CITY OF NANAIMO
THE HARBOUR CITY

Information Report

DATE OF MEETING NOVEMBER 10, 2021

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SUBJECT **REFUSE TRUCK OPTIMIZATION**

OVERVIEW

Purpose of Report:

To present information and an overview to the Finance and Audit Committee of a strategy to optimize the refuse truck fleet in support of budget deliberations.

BACKGROUND

As endorsed by Council, the Residential Waste Collection Optimization plan was implemented on January 25, 2021. This plan created about 20% additional capacity and had a positive impact on the Solid Waste Collection program by:

- Optimizing collection routing,
- Reducing service delays,
- Reducing Staff overtime hours,
- Reducing public service-related calls and emails, and
- Reducing number of collection-related incidents and accidents.

The next step to further optimize the Solid Waste Collection program is to ensure the refuse truck fleet is sustainably funded. Neilson have been contracted to develop a plan to alleviate these issues. See Attachment A.

DISCUSSION

The refuse truck fleet consists of thirteen units. Three diesel trucks are owned by the Sanitation department, and ten Compressed Natural Gas (CNG) trucks are owned by the Fleet Services department.

Unit #	Year	End of Useful Life	Fuel Type	Owner
301	2008	2018	Diesel	Sanitation
317	2008	2018	Diesel	Sanitation
318	2009	2019	Diesel	Sanitation
434	2017	2027	CNG	Fleet Services
435	2017	2027	CNG	Fleet Services
436	2018	2028	CNG	Fleet Services
437	2018	2028	CNG	Fleet Services
438	2018	2028	CNG	Fleet Services

439	2018	2028	CNG	Fleet Services
440	2018	2028	CNG	Fleet Services
441	2018	2028	CNG	Fleet Services
442	2020	2030	CNG	Fleet Services
443	2022	2032	CNG	Fleet Services

There are several concerns with units 301, 317, and 318, which include:

- **Replacement Plan**
  Three trucks were purchased by the Sanitation department second-hand and are now several years past their useful life. Typically, vehicles are purchased and "owned" by Fleet Services. A charge-out rate is established and charged to each department that utilizes the vehicle. This fee recovers the maintenance and replacement costs of the vehicle. Because these trucks are owned by the Sanitation department, they do not have a charge-out rate, and therefore, do not have a replacement plan associated with them.

- **Reliability and Annual Operating Costs**
  Due to the age of these trucks, they are prone to breakdowns, which leads to costly repairs and service disruptions. The average annual operating costs (maintenance, repairs, and fuel) are $4.24 per kilometer higher than the CNG refuse vehicles, a 250% difference.

- **Green Fleet Strategy**
  These trucks are diesel-powered and emit approximately 30% more CO2 emissions than the CNG refuse trucks and do not align with the City's Green Fleet Strategy.

Ten CNG refuse trucks in the fleet have a planned ten-year life cycle. As the trucks near their end-of-life they are susceptible to costly repairs, burn more fuel, and have increased down-time, which has a negative effect on the Solid Waste Collection program. These issues could be mitigated by shortening the life cycle of these trucks from ten years to eight years. This increases the charge rate, but ensures vehicles are sustainably funded.

FINANCIAL IMPLICATIONS

Implementing all recommendations, would see an increase in user fees of $23.00 over planned increases, phased in over two years. In 2022, the user fee would increase $15.00, and in 2023 the user fee would increase $8.00. This is in addition to the increase created by RecycleBC relocating the designated reception facility, estimated to be $8.00. Based on recent projections for 2021, the final rates may be trimmed slightly.

CONCLUSION

The recommended strategy to alleviate the current concerns and optimize the refuse truck fleet are:

- Replace Units 317 and 318 with two new CNG trucks.
- Continue to utilize Unit 301 and re-evaluate in 2023.
- Once the new CNG refuse trucks are purchased, delivery will take 12 – 15 months. In the interim, lease a new CNG refuse truck and remove Unit 317 from service. Unit 318

will be retained as an operational spare in case of emergencies and used when other refuse trucks are scheduled for maintenance.
- Shorten the useful life of the refuse trucks from ten to eight years.

SUMMARY POINTS

- Sustainable funding will continue to optimize the refuse truck fleet. Funding would be generated by increasing the Solid Waste Collection user fee.
- If approved, two new CNG refuse trucks would be purchased and two diesel trucks that have reached their end of life would be removed from service.
- The strategy to optimize the refuse truck fleet reduces costly truck repairs, decreases service disruptions, and reduces the City's Greenhouse Gas emissions.
- Residents in Nanaimo are generating a significant increase in all waste streams – 20% increases in each of the past two years. It is not feasible to sustain the Sanitation service without a commensurate increases in fees.
- The most effective way to reduce user fees is to reduce the disposal of waste by residents.

ATTACHMENTS

Attachment A – Refuse Truck Life Cycle and Funding Analysis

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