The Corporation of the District of Saanich

Report

To: **Mayor and Council**

From: **Sharon Hvozdanski, Director of Planning**

Date: **January 9, 2020**

Subject: **Climate Plan: 100% Renewable and Resilient Saanich**
File: 2560-50 • 100% Renewable Saanich

RECOMMENDATION

1. That Council adopt "Climate Plan: 100% Renewable and Resilient Saanich".

2. That Council endorse the acceleration of the following two climate actions:

   a. Invest in active transportation; and
   b. Improve climate resilience of Saanich's infrastructure.

3. That Council redirect the portion of the grant from the "Climate Action Revenue Incentive Program" (CARIP) that currently supports two existing sustainability staff positions, towards programs and projects that directly support Saanich residents.

4. That Council approve in principle allocating $322,000 annually to increase resources to implement the Climate Plan: 100% Renewable and Resilient Saanich, as follows:

   a. Two existing positions currently supported by CARIP (see recommendation 3):
      - One Senior Sustainability Planner; and
      - One Sustainability Planner.

      and

   b. Two new positions:
      - One Corporate Sustainability Specialist; and
      - One Sustainability/Climate Resilience Planner.

5. That Council approve in principle increasing the internal corporate carbon rate used from $25 to $50 per tonne of CO_2e to fund a new Climate Action Reserve Fund starting in 2020 (a budget increase of approximately $115,000 annually).

Notes:
If Recommendations 4 and 5 are supported in principle by Council this evening, the formal request(s) for these new financial resources would form part of Council's upcoming 2020 Budget deliberations.

In order to undertake the work required to meet the greenhouse gas reduction targets previously endorsed by Council, additional resources would be required, most notably in relation to Engineering. The general cost figures are noted later on in this report. Related budget requests would also be brought forward as part of the annual budget deliberation process.

PURPOSE

The purpose of this report is to:

1. Provide background information on the Plan development process and summary of public engagement results;
2. Present the "Climate Plan: 100% Renewable and Resilient Saanich" and short-term priority actions as a means by which to achieve the GHG reduction goals previously set by Council; and
3. Outline the new staff and financial resources needed to implement the Climate Plan.

BACKGROUND

Plan Development Process

On October 2, 2017, Council gave direction for staff to update Saanich's Climate Action Plan, and endorsed the original community-wide targets as follows:

- To become a 100% Renewable Energy Community by 2050; and
- To achieve an 80% reduction in community greenhouse gas (GHG) emissions by 2050 (below 2007 levels).

