Report

Date	December 12, 2023	File:
Subject	Net New Staffing Request; Planning Technologist (Transportation)	

PURPOSE

To consider hiring a Planning Technologist (Transportation) to oversee asset management and capital projects planning for transportation and active transportation within the Engineering Department

BACKGROUND

The Engineering Department has been challenged in delivering the capital program. An assessment of the department's capacity was undertaken in 2020 and concluded that additional capacity is required to enable the department to undertake more capital work. The Engineering Department also needs to have an infrastructure planning and analysis function created to provide the necessary capacity to properly plan, execute, and strategically assign our limited resources to undertake a capital program of the magnitude necessary to meet our asset management obligations. The Engineering Department also supports land development by processing referrals from the Planning & Building Department (Development Permits, Development Variance Permits, OCP Amendments, Rezonings, and Building Permits) as well as referrals from the Subdivision group.

In order to meet the demands faced by the department it was determined that seven additional staff would be required. The first two positions created were the Senior Manager of Engineering (Utilities/Drainage) (approved in 2021) and Senior Manager of Engineering (Transportation) (approved in 2022). These two senior managers require staff to assist them in undertaking their work, which is the rationale for the two new staffing requests for 2024: a Planning Engineer (Utilities/Drainage) and a Planning Technologist (Transportation).

This request relates to the Planning Technologist (Transportation) position. The justification for requesting this position is the same rationale for the Senior Manager of Engineering (Transportation) as this position is intended to support that role.

DISCUSSION

Alignment with Council's Strategic Plan

This position request aligns with Council's Strategic Plan as follows:

1. Environment:
    a. Strengthen environmental policy in all land use planning (Subdivision Bylaw Update, Engineering Standards, Active Transportation).
2. Economy:
    a. Attracting local businesses, and the requisite opportunities and talent, requires that there are basic municipal services available (water, sewage collection and treatment, roads,

active transportation, etc.) (Asset Management, DCC Bylaw Update, implementation Master Transportation Plan).

3. Community:
    a. Update subdivision bylaw (Subdivision Bylaw Update).
    b. Encourage appropriate development charges and amenities to support great development (DCC Bylaw Update).
    c. Improve pedestrian safety on Boys Rd (support Director with implementation of special projects).
    d. Continue to implement existing neighborhood plans (support the Manager of Development Services with off-site impacts of development).

This position also aligns with two of North Cowichan's Operational Strategic Plan Strategic Pillars:

1. Work Planning: We develop corporate plans to prioritize and resource our work, and ensure achievement of Council's Strategic Plan and other Master Plans.
2. Systems & Processes: We implement common and consistent approaches to analyzing and solving system and process problems, including formal project management.

Request Rationale: Asset Management

Asset management is an important part of what the Engineering Department does. The following services are considered core services of a Municipality:

1. Water treatment and distribution.
2. Sewage collection and treatment.
3. Storm water management and flood protection.
4. Transportation (provision of roads and active transportation infrastructure).

These services consist of extensive piping networks and pump systems, water reservoirs, water and wastewater treatment facilities, dikes, roads, bridges, and active transportation routes. All of these assets must be maintained and ultimately replaced. Better management of these assets extends their life and reduces long term costs. Better planning of capital projects reduces costs and allows for the more efficient allocation of our limited resources to those projects with the highest criticality. Better planning of capital projects better positions the Municipality to attract Federal and Provincial funding to help offset the cost of asset replacement and the provision of new assets. Hence the importance of Asset Management.

Referring to Figure 1, the Municipality has assets with a replacement value in the order of $1,68M ($1,550M in linear assets; $130M in non-linear assets) (all valuations are in 2023$). Further, the Municipality has an $120M backlog of asset replacement work for linear assets alone that needs to be funded and addressed. To deal with the next 20 years of asset renewals, plus the backlog, the Municipality needs to be saving $39M per year (Average Annual Life Cycle Investment - AALCI). However, year over year revenue (Average Annual Capital Savings - AACS) is in the order of $7M. Figure 2 shows the required annual capital outlay, AALCI and AACS for roads.

