TransLink Board of Directors
Mayors' Council on Regional Transportation

PUBLIC JOINT MEETING AGENDA

Version: January 21, 2022

January 27, 2022, 10:15AM to 12:15PM
Via Videoconference (live streamed to TransLink YouTube Channel)

CO-CHAIRS:
Mayor Jonathan X. Coté, Chair, Mayors' Council on Regional Transportation
Lorraine Cunningham, Chair, TransLink Board of Directors

Joint Discussion – Chaired by Mayor Coté

10:15AM **1. PRELIMINARY MATTERS**
1.1. Call to order
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10:20AM **2. REPORT OF TRANSLINK MANAGEMENT**
2.1. Approval of Transport 2050 ..... **2**
- **Annex A:** Transport 2050 ..... DOWNLOAD HERE

TransLink Board Motions – Chaired by Lorraine Cunningham

10:45AM **3. TRANSLINK BOARD MOTIONS**
3.1. Approval of Transport 2050 ..... **2**

Mayors' Council Motions – Chaired by Mayor Coté

11:00AM **4. MAYORS' COUNCIL MOTIONS**
4.1. Approval of Transport 2050 ..... **2**

Joint Discussion – Chaired by Lorraine Cunningham

11:30AM **5. REPORT OF TRANSLINK MANAGEMENT ON T2050 IMPLEMENTATION**
5.1. Report on 2022 Implementation Priorities **7**
- **Annex A:** New 10-Year Vision **10**
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5.2. Update on Transport 2050 Action to Eliminate Regional GHG Emissions from On-Road Transportation **20**

12:15PM **6. ADJOURN**

TO: TransLink Board of Directors
Mayors' Council on Regional Transportation

FROM: Kevin Quinn, CEO

DATE: January 21, 2022

SUBJECT: **ITEM 2.1 – Approval of Transport 2050**

PROPOSED RESOLUTIONS:

1. That the TransLink Board of Directors:
   a. Approve the long-term strategy titled *Transport 2050,* attached as Annex A to the January 21, 2022 report, "Approval of Transport 2050;" and,
   b. Provide the long-term strategy titled *Transport 2050,* attached as Annex A to the January 21, 2022 report, "Approval of Transport 2050" to the Mayors' Council on Regional Transportation.

2. That the Mayors' Council on Regional Transportation:
   a. Approve the long-term strategy titled *Transport 2050* attached as Annex A to the January 21, 2022 report, "Approval of Transport 2050;"
   b. Receive this report.

PURPOSE

The purpose of this report is to seek approval from the TransLink Board of Directors and Mayors' Council the updated long-term strategy, the Regional Transportation Strategy titled *Transport 2050,* pursuant to the requirements of the *South Coast British Columbia Transportation Authority Act* (SCBCTA Act).

BACKGROUND

Under the SCBCTA Act, TransLink is legislatively required to update its long-term strategy (30-year Regional Transportation Strategy (RTS)) every five (5) years. In preparing an RTS, TransLink must consider (Section 193(3) of the SCBCTA Act):

a) regional land use objectives,
b) provincial and regional environmental objectives, including air quality and greenhouse gas emission reduction objectives,
c) anticipated population growth in, and economic development of, the transportation service region, and
d) provincial transportation and economic objectives.

The previous strategy was adopted in 2013. In summer 2018, the Mayors' Council and Board re-adopted the existing 2013 RTS in order to allow for a more comprehensive update process that included close partnerships with the Province of British Columbia and Metro Vancouver.

From the outset, regional policymakers expressed several desires for the new RTS:

1) That it be a compelling, future-oriented vision document that provides the space to "think big" – capturing the imagination of the region by keeping its central focus on the customer experience.
2) That it clearly articulate the role of new mobility in the transportation landscape, but consider multiple plausible futures given the high degree of uncertainty.
3) That it provide refined metrics to support monitoring and performance-based decision-making for future policies and investments.
4) That it be a layered strategy, built on a solid vision, but proposing concrete actions and network investments that are grounded in reasonable assumptions.
5) That it achieve a robust social consensus on a desired future for regional transportation in light of rapid disruption and innovation in the transportation landscape.

These aspirations have been met in *Transport 2050* through extensive engagement with the public, including reaching out to a wide cross-section of people, listening and incorporating feedback from a wide variety of stakeholders, and working extensively with partner agencies and municipalities.

DISCUSSION

Transport 2050- A Bold Vision for the Future

Transport 2050 envisions a future of "*Access for Everyone"*, where every person in Metro Vancouver- no matter who they are, where they live, or how they choose to get around - can easily connect to the people, places and opportunities they need to thrive. This is a crucial moment in time: the choices we make today will influence how we move and live for decades to come.

In developing *Transport 2050*, staff sought to bring a long-term view to the pressing challenges of today. We are on the cusp of major technological changes in the mobility landscape, major social and economic changes are underway, we are recovering from a major global pandemic, and we are confronting the most significant collective challenge of our lifetimes in the global climate emergency. This document responds to the present moment with a bold and hopeful vision for our collective transportation future.

Transport 2050 Development Process

Co-Developing a Draft Strategy

Transport 2050 was developed in close and ongoing collaboration with both land use and transportation planning staff from local governments across the region, staff from Metro Vancouver as well as neighboring regional districts, and staff from the Provincial and Federal governments and other public agencies, including Port of Vancouver and YVR.

TransLink convened regular inter-agency working groups at all levels between the Province, Metro Vancouver and TransLink. This deep collaboration with key implementers resulted in a comprehensive Transport *2050* that is robust and reflects a partnership between all levels of government in this region on the future of transportation in Metro Vancouver.

The Mayors' Council and TransLink Board were deeply involved in steering the development of *Transport 2050*, reviewing draft materials and considering public feedback along the way through the Joint New Mobility Committee and through workshops and regular meetings of the full Mayors' Council and Board.

This essential feedback and direction fundamentally shaped the ambitious direction contained in *Transport 2050*.

Transport 2050 was developed in parallel with other key regional strategies, including Metro Vancouver's *Metro 2050* (the updated Regional Growth Strategy) and *Climate 2050* (the region's response to climate change), in particular the *Climate 2050 Transportation Roadmap*. Metro Vancouver and TransLink also collaborated on key foundational studies that contributed to the development of the regional strategies, including the *Regional Long-Range Growth and Transportation Scenarios* report, the *Regional Resilience Framework*, and the *Social Equity & Regional Growth Study*.

The nexus between *Metro 2050*, *Transport 2050*, and municipal plans is the location of housing, employment and other key destinations in the region, and the transportation needs of these various land uses. Both *Metro 2050* and *Transport 2050* emphasize more compact, complete communities where people can affordably live close to their daily needs, and increasing the supply of affordable, transit-oriented housing, enabling more people to walk, roll, cycle or take transit to get around the region. To further support more transit access for more people in the region, *Transport 2050* and *Metro 2050* developed in lockstep the Reliable & Fast Transit Network, an approximately 300 km expansion of rapid transit, with the Major Transit Growth Corridors being proposed in *Metro 2050*.

Engagement

Transport 2050 was developed through TransLink's largest-ever public and stakeholder engagement program. Over the course of three engagement phases (which began before the COVID-19 pandemic), we visited every municipality in Metro Vancouver, as well as those in neighboring regions, and held over 160,000 conversations with the public through 360 in-person or virtual events. Over 38,000 surveys and 4,000 ideas were submitted, and over 500 stakeholder groups representing every sector of society were engaged. Representative public opinion polling was conducted at each phase of engagement to supplement our online surveys. We made special effort to reach out to groups typically underrepresented in transportation decision-making, including having engagement materials and opportunities in seven different languages, and convening discussions with youth, through a Youth Advisory Council, and with organizations representing disadvantaged communities and individuals. social equity groups.

Phase 1 Public Engagement (May 3 – September 22, 2019) – Project Launch
In 2019, Phase 1 Public Engagement was launched. During this first phase of engagement, we asked the public to share their values, concerns, priorities, and ideas for the future of transportation. We learned that people most value the region's natural assets and convenient and easy access to work, transit, shopping, and other amenities. They're concerned about affordability, road congestion, and climate change. People want a transportation system that is efficient, cost-effective, and environmentally friendly. The top transportation priority identified for the region was the expansion and improvement of transit options — which was ranked as a top priority by both drivers and transit users alike.

Through our online Ideas Board, we received over 4,000 ideas for the future of our region's transportation system, with topics ranging from transit user experience to new technologies to resolving congestion.

Staff took the input received in Phase 1 and considered it in developing foundational pieces of *Transport 2050*. The values, concerns, and priorities we heard were translated into the five goals that drive *Transport 2050* (convenient, reliable, affordable, safe & comfortable, and carbon-free). The thousands of ideas

received were reviewed, analyzed, considered and shaped into strategies and actions, which began to populate the draft *Transport 2050*.

Phase 2 Public Engagement (April 19 – May 14, 2021) – Goals and Key Actions

After a pause in activity for much of 2020 due to the COVID-19 pandemic, TransLink resumed public engagement in spring 2021. Specifically, we sought feedback on the five draft goals and on three particularly transformative actions that are structure-forming parts of the strategy. These were:

- Action 1: People-first streets that invite walking, biking, and rolling
- Action 2: Fast and frequent rapid transit that's a competitive choice for most longer trips
- Action 3: Automated vehicles that provide convenient access to car trips, without adding to congestion

Phase 2 Public Engagement was conducted entirely online experience in light of COVID-19. We received nearly 5,000 survey responses and had in-depth discussions during the online events. During this phase of engagement, we put an emphasis on describing the key issues, choices and trade-offs associated with each of the above actions. Overall, participants said the draft goals were on-track, a sentiment broadly shared across people of different demographic backgrounds. In general, people were supportive of lower-speed and more people-oriented streets, as well as carefully managing the arrival of automated vehicles to minimize congestion impacts, with some caveats and considerations about implementation. When presented with two illustrative networks that emphasized either more above/below street level rapid transit, or more street level rapid transit, but in dedicated lanes, participants were aware of the trade-offs and relative merits of both. There was fairly balanced support for both rapid transit concepts, with an expressed desire to have a final network with a combination of both.