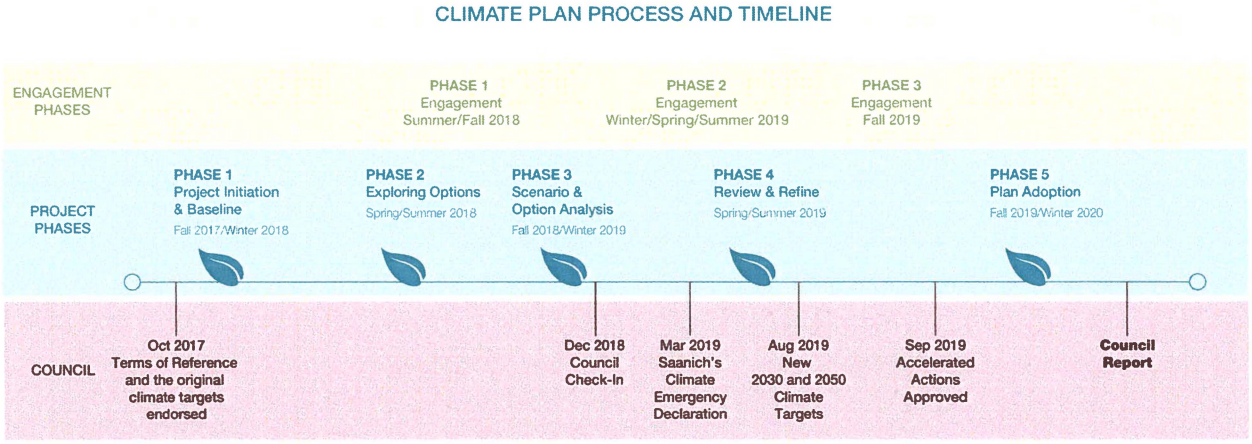

Figure 1: Climate Plan Process and Timeline

Phase 1

A territorial emissions inventory was completed to measure GHG emissions produced within our municipality from different sectors in Saanich (see Figure 2). It includes emissions from stationary energy (i.e. from buildings), transportation (based on Saanich registered vehicles), waste, and other areas such as industrial processes, product use, agriculture, forestry and other land use. The majority of territorial GHG emissions come from gasoline and diesel used for transportation, followed by natural gas and oil used in buildings, and lastly methane from waste.

Figure 2: Saanich Territorial GHG Inventory and Consumption-Based GHG Inventory

A consumption based GHG Inventory was also completed to measure GHG emissions from all the goods and services that the Saanich community consumes, regardless of where those goods and services are produced. Saanich community's consumption based emissions are considerably larger than territorial emissions.

In this phase, two internal working groups, one focused on climate mitigation (reducing emissions) and another focused on climate adaptation (preparing for climate change), were formed with staff representation from nearly all departments of the District of Saanich. The working group members participated in internal workshops, assisted with stakeholder workshops, and provided input and feedback throughout the plan development process.

Phases 2 and 3

Energy and emissions modeling was used to develop scenarios and inform draft climate actions to achieve the set targets. Public engagement was carried out to understand key themes, opportunities and barriers, and explore options.

The key findings from the scenario development and energy and emissions modeling were:

- Existing policies (modeled as a Business As Usual [BAU] scenario) will not be sufficient to achieve significant reduction in GHG emissions;
- Vehicle electrification and existing building retrofits have the biggest GHG reduction potential; and
- Vehicle electrification and existing building retrofits alone are not sufficient (40% of reduction in Saanich community GHG emissions). Many other measures have to be taken as well.

Phase 4 – Climate Emergency Declaration, New Targets and Accelerated Actions

Strategies and actions were developed with input from staff, key stakeholders and the public. They were reviewed and refined through multiple iterations.

During this phase, Saanich Council declared a climate emergency and subsequently adopted the following new targets to be in line with the recommendations from the Intergovernmental Panel on Climate Change (IPCC):

- Achieving 50% GHG reduction (below 2007 levels) by 2030; and
- Reaching net zero emissions by 2050.

The Plan before you for review and consideration outlines a pathway for achieving the above-noted targets within the prescribed timeframe. Further on in this Council Report, we have outlined the staffing and financial resources required to implement the Climate Plan along with the general impacts on the Strategic Plan and the work of the corporation.

These targets are intended to compel more ambitious climate action and be more consistent with the global GHG reduction needed to limit global warming to 1.5°C. Although it is unusual and challenging to adjust to new climate targets at a relatively late stage of the plan development process, the decision to incorporate them into the updated Climate Plan was supported by Council to ensure a climate emergency declaration is meaningful and leads to the transformation that matches the magnitude and urgency of the challenge.

Additional energy and emissions modeling was commissioned to assist in understanding the new pathways to achieve the new 2030 and 2050 reduction targets with an increasing focus on impactful actions over the next 11 years. These pathways are shown in Figure 3.

