Urban Food Table: Climate Leadership Workshop

Meeting date: April 30th 2018

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Workshop notes

Transportation and mobility

Cruise ships are not included. Consider the impact of engines running on GHG emissions. Could City develop regulations and/or facilities to provide electrical power hook-up?

Regarding goals and targets:

- Goals are inspiring and ambitious - this is good thing, but how will they be implemented? For examples, buses serve the whole region.
- Would like to see more efforts to build mixed-use neighbourhoods, and more community amenities. City should provide more information to help public understand the value/advantages of mixed use neighbourhoods.
- Look to Westminster for example of community that densified by transiting from "car focused" neighbourhood design to designs focused on active transportation, public transit and easy access to amenities & services.
- Promote the delivery economy, so people can access more goods without needing a car (i.e. gardeners looking for plants and compost often need vehicles to pick up gardening materials).
- Support more delivery services using bicycles or electric cars, consider incentives such as preferential parking.
- Foster businesses that reduce everyone's transportation needs. For example, encourage rooftop farming to reduce the volume of produce being trucked in.
- Facilitate access to Victoria by working with other municipalities to develop better public transit options at the regional level.

Buildings

Require greenroofs but provide expertise to ensure green roofs are successful in the long run.

City should promote different types of buildings (more "green" & sustainable) altogether. For example, Bosco Verticale (vertical forest on high rise development).

Missing goal: Encouraging better building design and use of better materials.

Hydroelectricity may not be renewable source of energy – site C is problematic.

Energy sources should be diverse and local. For example, France requires solar panels on new developments.

City requirements to accommodate cars should be redirected to protect and increase urban greenspaces.

Neighbourhoods must have more say in what amenities developers are required to provide. There must be a mechanism to ensure amenities are there to stay.

Waste

Expand composting facilities. We need a large/central regional facility, but we also need localized options at the neighbourhood level.

The same applies for recycling facilities. Without a car, it is hard to recycle items that are recyclable but cannot be placed in the blue box. Organize recycling drop-offs in parking lots once a month to enable more recycling without more driving.

Neighbourhood composting and recycling hubs can help reduce car dependence.

City should advocate to province to increase producer responsibility when it comes to recycling, reducing excessive packaging, etc.

Adaptation

Regenerative agriculture has an important role to play in reducing GHG emissions, restoring ecosystems, and feeding people.

"Natural habitats flourish in changing climate" – is that wishful thinking? What can the City actually do about this?

Consider food security – our local food supply will have a big impact on what adaptation will look like. Adaptation should be about planning and building a resilient local food system.

More density in City will reduce development pressure on regional farmlands, and help maintain our regional capacity for food production.

Landscape for climate change while preserving mature trees. Build more green spaces and plant trees to help address urban island heat effect.

Replace boulevard trees with food trees.

City leadership in operations

The goals are good, but they also seem a bit lofty. Need more implementation details.

Overall feedback

Awesome the City is doing/has this plan.

Public education is/will be key.

Improve the look & feel of plan so it is more accessible & engaging.

Focus on engaging younger generations.

LOW WASTE SURVEY ANSWERS

1. **What was your biggest take away from tonight's Low waste Living presentation?**
   - The importance of reducing, reusing, and refusing over recycling
   - Inspiration to keep reducing waste!
   - Compostable myths, different products that are compostable and are not as compostable as we may think
   - Ideas for next steps in my family
   - Many excellent resources in Victoria!
   - Eating locally, in season = can live virtually waste free

2. **Do you support the City's targets to reduce community greenhouse gas emissions by 80% and to transition to 100% renewable energy by 2050?**
   - Yes, and it should be in City operations
   - Yes, thrilled how relatively ambitious but necessary the targets are
   - Absolutely, this is a priority
   - Yes, of course
   - Yes
   - Yes, even sooner would be better of course if possible. 30 years seems like a long time
   - Yes, everyday

3. **What support from the City would you find most valuable in helping you, local businesses, and others in the community achieve the waste targets in the draft Climate Leadership Plan**
   - Yard waste in green bins
   - More recycling options
   - More divisions of materials (ie; soft plastic recycling)
   - Even smaller green bins for people with backyard composters (I never have more than 3 compost bags, and that is when I'm cleaning out the fridge)
   - Restaurants having green bins required (see Toronto example)
   - Policy changes
   - Shift the onus of waste onto the manufacturers
   - Recycling and organics bins on all the city streets and these bins should be mandatory in all businesses and apartment buildings.
   - The City should inspect businesses and apartments.
   - More incentives or increased property tax for those with oil or gas heating tanks
   - Incentives
   - More incentives for low-waste shopping in stores & benefits for stores doing this refill work
   - It would be great if the City can support eco-minded businesses. The bike lanes are great!
   - Education
   - Lots more education, FAQ's, how-to's, and policy with incentives to encourage a climate friendly transition. (ie; What are the most common products that contaminate compost bins?)

- Engaging, user-friendly resources bringing all the education/programs/rebates together in one place.
- Fun engagement via social media, cool events, etc.
- Education for different culture groups. For those that have moved to Victoria from foreign countries, they might not understand what waste reduction even looks like.
- Required costs for disposable cups for anyone who provides them
    - Even the big players – Starbucks, Tim Hortons, etc. Go big!
- Project for feeling proud of an advanced city

4. **Please provide any additional comments or feedback on the draft Climate Leadership Plan, or the Low Waste Living presentation:**
    - Acknowledge the territories at beginning of presentation
    - Host frequent "low waste" vents at a café in town in partnership with the West Coast Refill store
        - Need to continue discussion with broader community at a more accessible location
    - More data around what is working well, what is failing, and what will help us achieve our targets.
    - Policy for residents, business, and even governments to achieve climate policy integration and waste reduction.
    - We need to address air quality, while wood stoves are 'sustainable' & 'renewable' they make more particulate matter and reduce air quality which ultimately impacts health.
    - Great presentation
        - Copper hat also a local safety razer resource
    - Agree with BC government so producers are guided to circular economy
    - Great workshop for building awareness & getting started, Thanks
    - Great to get community together at this event and give everyone ideas and inspiration.
    - Thanks for your work! keen to keep up to date
    - What will be the consequences for industry when they don't comply in 2050? (ie; groups that have not yet started composting programs)

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ADAPTATION – PREPARING FOR A CHANGING CLIMATE

TARGET: The City's assets and services are ready to protect and respond to the risks associated with a changing climate.

Comments

- Feedback on target statement
  - Assets
    - F.W.
    - Hazardous waste
  - Risks
    - Projecting out full life-cycle costs
  - Protect sounds like police
  - Incorporate emergency response interactions
- Define "assets", "services"
- Even with full climate change mitigation, need for adaptations
- That adaptation doesn't take away from mitigation
- Time horizon is important (Miami)
- Across all sectors
- Empowerment versus/instead of fear
- Protect has a connotation that we haven't done anything yet
- What is worth protecting?
- Can't just be about recovery – protect is good goal
- Emergency social services
  - Volunteer
  - Water
  - Fire department
- Cooling centres
- Asset management plan (i.e. tsunami in Japan)

TARGET: Risks, vulnerabilities, and resiliency are measured, monitored, and reported.

Comments

- Could go first
- How do you measure resiliency?
- Food risks should be included, part of resiliency
  - Community garden space too limited
  - Storm water utility could incentivize this
  - Enhancement of greenways
- Risks
  - Food

    - Self-sufficiency
    - Understand 3rd order effects (i.e. industrial waste)
    - Cumulative risks (flood and wildfire)
        - Need to find way to model and communicate systemic risks
- Vulnerabilities
    - Social, economic, etc.
    - Do this first and then action setting
- Resiliency
    - 2nd water source
    - As long as this is defined correctly (peace of mind, quality of life)
- Open source mapping (partnerships)
- Water treatment example
- Very broad
- Marginalized groups are included in this?
    - Aging population, low income
    - Map this onto flood risk
- Broadening the scope of R.A. to incorporate food systems – co-benefits (A.L.R)

TARGET: Natural habitats support healthy fish, wildlife, and plant populations and healthy ecosystem function, in a changing climate.

Comments

- Rain water capture
- Good to show positivity but also be realistic
- Gateway?
- Maintain urban forest, consider food producing
- More shade trees
- Choosing appropriate species (some research needed)
- Can act as a buffer
- More inclined for soft barriers and green roofs
- Land-use decisions need to be based on climate risk
- Native species should be favoured
- Everyone loves the natural environment
    - Gateway to further, wider action
- 5000 edible nut trees
- Water conservation should be part of this
    - Permitting grey water use

TARGET: The community is knowledgeable and prepared to address the impacts from a changing climate.

Comments

- Move up to #1
- Water conservation (lifestyle change, frey water use)
- S.M.A.R.T. goals
- Incentives are going to be a part of this
    - Penalties (naming/shaming)
- Empower citizens to take action (i.e. arbutus seeds)
    - Social capital building too
- Engage youth, they can nudge parents
- City needs to provide information – train citizens/volunteers
- Gamification to track/celebrate practice
- The impacts need to be clearly communicated
    - Do flood plan mapping – innovative ways to show this (doom/gloom)
- Block parties, the city could facilitate
- Volunteer base is a big part of this
- Clear statement (once "Adaptation" is clear)
- "Adaptation" seems an abstract idea
- What is likely to come sooner, and later?
- Seismic resilience workshops are relatively effective
- Engage citizens to take ownership of the plan – buy in

TARGET: Adaptation efforts are shared across the economy and support overall sustainability.

- No comments/notes recorded

LOW CARBON TRANSPORTATION AND MOBILITY

TARGET: By 2050, 100% of personal vehicles are renewably powered.

Comments

- Language
    - 100% is too ambitious – no wiggle room
    - 80% might be more suitable
    - Set more interim goals – what is defined by renewable?
- Barriers
    - Infrastructure to support EVS
    - Costs to charge at home
    - How can the City encourage this? Provincial/federal needs
    - Electrical management for electric loading during change times after work
- Opportunities
    - Cost as a motivator – make it cheap!
    - Make it affordable/practical

    - More short term interim targets
- Constraints
    - City is limited in tools to encourage this
    - affordability
- Implementation
    - work in peripheral partners so infrastructure is continuous
    - province needs to do more
    - Linear transition of success not accurate – more work early in the game
- Phasing implementation and goals through shorter target year 1 (3-5)
- Victoria to lead with strategic transitions to electrical
- Expand goals past municipal boundaries (CRD and beyond)
- Consideration of electric autonomous vehicles
- Incentives for car share / more fuel efficient vehicles
- Why "personal vehicle" – car share at low occupancy
- Regulate air emissions
- Harder regulations on commercial vehicles that go past municipal boundaries
- Ambitious goals
- Needs clarification
- Need everyone to buy in if effort is to be shared

TARGET: By 2050, 25% of all trips in Victoria are taken by renewably powered public transit.

Comments

- Language
    - Goals should be higher
    - 25% too low of a target
- Barriers
    - Provincial service
    - Costs – should be fine
- Opportunities
    - Why only buses? LRT/sea bus/etc.
    - Regional transit services is required
    - Improve routes to regional transport hubs
    - Work with peripheral partners
    - More bikes on buses – multi-modal support
- Constraints
    - Tough political decisions
    - Not enough provincial/federal contributions
    - Unambitious – could be more
    - Regional considerations / provincial service
- Implementation
    - Electric buses, NOT DIESEL
    - Electricifcation by infrastructure – not battery

- This goal should be first
- Regional issue / boundary restrictions
- Feasible

TARGET: By 2041, 55% of all trips are taken by walking and cycling.

Comments

- Language
    - Add in distance for trips for cyclists
- Barriers
    - Demographics information (i.e. elderly)
- Opportunities
    - Make streets one way to make room
    - Make sidewalks wider
    - Bike tunnel
    - Time signals for bikes – keep the flow
    - Convenience for attracting people to biking/walking
    - More bikes
- Constraints
    - Topography
    - Culture of drivers not cyclists
- Implementation
    - Integration of cycling and walking paths
    - Network design distribution and connections to surrounding
    - Advocate to province for subsidies for bikes and ebike municipalities

TARGET: By 2041, 100% of neighbourhoods are complete by design.

Comments

- Language
    - Complete needs definition
    - Who defines complete?
    - Why 2041?
- Barriers
    - Financial challenges of e charging stations
- Opportunities
    - Charging stations instead of gas stations
    - Distribution of density / provide green space
    - Missed use forms
    - Commitment to different services (i.e. grocery story / pharmacy)
- Constraints
    - Opposition to density

    - Ebikes need regulation
- Implementation
    - Mix of mobility infrastructure connected and complete
    - Encourage missed use
    - Communicate land use density through climate and transportation impact lens
    - Encourage people living closer to work
    - Focus parking strategy – not distributed
    - Bike share systems

LOW CARBON WASTE MANAGEMENT SYSTEMS

TARGET: Achieve 100% residential organic waste (food and yard) diversion by 2022.

Comments

- Is 100% a current meaure?
    - Program to measure baseline
- 100% goal is unachievable, aspirational only 95% better
- Are the restrictions on home garden waste to the City impeding the organic collection from private gardens/farmers?
    - Inconvenience of apartment buildings properly disposing of organic waste
    - Negative convenient processes such as "kitchen garborators" that need to be addressed
- Diversion from what to what
- Barriers
    - Inconvenience
    - Lack of education of land fill
    - Stink
- need to have baseline and way to measure this

TARGET: Partner with local business to divert 90% of commercial organic food waste by 2025.

Comments

- Is 2025 too aggressive a target date?
- Business take back their packaging
- Backcasting
    - Envision what our future looks like, and work backwards from there
- Diverted to/from where
- Barriers
    - Lack of awareness of where waste goes
    - There are environmental costs associated with doing the "right" thing, i.e. recycling and composting

TARGET: Partner with the CRD to deliver a regional, industrial comporting facility for City organic waste by 2025.

Comments

- Contaminants?
- More progressive bylaws to tackle complex issues on long standing norms
- What needs to be industrially composted?
    - Is the need growing?

TARGET: 100% of the GHGs from collected organic food and garden waste collection is transformed into renewable natural gas, by 2025.

Comments

- The City could promote businesses who pay extra to use renewable natural gas, establish a program for customers to be aware
- Reduce barriers for people to afford renewable natural gas
- Simplify education to the point that children can even understand
- Barriers
    - Ease of finding a place to recycle and drop off yard waste. All neighbourhood village centres have recycling and waste days off facilities.

TARGET: Ensure less than 5% of local residual materials reach the landfill by 2050.

Comments

- "Residual materials" could be clearer
- Does the 5% give an "out" to justify some landfill materials?
- Needs short term goal (i.e. 2025)
- Knowledge of each community's goals, leading by example
- Important to know where recycling depots are, where to recycle certain materials not taken at curb
- Go to people with education

CITY LEADERSHIP AND MUNICIPAL OPERATIONS

TARGET: All City's facilities are renewably powered by 2040.

Comments

- Define jargon early
    - Renewably powered
- Visible and accessible (BCH)
- "Carbon Clock" at City Hall
- Where to municipal operations and adaptation cross over?
- What are costs?
- Education and new bylaws
- Future leaders = progressive
- Public spaces? Parks, waterfronts
- Look at neighbourhoods
- Intermediate steps
- Adaptive action
- Seismic actions
- Set an example – move faster – get started
- Alignment on climate goals need to be regional/provincial
- Customer service
- Knowledge back
- Planning
- Need diversity considered – youth/schools

TARGET: All new facilities are renewably powered.

Comments

- Give examples of facilities in plain language
- Barriers
    - Education of tax payer to understand the value investing in this
    - What's the incentive for tax payers to fund the reduction of only 1% (City's share)
- How can City share progress
    - Education and regular reporting – transparency
    - Good measurement tools – HARD FACTS

TARGET: 80% of Fleet is electrified or renewably powered by 2040.

Comments

- Sooner than 2040? Seems far off
- Bio-gas from sewage treatment plant (low hanging fruit)
- Make electrification visible
    - Map showing progress
- "Right-sizing" the City fleet
- Reduce overall trips
- Intermediate steps
- Electrified – natural gas, hydrogen

- Needs a changing infrastructure throughout the City to inspire the community
- Show me the road map of actions to get you to these targets
- Financial barrier – cost of purchasing your vehicles
- Support Canadian companies to develop these technologies

TARGET: All power tools and small equipment is electrified or renewably powered by 2025.

Comments

- Add "City" to the target statement
- Currently using gas generators to power work – use EVs to power
- Clarify "small equipment" – are we talking office equipment, construction equipment?

TARGET: By 2020, the City uses a triple bottom line accounting system for all business planning.

Comments

- Make sure the target statement is plain language (i.e. triple bottom)
- Triple bottom line accounting
    - Balance between
        - Social
        - Economic
        - Environmental
- Investing – City of Victoria uses the above metrics...
    - i.e. yard waste...this is being examined. Put yard waste in with kitchen waste; balanced by more trucks needed for same

TARGET: By 2022 all relevant City plans and policies address GHG emissions reductions and climate risks.

Comments

- No comments/notes recorded

TARGET: By 2030, the City has completed a Genuine Progress Indicator Assessment, and uses this information to set a GPI goal for 2030.

Comments

- Change to by 2020
- Include acronym GPIA

LOW CARBON, HIGH PERFORMANCE BUILDINGS

TARGET: By 2030, all new buildings are "net zero energy ready".

Comments

- Will help establish Victoria as leaders
- Materials not always easily accessible
    - Turn industrial zone into Green Zone
- City should require energy audit
- Utilize environment into design, i.e. orientation
- Specify what operational needs are
- Building materials / embodied energy to be more sustainable, local, structurally-sound
- Case studies important to show people
    - People pay attention when there is something in it for them, i.e. lower bills, incentives
- Lots of education needed to accelerate
- Stick and carrot
- No help for resources for preparation
    - City should provide this and incentives
- Education for all
- Term might trip up people
    - "Ultra-efficient"
    - Needs education to explain
- City process needs to be expedited/inform people better
- Need more regulations for compliance

TARGET: Before 2050, all existing buildings are retrofitted to new efficiency standards (TBD).

