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To: Regional Planning Committee

From: Erin Rennie, Senior Planner, Regional Planning  
Jessica Hayes, Planner, Regional Planning  
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Date: October 17, 2019 Meeting Date: November 8, 2019

Subject: **Social Equity in Regional Growth Management – Key Findings**

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### **RECOMMENDATION**

That the Regional Planning Committee receive for information the report dated October 17, 2019, titled “Social Equity in Regional Growth Management – Key Findings”.

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### **PURPOSE**

To communicate the key findings of Phase 1 of the Social Equity in Regional Growth Management research project.

### **BACKGROUND**

At its May 3, 2019 meeting, the Regional Planning Committee received a report titled, “Equity in Regional Growth Management – Project Initiation”, which presented the scope and timeline for a research project that would align with the update of *Metro Vancouver 2040: Shaping our Future (Metro 2040)*, the regional growth strategy, and highlight opportunities to explore how equity could be better considered.

The Social Equity in Regional Growth Management research project supports the intent of the Vision Statement outlined in the *Metro Vancouver Board Strategic Plan*, and the goals set out in *Metro 2040* and the *Regional Affordable Housing Strategy*, particularly with regards to the policy directions to develop complete communities, increase access to transportation and housing, and respond to climate change.

### **STUDY SCOPE**

Regional Planning retained EcoPlan International Inc. to conduct a desktop review and key informant interviews with 12 regional government planning agencies outside the Metro Vancouver region and to identify and document gaps in how Metro Vancouver currently promotes equity considerations through *Metro 2040*.

To guide the evaluation and research, the following working definition of equity was established:

*The promotion of justice and fairness and the removal of systemic barriers that may cause or aggravate disparities experienced by different groups of people. This can include the many dimensions of identity, such as socioeconomic status, ethnicity, sex, age, disability, gender, sexuality, religion, indigeneity, class, and other equity related issues.*

The Social Equity in Regional Growth Management research project had three objectives:

- explore how other government agencies (particularly regional government agencies) across North America and internationally are defining and embedding equity in their land use and transportation policy, plans, and practices;
- outline gaps and opportunities in *Metro 2040* and where a clear definition of equity could be embedded and used to address inequities; and
- identify potential performance measures for evaluating equity in regional growth management.

The research methods included:

- a preliminary desktop scan of academic and online research and the development of a working definition for equity for the purposes of this work;
- developing an equity evaluation framework;
- an evaluation and review of a number of North American and international policy document examples, and selection criteria for the candidate jurisdictions;
- interviews with selected key informants from those candidate jurisdictions; and
- a review and gap analysis of the policies and strategies of *Metro 2040*.

## **SUMMARY OF FINDINGS**

Through a review of academic research and the social equity work of other jurisdictions, the report identifies some common themes and recent practices. The report also includes a gap analysis of *Metro 2040*, resulting in some recommendations for Metro Vancouver for the development of *Metro 2050*.

### **Academic Research - Key Themes**

- **Equitable participation and equitable outcomes:** Social equity should be pursued both in terms of the process and the outcomes.
- **Targeting equity-seeking groups supports economic growth:** Regional economic growth is more robust when social equity is at its heart.
- **Organizations seeking to improve equity may also be a cause of inequity:** Organizations, including governments, must strive to be aware of how their processes and policies can function as instruments of exclusion.
- **Avoid 'siloeing' social equity:** Social equity is a complex and multifaceted topic that cuts across policy domains. Taking an integrative approach within an organization or plan is recommended.
- **Integrated Indigenous directions promote reconciliation:** A broad approach of equitably integrating Indigenous interest as a lens to be applied across departments is recommended.
- **Measure equity:** Identify appropriate metrics and data sources for understanding the extent of social equity issues. Use measures of equity to evaluate the benefits and consequences of proposed policies.
- **Equity goals should be accompanied by objectives and measures:** Additional effort should be directed towards clearly specifying social equity objectives and measures to ensure that equity goals can be adequately translated into action.

- **Mainstream an equity approach:** Developing social equity as a mainstream approach across disciplines and ensuring justice is a key working principle can be beneficial.