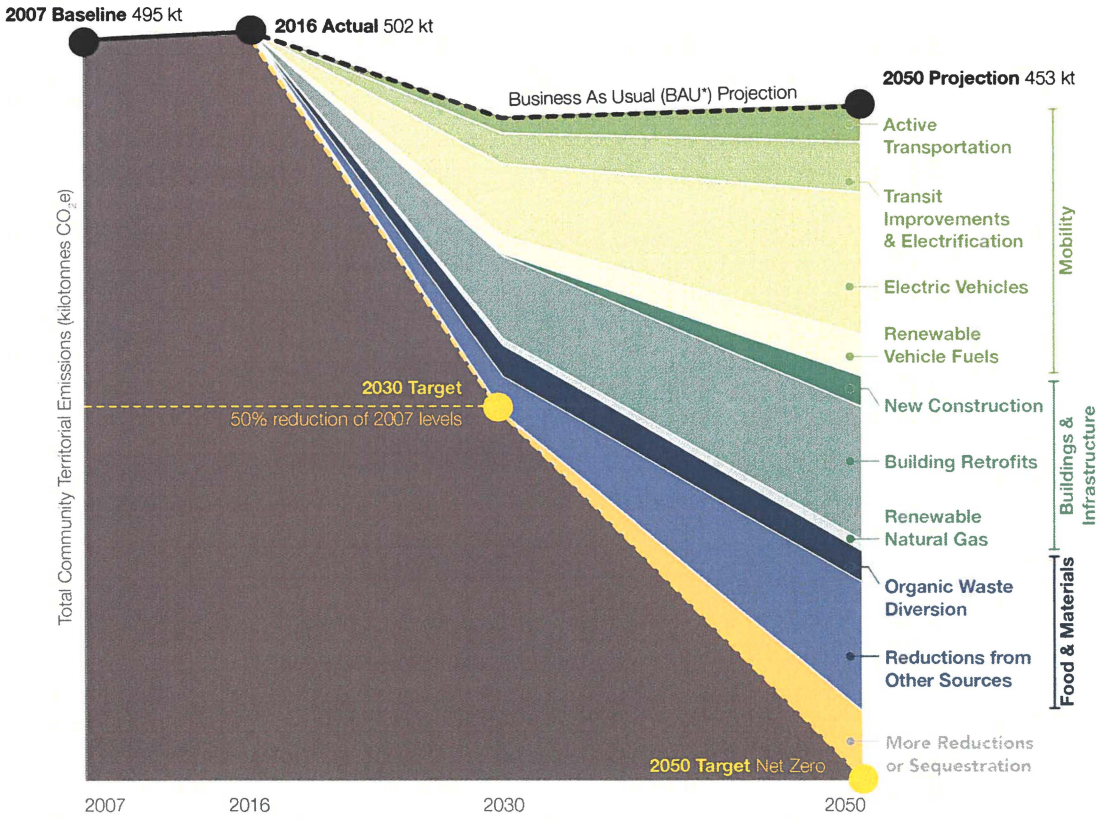

Figure 3: New Climate Targets and Pathways

Staff identified and proposed a short list of accelerated climate actions which Council approved in late September 2019 to help meet the District of Saanich's new climate targets. A draft Climate Plan with the new targets and a full list of actions was then completed and released for feedback in fall 2019.

Public Engagement Summary
Nearly 3,000 people have been engaged through our key events. During the engagement process, community members clearly expressed their belief that there is an urgent need for climate action, as well as their support for the proposed actions in the Climate Plan. Below is a summary of the three phases of public engagement carried out during the Climate Plan development.

Engagement methods include a Saanich Talk event, website, surveys, booths at festivals and public events, displays at recreation centres and libraries, newsletters, media and advertising, offering surveys on the bus to transit riders, one-on-one meetings and presentations, emails and phone calls, stakeholder workshops, public open houses and workshops, working group meetings, and social media interactions.

Phase 1: Broad input on key themes, issues and opportunities (late spring - fall of 2018)
Key findings:

- Broad consensus among most residents regarding strong support for climate action, the sense of urgency and the desire for regulation and incentives as top municipal approaches.
- Top three topic areas are smart land use planning, transit improvement and waste reduction.

Events number: 28 key events.

Reach: Over 1,700 individuals engaged at events.

Phase 2: Feedback for draft strategies and actions (winter 2018 - early summer 2019)
Key findings:

- High level of agreement and support for proposed strategies and actions (79% of responses).
- Most popular actions related to active transportation, vehicle fleet, electric vehicle charging access, local food production, transit improvement, bike parking, agriculture, waste and high-performance buildings.

Events number: 22 key events.

Reach: Over 1,000 individuals engaged at events.