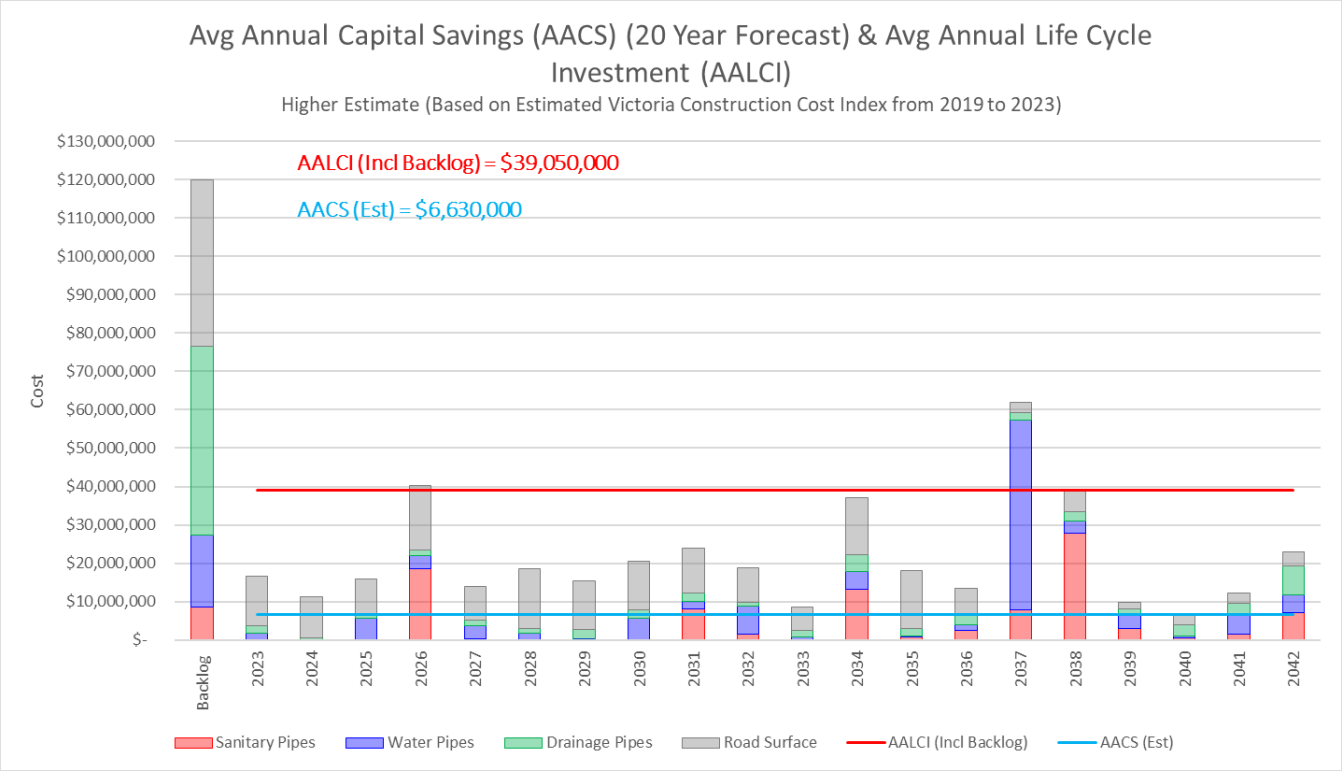

Figure 1 AACS and AALCI (all asset groups).

