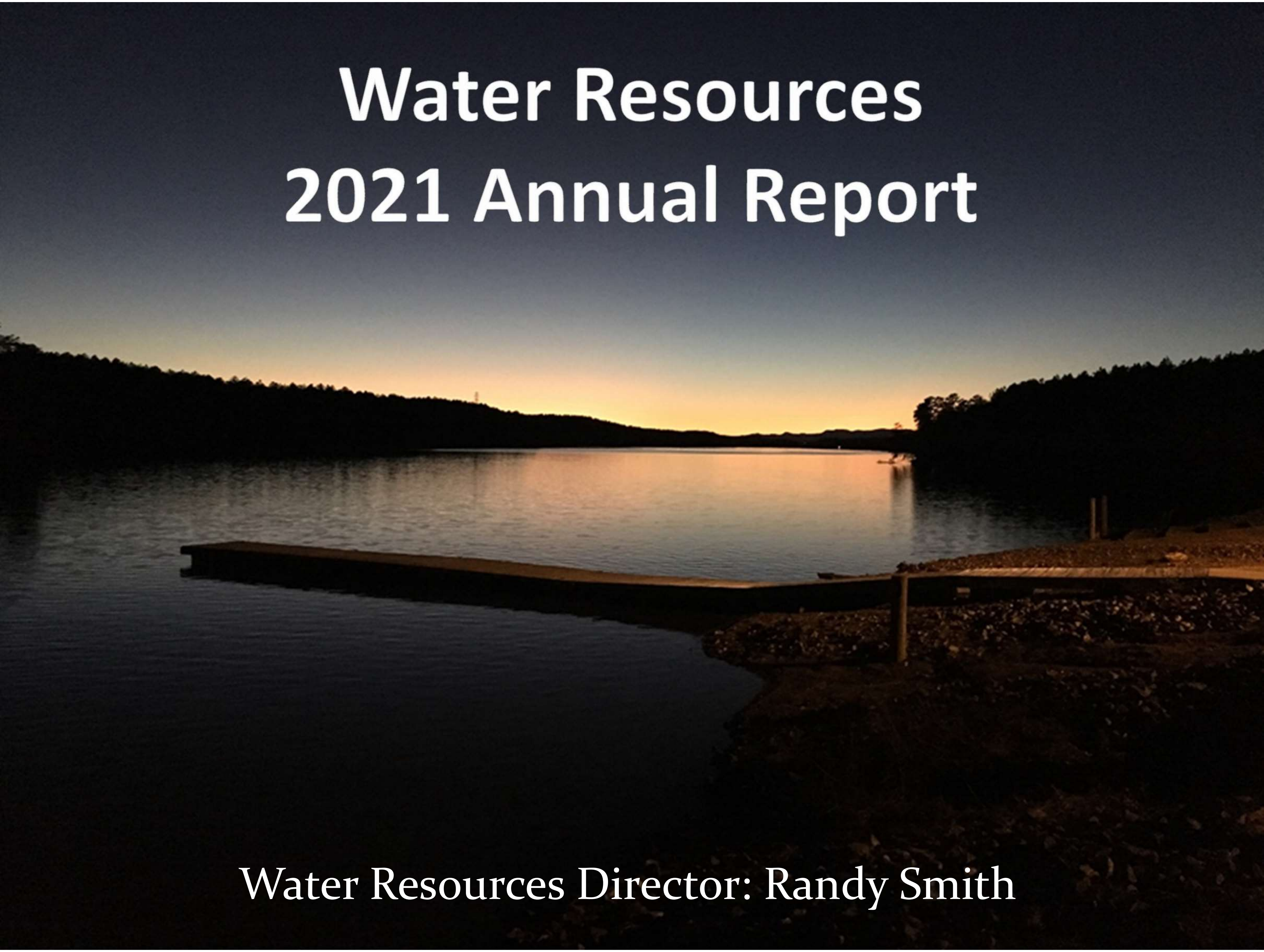
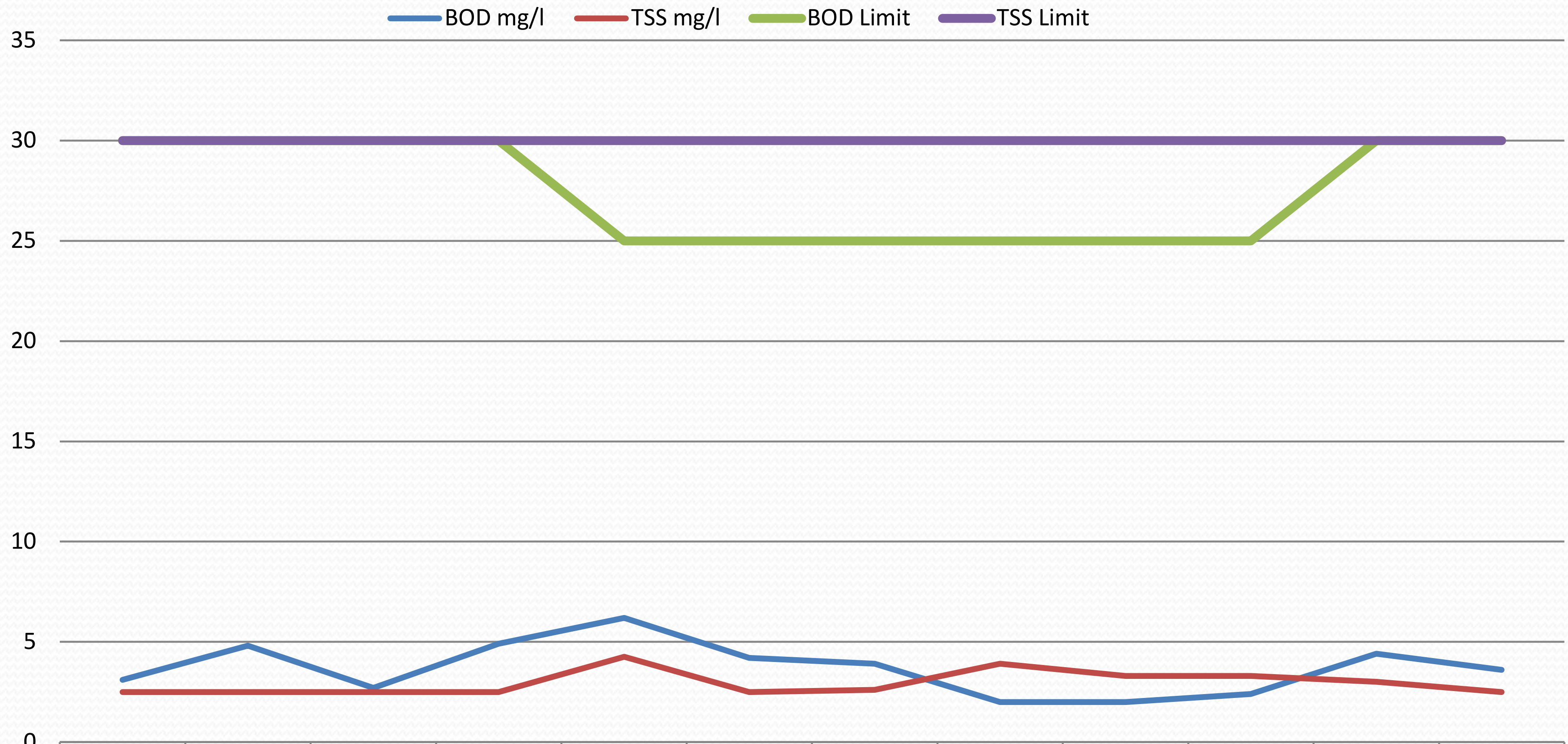

