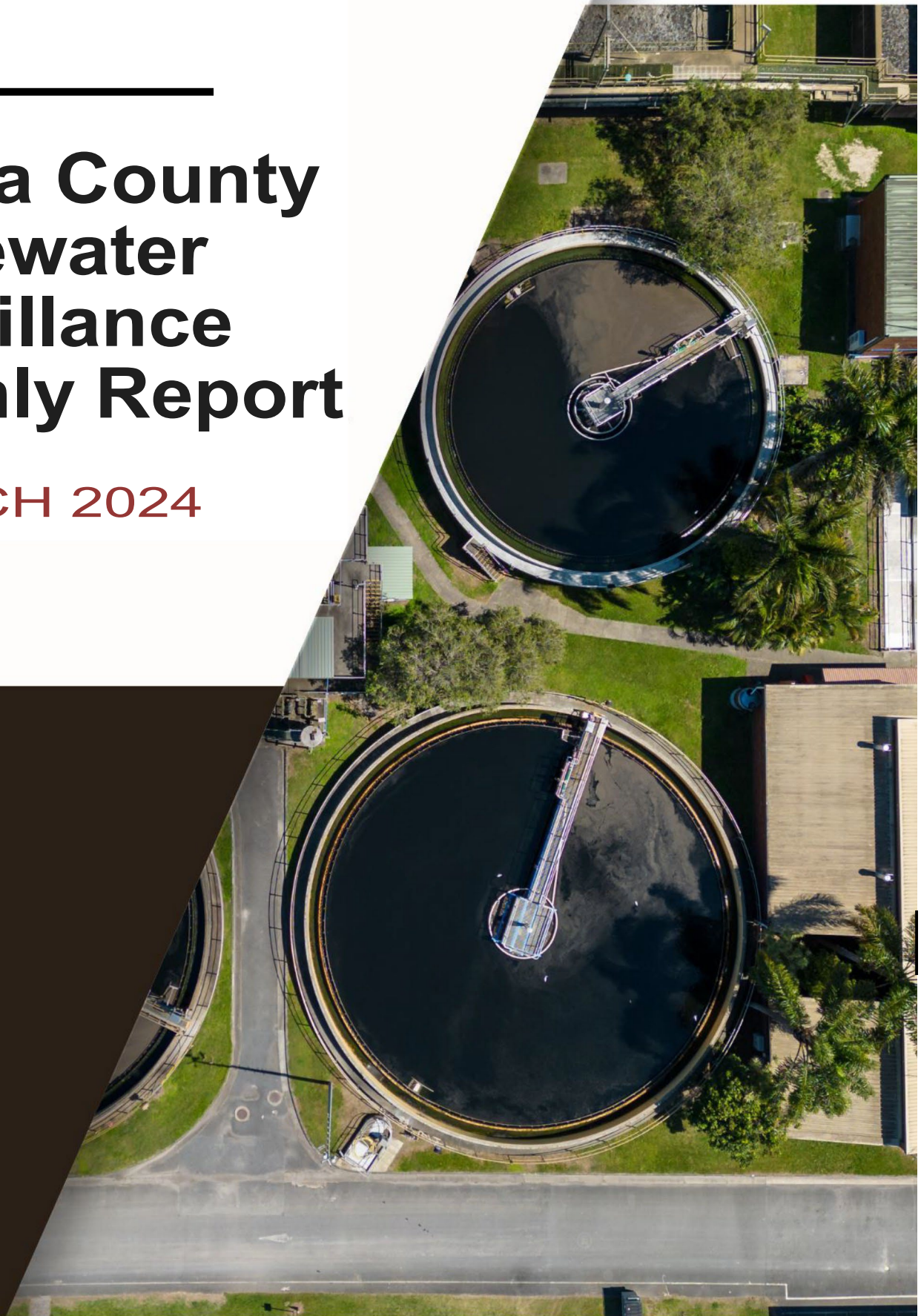

Shasta County Wastewater Surveillance Monthly Report

MARCH 2024



Introduction:

