3M lower than planned. This was driven primarily by cost-containment measures such as holding open personnel vacancies and other operational savings such as cancelling or delaying in-person outreach events. The ending fund balance was \$1.3M above budgeted levels due primarily to Republic Services not earning the performance bonuses and operational savings.

Fiscal Manager Liu summarized that Utilities ended 2020 on solid ground with all utilities in positive financial condition including operating revenues exceeding operating expenses and fund balances above expectations. As a result, Utilities is starting 2021 off in a healthy financial position and is well-positioned to continue to mitigate COVID revenue impacts. Utilities will continue to periodically report back to the ESC on the financial performance of the utilities and will continue to provide fiscal stewardship.

There were no comments or questions.

10. REVIEW OF COMMISSION & COUNCIL CALENDARS

Deputy Director Brian Bartle reviewed the Commission and Council calendars. Next month the topics for ESC will be a presentation on the Life Cycle of an Asset and an update on Pike's Peak. The CIP tour is still being planned for July.

Commissioner Wan asked about the timing of the election of Chair and Vice Chair in June. Deputy Director Bartle explained that this is normally done every June, but it was delayed last year due to COVID impacts.

11. **ADJOURNMENT**

Motion made by Commissioner Howe, seconded by Commissioner Hines, to adjourn the meeting. Upon a roll call vote, the motion passed unanimously (5-0).

The meeting was adjourned at 7:57 p.m.