

Board of Municipal Utilities
Work Session Minutes
May 15, 2018
201 Miller Road
Avon Lake, Ohio

Call to Order – Roll Call

The meeting was called to order at 6:05 PM.

Present: Mr. Abram, Mr. Dzwonczyk, Mr. Rush, and Mrs. Schnabel

Also present: CUE Danielson, CUO Munro, Outreach Specialist Arnold (arrived at 6:15 PM), Councilmember Fenderbosch and Mayor Zilka. Lamalani Siverts and Banafsheh Khakipoor arrived at 6:10 PM. Resident Nathan Nichols and his son arrived at 6:30 PM.

Excused: Mr. Phillips

Miscellaneous

The arrival of our biomimicry presenters was delayed by a traffic jam resulting from an accident blocking their route, the Chairman asked about the draft budget performance reporting included in the Board packet. He requested staff make sure the organization is budgeting appropriately, which he believes should be a realistic snapshot of what staff expects to need to spend in the upcoming year. He indicated in reviewing budget reports, Board members would be most interested in “exceptions,” and staff should be able to explain the exceptions.

Biomimicry Program Update

With the arrival of Lamalani Siverts and Banafsheh (Bana) Khakipoor, the Chairman invited them to present their novel research. CUE Danielson provided a brief background, reminding members that in 2015, the Board supported a 5-year commitment to sponsor a student to complete a Ph.D. in biomimicry. Avon Lake Regional Water is the first utility sponsor of a student and will benefit from two students performing research in the area of harmful algal blooms. Lamalani Siverts, who has a marine biology background, re-introduced biomimicry to members with three examples. She mentioned how engineers looked to the kingfisher bird’s head to help redesign the front of a bullet train to reduce drag and how the idea for Velcro was inspired by burrs. She also talked about how ants communicate to other ants using pheromones and bees use a waggle dance and how scientists are looking at those types of communication for potential application.

Lamalani then talked about her research. She presented a simplified Lake Erie food web and explained that warmer waters and nutrients in the lake give cyanobacteria a competitive advantage over other forms of algae. She then stated she would be looking at stable isotopes to track nutrients and carbon through the food web in order to hopefully identify better models to help predict harmful algal blooms.

Banafsheh Khakipoor, who has a computer science background, then spoke about using computers to perform deep learning to try to predict where harmful algal blooms and/or dead zones may develop. She also intends to look at Water Filtration Plant operational data to see if deep learning can help optimize treatment based upon raw water quality data.

Both Lamalani and Bana just completed their third year of the program and are about to begin their research efforts in earnest. The Chairman indicated the Board wants to assure their research continues, as necessary (even past the next two years), in order to assure that the utility realize success with its endeavors.

Adjourn

Following conclusion of the biomimicry discussion the Chairman adjourned the meeting at 7:02 PM.

Ayes: Abram, Dzwonczyk, Rush, and Schnabel

Nays: None

Motion carried.

Approved June 05, 2018

John Dzwonczyk, Chairman

Todd A. Danielson, Clerk