Welcome to the **Shasta County Wastewater Surveillance Monthly Report**, a pioneering initiative aimed at safeguarding public health through proactive pathogen detection. From its commencement on June 15, 2023, our comprehensive surveillance program has been diligently monitoring the **Clear Creek** and **Stillwater sewersheds** for the presence of various infectious agents. This crucial endeavor underscores our unwavering commitment to early identification and effective management of potential health risks within our community. We extend our thanks to the **City of Redding** and its **entire Staff** for partnering with **Shasta County Public Health** in this effort. We also thank the **Utilities** and **Laboratory Personnel** at the **Clear Creek** and **Stillwater Wastewater Treatment Plants (WWTP)**, for their contributions to wastewater surveillance in our area. Together, we are working to protect and safeguard our community!

Material and Methods:

Three composited samples were collected *weekly* from each the Stillwater and the Clear Creek WWTP locations. (Collections were performed on a **Monday, Tuesday, and Thursday** schedule). These collected samples were then shipped to the Verily Lab, and the California Department of Public Health (CDPH) Drinking Water and Radiation Laboratory (DWRL), for testing and analysis.

Results:

Norovirus (GII) is an *enteric* virus that is currently present in Shasta County. The CDC defines Norovirus as a very contagious virus that causes vomiting and diarrhea. Anyone can get infected and sick with norovirus. Norovirus is sometimes called the “stomach flu” or “stomach bug”. However, norovirus illness is not related to the flu, which is caused by influenza virus. Its presence in Shasta County has been on a downward trend from December 27th, 2023, and has appeared to have reached a current plateau on or around March 7th, 2024. (Figure 1A).

