

# Briefing notes on proposed Commute Trip Reduction (CTR) program for B.C.

## Executive summary

1. A commute trip reduction program is recommended to help B.C. attain *CleanBC* targets generally and in particular in transportation (currently >50% of urban carbon emissions).
2. Per University of Victoria's Environmental Law Centre's report, it is recommended that regulations be enacted under the *Climate Change Accountability Act*, requiring:
  - a. That Public Sector Organizations (PSOs) calculate and report annually on the total CO<sub>2</sub>e impact ("burden") of their employees' commutes,
  - b. That PSO consider over a dozen tactics to reduce that burden by making employee commutes shorter, greener and more active, and
  - c. That the above two regulations be subsequently extended to all sectors, to include all medium- to large-size employers in B.C.
3. The efficacy of a CTR program has been demonstrated in other jurisdictions. It could trim >5% off B.C.'s GHG total emissions, for a comparatively modest investment of ~\$3 million p.a.
4. A workplan has been created and costed for the 'resources & support' component of the program, building on extensive research, development, innovation and pilot-testing within B.C. This program is "shovel ready" and will generate jobs in B.C.
5. This program will address persistent calls for action by citizens and by B.C. employers whose operations are being constrained by congestion and by long-commuting-related HR problems (recruiting, absenteeism, retention, productivity, accidents, stress, etc.). More efficient commuting will make B.C. businesses and other organizations more financially, socially and environmentally sustainable – consistent with 'Building Back Better.'
6. Support has been confirmed – and advice incorporated into the program design – from interviews with >200 key stakeholders – in business, non-profits, crown corporations, health and education authorities, government (including Cabinet Ministers and executives across multiple ministries), planners and academics, in Canada, USA and Europe.
7. A CTR program responds to the Climate Solutions Council's recommendation to "highlight co-benefits and prioritize actions/system changes that address multiple priorities (health, affordability, economic opportunity, etc.)."
8. This CTR program will integrate with and enhance the effectiveness of programs within the Integrated Transportation & Development Strategy

**RECOMMENDED ACTION:** assign oversight responsibility and allot a budget to the Ministry of Environment and Climate Change Strategy.

## Background

### Consistent with B.C.'s commitment to affordability, equity, service delivery and sustainability

1. **Affordability & Equity:** Commuting is a significant expense for most citizens. Those with low incomes, part-time and/or multiple jobs and precarious work are particularly impacted financially by long commutes. Quality of life is also sacrificed due to loss of time and health.
2. **Service Delivery:** Transportation issues affect health and well-being across society, as well as impacting productivity, retention and hiring at B.C.'s education, health and other public sector organizations.
3. **Economic sustainability:** Economists at the Fraser Institute, ENGOs and universities contend that traffic congestion is costing the B.C. economy hundreds of millions annually.
4. **Environmental sustainability:** Transportation accounts for almost 40% of B.C.'s carbon emissions (over 50% in urban areas).
5. **CleanBC:** CleanBC must find ways to meet its GHG targets, especially in transportation. Reducing commutes and congestion through this program over the next 24 months would demonstrate that B.C.'s sustainability actions are tangible and effective.

### Synergy within the Integrated Transportation & Development Strategy

- Improving infrastructure (roads, transit system, housing density along transit corridors, etc.) => is necessary, expensive (multi-billions), and takes many years, even decades, for results
- *Meanwhile*, changing commuters' behaviour is also necessary, and much can be accomplished at comparatively minor investment, with quick roll-out (<12 months) and considerable impact.
- A CTR program will help address the "induced demand" from highway widening and the post-pandemic "transit hesitancy" that will negatively impact transit use, carpooling and vanpooling.
- A "city of short distances" requires closer/quicker commutes between home and workplace.
- Shorter, cheaper, more practical commutes will disproportionately benefit lower-income families financially and by providing more time together. The program will also reduce some unfair effects on workers of congestion pricing and other transportation/development programs.

## **The Approach: Inspiring and supporting medium & large employers to take action in their own self-interest**

### **B.C. employers are demanding action on commuting and congestion**

- B.C. employers recognize significant problems to their businesses are being caused by commuting and congestion, and have banded together to lobby for urgent action:
  - e.g., INSTPP on the North Shore
  - e.g., Sidney manufacturers.

