MUNICIPALITY OF NORTH Cowichan

ENGINEERING DEPARTMENT 2024 BUSINESS PLAN

Committee of the Whole

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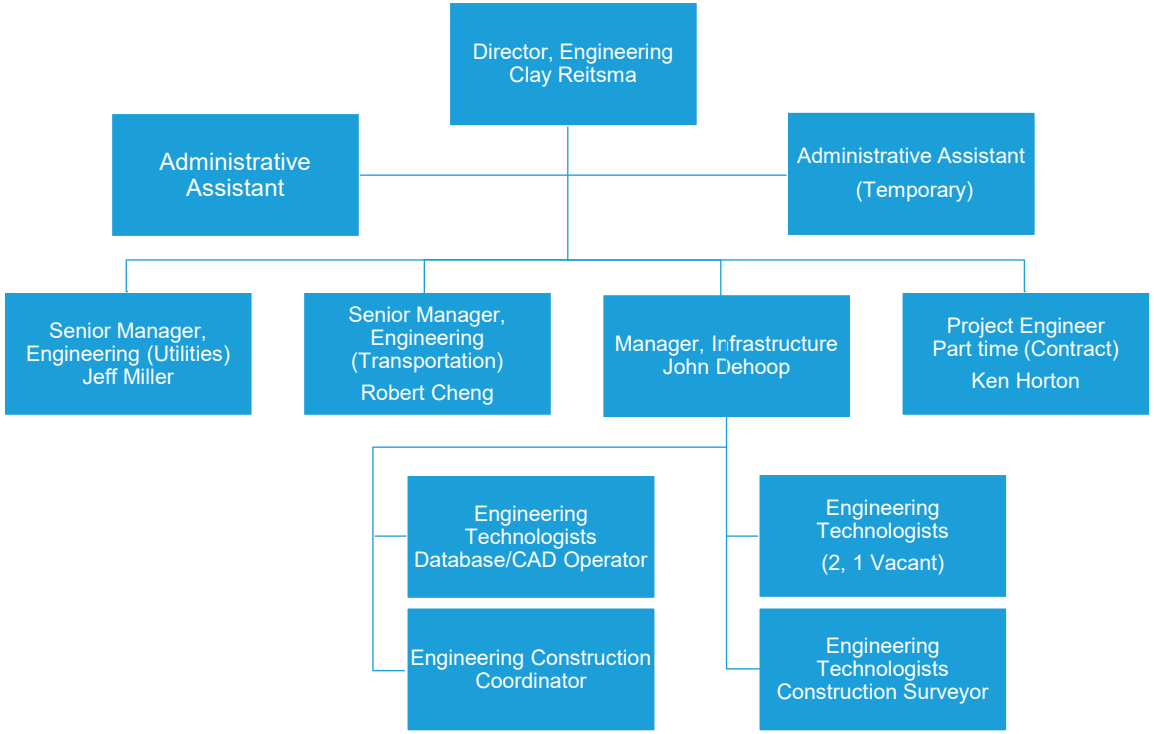
MUNICIPALITY OF NORTH Cowichan