***Figure 1A)**

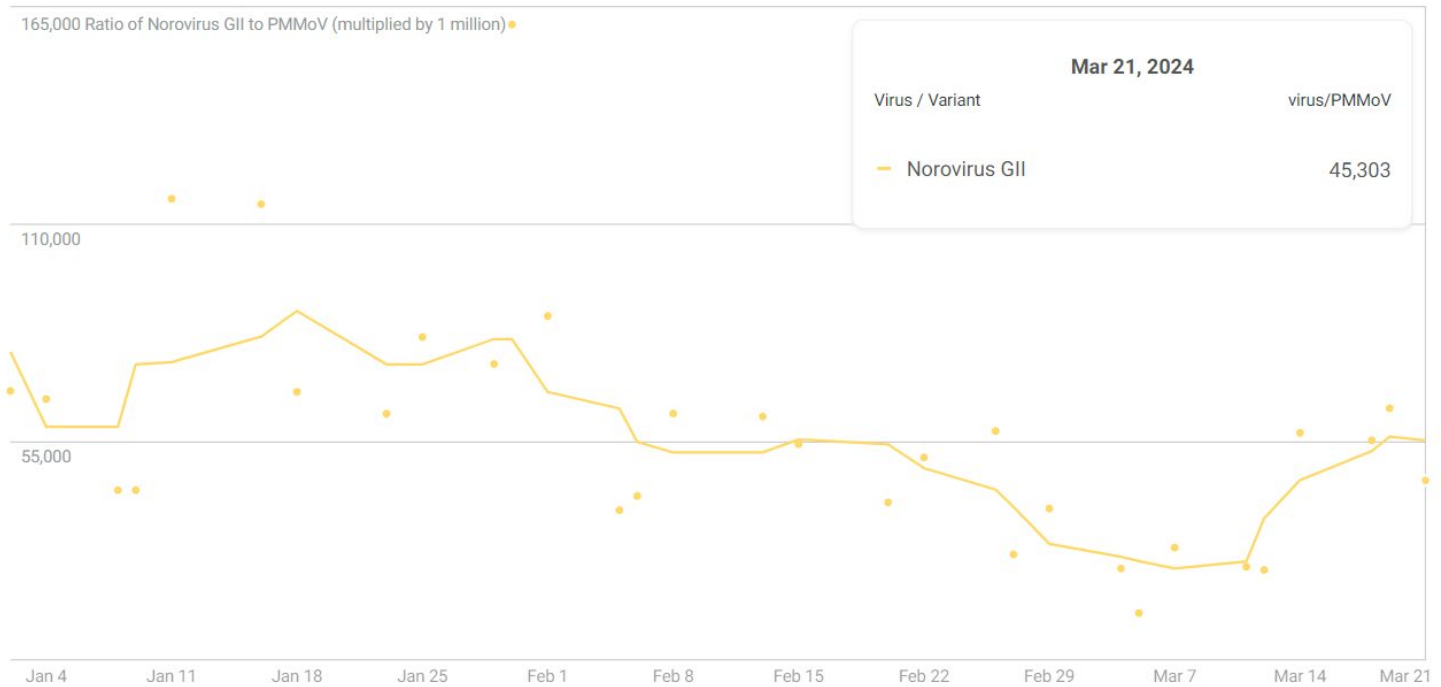


Figure 1A) The ratio of **Norovirus** to Pepper Mild Mottle Virus (PMMoV), multiplied by one million, from January 2nd, 2024, to March 21st, 2024, taken from composite samples collected at the **Stillwater Wastewater Treatment Plant**. The results indicate a plateau of **Norovirus**.

Respiratory viruses affect different groups of individuals in varying ways. **SARS-CoV-2** can lead to severe illness and fatalities, with the elderly and those with underlying health conditions being at higher risk. **Influenza A** and **B** primarily impact the very young, the elderly, and individuals with weakened immune systems, although severe cases can occur across age groups. **Respiratory Syncytial Virus (RSV)** disproportionately affects infants and young children, often leading to hospitalizations. **Human Metapneumovirus (hMPV)** tends to cause respiratory infections in individuals of all ages, particularly the elderly and those with compromised immune systems, although its impact can vary widely. Wastewater surveillance enables early detection of these respiratory viruses, providing essential data for informed public health decisions that can protect vulnerable populations and mitigate the spread of infectious diseases.

Figure 2A shows the ratio of **SARS-CoV-2**, **Influenza A** and **B**, **RSV**, and **hMPV** viruses to Pepper Mild Mottle Virus (PMMoV), multiplied by one million, from February 22nd to March 18th, 2024, taken from composite samples collected at the **Stillwater WWTP**.

SARS-CoV-2 was detected in all the samples submitted and was in a decreasing plateau at *both* the Stillwater and at Clear Creek WWTP. Positive samples were detected for both **Influenza A** and/or **B**

during this period as well. **RSV** was present in all the samples taken from the Stillwater and Clear Creek WWTPs. (See Figures 2A, 2B, 2C, and 2D).