Phase 3: Draft Climate Plan review (fall 2019)
Key findings:

- Strong support for climate action and the draft plan.
- Sense of urgency for action.
- Desire to see costs, timelines and anticipated impacts of each action and how they relate to the overall goals.

Events number: 5 key events.

Reach: Over 200 individuals.

The Climate Plan Engagement Reports for Phase 1, 2 and 3 can be found at www.saanich.ca/climateplan.

ACCELERATED ACTIONS – Five Council Endorsed Actions & Two New Proposed Actions

On September 30, 2019, Council endorsed the following accelerated community climate actions prior to the finalization of the Climate Plan:

- Accelerate personal transportation electrification;
- Convert all oil heating systems to renewable heating systems by 2030 or sooner;
- Enhance support for efficiency and renewable energy upgrades in existing buildings;
- Double the rate of planting trees to enhance the urban forest; and
- Catalyze community actions.

Background information on these actions can be found in the Response to Saanich's Climate Emergency Declaration – Accelerated Actions Council Report which forms part of the Agenda package (see Attachment 2).

Upon additional modeling and analysis, staff proposes that the following two actions identified in the Climate Plan be added to the existing list of five accelerated actions noted above, and be initiated in the next 6 to 24 months. Together, these seven actions are identified as First Priorities in the Climate Plan.

1. Invest in Active Transportation

Potential impact on emissions reduction
Personal transportation accounts for over 50% of Saanich's community GHG emissions. Energy and emissions modeling suggests that achieving the 2036 mode share targets in the Active Transportation Plan, namely 22% of all trips by walking and cycling, by 2030 would reduce 2.2% of Saanich's territorial GHG emissions by 2030 and 5.1% by 2050.

Electric bikes are an emerging trend in the region. While research on their impacts on GHG emissions is limited, there is early research and anecdotal evidence that e-bikes may encourage longer cycling trip lengths and replace more car trips than regular bicycles. An exploratory scenario being modelled suggests that e-bikes could potentially help the active transportation strategy achieve a reduction of 3.4% of territorial GHG emissions by 2030 and 7.8% by 2050.

From a consumption-based GHG emissions point of view, human-powered forms of transportation have far less embodied emissions associated with vehicle materials and road infrastructure than personal vehicles (e.g. a bicycle has a lot less embodied resources and emissions than a car).

Description
Increasing the investment in active transportation to help achieve the mode share targets of 22% of all trips taken by walking and cycling by 2030 means building more sidewalks and bike

lanes, improving intersection safety for vulnerable users, upgrading transit routes and stops, and investigating and expanding active transportation supportive programs and policies.

Aside from the emission reduction potential, active transportation has many more benefits such as using road space more efficiently, promoting health and equity, improving air quality, and potentially providing more options for accessing services during emergency events.

Building on Existing Work
The District has a Council-approved Active Transportation Plan (ATP) that is currently being implemented. At the current funding level, the District is on track to meet the mode share targets in the plan. However, to help meet the 2030 climate target, the implementation of the ATP needs to be accelerated and achieve the interim mode share targets sooner.

Financial Implications
Accelerating the implementation of the ATP would require an estimated $1 million increase to the existing funding level in 2020 and an additional $1 million increase in 2021 to support expansion of the pedestrian and cycling facilities network. It would also require increased staff resources including:

- One Engineering Technician to manage infrastructure projects;
- One FTE to support organizational capacity, likely in purchasing, in 2020; and
- One additional Engineering Technician in 2021.

2. Increase Climate Resilience of Saanich's Infrastructure and Assets

Potential Impact on Climate Resilience
Projected future climate changes such as hotter and drier summers, increased number and intensity of storm events, and sea level rise will likely negatively affect the existing capacities of Saanich's infrastructure. Incorporating climate change considerations into infrastructure design, retrofits and replacement will help mitigate the impacts of those changes, reduce the risks of service disruption and protect valuable assets and amenities.

Description
Incorporating climate change considerations in the corporate asset management system, engineering design specifications, flood hazard planning and stormwater master plan is a critical first step to address some of the highest risks associated with more severe weather patterns to Saanich's infrastructure.

