

Township of
Langley



Est. 1873

REPORT TO MAYOR AND COUNCIL

PRESENTED: JULY 27, 2020 - REGULAR MEETING
FROM: ENGINEERING DIVISION
SUBJECT: CLIMATE ACTION STRATEGY UPDATE

REPORT: 20-108
FILE: 5280-31

RECOMMENDATIONS:

That Council authorize staff to proceed with public consultation on the draft Climate Action Strategy; and further

That Council direct staff to bring forward the final Climate Action Strategy and financial plan for Council's consideration of adoption.

EXECUTIVE SUMMARY:

At its Regular Meeting on June 29, 2020, Council received a presentation and report from staff regarding the draft Climate Action Strategy. At that meeting, Council resolved to refer the item back to staff for more detailed cost estimates and funding sources, including per household related costs for each of the 'Big Moves' identified in the report; and directed staff to bring an updated report back to Council prior to proceeding with obtaining public input on the draft Climate Action Strategy.

The Climate Action Strategy (CAS) is intended to be the playbook that guides the entire community towards the carbon reduction targets previously adopted by Council, and, effectively establishes a new low-carbon vision for the municipality.

Realizing this vision will depend on the Township implementing the Strategy's 144 specific actions spread over eight priority areas, but also on efforts and investments made by the community at large. The Strategy's 144 action items over the eight specified priority areas rest upon what have been referred to as 'five big moves' with the majority of actions supporting previously established Council priorities. The five big moves can be viewed as high-level aspirational goals, necessary to set the direction needed to meet historic commitments; and further, to be used to articulate the commitment to the community, help maintain enthusiasm, and measure progress in a clear and coherent manner.

The cost to implement the specific actions under the Township's responsibility pursuant to the draft Strategy, has, at a high level, been estimated at approximately \$130 per year per representative residential household over the next ten years. Although a detailed financial plan is still to be developed, a breakdown of this projected cost, along with some potential funding sources identified for consideration, are included as part of this report.

It is recommended that Council direct staff to follow through with previous commitments in supporting the low-carbon vision established by the Strategy, and proceed with public consultation, as the next step in the process, based on the financial information and overall approach outlined in this report.

PURPOSE:

This report is in response to Council direction for additional financial information related to the Climate Action Strategy; and seeks Council's approval to proceed to public consultation.

BACKGROUND/HISTORY:

Township of Langley Council adopted the emission reduction targets recommended by the Intergovernmental Panel on Climate Change (IPCC), 45% by 2030; and, carbon neutrality, or zero carbon, by 2050. The draft Climate Action Strategy, as previously presented to Council, would put our community on a path to achieve these targets.

The CAS establishes a low-carbon vision for the community supported by 144 actions, spread over eight priority areas, intended to be implemented by the community at large, including the Township. In this way, the CAS is somewhat like a community or neighbourhood plan. The costs discussed in this report include the actions that would be the responsibility of the Township to implement but does not include all the costs that will be required to meet the targets. For example, the Township currently provides a financial incentive for energy efficient new homes but does not pay for the thicker wall assembly that the builder needs to construct to qualify for the rebate.

Meeting the emission targets will require leadership on an unprecedented scale along with efforts and investments from every single one of our community partners; from individual residents to large organizations, and from small businesses to big corporations. The 144 proposed actions support a new low-carbon vision for our community. If ultimately supported by Council as drafted, the community can expect a livable municipality, which is strong, healthy, and thriving. A community where:

- People would have access to safe and convenient multi-modal active mobility pathways to walk, cycle or roll to their destination.
- Residents could visit one of the Township's new, zero carbon facilities and newcomers to our community could purchase a high performance new home that is healthier, and less expensive to operate,
- In hot weather, outdoor enthusiasts could easily find shade beneath a growing tree canopy that is capturing carbon and improving biodiversity,
- Farmers would benefit from better access to local markets to sell their crops and residents would enjoy improved year round availability of locally-grown fruits and vegetables; and
- Businesses would have access to convenient and cost-effective recycling and composting options.

With the targets set, the vision established, and the actions identified, staff felt that goal statements would be useful as indicators of progress towards the targets. These were called the five big moves and are intended to be checkpoints on the way to zero carbon by 2050. The five big moves included in the draft CAS are as follows:

1. **Safe and Sustainable Transportation:** More than half of current passenger vehicle trips to be made by sustainable modes of transportation (active mobility, transit, EVs) by 2030;
2. **Zero Emission New Buildings:** All new community buildings to produce zero emissions by 2030;
3. **Zero Emission Existing Buildings:** More than half of existing community buildings to be retrofitted to produce zero emissions by 2030;
4. **Zero Emission Corporate Operations:** Achieve zero emission corporate operations through zero emission new facilities, facility retrofits and zero emission fleet vehicles by 2040;
5. **Resilient Natural Systems:** Increase tree canopy and rainwater capture from current levels by 2030.

The big moves will be revisited on a regular basis for the purpose of staying on track, maintaining our momentum, and to measure on-the-ground progress towards the emission targets.

DISCUSSION/ANALYSIS:

A public consultation plan has been established and is ready for release pending Council's support of this report's recommendations. The consultation is proposed to take place between September and December 2020, with the results brought back to Council early in 2021.