ORGANIZATIONAL STRUCTURE



STAFFING LEVELS

13

Total positions
as of
September 6, 2023

11 Permanent Full Time (1 Vacant)

1 Contractor

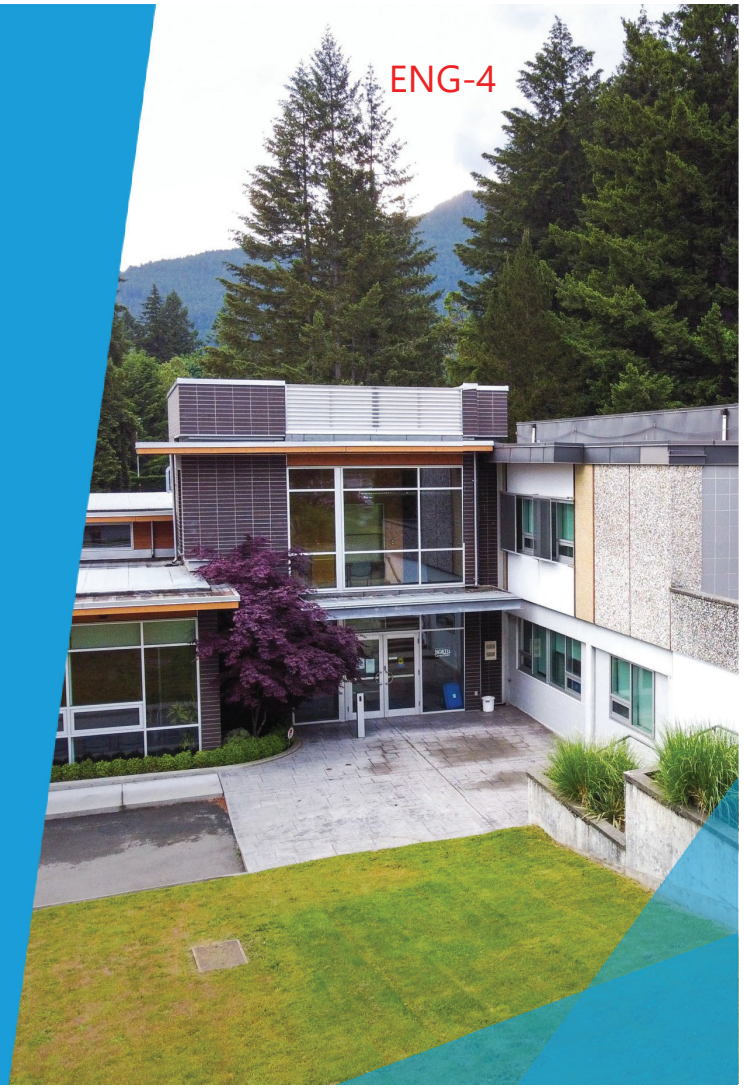
1 Temporary

(Exempt 4; CUPE 8; Contract 1)

DEPARTMENT FOCUS

The Engineering Department is primarily responsible for:

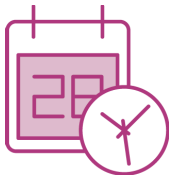
- providing technical expertise to other departments with respect to municipal services and projects;
- reviewing land development projects;
- designing and overseeing construction of capital projects;
- implementing the asset management plan; and
- providing technical expertise in the creation and management of Council's approved 5 year Capital plan.



MUNICIPALITY OF NORTH Cowichan

CORE BUSINESS

The Engineering Department is responsible for four key services:



ASSET MANAGEMENT

CAPITAL PROJECTS

DEVELOPMENT ENGINEERING

PERMITTING

ASSET MANAGEMENT

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MUNICIPALITY OF NORTH Cowichan

- The Engineering Department is responsible for the following assets under the Municipality's Asset Management plan:
  - Drinking water treatment and distribution assets.
  - Wastewater collection and treatment assets.
  - Stormwater conveyance and treatment assets.
  - Roads and active transportation assets.
  - Natural assets (with assistance from Environment Group).
- Key asset management responsibilities:
  - Implementing systems to monitor asset condition.
  - Planning for replacement of assets (for lack of capacity or end of useful life).
  - Replacement of assets prior to end of useful life.
  - Preparing Requests for Proposals (RFPs) and tender packages and evaluating responses to RFP calls and tenders.