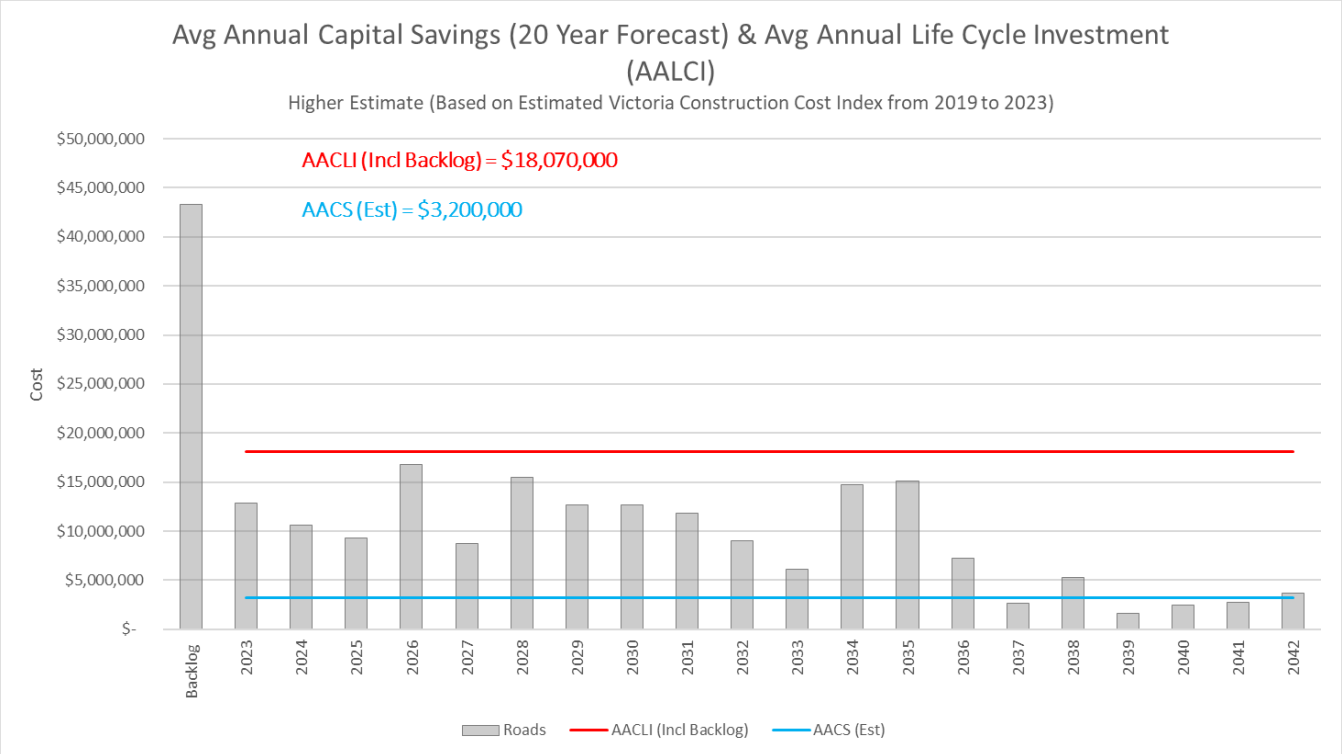

Figure 2 AACS and AALCI (roads).

Figure 3 shows the road surface assets for the entire Municipality. The analysis is based on condition data (Pavement Quality Index; PQI). Roads that are in poor condition require some attention whether it be crack sealing, overlay, or grind and overlay. The PQI ratings are as follows:

1) Red PQI = Poor surface condition.
2) Yellow PQI = Good surface condition.
3) Green PQI = Excellent surface condition.