Consultation will be both general and targeted, and will focus on the following two audiences:

1. General Public: with a focus on various audience archetypes including residents, commuters, and business owners in various age groups, and;
2. Stakeholder Groups: industry groups, associations, and organizations that have been identified as having sector specific expertise and/or high likelihood of impact from climate change and/or the CAS.

The underpinning element of the consultation will be a public survey, available online and as a hardcopy for mail out to residents that do not have internet access. The survey will consist of a series of questions intended to measure community support of the Climate Action Strategy. The survey will begin with a preamble that reveals the estimated cost of \$130 per representative household per year, so that respondents can answer the questions with a full and complete understanding of the potential cost impact using a familiar and easy to understand metric. It will be added, however, that this cost should be considered a high level estimate, could change based on the outcome of the public consultation, and, will not be the actual cost to a representative household since it will be the Township's goal to minimize the impact to residents using strategies to be developed as part of the financial plan (eg. offsetting grants / incentives, new revenue sources, cash-flow positive borrowing, etc.). Survey questions are currently being developed and will be a combination of demographic specific, closed and open-ended questions with ample opportunity for respondents to provide written remarks and opinions.

Targeted digital dialogue sessions and/or phone calls will be held with identified stakeholder groups to ensure opportunities for feedback from these groups. The following communication strategies will be used to reach the general public: Township website, press release, newspaper ads, and social media. Finally, local advertising will be done which might include posters in grocery stores, gas stations and restaurants, local radio ads and interviews, school district communications, and advertising in Township facilities and parks that are open to the public.

Through the consultation, the public will be introduced to the CAS, the big moves, the priority areas, and the actions proposed. In addition, the public will be presented with the estimated costs of the Township led actions in the strategy: approximately \$130 per representative residential household per year for the next ten years. For illustrative purposes, this means that a household paying \$3,000 in property tax in 2020, would pay \$3,130 in each of the subsequent years until 2030 if there were no other tax increases.

Figure 1 breakdowns the \$130 per representative residential household investment across the eight priority areas.

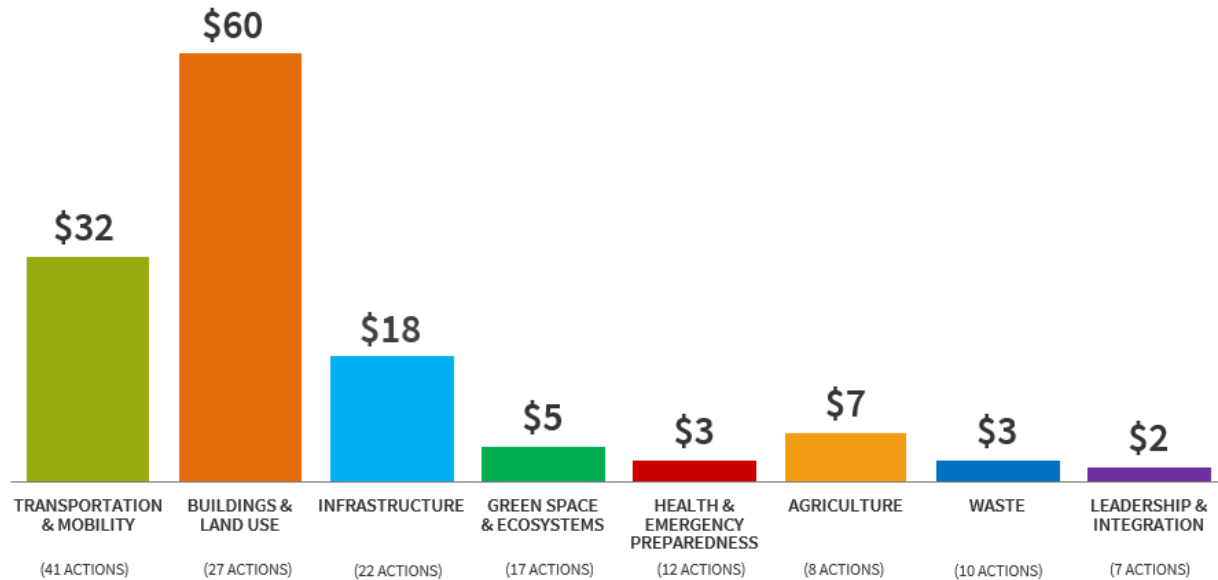


Figure 1: Distribution of the Financial Investment of \$130 and Actions across Eight Priority Areas

Figure 2 shows the breakdown of the annual per household cost associated with each of the five big moves. An additional category is shown to capture the cost of actions that are not directly associated with the five big moves, but have been included in the strategy to support other climate action mitigation and adaptation priorities.