### **Employers need support to contribute to a comprehensive solution to congestion and commuting**

- Workers typically don't control work scheduling or location. This limits their options for achieving shorter, green, active commutes – so their employers must be recruited and equipped to take actions.
- Most CTR actions by employers can have low-to-no cost, will boost productivity & reduce HR costs.
- Dozens of chief executives and HR professionals have been interviewed. These and other key informant interviews confirm that employers will not take action without a legal requirement to do so. Along with a requirement, they need support (know-how, easy-to-use analytical tools, templates, cost-benefit analyses, funding for infrastructure changes, etc.).

### **Extensive science shows alignment with employers' needs**

- There is extensive science on the ill effects of long commutes, especially in single-occupancy-vehicle mode (*see summary from Annotated Bibliography on last page*)
- These ill-effects align with employers' HR challenges/needs: recruiting, performance, mental health, physical health, attendance, compensation, retention, liabilities, etc.

### **Why a Province-wide program rather than patchwork of municipal programs?**

- Because commutes and congestion cross municipal boundaries
- There would be inefficiency and delay to have each municipality set up and operate a program
- Municipalities do not have authority to *require* participation, nor means to encourage, nor a budget to operate a support program.

## Further background

### Building on advice from key informant interviews with cabinet ministers, MLAs, mayors, councillors, planners, business leaders, superintendents, bank RVPs:

- Employers want this program to not be onerous, yet effective and revenue positive for them.
- Province needs to design and provide *efficient* education/support that is self-serve 24/7.
- The program should be straight-forward for employers to use. For expediency, the development, roll-out and operation could be contracted to a consulting consortium during the first two years.
- Some funding should be available to PSOs for investments (e.g., secure storage for bikes and ebikes; EV charging stations; etc.)
- The program should work synergistically with other Provincial and municipal programs.
- The development/ refinement of the support mechanisms and materials can be completed within three to six months.

### Action by medium and large employers would be mandatory

- Employers would be required to report annually on “employee commuting CO<sub>2</sub> burden” (a spreadsheet app linked to Google Maps database will be provided to employers).
- “Best efforts” could be voluntary for the first year while toolkits and support are refined and data is gathered; mandatory efforts in subsequent years.
- CleanBC targets require significant action ASAP, so Government should require all employers to take “best efforts” to ramp up results. (Note: Washington State has required reporting of best efforts on CTR by its largest employers since 1991.)

### An opportunity to tackle other transportation and climate change challenges

- Once employee commuting improvements are underway, there will be an opportunity to use the same mechanism/channels with medium and large employers to address other sources of transportation congestion and CO<sub>2</sub> emissions:
  - clientele travel (e.g., schools can share successes to improve student travel, health authorities can minimize patient travel through telehealth, etc.)
  - freighting/delivery (e.g., Peel Region pilot has cut delivery trucks times by 23%)

## Blueprint for the CTR program – *draft*

- Medium and large employers will be required to calculate their annual total employee commuting CO<sub>2</sub> burden, and report online. This will ensure awareness by all employers of their role/responsibility/opportunity.
- Employers will be required to “make best efforts” to improve employee commutes, and report annually on those efforts and the reduction in their total employee commuting burden.
- First phase is requiring reporting and action from PSOs; next, expand to employers in all sectors.
- An app for easily calculating the burden in-house has been developed and will be provided, thus addressing privacy/security concerns. Only the total annual burden is reported to government.
- Support will be developed and provided initially by a contracted consultancy. Employers will have access 24/7 to toolkits located in a moderated wiki that will be updated/improved through crowdsourcing by practitioners, consultants, service providers, academics and NGOs.
- There will be a free spreadsheet app an employer can use to identify which tactics could be appropriate to investigate further, given that employer’s and its employees’ circumstances:
  - closercommutes *aka proximate commuting* (awareness of home/work proximity at time of hiring and internal job openings, and for peer-with-peer worksite swaps)
  - supporting biking, walking and other active commuting modes (infrastructure, incentives, procedures, etc.)
  - connecting employees with carpool, vanpool & carshare services, possibly with incentive
  - promoting transit use with discounted passes & supportive work scheduling, etc.
  - guaranteed ride home for family urgencies
  - providing vehicles and/or taxi chits for errands
  - providing shuttle to transit stations
  - EV and e-bike charging stations
  - telework from home
  - working from remote/satellite offices and collaborative shared workspaces
  - shift re-scheduling/ flexibility; longer & fewer “compressed” workdays
  - disincentives for SOV use (e.g., charging extra for parking, and/or ‘cash-out’)
  - selecting/moving locations of offices/branches
  - supporting/coordinating with other existing and planned transportation programs.
- Toolkits for each tactic:
  - explainer video
  - instructions
  - internal communications templates
  - cost/benefit analysis template/app and app to assist with implementation if appropriate
  - experiences/advice/case studies from within B.C. and elsewhere
  - annotated/reviewed links to resources within B.C.
  - networking capability with other practitioners
- A fund would be created to subsidize cost for PSOs to improve infrastructure for bike and ebike security, EV charging stations, etc.
- Certification/recognition for the employer (possibly ISO for robust program implementation or rating similar to LEED in new building construction) and for HR professionals.