Comments

- Advocacy role for new codes, etc. – emphasize
    - Home energy labelling and benchmarking
    - Recognition for awareness
- Envelope first / lower hot water usage
- Attend home shows
- Focus is too much on efficiency us decarbonisation (language)
    - Fuel switching should be clarified/emphasized
- Embodied energy consideration for retrofitting
- Bulk buying of equipment or solar
- City should hand out shallow retrofit materials and energy audits
- Education and awareness needed from City
- Provide resources through permit process
- Clarify new efficiency standards if possible

- Vague and not very useful – needs interim targets and timelines
- Move more quickly/timelines too far
- Shorter term targets needed
- BC Hydro changes net energy program
- Proper valuation of efficient homes
    - Realtor education/labelling
- Heritage challenges
- Tax incentives for retrofits, i.e. TIP
- PACE/LIC i.e. Alberta
- Natural gas to heat pump program
- High cost/point of entry to adopting retrofits, i.e. solar
- Not a lot of savings when price of Hydro is high
- Provincial/federal subsidies for RE (not FFs)
    - YYU can't pay for everything

TARGET: Oil heating is phased-out by 2030.

Comments

- BC Hydro pricing tiers / high price
- What is replacing it? Specify.
- Access to information is a barrier
- People need to WANT to do it
    - Bragging rights
- Rentals are a barrier
- Should be changed to different demand times
- Needs to happen!
- Ban it / regulation of new installs
- Carrot and stick (fines)
- Public education for risks

TARGET: Before 2050, all buildings will only use renewable energy.

Comments

- Language needs to be more accessible to educate and inspire
- Grid integration with solar issues
    - Summer
- Move away from natural gas!
    - People only know its cheaper
    - Humans blind to extended costs
- Interplay between solar and trees
- Solar panels affecting aviation?
- Economically it doesn't make sense for some

    - Bragging rights
- Become a utility / DE system
- Consider removing wood from fuel sources
- Huge financial incentive to switch to natural gas
- SOFA district energy system is wasted energy
- Is there enough RE around?
    - Needs commitment from BC Hydro
- Resistance from public – higher costs
    - Opportunity for bulk purchasing
        - Canadian cities too spaced out
- Geo-X and waste heat energy not included
- RNG too much of a spin – still being burned
- Tackle wood burning too
    - Could be tied to affordability of hydro

ADAPTATION – PREPARING FOR A CHANGING CLIMATE

TARGET: The City's assets and services are ready to protect and respond to the risks associated with a changing climate.

Comments

- Much cheaper to plan ahead than to repair damage – over-prepare
- Rising temperatures, storms will be increasing "plan for the worst"
- Where/what can make this happen/leverage
    - We have a community that is aware and motivated
    - Sustainable city is very marketable, a selling point
    - Learn from other cities
- Create solutions – LA is painting driveways white
- Involve students in projects
- Barrier/need – make sure we are measuring and assessing what other agencies are doing in city to prepare for adaptation
- Include goals for other agencies

TARGET: Risks, vulnerabilities, and resiliency are measured, monitored, and reported.

Comments

- Targets for buildings – built to meet resilience targets xM of sea level rise or X temperature or X water
- Public health targets, personal targets included in adaptation
- Keeping track of change – make people aware of changes that are happening, use historical data
- Sea level rise will be much greater than 0.5M by 2050. 2-3 M is looking possible with changes to Greenland and Antartica "cost of ½ M higher is small"
- Goals are difficault to understand because not specific to a number or target
- Need info on wind
- "time consuming" taking the bus is tough for people living outside the city centre

TARGET: Natural habitats support healthy fish, wildlife, and plant populations and healthy ecosystem function, in a changing climate.

Comments

- Bee populations and wildlife protected? Bees are critical to many species
- Note indirect impacts: like rufugees, food security, economic in the climate impact statements of adaptation section
- Opportunity to orient people more towards ocean, stimulate more activity around water interface
- We will be moving people out of forests as they become dry in summer

- Advocate and intervene with insurers for new products
- Work with insurance bureau

TARGET: The community is knowledgeable and prepared to address the impacts from a changing climate.

Comments

- Hub of info on city site – climate hub like Biz Hub
- Events
- Info tools to help people see what they can do
- Encourage positive behavior, but not preachy
- Getting to people who aren't involved already
- Make it personal and make ROI really front and centre
- American media is still run by climate deniers
- Public buy in is difficult, such as for water restrictions
- Acceptance of public goals is easier than acceptance of actual chance to local infrastructure or budgets e.g. storm-proof windows, roof tie downs
- Who regulates window strength for future storms? Does the building code reflect climate change? How big a problem is this for existing buildings?
- Need steady communications on multiple platforms about climate
- Climate has become a left/right issue
- Need conservatives to acknowledge climate
- Education and communications – impending disaster coming but people need to see a path forward – solutions for what to do
- Avoiding – need to make personal change – somebody else's responsibility

TARGET: Adaptation efforts are shared across the economy and support overall sustainability.

- Barrier – individuals thinking mostly about themselves and their family and not thinking about community impacts
- Sustainability of tourism – impacts of tourists – this could be barrier
- Barrier – money and affordability
- People not thinking they can make a difference
- Enabling people to have influence on policy
- Uncertainty – until its happened its not going to happen to me (underground infrastructure)
- Somebody else (government) should pay for it "adaptation is a government issue they should pay for it"

LOW CARBON TRANSPORTATION AND MOBILITY

TARGET: By 2050, 100% of personal vehicles are renewably powered.

Comments

- Strategy: Focus on large employers and delivery companies
- Action: commercial e cargo pilot, investigate water based transport solutions (local or regional)
- Information: more strategic reference to advocacy and influence of provincial and federal agencies in the transportation sector
- Measure of at least acknowledge the emissions and pollution of cruise ships, passenger ferries and float planes

TARGET: By 2050, 25% of all trips in Victoria are taken by renewably powered public transit.

Comments

- 25% mode share for transit
- 100% electric bus for public transit
- On street bus e charge infrastructure
- Transit investment and taxes
- Transit amenities and stops – real time data/comfortable stops
- Micro-services in downtown core
- Free transit in downtown core
- Park and ride expansion

TARGET: By 2041, 55% of all trips are taken by walking and cycling.

Comments

- Continue to invest in infrastructure for pedestrians and cyclists
- Add more EV charging stations
- Introduce EV and e bike incentives
- Make developments build more EV charging stalls and bike parking
- Behaviour change education/information/pilots to encourage more
- Update CRD bike map to include more info on elevation to plan routes
-

TARGET: By 2041, 100% of neighbourhoods are complete by design.

Comments

- Define what complete means – really clear
- Reinforce regional mode share and GHG targets
- Have GJ of energy targets identified

LOW CARBON WASTE MANAGEMENT SYSTEMS

TARGET: Achieve 100% residential organic waste (food and yard) diversion by 2022.

Comments

- City needs to work with provincial agencies
- No targets around front end waste reductions
- Profit driven business dictating entire industry
- Perception that organics are shipped off island
- Composter design – heavy – aging population
- Info/education needed – labelling
- More zero waste shops and workshops
- Labour intensive for waste ops e.g. UK door to door milk delivery
- Encourage composting incentives
- Only 10% is collected by muni-waste system
- Densification will change operations
    - MURBs, small commercial > space
- Enforcement needed for private sector
    - How do we do this?
    - Trucks need to comply
    - Test for contaminants at Hartland
- Potential for drop-off zones eg. Oak Bay - walkability/accessible
-

TARGET: Partner with local business to divert 90% of commercial organic food waste by 2025.

Comments

- Inadequate price signals for CRD
    - Tipping fees for construction waste sorting
    - Encourage sorting
- Health and safety considerations for sanitation/re-use
- Government regulated service delivery eg. India milk drop off
- Should be 100%
- Compostable plastics and where to dispose
- Systems keep changing – barrier to change
- Individuals need support to show how to change culture
- Incentives (tax) money
- Neighbourhood groups support
    - Funding and organization to mobilize
- Lots of education
- Community pride in opportunities
    - Identify building, showcasing, incorporate with tourism industry "eco-incentives" eg. Using RNG at cruise ships terminals

- Waste is more visible here – makes easier
- Personal cost to recycle specialized items
- Limited options for buying bulk and compost infrastructure

TARGET: Partner with the CRD to deliver a regional, industrial comporting facility for City organic waste by 2025.

Comments

- Clarify definition of diversion
- Life cycle /full energy embodied /GHG/ financial costs need to be factored
- Cruise ship waste at "home port" (yyj)
    - High consumption, high GHGs
    - Not included in our waste accounting
    - Ships should pay additional fees/associated costs
- Challenge with hotels to divert
    - Expenses and education (perceived expense)
    - Switching bins sizes (work with waste providers)
-

TARGET: 100% of the GHGs from collected organic food and garden waste collection is transformed into renewable natural gas, by 2025.

Comments

- Ambitious target?
- Potential to use materials from up island

TARGET: Ensure less than 5% of local residual materials reach the landfill by 2050.

Comments

- Local processing facility for recycling
- People need to be told concrete actions to do
    - Work on messaging to avoid bombarding people who already comply
- Non-restaurant businesses do not produce a lot of organic waste – hard to justify paying for service
    - Pickup/drop-off zone needed (one on each block)
    - Awareness campaign for other businesses – need to educate why its good
    - People need to see consequences of improper waste sorting
- Need more composting infrastructure around town
    - Bins but also a facility
- Need to make it financially unviable to do things the old way
- Incentives and rebates
- Focusing on downtown can provide huge benefits
- Processing of waste needs to be better monitored
- Reinforce messaging and share with the community

- Educational resources are not comprehensive
- Consolidate info
- Educate how the province deals with e-waste – lots of misinformation on how different items get recycled
- Increase pickups for organics
- Provide businesses with better bins for organics
- Consider people with mobility issues - programs for support

LOW CARBON, HIGH PERFORMANCE BUILDINGS

TARGET: By 2030, all new buildings are "net zero energy ready".

Comments

- Language "GHGs" is not tangible
    - Think local, act local
- Green roofs and solar panel design guidelines
- Send out update to CALUCs
- Home energy labelling?
- Renewable doesn't need to be onsite
- Leave ability for flexibility – net zero community is possible, not just focused on buildings
- Include step-code adoption to CLP
- District energy ready buildings - add to actions
- Embodied energy requirements
-

TARGET: Before 2050, all existing buildings are retrofitted to new efficiency standards (TBD).

Comments

- Differentiate between building types
- Be careful with incentives
- Big opportunity with so many homes
- Durable language – make sure targets make sense for 5-10 years
-

TARGET: Oil heating is phased-out by 2030.

Comments

- Is this not banned?
- Education – link to Centre for Excellence
- Often replaced with gas
- More education around heat pump – heating cooling - benefits with global warming

TARGET: Before 2050, all buildings will only use renewable energy.

Comments

- More consultation needed and disclosure
- Communicate now PV renewable energy – don't pigeonhole
- Resource guide – for different projects
- "power" only means electricity – not heating/cooling
- District energy, heat recovery

City of Victoria Draft Climate Leadership Plan Engagement Session
Workshop in a Box

Focus Group Note Taking Form

Group Name/Organization: URBAN FOOD TABLE 04/30/2018

Participants at the table

Personal info

1.

2.

3.

4.

5.

Main issue(s)/theme(s) discussed:

Anecdotes/examples used:

Recurring comments/ideas brought up during discussion:

Other interesting ideas, questions, comments, thoughts, etc. raised during the discussion:

KEY GOALS – ALL SECTORS

The following table, (Table 1) summarizes the broad climate action goals for each sector, that are strengthened by measurable targets and defined in the sector chapters below.

Table 1. Climate Action Goals

Sector	City Climate Goals
Low Carbon, High Performance Buildings	• Buildings are highly energy efficient, using only a small fraction of their 2017 operational energy needs. • Buildings are powered by renewable energy.
Low Carbon Mobility	• Vehicles are powered by renewable energy. • Victorians enjoy a high-performing, affordable, sustainable, and fully integrated multi-modal transportation system. • Transportation emissions are minimized through smart land-use planning that optimises urban mobility and quality of life.
Low Carbon Waste Systems	• All residual organic materials are reduced, recovered, and reused. • Systems are in place to optimise the continual use and reuse of materials, to eliminate landfill waste and related greenhouse gases.
Adaptation	• All climate-related risks are minimized through early and wise planning and action. • Local, natural habitats flourish in a changing climate. • Victorians are prepared for all climate related events and emergencies.
Low Carbon Municipal (City) Operations Leadership	• The City is a recognized leader in climate mitigation and adaptation action. • City climate action is informed by a full understanding of through-life social, environmental, and economic costs, risks and benefits. • Victorians have access to timely and accurate data to support strong climate mitigation and adaptation actions. • Climate action is integrated across City programs.

OVERARCHING GHG REDUCTION TARGETS

Detailed sectoral GHG reduction targets are outlined in the below sections, for buildings, transportation, waste, and also include adaptation targets for improved climate resilience. Interim goals have been developed to ensure we define and stay on track, with the ability to course-correct before mid-century. The following overall mid-term and long-term targets apply:

Mid-Term:

- Reduce community GHG emissions by 50% below 2007 levels by 2030.
- Reduce corporate GHG emissions by 60% below 2007 levels by 2030.

Long-Term:

- Reduce community GHG emissions by 80% below 2007 levels by 2050.
- Reduced our corporate GHG emissions by 90% below 2007 levels by 2050.

CLIMATE STRATEGIES AND ACTIONS

A series of actions have been developed, which include the creation of strategies and initiatives that align and group discrete actions in a way to promote the highest potential for success. All climate actions are prioritized to reduce fossil fuel energy demand, replace fossil fuel technology or fuels, or to redesign systems, land use, processes, technology, behaviours, and actions to transition to a low carbon, resilient community. The City's climate action plans fit into a combination of four actions types, focused on a list of activities to be completed before the end of 2020:

- **REDUCE**: Reduce fossil fuel energy use through demand-side management, deep energy retrofits, radical efficiency improvements (with a primary focus on 'end-use' efficiency), new energy standards, and improvements in energy operations.
- **REPLACE**: Replace systems that rely on fossil fuel energy sources or replace the fuel with a lower carbon alternative.
- **REDESIGN**: Redesign, re-create, and reconsider GHG emissions production by 'designing-out' the energy burden using designs, plans and tools to achieve low carbon systems, and communities.
- **RESILIENCE**: Improve, strengthen, and mitigate risks to community, ecosystems, and infrastructure due to a changing climate and its resultant forces.

CLIMATE ACTION SPHERES OF INFLUENCE

The City has a large sphere of influence relating to climate action in our community, using our role in community planning and development, transportation planning and design, waste management, and asset management. The City can also use its regulatory powers to influence energy and emissions reductions. While this Plan mostly identifies actions that fall within the mandate of our regulatory influence, it also identifies actions that can only succeed with the help and cooperation with our partners and community stakeholders. These areas of joint-responsibility pose an important challenge where the City is an influencer, more than a 'duty-holder'. In these areas, the City must collaborate, support and partner with many community stakeholders, share critical information and incentivise change. All meaningful change will require effective communication and engagement. Education and awareness is a critical part of the stakeholder engagement process, and one role the City must lead.

As part of our process, each of the actions have been assessed on our ability to influence through:

- **Control** – this is where we have direct ownership over the initiatives, from capital and resources, and can implement actions to reduce climate change or its impacts (e.g. using local regulatory tools to mandate energy efficient buildings).
- **Influence** – these are actions where we can promote and support the desired GHG reductions (e.g. providing financial top-ups to energy efficiency programs such as the provincial Oil to Heat Pump Incentive Program, collaborating with other levels of government on policy design).

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CONTROL - INFLUENCE - EDUCATE

*Step Code adopted!
1- Nov. 2018
2 - 2020
3 - 2025...

Group Discussion Questions

1. Take a look at the proposed goals and targets in the CLP. Are the targets written in a way that they are easy to understand? For each sector (e.g., waste, buildings) are there any targets you would add or change?

2. What do you see as one of the main opportunities or challenges the City of Victoria should consider in reaching its climate leadership goals?

3. How would you like the City of Victoria to support your individual and/or organization's climate action efforts (E.g. education and awareness; programs and incentives; policy changes).
Think about efforts that can reduce GHG emissions and those that helps us adapt to a changing climate (e.g., preparing for more intense storms).

*CPWC | Bio-mass:
- CoV developing Waste Mgmt Strategy this year.

4. How best to share info? Report backs from City?

*CoV ~~that~~ gets % of BC carbon tax that is put back in their climate reserve funds.

*BOSCO VERTICALE: tree-clad buildings.

• The group liked the idea of a City-led "Love food, hate waste" campaign.

LOW CARBON WASTE MANAGEMENT SYSTEMS

Where We Are Today

10% of our GHG emissions come from the decomposition of the waste we produce. The climate related impacts of waste come from the methane that is created when organic waste is buried in a landfill.

Where We Want to Be

2050 Vision:

Residents, businesses, and visitors each manage their organic materials (food scraps and yard waste) responsibly, and ensure they are sorted in appropriate composting bins. We have minimized our consumption and waste across all sectors, and we benefit from a healthy, job-rich marketplace for used and repurposed materials that continually flow throughout the economy as reintroduced materials. The community's organic waste will be processed locally and reintroduced as feedstock for growing more food.

PROPOSED GOALS: Waste

Goal 1: All residual organic materials are reduced, recovered, and reused

* there is currently no way to get rid of gardening waste (e.g. large amts of weeds) w out driving.

Targets

- 100% of residential organic waste (food and yard) is diverted from the landfill by 2022
- Partner with local businesses to divert 90% of commercial organic food waste by 2025
- Partner with the CRD to deliver a regional, industrial composting facility for City organic wastes by 2025*

*This goal is not directly owned by the City, but is influenced by City and its regional partners

- 100% of the GHGs from organic food and garden waste collection is transformed into renewable fuels by 2025

- localized sol'ns exist for composting & recycling (depots) - neighbourhood → bio-digestors.

Goal 2: Systems are in place to optimise the continual use and reuse of materials, to eliminate landfill waste and related greenhouse gases

Ass'ns have recycling drop-off. 1x month.

Target

- By 2050, 95% of what we each produce, use and manufacture on a daily basis is given new life through re-using, repairing, sharing and recycling, so that less than 5% of our waste ends up in the landfill

Goal 2: Systems are in place to optimise the continual use and reuse of materials, to eliminate landfill waste and related greenhouse gases

Victoria's solid waste includes a wide range of materials that are discarded by residents and business. We want to shift to a system that avoids or reduces waste and finds innovative ways to recover and repurpose materials.

Target: 95% of what we each produce, use and manufacture is given new life through re-using, re-pairing, sharing and recycling, so that less than 5% of our waste ends up in the landfill by 2050.

• "Extended Producer Responsibility": if you make the product, you have to deal with it. BC Gov piloted this; City could champion.