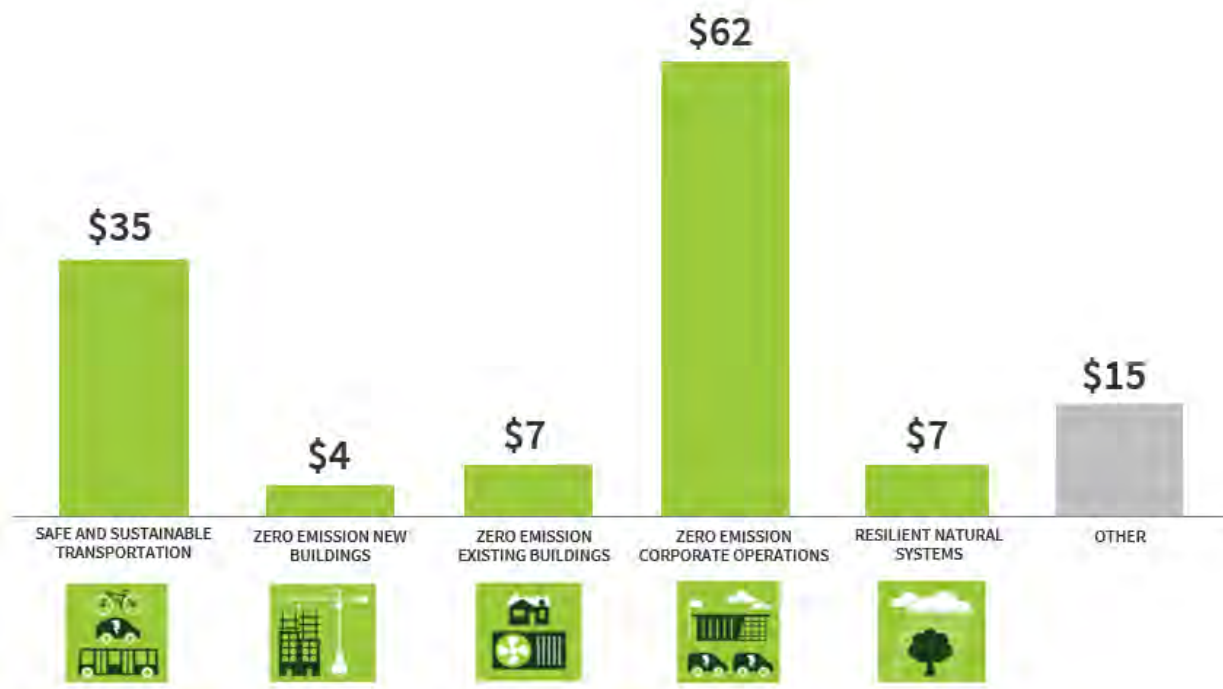


Figure 2: Distribution of the Financial Investment of \$130 across the Big Moves + Other

With respect to costs, it will be made clear to the public that the estimate only includes actions that would be the responsibility of the Township to lead, with other community costs expected, but not included, and, that there is significant uncertainty in the estimate.

Accurately costing this strategy comes with substantial challenges (eg. long horizon, unknown technologies / solutions, rising / falling costs, etc.). Although costs have been developed using the best available information, they should be considered very high level, an order of magnitude cost estimate, with the actual costs potentially varying significantly. CAS actions and costs will evolve and adapt as technology, policy and market economics change over the next five to ten years.

Finally, other information on costs that will be presented to the public through the consultation is the statistic that every \$1 invested in climate change mitigation efforts offsets \$3 to \$5 in future cleanup costs. This statistic has been researched and published by multiple sources, including the Federation of Canadian Municipalities, the Office of the Auditor General of Canada, and, the Insurance Bureau of Canada, and is based on case studies from across Canada¹.

This strategy is the start of a thirty year journey to a carbon neutral community by 2050.

Financial Implications:

The recommendations included in this report seek Council's support to proceed to public consultation and finalization of the CAS. If supported, staff would complete the consultation and financial plan development concurrently, and bring forward the finalized CAS in early 2021 for Council's consideration.

A financial plan will be developed that includes cash flow analysis, and considers funding strategies with a focus on minimizing the property tax impact on residents. Some ideas that have been discussed and will be explored in greater detail, include, existing budget reallocations, offsetting grants / incentives, new revenue sources (eg. electric vehicle charging), and cash flow positive borrowing. The recent LED street lighting project is an example of cash flow positive borrowing, where the energy savings that will be achieved by the project will offset the interest paid on the loan and even result in a return on investment for the Township. The financial plan will be centred on the existing Climate Action Reserve Fund Policy 05-011, adopted by Council on April 24, 2017, to establish a new reserve fund for the sole purpose of supporting corporate and community energy management and greenhouse gas (GHG) emission reduction efforts. As part of the financial plan development, this policy would be reviewed and modified as necessary to act as a vehicle to facilitate implementation of the strategy's actions. The updated policy would be brought back to Council, with the financial plan, for consideration. Climate Action Reserve Fund Policy 05-011 has been included as Attachment A for reference.

A high-level financial review has been undertaken for the CAS actions and anticipated staffing resources, which would result in an average annual estimated impact of approximately \$130 per representative household per year for the next ten years. In the first few years, it is expected that studies, analyses, project planning, etc. will need to occur to set the foundation for full strategy implementation. A combination of planning/policy and capital projects will be submitted as part of the 2021 budget for Council consideration, including:

- Capital upgrades such as: lighting upgrades, energy efficiency measures, bike lanes, traffic calming measures, enhancement and expansion of the existing multi-use trail network, and EV charging stations
- Rebates for: existing home low-carbon renovations and EV charging stations