#### Lessons Learned from Recent Practice - Interviews

- **Both urban growth and no-growth policies have social equity impacts:** The benefits and disadvantages of both urban growth (redevelopment) and “no-growth” (neighbourhood preservation) policies are generally inequitably distributed among groups and individuals. Understanding, measuring, and mitigating for these impacts can support more equitable outcomes.
- **Governments – legacies of inequity:** Inequity is a historical accumulation of decades of inequitable decisions, based on systemic bias or lack of representation. Correcting this history involves improving current practices and decision-making procedures, reviewing agency history, and organizational capacity-building.
- **Clearly define “social equity”:** Develop a clear definition of social equity that distinguishes it from the concept of “equality” as well as from concepts of “geographic equity.”
- **Data as a foundation:** Organizations with a more advanced equity agenda emphasized the use of data to understand the context as well as to support decision-making, defend actions, and highlight how actions are interconnected within an organization. Obtaining reliable and high-quality data benefits long-term tracking and policy evaluation. Data acquisition should include both quantitative sources as well as qualitative sources. Resources should be put towards data acquisition which may include compensating members of the community with lived experience.
- **Engagement and outreach:** Utilize equitable engagement practices to support plan-development. Equitable engagement practices include removing barriers to participation (such as providing transit passes or child care at meetings), offering accessible events and materials (such as material in multiple languages), and hosting multiple engagement opportunities.
- **Equity as a lens for resource allocation and investment:** Once a definition of social equity and high quality data on equity issues is obtained, use this understanding of inequity as a lens for allocating targeted investments in infrastructure, programs, or amenities to support equitable outcomes.

#### Gap Analysis – Recommendations for Metro 2050

- **Develop a clear definition of social equity** in the update to the regional growth strategy, and include this as part of the plan’s framework;
- **Clearly outline social equity challenges**, the strategy’s approach to these challenges and its application to regional growth management;
- Bring the equity discussion forward in the strategy’s **structure, format and narrative**;
- **Collect and create foundational data** that provides an understanding of social equity in the region, supports policy analysis, assessment and decision-making for more equitable outcomes;
- **Develop an “equity lens”** to review policy and program implementation once *Metro 2050* is in place;
- **Utilize scenario building** as a tool for an assessment of growth management and its equity outcomes – i.e. the intended and unintended consequences of growth on different groups;

- **Identify equity-seeking groups** and target specific policy and programs to mitigate and address negative consequences of growth to promote vertical equity;
- **Specifically target investments** (e.g. in infrastructure, services, programming, etc.) to reduce negative consequences of growth management for equity-seeking groups;
- **Obtain diverse perspectives through engagement** of equity-seeking groups using a wide range of tools, methods and provide necessary supports to overcome identified barriers to engagement;
- **Support internal organizational understanding** and integration of social equity; and
- Follow up with additional **monitoring and performance measures**.

The full Social Equity in Regional Growth Management report is attached (Attachment).

### **NEXT STEPS**

The Social Equity in Regional Growth Management research project explores how issues of equity can intersect with regional growth management. The findings presented in this report represent Phase 1 of the project, which will help inform the development of *Metro 2050*. In the next phase of research, intended to be undertaken in 2020, Regional Planning will be seeking to retain a consultant to support stakeholder engagement, and the development of a working understanding of equity, performance metrics, and baseline equity data for the region. Engagement activities for this work will focus on identifying then seeking input from a diversity of equity-seeking groups as well as organizations representing equity-seeking populations. The intent of this next phase of work is to leverage the findings the research project to apply an equity lens to regional planning and growth management policy, plans, and practices through the development of *Metro 2050*.

### **ALTERNATIVES**

This is an information report. No alternatives are presented.

### **FINANCIAL IMPLICATIONS**

The Social Equity in Regional Growth Management research project was funded through the 2019 Budget approved by the MVRD Board on October 27, 2018. \$20,000 was allocated in the Regional Planning budget for consultant support for this project.

