

Village of Fruitvale Renewable Energy Strategy 2023

We acknowledge and appreciate that the land on which we gather is the converging, transitional and unceded territory of the Sylix, Secwepemc, Sinixt and Ktunaxa Peoples as well as the Metis Peoples whose footsteps have also marked these lands.

Contents

Why Create a Renewable Energy Strategy?	5
Introduction.....	6
The Village’s Role in Building Bridges to Renewable Energy	7
What do the Scenarios Accomplish?.....	8
Fruitvale’s Energy and Carbon Pollution Profile	9
1. Electrifying Personal Transportation.....	10
2. Public and Active Transportation.....	12
3. Better Existing Buildings	14
4. Better New Buildings.....	16
5. Closing the Loop on Waste	18
6. Renewable Generation.....	19
7. Organizational Leadership.....	20
What We Heard.....	21

Why Create a Renewable Energy Strategy?

Health

Combustion of non-renewable energy causes air pollution that affects heart and lung health, especially in children.

Transitioning to renewable energy means cleaner air, quieter neighbourhoods, and better health.

Economy

Jobs in Canada's renewable energy sector will grow by 7% a year through 2050.¹ Installing and operating solar panels, building efficient new housing, and building pedestrian and bicycle infrastructure means more employment and investment.

Safety

Slower, quieter streets, less risk of catastrophic weather, drought, and wildfire add up to a safer community.



Leveraging Funds for Infrastructure and Development

There are millions of dollars in federal and provincial grants available to Fruitvale for supporting the transition to renewable energy. These grants can help fund major infrastructure improvements and save money for the Village and its residents. Many available grants require a component to increase energy efficiency, reduce the need to rely on cars, or reduce the risk of climate-related weather emergencies. The Renewable Energy Strategy, along with our Active Transportation Plan and Downtown Economic Plan will help the Village access grant funding and improve our community.

Introduction...

Around the world, people, businesses and governments are adopting renewable energy technology at an accelerating pace. Currently 92% of the world's GDP is affected by commitments to reach net-zero carbon pollution, including China and India.² In Ontario and Alberta, solar and wind generate electricity at a lower cost than natural gas,³ and the cost of generating renewable electricity is expected to fall even more.⁴ Electric cars, bicycles and scooters have become much more common, with more than 50% of new cars sold in Norway being fully electric. Globally, heat pumps installations increased 15% in 2021,⁵ and new buildings create 70% less carbon pollution than they did 14 years ago.

As the world moves to take advantage of the promise of renewable energy, many hurdles remain. Solar and wind power facilities can't generate electricity in all conditions. Transmission lines and networks need to be upgraded. New electricity facilities, electric vehicles, and efficient buildings use limited minerals and resources and cost money to build and transport. To continue using the same amount of energy and switch to renewables, we will need a lot more of it. But while these obstacles are serious, they are less serious than the consequences to our community's health and well-being if we fail to plan for energy conservation and transition.

The purpose of the Renewable Energy Strategy is to recognize ongoing changes in policy, lifestyle, and technology and plan our infrastructure and services in ways that serve the community, steward our assets, and make sound investments on behalf of current and future residents.

In order to make the most of Village resources, the actions in this plan are practical and cost-effective things that are within the Village's role and authority, and which generate positive return on investment. They are equitable and inclusive to all residents of Fruitvale and support the people who are most vulnerable to the impacts of climate change and energy transition. They recognize that many actions require or benefit from collaborations with other jurisdictions, organizations and residents. Finally, the Renewable Energy Strategy prioritizes actions that have multiple benefits such as cost saving, improving health and quality of life, and promoting economic development.

Renewable Energy Communities

Fruitvale is one of more than 200 municipalities around the world that have committed to completing the transition to renewable energy by 2050.

In the Kootenays, Fruitvale has the opportunity to collaborate with 13 other local governments that share our commitment:

Castlegar	Rosland
Creston	Slocan
Fruitvale	Silverton
Golden	Trail
Kaslo	Warfield
Nelson	RDCK
New Denver	RDKB

Not sure about climate change?

Pollution from extracting, shipping, and burning fossil fuels is the main contributor to our rapidly warming climate. Although almost all scientists are convinced of the risks and causes of climate change, not everyone is. Even if transitioning to renewable energy didn't help protect us from climate change impacts, it will reduce air and noise pollution and bring more economic development into our communities.

The Village's Role in Building Bridges to Renewable Energy

- Reduce operating cost, energy use, and pollution of municipal facilities and operations
- Develop municipal infrastructure that promotes energy efficiency and reduces pollution
- Help residents access resources to help save energy & money through rebates, subsidies and incentives
- Apply for grants that bring new infrastructure investment into the community
- With community input, include measures to save energy and reduce pollution into guiding documents like the Official Community Plan
- Support preparedness for changes in climate in operations and increase our community resilience

What do the Scenarios Accomplish?