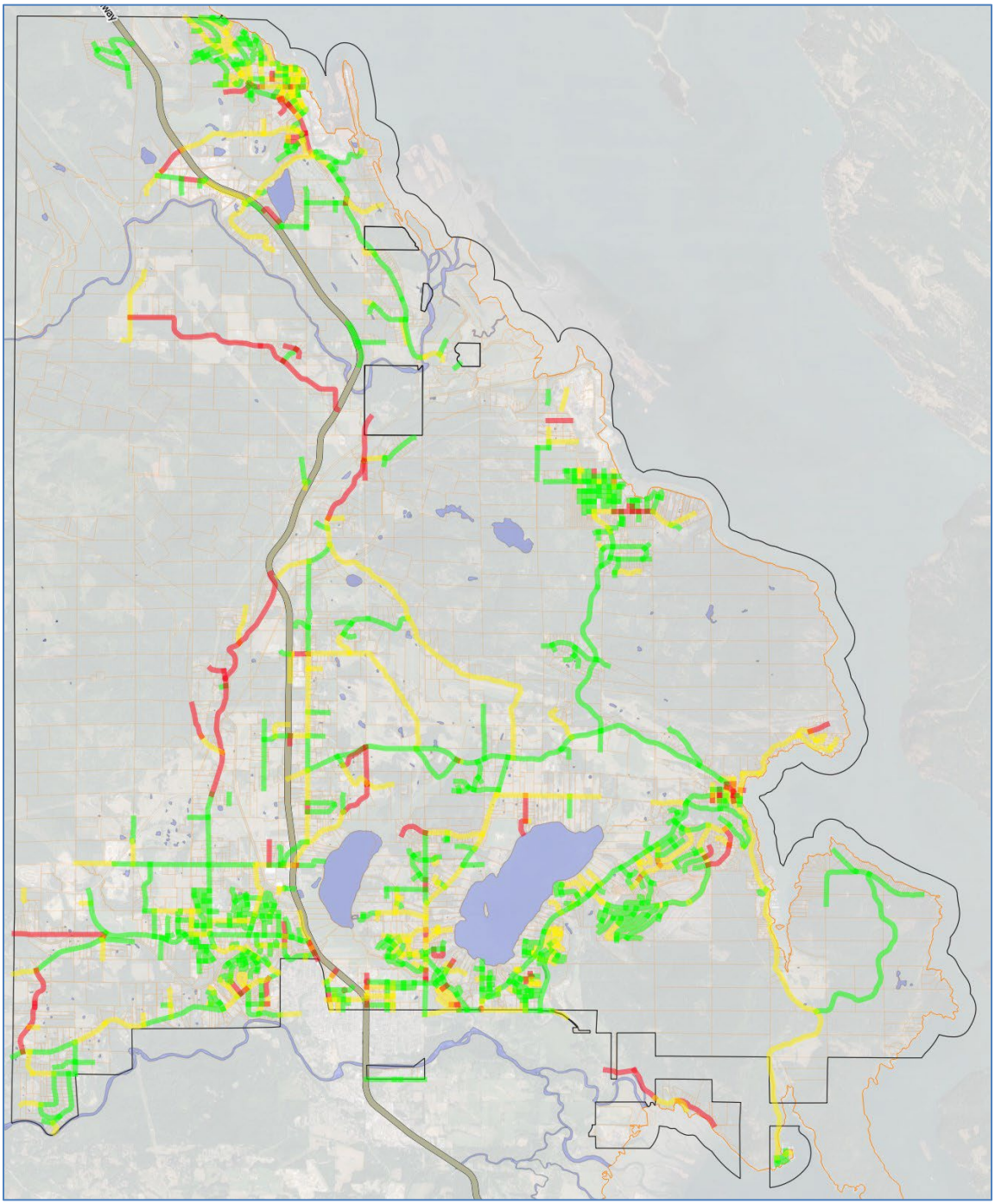

Figure 3 Road surface assets and their life remaining based on Pavement Quality Index (PQI).

Figure 4 shows cross-culvert assets for the entire Municipality. Cross culverts convey drainage under and across roads and are often related to road upgrades where culverts are old and/or are undersized and need replacing. Culverts are not currently included in the financial analyses at this time. The ratings based on Expected Useful Life (EUL). The EUL ratings are coloured as follows:

1) Red 0 yrs of EUL remaining.
2) Orange 0+ to 5 yrs of EUL remaining.
3) Yellow 5+ to 10 years of life remaining.
4) Green 10+ years of life remaining.