Focused Engagement

Staff took the feedback from Phase 2 Public Engagement and continued to refine the draft strategy through 2021.

Through the many stakeholder and decision maker engagements, *Transport 2050* began to coalesce around a central theme of "Access for Everyone" and three key strategic lenses, of reconciliation, social equity, and resilience.

Through the summer and fall of 2021, additional focused engagements were held with the Indigenous Advisory Committee (IAC), social equity groups, and the goods movement sector. The purpose of these engagements was to ensure that these three strategic lenses were aptly reflected throughout the document.

Engagement with the IAC, which comprised of ten local First Nations and two organizations representing urban Indigenous communities, occurred from April to October 2021 with three key meetings and material review periods in between. The IAC provided input on key transportation interests, issues, and priorities as they pertain to *Transport 2050.* A summary of feedback from the IAC is included in the 'What We Heard' report, which is being finalized and will be posted on the Transport 2050 website in February.

Feedback from the IAC, goods movement sector, and social equity groups were integrated into a draft *Transport 2050* which was presented to the TransLink Board and Mayors' Council in September, and which was endorsed to proceed to public engagement in October.

Phase 3 Public Engagement (October 12 – 29, 2021) – Review Draft Strategy
For the third and final phase of engagement, we shared the draft *Transport 2050* strategy for comment via an online survey, representative panel, and a series of online workshops. Over 2,000 surveys were submitted and 330 participants from the public, stakeholder groups, and elected officials attended ten online workshops. We also made a concerted effort to reach people whose main mode of transportation is driving, by reaching out to a broad range of organizations representing automobile users, truck drivers, and other commercial road users so that we could gather their specific input.

Overall, participants in Phase 3 were highly supportive of the draft *Transport 2050* strategy, including especially the proposed Reliable & Fast Network and the ambitious low-carbon initiatives. Modest edits and refinements were made following Phase 3 to account for the feedback – primarily to make clarifications, add emphasis and provide additional detail where requested.

CONCLUSION

Strategy Approval

As a result of significant community and policymaker engagement, *Transport 2050* is a comprehensive and forward-looking document that will help local, regional, provincial, and federal agencies make sound transportation investment and policy decisions that align with where we collectively want to be heading over the next 30 years. Significant credit is also due to the incredible staff team at TransLink who have been thoughtful, creative, hard-working, responsive and collaborative throughout the development of *Transport 2050*.

The attached *Transport 2050* (Annex A) is now presented for approval by the TransLink Board and Mayors' Council.

Next Steps in Implementation

Transport 2050 is a comprehensive regional transportation strategy, with strategies and actions outlined for local governments, Metro Vancouver, TransLink, the Provincial and Federal Governments as well as for the private sector, community organizations and academia. These actions vary in timeframe, complexity and implementation readiness. *Transport 2050* takes a long-term view, looking out 30 years, but begins with actions starting today. Work is already underway to support the near and medium-term implementation of *Transport 2050,* including the prioritization of the first ten years of investments and programs, and corporate and regional climate action.

ATTACHMENT

- **Annex A:** *Transport 2050*

TO: TransLink Board of Directors
Mayors' Council on Regional Transportation

FROM: Sarah Ross, Acting Vice President, Transportation Planning and Policy

DATE: January 20, 2022

SUBJECT: **ITEM 5.1 – Transport 2050 Implementation: 2022 Priorities**

RECOMMENDATIONS:

The Finance and Governance Committee recommends that the Mayors' Council:

1. Ask staff to bring back options for a new naming convention for the "New Vision" document for consideration at the next meeting; and,
2. Receive this report for information.

PURPOSE

With the anticipated approval of Transport 2050 (T2050) at the January 27, 2022 joint meeting of the Mayors' Council and TransLink Board, work has already begun to prioritize and implement key actions. The purpose of this information report is to outline some of the key T2050 priorities for implementation over 2022, as described in more detail in the two attached annexes, as well as the separate accompanying report, "Status update on Transport 2050 Action to Eliminate GHG Emissions from On-Road Transportation within Metro Vancouver."

BACKGROUND

T2050 is a comprehensive regional transportation strategy, with strategies and actions outlined for local governments, Metro Vancouver, TransLink, the Provincial and Federal Governments as well as for the private sector, community organizations and academia. These actions vary in timeframe, complexity and implementation readiness. T2050 takes a long-term view, looking out 30 years, but begins with actions starting today – as described in the memo below.

DISCUSSION

Following this memo are two annexes and a separate report on key T2050 implementation priorities for 2022:

1. **New 10-Year Vision Development (Annex A)**
   - The 10-Year Vision outlines which actions, projects, programs, and initiatives from T2050 will be considered for implementation within the next decade. Upon approval, the new 10-Year Vision will become the blueprint for all subsequent Investment Plans after 2022.
   - This memo outlines the progress made since the new 10-Year Vision process began in September 2021 (see Item 4.1 from the public agenda of the September 29th, 2021 meeting of the Mayor's Council).

2. **Eliminating GHG Emissions from On-Road Transportation in Metro Vancouver (separate report)**
   - This report outlines the current status of work in the Metro Vancouver region to reduce greenhouse gas (GHG) emissions from on-road transportation, including:
     a. Confirming the scale and urgency of the issue;
     b. An overview of recently updated provincial and regional climate action plans and targets; and
     c. An update on the work and coordination underway between the Province, Metro Vancouver and TransLink to define an implementation pathway to achieving our respective targets.

3. **TransLink Corporate Climate Action Strategy and Low Carbon Fleet Strategy (Annex B)**
   - TransLink has developed a Corporate Climate Action Strategy that focuses on reducing GHG emissions from TransLink's fleet and facilities as well as actions to increase the resilience and adaptation of TransLink's operations to climate-related impacts;
   - The purpose of this memo is to inform the Mayors' Council on Regional Transportation on:
     a. The key elements of TransLink's Corporate Climate Action Strategy
     b. Update on TransLink's Low Carbon Fleet Strategy
     c. Key TransLink corporate climate action priorities for 2022 and beyond

In addition, four other key T2050 implementation priorities are being scoped and further details will be brought forward at subsequent Mayors' Council and TransLink Board meetings:

4. **Indigenous Relations Framework and Reconciliation**
   - TransLink made a commitment to reconciliation within Transport 2050. As a public transportation authority, we have an opportunity to contribute in significant and respectful ways to advance reconciliation with Indigenous peoples in Metro Vancouver.
   - Beginning in Q1 2022, TransLink will engage with First Nations and the federal and provincial governments on transportation options to reserves. Transit service to reserves is a commitment within Transport 2050, which will support the elimination of a historical and deep-rooted systemic barrier of isolation caused by Canadian assimilation policies and actions. Initial steps include meeting with:
     - First Nations to identify their key transit needs for the purposes of creating potential transit plans and outlining infrastructure requirements; and
     - First Nations, federal and provincial governments regarding legislation, jurisdiction and funding mechanisms.
   - The Indigenous Relations Vision Statement and Guiding Principles will be submitted to the Board of Directors for approval in Q1 2022. TransLink will continue to engage with Indigenous Nations and urban Indigenous peoples on increasing Indigenous representation within all levels of the Enterprise, developing a cultural recognition program, guidelines to support meaningful engagement, and an Indigenous procurement strategy.

5. **Regional Social Equity Strategy**
   - The work on a Regional Social Equity Framework will build off the work completed through the *Social Equity & Regional Growth Study,* developed in partnership with Metro Vancouver. Additional partnerships will be sought for this next phase of work with community and government organizations involved in health, equity and inclusion.
   - TransLink will also partner with Metro Vancouver on the update to the *Housing and Transportation Cost Burden Study*.

6. Regional Resilience Strategy

- TransLink and Metro Vancouver have identified the need to collaborate and work together to understand the critical interdependencies and vulnerabilities of the various infrastructure systems (e.g., transit, wastewater, storm water, communications, electricity, fuels, etc.) in the region. Therefore, it will be important for TransLink to share its key risks and vulnerabilities with its partners to ensure potential failures of one system do not negatively affect other systems in the region and thereby significantly affect community well-being or the economy.
- The work on a Regional Resilience Strategy will build off the work completed on a *Regional Resilience Framework*, developed in partnership with Metro Vancouver.
- Through the Integrated Partnership for Regional Emergency Management (IPREM), some work has been done on understanding the associated cost of adapting regional infrastructure and operations to the changing climate.
- Through 2022, TransLink will develop high level financial implications of adaptation efforts on our operations and infrastructure and begin sharing possible adaptation strategies with Metro Vancouver and other partners in the region.

7. Transport 2050 Implementation Monitoring Program

- As outlined in Part H of T2050, an important next step in implementation is to prioritize the strategies and actions into those that will be implemented sooner (versus later) or given more resources (versus less). The New 10-Year Vision is the first step in this prioritization process.
- The Performance indicators described in T2050 are critical in evaluating and prioritizing strategies and actions and then to monitor performance over time.

CONCLUSION

TransLink Staff have already started preparing to implement *Transport 2050* and will bring implementation updates back to the Mayors' Council and TransLink Board as work progresses. Individual work programs will bring forward updates and decision items as needed, and their progress will be tracked through the performance monitoring program that will be established through 2022.