An additional \$20,000 is included as part of the 2020 Regional Planning budget to support the next phase of work. This work would involve the identification of and engagement with equity-seeking groups in the region, and developing a working definition, performance metrics and baseline report, which will provide input into the development of *Metro 2050*.

### **SUMMARY / CONCLUSION**

The Social Equity in Regional Growth Management research project advances Regional Planning's understanding of equity considerations as they related to regional planning and growth management, particularly with regards to land use and transportation policy, plans, and practices. The consultant's report communicates the key findings of the first phase of research, which examined how other regional government agencies around the world have defined and embedded equity in their policy, plans, and practices. This research will provide an important lens for *Metro 2050*, the update to the regional growth strategy.

**Attachment**

“Social Equity in Regional Growth Management”, dated October 10, 2019 – prepared by EcoPlan International (*Orbit Doc #33232600*)

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A Review Of

# Social Equity in Regional Growth Management

**SUBMITTED TO:** Regional Planning, Metro Vancouver

• OCTOBER 10, 2019 •



Prepared by EcoPlan International, Inc.  
208 - 131 Water Street  
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Regional Planning Committee



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# Executive Summary

## PURPOSE

This research document examines equity in regional growth management to advance Metro Vancouver's understanding of social equity considerations as they relate to regional policy and planning in preparation for the update to *Metro Vancouver 2040: Shaping Our Future (Metro 2040)*, the regional growth strategy. This report examines social equity in regional planning and land use and not:

- Level of service to member jurisdictions; or,
- Geographic equity/distribution of services.

## PROCESS

This review was conducted through:

- a preliminary desktop scan of academic and online research and the development of a working definition of equity for the purposes of this work;
- development of an equity evaluation framework;
- evaluation and review of North American and International policy documents and development of selection criteria for interview candidates;
- interviews with selected candidates, and;
- a review and gap analysis of *Metro 2040* using the same equity evaluation framework.

Preliminary academic and online research was conducted as an initial step to review a current approach to equity and definitions of equity; and to help establish a preliminary research framework for evaluation of selected plans and policies.

To guide the evaluation and research, the following working definition of equity was established:

*The promotion of justice and fairness and the removal of systemic barriers that may cause or aggravate disparities experienced by different groups of people. This can include the many dimensions of identity, such as socioeconomic status, ethnicity, sex, age, disability, gender, sexuality, religion, indigeneity, class, and other equity related issues.*

A list of potential candidate agencies was then compiled. Selection criteria took into account applicability to Metro Vancouver with respect to legislated authority, size, and structure and variable approaches to equity. Common observations were identified through interviews with other jurisdictions and summarized with several relevant examples provided.

Selected agencies and candidate documents were then evaluated using NVivo software (a qualitative data analysis computer software) with automatic coding features to support identification of themes of equity, based on the evaluation framework and followed up with a manual analysis to confirm results. The evaluation framework was also applied to review and analyze *Metro 2040* in the same way.

A total of 12 plans across North America and Internationally were reviewed as a part of the research process. Of these 12 jurisdictions, 9 were interviewed. The interviews were guided by an initial review of the relevant plan and key questions about:

- Review of the governance structure of the jurisdiction interviewed.



- The overall structure and approach to equity and current equity policies.
- Definition of equity.
- Experience with incorporating an equity lens within their policy and lessons learned.

### DOCUMENT REVIEW

Results provided an overview of how social equity is currently incorporated within similar organizational bodies, with some specific policy and program examples of its application to planning and growth management.

Review of the plan documents by NVivo revealed that equity coverage varied. Equity content was analysed at four policy levels: Direction Setting, Guiding, Policy, and Monitoring. Equity content was evaluated according to four different measures of embeddedness: Coverage, Depth, Comprehensiveness, and Language Specificity. In many cases, high coverage reflected a breadth of policy areas considered, while low coverage indicated fewer references but in some cases more detail.

On average, the reviewed documents considered equity in good depth. All documents had equity references at the Direction Setting and Policy levels. The majority of documents' most detailed policy level was Monitoring, the level with the greatest depth of the four analyzed policy levels.