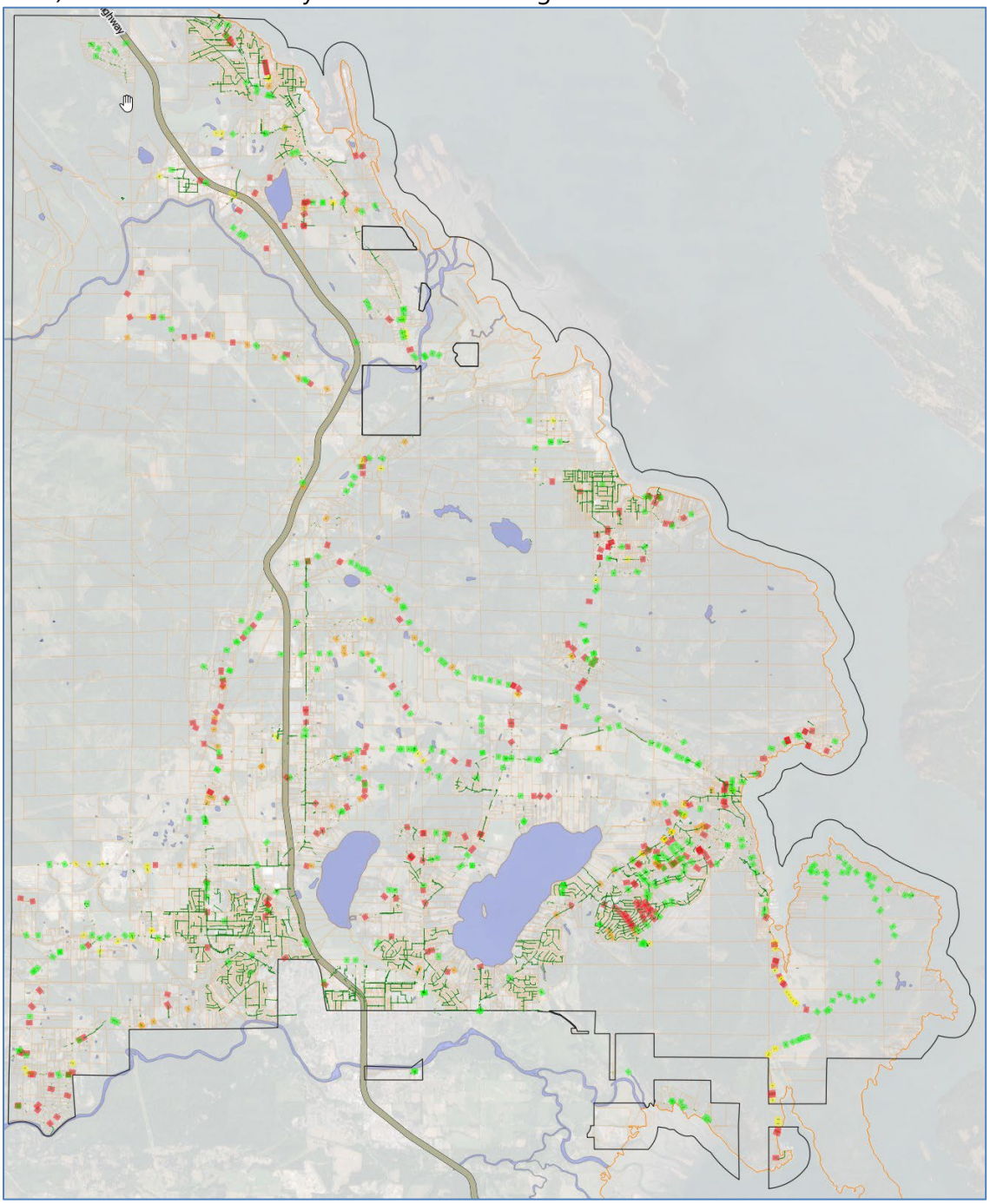

Figure 4 Cross-culvert assets and their life remaining based on Age vs EUL (Red = 0 yrs, Orange = 0+ to 5 yrs, Yellow = 5+ to 10 yrs, Green = 10+ yrs).