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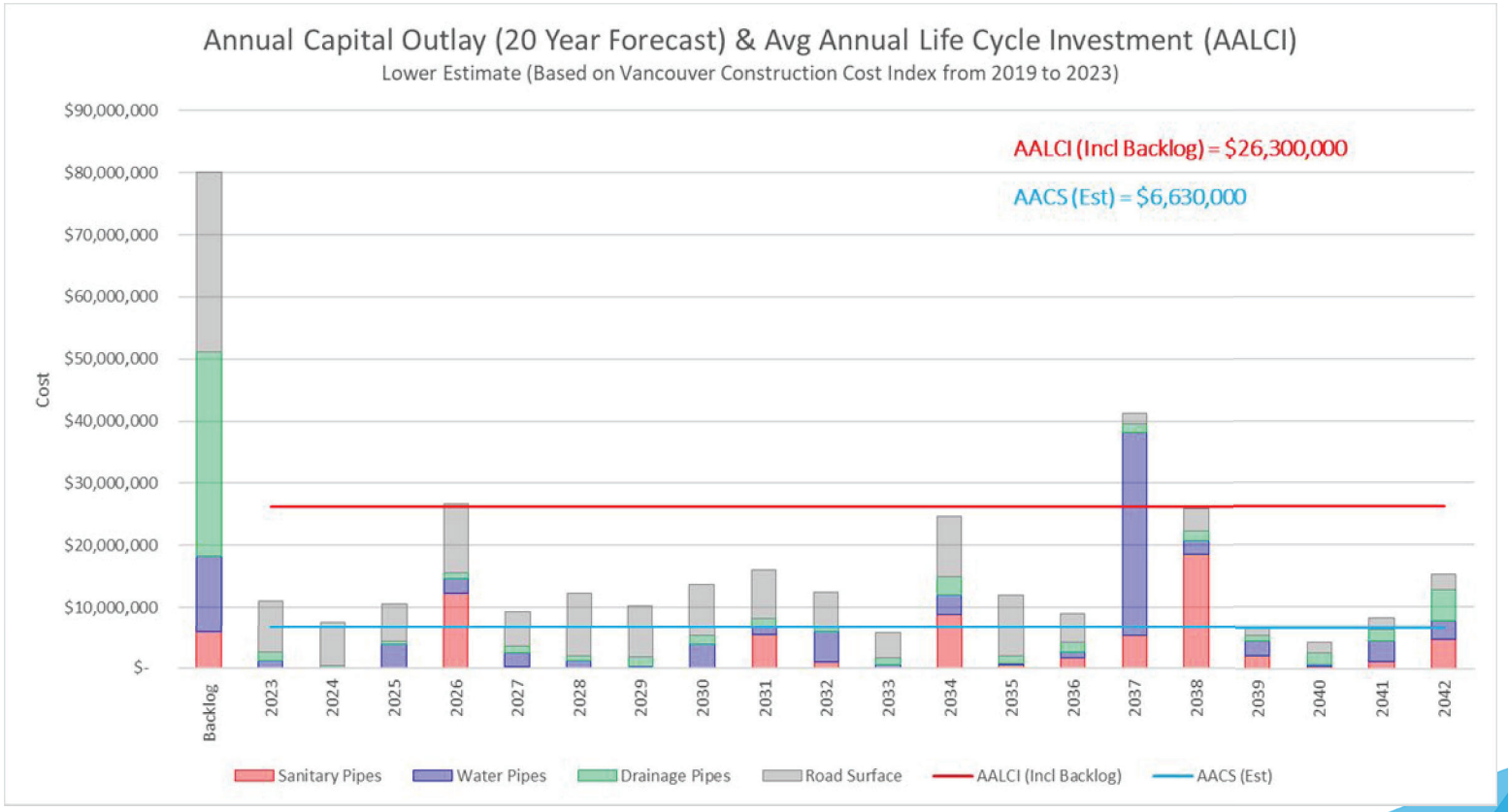
ASSET MANAGEMENT