ADAPTATION – PREPARING FOR A CHANGING CLIMATE

What is 'Adaptation?'

Air emissions are shared across the planet, which requires a common responsibility to reduce GHGs, but also a requirement to prepare now for the changes that we will face in the years to come.

If all current human caused GHG emissions ceased today, global climate change and its associated impacts would continue for many decades, due to the long lifespan of carbon in the atmosphere. For this reason, it is not sufficient to merely reduce future GHG emissions, the City and its residents must also prepare for a changing climate. Preparing for a changing climate and its uncertainties is known as 'adaptation.'

Where We Want to Be

2050 Vision:

All community properties enjoy strengthened infrastructure and support healthy, abundant natural ecosystems that contribute to our City's resilience. Restorations have been made to ensure affordability and the least disruption to our collective quality of life. The City has completed affordable infrastructure improvements to manage severe and prolonged storms, increased flooding, heat, and other extreme weather events.

PROPOSED GOALS: Adaptation

Goal 1: All climate-related risks are minimized through early and wise planning and action

Targets

- The City's assets and services are ready to protect and respond to the risks associated with a changing climate
- Risks, vulnerabilities, and resiliency are measured, monitored, and reported

Goal 2: Local, natural habitats flourish in a changing climate

Targets

- Natural habitats support healthy fish, wildlife, and plant populations and healthy ecosystem functions

Goal 3: Victorians are prepared for all climate related events and emergencies

Targets

- The community is knowledgeable and prepared to address the impacts from a changing climate
- Adaptation efforts are shared across the economy and support overall sustainability

- Developments: get neighbourhood Ass'ns to chose 'checklist' of community ammenities

HIGH PERFORMANCE BUILDINGS:

Where We Are Today

The energy we use in our homes and buildings produces 50% of our community GHG emissions, and represents the largest opportunity for improvement.

Where We Want to Be

2050 Vision:

We live and work in buildings that are powered by 100% renewable energy sources such as hydro-electric, solar, and renewable natural gas. Fossil fuel heating and power systems are a thing of the past and buildings are comfortable and affordable.

PROPOSED GOALS: Buildings

Goal 1: Buildings are highly energy efficient, using only a fraction of their 2017 operational energy needs.

Targets

- By 2030, all new buildings will be 'net zero energy ready,' which means they will be designed to be ultra-efficient and 'ready' to produce all of their energy needs through the future installation of an on-site renewable energy system(s)
- Before 2050, existing buildings will be retrofitted (updated) to new efficiency standards*

**note: these standards are currently under development with input from federal and provincial stakeholders; they will be defined in the near future.*

Goal 2: Buildings are powered by renewable energy (e.g. hydro-electricity, solar, wind, renewable natural gas)

DO NOT LIKE THIS.

Targets

-By 2030, oil heating is phased out

-Before 2050, all buildings will only use renewable energy (incl. hydro - even large scale)

Passive heating/cooling

- 'Bldgs' should include consideration of grounds, shading, green roofs, landscaping etc.
- Density needs to be balanced w. access to natural spaces, sense of place, ~~etc.~~ preservation of green space.
- Updates to parking bylaws - issue of duplex parking - to reduce loss of green space.

Goal 3: Natural building materials & techniques are prioritized & incentivized. Explore local solutions that increase biomass in built environment.

→ ~~LEED~~ LEED pilot credit for local food production.

→ ~~LBC~~ Living Building Challenge

LOW CARBON TRANSPORTATION AND MOBILITY

Where We Are Today

Transportation activities are the second largest source of GHG emissions in the City (40%). Most of those emissions come from the private, single occupant vehicle (86%), while commercial vehicles make up 14%. GHG reductions may be achieved through a reduction in trips, distance travelled, increased efficiencies, alternative low carbon fuels, electrification, and shifts to transit, walking and cycling.

Where We Want to Be

2050 Vision:

Walking, cycling and renewably powered public transit are favoured modes of transportation, connecting all residents and visitors to well-designed neighbourhoods complete with nearby amenities. The vast majority of commercial and community vehicles have been electrified and people, goods and services will travel generating little to no GHGs.

PROPOSED GOALS: Transportation

Goal 1: Vehicles are powered by renewable energy

Targets

- By 2050, 100% of personal vehicles are renewably powered (e.g. electric, bio fuel, hydrogen fuel cell)
- By 2030, all commercial vehicles are renewably powered

Goal 2: Victorian's enjoy a high-performing, affordable, sustainable, and fully integrated multi-modal transportation system

Targets

- By 2050, 25% off all trips in Victoria are taken by renewably powered public transit
- By 2041, 55% of all trips are taken by walking and cycling

Goal 3: Transportation emissions are minimized through wise planning that optimises urban mobility and quality of life

- By 2041, 100% of neighbourhoods are complete by design*

**Note: Specific criteria for complete neighbourhoods will be determined at a future date. A 'complete by design' neighbourhood may be one that is: central and easily accessed through walking, cycling and public transit; has green and natural spaces integrated into landscape and design; and is compact with necessary amenities and services nearby.*

LOW CARBON TRANSPORTATION AND MOBILITY

- How can the City foster/encourage biz development that reduces the need for transportation?
  → as in, food systems.

Where We Are Today

Transportation activities are the second largest source of GHG emissions in the City (40%). Most of those emissions come from the private, single occupant vehicle (86%), while commercial vehicles make up 14%. GHG reductions may be achieved through a reduction in trips, distance travelled, increased efficiencies, alternative low carbon fuels, electrification, and shifts to transit, walking and cycling.

Where We Want to Be

2050 Vision:

Walking, cycling and renewably powered public transit are favoured modes of transportation, connecting all residents and visitors to well-designed neighbourhoods complete with nearby amenities. The vast majority of commercial and community vehicles have been electrified and people, goods and services will travel generating little to no GHGs.

- How can these goals be amplified regionally?

PROPOSED GOALS: Transportation

Goal 1: Vehicles are powered by renewable energy

Targets

- By 2050, 100% of personal vehicles are renewably powered (e.g. electric, bio fuel, hydrogen fuel cell)
- By 2030, all commercial vehicles are renewably powered ← Sysco vans, Wilson buses.

Goal 2: Victorian's enjoy a high-performing, affordable, sustainable, and fully integrated multi-modal transportation system, including in & out of City to surrounding region.

Targets

- By 2050, 25% off all trips in Victoria are taken by renewably powered public transit
- By 2041, 55% of all trips are taken by walking and cycling

Goal 3: Transportation emissions are minimized through wise planning that optimises urban mobility and quality of life

* delivery economy. → green deliveries / incentives for companies that delivery w. low emissions.

- By 2041, 100% of neighbourhoods are complete by design*

**Note: Specific criteria for complete neighbourhoods will be determined at a future date. A 'complete by design' neighbourhood may be one that is: central and easily accessed through walking, cycling and public transit; has green and natural spaces integrated into landscape and design; and is compact with necessary amenities and services nearby.*

- Conversations w Harbour Authority; emissions from cruise ship transport? Shore power for cruise ships?
- What is scope of 'commercial vehicle' targets? Would it include vans from Alberta, say? Or vehicles in Rock Bay that service the entire lower mainly.

HIGH PERFORMANCE BUILDINGS:

Where We Are Today

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Where We Want to Be

2050 Vision:

We live and work in buildings that are powered by 100% renewable energy sources such as hydro-electric, solar, and renewable natural gas. Fossil fuel heating and power systems are a thing of the past and buildings are comfortable and affordable.

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- Before 2050, existing buildings will be retrofitted (updated) to new efficiency standards*

**note: these standards are currently under development with input from federal and provincial stakeholders; they will be defined in the near future.*

Goal 2: Buildings are powered by renewable energy (e.g. hydro-electricity, solar, wind, renewable natural gas)

Targets

-By 2030, oil heating is phased out
-Before 2050, all buildings will only use renewable energy

CITY LEADERSHIP AND MUNICPAL OPERATIONS

Where We Are Today

Corporate operations account for 1% of our community GHG emissions. Since 2007, the City's corporate building GHG emissions (directly from natural gas, and indirectly from electricity) have declined by 40% due to reductions in facilities (11, 000 square foot decline), and energy efficiency improvements (such as HVAC system optimizations at the Victoria Conference Centre and City Hall). GHG emissions from City fleets have increased by 16.6% due to increases in fleet operations.

Where We Want to Be

2050 Vision:

City fleet and facilities are 100% renewably powered. By 2030, City Staff will set the example for GHG reductions in buildings, transportation and operational energy use. The City works hard to eliminate waste in all its forms, and staff have found innovative ways to minimize energy consumption and GHGs without diluting quality, or level of public service.

PROPOSED GOALS: Municipal Operations

Goal 1: The City is a recognized leader in climate mitigation and adaptation action. Especially to other municipalities in CRD.

Targets

- All City's facilities are renewably powered by 2040
- All new City facilities are renewably powered
- 80% of Fleet is electrified, or renewably powered by 2040
- All power tools and small equipment is electrified or renewably powered by 2025

Goal 2: City climate action is informed by a full understanding of through-life social, environmental, and economic costs, risks and benefits.

Target

- By 2020, the City uses a triple bottom line accounting system for all business planning ✓✓✓

Goal 3: Victorians have access to timely and accurate data to support strong climate mitigation and adaptation actions

Target

- By 2022, all relevant City plans and policies address GHG emission reductions and climate risks

Goal 4: Climate action is integrated across City programs

Target

- By 2030, the City has completed a Genuine Progress Indicator Assessment (GPI) and uses this information to set a GPI* goal (*GPI is used to measure economic growth and is often considered an alternative metric to the more well known Gross Domestic Product (GDP) economic indicator. GPI nets the positive and negative results of economic growth to examine whether or not it has benefited people overall.

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PROPOSED GOALS: Adaptation

Goal 1: All climate-related risks are minimized through early and wise planning and action

- Flood mitigation through stormh$_2$O mgmt.

Targets

- The City's assets and services are ready to protect and respond to the risks associated with a changing climate
- Risks, vulnerabilities, and resiliency are measured, monitored, and reported
  ↳ this needs to include food security & food production.

Goal 2: Local, natural habitats flourish in a changing climate

- Better h$_2$O/stormh$_2$O mgmt. Rain h$_2$O Rewards revamped + upgraded.

Targets

- New landscaping takes into consideration climate change.
- Natural habitats support healthy fish, wildlife, and plant populations and healthy ecosystem functions
- Mature trees are preserved. When trees need to be replaced, food species are prioritized.

Goal 3: Victorians are prepared for all climate related events and emergencies

Targets

- The community is knowledgeable and prepared to address the impacts from a changing climate
- Adaptation efforts are shared across the economy and support overall sustainability

- Take pressure off regional farmland by increasing urban density & urban food production.

LOW CARBON WASTE MANAGEMENT SYSTEMS

Where We Are Today

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Goal 2: Systems are in place to optimise the continual use and reuse of materials, to eliminate landfill waste and related greenhouse gases

Target

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Bridget Frewer

From: Jess Dawe
Sent: July 17, 2018 9:49 AM
To: Bridget Frewer
Subject: SFU masters student feedback FW: Feedback on Victoria's Draft Climate Leadership Plan

From: Morgan Braglewicz <morgan_braglewicz@sfu.ca>
Sent: May 16, 2018 2:09 PM
To: Steve Young <SYoung@victoria.ca>
Cc: Mark Jaccard <jaccard@sfu.ca>
Subject: Re: Feedback on Victoria's Draft Climate Leadership Plan

Hi Steve,

I read through the CLP and jotted down a few thoughts below. I didn't comment on the adaptation section since I'm not as familiar with adaptation strategies. Let me know if there's anything you'd like to discuss in more detail, or if you have any questions on my master's work. Happy to clarify if needed. Hope this helps!

-The "Partnerships and Collaboration" Section at the end is very important. One of the main findings from the modeling I did is that it will be extremely challenging for Victoria to affect dramatic fuel switching and emissions reductions through local policies - the suite of policies I modelled was quite aggressive and didn't meet the targets. Even with additional senior government intervention in the form of a very high carbon tax, the policies that I modelled didn't achieve 100% renewable energy use or an 80% reduction in emissions. The section focuses mostly on partnerships at a community level, but perhaps it could be a good opportunity to touch on partnerships with senior levels of government in more detail (this is mentioned briefly under the sectoral lists of partnerships). Some of the priority actions throughout the document related to Victoria's support for certain senior government policies like the provincial LCFS or a potential national retrofit code; perhaps a dedicated paragraph or two in this section could help underline the need for effective senior government policies in areas that it is particularly difficult for Victoria to affect (in my analysis these were commercial buildings and freight transportation - personal transportation to a lesser extent).

-The breakdown of goals/targets/strategies/actions is very good; many plans are not clear on the distinction between these various levels

-It could be helpful to unpack what is meant by "Current Pace" improvements. The paragraph you had sent me via email was very useful and I think helped to make clear what is meant by this term/scenario.

-One thing I very briefly touched on in my master's project is how Victoria is defining renewable energy. In the CLP the upstream emissions from electricity are considered (e.g. in Figure 6), but not the upstream emissions from biofuels - the production of which could very well be fossil-fuel intensive if there aren't any policies in place mandating that the lifecycle carbon intensity of biofuels meets low/zero carbon requirements (currently under the LCFS the requirements for lifecycle GHG intensity are not very stringent). Since biofuels only accounted for a very small portion of total energy use in my modelling results I didn't worry about this too much, but could be something to consider for the CLP as it would seem RNG and biofuels for vehicles are a part of the 100% renewable energy future that is laid out in Figure 5

-In Figure 5, RNG has an increasing proportion of energy use but under the "buildings" section none of the priority actions touch on how Victoria might cause an increase the use of RNG. Most of the actions in this section focus on strategies to improve energy efficiency for buildings (in line with Goal 1) but only a couple actions relate to the fuel switching that is essential to achieve Goal 2 (and the overall goal of 100% renewable energy use), and none of them mention an RNG strategy. I do understand the challenge in tackling RNG supply/use (I excluded it from my analysis for that reason) but if the City is counting on transitioning at least some NG use to RNG, then it would seem that the pathway for this transition is a bit of the gap for the buildings section.

-I notice that in terms of transitioning vehicles to renewable fuels, the mobility section focuses mainly on electrification of personal vehicles (rather than biofuels). I chose to model policies focused on electrification as well, both for personal and freight (light/medium duty) vehicles. Given that Figure 5 anticipates some uptake of biofuels in transportation, I wonder if the City might consider any actions that would also promote/support the uptake of biofuel vehicles. I noticed the one action of continuing to support the Provincial LCFS, but curious as to whether or not Victoria is considering any local policies in addition to that. I also noticed that none of the actions explicitly target freight transportation; are there are any strategies/actions in mind to target emissions from freight?

Morgan

Morgan Braglewicz
Master of Resource and Environmental Management Candidate
Energy and Materials Research Group
School of Resource and Environmental Management
Simon Fraser University
mbraglew@sfu.ca

On May 7, 2018, at 3:26 PM, Steve Young <SYoung@victoria.ca> wrote:

Hi Morgan,

Thanks for sharing your thesis. I took a quick read through and look forward to taking deeper dive at a later date. I've also shared it with my colleagues here, so there may be a few follow up questions. Congrats on getting this work done. I found it informative and well-reasoned.

Thanks also for your offer to review the CLP. Please do take a read and provide your feedback. It would definitely be useful!

Cheers,

Steve

From: Morgan Braglewicz <morgan_braglewicz@sfu.ca>
Sent: May 7, 2018 10:08 AM
To: Steve Young <SYoung@victoria.ca>

Cc: Mark Jaccard <jaccard@sfu.ca>
Subject: Re: Feedback on Victoria's Draft Climate Leadership Plan

Hi Steve,

Attached are a copy the slides from my defense presentation as well as the full version of my master's project. Please feel free to let me know if you have any questions, or if there's anything in particular you'd like to go over in more detail. If you think it would be helpful, I could also read and provide feedback on the Climate Leadership Plan itself. Let me know if this would be useful.

Hope this helps!

Best,

Morgan

Morgan Braglewicz
Master of Resource and Environmental Management Candidate
Energy and Materials Research Group
School of Resource and Environmental Management
Simon Fraser University
mbraglew@sfu.ca

On May 1, 2018, at 8:31 AM, Steve Young <SYoung@victoria.ca> wrote:

Hi Mark and Morgan,

I hope you are both well.

I???m writing to follow up on our discussions over the past couple of months regarding the development of Victoria???s Climate Leadership Plan. The draft is out for public review until May 18th. We???re asking key experts, partners and stakeholders for their written feedback. We???re incorporating some additional data into our modelling and this is the window for us to take recommendations from Morgan???s work as well as more general comments.

Are you are interested and available to provide feedback?

Cheers,

Steve

Steve Young
Climate & Environmental Sustainability Specialist
Engineering and Public Works
City of Victoria
1 Centennial Square, Victoria BC V8W 1P6

T 250.361.0279 **C** 250.514.8638 **F** 250.361.0311

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<Climate Leadership Plan Public Draft ver2.2 Dec 12a.pdf>

Bridget Frewer

From: Engagement
Sent: May 22, 2018 9:35 AM
To: Jess Dawe
Cc: Ryan Shotton
Subject: FW: Victoria Climate Action

From: Personal info
Sent: May 19, 2018 12:13 PM
To: John Mullane
Cc: Engagement ; Personal info ; John Mullane VWCA Harbour Committee ; Jeremy Loveday (Councillor)
Subject: Re: Victoria Climate Action

Well said Mr. Mullane!
Please add me to your list of supporters.

Personal info

On Sat, May 19, 2018, 6:19 PM John Mullane Personal info > wrote:

Great to see some Climate Action. I do appreciate all the good work.

However, Business as Usual is not good enough. It is time to recognize that Victoria has a harbour and it is the City's biggest asset. The harbour is why we live here, it is why the tourists come, and it is a great attraction to high technology and green businesses as well as marine activity that supports our economy.

You cannot fully address Climate Action while turning a blind eye to the very heart of Victoria. I am informing you that there are boats, planes, motorized recreation craft, tug boats etc. that operate in the harbour. Climate action has to apply the Harbour as well.

Don't tell me it is not the City's responsibility. The City of Victoria is the organization most responsible for the well being of its residents.

Surely the pollution disaster at Laurel Point and adjacent waters is enough of a wake up call to the City of Victoria that they have to step up and fully protect our environment and the economy.