Figure 5 shows examples of Corrugate Metal Pipe (CMP) culverts where the bottom of the culverts have rusted out. This is a fairly common problem with CMP culverts particularly as they near the end of their EUL. When this happens, water can run outside and beneath the culvert, eroding away the soil and potentially triggering a wash-out and failure of the road under which the culvert is conveying water (see Figure 6).

Figure 5 Examples of failing Corrugated Metal Pipe (CMP) culverts.

Figure 6 Section of Mays Rd where flow diverted around a culvert ultimately resulting in the washout of the road.

Based on the AALCI required versus the AACS, it will be important to optimize the replacement of these assets to make the best use of limited funding. In order to better plan work based on the condition of all of the assets within a specific corridor, it is imperative that all of the information needs to be accurate, reliable, up-to-date, and presented in a manner that allows for more effective decision-making. Currently, the Engineering Department lacks the staff to put in place and maintain such systems. This position will work closely with the Senior Manager of Engineering (Transportation) and in cooperation with the Utilities/Drainage group to move the department towards better planning for asset renewals and asset management in general.

Request Rationale: Climate Change and Adaptation

In terms of our roads, bridges and cross-culverts, we need to ensure that they are designed to withstand the more frequent and intense storms predicted. This comes down to a better understanding of the effects of climate change on the intensity of future rainfall events. The impact of more intense rainfall events has the potential to affect roads since there are cross culverts that pass rainfall runoff under roads and those culverts must be appropriately sized to convey future flows.

Request Rationale: Service to the Public

Engineering deals with a significant number of requests from the public. Some of which are relatively straightforward to deal with. Others are more significant in nature. Currently, Engineering has 358 outstanding issues tracked in its Calls for Service (CFS) system. Referring to Figure 7, approximately 274 of the 358 CFS items (or 77%) are related to roads and active transportation. This position will support the Senior Manager of Engineering (Transportation) with the addressing of the roads and active transportation related CFS items.