¹ Office of the Auditor General of Canada (2016), Reports of the Commissioner of the Environment and Sustainable Development: Mitigating the Impacts of Severe Weather. p. 2, http://www.oag-bvg.gc.ca/internet/docs/parl_cesd_201605_02_e.pdf ; Federation of Canadian Municipalities; Insurance Bureau of Canada (2020), The Cost of Climate Adaptation at the Local Level, p. 13, <https://data.fcm.ca/documents/reports/investing-in-canadas-future-the-cost-of-climate-adaptation.pdf>

- Strategy and planning projects such as: Development of a Transportation and Mobility Strategy, completion of a natural assets inventory, development of low-carbon retrofit plans for existing facilities, completion of a full review of all rainwater systems using future climate change and growth projections
- Education and training programs for local builders, developers and trades on high performance low-carbon buildings and for the public on emergency preparedness

A preliminary list of the CAS actions that will be submitted as part of the 2021 budget for Council consideration are included in Attachment B. In total, 82 of the 144 CAS actions would be initiated in 2021, at an estimated cost of \$41.29 per representative residential household. Figure 3 breaks down the 2021 per representative residential household investment across proposed funding sources and the required new funding. This request for new funding for 2021 will likely be as a contribution to the Climate Action Reserve Fund.

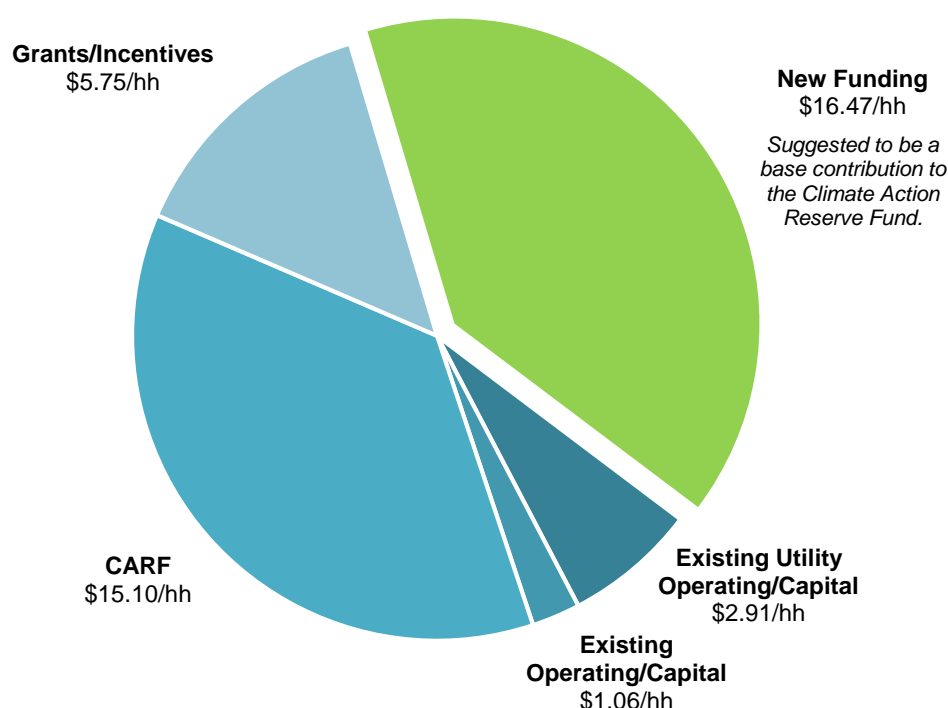


Figure 3: Distribution of \$41.29 per representative household investment across Proposed Funding Sources for 2021

It should be noted however that CAS actions, and costs, are subject to change based on the outcome of the public consultation process. Using the categories above, 'New Funding' of \$16.47/hh is the category that would represent an increase in property tax for 2021². The remaining categories could be achieved by a reallocation from existing budgets, transfer from existing reserves or injections of revenue from outside sources (grants/incentives).

It is important to acknowledge that accurately costing the actions that make up the strategy comes with challenges that introduce significant uncertainty to the estimates provided. The estimates should be considered very high level, order of magnitude cost estimates, with actual costs potentially varying significantly. The CAS actions and costs will evolve and adapt as technology, policy and market economics change over the next five to ten years. Therefore, at this time, staff are unable to provide costs beyond 2030.

² For those improvements that are water/sewer/solid waste in nature, utility fee increases would be required.

Municipalities are in a period of unprecedented financial uncertainty. As recently quoted by the Federal Environment Minister, Jonathan Wilkinson, "Climate change is a crisis that we know is coming. It's coming more slowly but it is coming in a manner that if we do not act now, the effects will be significantly more devastating from an economic perspective than what we've been having to deal with over the past number of months." While some of the commitments in the CAS will require a response from, and coordination with, provincial and federal governments for funding, some of these actions and strategies will require a reallocation of municipal resources and a reassessment of priorities.

Respectfully submitted,

Ryan Schmidt
MANAGER, SUSTAINABILITY
for
ENGINEERING DIVISION

This report has been prepared in consultation with the following listed departments.

CONCURRENCES	
Division / Department	Name
FINANCE DIVISION	K. Sinclair

ATTACHMENT A Climate Action Reserve Fund Policy No. 05-011

ATTACHMENT B CAS 2021 Actions



COUNCIL POLICY

Subject: Climate Action Reserve Fund

Policy No:
Approved by Council:
Revised by Council:

**05-011
2017-04-24**

1. Purpose

- 1.1 The purpose of this policy is to formalize specific guidelines for the use of the Township's Climate Action Reserve Fund (CARF) to ensure that the fund is maintained and accessed for the sole purpose of supporting corporate and community energy management and greenhouse gas (GHG) emission reduction efforts.