A Few Key Points to Keep in Mind

Scenario	Pollution reduction compared to 2020	Projected community energy expense in 2030 The total of all Fruitvale energy costs, including residents, businesses, and the Village
Low	30%	\$7,190,000
Medium	40%	\$6,770,000
High	50%	\$6,540,000

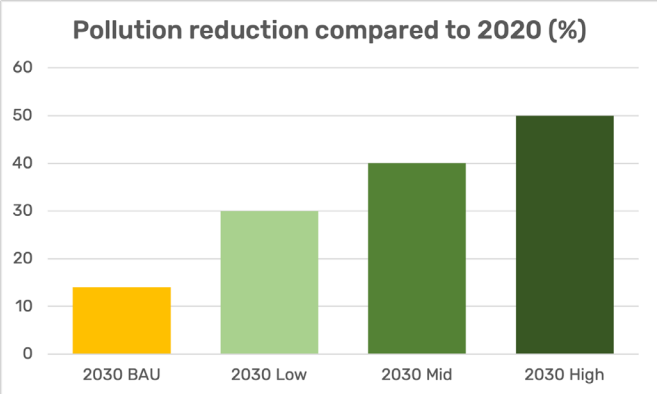
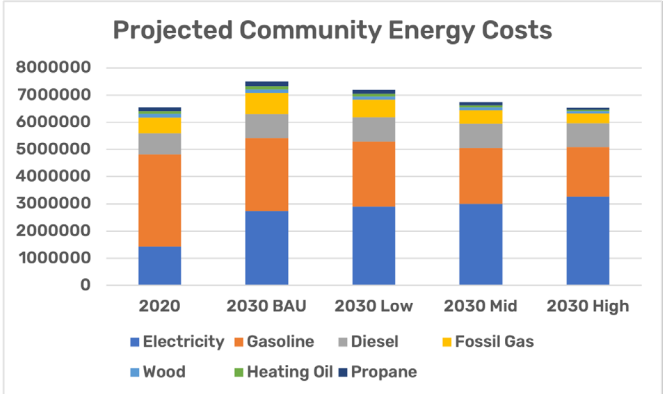
Most if not all of the proposed actions rely on provincial or federal funding, or would provide positive return on investment for the Village. Expenditures related to the Strategy would be required to go through the normal appropriations process.

The Renewable Energy Strategy is an advisory document and will guide rather than direct future actions. In other words, this document doesn't have authority to ensure any future action.

Successful implementation of the actions in this strategy will require community support and participation and direction from Village Council and Staff.

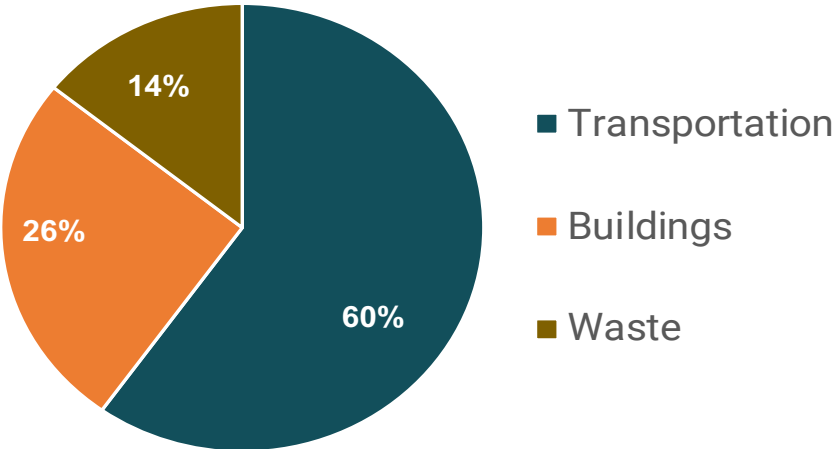
The goals of the Renewable Energy Strategy are:

- 1) to plan ahead for how the Village can adapt to the energy transition that is already underway; and
- 2) to make it easier for residents to transition to renewable energy if they choose to, primarily using existing resources (e.g. at no additional cost to the taxpayer).



Fruitvale's Energy and Carbon Pollution Profile

Carbon Pollution by Sector



Fruitvale residents use energy primarily to heat and cool buildings and for transportation.

Fruitvale's carbon pollution is about 14,000 tonnes per year.

- 60% is from transportation (driving cars and trucks).
- 26% is from heating and cooling buildings (mostly methane gas)
- 14% is from decomposition of food and yard waste

In total, Fruitvale residents and businesses spent about \$6.5 million on energy in 2020.

- \$4.2 million went to diesel and gas for cars and trucks.
- \$1.4 million went to electricity
- \$.6 million was spent on methane gas for cooking and heating

Making Big Moves

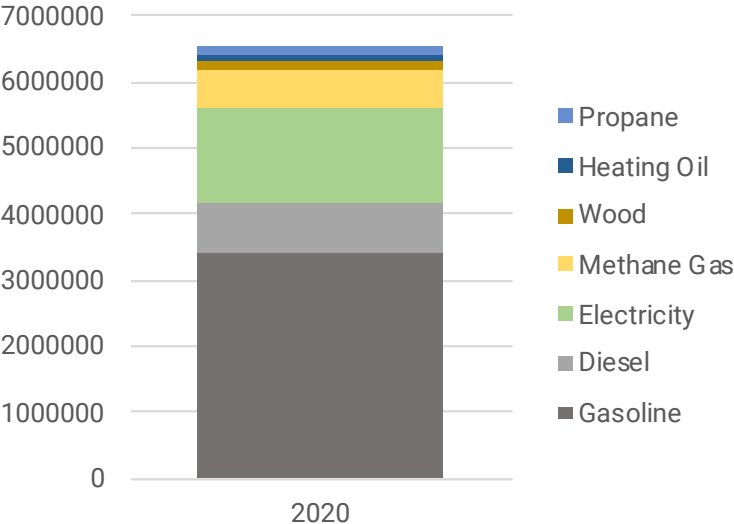
We're not going to reach 100% renewable energy overnight, but we can start with an ambitious goal by 2030. To reach that goal, Fruitvale's renewable energy strategy identifies targets and actions in each of the following areas:

- Electrify transportation
- Active and public transportation
- Better new and existing buildings
- Waste
- Renewable generation
- Organizational leadership

Actions in green are in regard to Village facilities and operation

Actions in blue are from community input

Fruitvale Energy Expenditure



Source: Community Energy Association Climate Action Planner

1. Electrifying Personal Transportation

Because Transportation makes up 40% of all carbon pollution, switching to electric vehicles can make a bigger impact on community energy use than any other pathway.

The targets and projections in the Fruitvale Renewable Energy Strategy assume that many Fruitvale residents will prefer to wait for technology to be more established, for a greater variety of vehicle types, for EV prices to go down, or for more used EVs to be available. That's OK! If EVs turn out to as reliable and economical as they promise, people will switch when the time is right for them. Meanwhile, the Village needs to plan for the needed infrastructure.

Even though EVs cost a lot less to operate, they often cost more for the equivalent vehicle. While the price difference is expected to disappear as technology advances, CleanBC enables residents

to get up to \$8,000 in rebates for choosing a Zero Emissions Vehicle, and \$350 to install a charger.

The province has also legislated that all new light-duty cars and trucks must be Zero Emission Vehicles (ZEVs) by 2035. Over 30% of North America's light-duty vehicle market in Canada and the U.S. has ZEV standards in place for this transition.

BC does not currently produce enough electricity (or fossil fuel) for all of the current transportation needs. As more people switch to zero emissions vehicles, more renewable energy will be needed. Advances in technology will likely increase renewable generation and reduce energy demand to some degree. Nevertheless, it's also important to conserve electricity and to make other transportation options like biking, walking, and busing more attractive than they are today.

Possible Actions for Electrifying Transportation

1.1: Develop an electric vehicle charging strategy. Identify where new chargers can be installed, and decide when they should be installed to serve community members and promote economic development.

1.2: Explore Carsharing. Investigate collaboration with the Fruitvale Transportation Cooperative and Kootenay Carshare Cooperative to locate a shared electric vehicle in Fruitvale to make access to zero-emissions transportation easier.

1.2: Require off-street parking for new buildings to be EV-ready. It's much less expensive to add wiring for an EV charger when a new building is going up than after the fact. Also consider incentives for full charging stations in off-street parking spots.

1.3: Create a Village Fleet Electrification Plan. Council has directed staff to seek electric vehicles for new fleet additions. Identify the infrastructure and conditions that make replacing existing vehicles with EVs more cost effective than maintaining them.



2030 Projections:

Low: 160 new EVs by 2030 (20 per year)

Mid: 320 new EVs (40 per year)

High: 460 new EVs (60 per year)

Peer to Peer Carsharing

If you're like most Canadians, 95% of the time your car is parked in your driveway or at your workplace, not actually in use. Peer-to-peer carsharing through Kootenay Carshare Cooperative allows vehicle owners to rent their personal vehicles to other members, which means you can get help paying off your car and someone else can have access to a car when they need it.

DC Fast Chargers can charge an EV battery to 80% in 15 to 45 minutes. The charging network is growing quickly and includes fast-charging stations in Castlegar, Christina Lake, Creston, Midway, Nakusp, Rock Creek, Trail, and Beaverdell. BC's goal is to have 10,000 public charging stations by 2030.

Although EV battery recycling is in its infancy, technology is advancing rapidly, and Trail's Metal Tech Alley is working to become a national leader.

The rapid adoption of EVs in northern Europe has shown that EVs can perform well in cold climates.

Big batteries like those in EVs can provide emergency power during an outage and store energy from solar panels for later use.

320-663

Single-charge range for current EVs, in km

97.7%

remaining battery capacity after 250,000 km

8 yrs

minimum required length of battery warranty



2. Public and Active Transportation

Not everyone in Fruitvale wants or needs to use a personal vehicle for every trip. Improved options for public transportation and self-propelled transportation can reduce the need for additional electricity generation as well as supporting the health and quality of life for residents. Personal cars make neighbourhoods noisier and less safe for seniors, children, pets, and pedestrians.

Creating more options for public transit and active transportation can help make neighbourhoods more enjoyable, healthy, and social.

Public and active transportation are widely used in many communities. Increased convenience, safety and comfort can increase usership.

For people who need cars for some of their trips, park-and-ride facilities and ridesharing services can reduce the number and the length of car trips.

Advances in battery technology are dramatically changing the way that people use bikes, scooters, carts, skateboards, and other personal mobility devices.

Possible Actions for Public and Active Transportation

2.1 Complete the Active Transportation Plan. Fruitvale will complete an Active Transportation Plan in 2023 to guide development of municipal infrastructure including sidewalks, trails, paths, and streets.

2.2 Implement recommendations of the Active Transportation Plan. Follow up with infrastructure enhancements as identified in the Active Transportation Plan. Incorporate Active Transportation Plan priorities into the Official Community Plan when it is next updated.