ASSET MANAGEMENT

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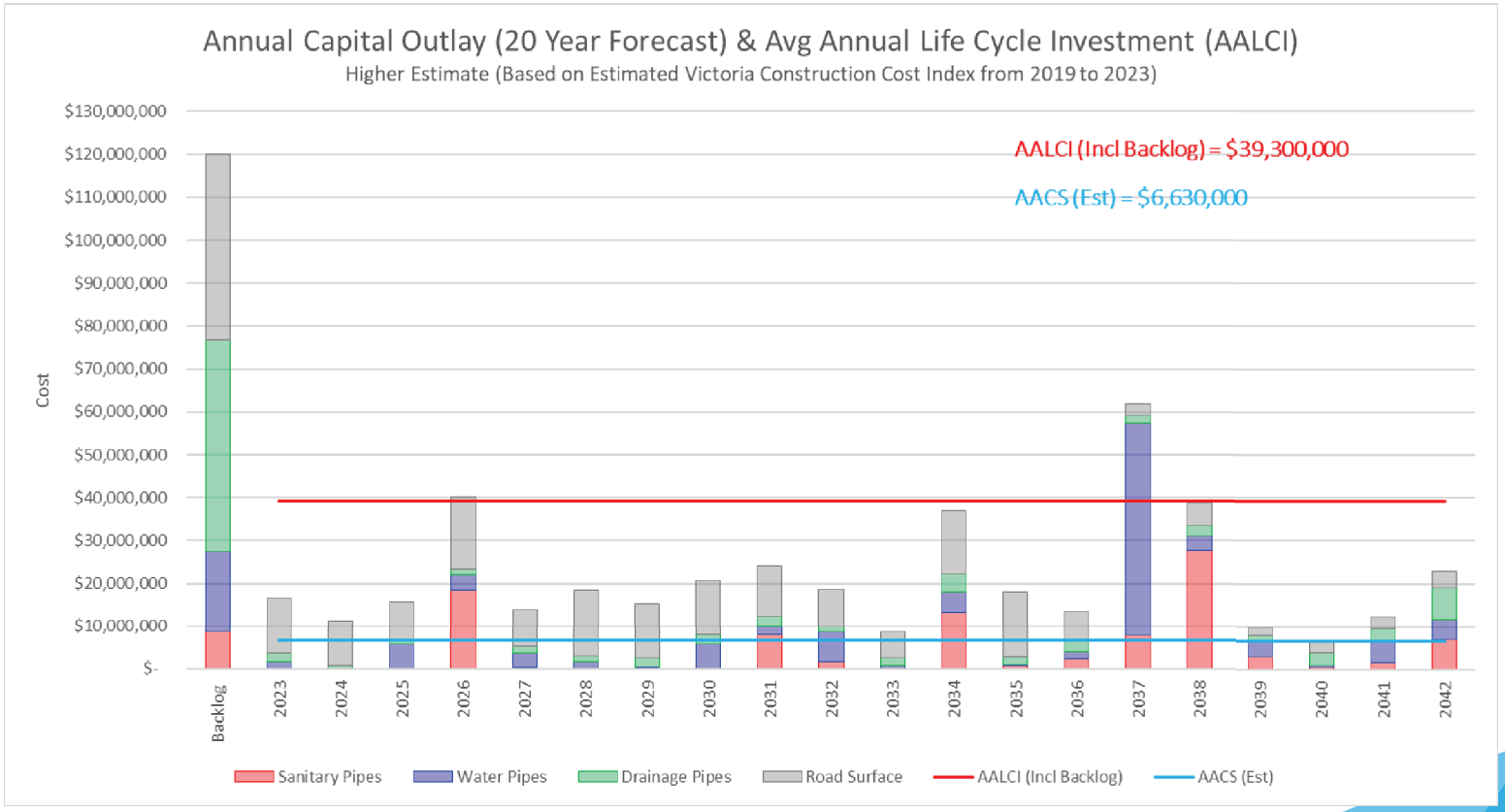
MUNICIPALITY OF NORTH Cowichan



ASSET MANAGEMENT: DRINKING WATER

Assets: Approximately **240 km** of pipes valued at **$208M**, 5 dams, 7 pump stations, 16 reservoirs, and 10,000 connections.

SOUTH END	CROFTON	CHEMAINUS
-Groundwater source (Cowichan Aquifer) -162 km of pipes -4 pump stations -12 reservoirs -Backup water can be supplied via South End water system via City of Duncan water system.	-Surface water source (Cowichan River) via Paper Excellence pulp mill -27 km of pipes -2 pump stations -3 reservoirs -2 dams (@ Crofton Lake) -Backup water can be supplied from South End water system.	-Surface water source (Holyoak Lake) and ground water source (Chemainus Aquifer) -54 km of pipes -1 pump station -2 reservoirs -3 dams (2 @ Holyoak, 1 @ Banon Reservoir)

- City of Duncan supplies water to a few areas surrounding the City limits within the Municipality.
- Private water systems have been discouraged with the exception of bare land stratas and 25 homes in Genoa Bay (circa 1967).

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ASSET MANAGEMENT: DRINKING WATER

Management of drinking water supply, including treatment, reservoirs, distribution system

KEY SERVICES

- Ensure compliance with Island Health requirements for drinking water (Chemainus, Crofton, South End). Oversight of compliance reporting to the Province (9 reports per year).
- Future planning of water supply and distribution infrastructure.
- Define and manage capital projects for replacement of existing infrastructure and construction of new infrastructure.
- Manage Local Area Service requests for water services from the public.
- Engineering technical assistance to Operations.
- Assist with emergency response.
- Working with First Nations and other local governments.