Water Resources
2021 Annual Report
Water Resources Director: Randy Smith

Our Mission

To promote and protect the environment, preserve natural resources, and ensure the health and safety of our customers.

Granite Falls
Wastewater Treatment Plant

Granite Falls Wastewater Treatment Plant (WWTP)
Bio Oxygen Demand (BOD) & Total Suspended Solids (TSS) Results



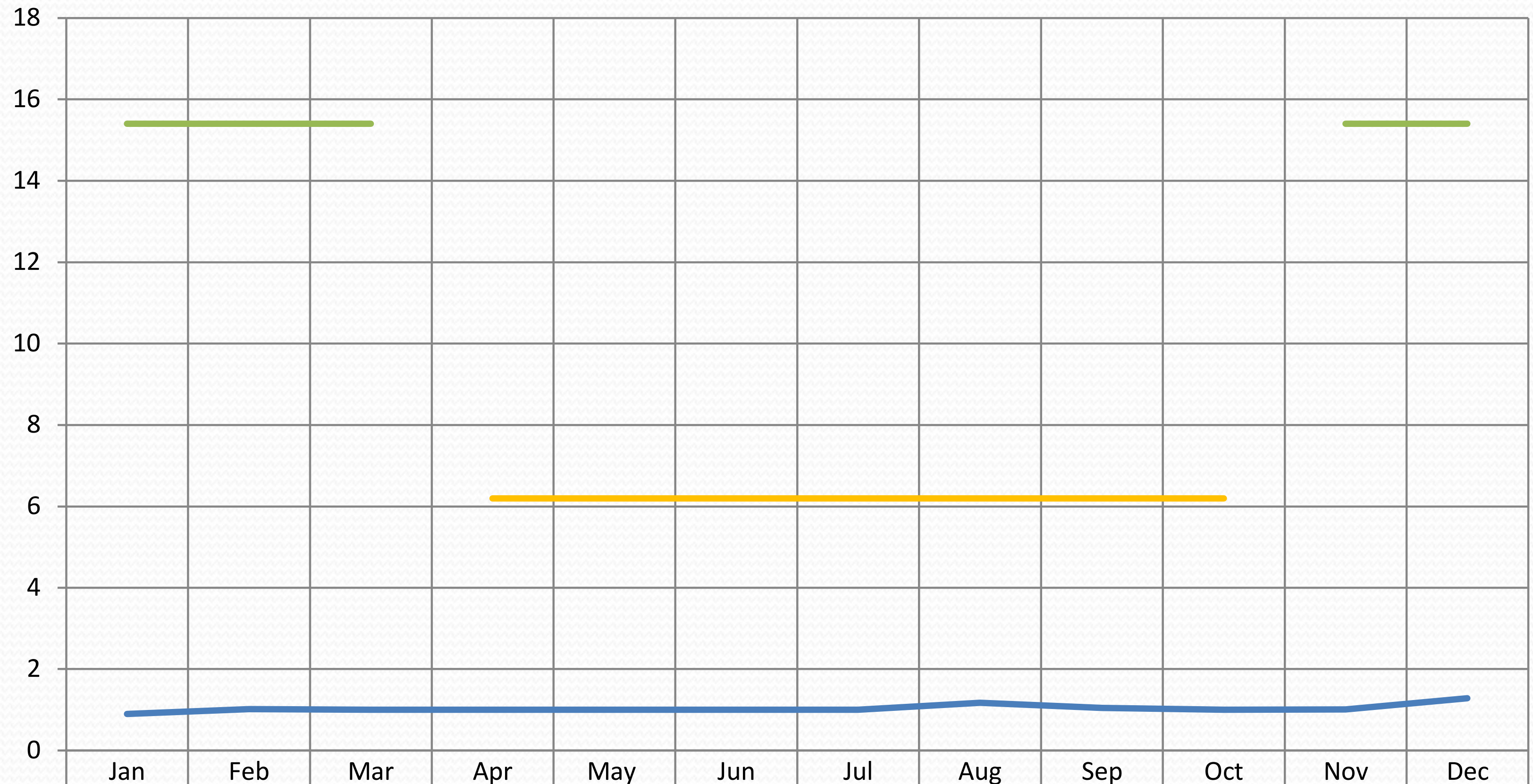
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
BOD mg/l	3.1	4.8	2.7	4.9	6.2	4.2	3.9	2	2	2.4	4.4	3.6
TSS mg/l	2.5	2.5	2.5	2.5	4.25	2.5	2.6	3.9	3.3	3.3	3	2.5
BOD Limit	30	30	30	30	25	25	25	25	25	25	30	30
TSS Limit	30	30	30	30	30	30	30	30	30	30	30	30

BOD & TSS are two of the main indicators of facility efficiency.

WWTP Average BOD & TSS

Average Influent BOD	Average Effluent BOD
319	**3.7**
	Permit Limit: 25 / 30 mg/l
Average Influent TSS	**Average Effluent TSS**
170	**2.95**
	Permit Limit: 30 mg/l
Overall Treatment Plant Efficiency (Actual)	**Rate Efficiency of Treatment Plan (Design)**
98.9%	**87%**