2.3 Complete the South Kootenay Green Link. Collaborate with Rossland, Warfield, Trail, RDKB and Montrose to complete the “Green Link” trail and route.

2.4 Promote Economic Development. Through zoning, infrastructure planning, permit and tax agreements, and other mechanisms, promote economic development that reduces the need to leave Fruitvale for day-to-day needs including work, childcare, shopping and entertainment.

2.5 Lower speed limits. Make walking, biking, and waiting for the bus safer and more comfortable, and accommodate low-speed electric vehicles by lowering non-highway speed limit to 30 kmh and posting more speed limit signs.

2.6 Advocate to BC Transit for more frequent trips and extension of service area. BC Transit is evaluating routes and service. With other local governments, advocate to expand service to Salmo and make more frequent trips and integrate with other transportation modes

2.7 Explore education and outreach. Explore collaboration with other local jurisdictions and community organizations to encourage active and public transportation with events, incentives, and communication.

2.8 Adjust snow clearing operations. Snow is a major obstacle to people who want to bus, walk, or bike in the winter. Explore changes to scheduling and bylaw enforcement that can make active transportation routes safer all year.



Fruitvale residents depend on personal vehicles for getting to work. About 90% of people drive themselves to work, while 5% carpool and 5% took a bus or active transportation. In the Regional District of Kootenay Boundary, 75% of commuters drive themselves, while 3% carpool and 11% use active or public transportation.⁶

2030 Target: Reduce the number of kilometers traveled by car by

Low: 4% Mid: 8% High: 11%

To accomplish this goal, each person could combine trips, carpool, bus, ride or walk for three trips out of each twenty that they now take by car.

Success Story: Walk Bike Bus Spokane

In 2017, the Spokane Regional Health District launched a program to encourage Spokane residents to cut down on car trips. The program received \$85,000 over two years from the US department of Transportation. The City of Spokane, Spokane Bicycle Club, and other agencies also contributed time and money.

The program set a goal of finding 50 participants who were willing or ready to change their behaviour and reduce vehicle trips. Ultimately, almost 300 people signed up for a short consultation to set goals to reduce car trips. The staff and volunteers then followed up to see how participants are progressing.

The program also developed safety education programs and local maps showing bus stops, hidden paths, and safer intersections.



3. Better Existing Buildings

Upgrading existing buildings to retain more of their heating and cooling energy will make an impact in the region's energy use and carbon pollution. Older electric and natural gas heating systems in residential, commercial, and government buildings cost more to operate than newer systems, and some old natural gas systems waste 40% or more on heat that goes right out the chimney. Newer systems, on the other hand, can be up to 97% efficient.

In addition to reducing heat wasted through chimneys, buildings can also be upgraded with better windows, air sealing, and insulation to prevent heat from escaping. Improving our existing buildings is a powerful, high-priority step in the transition to 100% renewable energy.

Despite the benefits to homeowners and occupants, there are some key barriers to retrofitting existing homes. It can be hard for families to come up with the up-front costs for retrofits that make good economic sense in the long term. Clean BC has developed a host of rebates and subsidies to offset these costs, and certain groups qualify for free upgrades based on age and income.



Adding insulation in crawlspaces, basements, and attics is one of the easiest ways to increase the efficiency and comfort of your home.

CleanBC Better Homes offers the following incentives as of 2023:

Insulation

up to
\$5500

**Windows
and Doors**

\$100 each
up to
\$2000

**Heat
Pumps**

up to
\$6000

**Electric
Heat Pump
Water Heater**

up to
\$1000

**Natural
Gas Furnace**

up to
\$1000

Regional Energy Efficiency Programs

The Regional Energy Efficiency Program offers assistance to homeowners, renters, and builders to save energy in new and existing buildings. Participants access personal assistance with next steps, energy advisors, contractors, rebates, and low interest financing. Rossland has initiated a similar program, and RDKB has identified the need for such a program in its Climate Action Plan.

The first step is to find out where heat is leaving your home with an Energy Audit. The Energy Audit may be free or subsidized depending on your income, and is available to everyone through the Clean BC Better Homes website.

www.betterhomesbc.ca



2030 Fuel Switching Target: of current gas or oil users, the following percent switch to renewable gas or electricity

Low: 70 buildings by 2030, 9 per year

Mid: 140 buildings, 18 per year

High: 210 buildings, 27 per year

2030 Retrofit Target: The following percent of existing buildings undergo deep retrofits to reduce emissions by 50%

Low: 120 buildings by 2030, 15 per year

Mid: 240 buildings, 30 per year

High: 358 buildings, 45 per year

Possible Actions for Better Existing Buildings

3.1 Conduct energy scan of all Village buildings. Assess opportunities to reduce energy costs through efficiency improvements, heat pumps, or fuel switching, especially for Memorial Centre and Public Works Maintenance Yard, specifically using heat from adjacent wastewater lagoons.

3.2 Connect village residents with free resources. Use website, newsletter and facebook page to help residents learn about free and reduced-cost building improvements

3.3 Create energy efficiency assistance program. Explore opportunities and funding sources to collaborate with RDKB and other local jurisdictions to help residents and businesses implement efficiency upgrades and encourage home improvements

3.4 Implement the BC Building Alterations Code. Work with RDKB to integrate energy audits and increased building performance for building permits.