--
Regards
JOHN MULLANE,
Personal info

Bridget Frewer

From: Engagement
Sent: May 22, 2018 9:34 AM
To: Jess Dawe
Cc: Ryan Shotton
Subject: FW: Victoria Climate Action

Hi Jess,

Below is some more CAP feedback.

Roz

From: John Mullane
Sent: May 19, 2018 1:50 PM
To: Engagement
Cc: Personal info ; John Mullane VWCA Harbour Committee ; Jeremy Loveday (Councillor)
Subject: Victoria Climate Action

Great to see some Climate Action. I do appreciate all the good work.

However, Business as Usual is not good enough. It is time to recognize that Victoria has a harbour and it is the City's biggest asset. The harbour is why we live here, it is why the tourists come, and it is a great attraction to high technology and green businesses as well as marine activity that supports our economy.

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Surely the pollution disaster at Laurel Point and adjacent waters is enough of a wake up call to the City of Victoria that they have to step up and fully protect our environment and the economy.

--
Regards
JOHN MULLANE.
Personal info

Bridget Frewer

From: Engagement
Sent: May 15, 2018 2:35 PM
To: Jess Dawe
Cc: Ryan Shotton
Subject: FW: Draft Climate Leadership Plan
Attachments: Climate Change Action Plan 08 May 2018.docx

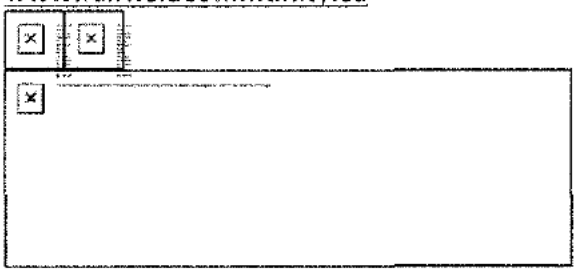
From: Vanya McDonell
Sent: May 15, 2018 11:28 AM
To: Engagement
Subject: Fw: Draft Climate Leadership Plan

Attn: Climate Leadership Team

Please see the attached comments regarding the City's Draft Climate Leadership Plan, on behalf of the FGCA Board of Directors. Apologies for providing this a day past your deadline.

Sincerely,

Vanya McDonell
Co-Executive Director
Fairfield Gonzales Community Association
1330 Fairfield Road Victoria, BC V8S 5J1
Ph: 250.382.4604 (Ext. 104) Cell: Personal info
vmcdonell@fairfieldcommunity.ca
www.fairfieldcommunity.ca



Principles:

1) The proposed initiative encompass both the soft and hard program elements, that is it embraces a program targeted at "people" as well as "measures and techniques" which is excellent. However, to ensure that this foundation endures and delivers results in the long term the following principles should be appreciated and embodied in the effort:
   a) Leadership;
   b) Awareness;
   c) Accountability;
   d) Recognition; and
   e) Reward.

Priorities:

2) Cost, simplicity and effect are the key factors in accessing priority. Look for early easy success. Further, generally speaking (to illustrate examples for buildings are used) the first priority is to reduce the load (turn down the thermostat), second to reduce the loss (weather strip doors and windows), third increase the system efficiencies (replace the furnace) and next shift to alternative lower GHG and renewables sources. Yes to get to the ultimate goal you will need to focus on all four areas, no doubt however, suggest, particularly in the early stages of the program, that you need to lead by example and demonstrate early success and reducing costs as a first priority to fund the shift to renewables is a sound starting point. New acquisitions and enhanced maintenance and renewal are two overriding exception to the above priorities. If you have to replace or expend significant maintenance on a fuel consuming item or you are acquiring new (buildings or vehicles) this is the time to force priorities three and four.

Objectives:

3) Year One:
   a) Resolve to establish a program embodying the five key principles: leadership, awareness, accountability, recognition and reward.
   b) Focus on Getting Your Own House In Order:
      i) Gather and compile existing consumption statistics, focus management effort on reducing energy and measure both energy (i.e. mega joules of energy in buildings, litres of fuel for vehicles) as well as GHG,s (benchmarking will be on energy basis and hence the focus with GHG reduction the obvious results not the driver-see item iii below);
      ii) Establish and fund an enhanced renewal and maintenance program focused on GHG reduction and force priority three and four above on all new acquisition;
      iii) Register all your buildings in Natural Resources Energy Star portfolio benchmarking program for buildings;
      iv) Mirror foregoing Benchmarking effort in all segments and program efforts going forward;
      v) Incorporate consumption data reporting in all existing organizational management reporting systems and community reporting and engagement programs;

vi) Publicise and celebrate achievements seasonally to the public and monthly on your web site (consider getting the Times Columnist to publish a "GHG Corner" on the business or life section in which your monthly results are reported).
vii) Use as a model, the communication and engagement effort for the bridge replacement project for this effort.
viii) Develop your idea sharing portal organized based on simple payback periods (yes keep it simple) say under one year, two to five years, five to seven , over seven years (you can acknowledge that a simple seven is about ten years if you include the escalation of energy and the cost to borrow money);
ix) Establish recognition and reward programs internally in year one to be followed by external programs in year two
x) Establish a steering committee of experts in the field to drive and advise the program.

4) Subsequent years
   a) Look to the steering committee to provide focus and priority for the out years
   b) Focus on priority three and four issues internally;
   c) Shift to external focus having launched the internal effort to put your own house in order and look to the new building code to drive that segment for buildings.

Comment

5) Bottom line, all principles are not created equal and you will need to shift focus based on the circumstances but ultimately "recognition and reward (celebration)" fueled by Leadership and Accountability will deliver Awareness.
6) If you are looking for inspiration, Amory Lovins most recent Ted Talk on the subject and our own departed Ursula Franklin and her focus on "Beautiful, Functional and Frugal" are recommended. If you google those two individuals you will find some interesting inspirational thoughts and perspectives. There are others of course.
7) Your program document in many places uses the term "climate change mitigation and adaptation action". Suggest you might consider using the term "climate change action" and consider "adaptation" as something to flesh out two to three years from now. Or in other words avoid debate or confusion about what is adaptation and what is mitigation, and duck that issue for the short term (keep it simple).
8) You need a slogan, a symbol plus rituals. Frugal and Functional might be a good slogan. A symbol based on nature is suggested, and timed annual celebration events as the ritual(s) are a possibility.
9) Best of luck and thanks for your efforts to build a better world for all!

Bridget Frewer

From: Engagement
Sent: May 14, 2018 12:39 PM
To: Jess Dawe
Cc: Ryan Shotton
Subject: FW: Climate leadership plan

Hi Jess,

More feedback for you as well as a question.

Roz

From: Personal info
Sent: May 11, 2018 3:51 PM
To: Engagement
Subject: Climate leadership plan

Sorry, I only actually learned about this today.

The biggest thing I see missing from your plan is any discussion (other than a vague goal for a plan by 2020) about retrofitting of existing buildings. These form the majority of the inventory -- why are they omitted from the plan?

David

Bridget Frewer

From: Engagement
Sent: May 9, 2018 8:40 AM
To: Jess Dawe
Cc: Ryan Shotton
Subject: FW: BC Sustainable Energy Association - comments on City of Victoria's draft 2018 Climate Action Plan
Attachments: 2018-05-08 - BCSEA-VC comments on 2018 Climate Leadership Plan.pdf

More feedback.

R

From: Thomas Hackney
Sent: May 8, 2018 5:58 PM
To: Engagement ; Fraser Work
Subject: BC Sustainable Energy Association - comments on City of Victoria's draft 2018 Climate Action Plan

Dear Fraser,

Please see the attached comments of the BC Sustainable Energy Association on the City of Victoria's draft 2018 Climate Action Plan.

Regards,
Tom

Tom Hackney | *Policy Advisor*
BC Sustainable Energy Association
250-381-4463 | tom.hackney@bcsea.org

B.C. Sustainable Energy Association
Become a member or sign up for our newsletter today!

BRITISH COLUMBIA
Sustainable Energy ASSOCIATION
Victoria Chapter

8 May 2018

To: Fraser Work, Director of Engineering and Public Works
City of Victoria
by email: FWork@victoria.ca

Dear Fraser,

Re The City of Victoria's draft 2018 Climate Leadership Plan

General:

The BC Sustainable Energy Association (BCSEA) welcomes this opportunity to comment on the City of Victoria's draft *2018 Climate Leadership Plan*. We commend the City for producing a plan of sufficient scope and magnitude to address the challenges of minimizing climate change and shifting to a renewable energy system.

BCSEA is a non-profit association of citizens, professionals and practitioners committed to promoting the understanding, development and adoption of sustainable energy, energy efficiency and energy conservation in British Columbia. We educate and empower British Columbians to move away from fossil fuels and to sustainable forms of energy. We have 500 members and five chapters across BC, including an active chapter in Victoria.

BCSEA strongly supports the City's present initiative to update its climate action plan and targets, and to align them with current knowledge and international leadership on climate action, as reflected in the 2015 Paris Agreement. Cooperation of all humanity and all levels of government is needed to address climate change, and Victoria has courageously stepped up as a leader.

Mayor's Message and Vision:

BCSEA strongly supports the vision for 2050 in the *Message from the Mayor* (p. 4) and *Victoria's Climate Leadership Vision* (p. 8). The vision appropriately focuses on values of health, well-being and inclusiveness, and links these to the achievement of the ambitious climate action and renewable energy goals. The vision acknowledges that it will be challenging to achieve the targets, but asserts that doing so is the best way to maintain Victoria's prosperity and well-being in the long term. The vision also it appropriately identifies that achieving the targets requires a whole-community effort and will affect our lives in many ways.

Targets of 80% GHG reduction by 2050 and 100% Renewable Energy by 2050:

BCSEA strongly supports the City's two related targets of achieving (a) 80% greenhouse gas (GHG) emissions reductions by 2050 and (b) 100% renewable energy (RE) by 2050. We endorse the reasons given for these ambitious targets in the *Introduction* (p. 7) and *Victoria's Climate Imperative* (pp. 10 - 12). In order to minimize the harmful effects of climate change and maximize human and ecological well-being in the long run, all levels of society in Victoria will need to work together; and our efforts will need to be matched by the efforts of everyone around the world.

Embodied Emissions and Energy Use, and End-of-Life Disposal:

BCSEA supports clearly and transparently including both embodied and end-of-life emissions and energy use in the City's targets and planning. Newer analytical models and methods of presentation make it practical to do this.

BCSEA acknowledges that this would increase the complexity of analysis and include many things beyond the City's boundaries and control. This problem cannot be avoided in a complete climate action plan. We believe confusion can be minimized by transparent analyses and the clear delineation of the City's various roles (control, influence, inspire) with respect to the limits of the City's jurisdiction.

Climate Leadership – Planning Principles:

BCSEA strongly supports the ten planning principles (page 9) as being appropriate and comprehensive.

We especially support the City's commitment to "lead and inspire." Although the urgency and danger of climate change are known as are many of the best solutions, societies all over the world are having trouble committing decisively to action. Some of the reasons for this are fear, inertia and conflicting messages. Inspiring leadership will do much to overcome inaction.

BCSEA also supports the City's commitment to "be a regional and national leader," despite the recognized jurisdictional limits to the City's powers. If Victoria strongly affirms and acts on appropriate climate action targets and measures, it will encourage other governments to do likewise and make it more difficult for them to avoid the issue. We agree with the City's plan to "influence" and "educate, inform and encourage" in areas where it cannot control behaviour.

Key Goals – All Sectors:

BCSEA supports the list of key goals given on pp. 12 – 13.

We suggest these additions for *Low Carbon Mobility*:

- Define the goals for the transportation system regionally, rather than just for Victoria.
- Explicitly include regional commercial and freight vehicles in the "vehicles are powered by renewable energy" goal.
- Add that the energy and emissions from transportation are minimized by transportation demand management planning for the regional distribution of goods, and for the delivery of goods to Vancouver Island from the continent (i.e. Canada, US, Mexico).

BCSEA would like to see intermediate targets specified where practical, as an important way to gauge progress and to signal direction. If these cannot be achieved in the final version of the current climate action plan, it should certainly be developed and published as soon as possible, as detailed plans are developed.

***2015 GHG Inventory* and *GHG Reduction Pathways*:**

Victoria's energy use should be inventoried and reported along with GHG emissions. The BC Government's Community Energy and Emissions Inventory (CEEI) centralised these inventories for use by local governments, but the latest version is from 2012. Victoria could ask (through UBCM) for periodic updates.

Where possible (i.e., not for waste), targets should be defined in terms of the percentage of the

way to 100% RE, as well as in terms of GHG reductions.

For all sectors, Victoria should set appropriate targets, not only for GHG reductions and percent of the way to 100% RE, but also for the overall amounts of energy used; and these should reflect the overall need to maximize energy efficiency and minimize waste.

Targets should also be set for renewable energy generation in the City. Victoria has good potential for distributed photovoltaic (PV) generation. Other RE, such as biogas, may not be able to make large contributions, but should not be wasted if it can be cost-effectively harnessed.

Improving energy efficiency and generating RE in Victoria will not only make Victoria more resilient in the face of climate change, but it will also help BC as a whole to meet its climate and energy targets. By reducing its demand for electricity, Victoria frees up low-GHG electricity for use elsewhere in BC, where there are energy intensive industries that must shift off fossil fuels.

Low Carbon, Higher Performance Buildings: Goals and Targets:

BCSEA supports Goal 1 – maximizing the energy efficiency of Victoria's existing and new buildings. This goal can best be accomplished as part of a BC-wide initiative led by the provincial government and supported by the federal government. Detailed modeling of the building stock will be needed to determine what specific energy performance goals are realistic and appropriate. Accordingly, BCSEA supports the City's proposed Deep Energy Retrofit Strategy, but we urge the City to consider this in a provincial, even national context.

The energy performance of buildings is very important. Historically, many people in BC (including in Victoria) have rationalized energy-wasteful buildings because energy was perceived to be cheap. But today, many people have trouble affording the energy to keep themselves warm in leaky, under-insulated homes. We believe it is in the public interest for all levels of government to support achieving high levels of energy performance in all BC's buildings.

BCSEA supports a regionally collaborative approach on the Step Code, and we urge the City to support the highest performance standards that it finds to be realistic.

BCSEA strongly supports the goal of phasing out oil heating. We hope this can be accomplished before 2030.

BCSEA strongly supports Goal 2 – having all buildings use only renewable energy. This should be accomplished before 2050. Electrically powered heat pumps for space heating are a well-established and very efficient technology. Heat pumps for water heating are less well known, but they appear to be effective. Given the long-term need to shift off fossil fuels, heat pumps should be installed in new buildings in preference to natural gas. Likewise, heat pumps should be preferred over natural gas heating for retrofits.

Low Carbon, Higher Performance Buildings: Priority Actions:

BCSEA generally supports the City's *Priority Actions* (pp. 22 – 23).

The "Building Centre of Excellence" and the "Deep Energy Retrofit Strategy" would ideally be part of a comprehensive provincial initiative to address the energy performance of BC's building stock (though if the province does not adopt this strategy, the City should implement it in cooperation with other municipalities). The City should consider training programs (possibly free) for architects and builders, and it should consider advocating to the provincial government to implement certification for builders. BCSEA would like to see more details on how the City

proposes to work with federal partners and local stakeholders on energy upgrade programs.

By "energy equity program," BCSEA understands a program to address low income homeowners and renters, who may have trouble affording energy conservation measures and who may experience "energy poverty." We support programs to address this: no one should be left behind in the City's efforts to achieve sustainability.

BCSEA strongly supports moving as quickly as possible to mandatory labelling of the energy performance of buildings.

The transition plan from oil heating should be to electric heat pumps, not to natural gas.

Low Carbon Transportation and Mobility: Goals and Targets:

BCSEA supports Goals 1 through 3. As noted above, we urge the City to consider Goal 2 – the fully integrated multi-modal transportation system – as being regionally integrated, and as including the transportation of goods.

Low Carbon Transportation and Mobility: Priority Actions:

It is especially important for the City to take leadership to achieve a regionally integrated transit plan that would support and enable substantial mode shifting away from personal motorized vehicles. This is the most necessary thing for achieving Goal 2 – a "fully integrated multi-modal transportation system." The City should prioritize persuading Victorians to shift from personal motorized vehicles to transit and active transportation; and, as noted above, a "fully integrated multi-modal transportation system" needs to be regional, not just within the City. This implies that a major part of the City's efforts should be toward achieving provincial and regional cooperation to an expanded, more effective transit system.

Action 3b. – "actions to support a radical improvement in low-carbon rapid and frequent public transit in, out, and around the city" (page 27) – BCSEA would like to see more details. What kind of transit does the City have in mind? How will the City work with BC Transit, the provincial government and other governments in the region to further this?

Action 3c. – an updated parking strategy – is very important. For new construction, the City should require that the purchase of a residential condominium suite should be separated from the purchase of a parking space. Thus, a car-free owner could avoid both the purchase cost of a parking space and the on-going property tax cost associated with the assessed value of a parking space. In this way, Victorians who go car-free will reap an appropriate financial benefit, and their subsidy of car users will be reduced.

The City should also update its street parking strategy, probably on an evolving basis, as improved transit service makes mode shifting more attractive.

Action 1 – the EV Ecosystem Strategy – will need to address access to charging for people living in MURBs. For apartment dwellers, the issue may be one of affordability of transportation. For condominium dwellers in existing buildings, the issues will include the ability or right to access EV charging services, and the cost of EV charging infrastructure retrofits. There will need to be coordination between provincial government, strata corporations and the City to address this.

For new-builds, the City should require adequate provision for EV charging. This should likely be Level 2 charging for all parking spaces. The City should probably require actual charging stations to be installed, rather than accepting only electrical rough-ins.

Action 5 – collaboration to deliver improvements in commercial vehicle performance – should be framed more ambitiously to include (a) a zero-emissions regional freight transportation concept; and (b) a continental zero-emissions freight transportation system to deliver goods to the region. BCSEA acknowledges that these areas are mainly controlled by the provincial and federal governments, and Canada in relation with the US and Mexico. Here the City should "lead and inspire."

The City should further develop priority actions in relation to Goal 3 – smart land use planning – and apply a regional scope of planning, as well as addressing within-city planning. Regional development patterns greatly affect transportation emissions and energy use. Here again, the City should "lead and inspire" in favour of integrating climate action and renewable energy principles into the region's growth strategies.