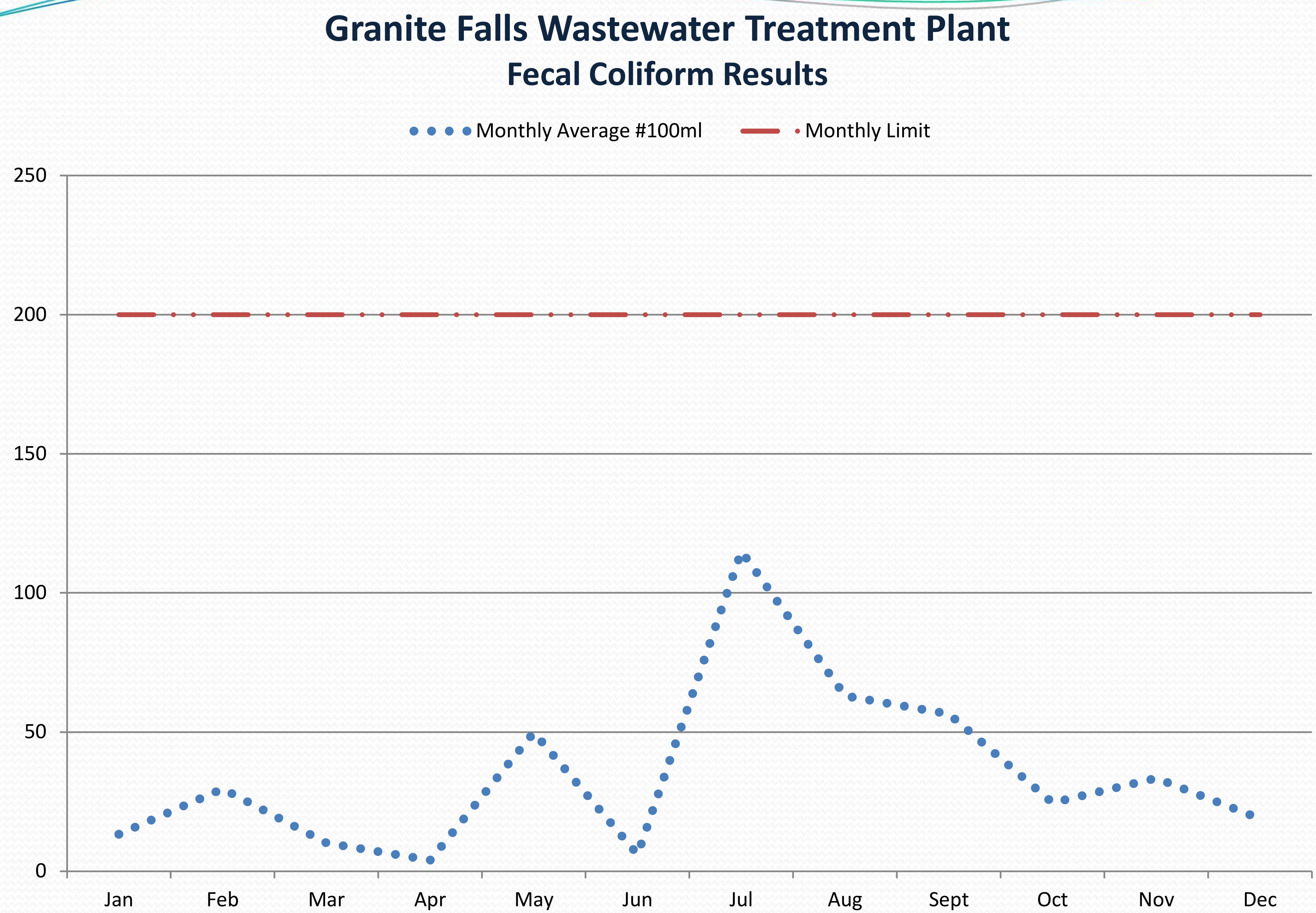
Granite Falls Wastewater Treatment Plant
Ammonia Nitrogen Results



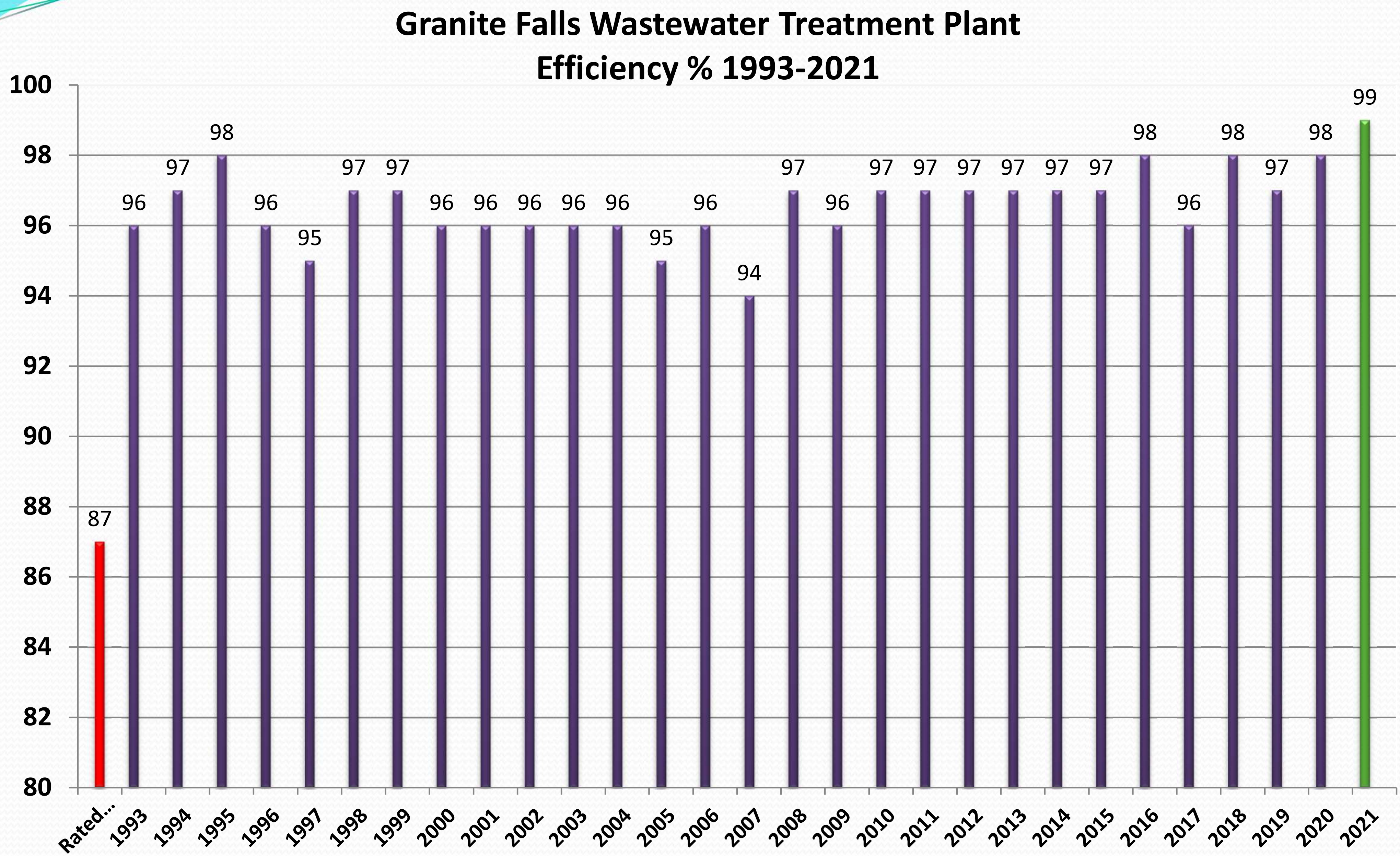
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Monthly Average mg/l	0.9	1.02	1	1	1	1	1	1.17	1.05	1	1.01	1.29
Monthly Summer Limit				6.2	6.2	6.2	6.2	6.2	6.2	6.2		
Monthly Winter Limit	15.4	15.4	15.4								15.4	15.4