3.5 Build retrofit capacity. Explore opportunities to work with trades, colleges, and other local governments to help tradespeople, builders, and real estate professionals build capacity

4. Better New Buildings

Making new buildings more energy efficient can help save energy and avoid carbon pollution for the lifetime of the building, hopefully many decades or more. As our community grows and redevelops, making new buildings as efficient as possible saves money, conserves energy needed for other uses, and makes buildings more comfortable for occupants.

The requirements for new buildings are set out in the federal and provincial building codes, and both codes are gradually requiring higher levels of efficiency.

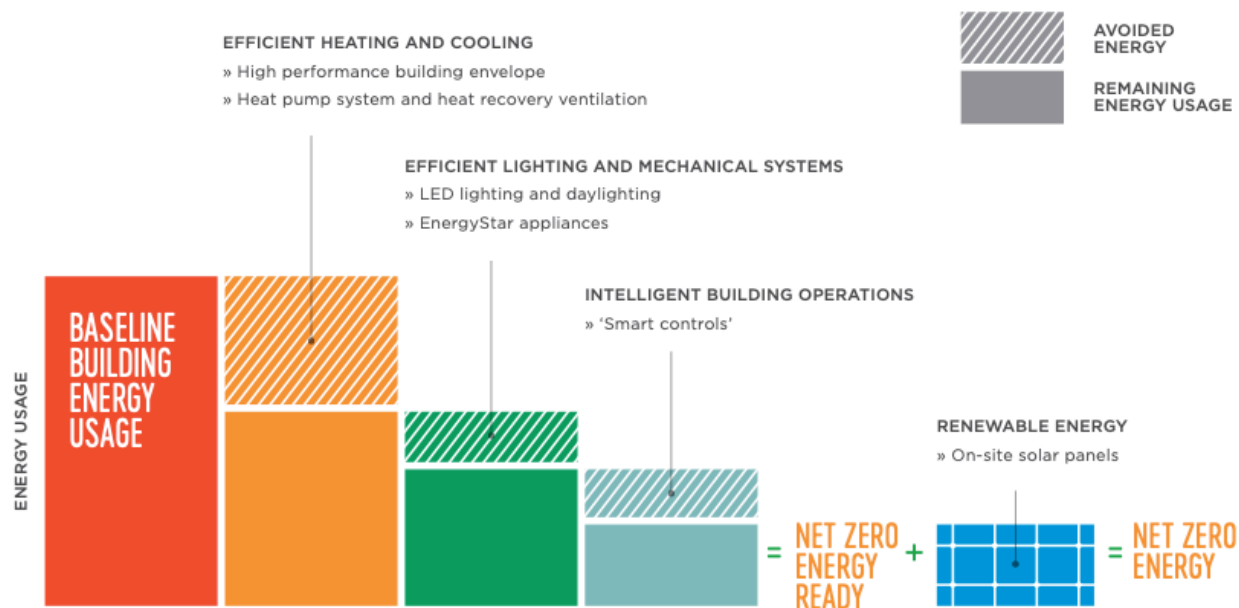
New residential buildings must now be 20% more efficient than they were in 2018. Canada has set a goal to reach 100% net-zero buildings by 2030, and BC's legislation requires it by 2032. Fruitvale has the option to adopt higher levels of efficiency in advance of the provincial time frame.

Clean BC is offering up to \$15,000 per unit to help builders make this transition.

Net zero buildings are able to produce as much energy as they consume in a year. NZE buildings are about 80% more efficient than if they were built to the 2018 building code.

Net zero ready buildings are built to the same standard as Net Zero buildings but do not yet have energy systems (eg solar panels or off site microhydro) in place.

EFFICIENCY FIRST BUT NEVER ALONE - THE STEPS TO NET ZERO ENERGY READY BUILDINGS



Tantrum Bike Shop in Revelstoke is a net-zero-ready building

Adapted from Pena, R. (2014). Living Proof: The Bullitt Centre. <https://betterbricks.com/uploads/resources/living-proof-bullitt-center-case-study.pdf>

2030 Target: All New Buildings are net zero ready.

Possible Actions for New Buildings

4.1 Accelerate Efficiency. Review options for adopting BC Step Code and Zero Carbon Step code, including assessing the need for the prescriptive approach.

4.2 Raise awareness. Explore collaboration with other local jurisdictions to raise awareness of the Clean BC Better Homes programs.

4.3 Build Capacity. Explore collaboration with trades, colleges, and other local jurisdictions to help local builders and tradespeople adapt to new building codes.

4.4 Lead on New Buildings. Enact a policy requiring all new Municipal facilities to be net-zero energy by 2030.

Advantages of high-efficiency homes:

- **Energy & cost savings**
- **Greater comfort**
- **Healthier indoor air quality due to advanced ventilation systems**
- **Resilience to extreme heat and cold and power outages**
- **Higher resale and rental value**

How soon do Net Zero Ready homes pay for themselves?

