Agenda Date: 9/4/2019
Agenda Placement: 8A

Napa Sanitation District
Board Agenda Letter

TO:	Honorable Board of Directors
FROM:	Timothy Healy - General Manager NS-Technical Services/Engineer
REPORT BY:	Matthew Lemmon, Senior Civil Engineer - 707-258-6004
SUBJECT:	Presentation of the 18/19 I/I Reduction Program Flow Monitoring Results

RECOMMENDATION

Receive a presentation from staff on the 18/19 Inflow/Infiltration (I/I) Reduction Program flow monitoring results.

EXECUTIVE SUMMARY

NapaSan has been implementing an inflow/infiltration (I/I) program (CIP 13705) since 2011. To this date, NapaSan has successfully completed eight major rehabilitation projects, four manhole rehabilitation projects, and three upper lateral projects. These projects have removed a combined total of approximately 16.4 million gallons per day of peak unattenuated flow from the collection system and have reduced or eliminated sanitary sewer overflows that historically occur during large storm events.

Flow monitoring was not conducted during the winter of 2017/2018 due to inadequate storm events, so the winter 2018/2019 flow monitoring included post-construction monitoring for rehabilitation projects constructed during 2017 and 2018. The 2017 and 2018 rehabilitation projects were constructed after the large storm events that the North Bay experienced in January and February 2017, so the projects included a specific focus on reducing I/I in basins upstream from overflow locations. As a result of the 2017 and 2018 I/I reduction projects, certain overflow locations were eliminated and others were reduced during the large storm event that occurred during the winter of 2019, which was measured to be more intense than the 2017 storms.

Flow monitoring results from sewer rehabilitation projects vary from year-to-year based on system characteristics, project goals, and inflow components versus infiltration components. 2017 was the first year that NapaSan combined the annual I/I and R/R projects into a single project for cost savings due to economy-of-scale. The R/R components that were added to the 2017 project included basins that did not have high pre-project peaking factors. These basins were prioritized due to other factors such as failing pipes, increased maintenance costs, and risks of sanitary sewer overflows not associated with wet weather events.

After implementing I/I reduction projects for the last eight years, the results have proven that I/I reduction is effective at reducing sanitary sewer overflows and avoiding certain capacity improvement projects.

The presentation by staff will provide information to the Board based on the 18/19 flow monitoring results and will include a more detailed discussion of the overall success of the I/I program. The presentation will also include proposed future steps.

FISCAL IMPACT

Is there a Fiscal Impact? No

ENVIRONMENTAL IMPACT

None.

BACKGROUND AND DISCUSSION

NapaSan's Collection System Master Plan (2007) identified $120 million (2007 dollars) in needed capacity system upgrades to convey peak wet-weather flows in the collection system. During large storm events, system-wide flows can result in high peaking factors. As an alternative to expensive capacity upgrades to pipelines and pump stations, NapaSan opted to implement an I/I reduction pilot program. A series of projects were planned and constructed, including manhole rehabilitation, pipeline rehabilitation, and private lateral rehabilitation. Flow meters were installed to measure peak flows from project areas before and after construction to estimate project effectiveness.

SUPPORTING DOCUMENTS

A . Presentation Slides

Napa Sanitation District: Approve

Reviewed By: Timothy Healy