Building on Existing Work
A District-wide stormwater management master plan is under development and is anticipated to be completed by the end of 2021. Other work related to stormwater management includes updating specifications to reuse rain water and increase infiltration, and developing a staged strategy for an Integrated Stormwater Master Plan, a storm drain main condition assessment rating framework, and a replacement prioritization framework based on principles of asset management.

Financial Implications
Adapting to climate change now and early is in our strong economic self-interest and is typically much less expensive than recovery and rebuilding. The Global Commission on Adaptation found that the overall rate of return on investments in improved resilience is very high, with benefit-cost ratios ranging from 2:1 to 10:1, and in some cases even higher.

Over the next two years, the initial work related to increase climate resilience of Saanich's infrastructure would require between $900,000 and $1.65 million for engineering analysis, specialized software, water modeling and one Project Engineer. The dedicated Project Engineer would allow a portion of the work associated with all the Water Resources division's short-term initiatives to be delivered internally at a fraction of a consultant's fee and in the time frame Council prefers. There would also be a continued need to have a resource undertaking the next set of medium/long-term initiatives followed by the implementation of study recommendations and monitoring of effectiveness.

IMPACT ON DISTRICT OPERATIONS

To both gain and maintain the long-term support of residents and businesses, the District should strive to lead by example and demonstrate a high level of commitment to climate action. The scale of transformation endorsed by Council through the Climate Emergency declaration and setting of GHG reduction targets would require the District to embed climate change considerations into all aspects of corporate operations and decision making processes. This is a significant operational change and would alter both the ongoing work program of the corporation and how it allocates staff and financial resources.

New Corporate Targets

The Climate Plan sets new targets for reducing the GHG emissions from the District's municipal operations:

- Reducing emissions to 50% of 2007 levels by 2025; and
- Achieving net-zero emissions by 2040.

The above targets are set for five and ten years earlier, respectively, than the same targets for the Saanich community.

Corporate Actions - 2020

On September 30, 2019, Council endorsed the following accelerated corporate actions to be initiated over the next 6 to 24 months:

1. Implement a Climate Friendly Commuter Program for Saanich employees;
2. Include a climate alignment scorecard in development application reports to Council;
3. Incorporate a carbon pricing in business case analysis;
4. Develop a corporate fleet strategy to reduce carbon emissions starting 2020; and
5. Model a low carbon diet through corporate catering.

Other new corporate actions to be initiated in 2020 if the Climate Plan is both adopted and resourced include:

6. Create a climate leadership group within the District to oversee implementation and monitoring of the Climate Plan;
7. Develop a risk register and monitoring platform to track climate risks and actions;
8. Implement a training and capacity building program for Saanich staff; and
9. Develop an e-bike fleet program for work trips.

The complete list of Climate Actions to be carried out starting 2020 are included as part of this Council Report (see Attachment 3).

ALTERNATIVES

1. That Council approve the recommendations as outlined in the staff report.

   Should Council not support the recommendations, the implications are that:

   - Climate actions currently identified to be initiated over the next 24 months may be delayed;
   - Saanich may not be on track to meet its 2030 and 2050 climate targets;
   - The District may not meet its corporate climate targets; and
   - Climate change impacts may not be adequately addressed, potentially resulting in greater damage to infrastructure and amenities, loss of biodiversity, reduction of services, threat to human health and safety, and cost of repair and recovery.

2. That Council direct staff to maintain the existing staff level and an internal carbon rate at $25 per tonne of CO2e.

   Should Council choose this option, the implications are that:
   - New projects and initiatives that require additional capacity and funding would be delayed; and
   - Meeting the new climate targets for both the community and the District of Saanich would be delayed.

3. That Council provide alternate direction to staff.

FINANCIAL IMPLICATIONS

A total of 131 actions are identified in the Climate Plan, about 40% of which are already underway or could be delivered with existing staff and financial resources. The implementation of the remaining actions will likely require re-allocation of existing resources, new resources, and increased capacity in the organization.