Monthly Average mg/l   Monthly Summer Limit   Monthly Winter Limit

Ammonia Nitrogen is also an indicator of the efficiency of the wastewater treatment process. Our facility operates well below the permitted limits for this chemical compound.



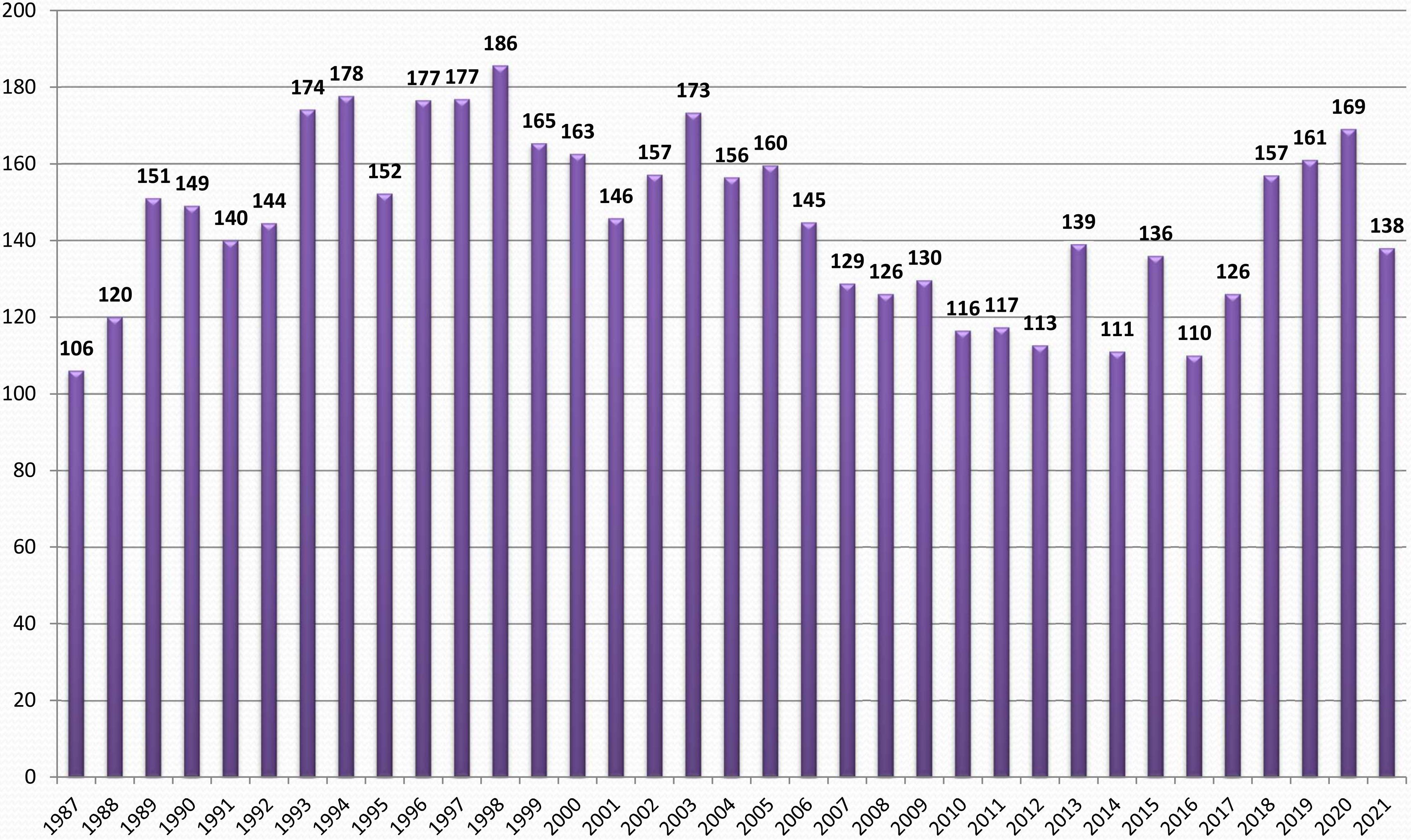
Fecal Coliform are pathogenic organisms that must be removed from our discharge in order to meet state and federal standards. We have consistently discharged significantly less than our permitted limit.