Finally, the City should "lead and inspire" in advocating the shifting of infrastructure spending by all levels of government from transportation systems that encourage more energy use and emissions to those that encourage lower energy, lower emitting modes of transportation. This is in line with the *Pan-Canadian Framework on Clean Growth and Climate Change*, to which BC is a signatory, specifically New Action 3 in Section 3.3 Transportation: "Shifting from higher to lower-emitting modes and investing in [transit] infrastructure." BCSEA commends the City for its letter on this subject to the Prime Minister (29 January 2018).

More generally, both the BC and the federal governments have proposed significant amounts of "green" infrastructure spending that is billed as helping to address climate change, but there are no established criteria to ensure that such monies will be optimally prioritized to achieve the best climate action results. The City can have a role in advocating for transparent, robust criteria and priority ranking for "green" infrastructure spending, especially where there are associated municipal contributions.

Low Carbon Waste Management Systems: Goals and Key Targets:

BCSEA supports the key goals. BCSEA supports a "consumption based" approach to assessing embodied emissions and energy use, rather than a "territorial" approach. The work of Dr. Jennie Moore on ecological footprints could help the City with this.

BCSEA generally agrees with the key targets, but we are not in a position to judge the reasonableness of the specific target years or percentage goals.

BCSEA urges the City to add a goal for Victoria to reduce the size of its waste stream through (a) encouraging less wasteful consumption and (b) advocating for less wasteful production, packaging and delivery of goods and services.

Low Carbon Waste Management Systems: Priority Actions:

BCSEA urges the City to add actions to support the above-mentioned goals of (a) encouraging less wasteful consumption and (b) advocating for less wasteful production, packaging and delivery of goods and services.

BCSEA is aware that many of the goods and services that are produced and delivered to Victoria have huge embodied energy and emissions that could be reduced, often with little or no reduction in the quality of the end product. For example, packaging often has more embedded energy, emissions and resources than the product being delivered, and packaging is frequently designed so that it is difficult or impossible to re-use or recycle. This can put a large burden on

the City's waste disposal system.

BCSEA also urges the City to include specific measures to address the large volumes of waste caused by the cruise ship industry. For example, the City could "lead and inspire" by collaborating with other ports of call for cruise ships to apply best-practices standards to the cruise ship industry, and to ensure those standards reflect appropriate climate action goals.

Adaptation – Preparing for a Changing Climate:

BCSEA supports the vision and goals proposed. It is appropriate to include human health and safety; public information; economic assessments; risk management; and measures to address the natural environment. BCSEA agrees that a collaborative, engaging approach with all stakeholders is appropriate, especially as adaptation to climate change is a new area of activity for the City.

City Leadership & Municipal Operations:

BCSEA generally agrees with the goals, key targets and priority actions. Without wishing to diminish the importance of leading by example, BCSEA suggests it is even more important to lead by inspiring community action and cooperation from other governments.

BCSEA agrees the City should bring Victorians good data on the issues. Perhaps even more important is for the City to continue to convene solutions oriented conversations for all sectors of society, helping to envision, plan for and act on changes on our energy systems bigger than most of us have experienced before.

BCSEA would like to know what steps the City will take to develop the Energy and GHG Information Management Strategy (EGIMS).

Next Steps:

BCSEA agrees that community education and engagement will be critical to the success of the Climate Action Plan.

Additional Comments and Specific Measures:

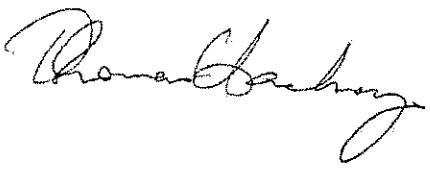
Please see the detailed comments submitted under separate cover by Rafe Sunshine, BC member for BCSEA, Victoria Chapter, dated 29 March 2018.

Conclusion:

BCSEA looks forward to seeing the City's next steps on this very important issue.

Thanks again for providing this opportunity to comment on the Climate Action Plan.

Sincerely,



Thomas Hackney, Policy Director

Bridget Frewer

From: Engagement
Sent: May 9, 2018 8:39 AM
To: Jess Dawe
Cc: Ryan Shotton
Subject: FW: Climate Leadership Plan Feedback

And another...

From: Personal info
Sent: May 8, 2018 10:50 PM
To: Engagement
Subject: Climate Leadership Plan Feedback

Dear City of Victoria, Climate Leadership Team.

On May 3, a small group of seven friends, and some family, held a group discussion about the City's Climate Leadership Plan. Our group applauds your efforts to elevate climate action as important city policy. At the same time, our discussion pointed to some key deficiencies with the city's efforts.

Some key themes emerged from this discussion that we wanted to share with you. Residents are interested in increasing their awareness around how to be better environmental stewards. However, the city, region, and government in general are not engaging residents in a meaningful way. Goals are lofty (e.g., massive increase in renewable energy), distant (e.g., 2050), do not relate to resident's daily lives, and appear to be mostly aspirational rather than practical. Our discussions kept coming back to visible things like waste and transit. However, climate action planning documents use inaccessible language that confuses and does not help the audience to relate. The city should be engaging and educating residents on how to reduce their carbon footprint, and why this is important. The city should also be integrating climate targets into planning materials and to focus on real, manageable and achievable goals in short (e.g., 1, 3, 5 year) time periods.

Waste

- There is a significant lack of awareness (which in part may be generational) around how much waste we produce, what is done with that waste, and what the climate, environmental, economic and social impacts are.
- The city needs more downtown recycling and compost options. More incentives to.
- The city, and region, needs to do more education and outreach to explain the types of waste streams, how waste is managed, and why efficient and effective waste management is important.
- Provide more incentives for residents to return, reuse and reuse potential waste, and to view waste as a commodity instead of product destined for the landfill. Create disincentives for poor waste management with levies and penalties.

Transport/Transit

- Impose vehicle levies for those who want to drive more. The principle that if you want to drive, you should pay for it.
- Impose more incentives for people to use alternatives to single occupancy vehicles.
- Have goals for people using alternatives to single occupancy vehicles in the short term (e.g., 1, 3, 5 year).
- Increase the number of transport options (e.g., sea bus, trains) from places like the West Shore into Esquimalt (military) and Victoria.
- Require that all taxis, Uber and busses use renewable energy.

- Have the city work with other municipalities and the CRD to put climate at the forefront of a regional transit/transport plan.

Buildings

- The city must do more to encourage energy efficient building for existing and new builds.
- Cost is a huge barrier for companies and developers to build energy efficient. The city must work to incentivize efficiency and to lower costs.
- There is a lack of resident and business knowledge around the benefits of building energy efficient.
- The city needs to develop more incentives to use renewable energy to power alternatives like EV charging for vehicles.

Adaptation

- More education on what adaptation means, including more accessible language to make it easier for residents to understand climate impacts on their lives:
    - sea level rise (e.g., how does climate impact housing value?)
    - increasing precipitation (e.g., how does this impact transportation infrastructure?)
    - heat waves (e.g., heat stroke, loss of life)
    - water contamination (e.g., is climate a threat to our water supply?)
    - loss of biodiversity (e.g., what will climate do to our environment and why is this important?)
    - economic pressures (e.g., how does climate impact insurance?)

Thank you very much for your consideration.

Personal info

Bridget Frewer

From: Engagement
Sent: May 9, 2018 8:38 AM
To: Jess Dawe
Cc: Ryan Shotton
Subject: FW: Draft Climate Leadership Plan Feedback

Here's another one re: the CLP draft feedback...

Roz

-----Original Message-----
From: Personal info
Sent: May 8, 2018 10:54 PM
To: Engagement <engage@victoria.ca>
Subject: Draft Climate Leadership Plan Feedback

To whom it may concern,

Thank-you for publishing a detailed draft climate plan online and thereby demonstrating some much needed leadership in face of the most important issue humanity has ever faced.

Unfortunately I was only recently made aware of the plan, and have not yet had time to read through all of the details in order to submit a fully-formulated comment by May 8th. However, in case it has not already been caught, there is a small factual error on page 4, where it is stated that "In 2017, the atmospheric concentration of carbon dioxide (CO_2) exceeded 400 parts per million (ppm) for the first time in the earth's history."
Current atmospheric concentrations of CO_2 are indeed higher than they have ever been while humans have been roaming the Earth, but they are definitely not the highest in Earth's history. CO_2 concentrations have been in the thousands in the early Jurassic for example.

I hope there will be further opportunities to engage in initiatives and discourse on this very important topic, not only within the City of Victoria but also in a synchronized manner with all other municipalities across the region.

Thank-you,
Personal info

Bridget Frewer

From: Engagement
Sent: May 8, 2018 4:07 PM
To: Jess Dawe
Cc: Ryan Shotton
Subject: FW: Comments on Victoria's Climate Leadership Plan
Attachments: 2018-05-08 Victoria-CLP-Comments.docx

Hi Jess,

Attached are some comments on the draft CLP, received today.

Roz

From: Personal info
Sent: May 8, 2018 1:26 PM
To: Engagement
Subject: Comments on Victoria's Climate Leadership Plan

I have attached an MS-Word document with two personal comments on the draft CLP.

I would be happy to explore them in more depth with City staff or Councillors.

Thanks,

Personal info

Victoria BC
Personal info

This submission contains two comments on the Victoria Climate Leadership Plan from Personal info Personal info

1. Specifics:

I would like to see a list of specific replacements for specific uses of fossil fuels in Victoria, such as gas hot water boilers, restaurant gas grills, delivery trucks, dump trucks, excavators, and others. The plan lacks credibility with professionals and business owners if it doesn't show how our vehicles and buildings could eventually meet its goals.

2. Parking and Trucking

Summary: Requirements for underground parking trigger a lot of diesel use.

At the business consultation event on May 2, transportation specialist Sarah Webb mentioned that as the city densifies with more and more residential units, there will not be enough space on the roads to have private vehicles for every resident. Recent larger buildings all put these spaces underground, so that it is common for new residential towers to have two or more levels of parking below grade. Digging these out removes an enormous amount of rock and dirt. In recent times this material appears to be trucked up the Malahat for disposal somewhere near Shawnigan Lake.

I have done a rough calculation (see spreadsheet below) that excavation of a typical site of 35m x 70m (Johnson St. @ Vancouver St) with three levels of underground parking generates roughly 800 trips with a 12-yard dump truck and long dump trailer, using something like 50,000 litres of diesel. Moving the material for three floors below the site across from City Hall was more like 1,600 trips and 100,000 litres of diesel. These are in addition to the fuel to dig it out, and the carbon footprint of hundreds of cubic metres of concrete and steel in parkade walls, floors and pillars – a lot of embodied energy. All to fit more cars downtown.

This line of thinking suggests that Victoria should relax its requirement for off street residential parking in new towers. Victoria could support developers who decouple sales of parking spaces from sales of units, as was done at Dockside Green.

The spreadsheet below is a 'back of the envelope' order-of-magnitude calculation of how much diesel is burned to move the material from a couple of example sites in downtown Victoria. I have tried to make reasonable guesses but these numbers all require validation for accuracy.

Effects of underground parking in Victoria

How much diesel to move the dirt for a typical underground parking lot ?

Note: These are 'back of a napkin' estimates and should be verified if accuracy is important

Example:	Vancouver @ Johnson St	Douglas @ Pandora St	
Lot size	35 x 70	50 x 100	metres
Lot Area	2450	5000	sq. metres
Parkade/Basement levels	3	3	stories
Depth per level	2.5	2.5	metres
Excavation Volume	18375	37500	cubic metres
Convert to cubic yards	1.3	1.3	Cubic Metres -> Cubic Yards
Material to remove	23,888	48,750	Cubic Yards
Expansion factor when material is excavated (est.)	10%	10%	
Material to load	26,276	53,625	Cubic Yards
How many trips up the Malahat ?			
Standard Dual Axle Dump Truck Capacity	12	12	Cubic Yards
Extended Dump Trailer Capacity (est.)	18	18	Cubic Yards
Total Capacity	32	32	Cubic Yards
Truck & Trailer loads to empty excavation	821	1,676	Loads up Malahat
How much diesel ?			
Distance travelled to Shawnigan Lake & return (est.)	80	80	km
**Truck & Trailer Diesel Consumption (3 mpg)	78	78	litres / 100 km
Diesel use for one trip	62.4	62.4	litres
Diesel use for one excavation	51,239	104,569	litres

** One estimate of Class 8 3-axle truck fuel consumption was 6 mpg. The trailer doubles the weight so I have doubled the fuel consumption.

Bridget Frewer

From: Engagement
Sent: May 2, 2018 4:11 PM
To: Jess Dawe
Cc: Ryan Shotton
Subject: FW: Climate Plan

Not sure if you want to receive emails like this?

Roz

From: Personal info
Sent: May 2, 2018 2:37 PM
To: Engagement
Subject: Climate Plan

First off, you need to stop dumping your sewage into the Pacific.

Sent from Mail for Windows 10

-----Original Message-----
From: Public Service Centre - Internet email <publicservice@victoria.ca>
Sent: April 9, 2018 11:02 AM
To:Personal info
Subject: RE: General Inquiry

Hi Randal,

Thank you for contacting the City of Victoria. I have forwarded your email to our Engagement Department.

Kind regards,
Marissa

Public Service Representative
Finance Department
City of Victoria
1 Centennial Square, Victoria BC V8W 1P6

-----Original Message-----
From: webforms@victoria.ca [mailto:webforms@victoria.ca]
Sent: April 6, 2018 7:57 PM
To: Public Service Centre - Internet email <publicservice@victoria.ca>
Subject: General Inquiry

From: Personal info
Email
Reference : http://www.victoria.ca/EN/main/residents/climate-change/climate-action.html
Daytime Phone : Personal info
Hi, I am writing to this organization because on looking at your Plan, It is obvious that for some reason you still believe Hydro electricity from the BC Hydro grid to be a renewable source. I am hoping that you will reconsider that position in light of this comment that has been around for quite a while. In order for an energy source to be even largely renewable the net effect has to be of resources used to create the energy, whether it is wind, solar, geothermal or hydro dams, are renewed. The river valleys that are consumed in the production of electricity in this Province are not renewed.

In fact BC Hydro refuses to even consider including the cost of decommissioning Site C in the already highly inflated costs for the proposed dam. Your city, in proposing to use BC Hydros grid supply to alleviate global warming, is falling victim to the same ignorance about the damage done related to climate change, and adaptability to it, as well as the denial of social, environmental and resource loss costs that BC Hydro has promoted since their attempt in 1983 to build this thing. Attacking one aspect of our sustainability problems is a fine thing, but irrelevant if you make another aspect worse in the process.

I am asking that you include in your plan a clear statement that you will not include energy from any new large dams, specifically Site C, as part of a renewable energy option. I ask this in recognition that the ambitious conservation and energy efficiency targets identified will take Victoria through a transition

period until clean green energy systems can be brought on stream in your back yard rather than a destructive, uncosted, mess in mine.

Personal info

Looking forward to hearing your thoughts on this.

IP Address: Personal info

Bridget Frewer

From: Jess Dawe
Sent: July 17, 2018 9:42 AM
To: Bridget Frewer
Subject: Uvic Student FW: Feedback - CLP
Attachments: PP1_EandP.pdf

From: Melinda Jolley
Sent: March 22, 2018 10:58 AM
To: Personal info
Cc: Jess Dawe <jdawe@victoria.ca>; Julie Potter <JuPotter@victoria.ca>
Subject: FW: Feedback - CLP

Personal info

Thank you for sharing your feedback about the Draft Climate Leadership Plan.

I have included your feedback in our Engagement Summary that will be shared with Council this June.

If you have any specific questions, Jess Dawe our Manager of Energy and Climate Action can be in touch with you.

Thank you again for sharing your feedback on this plan.

Best regards,

Melinda Jolley
Engagement Coordinator

From: Personal info
Sent: March 20, 2018 5:20 PM
To: Engagement <engage@victoria.ca>
Subject: Feedback - CLP

Hi !

Personal info

I attached the file to this email.

Concerning the new Victoria Climate Leadership Plan: Why is renewable energy not in the picture ?

Charlotte Lafleur *Institute of Integrated Energy Systems, University of Victoria, BC, Canada*

March 13, 2018

The City of Victoria's new Climate Leadership Plan is open for public comments until April 18th and this is everyone's chance to help the city reach the ambitious goal of a 100% renewable city and an 80% green house gases (GHG) reduction by 2050. Those who are brave enough to read the 42 page document will soon realise that the main question is left unanswered: how are we going to reach this goal? Aside from the fact that some of the targets are unrealistic (all personal vehicles to be electric by 2050?) and many aspects lack a proper implementation strategy, the most flawed portion is an absence of initiative for small scale renewable energy production and district energy.

When the aim is a transition to 100% renewable energy, an organization needs to consider four main aspects: transportation, energy efficiency, heating source, and electricity source. While the first three are addressed in the city of Victoria's Climate Leadership Plan, the latter is mentioned only twice: "Through our 100% renewable energy target, by 2050 Victoria will only run on technologies that use sunshine, wind, flowing water, geothermal heat, and/or non-fossil fuels or biological processes to power our lives". Their clumsy sentence structure and misuse of flowing water can lead to misinterpretation. One may think this implies a local "run-of-river" technology, or other local renewable energy production, but the plan otherwise makes no mention of local energy production. The second mention of renewable energy is point 5 of the planning principles: "Renewable energy for all - We will work to remove barriers to ensure that our community has access to affordable, renewable, and efficient energy options. All City planning efforts act to deliver a low carbon, renewable energy future." This fifth pillar of eight weakens the structure of the plan by underlying what is lacking; no part includes renewable energy generation. In their proposal, the City of Victoria considers the BC grid to be 96% hydro-electric, which is based on the 2010 Clean Energy Act that mandates 96% of BC's grid be from renewable sources by 2016. This assumption is far from rigorous, as hydro-electricty is not the only renewable energy source used in BC, but mostly because an overreaching goal from 8 years ago is not a fact.

But why should renewable energy production at the municipal level even be addressed? The BC power grid is already over 90% renewable source from hydro-dams, wind, and bio-fuel, right? Well, in terms of energy produced, yes. But, despite BC's objective of being a net renewable energy exporter by 2016, the province imported more electricity than it exported in 5 of the last 10 years. In addition to being the province with the largest US importation of electricity, BC also trades with its provincial neighbour's fossil fueled based energy. Despite having hydro and nuclear generators, the US portion of the Western Interconnection is also fed by larger portions of natural gas and even coal. In the past three years, imported electricity has been varying between 10-15% of BC's total production (MWh). And so, using simple math and approximate numbers: if 12% of the electricity used to respond to the demand is imported from a source that is only 60% renewable based, and BC's energy is 94% renewable, then the energy used to power your house is, on average, only 90% renewable. One might still argue that though this does not entirely correspond to the 100% renewable energy target set by the City of Victoria, 90% is a very acceptable number.