***Figure 2A)**

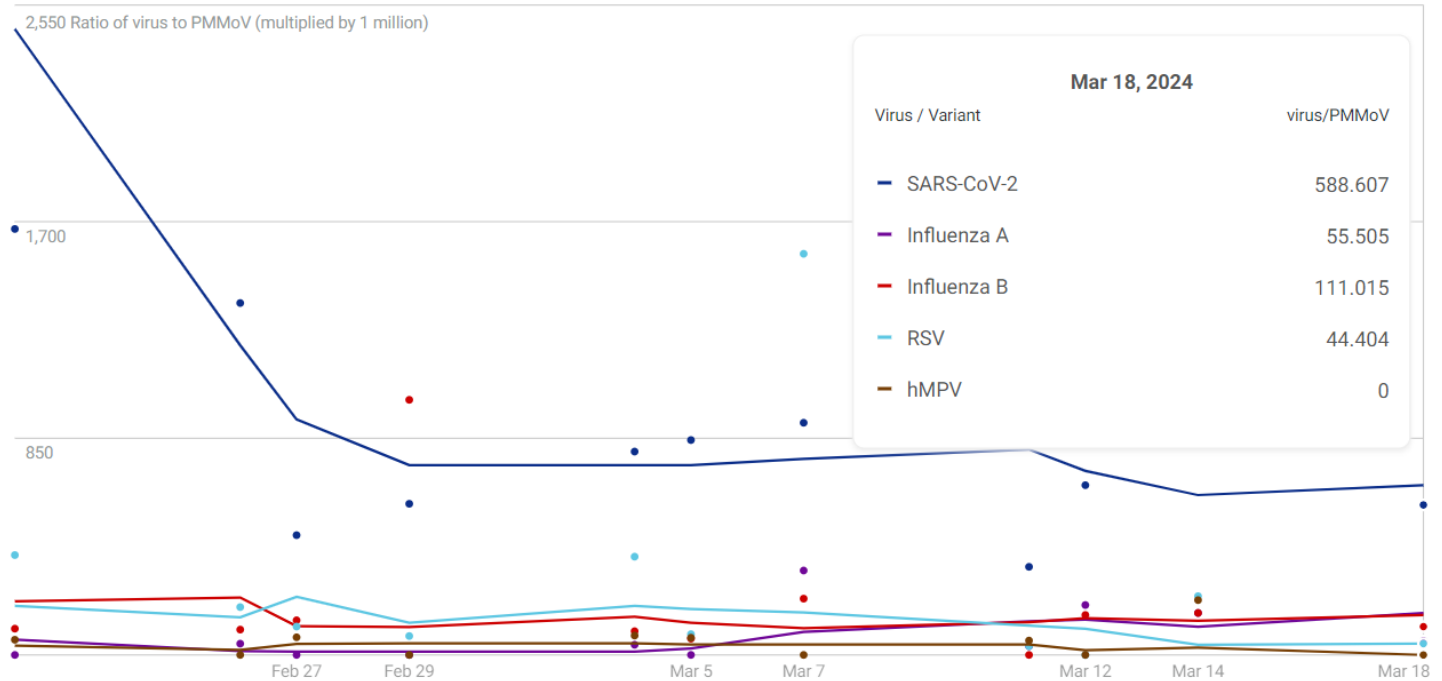