DESIGN RATED EFFICIENCY: 87% **ACTUAL 2021 EFFICIENCY: 99%**

TOTAL YEARLY FLOW 1987 - 2021

*TOTAL FLOW IN MILLION GALLONS



The Granite Falls Wastewater Treatment Plant treated 137,693,000 gallons, or an average of 377,241 gallons per day, of wastewater while meeting all effluent limitations in our permit. The Treatment Plant operated at 41.9% of its permitted capacity of 900,000 gallons per day and achieved a 99% combined efficiency removal rate.

Wastewater Treatment Plant Improvements

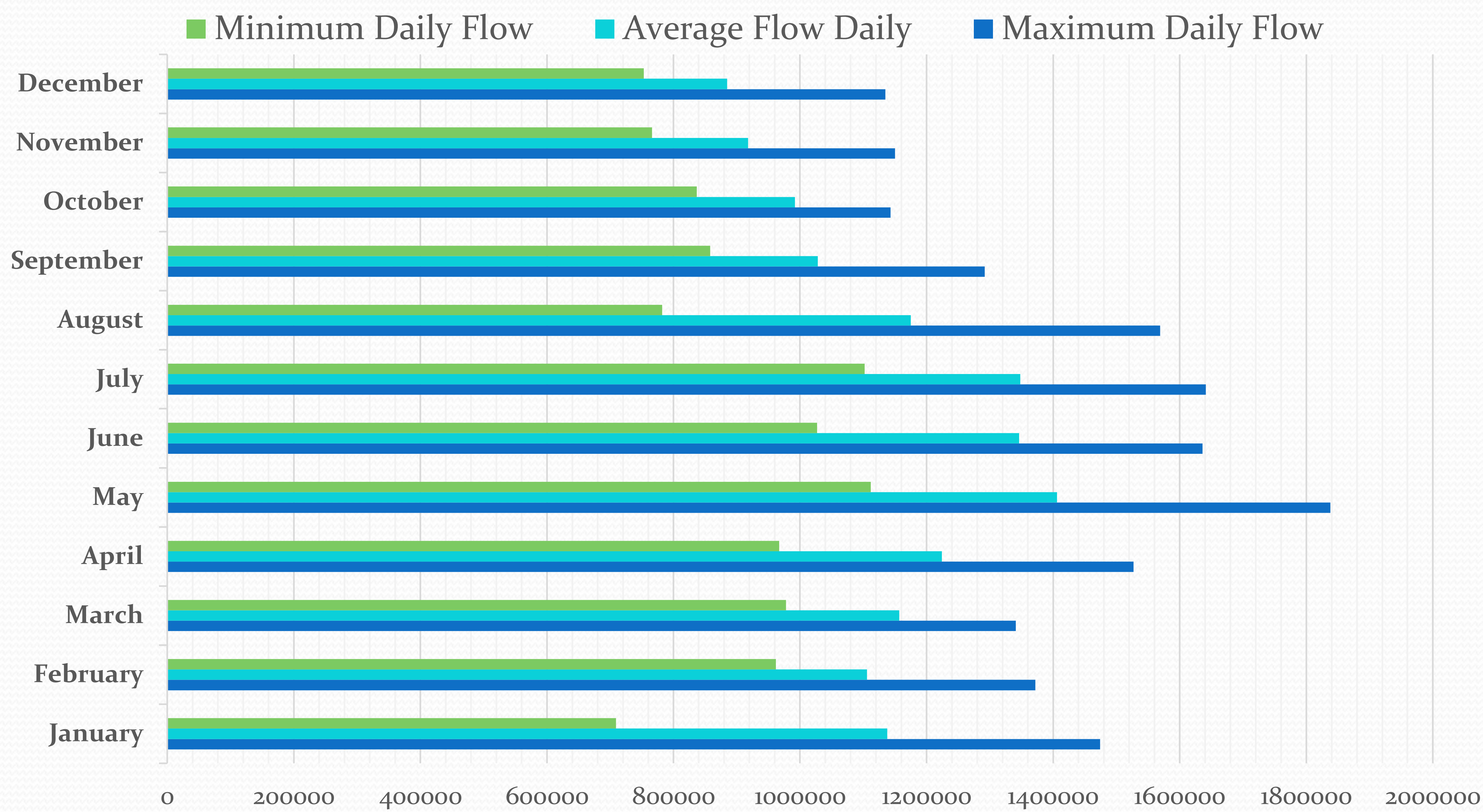
Corrected erosion issues and replaced a portion of exterior fencing

Plant staff completed lab proficiency certification for field analysis during 2021. There were no compliance issues during 2021.