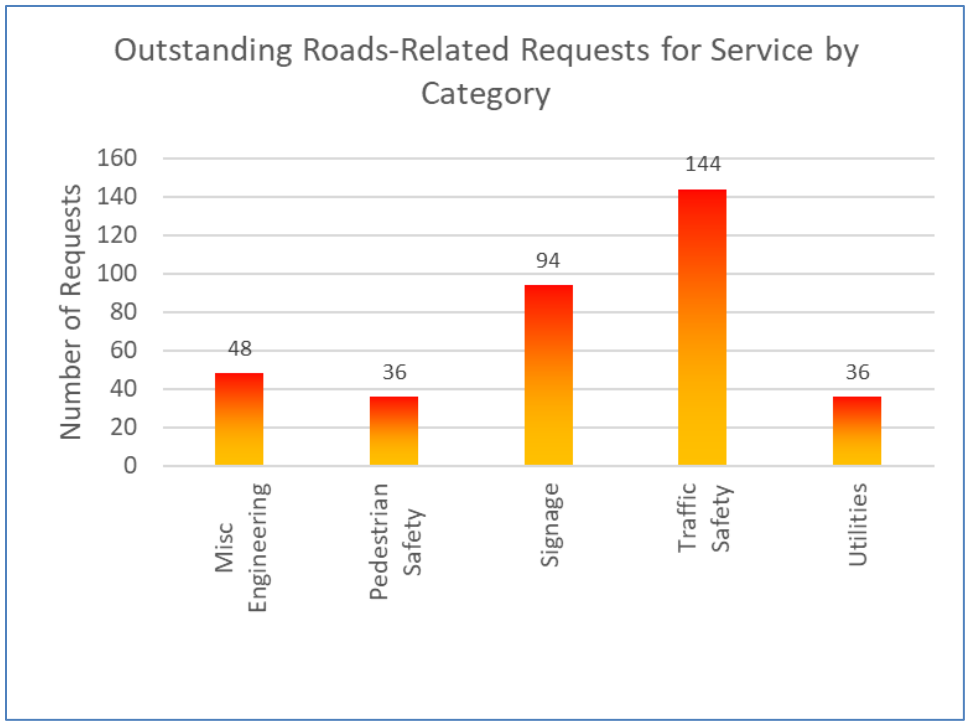

Figure 7 Calls for Service statistics.

Analysis of Resource Requirements

While North Cowichan needs to increase the amount of money being collected and deposited into Reserve fund accounts to fund the replacement of existing assets, this money cannot be effectively utilized if the Engineering Department is not sufficiently staffed to undertake/oversee the work. At current staffing levels, the department can execute approximately $4.0M to $7.0M of capital projects-related work, depending on the size and complexity of projects. That leaves no capacity for asset management planning and execution and for undertaking studies to set up future projects.

The Department has worked with Finance to put in place a Standing Offer Agreement for Professional Services, which includes Engineering Services, to help increase the amount of work the Department can undertake. However, undertaking this work still requires that the Department can retain and manage the consulting forces necessary to execute a proper asset management program and the capital program that flows from the asset management program and development-triggered projects.

A capacity assessment undertaken in 2020 determined that the department needed in the order of seven staff including two new senior positions; a Senior Manager of Engineering (Utilities) and a Senior Manager of Engineering (Transportation), along with four engineering support positions to assist the two managers. The intent is to have these two new positions in place not only to help with the work that needs to be done but also to work with the Director to refine the analysis of future staffing needs and improve the business practices within the Department.

Approving the hiring of a Planning Technologist (Transportation) will go a long way to helping with the following:

1. Planning and implementing future capital works.
2. Supporting/working with Finance with Asset Management Planning and setting appropriate tax rates for the accumulation of monies for Reserve Funds to fund future asset replacements.
3. Supporting the Operations Department with the operating our transportation and active transportation infrastructure.
4. Supporting the land development by establishing servicing requirements and assessing the impacts of land development on our roads and active transportation networks so that we can know what amenities we can seek from developers when they impact those assets.

The Role and Cost of This Position

This position will focus on the short and long-term planning of roads and active transportation infrastructure, support the infrastructure design team, and support the Operations Department with the operation and maintenance of all road and active transportation assets. This role will also lead the Land Development group and will oversee and assist with the processing of subdivision applications and handling all land development-related referrals from the Planning and Building Department (re-zonings, development permits, development variance permits, building permits, OCP amendments, ALR exclusions, and temporary use permits). This position will be responsible for the following areas of expertise:

1. Asset management processes.
2. Traffic modelling.

3. Design of, and upgrades to, transportation infrastructure.
4. Traffic management and calming best management practices.
5. Traffic studies and analysis.
6. Land development processes as it relates to servicing and servicing assessments.

The annual cost of this position is $111,000 (including benefits). The position will be funded from the following sources: 100% from general taxation. The impact on the 2024 operating budget is $85,000 due to the anticipated start date of April 2024.

OPTIONS

Recommended Option

THAT the Committee of the Whole direct staff to include a Planning Technologist (Transportation) position in the 2024 Operating Budget.

Alternative Option

THAT the Committee of the Whole direct staff bring forward the request for a Planning Technologist (Transportation) position to a future budget process.

RECOMMENDATION

THAT the Committee of the Whole direct staff to include a Planning Technologist (Transportation) position in the 2024 Operating Budget.

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