Net zero ready homes cost more to build when you factor in the airtight construction, better insulated windows and doors, advanced ventilation, and solar-compatible roofing. The total additional cost can increase the construction cost by 2-10% depending on the options, site conditions, and other factors. But homeowners can expect to recover their additional costs in as few as five years, not including the increased resale and rental value of the home.⁷

	Compared to Electric	Compared to Methane Gas
Additional cost to build Zero Energy Ready	\$5,369	\$5,358
Annual Energy Cost Savings	\$1,052	\$708
Payback (years)	5.1	7.6



5. Closing the Loop on Waste

2030 Targets:

Divert of organics from landfill including industrial, agricultural, and municipal sources.

Low: 50% diversion

Mid: 75% diversion

High: 95% diversion



Possible Actions for Waste Management

- 5.1 Collaborate with and support RDKB's curbside organics diversion program (underway).
- 5.2 Collaborate with and support RDKB's plan to divert organics from commercial properties.
- 5.3 Advocate for diversion program for industrial and agricultural organic waste.
- 5.4 Promote and support WildSafeBC programs to reduce the risk of wildlife problems with backyard compost.

Carbon pollution can also come from solid waste (residential and commercial garbage). Methane is released when organisms break down without access to oxygen, as is the case in landfills, poorly managed compost piles, and renewable natural gas facilities.

Methane is up to 60-80 times more powerful than carbon dioxide in changing our climate over a 20-year period. Methane production can either be avoided by ensuring oxygen is available, or methane can be captured. With some processing, methane captured from landfill can replace methane derived from mining and fracking operations.

Starting in fall 2023, RDKB will begin picking up kitchen and table scraps from Fruitvale's curbs. The program, which is partially grant funded, will make it much easier for Fruitvale residents to keep organic waste out of the landfill. The scraps will be composted at a regional composting facility.

Backyard composters can also avoid methane production by ensuring their compost has plenty of oxygen and the right mix of nitrogen and carbon. Well managed compost has very low odour, provides useful soil amendment, and reduces the risk of wildlife problems.

Commercial and institutional organic waste will be another challenge. Restaurants, grocery stores, and school cafeterias can produce a lot of food scraps, and backyard composting can be more challenging. Curbside pickup and industrial composting at a shared facility would make it much easier for local businesses and institutions to reduce their organic waste.



6. Renewable Generation

To reach 100% Renewable Energy, we will need to replace some of our current non-renewable energy with new renewable sources. Every energy source has social, environmental and financial costs. In addition, some renewable energy sources have technical challenges that would need to be solved.

There are a variety of potential sources of local renewable energy, including solar panels,

Possible Actions for Renewable Generation

6.1 Conduct a renewable energy scan. Identify opportunities for the Village to invest in power generation, such as community solar and micro-hydro, eg Hydroelectricity from water utility pressure reducers.

6.2 Explore solar panels for Village buildings. Investigate the feasibility and return on investment for adding solar panels to municipal buildings.

6.3 Support REN Energy. Continue to aid the renewable gas facility with letters of support and respond to information requests.

6.4 Top up Solar Incentives.

hydroelectricity, geothermal, wind and biomass. How and whether Fruitvale is able to access this energy depends on factors such as cost, abundance, and the willingness to accept economic and ecosystem impacts.

Energy storage is another important consideration, as many renewable sources don't produce the same amount of electricity at all times. Grid connection, battery storage, and load management are ways that utilities and communities can address the storage challenge.

Rooftop solar panels are a straightforward and proven technology with a group of supportive

installers and experts in our region. FortisBC has a net-metering program in place to allow solar panel owners to supply surplus power to the grid and count that contribution against utility use.



Sunmine Municipal Solar Farm, Kimberley, BC

REN Energy and the challenging opportunity of forest energy

Forests are a critical part of our landscape, our culture and our economy. With the proposed development of a biomass plant near Fruitvale, forests might become a part of our renewable energy future, too. REN Energy has purchased land and obtained provincial permits to build a plant that the company says will be able to convert wood waste and municipal solid waste into methane gas that can replace mined and fracked “natural” gas. REN Energy is confident that their technology will make biomass methane (renewable natural gas) economically competitive with other renewable energy sources. The facility would bring new employment to the region and may help with meeting goals for solid waste and reducing wildfire risk. There have been concerns about the potential for increased pressure to cut healthy trees. REN Energy has partnered with FortisBC, which has set a goal of replacing 15% of its mined methane gas with renewable biomass methane by 2030.

7. Organizational Leadership

One of the most effective ways for the Village to reduce community energy use is to lead by example and demonstrate how investing in energy efficiency pays financial, health, and functional dividends. The Village's operations and maintenance also make it a significant user of electricity, gasoline, and methane gas for buildings, vehicles and tools.



Possible Actions for Organizational Leadership

7.1 Electrify equipment. The Village has directed public works to replace all fossil powered equipment with electric when possible.

7.2 Reserve matching funds. Set aside Local Government Climate Action Program funding from BC government to use for matching purposes for leveraging grants or implementation of climate actions.

7.3 Integrate decision making. Pass a bylaw adopting a climate lens assessment framework to integrate renewable energy, carbon pollution, and community resiliency into decision making.