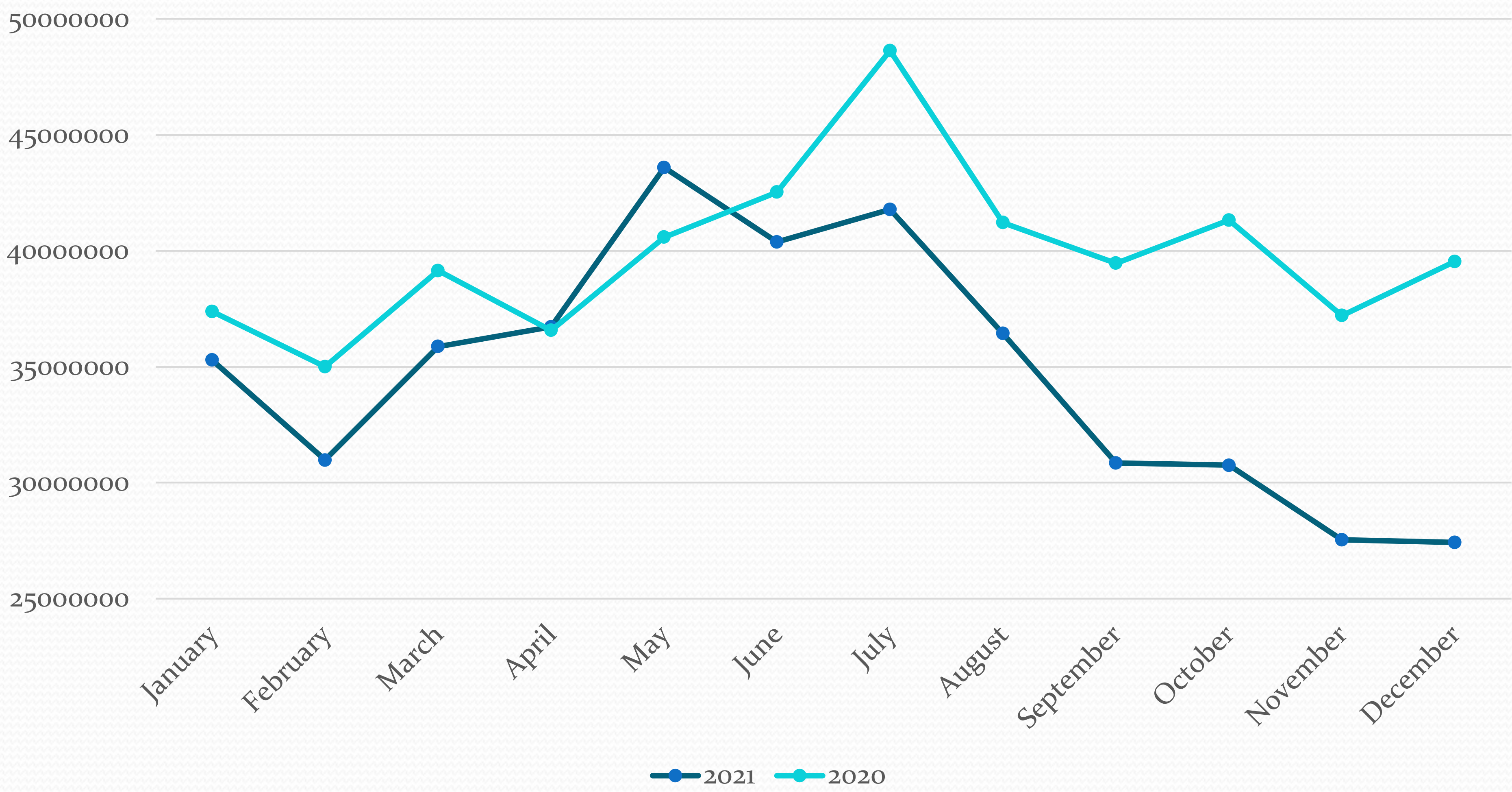
Granite Falls Water Treatment Plant

The Granite Falls Water Treatment Plant treated 417,603,000 gallons, or an average of 1,144,118 per day, of water while exceeding all drinking water quality standards. The Treatment Plant operated at 45.8% of its permitted capacity of 2,500,000 gallons per day.

Monthly Water Treatment Plant Flow



Flow Comparison



There was a 12.75% decrease in water treated during 2021.