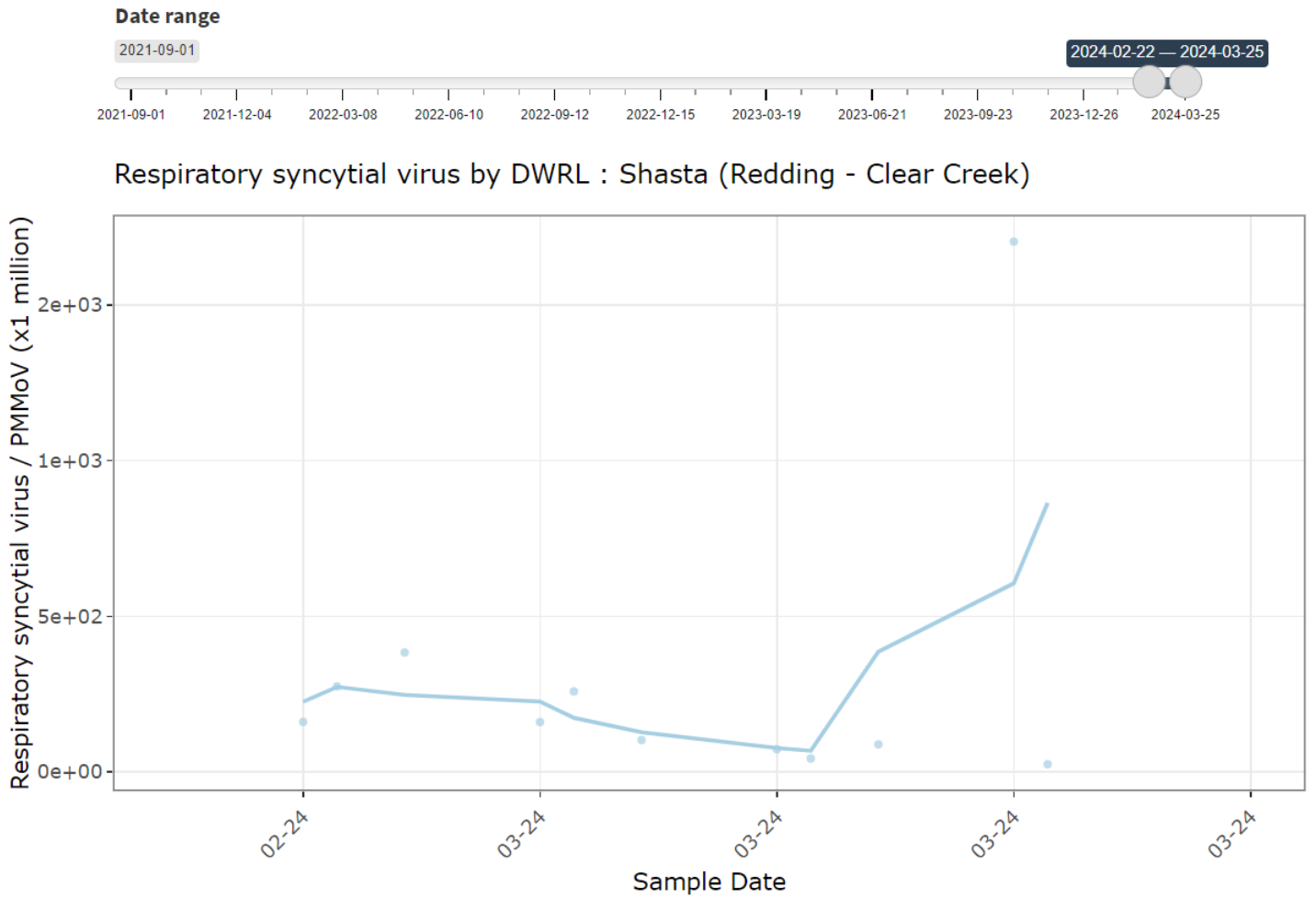
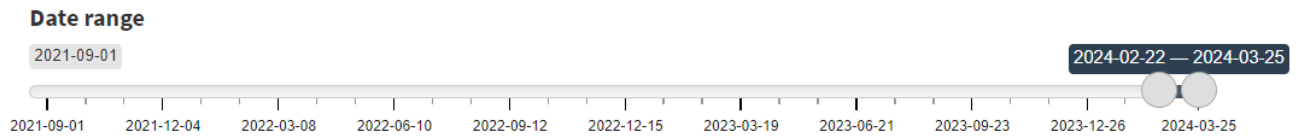