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ASSET MANAGEMENT: STORMWATER

Management of stormwater and flood protection

ASSETS

- 160km of pipes valued at $213M
- 16 managed wetlands
- 5 flood pump stations
- 4 km of dykes
- 2 flood gates

KEY SERVICES

- Future planning of stormwater and flood protection infrastructure
- Define and manage capital projects for replacement of existing infrastructure and new infrastructure
- Engineering technical assistance to Operations
- Assist with emergency response
- Working with First Nations and other local governments

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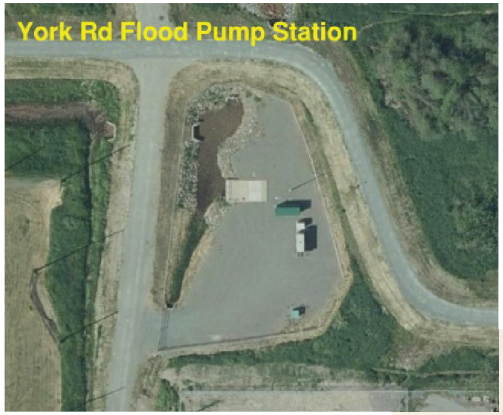
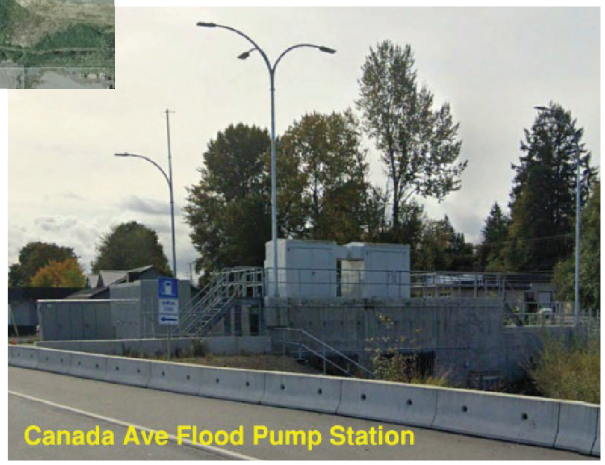
MUNICIPALITY OF NORTH Cowichan

ASSET MANAGEMENT: STORMWATER





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ASSET MANAGEMENT: WASTEWATER

Assets: Approximately **150 km** of pipes valued at **$188M**, 14 pump stations, 4 treatment plants.

SOUTH END	CROFTON	CHEMAINUS	MAPLE BAY
- JUB WWTP (aerated lagoon with tertiary add-on) - 103 km of pipes - 13 pump stations - Co-owned with Duncan - Serves DNC, Duncan, CVRD and Cowichan Tribes - Freshwater discharge to Cowichan River	- Crofton WWTP (secondary treatment, aerobic digestion) - 18 km of pipes - 4 pump stations - Serves DNC, Penelakut First Nation (Halalt First Nation pending) - Marine discharge to Osborne Bay	- Chemainus WWTP (secondary treatment, aerobic digestion, biosolids dewatering) - 29 km of pipes - 7 pump stations - Marine discharge to Stuart Channel	- Maple Bay WWTP (secondary treatment, membrane filtration) - 1 km of pipes (privately owned) - Marine discharge to Maple Bay

ASSET MANAGEMENT: WASTEWATER

Management of wastewater systems including, collection, treatment and capital upgrades

KEY SERVICES

- Ensure compliance with Provincial and Federal requirements for sewage effluent (Chemainus STP, Crofton STP, JUB STP, Maple Bay STP). Oversight of compliance reporting to the Province and Canada (28 reports per year).
- Future planning of wastewater collection and treatment infrastructure.
- Define and manage capital projects for replacement of existing infrastructure and construction of new infrastructure.
- Manage Local Area Service requests for wastewater services from the public.
- Engineering technical assistance to Operations.
- Assist with emergency response.
- Working with First Nations and other local governments.