Let's do a bit more math. We know 88% of BC's electricity production (MWh) comes from hydro with storage (before Site C). Without a doubt, water is a renewable resource, and as a *québécoise* with a degree in water resource engineering, I certainly encourage making efficient use of Canada's abundant supplies. However, hydroelectricity may be renewable, but it is not emission free. Emissions for Site C over its life cycle are double that of a similar capacity wind farm. Biomass plants, BC's second most used source of renewable energy, produce 10 times the emission of a normal dam. Both energy sources are certainly renewable, but they are not necessarily clean.

The City of Victoria's objectives for 2050 include the complete electrification of personal vehicles, of 30% of the commercial fleet, and of heating. This, as well as a 20% population growth in the next 25 years, will add to the electrical demand, even if citizens modify their behaviours to reduce electricity consumption. So why is carbon emission from electricity not accounted for in the City's second target: a 80% GHG emission reduction by 2050?

Other cities have taken the matter into their own hands. Guelph, Ontario, has been acknowledged by the United Nations Environmental Program as the most advanced city in Canada with respect to district energy: they can locally provide up to 50% of the city's heating needs. Vancouver developed the Neighbourhood Energy Strategy to offset carbon emissions as part of the Greenest City 2020 Action Plan. In 2010, they installed a plant in Southeast False Creek that captures thermal energy from the sewage system and redistributes it in a heating system, while being profitable to the city. In the T'Sou-ke Nation's 250 people community, a 75kW-capacity solar PV installation supplies the municipality's infrastructure and feeds back into the grid for additional revenues, and 38 of the 96 houses are equipped with thermal and solar systems. The cases of Guelph and Vancouver differ from that of the T'Sou-ke Nation. The distinction lies in that the first two are both examples of district energy while the latter is a local scale production of renewable energy in an effort to decentralization power production.

Local electricity production is the use of local resources (wind, sun, or rivers) to power local infrastructure or businesses. Whatever fraction of the electricity is not used can be fed back to the grid for a bi-monthly credit from BC Hydro. Popular concepts include Clean Energy Parks, where a dedicated area of the city serves to host clean energy facilities, solar roof panels, and storage. District energy is the local production and distribution of thermal energy for heating and cooling purposes. It is encouraged worldwide by international organizations like the United Nations and the International Energy Agency. Closer to home, BC Hydro devotes an entire page of their website on district energy benefits.

Both approaches can combine with energy efficiency policies to create a robust and comprehensive way to tackle GHG emissions, but they also enhance community-based economies, increase the security and reliability of the electricity system, and ultimately lead to the more efficient use of resources. The City of Victoria does not need to go very far for inspiration: Dockside Green, situated in Vic West, is a high-density neighbourhood combining residential, commercial, and industrial properties in an environmentally sustainable community. They use a district heating system fueled by waste wood, and are aiming at being the first GHG neutral community for all building energy use in North America. Natural Resource Canada refers to this concept as *Integrated Community Energy Solutions* and suggests it is "the next important step toward smart, sustainable use of our energy resources".

Victoria's leadership has influenced its neighbouring municipalities in the past, and it is time to do it again with the Climate Leadership Plan. We cannot have another plan with clear objectives but unprecise and inconsistent routes to reach them. We need innovation and clear actions that will make *us*, not Vancouver, the greenest city in Canada.

A respectable kick-off would be to stay true to the Climate Leadership Plan's third planning principle: "Energy is visible". This will start by re-organizing Victoria's website so enery related information can be found easily, and by making the Community Energy and Emission Plan (CEEP) public on the website. Citizens need to be aware more than 50% of Victoria's emissions come from electricity and heating so they may take action themselves.

Next step is to tackle the "renewable energy" gap with a pre-feasibility study on the city, which would include a natural resource assessment and an economical and technical evaluation. The University of Victoria has many competent professors and students in terms of energy systems that it would be an aberrant oversight not to use knowledgeable resources.

At the final stage, a partnership with the energy industry to build the system will create new green employment opportunities for engineers and qualified technicians.

An added benefit of local production and district energy is the inherent application to the residents' increasing concerns for energy security. Victoria cannot continue to depend on a connection to the mainland for electricity in the case of earthquakes or an increase in the frequency of extreme weather events. With an independent system, the city and neighbouring municipalities' resilience can be enhanced.

All in all, the 100% renewable energy target is simply impossible if the electricity on which we heavily rely is only 90% renewable. We stand before a crossroad where, as Professor Dumbledore puts it, "[w]e must face the choice between what is right and what is easy." I encourage the council to provide us with a clear path, achievable goals, and precise incremental steps to help achieve the mandatory GHG reduction target. Based on past failures (*cough* Blue Bridge *cough*), transparency and communication are the key. This is why we need to be informed of not only the long-term goal, but also of every step along the way. But mostly, I urge them to consider renewable energy production and district energy as a way to offset emissions, to unite our dynamic city towards a common environmental and economical sustainability goal, and to remain a Canadian Leader through the fight against climate change. □

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City of Victoria 2018 Climate Leadership Plan (CPL) March 29, 2018

Strategies and Actions for a Low Carbon Future

General Feedback: There are many aspirational goals/ verbiage without definite concrete ideas (only ideals) to produce the 80% GHG emission reductions with 100% Renewable Energy within a ***defined timeline***.

Specific Recommendations: Key Goals (pg. 7)

1. **Low Carbon/ High Performance Buildings**

· Mandatory Step Code 3 for ***All*** **Renovations of Existing Housing stock.**
· Mandatory Step Code 4 and 5 for ***All*** **New Construction.**
· Use of city **Tax Incentives** to initiate/ incentivize **Step Code 3 upgrades** in existing housing (similar to the James Bay heritage housing tax breaks).
· Use of **Solar Energy (photovoltaics)** on rooftops to generate electricity for selling back to BC Hydro for **Net Zero Energy Consumption.**
· **Downtown buildings** heated by **Ocean Thermal Heat Exchange** or **Sewage Heat Extraction** and **Heat Pump Exchange. Eg. Save-on-Foods Ice Arena** to *deliver* **Waste Heat** to the surrounding Condominiums, High Rise Apartments at the Hudson Housing Projects and Downtown City Hall Projects.
· **Sewage Heat Extraction** to schools, recreation centers, daycare centers and other public buildings.
· **Energy Transferable Mortgages** for householders (single family, apartment complexes, condominiums, store owners and senior's housing facilities) that wish to **retrofit to Step Code 3 or better for the conserving of energy.**

2. **Low Carbon Mobility**

· **Downtown City Car Tax** (similar to the car tax of the city of London, England) for ***All*** **Internal Combustion Engine driven vehicles.**
· **City Parking Meters for E-Bikes/ E-Vehicles** for **Recharging Batteries** while parked.
· **Downtown Electric Vehicle City Parkades with Electrical Charging Stations.**
· **One-way Secondary Streets (eg. Leighton St. to go west one way; Brighton St. to go east) – both streets for Pedestrians, Cyclists** and **Mobility Devices** to **improve connectivity between various communities** (eg. Victoria to Oak Bay) with **overnight residential parking from 6 pm to 8 am.**
· **Sidewalk widening** to **accommodate Pedestrians, Mobility Devices, etc.** ***without*** **Utility Poles in the middle of** sidewalks.
· **One-way Major Thoroughfares (eg. Shelbourne Ave.) towards U. Vic for Cyclists** and **Electric Vehicles** giving **better safety** to those travelling this route.

· **Wind Turbines** on the **breakwater** at **Ogden Point** and **on Clover Point to**

provide electrical shore power for Cruise Ships and lessen wind's force on James Bay and Victoria Beacon Hill.

· Combine Rooftop Solar Panels/ Wind Turbines with number of Community Batteries to provide Emergency Electrical Power to Victoria in the case of a Major Earthquake.

· Electrical Shore Power for Cruise Ships at Ogden Point to stop the ships from burning fossil fuels while in port helping to stop pollution in James Bay.

· Electric Trams from Ogden Point along Dallas Rd. and left on Government St. and past the Legislature Buildings and the Empress Hotel, across the Causeway and down a Government St. Pedestrian Mall (except for the electric tramway). The Trams would travel past Chinatown to Discovery St. (*where the new Phillips Brewing Tasting Room is located*) and turn about at the BC Power Company lands for the return trip to Ogden Point. The tramway would bring cruise ship passengers to the downtown core on a faster scenic route eliminating the bus traffic through the downtown core while pedestrians could enjoy the absence of vehicle traffic.

· Seabus transport should be established from the Western Communities to Victoria (perhaps travelling under the new Johnson St. Bridge to berth at the old Capital Iron site.

· Use of Battery-Electric Buses with dedicated Bus Lanes from downtown Victoria to YYJ Airport and to the BC Ferry Terminal.

· Electrify Commuter Rail Service to and from the Western Communities from Victoria with future rail renewal for an electrified Up-Island service to Courtney/ Comox.

· Use of Biofuel for Aircraft Transportation from Victoria Harbour using Canadian Mustard Seed Oil (Brassica Carinata) that could be grown in Central and North Saanich Agricultural Lands as well as Metchosin. Brassica Carinata is a winter crop to aid in ground cover and prevents soil erosion due to increased precipitation during the winter months. The byproduct is a usable fodder for livestock.

·Use of Renewable Natural Gas (RNG) currently extracted from the Hartland Landfill to replace LNG (from *fracking* that is currently polluting groundwater with carcinogenic chemicals and causing 4.6 earthquakes on the Richter scale).

3. Low Carbon Waste Systems

· Education re: What is Recyclable and Increase Community Recycling Destinations.

· Increase the number of Community Repair Cafés in Victoria, Oak Bay, Vic West, Saanich and CRD

· Composting of Garden Waste/ Kitchen Scraps/ Marijuana Grow Operations Waste, etc. for Fertilizer for City Gardens and Community Gardens; Compost for sale to Local Crop Producers to offset costs.

· Use of Grocery Store Waste for Food Banks (if the produce/ products are still edible – otherwise – use in Compost = Fertilizer for crop production and urban fruit/ nut trees.

4. Adaptation to Climate Change

· Increased Precipitation in Winter Months + Increased Number of Storms and Storm Severity + Sea Level Rise of 2 m. means:

· Increased Oceanfront Property Erosion (Victoria, Esquimalt, Oak Bay, Saanich, Central Saanich, North Saanich, Sidney, Metchosin, Colwood, Langford, Sooke, Jordan River, Port Renfrew, etc.) would be affected.

· Use of rock projections (eg. McNeil Bay) to break wave action on coastlines.
· Seed boulder projections with oysters to further break wave action severity (plus oysters provide for future Food Security).
· Replace some of the road pavement with rubber Pavement Bricks to quiet vehicle noise levels and allow storm water on streets to percolate into the groundwater. This would lower amount of street flooding/ home basements due to inadequate storm sewers/ storm drains and increase water-table to avoid summer drought conditions.

· Decreased Precipitation of Summer Months means:

· Plant Native Trees and Grasses to maintain ground cover vegetation to prevent soil erosion from increased wind storms and possible heavy rain events.
· Plant Shade Trees and Fruit/ Nut Trees/ Olive Trees, etc. to augment Food Security should ALR lands experience Drought Conditions too severe for past Irrigation Practices.
· Plant adapted semi-tropical Trees/ Plants to absorb CO2 from the atmosphere.
· Aeration System on Elk/ Beaver Lakes to prevent buildup of Cyanobacteria in lake water to Secure another Source of Drinkable Water should the Sooke Water System become jeopardized due to Earthquake/ Wildfire conditions or for ensuring additional Water Security for the Victoria/ CRD.
· Carbon Capture by using Sodium Hydroxide (NaOH) canisters to absorb CO2 from the atmosphere on Ogden Point and Clover Point Wind Turbines as part of a Municipal Cap and Trade project to *lower* Victoria's greenhouse gas emissions.

5. Low Carbon Municipal (City) Operations and Leadership

· Eliminate sources of Methane Gas in the Victoria area by use of a Mobile Mass Spectrometer (MMS) and aerial drone with Methane Detection Sensors (MDS).
· Measurement of GHG's within CRD by use of the MMS and MDS to determine baseline measures of GHG's and if subsequent actions are resulting in emission reductions. (*Los Gatos Research – Ultraportable GHG* (CH4, CO2, H2O) *Analyser* (email: lgrinc.com/advantages)
· Mandatory CO2 capture of emissions from light/ heavy industrial businesses by use of Emissions Capture Tubes filled with salt water and algae. Algae growth to be reclaimed/ cleaned/ dried/ used as fertilizer or livestock feed.
· Demonstration Project for Ocean Concrete's plant on Bay St.

· Health of the Elder Community *must be enhanced* by taking Carbon Particulate out of the environment. Higher Summer Temperatures must bring better Bylaw Code into effect to curtail older fossil-fueled Vehicles and *other sources* of pollution from the Downtown Core.
· Provide Educational Opportunities and Community Involvement *to prevent* Social Isolation, thus *decreasing* Physical, Mental, Emotional Instability.
· Establish Community Healthcare Centers for *better* health of seniors by Nurse Practitioners.
· Provide Incentives for the Elder Community to *volunteer* their time/ efforts in Daycare Centers and Recreation Centers as these would become Cooling Centers to *escape* the Summer Heat.
· Resolution to UBCM re: Provincial Government *incentivize* financial means to Retrofit buildings to Step Code 3, 4, 5 levels of Energy Efficiency.

· **More Car Free Days** to provide **public education/ information on Renewable Energy** and the **beginning of Government St. as a *summertime* Pedestrian Mall.**
· **Support Public Education by a city grant for Renewable Energy Projects eg. BC Sustainable Energy Association's Youth Involvement Project for high school students to explore Renewable Energy careers through school Work Experiences with BCSEA Renewable Energy businesses.**
· **Support in-school Renewable Energy projects to benefit community.**
· **Municipal Employees *must show leadership* in using Renewable Energy modes of transportation to and from work. eg. e-bikes, e-vehicles, e-seabus, e-buses, e-tramway, skateboarding, walking, etc.**

Conclusion

These many suggestions have had months of consideration by this BCSEA Steering Committee member and hope they assist the City of Victoria in the pursuit of the goal for 100% Renewable Energy by 2050.

Sincerely –

Personal info

Bridget Frewer

From: Jess Dawe
Sent: July 17, 2018 11:49 AM
To: Bridget Frewer
Subject: south island FW: Victoria Climate Leadership - TRANSPORTATION

From: Dallas gislason [mailto:dgislason@southislandprosperity.ca]
Sent: May 11, 2018 4:42 PM
To: Jess Dawe <jdawe@victoria.ca>; Sarah Webb <swebb@victoria.ca>
Cc: Emilie de Rosenroll <ederosenroll@southislandprosperity.ca>
Subject: Re: Victoria Climate Leadership - TRANSPORTATION

Hi Jess,

The South Island Prosperity Project received the email below regarding the City of Victoria's Climate Leadership Plan so I'm replying with some comments here. We are not subject matter experts in transportation or in climate change mitigation, but I'd like to emphasize that we recently completed an application to the Federal Government's Smart Cities Challenge and the theme was directly related to transportation outcomes you've noted. I would encourage us to review the VISION 2040 that was developed by the partners committee (which Lisa Helps was co-chair) that involved 10 of the region's 13 municipalities along with First Nations partner at Songhees. The vision document and the Smart South Island proposal can both be found here: https://smartsouthisland.com/canadachallenge

On the note of 2040 Vision, it's not clear to the reader why the goal dates are not the same across each area. Especially since the RGS is 2038 (we elected to align the vision for Smart South Island to RGS, we just thought 2040 sounded better than 2038 and would resonate better with the public and our stakeholders). I assume this Climate Leadership plan is linked to the 2008 legislation around GHG reductions or other requirements that suggest target dates? Either way 2041 seems like an arbitrary date, especially when 2030 and 2050 are the other ones.

Secondly, with the City of Victoria being the regional centre of business, this implies that most vehicles driving around over of the course of a given day are likely from outside the city proper. The goals may want to reflect that in some way, like "vehicles entering the city" as part of the description? Unless your goal is explicitly about vehicles owned inside city by residents then that creates a new set of issues (like what policy lever influences transient population due to increasing # of rental units; and most car dealerships are outside city boundaries so even some sort of policy lever based on purchases would have limited impact unless provincially or CRD legislated). Perhaps I'm out of left field on this, but I thought the same with regards to City of Vancouver's "Green City" plan. None of the targets involved the metropolitan region which made it seem more like a marketing initiative than an actual set of policy/program levers that reduce GHG emissions, increase air quality, mitigate against rising sea levels, etc.

Lastly, with regards to Complete Neighbourhoods goal of 100%. I wonder if each neighbourhood's respective progress towards being deemed "complete" would be a better metric. Like "All neighbourhoods in Victoria are within XX% of being deemed complete neighbourhoods". This way when you're measured if the all neighbourhoods but one have been completed, then the metric is still a failure rather than being positioned as 90% completed and therefore a win.

That's really the only observations I can reasonably make given limited exposure to these concepts but I'm happy to explore deeper with you on anything above, especially the Smart South Island initiative.

Thanks for including us in your consultations! Kind regards,

Dallas Gislason
Director of Economic Development
South Island Prosperity Project
e: dgislason@southislandprosperity.ca
c: 250-812-0510
a: #240-730 View Street, Victoria, BC V8W 3Y7
w: www.southislandprosperity.ca

On Tue, May 1, 2018 at 3:24 PM, Emilie de Rosenroll <ederosenroll@southislandprosperity.ca> wrote:

Can you reply?

Emilie de Rosenroll
Chief Executive Officer
South Island Prosperity Project
240-730 View Street
Victoria, BC, V8W 1C4
e ederosenroll@southislandprosperity.ca
p (250) 891-9220
w www.southislandprosperity.ca

SOUTH ISLAND
PROSPERITY
PROJECT

---------- Forwarded message ----------
From: **Sarah Webb** <swebb@victoria.ca>
Date: Mon, Apr 30, 2018 at 5:09 PM
Subject: Victoria Climate Leadership - TRANSPORTATION
To: Sarah Webb <swebb@victoria.ca>
Cc: Jess Dawe <jdawe@victoria.ca>

Dear Community Transportation Enthusiasts & Service Providers:

The City of Victoria has made a commitment to achieving 100% renewable energy and an 80% reduction in greenhouse gas emissions by 2050. This bold target requires coordinated action and investment by the municipality, our partners, residents, businesses and visitors.