Figure 2A) The ratio of **SARS-CoV-2**, **Influenza A** and **B**, **RSV**, and **hMPV** viruses to Pepper Mild Mottle Virus (PMMoV), multiplied by one million, from February 22nd to March 18th, 2024, taken from composite samples collected at the **Stillwater WWTP**.

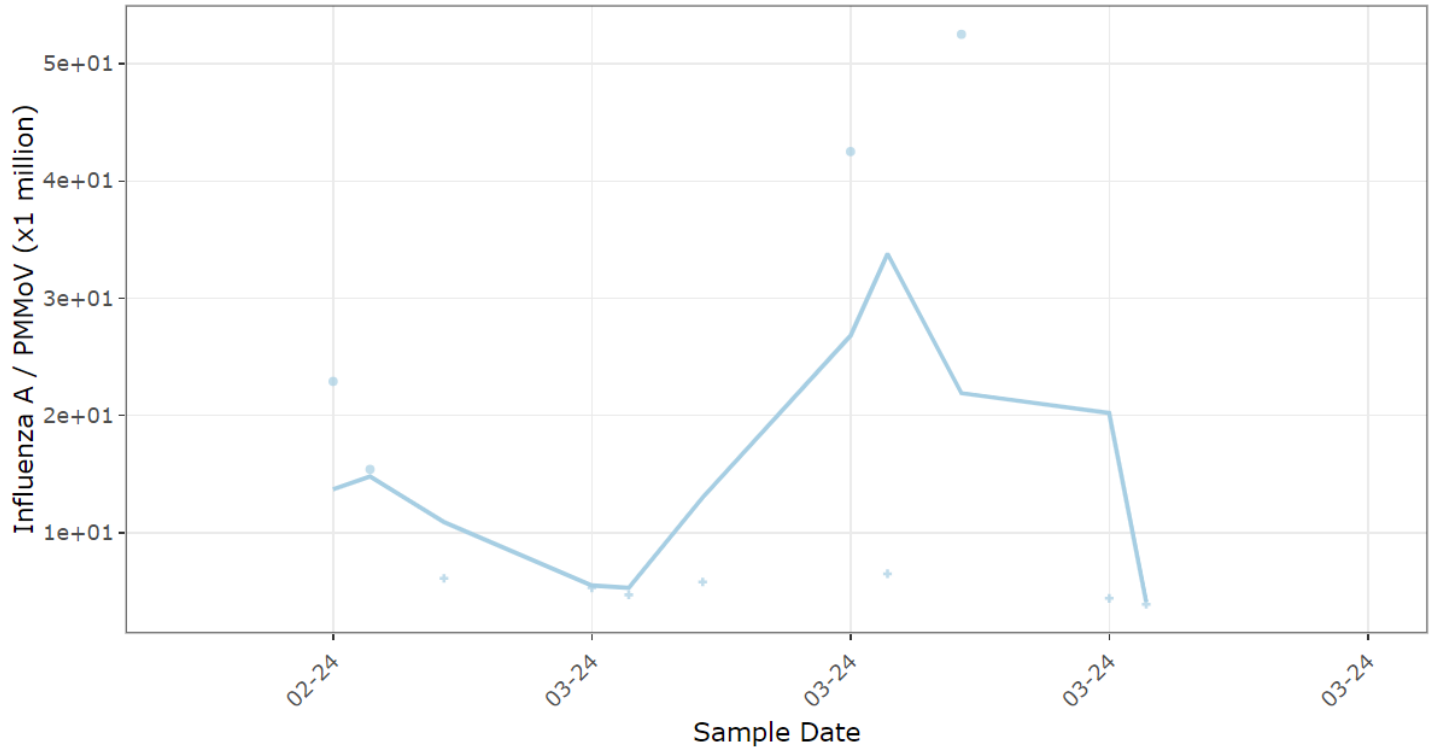
***Figure 2B)**



***Figure 2C)**



Influenza A by DWRL : Shasta (Redding - Clear Creek)