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MUNICIPALITY OF NORTH Cowichan

ASSET MANAGEMENT: WASTEWATER

ASSET MANAGEMENT: ROADS

KEY FACTS:

- Approximately **300 kilometres** of paved roads valued at **$220M**
- Bare land stratas own and maintain private roads themselves
- Approximately $3.0M per year is budgeted for renewals, replacement and improvements

7 bridges across rivers and streams:

- Lakes Road
- Herd Road
- Chemainus Road
- Canada Avenue (2 bridges nearing end of useful life)
- Gibbins Road
- Westholme Road

3 footbridges:

- Somenos Creek
- Chemainus Lake
- Kingston Park

4 large diameter culverts:

- Richards Trail
- Mary Street
- Drinkwater Road
- Menzies Road

MoTI roadways within the Municipality include:

- Crofton Road
- Tzouhalem Road
- Mount Sicker Road (Chemainus road east of Trans Canada Highway)

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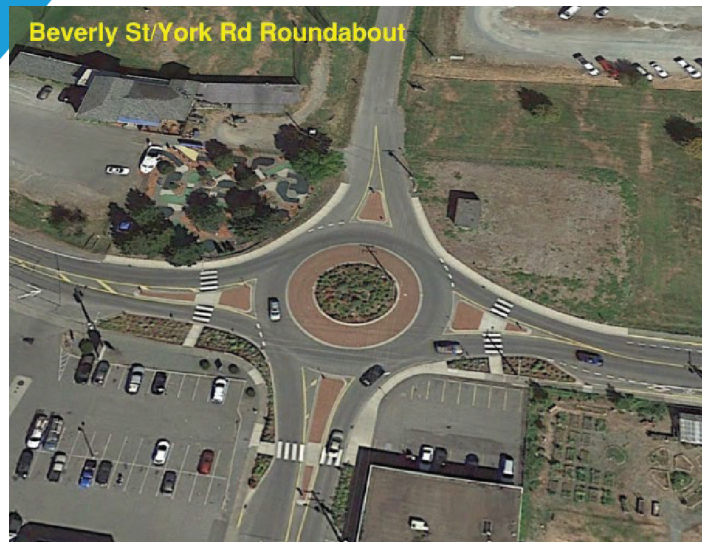
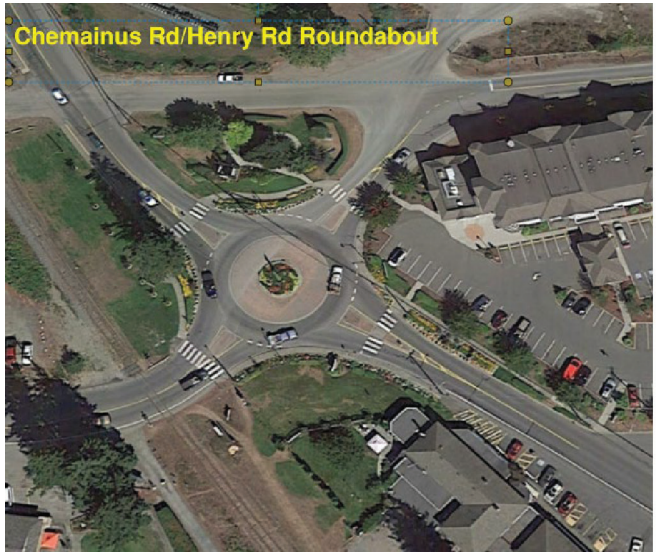
ASSET MANAGEMENT: ROADS

KEY SERVICES:

- Future planning of transportation and active transportation infrastructure.
- Define and manage capital projects for replacement of existing infrastructure and construction of new infrastructure.
- Manage traffic-related requests for service (traffic calming, signs, crosswalks, etc.) from the public.
- Engineering technical assistance to Operations.
- Assist with emergency response.
- Working with First Nations and other local governments and the Province.

ASSET MANAGEMENT: ROADS





SUPPORT TO LAND DEVELOPMENT

Supports land development (Planning and Subdivisions) with respect to infrastructure servicing.

KEY SERVICES

- Reviews referrals from Planning and Subdivisions :
  - Subdivision Applications;
  - Rezoning Applications;
  - Development Permits;
  - Development Variance Permits; and,
  - Building Permits.
- Undertakes capacity assessments for all water, sanitary, drainage, infrastructure.
- Construction approval of larger municipal infrastructure constructed by developers.
- Official Community Plan advisory services.
- Reviews Local Area Service and lot-level service requests.