Climate Action Revenue Incentive Program

Currently a portion of the grant from the Climate Action Revenue Incentive Program (CARIP) Saanich receives from the province each year is used to top up two existing sustainability staff positions. It is recommended that this top up portion be redirected to programs and projects that directly benefit Saanich residents to support high priority actions, such as:

- Rebate top-ups for switching to renewable energy sources (up to $50,000);
- An electric bicycle incentive pilot (up to $50,000);
- Rebate top-ups for EV charging infrastructure (up to $15,000); and
- BC Sustainable Energy Association Cool It! programs for students ($5,500).

Increased Staff Resources - Sustainability Section

In order to deliver multi-year projects to support the implementation of the Climate Plan, approximately $322,000 annually is required to increase staff resources in the Planning department as follows:

a. Top up two existing positions that are currently being supported by CARIP:

- One Senior Sustainability Planner (partially funded by BC Hydro Community Energy Manager Program); and
- One Sustainability Planner.

b. Two new positions:

- One Corporate Sustainability Specialist to support actions in Leadership in District's Operations and meet corporate sustainability objectives; and
- One Sustainability/Climate Resilience Planner to support the development of climate resilience metrics and indicators, apply for grants, and lead, coordinate or support climate resilience projects.

If the proposed topped up and new staff positions are supported in principle by Council this evening the formal request(s) for these new financial resources would form part of Council's upcoming 2020 Budget deliberations.

A New Climate Action Reserve Fund

On September 30, 2019, Council directed staff to establish a new Climate Action Reserve Fund in 2020 to replace the Carbon Neutral Reserve Fund (Carbon Fund) established in 2007. Staff proposed that the internal carbon rate be raised to at least $50 per tonne of CO_2e in 2020 (from $25 per tonne). The total contribution will be increased by 2% every year thereafter, making it a stable source of funding not affected by the decreasing emissions. In 2019, the total contribution to the Carbon Fund is $115,000. With a new rate of $50 per tonne carbon, the total contribution would be approximately $230,000 each year starting in 2020. This represents a budget increase of approximately $115,000 per year.

The new Climate Action Reserve Fund is intended to be managed by the Planning department to support GHG emissions reduction from the District's operations as well as climate adaptation and GHG emissions reduction in the community. The new fund could be used as critical project funds, or matching funds for external grants, to implement the following priority actions that would require new resources in 2020 and 2021:

Table 1: Climate Actions and Funding Required in Planning Department

Action Identifier	Description	Estimated New Resources Required		Lead Department
		2020	2021	
B1.1	Identify and remove municipal barriers to high performance buildings (consulting fee and engagement activities)	$10,000	$10,000	Planning
B2.3*	Carry out effective communications campaigns to promote conversion to renewable energy systems (print material, advertising, bill inserts)	$10,000	$10,000	
B2.7	Work with partners to support skills development (training event costs)	0	$15,000	
B2.10	Work with industry partners to support renewable energy retrofits	$25,000	$25,000	

	(e.g. Greater Victoria 2030 Resilient District, Transition 2050 Residential Retrofit Acceleration project)			
B2.11	Develop incentives tools to encourage commercial and multi-unit residential buildings to undertake deep energy retrofits (consulting fee for technical analysis and program design)	$10,000	0	
C2.1*	Implement a tangible and hands-on neighborhood-level program (consulting fees, facilitators, material development, venues)	$75,000	$40,000	
C2.2*	Host an annual climate fair (materials, advertising, food and venue)	$10,000	$10,000	
C2.4	Carry out a communications campaign on urgent climate action (print material, advertising)	$10,000	$10,000	
C2.6	Develop an equity tool (data analysis, external facilitators, community grants, translation of materials, food and venue)	$5,000	$34,000	
L2.1*	Implement a Climate Friendly Commuter Program (consulting fee for parking studies and transportation demand management program development)	$20,000	$30,000	
L3.3	Develop an e-bike fleet program (2 e-bikes, lockers, safety gear, training course, etc.)	$27,000	$3,000	
L4.1	Transition to highly efficient and renewably powered municipal facilities (e.g. energy studies)	$15,000	$20,000	
n/a	Various engagement activities to support policy development	$3,000	$3,000	
n/a	Monitoring and evaluation (e.g. GHG inventory update, climate resilience metrics development)	0	$10,000	
n/a	Administration (e.g. energy and GHG accounting software, training, professional network membership fees, etc.)	$10,000	$10,000	
	Total	**$230,000**	**$230,000**	