***Figure 2D)**

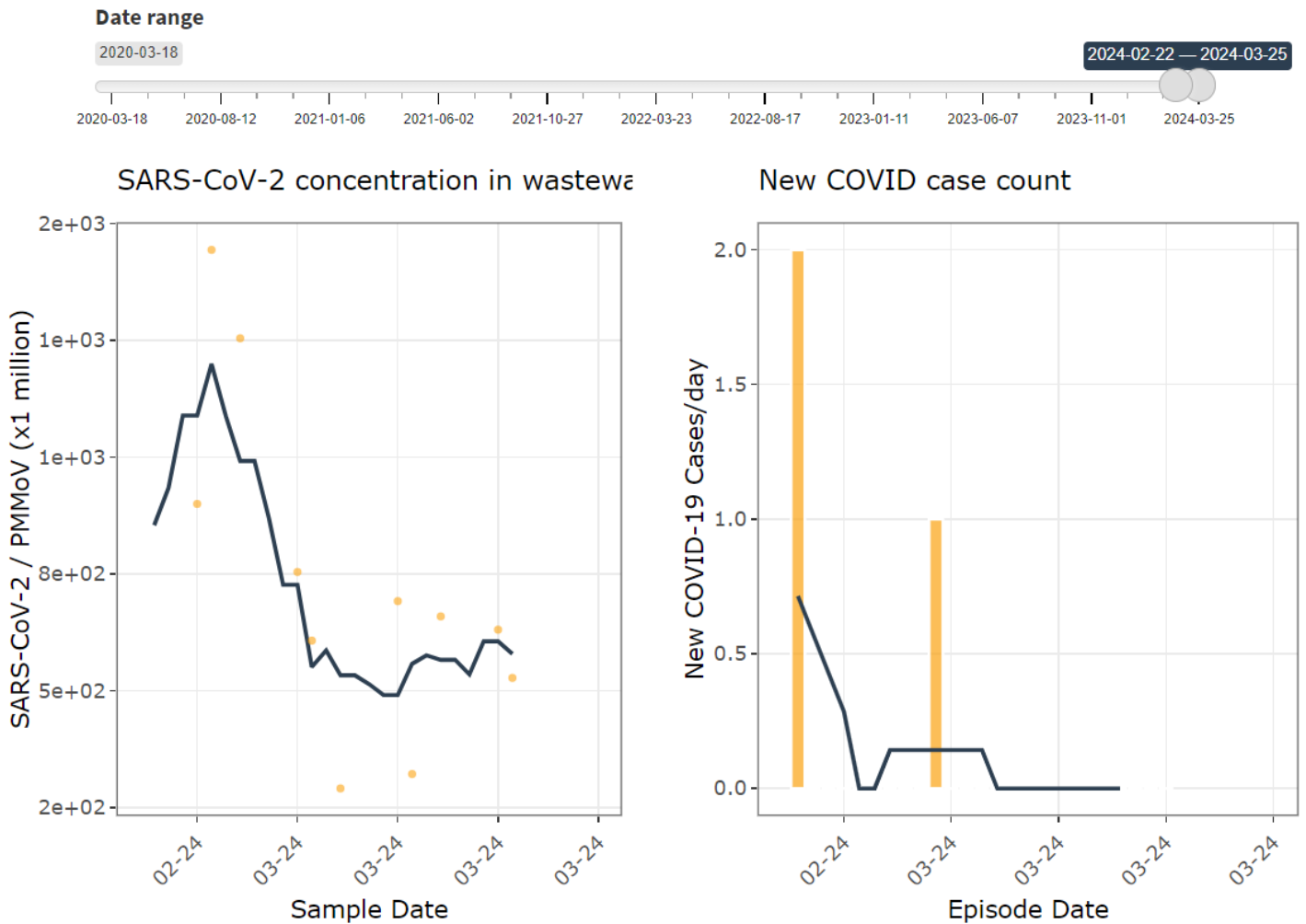


Figure 2B), 2C), and 2D) reflect the ratio of **RSV**, **Influenza A** and **SARS-CoV-2** viruses, respectively, to Pepper Mild Mottle Virus (PMMoV), multiplied by one million, from February 22nd to March 18th, 2024, taken from composite samples collected at the **Clear Creek WWTP**.

Conclusion:

In summation, it appears the current projected trends for our **RANCHO** Regional Area of Wastewater surveillance for **MARCH 2024**, are as follows:

For **SARS-CoV-2**, the surveillance results reflect a **current downward trend** with detection levels in the **low range** heading towards April 2024.

For **Influenza A**, the surveillance results reflect a **current downward trend** with detection levels in the **low range** heading towards April 2024.

For **Influenza B**, the surveillance results reflect a **current downward trend** with detection levels in the **low range** heading towards April 2024.

For **RSV**, the surveillance results reflect a **current downward trend** with detection levels in the **low range** heading towards April 2024.

For **Norovirus (GII)**, the surveillance results reflect a **current downward trend** with

detection levels in the *low range* heading towards April 2024.

For **hMPV**, the surveillance results reflect a *current trend of absence* with no detections and remains in the extremely low range heading into April 2024.