A Draft Climate Leadership Plan was approved by Council in December 2017 and since then City staff has been out collecting feedback from various stakeholders and community members on the proposed goals and targets. There are

From: Personal info
Sent: April 2, 2018 6:40 PM
To: John Ho <jho@victoria.ca>; Personal info
Subject: Climate Leadership Plan

John,

I had wanted to attend at least one of the upcoming sessions on the City's Climate Leadership Plan but I will be out of town for all of them.

Consequently, I would like to pitch an idea for you to consider:

The idea is for the City to loan money to homeowners who want to improve the efficiency of their homes; remove oil tanks or install PV systems. The loan to the homeowners would have a low interest rate (the City's borrowing rate so no subsidy from the City) and the loan would be paid back via the homeowners' utility bills. Energy advisors would be involved in advising homeowners on what measures to implement to ensure energy savings from the measures implemented would save more money than the loan payments, so the homeowner would have more money at the end of every year. The loan would be attached to the property so when ownership transfers the loan and savings could be transferred. The loan should be set up so that it can be paid off at anytime by either the old or new homeowner (in order to eliminate the perception of the loan affecting the purchase price of the home).

Pitch for this idea:

1. This would enable City homeowners to eliminate oil tanks which are a huge liability.
2. This would dramatically improve the energy efficiency of the homes in Victoria.
3. This would jump start a dramatic increase in the amount of PV systems in Victoria.
4. This would go a long ways to achieving the City's Climate Leadership Plan goals
5. This would not cost the City anything other than administration of the loan as the loan rate should be at the City's borrowing rate.
6. This would utility the existing community of energy advisors who are well skilled in this work.
7. This would make Victoria homes far more valuable than homes in other municipalities.
8. This is something that can be done NOW! (relatively easily and quickly).

I would be interested in your feedback on this idea.

Jack

VICTORIA EV CLUB

May 14, 2018

Ms. Jess Dawe,
Manager of Energy & Climate Action
Engineering & Public Works, City of Victoria
1 Centennial Square
Victoria BC V8W 1P6
jdawe@victoria.ca

Dear Ms. Dawe

Re: City of Victoria – Climate Leadership Plan (CLP) – Draft for Public Comment ver 2.2

On behalf of the Victoria Electric Vehicle Club, I wish to thank you for the opportunity to comment on the draft Victoria Climate Leadership Plan.

Victoria and south Vancouver Island have the potential of having the highest EV adoption rate in the North America because of some unique factors associated with its geography and climate. As Victoria is located on an island and surrounded by water on three sides and a mountain on the fourth daily commute distances and total daily travel by vehicles may possibly be the lowest of any metropolitan area in North America. Victoria is also located in a temperate climate zone which is ideal for electric vehicles.

The south island municipalities have an opportunity to play a key role in the acceleration of EV adoption and some effective measures could be deployed at almost no cost. With leadership and stakeholder participation considerable progress is possible.

Outlined below are our general comments and the responses to the questions that were asked of us. This is followed by specific comments related to the draft document itself. For ease of reference, our comments on the draft CLP are included in blue italics within the section being referenced.

Yours very truly

James Locke, President
Victoria Electric Vehicle Association
info@VictoriaEVclub.com

A) General Comments

The following are general comments for consideration with respect to reducing GHGs associated with the transportation sector.

Victoria has the potential to become a leader in the adoption of vehicles powered by renewables if it were to match and then exceed the measures taken by the current leaders.

To match the current leaders (Vancouver & Richmond):

1) Changes to the Victoria Zoning Bylaw 2017 Schedule C Section 16
    a. to require each new one family, two family, or row house to be provided with an energized outlet (EV ready) capable of providing Level 2 charging for an electric vehicle
    b. to require 100% of new parking spaces to be EV ready with Level 2 managed capability and a minimum overnight charging performance standard

And then exceeding them:

1) Further changes to the Victoria Zoning Bylaw 2017 Schedule C Section 16
    a. to require electric vehicle charging infrastructure in new construction for all non-residential land uses but specifically tailored for each type of land use[1] (Refer to the attached model Appendix B)

2) Developing a plan to determine opportunities for access to electric vehicle charging infrastructure through pilot studies
        i. A study of a neighbourhood in Victoria that has a significant shortage of off- street vehicle parking to determine EV charging opportunities through the provision of on street resident-only spaces that also include curbside EV charging capability and the potential use of public and private off-street parking spaces after hours[2] for electric vehicle charging.
        ii. A study of a several typical older MURBs in Victoria to determine the retrofit potential for installing Level 2 managed EV charging infrastructure within the limits of their existing electrical infrastructure capacity.

3) A study to determine the charging requirements for area businesses that may be receptive to considering electric vehicles for their business operations but require fast (DCFC) charging.

4) A strategy to replace fossil-fueled vehicles in the municipal fleet with electric vehicles.

[1] In our opinion, Vancouver's 10% commercial requirement is too high and should closer to 3% for Greater Victoria

B) Responses to the specific feedback requested per April 30 email

Goals and Targets:

1) Renewably powered vehicles:
a. By 2050, 100% of personal vehicles are renewably powered
b. By 2030, 30% of commercial vehicles are renewably powered

a. VEVA has developed a model (Figure 1) of the estimated battery electric vehicle sales and fleet penetration for BC to 2052. The model is based on BC light duty vehicle (LDV) vehicle (under 3,850 kg) registrations in BC and takes into account fleet growth over time. In the model, approximately 30% EV sales are reached by 2030 which is fairly consistent with the current consensus from a number of sources including the latest from Bloomberg (Figure 2). It is noted that the Bloomberg model forecasts a stall in EV sales after 2035 whereas the VEVA model does not.

Figure 1

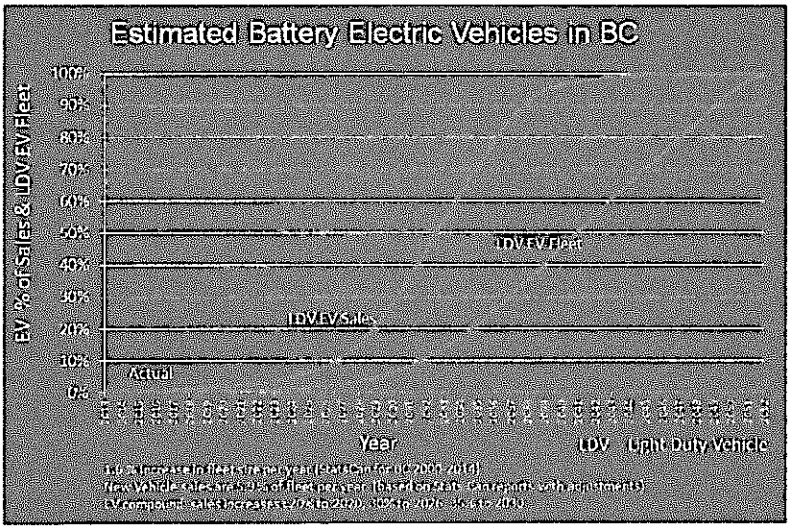
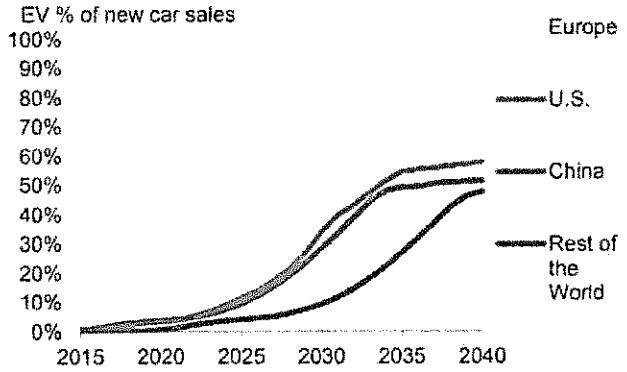


Figure 2

Figure 6: Long-term EV sales penetration by country



Source: Bloomberg New Energy Finance
Electric Vehicle Outlook 2017, July 2017

The VEVA model projects that 100 % of LDV sales would be electric by 2046 with 100% of fleet by 2052. Personal vehicles above 3,859 kg may lag this trend, but that raises a number of variables that are speculative such as how many heavier personal vehicles would remain by 2050 and if were to remain where would they get gas as many gas stations would probably be closed by then. On this basis 100% of personal vehicles by 2050 may be an attainable goal.

b. With respect to the 30 % of commercial vehicles being renewably powered [3] by 2025, this goal is unlikely due to the lag between sales and fleet penetration. To achieve 30% of fleet, commercial vehicle electrification would currently need to be on the same track as light duty electric vehicles. At present there are virtually no medium of heavy duty vehicles available in the market. Although they are expected within the next 5 years, the adoption rate of electrified commercial vehicles will primarily depend on total cost of operation, for which the parameters are currently unknown.

2) Multi-modal solutions:
   a. By 2050, 25% of all trips in Victoria are taken by renewably powered public transit
   b. By 2041, 55% of all trips in Victoria are taken by walking and cycling

a. Table 1 below indicates the 24 hour Victoria travel mode characteristics as reported in the CRD Origin Destinations Studies from 2001, 2006 and 2011. In 2011, transit accounted for 6% of trips within Victoria. Having 25% of trips within Victoria occurring by (renewable) transit would require that an additional 19% come from other modes (Auto 49%, Cycling 4% or Walking 38%) Assuming that existing walking or cycling trips are preferable to transit and unlikely to migrate to transit, the additional 19% would have to come from auto travel. We know of no evidence or science that would suggest that this is feasible without politically-difficult actions such as severely curtailing or partially banning vehicle traffic within Victoria.

The electrification of public transit, to our knowledge, will be determined by BC Transit and although we encourage steps to electrify public transit, we defer to BC Transit as to what plans they may be considering. Having said that, there are several manufacturers of electric transit vehicles in North America and we are hopeful that BC Transit will consider electrification of the Victoria bus fleet.

b. Referring to Table 1 and assuming that the goal is associated with internal trips ("in Victoria"), the goal would require an increase of 13% of internal trips that would have to come from other modes (Auto 49%, Transit 6%) by 2025 or a 30% increase in combined internal walking/cycling trips. We are not aware of any evidence or transportation science that would support such a goal as being feasible.

The Climate Action Plan is focused on reducing emissions. If vehicles are electrified there are no emissions so any goal to change modal split to reduce emissions becomes somewhat irrelevant in this context.

Table 1 – Travel Mode Characteristics for the City of Victoria (Appendix A)

Travel Mode	2001		2006		2011		
	Origin	Destination	Origin	Destination	Origin	Destination	Within
Auto Driver & Passenger	65%	65%	67%	67%	79%	80%	49%
Transit	12%	12%	9%	10%	12%	12%	6%
Bicycle & Walking	21%	21%					
Bicycle			5%	4%	3%	3%	4%
Walking			17%	17%	4%	3%	38%
Other	1%	1%	2%	2%	1%	1%	2%

Source: CRD Origin Destination Studies 2001, 2006, 2011

[3] By renewably powered we assume by electricity as hydrogen, biodiesel are not viable renewable sources in BC

3) Complete neighbourhood design:
a. By 2041, 100% of Victoria neighbourhoods are complete by design

Complete neighbourhood design, as we understand it, is making neighbourhoods sustainable with ready access to services, transportation hubs, social amenities and the avoidance of private vehicle travel. Although complimentary to emission reductions, this concept is more associated with Transportation Demand Management (TDM) and "complete communities" than it is GHG emissions. As noted above, the electrification of private vehicles undermines using GHG emission reductions as a rationale for complete neighbourhood design. By 2041, according to VEVC estimates 50% of the LDV fleet would be electrified.

C) Comments relating to specific sections of the Draft Plan

LOW CARBON HIGH PERFORMANCE BUILDINGS

PRIORITY ACTIONS (Page 16)

5. Develop and implement a 'Deep Energy Retrofit Strategy'. As part of this strategy, the City will prioritize the following:

a. Actions for Single Family Homes:
i. Deliver a program for 'bundled and easy to achieve' energy retrofits that aim to deliver priority energy improvements without the recipient's burden / barriers due to detailed administration, time and complexity, while still leveraging all available external funding.
ii. Train staff to gain skills unique to zero-emission buildings, and renewable energy systems
iii. Partner with utilities and higher levels of government to support innovative financial incentives and programs to encourage retrofit behavior and to provide a consistent process and funding source.

b. Actions for multi-unit residential and commercial buildings:
i. Complete a Market Rental Revitalization Study (MaRRS) to determine how to best retrofit and revitalize existing rental housing stock while preserving affordability and improving energy performance.
ii. Complete a retrofit study to identify opportunities to initiate deep energy retrofits for market residential buildings (e.g. condominiums).

Comments
We would urge consideration of including EV charging infrastructure in all residential building retrofit assessments and strategies. Lack of EV infrastructure is a major impediment to increase EV adoption. Including it would be a synergistic opportunity to not only address building GHG emissions but auto GHG emissions.

KEY GOALS

GOAL 1: VEHICLES ARE POWERED BY RENEWABLE ENERGY

Electric Vehicles (EVs), charged by renewable hydro-electricity are becoming commonplace in Victoria. Modern battery technologies provide over 300 km of vehicle range on a single charge, which is more than enough for most commuters' needs. Auto manufacturers are increasing the number of available EV models each year, and

the costs are becoming more competitive with the equivalent internal combustion engine models. The barriers preventing more widespread adoption of EVs continue to be reduced. More widespread EV adoption will be possible with more consumer confidence, vehicle availability and configuration, lower purchase price and greater ease of charging (home or destination). The City has a key role to play in unlocking many of these barriers, to incentivise a shift to electrification.

Comment

VEVC is less concerned about vehicle and body style availability as many more EV models are now on their way to market. Measures that the City of Victoria could do that would have the most immediate effect are:

- *Implement zoning bylaw changes requiring that 100% of residential parking spaces in new construction be EV ready. (Refer to attached zoning bylaw model Appendix B)*
- *Work with other stakeholders:*
  - *to develop residential EV charging strategies for each community (L2, retrofits, parking lots, curbside, front yard parking)*
  - *to plan for DCFC fast charging infrastructure for primarily business use*

KEY TARGETS

The following table summarizes our specific targets as it relates to each goal, Table 5.

Table 5. Low Carbon Transportation and Mobility Targets

Goal	GHG Targets	
Goal 1	By 2050, 100% personal vehicles are renewably powered[11]	
	By 2030, 30% of commercial vehicles are renewably powered[12]	
Goal 2	By 2050, 25% of all trips in Victoria are taken by renewably powered public transit.	
	By 2041, 55% of all trips are taken by walking and cycling	
Goal 3:	By 2041, 100% of neighbourhoods are complete[13] by design	
Total Estimated GHG tCO_2e / % Reduction		**160,000 / 40%**

(Note: Footnotes [4][5][6] replace original document footnotes 11,12,13)

Comments:

See Section B) in which these goals are discussed.

PRIORITY ACTIONS

By 2020, the City will implement the following CLP priority actions that address the above objectives, in conjunction with wider mobility improvements, many of which will improve climate outcomes, via the City's Sustainable Mobility Strategy:

[4] We recognise this is an ambitious target beyond current projections, but is required to meet our target
[5] Supports EV30@30 campaign led by Clean Energy Ministerial
[6] Criteria for complete neighbourhoods will be determined at a future date (see actions)

1. Design and implement a vehicle electrification strategy to promote and support our community's transition to electric vehicles (private and commercial). As part of this strategy, the City will:

a. Design an Electric Vehicle Ecosystem Strategy (in partnership with BC Hydro and other key stakeholders) that delivers innovative charging and power management infrastructure, parking systems, and information management systems on city streets and public spaces.

b. Propel the rapid adoption of electric vehicles in public and private applications.

c. Develop EV charging design guidelines to support high levels of EV charging availability in new MURBs and commercial buildings.

Comment:

All Good

2. Develop a transportation GHG information strategy through partnership with CRD and ICBC, supported by monitoring, analysis and information management tools and technology to help inform all transportation GHG planning and action.

3. As part of the parallel Sustainable Mobility Strategy development, finalize policies and actions to support plans and policies to support GHG reductions such as:

a. Design and implement a future-proof, fully integrated and sustainable mobility system, which provides a seamless network of clean, convenient, and intelligent mobility options and modes across the City, and connected across the region.

Comment
Refer to Section B regarding the parallel impact of electrification of vehicles on GHG emissions and the relationship to Transportation Demand Management

b. Implement actions to support a radical improvement in low-carbon rapid and frequent public transit in, out and around the City, in partnership with regional and local stakeholders.

c. Update the City's parking strategy, to include residential, public and private parking design, management and information.

d. Continue the delivery of the Bicycle Master Plan and Pedestrian Master Plan, including a renewed action plan to support and deliver enhanced mode-shift to cycling across the City.

Comment
We would recommend that consideration be given to a continuous assessment of mode-shift expectations and outcomes. As an example, the CRD Origin Destination studies for the past 15 years have a flat-line transit mode share in spite of significant increases in transit service and frequency beyond those required by population increases.

e. Update off-street bicycle parking design guidelines to encourage attractive and functional bicycle parking on private property.

f. Complete a corporate Transportation Demand Management strategy and action plan to reduce Single Occupant Vehicle, congestion, air pollution and GHGs.

Comment

Refer to Section B regarding the relationship with the electrification of the private vehicle fleet. TDM is very important but more from a traffic congestion point of view. With full electrification there are no pollutants or GHGs.

g. Develop a Car Share / Ride Share Strategy, policy, and action plan.

h. Develop regulatory frameworks to address bike-share services and other emerging transportation services, integrated seamlessly with all other mode choices.

4. Undertake research in partnership with academic institutions on electric bicycle and autonomous vehicle demand and GHG reduction potential to better understand risks, benefits and potential roles for local government.

5. Petition, partner and collaborate with the Province to deliver significant improvements in community and commercial vehicle performance and usage information, vehicle fuel efficiency and air quality standards and monitoring.

6. Develop new, modern and effective strategies to improve neighborhood design to provide increased opportunities for active transportation, reduced single occupant vehicle use and improved connections to 3rd places (i.e. key destinations other than home and work).