2. Background

- 2.1 The Township is a signatory of the British Columbia Climate Action Charter (CAC). Signatories of the CAC have committed to make progress toward achieving carbon neutrality in corporate operations and creating complete, compact, energy-efficient communities.
- 2.2 In return for being a CAC signatory, the Township receives an annual grant equal to one hundred per cent of the carbon tax paid by the Township each year through the Climate Action Revenue Incentive Program (CARIP).
- 2.3 The Township's Climate Action Reserve Fund (CARF) was established in 2012 using grant proceeds from the CARIP as a funding source to support the Township in becoming carbon neutral in the year 2013 and beyond. A policy that formalizes guidelines for supporting energy management and GHG emission reduction efforts will improve the Township's ability to achieve the commitments of the CAC.

3. Related Policy

- 3.1 Corporate Energy Management Policy (proposed)

4. Policy

4.1 Guidelines

The following guidelines shall direct decision-making related to appropriate use of the funds in the Township's Climate Action Reserve Fund. The CARF may be used to accomplish the following:

- 4.1.1 Undertake annual updates to the Township's corporate and community energy and greenhouse gas emissions inventories and plans.

- 4.1.2 Leverage external energy-related funding through “matching fund” grant applications.
- 4.1.3 Finance local carbon reduction projects to reduce corporate carbon liability and make progress towards achieving carbon neutrality in a given reporting year.
- 4.1.4 Purchase local carbon offsets to balance remaining corporate emissions and achieve carbon neutrality in a given reporting year.
- 4.1.5 Serve as a funding source for energy management and GHG emission reduction related staff roles.
- 4.1.6 Invest in energy and emission leadership projects that are educational or innovative in nature and demonstrate the Township’s commitment to sustainability leadership.
- 4.1.7 Finance strategies and actions that create a more energy efficient organization and community.

2021 CAS ACTIONS

ATTACHMENT B

transportation & mobility



Action	Details	2021 Measures	Lead Department	2021 Investment Required
Develop a Transportation and Mobility Strategy	Increase opportunities for active mobility and transit, and prioritize connectivity, safety and accessibility	Develop proposed project scope and framework with applicable stakeholders Issue EOI and RFP Complete phase one of strategy development	Transportation	\$300,000
Enhance and expand the existing multi-use trail network to connect neighbourhood centres and transportation corridors	The enhanced trail system will offer safe and attractive recreational and mobility routes for pedestrians and cyclists	Identify gaps in current multi-use trail network, including safety, accessibility and aesthetic dimensions Complete Trails Plan update	Parks Design and Development	\$0
Improve bike and e-bike network	Continue to advance cycling network and add plan for electric and/or shared little vehicles	Assess current Cycling Plan and infrastructure projects Develop new five-year cycling infrastructure project list Implement various cycling infrastructure projects	Transportation	\$500,000
Advocate for expansion of the transit network	Include an update of Translink's South of Fraser Area Transit Plan (SOFATP)	Issue correspondence to Translink/Province regarding an update to the South of Fraser Area Transit Plan, to increase transit services Explore partnership with Translink to pilot on-demand bus service	Transportation	\$0
Require multimodal infrastructure in all new ICI developments	E.g. end of trip bike facilities, car share spaces, etc.	Draft end of trip bike facilities / infrastructure requirements, as outlined in the Township's Cycling Plan, for integration into the Zoning Bylaw	Community Policy and Planning	\$0
Expand online services to reduce travel to and from Township facilities	E.g. Increase online payment options and permit applications, improve teleconference capabilities, expand remote work opportunities for staff	Conduct an assessment of current and future online services to identify software / infrastructure requirements	Information Technology	\$0
Accelerate implementation of traffic calming measures to encourage active mobility	Implement in areas where most warranted	Conduct mapping exercise to prioritize traffic calming measures in corridors and intersections where collisions are highest Implement three additional traffic calming measures	Transportation	\$150,000

Action	Details	2021 Measures	Lead Department	2021 Investment Required
Facilitate car sharing companies to expand into Langley		Develop a car-share pilot project with applicable stakeholders	Economic Development	\$0
Incentivize EV charging installations for businesses and residents		Participate in the CleanBC Go Electric EV Charger Rebate Program by providing top-up rebates for TOL businesses and residents to install EV charging stations	Sustainability	\$20,000
Expand the Township's public EV charging network		Complete EV charging installation at George Preston Recreation Centre Conduct gap and costing analysis to identify priority locations for additional stations	Sustainability	\$20,000
Implement user fees for Township EV charging	Implement fees for EV charging to support cost recovery of EV charging infrastructure and increase turnover	Implement user fees at Township EV charging stations, as outlined in the Fees and Charges Bylaw	Sustainability	\$0
Continue and expand education on EVs		Develop and implement an EV education program	Sustainability	\$10,000
Host EV "Ride and Drive" events		Host Ride and Drives, Test Drive Days, and other opportunities for residents to experience EVs and speak with current drivers	Sustainability	\$0
Advocate for EV leadership from other levels of government and utilities			Sustainability	\$0
Advocate for Zero Emission Vehicles (ZEV) for shared mobility (e.g. ride hailing, taxis) and future driverless vehicles			Sustainability	\$0
Advocate for zero emissions requirements for medium-duty and heavy-duty vehicles			Sustainability	\$0
Advocate for "Right-to-Charge" legislation	Legislation ensures strata dwellers are able to charge electric vehicles at home		Sustainability	\$0
Advocate for park-and-ride and carpool lots			Transportation	\$0