## Effects of Long Commutes on Commuters' Physical and Mental Health, Activities, Work and Social Life

Link: [http://www.trelawnyconsulting.com/closecommute/Effects\\_of\\_Long\\_Commutes.pdf](http://www.trelawnyconsulting.com/closecommute/Effects_of_Long_Commutes.pdf)

Peer-reviewed research from many countries indicates that longer commutes are linked to increased worker stress, unhappiness, sedentary living (lack of exercise) and obesity, and pollution exposure, leading to reduced productivity and job dissatisfaction, illness and absenteeism, and domestic conflicts among other impacts. For example, studies have identified correlations between long commutes and the following outcomes:

### Physical health

- obesity or adiposity [severe or morbidly overweight] (Jacobson et al., 2011) (Jilcott et al., 2010) (Lopez-Zetina et al., 2006) (Hoehner et al., 2012) (Sacker et al., 2014) (Sugiyama et al., 2016)
- higher daily exposure to particulate matter and black carbon (Karanasiou et al., 2014) (Shekarzifard et al., 2016)
- more visits to general practitioner (Künn-Nelen, 2016)
- lower cardiorespiratory fitness (Hoehner et al., 2012) and higher cardio-metabolic risk (Hoehner et al., 2012) (Sugiyama et al., 2016)
- higher blood pressure (Novaco et al., 1979)
- chronic fatigue (Kageyama et al., 1998)
- diabetes mellitus (Tsuji et al., 2015)
- self-reported poor health, serious backache, headaches, sleep disorders & fatigue (Hämmig et al., 2009)

### Mental health

- anxiety and depression, lack of energy and optimism (Hämmig et al., 2009)
- chronic stress, being in a sympathodominant state (Kageyama et al., 1998)
- increased stress and anxiety (Pohanka et al., 2004)
- lower sense of well-being (Stutzer et al., 2008)

### Activities

- reduction in sleeping, physical activity and food preparation which over time may contribute to obesity and other poor health outcomes (Christian, 2012)
- less physical exercise (Künn-Nelen, 2016) (Hoehner et al., 2012) (Nomoto et al., 2015)
- fewer sleeping hours (Nomoto et al., 2015)

### Work Performance

- increased sickness absence (Ala-Mursula et al., 2006) (Künn-Nelen, 2016)
- longer average paid time loss days due to work-related injury (Fan et al., 2013)
- fewer working hours (Nomoto et al., 2015)
- more accidents (Pohanka et al., 2004)
- lower job satisfaction and decreased intention to stay with same employer (Steinmetz et al., 2014)

### Social life

- less access to social capital (Besser et al., 2008); less time with friends (Sandow, 2011); and social isolation (Pohanka et al., 2004)
- higher time- and strain-based work-life conflict [WLC] (Hämmig et al., 2009)
- strain on relationships and likelihood of divorce (Sandow, 2011)
- low social participation and low general trust (Mattisson et al., 2015)

PDFs of the full published papers are available to researchers from CloserCommutes.org upon request. *Our thanks to B.C. Ministry of Finance, Royal Roads University and Victoria Transportation Planning Institute for assistance in identifying and for arranging access to this research.*