ENGINEERING: PERMITTING

OTHER FACTS

The Engineering Department issues the following permits:

- Utility Permits (Hydro, TELUS, Shaw and FortisBC)
- Highway (Driveway) Access Permits
- Highway (Road) Use/Construction Permits
- Blasting Permits
- Event Permits (Parades, Street Celebrations, Marches, etc.)
- Hydrant Use Permits

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CLIMATE EMERGENCY PRIORITIES

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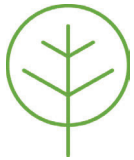
MUNICIPALITY OF NORTH Cowichan

CLIMATE EMERGENCY PRIORITIES

Engineering



PRIORITY 1:

Consider CAEP actions that can be incorporated by Engineering that will reduce GHGs

PRIORITY 2:

Relocate the Joint Utility Board Sewage Outfall (Adaptation)

PRIORITY 3:

Develop climate adaptation measures (flood protection, water storage)

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MUNICIPALITY OF NORTH Cowichan

2024 BUSINESS PLAN

PROJECTED BUSINESS PLAN DELIVERABLES

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MUNICIPALITY OF NORTH Cowichan

Actions/Projects	Start Date
Sanitary Model Updates (3 models; South End, Crofton, Chemainus)	2022
Water Model Updates (3 models; South End, Crofton, Chemainus)	2022
Master Drainage Plan Update and Model Development	2023
Update Development Cost Charge (DCC) Bylaw (dependent on OCP, CAEP, Master Transportation Plan, Sanitary Modelling, Water Modelling, Master Drainage Plan)	2023
Create 10-year capital plan (dependent on OCP, CAEP, Asset Management Plan, Water Modelling, Sanitary Modelling, Master Drainage Plan, Master Transportation Plan, DCC Bylaw Update)	2023

PROJECTED BUSINESS PLAN DELIVERABLES

MUNICIPALITY OF NORTH Cowichan

Actions/Projects	Start Date
Relocate the Joint Utility Board Effluent Outfall	2018
Bell McKinnon LAP servicing assessment (water/sanitary models update, drainage assessment, traffic impact assessment)	2022
Update Subdivision Bylaw (incl Engineering Design Standards, green design standards	2021

OPERATING BUDGET - SUPPLEMENTAL BUDGET REQUESTS NET NEW STAFFING REQUEST

MUNICIPALITY OF NORTH Cowichan

Position	Rationale	Implications of Deferment	Projects Deferred/Delayed	Budget Impact
Administrative Assistant	Assessment of workload for routine duties (non-project related duties) shows that 2.6 FTE required to support Engineering Department and Land Development/ Environment Department. Of the 2.6 FTE, 1.0 FTE provides services specific to supporting Land Development. Need admin support to assist with developing and implementing improved business practices within the department. This will relieve Engineering managers and staff with some administrative work and will improve service delivery in general.	The implementation of business improvement processes will be further delayed, resulting in longer processing times for permits (Hydrant Use, Blasting, Events, Road Construction, Road Access), managing calls for service entries/tracking/responses. Less support to Land Development which will impact the rate at which land development applications are processed.	Delayed: 1. Adoption of Laserfiche. 2. Bond list cleanup. 3. Permit application form updates. 4. Incorporation of additional business processes into Prospero. 5. Business process documentation.	$84K including Benefits (.net budget impact of $56,000 as cost includes previously funded temp. position) Sources of Funding Utilities: $13K General Taxation: $43k

OPERATING BUDGET - SUPPLEMENTAL BUDGET REQUESTS NET NEW STAFFING REQUEST

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MUNICIPALITY OF NORTH Cowichan