Action	Details	2021 Measures	Lead Department	2021 Investment Required
Advocate for the regional collection and analysis of Vehicle Kilometres Traveled (VKT) data	Improves emissions data		Sustainability	\$0
Convert 100% of passenger corporate fleet to zero-emission vehicles	By 2030, including equipment where technologically feasible	Develop a fleet and equipment replacement schedule Replace applicable passenger vehicles with EVs in 2021	Equipment and Fleet	\$0

Action	Details	2021 Measures	Lead Department	2021 Investment Required
Develop a Step Code implementation plan for applicable building types	To meet the Township's climate action targets, new buildings will need to be energy efficient and zero carbon	Draft a Step Code Framework for Part 3 non-residential Conduct modelling and costing for proposed Step Code acceleration and adoption Conduct stakeholder consultation	Permit, Licence and Inspection Services	\$0
Create one comprehensive set of energy and emissions guidelines for new construction	Revise and consolidate existing Development Permit Area (DPA) energy and emissions guidelines and apply guidelines Township-wide	Draft new energy and GHG guidelines Conduct a technical and legal review of the draft DPA guidelines and related policy documents	Permit, Licence and Inspection Services	\$0
Explore the development of a green roof requirement for new commercial, industrial, institutional and multi-family residential developments		Research best practices Conduct business case analysis and industry consultation	Sustainability	\$0
Reduce energy and emissions and increase resilience in existing buildings	E.g. expand Green Building Rebate Program, implement Strata Energy Advisor program, etc.	Expand the Green Building Rebate Program's existing building renovation stream (including a building analytics database and development of a renovation coach resource) Implement a pilot project to reduce emissions and increase energy efficiency in 10-15 existing residential homes	Permit, Licence and Inspection Services	\$100,000
Explore options to require energy benchmarking and home energy labelling for new and existing buildings	Benchmarking tracks a building's energy use and compares it to similar buildings. Benchmarking will apply to Part 3 buildings and home energy labelling for Part 9 homes.		Permit, Licence and Inspection Services	\$0
Continue education and training for building industry members on low-carbon and high performance construction	Continue Builder Forum Series	Host three additional Builder Forum workshops	Permit, Licence and Inspection Services	\$15,000
Develop public education on the benefits of green buildings		Develop education program	Permit, Licence and Inspection Services	\$0
Advocate and support development of a climate resilient building code	To be integrated into future updates of the BC Building Code	Advocate for Climate Resilient Building Code to the Ministry of Housing and Affairs	Permit, Licence and Inspection Services	\$0
Advocate to the provincial government to expand regulations for energy and emissions in buildings	E.g. - retrofit code for existing buildings - building energy reporting (benchmarking requirement) - GHG performance targets to accompany Step Code		Permit, Licence and Inspection Services	\$0

Action	Details	2021 Measures	Lead Department	2021 Investment Required
Advocate to British Columbia Real Estate Association to include building energy labels in MLS listings			Permit, Licence and Inspection Services	\$0
Develop voluntary water assessment program for ICI and multi-family residential buildings	A water assessment can identify actions for building owners to take to reduce water use	Develop audit program framework	Sustainability	\$0
Continue and enhance existing water conservation education and programs		Review and refine current water conservation education and programs for residents and businesses (Water Wise, School Education, Langley Food Service Industry Water Savings Program, etc.)	Sustainability	\$0
Develop low-carbon retrofit plans for all existing corporate facilities	Plans will focus on reducing energy use and emissions, and increasing climate resilience	Develop low-carbon retrofit plans for 2-4 corporate facilities	Facilities	\$200,000
Implement an Energy Monitoring Plan at all corporate facilities	Provides ongoing communications to key staff on the use of energy and equipment performance in facilities	Establish energy report framework Upload all corporate facilities to Energy Star Portfolio Manager Develop Measurement and Verification Process	Sustainability	\$0
Develop and implement a Building Tune Up program at all major corporate facilities	Covers preventative and predictive maintenance, using automated recommissioning to reduce energy use and emissions	Install sub-metering equipment, smart analytics software, and Identify and implement recommended Energy Conservation Measures at three to five corporate facilities	Facilities	\$90,000
Ensure major corporate facility renovations are zero carbon in operation	Develop and implement a green buildings policy for the renovation of existing Township-owned facilities	Conduct best practices research Develop technical specifications for Township facility renovations with applicable stakeholders	Facilities	\$0
Construct new corporate facilities to be zero carbon in operation	Develop and implement a green buildings policy for the construction of new Township-owned facilities	Conduct best practices research Develop green buildings policy for construction of new Township facilities with applicable stakeholders	Facilities	\$0
Review guidelines in neighbourhood/community plans that support complete streets	Complete streets create a space where people can safely walk, bicycle, drive, take transit, and socialize	Review existing Township standards that support complete streets Recommend revisions for new and existing Community Plans or bylaws that support/accelerate the creation of complete streets	Community Policy and Planning	\$0