ATTACHMENTS:

- **Annex A:** New 10-Year Vision Development
- **Annex B:** TransLink Corporate Climate Action Strategy and Low Carbon Fleet Strategy

ANNEX A

New 10-Year Vision Development

PURPOSE

This report outlines the progress made since the new 10-Year Vision process began in September 2021 (see Item 4.1 from the public agenda of the September 29th, 2021 meeting of the Mayor's Council). The 10-Year Vision outlines which actions, projects, programs, and initiatives from Transport 2050 (T2050) will be identified for implementation within a 10-year time horizon. Upon approval, the new 10-Year Vision will become the blueprint for all subsequent Investment Plans after 2022.

BACKGROUND

The Transport 2050 30-year strategy, to receive final approval by the Mayors' Council in January, 2022, sets out the long-term vision for this region, where "*by 2050 active transportation and transit are competitive choices accounting for at least half of all passenger trips*." A key part in achieving this vision will be making transit the most convenient choice for longer trips and walking and cycling for shorter trips.

With transport being the largest single source of carbon pollution in the region, the Mayors' Council has said that the region needs to act urgently with bold moves if we are to meet our climate action targets. This was also recently re-affirmed in the Province's *CleanBC: Roadmap 2030* and Metro Vancouver's *Clean Air Plan*. In order to reach our region's GHG reduction targets a full suite of actions and investments will be required, such as those included in Transport 2050.

Transport 2050 includes actions for transit, walking, cycling, roads, and new mobility, including approximately 40 Fast & Reliable corridors. Limited capacity and available funding indicate not all T2050 actions can be implemented over the New Vision's 10-year horizon. The New Vision process will help determine which actions and investments have the greatest potential to achieve T2050 goals and should be prioritized in the near-term, and which actions should be implemented later in the T2050 timeline.

DISCUSSION

Staff are developing the New Vision as a five-step process:

1. **Confirm** candidate actions and initiatives for evaluation
2. **Evaluate** candidate actions and initiatives against T2050 goals
3. **Compare** actions and initiatives based on policymaker values
4. **Optimize** portfolio & **Iterate** based on overall affordability and regional effectiveness
5. **Approve** draft and final plans

Step 1: Confirm

The Mayors' Council met in a series of workshops from September to November, to confirm the list of candidate actions and initiatives to consider and evaluated in more detail in the New Vision. These candidate actions and initiatives come from the remaining, unimplemented portion of the 2014 Vision (10+ actions/initiatives), the T2050 Network Maps (40+ actions/initiatives), and the T2050 Policy Direction (10+ actions/initiatives).

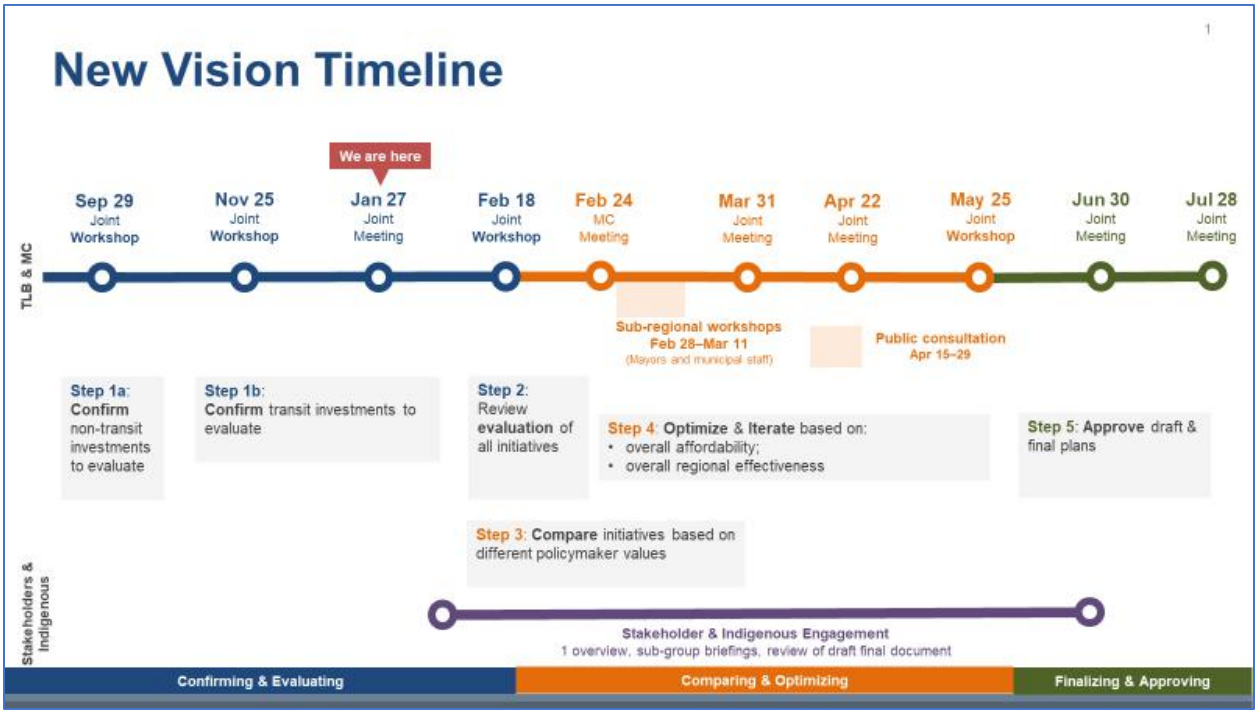
Step 2: Evaluate
This process is currently underway and evaluates each initiative against the goals established in T2050 and combines them into an overall performance score.

Step 3: Compare
Compare actions and initiatives based on policymaker values and the overall cost-effectiveness score, and package into several candidate portfolios.

Step 4: Optimize & Iterate
The performance evaluation of each portfolio will include social equity considerations such as minimizing gaps and reducing disparity between disadvantaged groups and the rest of the population. In particular, portfolios that provide proportionately better outcomes for areas with higher numbers of people who are low-income, seniors, visible minorities or of Indigenous identity could be considered more favourable.

Finally, the Mayors' Council can consider overall portfolio affordability and iterate to see what initiatives could be "in" or "out" at different expenditure levels. Overall regional effectiveness of the proposed portfolio will also be assessed.

Step 5: Approve draft and final plans
We have completed Step 1, and are preparing Step 2 for a February workshop of the joint Mayors' Council and TransLink Board, as shown in the timeline graphic below:



Naming convention

The 10-Year Vision for Metro Vancouver Transit and Transportation was the title of the implementation plan adopted by the Mayors' Council in 2014. Then, as now, it was conceptualized as an implementation blueprint to plan and deliver priority projects from the 30-Year Regional Transportation Strategy (RTS).

The last RTS was approved in 2013 and was based largely on iterations of Transport 2021 originally approved in 1993. Given the long-history of the 2013 RTS, the 2014 Vision was designed to "push the envelope" in identifying new planning horizons for the region and was considered as much a vision-setting document as it was an implementation blueprint for the 2013 RTS.

The situation in 2022 is much different, with a newly adopted RTS (T2050) that was developed from first principles as a new vision for the region. As such, the implementation blueprint for T2050, the "New Vision," will be explicitly limited to prioritizing the implementation of objectives, projects and services already laid out in T2050; in short, it will not propose new "visionary" elements beyond those already approved in T2050.

Given the changed circumstances, it is recommended that the "New Vision" naming convention be updated. A new name and brand for the "New Vision" document will align it more clearly to Transport 2050, and signal how the implementation plan is then rolled out through 2-3 subsequent Investment Plans (the 2014 Vision was delivered through three investment plans called "Phase One," "Phase Two," and so on – a bland naming convention that was not clearly linked to the Vision or the RTS). Staff can bring back options for a new naming convention for consideration at a future meeting.

CONCLUSION

Upon its approval, the New Vision will become the blueprint for all subsequent business casing and Investment Plans after 2022. Some study funding has been set aside in the 2022 Investment Plan, to advance the project planning and development of prioritized New Vision initiatives.

ANNEX B

TransLink Corporate Climate Action Strategy and Low Carbon Fleet Strategy

PURPOSE

The purpose of this report is to update the Board and Mayors' Council on:

1. Key elements of TransLink's Corporate Climate Action Strategy;
2. Low Carbon Fleet Strategy and how it supports the Corporate Climate Action Strategy
3. Key climate action priorities for 2022 and beyond

BACKGROUND

Public transit is both a contributor to the problem of GHG emissions and a major part of the solution (switching to zero emissions modes such as battery electric buses, trolley and SkyTrain). TransLink's operations just are 2.7% of region's transportation GHG emissions, or 0.9% of all regional emissions.[1] Our GHG emissions are predominantly from our bus fleet and facility operations (93 per cent and 7 per cent, respectively). Due to the long service life of these assets, TransLink's current policy and investment decisions have the potential to lock-in levels of GHG emissions for decades. TransLink has recognized the importance of acting now and working with its stakeholders to reduce carbon pollution, improve air quality and ensure our ecosystems, infrastructure, and communities are resilient to climate change.

In September 2018, the Mayors' Council adopted the following resolution:

1. Adopt the targets of 80 per cent reduction of GHG emissions by 2050, and 100 per cent renewable energy by 2050; and,
2. Direct staff to bring forward by Q3 2019, GHG emission reduction targets and renewable energy goals for 2030 and 2040 to support the 2050 commitments; and,
3. Request that TransLink consider the procurement of renewable fuels when available and cost effective in support of these goals; and,
4. Direct TransLink to see external grant funding from Green Infrastructure Fund, and other sources of provincial and federal funding for the upfront capital investments required to transition to electrification.