* Council approved accelerated actions

Increased Resources – Other Departments

New resources required in other departments to support the implementation of the Climate Plan as well as corporate and departmental strategic/work plans for consideration in the 2020 and 2021 budgeting process include:

Table 2: Climate Actions and Resources Required in Other Departments

Action Identifier	Description	Estimated New Resources Required		Lead Department
		2020	2021	
M1.1	Accelerate the implementation of Active Transportation Plan (i.e. implementation of network of pedestrian and cycling facilities)	Increase annual funding by 1,000,000; 1 FTE Engineering Technician and 1 FTE to support organizational capacity such as in purchasing	Additional increase of 1,000,000 in annual funding; Additional 1 FTE Engineering Technician	Engineering
M1.3 M1.4 M1.6	Expand Active School Travel Planning program Improve bike parking at existing buildings Support bike shares and other shared mobility services	1 FTE Transportation Planner	0	Engineering
B5.1	Incorporate climate change considerations in the corporate asset management system	0	$100,000 for software and consulting fee	Engineering
B5.2	Update engineering design specifications to account for future climate projections	0	$50,000 for consulting fee	Engineering
B5.3	Conduct flood hazard planning (i.e. carrying out required engineering and flood modeling using specialized software)	0	$250,000 to $1,000,000 depending on the extent of river modeling; 1 FTE Project Engineer	Engineering
B5.4	Accelerate the completion of a stromwater mater plan with climate change considerations	0	$500,000 for consulting fee	Engineering
E1.1*	Double the rate of planting trees to enhance urban forest	$50,000 per year (over 5 years)	Up to 1FTE (2 part-time Park Workers)	Parks, Recreation and Community Services
	Total	**$1,050,000 plus $333,750 for 3 FTEs**	**$1,900,000 - $2,650,000 plus $306,000 for 3 FTEs**	

* Council approved accelerated actions

Decisions on Funding

Assuming Council supports some or all of the proposed new positions in principle this evening, all new resource requests would be submitted as part of the annual budgeting process for review and consideration.

If there are unique opportunities (e.g. external funding, partnerships) aligned with the District's climate action priorities outside the annual budgeting cycle, staff would bring those initiatives to Council for review and consideration off-cycle.

STRATEGIC PLAN IMPLICATIONS

As previously noted, the scale of transformation called for as a result of the Climate Emergency declaration and setting of aggressive GHG reduction targets would require the District to embed climate change considerations into all aspects of corporate operations and decision making processes. This would result in a significant operational change that would alter both the ongoing work program of the corporation and how it allocates staff and financial resources. The ability to achieve some of the initiatives in Council's Strategic Plan would also be impacted.

CONCLUSION

The "Climate Plan: 100% Renewable and Resilient Saanich" outlines a pathway for achieving the ambitious climate targets necessary to stay below 1.5 °C of global warming and preparing the community for the anticipated climate change in response to the latest climate science and increasing public concern. This report further outlines the priority actions to be initiated over the next two years and the staffing and financial resources required to implement them.

Implementing the Climate Plan would require considerable financial commitment and result in significant operational change. However, the resources required may also come from re-allocation of existing resources and external sources. At the same time, climate actions can contribute to multiple goals of the Strategic Plan and deliver many benefits to the community, both short-term and long-term.

Prepared by:

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Manager of Sustainability

Approved by:

Sharon Hvozdanski

Director of Planning

TP/jsp

Attachments: Climate Plan: 100% Renewable and Resilient Saanich
Report: Response to Saanich's Climate Emergency Declaration – Accelerated Actions
Climate Actions 2020

ADMINISTRATOR'S COMMENTS:

I endorse the recommendation from the Director of Planning.

Paul Thorkelsson, Administrator