Action	Details	2021 Measures	Lead Department	2021 Investment Required
Complete a full review of all rainwater systems using future climate change and growth projections	Review all grey and green infrastructure as well as natural assets (wetlands, forests) as a system to manage stormwater and improve water retention and infiltration	Develop proposed project scope and framework Hire Consultant to begin review in 2021	Water Resources and Environment	\$150,000
Review green infrastructure design guidelines and develop an education and maintenance program for staff and the public	Increase knowledge and awareness of the stormwater and water supply benefits of green infrastructure	Develop educational signage for green infrastructure (e.g. rain gardens) Develop website, print and other educational materials for the public	Roads Operations	\$0
Create a strategic plan for long-term water supply that addresses future climate change and growth projections		Complete long-term water supply study (already initiated)	Water Resources and Environment	\$0
Complete condition assessments for water pump stations and sewer lift stations		Complete water pump stations asset management plan	Asset Management	\$0
Implement energy efficiency upgrades at all Township water pump stations and sewer lift stations	Upgrades will be prioritized through water and sewer condition assessments	Develop a capital plan for retrofitting stations based on water and sewer asset management plans	Utilities Operations	\$50,000
Continue investing in sewer system upgrades and monitoring	Video monitoring (Closed Circuit TV) in connection laterals	Developing CCTV procedure for investigating private laterals with existing property owners	Utilities Operations	\$0
Continue to optimize leak reduction system in water supply infrastructure		Continue rotating leak detection sensors Inventory and remediate identified leaks	Utilities Operations	\$0
Continue participating in the development of the Lower Mainland Flood Management Strategy to inform flood management planning along the Fraser River			Water Resources and Environment	\$0
Limit soil deposits in the floodplain		Complete Report to Council and Draft Bylaw for Council consideration	Engineering and Construction	\$0
Complete a renewable energy assessment for a new neighbourhood	Assessment will identify possible renewable energy sources to be incorporated with future development	Assess upcoming neighbourhood developments Complete technical energy assessment Integrate assessment recommendations into Engineering Services Plan	Community Policy and Planning	\$30,000

Action	Details	2021 Measures	Lead Department	2021 Investment Required
Explore feasibility of renewable district energy systems		Conduct a high-level feasibility analysis for a district energy system at a suitable location within the Township	Sustainability	\$100,000
Convert all existing streetlights to LED		Completed detailed lighting design With Council support, apply for funding through the Municipal Finance Authority	Roads Operations	\$0
Convert all existing park lighting to LED		Conduct a detailed park lighting inventory, assessment, and costing study Pilot an LED lighting retrofit pilot at Walnut Grove Community Park	Parks Operations	\$100,000

Action	Details	2021 Measures	Lead Department	2021 Investment Required
Complete a Tree Canopy Study/Strategy	Strategy will work to reduce the urban heat island effect, lower cooling needs for buildings, maintain/increase carbon sequestration, and improve biodiversity	Complete Tree Canopy Study Develop Urban Forestry Strategies for various neighbourhoods/communities	Community Policy and Planning	\$0
Develop a tree voucher program for private properties	Explore subsidy options to encourage the planting of trees on private lands to increase tree canopy	Conduct best practices research Develop tree voucher program framework with applicable stakeholders Complete Report to Council on proposed program for Council consideration	Parks Operations	\$0
Evaluate natural assets and incorporate into the asset management program		Complete a detailed natural assets inventory Complete condition assessment and valuation exercise for all natural assets	Asset Management	\$50,000
Update preferred planting list of trees and shrubs to ensure plants can adapt to future climate conditions	For use corporately and to distribute to developers	Review the preferred planting list in the Subdivision Development Servicing Bylaw Complete Report to Council and Draft Bylaw revisions for Council consideration	Parks Operations	\$0
Explore a standard to increase soil volume and quality for tree plantings			Parks Operations	\$0
Use a climate lens to conduct a cost/benefit analysis for synthetic turf fields vs. grass fields in parks			Parks Operations	\$0
Expand invasive species control program	Expand knotweed program and add other invasive species control along roadways and in parks	Define and implement area and species expansion of existing program	Roads Operations	\$0
Develop best management practices for Integrated Pest Management that include a climate adaptation lens	For key species of concern e.g.: European chafer and Japanese beetle, emerald ash borer, sudden oak death, Asian giant hornet	Conduct best practices review	Parks Operations	\$0

Action	Details	2021 Measures	Lead Department	2021 Investment Required
Update Langley's Emergency Response Guidelines for extreme heat events		Review current emergency response guidelines Propose revisions related to heat events and emergency preparedness	Fire Department	\$0
Purchase and maintain a portable water station and misters	For events and staff during heat events		Sustainability	\$15,000
Integrate climate risks into the Hazard, Risk and Vulnerability Analysis (HRVA)		Host workshop with applicable stakeholders Update HRVA with future climate projections	Fire Department	\$0
Expand Department Operations Centre (DOC) and Emergency Operations Centre (EOC) notification lists			Fire Department	\$0
Develop a response operational guideline for interface fires		Hire a consultant and develop new guidelines	Fire Department	\$25,000
Expand emergency preparedness education		Procure additional materials and equipment Integrate emergency preparedness education into existing Public Fire Safety Education Program	Fire Department	\$5,000

