

January 20, 2021

## **IES Capstone Student Mimi Mahan Project Summary**

### *Overview*

The following document is an overview and summary of IES capstone student Mimi Mahan's capstone project titled, "GIS Analysis of Sheridan Regional Water Transport: Where does your water come from?". With a specific geographic focus on Sheridan, Colorado, Mimi conducted this project on behalf of IES to assist the public in understanding what contaminants of emerging concern (CECs) are, their impact on local waterways, and strategies to alleviate their impact. The project assisted IES in helping the public to understand where their tap water comes from, the tap water treatment process, and methods to best engage and educate the community on this information. To address these questions, Mimi created GIS maps to illustrate the water transportation process in Sheridan, as well as distributed surveys to gauge the public's knowledge of the aforementioned topics.

The paper begins with a literature review to address the following questions: why are CECs important and will educating the community make a difference? Next, the paper contains an analysis of an in-depth survey focused on community engagement and education. Then, a GIS analysis illustrates the answers to the following questions: Where does water come from in Sheridan, CO and where does wastewater go in Sheridan, CO? The final section of the project consists of a discussion of the results, recommendations for IES on how to present the information discussed in the project, and an answer to Mimi's final question: What policy implications could this have for the City of Sheridan?

### *Findings*

The primary findings of the GIS analyses show that CECs are prevalent in Colorado, but are not treated for in Sheridan's two wastewater treatment plants: South Platte Renew and Metro Wastewater Reclamation District. As CECs are not treated for at these facilities, it was concluded that once the water processes through the plants were complete, the CECs are then disposed back into the South Platte River, continuing downstream.

Through her survey analyses, Mimi concluded that the public generally cares about their water quality but are unaware of what CECs are and how they impact their water quality. The surveys showed that respondents were interested in learning more about CECs. Most survey respondents preferred online communication over community workshops, as this method would better suit their ability to attend. It was assumed that this preference could be largely attributed to the COVID-19 pandemic and working to abide by government safety standards.

*Recommendations*

A recommendation Mimi had for IES was that, “IES should have an informational presentation about water transportation, quality, and CECs.” This presentation has been created and is ready to be used by IES. Mimi also recommended that IES should expand its online presence to accommodate the current needs of the community. Lastly, IES should expand its reach outside Sheridan, starting with Denver.

*Recommendations stated in paper:*

1. Address the knowledge gap of where water comes from, where it goes, and how CECs affect water quality. IES should have a presentation with information on all three categories. Mimi has developed a presentation addressing these topics, which has been submitted to IES for public use in newsletters, workshops, and any other way that IES sees fit.
2. IES should expand its online presence by changing workshops to be recorded or through video meetings. IES should also write more newsletters and create shareable pamphlets about CECs and possible alternatives to better interact with the community.
3. If IES has the resources, it should expand its reach outside of Sheridan, starting with Denver. That community can receive the same newsletters and also be a part of the same online workshops. This will also be a good resource for IES, as expanding its reach also means more donations to the organization.