7. Prioritize projects that optimize and harmonize GHG, mobility and improved air-quality objectives.

8. Support the continued implementation of the Province's low-carbon fuel strategy.

9. Define complete neighbourhood criteria for target tracking.

MEASURING SUCCESS

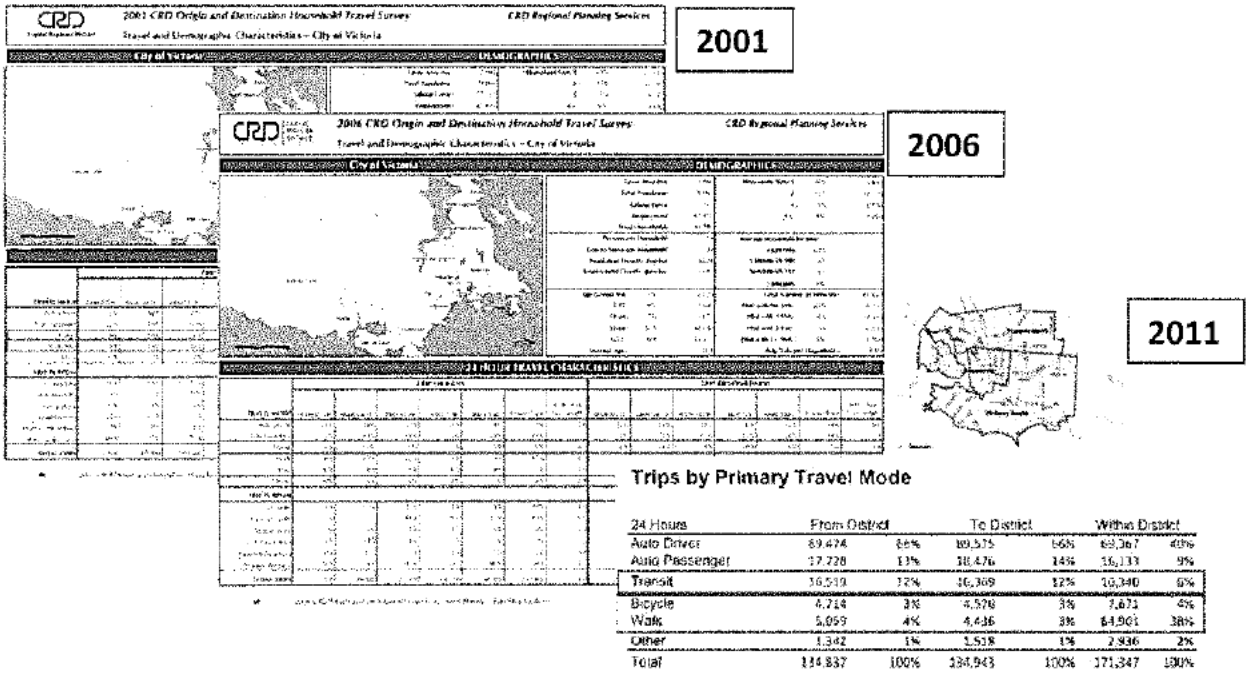
To ensure we remain on the right track, we will need to frequently report to Council and to the community about our overall progress, required improvements, successes and failures. We will need to do so, completely and transparently.

Comment

We would encourage the consideration of measurement-metrics reporting for each sector.
In the Transportation and Mobility Sector for example, metrics that could be considered are:

- *Annual screen line crossing studies determining the number of persons entering and leaving Victoria on major routes by travel mode (private vehicle, transit, bicycle, walking)*
- *The number of registered EVs (BEVs and PHEVs) by the first three digits of the postal code*
- *The number of building retrofit engagements (that include EV charging possibilities)*
- *The number of neighbourhoods for which EV charging strategies have been developed*

Appendix A – CRD Origin Destination Surveys (2001, 2006, 2011)



2001

2006

2011

Trips by Primary Travel Mode

24 Hours	From District		To District		Within District	
Auto Driver	89,474	66%	89,575	66%	69,367	40%
Auto Passenger	17,728	13%	18,476	14%	16,133	9%
Transit	16,519	12%	16,369	12%	10,340	6%
Bicycle	4,714	3%	4,578	3%	7,671	4%
Walk	5,099	4%	4,436	3%	64,901	38%
Other	1,342	1%	1,518	1%	2,936	2%
Total	134,837	100%	134,943	100%	171,347	100%

Appendix B –

A Methodology to Revise the Victoria Zoning Bylaw for EV Infrastructure

May 7, 2018 (revised)
Please direct enquiries or questions to jhindson@telus.net

Step 1) Add Definitions to the Victoria Zoning Bylaw # 2017, Schedule C

EVSE (Electrical Vehicle Supply Equipment) means electrical equipment installed for the purpose of power transfer and information exchange between a branch circuit and an electric vehicle.

Energized when referring to a parking space means that the parking space shall have access to an outlet that is electrically connected to, or is, a source of electrical current for the connection of an EVSE unit.

Level 1 (L1) refers to a 110 Volt AC power circuit as defined in the Society of Automotive Engineers (SAE) J1772 standard.

Level 2 (L2) refers to a 208/240 Volt AC circuit with a range of 20 Amps to 100 Amps for electric vehicles and as defined in the Society of Automotive Engineers (SAE) J1772 standard.

Level 2 Managed (L2M) refers to Level 2 AC charging capability that is load managed between two or more charging outlets (vehicles).

Charging Performance Standard is a standard that outlines the minimum charging requirements for multiple electric vehicles sharing the same power supply. It specifies the number of kWhs that is required to be delivered to each vehicle in a specified time period for a given number of EVSEs sharing a supply.

Step 2) Add the minimum Charging Requirements to the Minimum (Parking) Space Requirements in Schedule C Subsection 16

Subsection 16. Minimum Parking Spaces

The minimum number of off-street parking spaces and electric vehicle infrastructure that shall be provided and maintained in respect of each building or land use shall be in accordance with the following tables and in accordance with the land uses as set out in the second column of the Table:

Column A in each of the tables refers to the class code.

Column B in each of the tables refers to the land uses that include a minimum parking space requirement.

Column C in each of tables refers to the minimum number of parking spaces required for the land use(s) indicated in Column B

Column D in each of the tables refers to the minimum number of parking spaces, either expressed as a percentage of the total or as a whole number for which energized outlets shall be provided.

Column E in each of the tables refers to the minimum number of energized outlets in Column C that shall also be provided with EVSE units. It may be expressed as a % or a number.

Column F in each of the tables refers to the minimum charging Level to be provided at each of the energized parking spaces in Column D.

Where a percentage of spaces is specified and the calculated amount of energized parking spaces or EVSE units results in a fraction, the number required shall be rounded up to the next whole number.

Step 2a) Add text to the Bylaw for the Minimum Charging Performance Standard

17. The Minimum Charging Performance Standard for Level 2 Managed (L2M) charging is 12 kWh per vehicle over an eight hour period for 4 EVSEs sharing a supply.

Step 2b) Revise the existing Bylaw to include the column entries for each land use

(A)	(B) Building Class	(C) Minimum Number of Parking Spaces	(D) Minimum Energized	(E) Min. EVSE	(F) Minimum Charging Level
A	**Residential**				
1	Single family dwellings	1 space per dwelling unit	100%	0%	L2
2	Two family dwellings	1 space per dwelling unit	100%	0%	L2
3	Buildings converted to housekeeping units	1 space for the first unit plus 0.5 space for every unit over 1	100%	2	L2M
4	Buildings converted to rooming houses or boarding houses	1 space for the first unit plus 0.5 space for every unit over 1	100%	2	L2M
5	New rooming houses or boarding houses	0.5 space per sleeping unit	100%	2	L2M
6	New buildings containing housekeeping Units	1 space per housekeeping unit	100%	2	L2M
7	Buildings converted to **multiple dwellings** in zones other than a multiple dwelling zone; both for rental and strata buildings	0.8 space per dwelling unit for any building containing more than 3 dwelling units 1.0 space per dwelling unit for any building containing 3 dwelling units	100%	2	L2M
8	Buildings containing residential use in the CA-3, CA-4 and CA-5	0.7 space per dwelling unit	100%	2	L2M
9	Buildings containing residential use in	1 space per dwelling unit	100%	2	L2M

	the C1-CR Zone				
10	Buildings containing senior citizens' residences located in the area bounded by Cook Street on the east, Pembroke Street on the north, the Inner Harbour on the west, and the extension of Belleville Street to Fairfield Road on the south	0.35 space per senior citizens' unit	100%	2	L2M
11	Multiple Dwellings (a) located in a R3-1 Zone 1.1 space per dwelling unit (b) located in a R3-2 Zone 1.3 space per dwelling unit (c) located in zones other than R3-1 and R3-2	 1.3 space per dwelling unit 1.3 space per dwelling unit 1.3 space per dwelling unit	 100% 100% 100%	 2 2 2	L2M
12	Those Multiple Dwellings Subject to Strata Title Ownership (a) located in a R3-1 Zone 1.2 space per dwelling unit (b) located in a R3-2 Zone 1.4 space per dwelling unit (c) located in zones other than R3-1 and R3-2	 1.2 space per dwelling unit 1.4 space per dwelling unit 1.4 space per dwelling unit	100%	2	L2M
13	Rental attached dwelling	1.4 space per dwelling unit	100%	0%	L2M
14	Condominium attached dwelling	1.5 space per dwelling unit	100%	0%	L2M

(A)	(B) Building Class	(C) Minimum Number of Parking Spaces	(D) Minimum Energized	(E) Min. EVSE	(F) Minimum Charging Level
B	**Institutional**				
1	Community Care Facilities	1 space per 5 beds	3%	2	L2
2	Hospitals (other than extended care hospitals)	1 space per 4 beds; plus 1 space per 3 employees not counting doctors, plus 1 space per doctor.	3%	2	L2
2A	Extended Care Hospitals (a) containing less than 100 beds (b) containing 100 beds and more	 1 space per 3 beds 1 space per 2.5 beds	3%	2	L2
3	Buildings for private club use, fraternal lodges, athletic instruction, social halls and similar uses	1 space per 9.5 m2 of floor area used or intended to be used for assembly purposes	0%		
4	Auditoriums and similar places of assembly	1 space per 6 m2 of floor area used or intended to be used for assembly purposes	0%		
5	Churches	1 space per 10 seats and per 5m of bench in the principal assembly room; or 1 space per 9.5m2 of floor area used or intended to be used for public assembly purposes whichever is the greater.	0%		

6	Buildings used as schools (a) Kindergarten and elementary schools (b) Junior secondary schools (c) Senior secondary schools and colleges	 1 space per employee plus 2 1 space per employee plus 2 1 space per employee plus 2, plus 1 space per 25 students	3% 3% 3%	2 2 2	L2 L2 L2

(A)	(B) Building Class	(C) Minimum Number of Parking Spaces	(D) Minimum Energized	(E) Min. EVSE	(F) Minimum Charging Level
C	**Commercial**				
1	Buildings for transient accommodation (a) located in CA-3, CA-4, CA-5 zones 0.5 space per transient accommodation unit (b) located in zones other than CA-3, CA-4, CA-5 zones	 0.5 space per transient accommodation unit 1 space per transient accommodation unit	0%		
2	Theatres	1 space per 10 seats in the public assembly Area	0%		
3	Funeral Directors' establishments	1 space per 4 seats in the public assembly area	0%		
4	Retail stores, banks personal services establishments or similar uses	1 space per 37.5m2 of gross floor area	0%		
5	Offices used for medical and dental Services Other offices	1 space per 37.5m2 of gross floor area 1 space per 65m2 of gross floor area	3%	1	L2
6	Service Stations	1 space per 186m2 of lot area	Min of 1	1	L2
7	Automatic car wash	10 spaces	0%		
8	Launderettes and coin-operated drycleaning establishments	1 space per 19m2 of gross floor area	0%		
9	Commercial Exhibit (a) In the Commercial Exhibit Zones (b) In zones other than Commercial Exhibit zones	 4 spaces 1 space per 232 m2 of lot area	0%		
10	Commercial Amusement Park	1 space per 9m2 of site area used for the commercial amusement park and any retail establishments plus 1 space per 8 patrons which can be accommodated by the commercial amusement park and associated establishments	0%		
11	Free standing food sales outlets	20 spaces plus 1 space for each 2.5 seats	0%		
12	Eating and Drinking Establishments	1 space per 5 seats	0%		
13	Neighbourhood Pubs	1 space per 3 seats	0%		

(A)	(B) Building Class	(C) Minimum Number of Parking Spaces	(D) Minimum Energized	(E) Min. EVSE	(F) Minimum Charging Level
D	**Industrial**				
1	Buildings for warehouse and wholesale distribution use	1 space per 93m2 of gross floor area or 1 space per 3 employees, whichever is greater	3%	2	L2
2	Buildings for manufacturing use	space per 140m2 of gross floor area or 1 space per 3 employees, whichever is greater	3%	2	L2M

Notes and Rationale for the suggested standards for Victoria

There are many factors to consider in the development of local government standards for EV charging. The following factors should be considered in the development of minimum charging requirements and have been considered in the suggested standards for Victoria. Regulating EV charging standards is not an exact science.

EV charging standards should be implemented for residential and accommodation land uses at a minimum as the cost of installation at the time of construction is considerably less than retrofitting electric vehicle infrastructure after construction. Concerns about the application of the standards in individual cases can be referred to the zoning variance and appeal process provided that the intent of the bylaw is maintained.

Daily EV charging requirement (minimum charging performance standard)
The Minimum Charging Performance Standard is based on the average daily charge (in kWh) that would be needed to meet the daily travel requirements of 95% of the vehicles in the local area and surrounding districts.

"Design" electric vehicle
A "design" electric vehicle is used as a representation of a) the vehicle energy capacity (range) and b) the vehicle efficiency that is generally available in the marketplace at affordable cost.
It is used in the determination of the default charging requirement for land uses that have vehicles parked there for a period of time sufficient to obtain a reasonable charge and in the determination of the average daily vehicle range requirement and hence the minimum overnight charge required. The "design vehicle" used was a second generation all-electric vehicle with a range of 320 km and an efficiency of 200 Whrs/km.

Location and charging performance standard
Victoria is a community of 86,000 persons located at the southern end of Vancouver Island and forms part of Greater Victoria with a population of 368,000. Greater Victoria is surrounded by the ocean on three sides and mountainous terrain on the fourth side. Vehicle access to Victoria from larger urban centres such as Vancouver is only via ferry. Although there are urban areas immediately adjacent to Victoria, there are no urban centres in close proximity that would generate long vehicle commuting distances. Therefore average daily charging requirements (Minimum Charging Performance Standard) for 95% of vehicles is assumed to be 12kWh for 4 EVSE's sharing a supply over an 8 hour period (including adjustments for climate conditions).

Climate
Victoria is located within Climate Zone 1 and a factor of 30% range reduction for driving in winter conditions was used in the determination of the daily charging requirements for Victoria.

Charging levels
Charging Levels are defined according to SAE (Society of Automotive Engineers)

Level 1 (L1) is suggested in cases where there is sufficient dwell-time (overnight) to obtain the minimum charging requirement.

Level 2 (L2) is suggested in cases where the vehicle operator needs a faster charging rate and need certainty about the time to obtain a specific amount of charge and is not sharing a supply.

Level 2 Managed (L2M) is the managed charging of multiple L2 connections to charge vehicles on one supply. It is more desirable (and cost- competitive with L1) as it allocates charging

according to the number of vehicles connected and hence is more likely to charge a group of vehicles faster than L1 at less cost.

DCFC fast charging is generally not recommended for regulation through zoning due to its high cost. It is primarily intended for inter-city or commercial use where a fast charge is needed.

Land use

Residential and Accommodation

Most electric vehicle charging is expected to occur when vehicles are idle overnight and the impacts on the electrical grid peaks are minimized. Therefore, in the long term, it is important that all residential and accommodation spaces have access to charging infrastructure.

Note: The mandatory requirement of 100% energized for larger residential buildings may be contentious in the short term due to lack of information about advances in technology that reduces costs. The zoning process includes provisions for zoning variances and appeals that may have merit. Over time, electric vehicle charging will become essential and add to property values. Some developers are already proactively including charging infrastructure in their new buildings. As buildings last over 50 years and it is much less expensive to install infrastructure at the time of construction, a 100% mandate makes economic sense.

Institutional

Electric vehicle that have longer dwell times at institutional land uses such as schools and hospitals should have certainly about charging times and hence L2 should be specified. Institutional land uses that have short electric vehicle dwell times such as churches and art galleries do not require minimum charging infrastructure.

Commercial

Electric vehicles have longer dwell times at commercial land uses such as shopping centres, schools and professional offices. Electric vehicle owners visiting these locations should have certainly about charging times and hence L2 should be specified. Commercial land uses that have short electric vehicle dwell times such as retail stores and fast food outlets do not require minimum charging infrastructure. The rationale for excluding other land uses such as bowling alleys and theatres is that they cater to local residents who, for the most part, would not require additional daily charging. In the absence of a separate category for smaller strip malls with short vehicle parking times, the zoning variance process could be used to exempt strip malls or small centres from charging requirements.

Schedule C does not have a category for larger retail shopping centres. Therefore the "Commercial" table for minimum charging requirements indicates a 0% requirement for (general) "retail" shopping, however if a large shopping development were proposed in the future, it should include a requirement for a greater minimum EV charging infrastructure or alternatively an addition to the table could be made for shopping centres.

Industrial

The rationale for including a minimum charging requirement for Industrial land uses is that they are more likely to have visitors with electric vehicles from other cities outside the local area. A minimum of infrastructure facilities would facilitate electric vehicle travel to and from Industrial land uses. L2 minimum is specified due to the need for charge time certainty.

Security
A consideration in the cases of L1 charging infrastructure is the security of the L1 charging unit. Although all EVs come with an L1 charging unit these valuable units ($500) are used outside the vehicle and are vulnerable to theft and vandalism. In exposed areas or where the long term serviceability and maintenance of the L1 receptacle (wall outlet) is of concern L1 EVSE units should be considered as a mandatory requirement.

Employee charging requirements
Employee parking is not specifically regulated in zoning bylaws. If employers have areas specifically designated for employee then the employer or landlord has the option of providing charging for employees. However such charging spaces should be considered as an addition to any default charging requirement.

Current structure of the local zoning bylaw
The parking provisions of the local zoning bylaw may be included in text or table formats and with varying degrees of complexity and aggregation of land uses. In cases where land uses are aggregated in larger groups it may be desirable to specify the lowest common charging standard that would apply to all land uses within the group or separate the requirements into additional classes (groups).

Impact on building costs over time
The general principal used was to minimize the initial impacts on building construction cost while taking advantage of the savings in avoiding future costly retrofitting.