Action	Details	2021 Measures	Lead Department	2021 Investment Required
Continue and enhance local food promotion and education		Research existing local food education/promotion Integrate local food education into existing workshops for SD35 schools	Economic Development	\$0
Continue and expand the Ecological Services Initiative (ESI)	ESI enhances riparian health and other ecological features on farm properties	Complete Report to Council on proposed program for Council consideration in 2020	Community Policy and Planning	\$400,000*
Encourage best practices in sustainable farm management	Engage stakeholders to advance climate friendly agricultural strategies, including identifying and showcasing carbon-absorbing crops		Sustainability	\$0
Encourage local farmers to complete and implement federal Environmental Farm Plans (EFP)	The Federal EFP program offers free environmental risk assessments for farm operations, including funding opportunities to support on-farm mitigation and adaptation projects	Work in partnership with the Agriculture Research & Development Corporation (ARDCorp) to enhance promotion of existing programs, including the EFP.	Community Policy and Planning	\$0
Partner with the BC Agriculture & Food Climate Action Initiative (BCAGFCAI) to support climate action in the Township's agricultural industry			Community Policy and Planning	\$0
Promote the provincial program Premises ID to assist with livestock relocation during emergency events			Community Policy and Planning	\$0

*The ESI program and financial investment required will be submitted as a separate request to Council in 2020, and is not included in the CAS Financial Summary.

Action	Details	2021 Measures	Lead Department	2021 Investment Required
Expand municipal Green Cart and garbage collection program to residential properties outside current municipal collection areas		Conduct pilot within a rural area of the Township	Sustainability	\$0
Explore feasibility of a municipal recycling depot	Aim for one-stop recycling drop-off	Complete Report to Council on proposed next steps for Council consideration in 2020	Sustainability	\$0
Ensure all residential properties have disposal options for recycling and organics	Explore a combination of education and enforcement to bring all residential properties in compliance with the Township's Solid Waste Bylaw	Complete an inventory of all multi-family properties Develop education program Develop compliance and enforcement processes	Sustainability	\$0
Support and advocate for waste reduction strategies/programs from all levels of government			Sustainability	\$0
Explore alternatives to burning green waste	Open-air burning is sometimes used as a method to manage large quantities of green waste, releasing carbon and reducing air quality	Survey rural property owners Conduct best practices research Develop a recommended program alternative	Sustainability	\$0

Action	Details	2021 Measures	Lead Department	2021 Investment Required
Review and align strategic policy documents and bylaws to support climate action	Including but not limited to: Sustainability Charter, OCP, Neighbourhood and Community Plans, Zoning Bylaw, Subdivision and Development Servicing Bylaw, Building Bylaw, Form and Character DP Guidelines, and Energy and GHG DPA Guidelines	Develop proposed project scope and framework Hire Consultant to complete phase 1 review in 2021	Community Policy and Planning	\$30,000
Develop a climate impact assessment tool to improve decision-making	Assessments to be included in Council reports, annual budget requests, and purchasing processes	Develop and implement climate impact assessment tool	Sustainability	\$0
Establish a funding mechanism to support the implementation of the Climate Action Strategy	Mechanism should include funding to support extreme weather remediation	Develop a financial plan that includes cash flow analysis, and considers funding strategies with a focus on minimizing the property tax impact on residents Draft revisions to the Climate Action Reserve Fund Policy for Council consideration	Financial Services	\$0
Develop a climate action policy to ensure key actions are implemented consistently across the organization	Examples of areas covered under the policy: - Fleet and equipment - Procurement - Energy management, etc.	Develop proposed Climate Action Policy with applicable stakeholders Complete Report to Council and Draft Policy for Council consideration	Sustainability	\$0
Establish an internal stakeholder committee to support implementation of the Climate Action Strategy		Establish Terms of Reference for committee Gather staff representatives across all divisions to meet on a regular basis to ensure successful CAS implementation	Sustainability	\$0
Provide ongoing education and data to support staff, management and Council to implement the Climate Action Strategy		Develop key messages, narratives and education/training initiatives	Sustainability	\$0

Action	Details	2021 Measures	Lead Department	2021 Investment Required
Continue implementation of energy efficiency and emission reduction projects in existing corporate facilities	Projects will focus on upgrades that reduce energy use and emissions, and increase climate resilience	Implement 2021 projects, which may include: LED lighting upgrades at Civic Facility, Operations Centre, RCMP Detachment, Various control upgrades Low-carbon electrification projects at WC Blair and Walnut Grove Community Centre	Facilities	\$500,000

This action is an ongoing initiative in the Strategic Energy Management Plan, adopted by Council in 2017, and assists the Township in meeting its commitment to the BC Climate Action Charter, and the Township's adopted emission reduction targets.

Action	Details	2021 Measures	Lead Department	2021 Investment Required
Hire three new RFT positions	Positions will be used to support actions in the Transportation and Mobility, Buildings and Land Use and Infrastructure Priority Areas	Hire the following three new RFT positions: Transportation Planner Building Energy Specialist Project Engineer	Transportation Permit, Licence and Inspection Services Facilities	\$330,000

The above 2021 staffing resources will be critical to the Township implementing the actions within the CAS.