Water Treatment Plant Chemicals Used

Chemical	Amount Used
Activated Carbon	0 lbs.
Aluminum Sulfate	19,100 gals
Fluoride	21,849 lbs.
Lime Slurry	23,311 gals
Polymer	692 lbs.
Sodium Hypochlorite (Bleach)	7,729 gals
Sodium Permanganate	255 gals

Water Treatment Plant Improvements

Updated older malfunctioning turbidity meters to new laser turbidity meters for increased accuracy and reliability

Water Treatment Plant Improvements

Plumbing in Filter Gallery that was corroded was replaced with new pipe

Water Treatment Plant Improvements

Repainted alum sludge holding basin

Water Treatment Plant Improvements

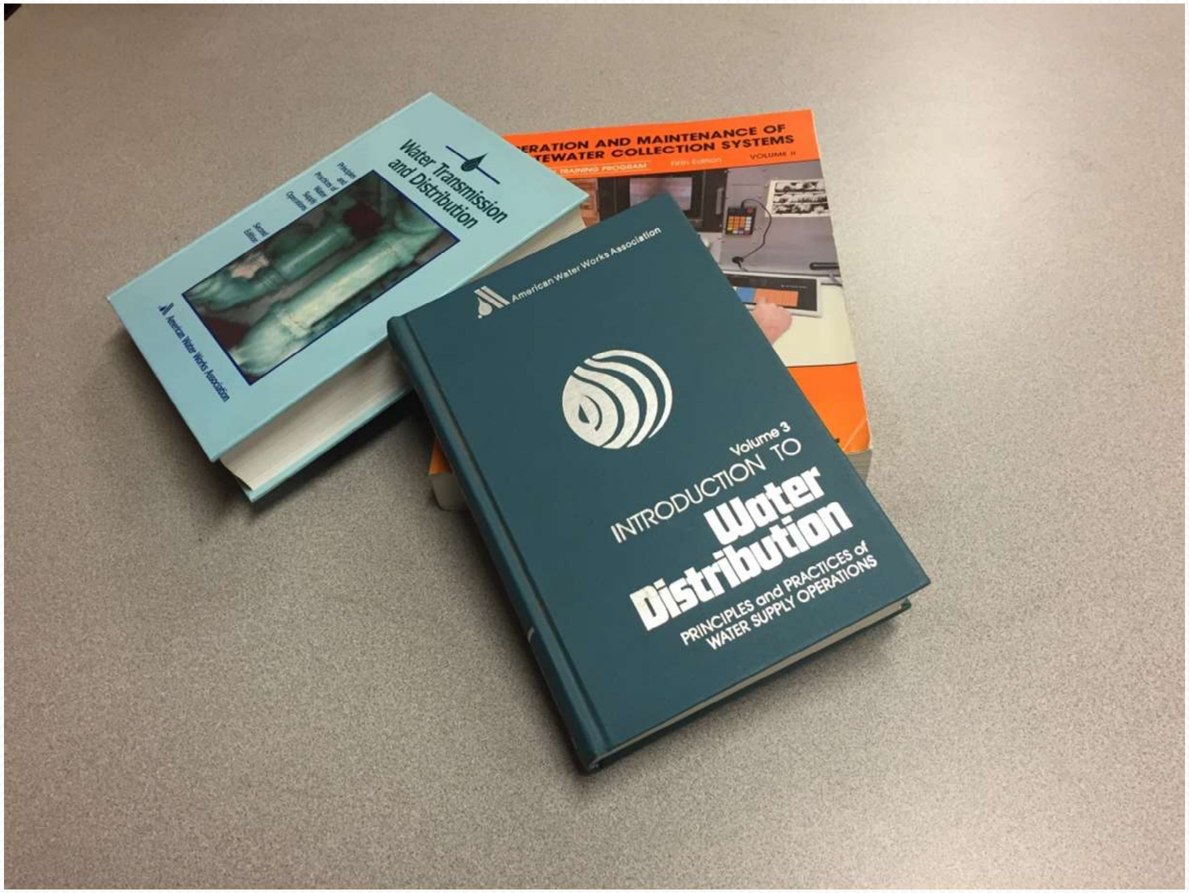
- Updated SCADA Software
- Repaired issues from lightening damage which included upgrading to a new SCADA computer, a new touchscreen SCADA monitor, new loss of head transmitters, and new raw flow transmitters
- Repaired exhaust fan in chemical feed building
- Underwent flow study and recalibrated raw water flow meter to closer align with our finished water flows

Training, Qualifications, and Awards

All Water Resources staff obtained their mandatory six hours of continuing education to maintain their certifications.

All staff members attended required safety training.

Fifth Consecutive Year Gold Safety Award from NC Department of Labor for Public Utilities



In Conclusion

Our Water Resources employees are operating both facilities at efficient levels. Drinking water and wastewater qualities continue to meet and/or exceed state and federal standards. We will continue to provide high quality water to our customers and return high quality water to the environment by the most efficient means available.