Position	Rationale	Implications of Deferment	Projects Deferred/Delayed	Budget Impact
Planning Engineer (Utilities / Drainage)	This position's purpose is to provide the ability to plan, carry out conceptual design/cost estimates, prioritize projects and programs for the maintenance, upgrade, replacement or new infrastructure for utility and drainage infrastructure systems, and support the Senior Engineer with land development servicing assessments. Projects arise from three key sources: 1) Due to growth where new infrastructure, or upgrades to existing infrastructure, are required. 2) Where assets reach the end of their life. 3) Community improvement projects (typically street-scape improvements). The above work requires sound planning and coordination.	Deferment will delay the development of 10-year capital plans along with master plans. This delay will cause that North Cowichan will continue to plan infrastructure projects on a reactive basis rather than a long-term planning basis. By remaining in reactive mode, the Municipality will be missing opportunities for external funding. Future projects could be developed and be partially shovel ready with a clear definition of the cost implications for the Municipality and funding could be applied for. By changing how future work is planned there would be an improvement of how funding would be utilized from the reserves with knowledge of funds available and future commitments/requirements.	1. Asset management planning 2. 10-year capital plan 3. Master drainage plan and stormwater management design standards 4. DCC Bylaw 5. Subdivision Bylaw (Engineering Standards) update 6. Land development application servicing reviews	$143k (benefits included) potential start date of April 2024. Sources of Funding Utilities: $64k General Taxation: $45k

OPERATING BUDGET - SUPPLEMENTAL BUDGET REQUESTS NET NEW STAFFING REQUEST

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MUNICIPALITY OF NORTH Cowichan

Position	Rationale	Implications of Deferment	Projects Deferred/Delayed	Budget Impact
Planning Technologist (Transportation)	This position's purpose is to provide the ability to plan, carry out conceptual design/cost estimate, prioritize projects and programs for the maintenance, upgrade, replacement or new infrastructure for multi-modal transportation systems (vehicles, walking, bicycles, transit, etc.), provide support to calls for service requests, and support the Senior Engineer with land development servicing assessments. Projects arise from three key sources: 1) Due to growth where new infrastructure, or upgrades to existing infrastructure, are required. 2) Where assets reach the end of their life. 3) Community improvement projects (typically street-scape improvements). The above work requires sound planning and coordination.	Deferment will delay the development of 10-year capital plans along with master plans. This delay will cause that North Cowichan will continue to plan infrastructure projects on a reactive basis rather than a long-term planning basis. By remaining in reactive mode, the Municipality will be missing opportunities for external funding. Future projects could be developed and be partially shovel ready with a clear definition of the cost implications for the Municipality and funding could be applied for. By changing how future work is planned there would be an improvement of how funding would be utilized from the reserves with knowledge of funds available and future commitments/requirements.	1. Asset management planning 2. 10-year capital plan 3. Implementation plan for Master Transportation Plan (including multi-modal projects) 4. Upgrade of intersections/round abouts to maintain level of service requirements 5. DCC bylaw 6. Subdivision Bylaw (Engineering Standards) update 7. Land development application servicing reviews	$111k (benefits included) potential start date of April 2024. Sources of Funding General Taxation: $85k

MUNICIPALITY OF NORTH Cowichan

OPERATING BUDGET

	2023 Budget	2024 Budget	$ Change	% Change	2023 YTD	Supplemental	$ Change
REVENUE							
Sales of Service	$ 209,100	$ 157,222	(51,878)	-25%	$ 130,626		
TOTAL REVENUE	**$ 209,100**	**$ 157,222**	**(51,878)**	**-25%**	**$ 130,626**		
EXPENSES							
Administration	$ 1,822,437	$ 1,892,147	69,710	4%	$1,374,898	$ 173,000	$ 242,710
Engineering Studies	401,705	130,000	(271,705)	-68%	16,310	-	-
TOTAL EXPENSES	**$ 2,224,142**	**$ 2,022,147**	**(201,995)**	**-9%**	**$1,391,209**	**$ 173,000**	**$ 242,710**

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MUNICIPALITY OF NORTH Cowichan

KEY STATISTICS

	2019	2020	2021	2022	2023 [1]
# of permits processed in TOTAL	295	264	337	313	175 (233)
# of driveway access permits processed [2]	5	4	18	19	7 (9)
# of highway construction/use permits processed	23	33	30	40	46(61)
# of hydrant use permits processed	18	11	20	16	11 (15)
# of utility permits processed	170	172	188	150	68 (91)
# of blasting permits processed	10	6	15	17	7 (9)
# of service applications processed	48	32	58	51	21 (28)
# of event permits processed [3]	21	6 [3]	08 [3]	20	15 (20)

Notes

[1] Based on current statistics (up to Sep 30/23; in brackets) extrapolated to Dec 31/23.
[2] Excluding driveway access permits issued as part of a building permit review.
[3] Numbers are lower due to COVID-19 pandemic.