To respond to this resolution, TransLink has advanced and begun implementation of the Low Carbon Fleet Strategy and developed a Corporate Climate Action Strategy. The Corporate Climate Action Strategy will be published in January 2022 and outlines seven key strategies and 31 actions for the enterprise to reduce its GHG emissions and adapt its infrastructure and operations to climate change. As part of the Strategy's development, TransLink has committed to new, more aggressive climate and GHG reduction targets:

- Achieve net zero GHG emissions[2] by 2050, with an interim reduction of 45% by 2030, from 2010

[1] Based on Metro Vancouver, Metro2040 Dashboard (2019 GHG Inventory) and TransLink 2020 Accountability Report and internal GHG inventories.

[2] The achievement of "net-zero GHG emissions" is also referred to as "carbon neutrality." TransLink has chosen the term "net zero GHG emissions" for clarity in communications and terminology used by global public and private sector leaders including the Government of Canada and more than 130 countries. It is also acknowledged by C4O Cities Climate Leadership Group.

levels; and,
- Ensure our infrastructure and operations are resilient to the impacts of climate change.

These targets support:
- Canadian and global public and private sector efforts to limit global warming to 1.5°C as recommended by the Intergovernmental Panel on Climate Change (Paris Agreement);
- TransLink's responsibility under the SCBCTA Act to support "provincial and regional environmental objectives, including air quality and greenhouse gas emission reduction objectives;"
- Meet or exceed the expectations, commitments and plans of our major investors and funders;
- Support economic shifts and job creation toward a low carbon economy; and
- Mobilization of the organization towards measurable targets.

DISCUSSION

The development of TransLink's Climate Action Strategy in 2020-21 has been informed by:
- Ongoing implementation of our Low Carbon Fleet Strategy (LCFS);
- Development of a Facilities Renewable Energy Plan;
- Conducting emissions pathway/roadmap analysis to achieve net-zero;
- High level climate change risk assessment of our infrastructure assets;
- Identification of key investments required; and
- Informal consultation with regional and provincial partners.

The Strategy is based on three key pillars and seven strategies:
1. Reduce GHG Emissions
    a. Implement Low Carbon Fleet Strategy
    b. Develop Net Zero Facilities Strategy
2. Adapt to Climate Impacts
    a. Develop Climate Change Adaptation and Resiliency Roadmap
    b. Support a More Climate-Resilient Region and Low Carbon Economy
3. Advance Governance and Funding
    a. Develop and Implement Supporting Climate Policies, Plans, and Processes
    b. Enhance Climate Education and Communication
    c. Secure Funding for Net Zero and Climate Resilience

<u>Reducing Emissions and the Low Carbon Fleet Strategy</u>
Our emissions pathway/roadmap analysis indicates that TransLink can achieve a 45% reduction in overall GHG emissions by 2030 through a combination of planned and funded and incremental, unfunded (currently) investments.

Our draft 10-Year Investment Plan (planned, funded investments) and continued implementation of the Low Carbon Fleet Strategy on the most aggressive implementation pathway (as directed by the Board and Mayors' Council) will achieve a 37% GHG emissions reduction (~51,000 tonnes CO_2e) over 2010 levels. These investments include:

- 2022 thru 2030, replace 438 end-of-life Diesel and Hybrid Diesel (40' and 60') with 462[3] battery electric buses (34% of our current diesel bus fleet)
- In 2024, replace 84 end-of-life Diesel with Compressed Natural Gas (CNG) buses (28% expansion of CNG fleet) and 100% of CNG fleet is fueled by Renewable Natural Gas (RNG)
- Marpole Transit Centre (new), Port Coquitlam Transit Centre (charging infrastructure), Burnaby Transit Centre redevelopment to charge battery electric buses
- Maintaining the near-zero emissions electric trolley fleet (largest in North America) and maximizing our past investment in catenary infrastructure by replacing 188 end-of-life electric buses in 2027

Table 1 provides an overview of the current schedule to procure battery electric buses, design and construct the required charging infrastructure and switch to 100% RNG.

Table 1. *Overview of Current Planned Low Carbon Fleet Strategy Investments 2022-2030*

Year/Investment	2022	2023	2024	2025	2026	2027 - 2030
Battery Electric Buses (40 & 60 ft)	15 – 40'	57 - 40'		79 - 40'	217 - 40' 45 - 60'	20 – 40' 29 – 60'
CNG		50 - 40'	84 - 40' 100% RNG →			
Base Location	Hamilton Transit Centre	Port Coquitlam Transit Centre	Hamilton / Surrey / Port Coquitlam Transit Centre	Marpole Transit Centre	Marpole Transit Centre	
Infrastructure	On-route chargers		Port Coq. Charging Infrastructure	On-route chargers	Marpole Transit Centre[4]	Burnaby Transit Centre electrification
Cost **Net of Funding**	$16M $1M	$135M $8M	$107M $11M	$139M $75M	$565M $57M	$253M $99M

The Low Carbon Fleet Strategy projects constitute $1.21B in planned investment by 2030 and are based on our draft 10-Year Investment Plan which is critical to achieving our 2030 reduction target. It will be critical that any future service expansion emerging from the New Vision will need to be met using zero-emissions and low carbon technologies and be integrated into the Low Carbon Fleet Strategy's plans and projects.

To achieve the additional 8% reduction (~4,500 tonnes) by 2030, the following (currently) unfunded investments have been identified:

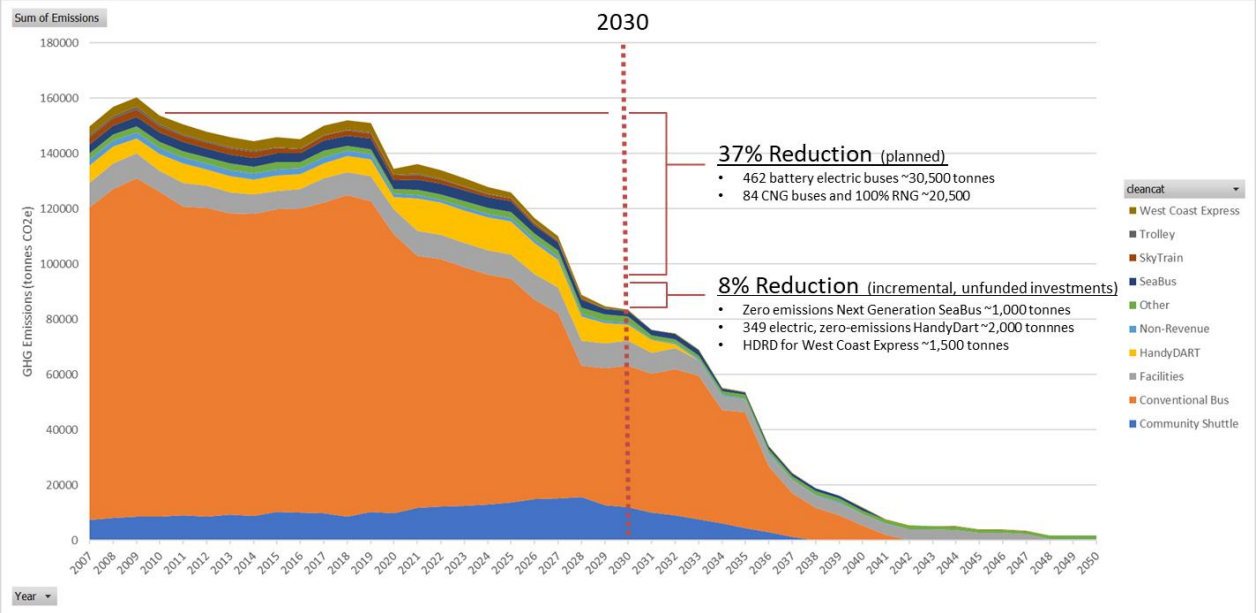
- 2026 thru 2030 – Begin phasing in 349 electric, zero-emissions HandyDarts to replace diesel and gasoline vehicles;
- By 2030 – First fully electrified, zero emissions Next Generation SeaBus; and
- By 2030 – Transition West Coast Express and-or SeaBus to renewable, low carbon fuels.

[3] Expansion accommodates reduced range of battery electric buses.

[4] Marpole electrification cost estimated based on earlier cost project cost splits (includes 90% funding)

The incremental capital investment for electrification of the HandyDart and SeaBus are estimated at $95M. However, the full cost of charging infrastructure is still to be determined. These projects will be integrated into TransLink's next Investment Plan (2024 or 2025) or implemented sooner if funding is secured. Note that our roadmap to net-zero emissions assumes that BC Hydro will achieve CleanBC's goal for 100% Clean Electricity Delivery Standard by 2030 enabling our battery electric buses, electric trolley and SkyTrain fleets to achieve net-zero emissions. A summary of the above investments and their contribution to reaching our targets is provided in Figure 1.

Figure 1. *Roadmap of Investments to Achieve 45% GHG Emissions Reduction by 2030.*



To achieve a further 55% reduction and meet the net-zero target by 2050, TransLink's will need to begin planning and implementing the following:

- Secure funding to continue the implementation of the Low Carbon Fleet Strategy beyond 2030Phasing out, by 2041 the remaining diesel bus fleet: replacing 446 Diesel and Hybrid Diesel, and 383 CNG buses with battery electric buses;
- By 2041, design and construct the required charging infrastructure for the battery electric buses;
- In 2031, begin phasing in 225 electric, zero-emissions Community Shuttles to replace gasoline vehicles;
- In early 2030s begin replacing Highway Coaches with zero-emissions/low carbon vehicles;[5]
- Starting in 2022, begin incremental phase in of hybrid and electric support/non-revenue vehicles;
- Replace Pacific Breeze SeaBus at end-of-life (2049) with fully electric, zero emissions Next Generation SeaBus;
- Beginning in 2030, transition existing facilities to net-zero, primarily through heat-pumps;
- Work with our contracted service providers (e.g., HandyDART, West Vancouver Transit) to ensure zero-emissions vehicle technology and low carbon fuels are implemented; and,
- Identify means to sequester/offset remaining GHG emissions from refrigerants and waste on any remaining portions of our fleet that are not zero-emissions.