7.4 Track leveraging opportunities. Assign responsibility for tracking renewable energy and carbon pollution related funding opportunities to a designated staff person

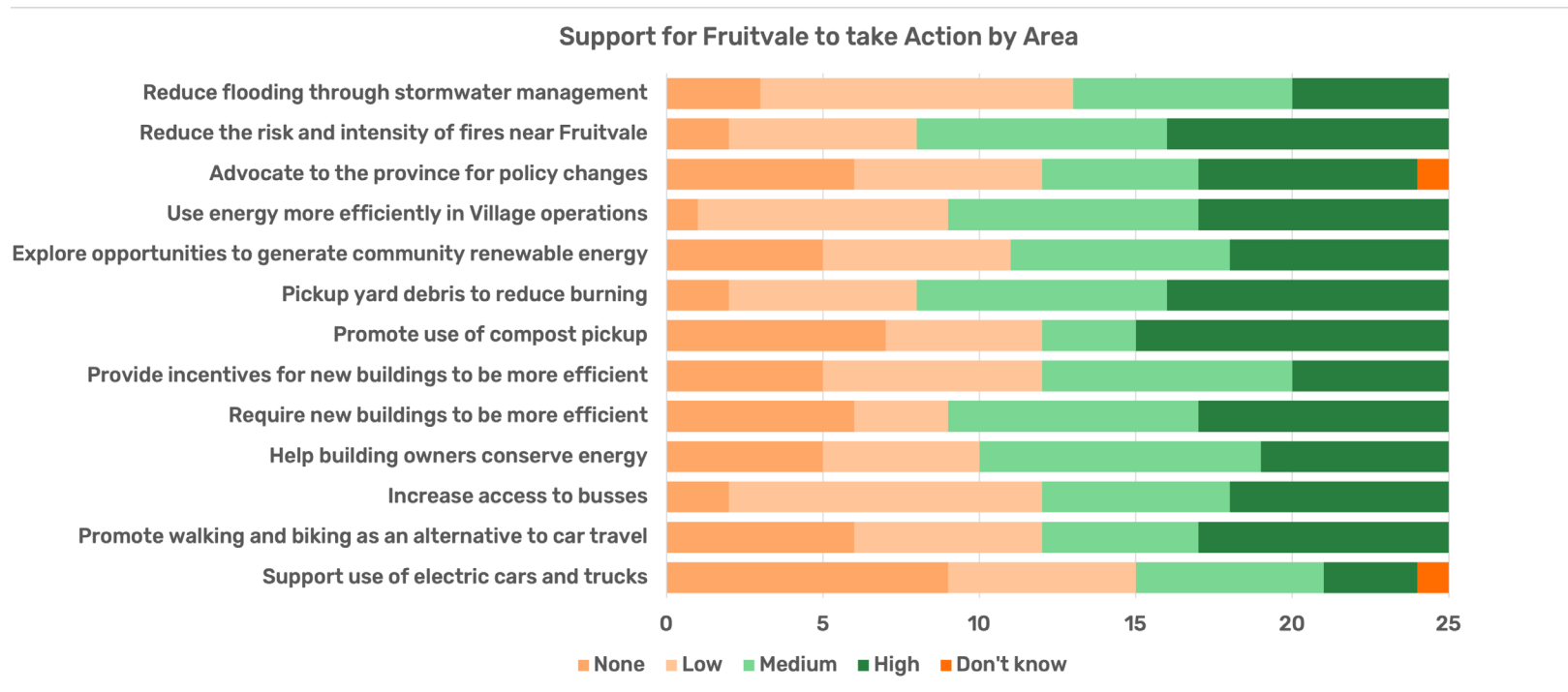
7.5 Consider creating a municipal carbon budget.

7.6 Reduce staff use of personal vehicles. Consider policies to reduce vehicle commuting for Village Staff, such as remote work, sustainable transportation incentives, end-of-trip facilities, and carpooling for off-site work.

7.7 Reduce staff use of municipal internal combustion vehicles. Consider purchasing a low-speed electric vehicle and/or electric bicycles for staff use.

What We Heard...

The Village of Fruitvale held an open house on May 5, 2023. The Village also created an online survey and mailed postcards to each address in the Village with a link to the survey. An email address was created to collect comments prior to the development of a discussion draft. The results of the survey as of June 5 are summarized below. The Village of Fruitvale invited feedback on a draft of this document by publishing a link and email address on the Village website and newsletter. No emails were received and no one registered for the webinar. The Village should continue to engage the community on a project-by-project basis as the strategy is implemented.



The small number of responses to the survey (25 respondents out of 800 households) means that the margin of error is about 20%. If we were to talk with every resident, the actual percentage of people who would rate a given item as high priority could be different from these results by 20% in either direction.

With that in mind, we can group responses into three categories:

“Few Objections” actions that relatively few people who would not support are:

- Using energy more efficiently in Village operations (0-24% no support);
- Yard debris pickup (0-28% no support);
- Increase access to buses (0-28% no support);
- Reduce the risk and frequency of wildfires (0-28% no support).

“Few Champions” actions that relatively few people would support a lot are:

- Support use of electric cars and trucks (0-36% high support);
- Provide incentives for new buildings to be more efficient (0-40% high support); and
- Reduce flooding through stormwater management; (0-40% high support).

“Mixed Support” actions are everything else.

What We Heard...

What if any other actions do you think Fruitvale should take to reduce energy use or transition to renewable energy?

- Look for opportunities for community wind or solar energy projects/Build electrical generating capacity
- Focus on Village-owned infrastructure and buildings
- Motion sensors for street lights
- Safe and accessible walking and biking
- Work with FortisBC to improve net metering (buyback) program
- Promote green spaces/gardens
- Avoid increased tax burden for homeowners
- Village staff should drive less

Thinking about your own energy use, what actions could Fruitvale take to help you personally reduce the amount of money you spend on energy and fuel for heating, cooling, and driving?