[5] TransLink anticipates that future fuel cell technology development will meet the range requirements of this fleet type.

The investments listed immediately above are estimated to be over $1.2B[6] and will have to be integrated into several Investment Plans between now and 2050.

TransLink's continued assessment, planning and procurement of renewable fuels and low/zero emissions fleet and facility technologies (e.g., biofuels, hydrogen fuel cell, heat pumps, building solar, etc.) will be based on balancing service needs, operationally feasibility, cost-effectiveness, and emissions reductions.

Many of the investments in low-carbon fuels and zero-emissions technologies will pay for themselves over the long term, for example:

- The net cost of renewable natural gas is less than fossil-fuel derived natural gas due to the revenue generated from carbon credits;
- Changes to the Renewable and Low Carbon Fuel Requirements Regulation, B.C will generate additional carbon credits revenue associated with TransLink's investment in electrification of its fleet and infrastructure as well as new SkyTrain expansion;
- Current electric buses are more expensive than diesel buses, but costs are projected to come down as the technology matures and life-cycle cost parity for electric battery buses is expected in the near future;
- The life-cycle fleet costs for electrification over the next 30 years are projected to be marginally less expensive compared to diesel primarily because of fuel cost savings[7]; and
- Improved energy performance and cost savings by retrofitting existing buildings and designing new facilities.

These investments will also achieve the following benefits to TransLink's customers, stakeholders, and the region:

- Improved health from better air quality and reduced pollution;
- Quieter, smoother ride on electric buses and improved quality of services;
- Transition to a clean, low carbon economy with new jobs and workforce development;
- Attracting investment, funding, and economic development; and
- More resilient, zero emissions public transportation system with reduced risk, future proofed infrastructure, and assets.

Adapt to Climate Impacts

The second key pillar of TransLink's Climate Action Strategy is ensuring our infrastructure and operations adapts to changes in our climate. Climate change is both a local and global challenge. Climate impacts — such as extreme weather, heat waves, wildfires smoke, flooding, and sea level rise — are already being felt in our region and are expected to intensify. The Province and Metro Vancouver have recognized the importance of acting now and working across sectors to ensure our ecosystems, infrastructure, and communities are resilient to climate change. As part of the Climate Action Strategy, TransLink has identified key climate risks and hazards, conducted a high-level vulnerability assessment of its infrastructure assets.

[6] Includes battery-electric buses, community shuttles, SeaBus, and Highway Coaches, based on current costs. Costs of other investments will need to be determined.

[7] The total fleet costs include bus driver labour, bus purchase, annual bus maintenance, overhauls, battery pack replacement midlife, fuel and fueling infrastructure, annual infrastructure maintenance and depot expansion.

Through the Integrated Partnership for Regional Emergency Management (IPREM), Transport 2050 and the current Investment Plan, some work has been done on understanding the associated cost of adapting TransLink's infrastructure and operations to the changing climate. But it is anticipated that enterprise changes will be required in operational procedures, maintenance practices (e.g., frequency of storm drain cleaning), modified engineering and design standards (e.g., designing for future climate norms), facility site selection and design (e.g., to avoid flood and sea level rise risks) as well as asset management and capital planning.

TransLink and Metro Vancouver have also identified the need to collaborate and work together to understand the critical interdependencies and vulnerabilities of the various infrastructure systems (e.g., transit, wastewater, storm water, communications, electricity, fuels, etc.) in the region. Therefore, it will be important for TransLink to disclose and share its key risks and vulnerabilities with its partners to ensure potential failures of one system do not negatively affect other systems in the region and thereby significantly affect communities and the economy. Through 2022, TransLink will develop high level financial implications of climate change adaptation efforts on our operations and infrastructure and begin sharing our adaptation strategies with Metro Vancouver and others in the region.

TransLink's commitment to *ensure our infrastructure and operations are resilient to the impacts of climate change* is a proactive management strategy to manage future financial risks, potential infrastructure and operational failures/impacts that could impact communities, our customers, and the regional economy.

This commitment will ensure future investments in infrastructure and operational changes can achieve the following benefits to TransLink's customers, stakeholders, and the region:

- More resilient public transit system;
- Reduce financial risk and optimization of return on investment;
- Future proofed assets and optimized life cycle;
- Improved assurance and quality of service and reduced risk of service disruptions; and
- Attracting investment, funding, and economic development.

ANALYSIS

TransLink's Climate Action Strategy and continued implementation of the Low Carbon Fleet Strategy will require ambitious and ongoing action across the Enterprise. But TransLink cannot do this alone – we will need support from Metro Vancouver, the Province, and the federal government. Key risks as well as opportunities are:

1. **Funding** - Staff are monitoring and engaging with provincial and federal counterparts in pursuit of available funding that is aligned with our climate goals. TransLink will continue to utilize future Green Bonds and Carbon Credits to support projects and operations that reduce its emissions and adapt to the changing climate.
2. **Policy and Strategy Landscape** - Key federal, provincial, regional policy and strategic planning actions (i.e., CleanBC's Roadmap to 2030, Transport 2050) will also be needed to increase the supply of medium and heavy duty zero emissions vehicles, the availability of renewable fuels, incentives to improve energy efficiency, switch to renewable and clean energy and support adaptation projects.
3. **Technology** – Although our current strategies are based on existing technologies, new innovations in fuels, propulsion, batteries, heating, cooling may emerge over the next two decades. TransLink will need to continuously track, assess, and pilot emerging technologies and course correct to ensure the value of its investments are optimized.

4. **Significant Service Expansion** – It will be critical to ensure that any significant service expansions emerging from the New Vision, or those required to meet provincial and regional transportation emissions reduction targets, are met through zero-emissions or low carbon technologies, even though this will increase the cost of service expansion in the short-term.
5. **Supply Chain Capacity and Capability** – TransLink and its key fuel, energy, fleet, and infrastructure supply chain partners will need to work together to ensure renewable/low carbon fuels, zero-emissions vehicles and technologies and are brought to the market in adequate supply to meet our needs.
6. **Capacity, Collaboration and Continuous Learning –** The future capacity and capability for TransLink and its project partners will be important to ensure future investments are delivered on time and on budget. This will also require efficient approvals, permitting, and project coordination with municipalities and utilities and the ability for project teams and decision-makers to learn as we go, pivot, and adjust as new technologies and solutions emerge over the next 28 years.

CONCLUSION

The draft Investment Plan and Low Carbon Fleet Strategy will reduce our enterprise emissions by approximately 51,000 tonnes of CO_2e (37% below 2010 levels). However, TransLink and its partners will need to secure incremental investments to achieve the 45% by 2030 target.
Through 2022, TransLink will continue to develop a more detailed corporate Climate Action Plan and refine the financial and organizational implications of our efforts to reach net zero by 2050 and adapt our infrastructure and operations to climate change.

TO: TransLink Board of Directors
Mayors' Council on Regional Transportation

FROM: Sarah Ross, Acting Vice President, Transportation Planning and Policy

DATE: January 20, 2022

SUBJECT: **ITEM 5.2 – Status update on Transport 2050 Action to Eliminate GHG Emissions from On-Road Transportation within Metro Vancouver**

RECOMMENDATION:

That the Mayors' Council on Regional Transportation receive this report.

PURPOSE

This report, a complement to Item 5.1 on Transport 2050 implementation priorities, outlines the current status of on-road transportation greenhouse gas (GHG) emissions reduction work in the Metro Vancouver region, including:

1. Confirming the scale and urgency of the issue;
2. An overview of recently updated provincial and regional climate action plans and targets; and
3. An update on the work and coordination underway between the Province, Metro Vancouver and TransLink to define an implementation pathway to achieving our respective targets.

BACKGROUND

Science Based GHG Emissions Reduction Targets

According to the United Nations' Intergovernmental Panel on Climate Change (IPCC), the world is currently on track for over 3°C of global warming by the end of the century as a result of human-caused GHGs, bringing severe and harmful consequences to communities and ecosystems everywhere. Climate impacts – such as extreme weather, heat waves, wildfire smoke, and unprecedented rain and flooding events – are already being felt in our region and are expected to intensify. It is now widely acknowledged that humanity is in the midst of an accelerating climate emergency.

To avoid the worst impacts of climate change, the IPCC warns that we must limit global heating to 1.5°C above pre-industrial levels. This means slashing carbon pollution globally by 45% below 2010 levels by 2030, and reaching net zero emissions by 2050. Canada signed onto to the Paris Agreement in 2015 to strengthen the effort to limit the global average temperature rise.

In 2021, the Province, Metro Vancouver and TransLink all released updates to their respective strategies and plans, *CleanBC Roadmap to 2030*, *Climate 2050 Transportation Roadmap*, and *Transport 2050*, outlining GHG emissions reduction targets and high-level policy tools that could support the achievement of the targets.

Metro Vancouver's commitment to pursue a carbon neutral region by 2050 with an interim target of reducing GHGs by 45% from 2010 levels by 2030, has been adopted by the Metro Vancouver Board in the *Climate 2050 Strategic Framework* and *Metro 2040, the Regional Growth Strategy*. Metro Vancouver conducted preliminary modelling work to understand what it might take to achieve the regional GHG emissions targets. Under the Business as Planned scenario, total projected GHG emissions declined only by 6% between 2020 and 2050, relative to 2010. Working with regional sector stakeholders including the Province and TransLink, this modelling work assessed the potential impact of 'aggressive but achievable' policy tools and found that the region could achieve a 15% reduction in its total GHG emissions by 2030 from 2010 levels in this scenario – leaving us with a further 30% reduction needed in order to reach the regional target[8].