- Better active transportation network (sidewalks, trails) and more frequent public transit schedule.
- Bike racks on Main Street. Smaller shuttle bus on non-peak times to Trail.
- Heat pump incentives. EV home charger installation and purchase help. Help people take advantage of the existing incentives via fortis etc.
- Provide more options for recreation so we don't have to travel out of town
- Produce hydrogen locally
- Better transit
- Nothing the Village can do about driving, but the Village could provide energy for heating and cooling
- Bulk purchase of heat pumps (mini splits even), community/neighborhood solar grids
- Rebates for solar panels
- Help purchasing a heat pump
- Lower income taxes and look after infrastructure
- Lower electric rates
- Hand out an upgradable solar package every year to each household that pays taxes

What will you do to participate in transitioning to renewable energy?

- Installing energy Efficient appliances
- Cycling or walking for most of my errands in Fruitvale
- Installing solar panels this year or next.
- Making a smart home that powers off unneeded circuits
- Walk and wait for rebates
- Considering Electric car
- Home efficiency improvements like lowering temp in winter,
- Cooling home by using fans & passive breeze in summer,
- Using of blinds and curtains to mitigate heat in summer
- Installing a heat pump and heat pump water heater

How can Fruitvale make the impacts of transitioning to renewable energy more fair for everyone and ensure no future no one is left out?

- Focus on Village owned property and infrastructure, not incentives to private property owners.
- Don't make things applicable to only the higher class
- Make sure it's affordable for all and it makes sense to move forward keep communication lines open.
- Give a tax break to seniors and acquire unpaid tax properties for development
- Consider helping the less fortunate first.

Responding to concerns

Several respondents to the survey had concerns about the Village’s commitment to transition to 100% renewable energy.

Concern or value expressed	Response
We can’t make a difference in carbon levels/global warming	Even if the impact on global carbon concentrations is small, there are a lot of benefits to the actions that reduce our reliance on fossil fuels. These actions will increase safety for people who walk or bike to get around, save money on electricity by making buildings more efficient, and reduce air and noise pollution by making it easier to choose an electric vehicle or to get around without a car.
It’s not the Village’s responsibility to address how residents use energy	It is the Village’s responsibility to plan for the infrastructure needs of the present and future, and to be a careful steward of the Village’s assets. Encouraging people to take advantage of rebates, subsidies and other incentives leaves the responsibility in residents’ hands but ensures they have access to resources that other communities have.
Concerns/skepticism about electric vehicles	Electric Vehicles are an emerging technology that most people have very little experience with. It’s reasonable to be skeptical about adopting new technology for something that you may rely on every day. A lot of people would rather wait and see, or they already have a vehicle that works well for them. Other people are be willing to tolerate the risk of inconvenience, expense and disruption to be on the cutting edge. Signs point to a rapid uptake of electric vehicles in the next decade, so it makes sense for the Village to take some steps to prepare.
Rapid increase in demand could outstrip availability of electricity	Currently, when electricity demand is greater than our local renewable supply, utilities purchase power generated elsewhere, often from methane gas-fired electrical generating plants. While mined methane gas is not renewable, it may be an important “bridge fuel” to meet growing electricity demand while new renewable electricity capacity is being installed. This issue highlights the need to conserve electricity and avoid the moral hazard of believing that its acceptable to use electricity wastefully because it is renewable. The need for an upgraded electrical grid is another important issue, but one which Fruitvale has no influence over.
Cost of renewable energy is greater than non-renewable	The current cost to generate electricity from a solar concentrator power plant is significantly lower than to generate electricity from methane gas in Alberta. In BC, the cost is about the same depending on location and conditions. Likewise, the cost to operate an electric car is about 1/6 the cost to operate an internal combustion vehicle. These technologies will pay for themselves in 8-10 years.
Concern that climate action is not intended to benefit residents, and that residents won’t be heard	The Village is committed to providing services and infrastructure for residents. Residents will benefit from saving money on energy, having safer and more comfortable ways to walk and bike around, and having access to more jobs related to retrofitting homes and buildings to waste less energy through lack of insulation, leaky windows and doors, and inefficient heating systems.

Endnotes

- 1 Clean Energy Canada, A Pivotal Moment. <https://cleanenergycanada.org/report/a-pivotal-moment/>
- 2 Clean Energy Canada, A Pivotal Moment. <https://cleanenergycanada.org/report/a-pivotal-moment/>
- 3 Clean Energy Canada, <https://cleanenergycanada.org/report/a-renewables-powerhouse/>
- 4 Rocky Mountain Institute, <https://rmi.org/the-energy-transition-in-five-charts-and-not-too-many-numbers/>
- 5 International Energy Agency, <https://www.iea.org/reports/the-future-of-heat-pumps/executive-summary>
- 6 Stats Canada. <https://www150.statcan.gc.ca/t1/tbl1/en/>
- 7 Petersen, Alisa, Michael Gartman, and Jacob Corvidae. The Economics of Zero-Energy Homes: Single-Family Insights. Rocky Mountain Institute, 2019. www.rmi.org/economics-of-zero-energy-homestv.