These aggressive but achievable policy tools are reflected in Metro Vancouver's *2021 Clean Air Plan* and *Climate 2050 Transportation Roadmap*, both of which have been adopted by the Metro Vancouver Board. TransLink also included most of the same policy tools in *Transport 2050* in order to be aligned with the Metro Vancouver plans.

Recognizing that the assumptions as modelled for the policy tools would not achieve the targets outlined in *Climate 2050*, Metro Vancouver developed regional sector specific GHG emissions reduction sub-targets for 2030 and 2050[9]. These sector specific sub-targets were introduced to reflect each industry and sector's capacity for change and therefore potential to contribute to the achievement of the overall regional GHG reduction target. The updated transportation-specific targets are provided in Table 2 below. The details on how to achieve these sub-targets have not yet been determined.

On October 25, 2021, the Province released its climate plan update – the *CleanBC Roadmap to 2030*. The overall Province-wide GHG targets remain the same as in the 2018 *CleanBC Roadmap*, and this update introduces important new commitments across all sectors, including transportation, as described later in this memo.

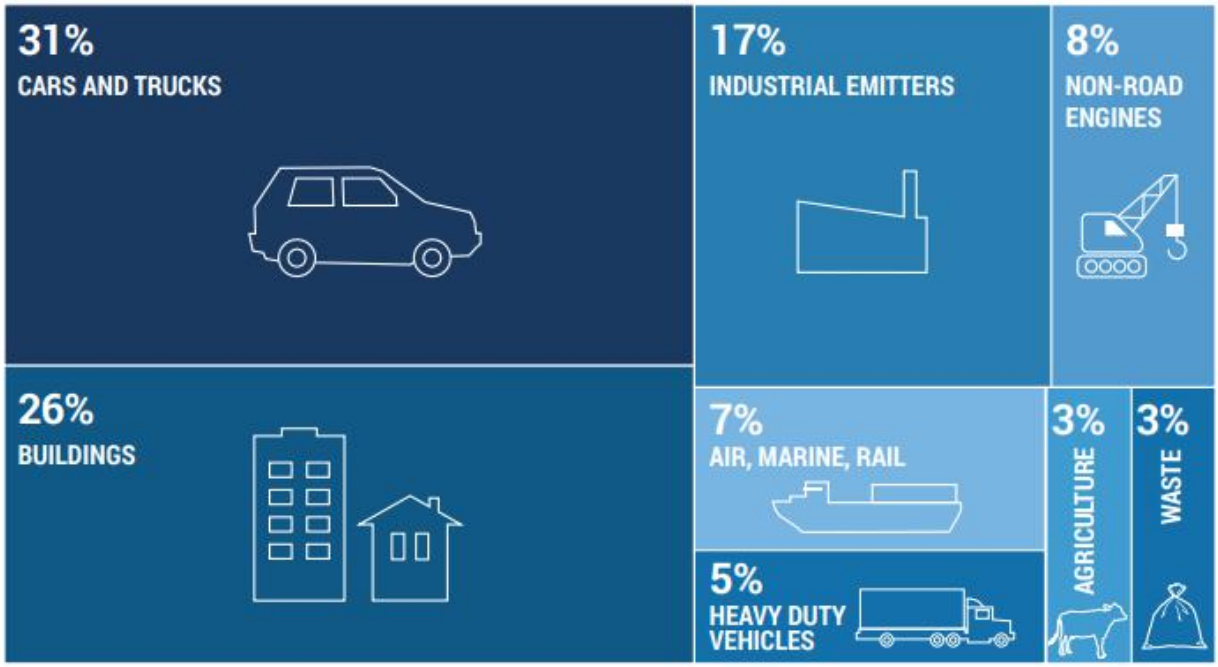
Transportation Sector

The movement of people and goods – whether by car, truck, train, aircraft or boat – is the largest source of GHG emissions in Metro Vancouver, accounting for over 40% of total annual regional GHG emissions. The 1.5 million passenger cars and trucks, also known as light-duty vehicles, registered in the region make up most of those emissions, accounting for almost 75% of transportation emissions. The transportation sector has a significant role to play in helping achieve our climate action targets.

[8] Summary report submitted to the Metro Vancouver Climate Action Committee on July 16, 2021: http://www.metrovancouver.org/boards/ClimateAction/CAC_2021-Jul-16_AGE.pdf

[9] Sub-sector targets were first introduced through the draft *Clean Air Plan*, presented to the Metro Vancouver Climate Action Committee on March 3, 2021: http://www.metrovancouver.org/boards/ClimateAction/CAC_2021-Mar-3_AGE.pdf

Figure 2: *Sources of Regional GHG Emissions*[10]

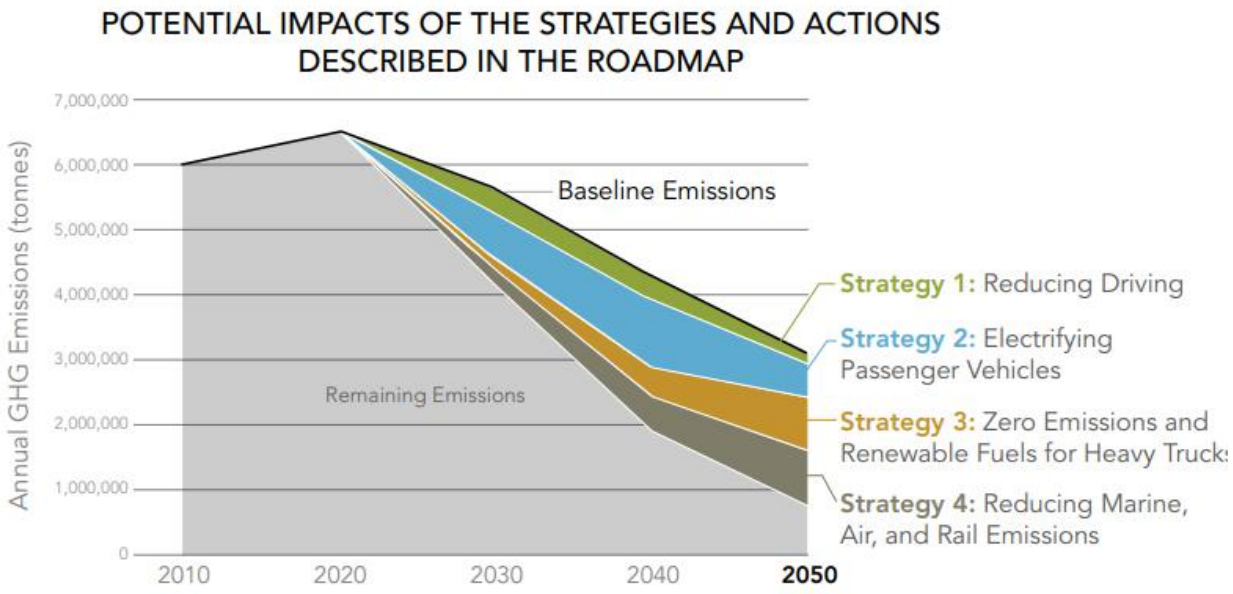


Through the preliminary modelling work described above, Metro Vancouver found that under a Business-As-Planned scenario[11], the region would achieve a 5% reduction of GHG emissions from light duty vehicles by 2030. Under the 'aggressive but achievable' policy scenario, light-duty vehicles would see a reduction in GHG emissions of about 40% by 2030 mostly due to consumers switching to low or zero emission options, fuel efficiency improvements, and some switching to other modes such as walking, cycling and transit. The 'aggressive but achievable' scenario included several major investment and other significant policy levers.

[10] http://www.metrovancouver.org/services/air-quality/AirQualityPublications/AQ_C2050-DiscussionPaper.pdf

[11] The Business-As-Planned scenario included only commitments we currently have in place today at the federal, provincial or regional level. Beyond the transit projects currently funded and underway, this scenario includes no new major transit investment (this modelling occurred before Transport 2050 was approved). This scenario uses the previous Provincial zero emissions vehicle (ZEV) sales target that, by 2040, all new vehicles sold in B.C. will be ZEV (modelling occurred before the *CleanBC Roadmap* was approved that moved up this target date to 2035),

Figure 3: *Potential Impacts of the Strategies and Actions Described in the Climate 2050 Transportation Roadmap*[12]



To support the achievement of the overall regional GHG reduction target of 45%, Metro Vancouver introduced an even more ambitious target for light-duty vehicles of 65% reduction by 2030 from 2010 levels in the *2021 Clean Air Plan* and the *Climate 2050 Transportation Roadmap*[13]. This new sub-sector target was developed in recognition that the personal transportation sector has a much higher potential to dramatically reduce GHGs by 2030 than does the commercial transport sector, the building sector, industrial facilities or agriculture.

TransLink is required under the *SCBCTA Act* to support provincial and regional GHG emissions reduction objectives in preparing the Regional Transportation Strategy. Accordingly, at their respective meetings in in June and July 2021, the Mayors' Council on Regional Transportation (Mayors' Council) and the TransLink Board of Directors approved including the newly proposed Metro Vancouver light-duty vehicle GHG reduction targets in the draft *Transport 2050* document that went for public consultation in October 2021, and is included in the final version of *Transport 2050*. The aspiration to reduce GHGs from light-duty passenger vehicles by 65% over 2010 levels by 2030 is emphasized as the headline target for the Carbon-Free goal in *Transport 2050*.

[12] http://www.metrovancouver.org/services/air-quality/climate-action/climate2050/Climate2050Docs/AQ_Transportation_Roadmap_v10_Nov15_Web_FINAL.pdf

[13] See Footnote 2 above

Table 2: *Current GHG reduction targets, overall and for the transportation sector*

	Province	Metro Vancouver	TransLink
Targets:			
Overall GHG reduction targets	• 40% reduction by the year 2030 (from 2007 levels) • 80% reduction by 2050 (from 2007 levels)	• 45% reduction by 2030 (from 2010 levels) • Carbon neutral by 2050	• *Transport 2050*: consistent with Metro Vancouver
GHGs - personal transportation / Light Duty Vehicles (LDV)	• All on-road transportation within the Province: 27% to 32% reduction by 2030 (from 2007 levels)[14]	• 65% reduction by 2030 (from 2010) • 100% reduction by 2050	• *Transport 2050*: consistent with Metro Vancouver

GHGs - commercial transport / medium-duty vehicles (MDV) / heavy-duty vehicles (HDV)		• 35% reduction by 2030 (from 2010)
		• 100% reduction by 2050
		  ○ All medium-duty trucks are zero emission, powered by clean, renewable electricity or hydrogen by 2050
		  ○ All heavy-duty trucks and rail locomotives use either zero emission technologies or biofuels by 2050
			• *Transport 2050*: consistent with Metro Vancouver
			• Draft TransLink Corporate Climate Action Strategy (specific to TransLink's own operations): 45% reduction by 2030 (from 2010 levels), and net zero within TransLink operations by 2050

DISCUSSION

Urgent and Significant Action Required

The IPCC warns that the global target of cutting GHG emissions by nearly half from 2010 levels by 2030 is not merely an interim milestone that can be missed in favour of bolder climate action later this century – rather it must itself be met in order to avoid sending the global climate system past critical thresholds that we are now on the cusp of crossing. While it is somewhat easier to achieve the 2050 target of carbon neutrality thanks to emerging technological advances, especially in vehicle electrification, and longer time horizon to change technology, the most critical and urgent global target to reach is the 2030 target.

Despite the urgency and the bold targets, overall transportation GHG emissions in our region have actually increased by 6% since 2010, and overall our region has only managed to achieve a 1% reduction in total GHG emissions since 2010. With only eight years left to achieve a further 44% reduction in total emissions, in staff's view, incrementalism will not be sufficient to even get close to meeting this target. If we are to achieve a 5-10% reduction in GHG emissions every year for the remainder of this decade to meet our 2030 target, we need urgent, significant, and immediate action by all levels of government.

[14] https://news.gov.bc.ca/releases/2021ENV0022-000561

While approving its inclusion in the July 2021 draft of *Transport 2050* for Phase 3 engagement, the Mayors' Council and TransLink Board expressed concern about how we will actually achieve the 2030 light-duty vehicle target of 65% reduction from 2010 levels by 2030, given that implementation details were not outlined in the *Climate 2050 Transportation Roadmap*, nor in *Transport 2050*. Any meaningful progress towards this ambitious target within such a limited time-frame will require immediate, urgent and strong coordination and close partnerships between TransLink, Metro Vancouver, and the Province. In recognition of this need, the Mayors' Council and Board requested that TransLink staff initiate these conversations and propose a work plan and budget to develop a preferred implementation pathway. Staff and management have been meeting with Metro Vancouver and Provincial counterparts through the fall of 2021 on this work and an update on those coordination efforts is below.

Building on a Strong Foundation

The Province, Metro Vancouver and TransLink all released strategic level planning documents in 2021 outlining an aligned vision for emissions reductions across the Province and in the Metro Vancouver region in terms of targets and defining what we want to achieve by 2030. All of these strategies/plans also recognized the importance of social equity implications when considering potential implementation pathways, which will play an important part in any future work.

The Province's *CleanBC Roadmap to 2030* is a significant step forward in defining actions at the Provincial level to meet the GHG emissions targets. There is now strong alignment at the regional and Provincial level on policy tools and actions as outlined in Metro Vancouver's *Climate 2050 Transportation Roadmap* and the draft *Transport 2050* strategy.

Senior staff at Metro Vancouver, TransLink and the Province are now turning attention to more clearly defining the implementation pathway to achieve the 2030 targets, defining the details, supporting actions, trade-offs, and equity considerations of various potential implementation pathways for the region for public and decision-maker consideration.

Reducing GHG emissions from on-road vehicles will involve two key elements:
1. Faster transition to low/zero emissions vehicles; and
2. Reducing usage of the remaining fossil-fuel-powered vehicles.

1. **<u>Faster transition to low/zero emission vehicles:</u>**
   - **Zero emissions vehicles (ZEV) sales targets for Light Duty Vehicles (LDV):** The *CleanBC Roadmap* establishes new, more ambitious light duty vehicle (LDV) ZEV sales mandates, which generally align well with *Climate 2050 Transportation Roadmap* and *Transport 2050*. Both *Climate 2050 Transportation Roadmap* and *Transport 2050* advocate that, by 2030, 100% of all new vehicles sold in BC should be ZEV. The *CleanBC Roadmap* has moved up the Provincial target, introducing a 100% ZEV sales target beginning in 2035 (in alignment with Federal regulation) and a 90% ZEV sales target by 2030. The *Climate 2050 Transportation Roadmap* and *Transport 2050* also advocate to increase incentives to make electric vehicles more affordable, with priority for low- and middle-income households.
   - **ZEV Requirements for Medium (MDV) and Heavy-Duty Vehicles (HDV)**: Both *Climate 2050 Transportation Roadmap* and *Transport 2050* advocate for extending the provincial ZEV mandate to include MDVs and HDVs. *CleanBC Roadmap* contains an action to establish new ZEV sales targets for MDVs and HDVs to align with California and subject to consultation over the next two years. At an Enterprise level, TransLink is aligning with this objective by purchasing over 400

battery electric buses between 2022 and 2028 to replace diesel and diesel hybrid buses and building the supporting in-route and depot charging infrastructure at Marpole, Port Coquitlam and Burnaby Transit Centres.

- **BC Low Carbon Fuel Standard:** Both *Climate 2050 Transportation Roadmap* and *T2050* advocate for continuing to decrease the carbon intensity of transportation fuels. The *CleanBC Roadmap* commits to strengthening the carbon intensity reduction target from a 10% reduction to a 30% reduction by 2030, representing good alignment with the regional strategies. It also commits to doubling the production of made-in-BC renewable fuels to 1.3 billion litres by 2030, which could enable TransLink's fuel switching to low carbon fuels away from diesel as an interim step towards zero emissions. TransLink continues to increase the use of renewable natural gas by using 100% renewable natural gas for its Compressed Natural Gas fleet starting in 2024 and evaluating the market availability of other low carbon fuels such as hydrogenated-derived renewable diesel.
- **Accelerate the switch to other modes and low/zero emission vehicles:**
  - Both the *Climate 2050 Transportation Roadmap* and *Transport 2050* support the development of regional emission requirements/regulations for passenger vehicles. Requirements could include low or zero emission zones, or a vehicle emission levy with rebates for replacing older vehicles.
  - *Transport 2050* advocates for raising the carbon tax to support reaching regional GHG targets and the *CleanBC Roadmap* commits to raising the BC carbon tax to meet or exceed federal carbon price of $170/tonne by 2030. Work is underway to understand whether this price is sufficient to accelerate the switch to zero emission vehicles or mode switching to achieve the GHG reduction targets, and how that might influence the sector specific targets.
  - Both the *Climate 2050 Transportation Roadmap* and *Transport 2050* support consideration of pricing mechanisms, including integrating carbon cost into existing usage fees such as vehicle licensing and parking fees.
- **Other supportive policies:** The *CleanBC Roadmap* contains a few additional policy areas, including proceeding with "right-to-charge" legislation and completing the B.C. Electric Highway by 2024 with a target of having 10,000 public EV charging stations by 2030. Both *Climate 2050 Transportation Roadmap* and *Transport 2050* support expansion of electric vehicle charging in buildings, and a commitment to develop a Regional Electric Vehicle Charging Strategy.

2. <u>Reducing usage of the remaining fossil-fuel-powered vehicles:</u>

- Currently there are over 1.5 million registered vehicles in the Metro Vancouver region[15], and across BC, 9.4% of new light-duty vehicle sales were electric in 2020[16]. Even with the new accelerated ZEV sales mandate in British Columbia, every fossil fuel powered vehicle sold in the region between 2020 and 2030 will still be on the road in 2030, and probably longer, meaning that in order to reduce emissions we need to encourage less use of those vehicles by encouraging people and businesses to switch to alternative modes or make shorter trips.
- **Reduce distances travelled:**
  The *CleanBC Roadmap* commits to reducing the distance travelled in light-duty vehicles by 25% by 2030, compared to 2020, and all three of the strategies include actions such as:
  - Supporting more complete communities and compact land use,
  - Increased use of active transportation and transit, and
  - Supporting digital access and remote work where feasible.

[15] http://www.metrovancouver.org/services/air-quality/climate-action/climate2050/Climate2050Docs/AQ_Transportation_Roadmap_v10_Nov15_Web_FINAL.pdf, p. 38
[16] https://news.gov.bc.ca/releases/2021EMLI0024-000628

- **Switch to other more sustainable modes:**
  - The *CleanBC Roadmap* aims to increase the share of all trips made in the Province by walking, cycling and transit to 30% by 2030, 40% by 2040 and 50% by 2050. *Transport 2050* set a target that at least 50% all passenger trips are made by active transportation and transit by 2050, with the majority of the remaining trips made by taxi, ride-hail and car-sharing.
  - *Transport 2050* includes many strategies and actions to expand and enhance active transportation infrastructure networks across the region, making walking, cycling and rolling the preferred choice for shorter trips.
  - Both the *Climate 2050 Transportation Roadmap* and *Transport 2050* include several actions related to active transportation including stable funding from senior government, incentives, and outreach.
  - *Transport 2050* outlines a dramatic increase in transit service across the region, making transit the preferred choice for longer trips for almost everyone in the region. *Climate 2050 Transportation Roadmap* advocates for senior government to ensure stable funding for regional transit and enhance and improve regional transit.
  - Both the *Climate 2050 Transportation Roadmap* and *Transport 2050* support increased use of bike and car-sharing services, identifying actions to increase availability of shared modes through various forms of support. Both strategies also prioritize the electrification of car-sharing, taxi and ride-hailing fleets.

Overview of Further Collaboration Required

All of the actions outlined in the *CleanBC Roadmap, Climate 2050 Transportation Roadmap* and *Transport 2050* are already ambitious. Going further to achieve the light-duty passenger vehicle target of a 65% reduction in GHGs over 2010 levels by 2030 necessitates going above and beyond the measures described above and implementing many of them as soon as possible**. This will be an extremely challenging task that will require additional assertive measures initiated in a short timeframe to reduce vehicle kilometers driven in gasoline and diesel vehicles.**

The short time we have remaining until 2030 – just eight years away – limits the number and variety of tools available to achieve the 2030 target. Production limits for electric vehicle technology and required construction timelines for rapid transit infrastructure are two examples of limitations which are unlikely to be able to be resolved in time to have a significant impact on the 2030 targets, especially given the existing financial challenges over the next few years coming out of the pandemic. Some actions could be undertaken quite quickly and cheaply, such as reallocating road space with barriers, paint and signs for more climate friendly modes, such as walking, cycling, rolling and transit.

Some of the most effective tools for reducing GHG emissions in short order are either already in place (such as fuel tax, carbon tax or parking fees) or already contemplated in the draft of *Transport 2050* (such as road space reallocation for active transportation and transit, and low emission zones), but **achieving dramatic driving reductions using these existing tools will require accelerating their adoption and turning up their intensity to levels seen only in other leading jurisdictions.**

Recommended approach to developing a preferred GHG reduction implementation pathway

Building on the solid foundations established in the Province's *CleanBC Roadmap to 2030*, Metro Vancouver's *Climate 2050 Transportation Roadmap* and TransLink's *Transport 2050*, all three agencies have identified the need to take urgent action in 2022 to determine the preferred GHG reduction

implementation pathway to achieve our respective 2030 and 2050 climate targets related to on-road transportation. Collaboration and coordination will be crucial, and staff and management from the three agencies are now actively working together to confirm what the individual work plans will look like and how best to coordinate and collaborate.

Over the course of 2022, the following three streams of work will be undertaken:

1. **The Province** is developing the *Clean Transportation Action Plan*, which will be the Province's pathway to achieve Provincial targets established in the *CleanBC Roadmap*. The *Clean Transportation Action Plan* will set out the next set of actions to reduce transportation emissions by 27-32% (from 2007) by 2030. Specific actions will be consistent with advice from the Climate Solutions Council[17]; TransLink, Metro Vancouver and other key partner agencies and stakeholder will be engaged on the development of the plan, and final approval will rest with the Province.

2. **Metro Vancouver** will conduct further analysis, modelling, and public perception research to identify an effective and equitable regulatory and/or pricing approach that will be the primary driver of additional transportation GHG reductions in the Metro Vancouver region. Metro Vancouver will work closely with TransLink on the assumptions and outputs of the analysis and modelling so that TransLink can assess and provide guidance on broader transportation system implications and needs. Metro Vancouver will also work closely with Provincial staff and will seek approval of the preferred regulatory and/or pricing approach through the Metro Vancouver Board of Directors.

3. **TransLink** will work closely with both the Province and Metro Vancouver to identify and model the supportive regional transportation programs and investments needed to achieve the Transport 2050 target for light-duty on-road vehicles of 65% GHG reduction over 2010 levels by 2030. This work will be undertaken in tandem with work currently underway by the Mayors' Council and TransLink Board to prioritize investments and initiatives for the first ten years of Transport 2050 (see agenda item 5.1). TransLink will also assess the role that road space reallocation, parking rules, electric vehicles in High Occupancy Vehicle (HOV) lanes, and other measures could play in reducing the use of fossil fuel powered light-duty vehicles in the region. TransLink will draw upon the social equity expertise developed internally to better understand the distribution of costs and benefits across different groups of people, and work with the public, stakeholders and policymakers to determine the desirable distribution.

Given the short timeline, the multiple overlapping jurisdictions and inter-dependent actions, strong political leadership and coordination is needed. Staff from all three agencies are determining what that coordination will look like and TransLink staff will bring forward the recommendation at a future meeting.

TransLink is committing $250,000 in 2022 to support the work described above. Management will report back regularly to the Mayors' Council and TransLink Board on progress.

[17] The Climate Solutions Council is an advisory group with a legislated mandate to provide advice to the Minister of Environment and Climate Change Strategy on matters respecting climate action and clean economic growth. It includes members from First Nations, environmental organizations, industry, academia, youth, labour and local government. https://www2.gov.bc.ca/gov/content/environment/climate-change/planning-and-action/advisory-council

CONCLUSION

In order for both the Province of BC and the Metro Vancouver region to achieve the GHG emissions reductions targets outlined in the *CleanBC Roadmap*, *Climate 2050 Transportation Roadmap* and *Transport 2050,* a coordinated and aligned effort is required to define the public and politically acceptable implementation pathway. This report identifies where further collaboration is essential. Consistent with previous direction from the Mayors' Council and TransLink Board in summer 2021, TransLink is continuing to work closely with Metro Vancouver and the Province to further refine and finalize a work program with the objective of establishing a clear implementation pathway for the Metro Vancouver region by the end of 2023 to achieve our on-road transportation climate action targets for 2030 and 2050.

ATTACHMENT

- **Annex A:** Staff presentation slides

Item 5.2: Status Update on Transport 2050 Action to Eliminate GHG Emissions from On-Road Transportation within Metro Vancouver

Caitlin Cooper, Lead Planner Transport 2050 Implementation

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Overview

1. Science-based targets;
2. Actions need to be strengthened; and
3. Coordination is necessary

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1. Science-Based Targets

Targets included in *Transport 2050* and the *Climate 2050 Transportation Roadmap*

- **Total Regional GHG Reduction Targets:**
  - 45% reduction by 2030 (from 2010 levels)
  - Carbon neutral by 2050
- **Transportation Regional GHG Reduction Targets:**
  - Light-Duty Vehicles:
    - 65% reduction by 2030 (from 2010)
    - 100% reduction by 2050
  - Medium and Heavy-Duty Vehicles:
    - 35% reduction by 2030 (from 2010)
    - 100% reduction by 2050
      - All medium-duty trucks are zero emission, powered by clean, renewable electricity or hydrogen by 2050
      - All heavy-duty trucks and rail locomotives use either zero emission technologies or biofuels by 2050

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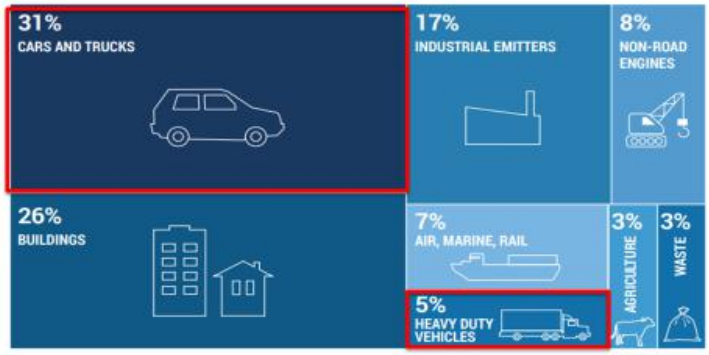
Focus for Transport 2050 Implementation:

Sources of Regional GHG Emissions (Metro Vancouver)



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Current Trends and Modelling Scenarios

- **Current Trends:**
  - Total GHG emissions in the region:
    - **Decreased by 1%** between 2010-2020
  - Total transportation emissions in the region:
    - **Increased by 6%** between 2010-2020

- **Metro Vancouver Modelling Scenarios:**
  - Business as Planned: Light-Duty Vehicles
    - **5% reduction by 2030**, from 2010 levels
  - 'Aggressive but Achievable': Light-Duty Vehicles
    - **40% reduction by 2030**, from 2010 levels

Key takeaway: achieving the 65% reduction target by 2030 using existing tools will require accelerating their adoption and turning up intensity to levels seen only in other leading jurisdictions.

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2. Actions Need to be Strengthened

1. **Faster transition to low/zero emissions vehicles**
   - Zero emissions vehicles (ZEV) sales targets for Light Duty Vehicles (LDV)
   - ZEV Requirements for Medium (MDV) and Heavy-Duty Vehicles (HDV)
   - BC Low Carbon Fuel Standard
   - Accelerate the switch to other modes and low/zero emission vehicles
   - Other supportive policies

2. **Reducing usage of the remaining fossil-fuel-powered vehicles**
   - Reduce distances travelled
   - Switch to other more sustainable modes

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3. Coordination is Necessary

1. **The Province** is developing the *Clean Transportation Action Plan*

2. **Metro Vancouver** will conduct further analysis, modelling, and public perception research to identify an effective and equitable regulatory and/or pricing approach that will be the primary driver of additional transportation GHG reductions in the Metro Vancouver region.

3. **TransLink** will work closely with both the Province and Metro Vancouver to identify and model the supportive regional transportation programs and investments needed to achieve the light-duty vehicle target of 65% GHG reduction over 2010 levels by 2030.
   - The New Vision will form the basis of these supportive programs and investments

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Urgent Action is Needed

- Given the short timeline, the multiple overlapping jurisdictions and inter-dependent actions, strong leadership and coordination is needed.

- Staff from all three agencies are determining what that coordination will look like and TransLink staff will bring forward the recommendation at a future meeting.

- TransLink is committing $250,000 in 2022 to support the work described above. Management will report back regularly to the Mayors' Council and TransLink Board on progress.

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