In general, the comprehensiveness of equity in the plans was high. Out of a possible 10, the average comprehensiveness score was 8.7. All documents addressed equity or contained equity related language in at least three policy levels.

Many plans used explicit language to identify and discuss equity. Several contained implicit language but clearly acknowledged issues of

equity and were guided by it. A few inferred or assumed equity as part of good planning overall and/or dealt with policy areas related to equity but did not address equity specifically.

Of these, approximately 60 percent used explicit language to define equity, meaning the documents both used the term and defined "equity" from a social perspective as well as included equity discussion within policy areas.

### METRO 2040 ANALYSIS

Reviewed using the same framework, *Metro 2040* does not specifically define equity, although it references "social justice" and "compassion." Language used in *Metro 2040* discusses dimensions of equity but is implied rather than directly addressed. Slightly below the average, *Metro 2040* includes references to 50 percent of identified "equity-seeking groups." *Metro 2040* includes discussion of some of the identified equity issues including: access, affordability, health, and opportunity. However, the plan does not directly discuss discrimination, obstacles, or aspects of disparity. These three challenges are also the least referenced by plans overall. *Metro 2040* describes the active bodies for governance of the plan. *Metro 2040* also provides guidelines and commitments regarding engagement with First Nations groups.

Overall, *Metro 2040* has relatively low coverage of equity, ranking approximately 10th in number of equity references at the Direction Setting, Guiding, and Policy levels compared to the 12 other reviewed documents. Like most other documents reviewed, housing is *Metro 2040's* policy area with the most equity references. Most of these policies focus on affordable housing, which implies equity, though specific equity-seeking groups are not mentioned.

The goal to “Develop complete communities” (Goal 4) is the primary way in which *Metro 2040* implicitly supports equity. By developing complete communities, *Metro 2040* makes improvements in multiple policy areas, including housing, social services, food, and the environment for all residents. Wellbeing in these policy areas also supports success in other areas of life. However, *Metro 2040* does not explicitly discuss how improvements to these policy areas may be inequitably distributed, and that some residents may face greater obstacles than others.

In comparison to other review documents, *Metro 2040* has a strong monitoring framework, particularly for environmental, economy and employment, and climate policy areas, but does not explicitly mention equity.

### **SUMMARY OF FINDINGS FOR INCORPORATING SOCIAL EQUITY**

The document review, follow up interviews and *Metro 2040* gap analysis outlined a number of key findings and potential opportunities for Metro Vancouver Regional Planning to consider in incorporating social equity as part of the upcoming *Metro 2040* update. A summary is as follows, specific plan examples and policy examples are provided in the body of the report:

- Develop a clear definition of equity and include this as part of the plan’s framework.
- Clearly outline equity challenges, the plan’s approach to these challenges and its application to regional growth management.
- Bring equity discussion forward in the plan’s structure, format and narrative.
- Collect and create a foundational data plan that provides an understanding of equity in the region to support policy analysis, assessment, and decision-making for more equitable outcomes.
- Develop an “equity lens” to review policy and program implementation once the plan update is in place.
- Utilize scenario building as a tool for assessment of growth management and its equity outcomes – the intended and unintended consequences of growth.

- Identify equity-seeking groups and target specific policy and programs to mitigate and address consequences of growth to promote vertical equity.
- Specifically target investments (in infrastructure, services, programming, etc.) to reduce negative consequences of growth management for equity-seeking groups.
- Obtain diverse perspectives through engagement of equity-seeking groups using a wide range of tools and methods and provide necessary supports to overcome identified barriers to engagement.
- Support internal organizational understanding and integration of social equity.
- Follow up with additional monitoring and performance measures.

Additional considerations for going forward in effectively addressing social equity in the update of *Metro 2040* include:

- Establish a social equity working group. Working together, the group’s work could include supporting Metro Vancouver in:
  - Developing a definition of social equity
  - Developing potential regional targets and/or measures (using the findings of this report as a starting point)
  - Developing a monitoring framework or recommendations to track social equity outcomes of the updated *Metro 2040* plan.
- Continue to collaborate with equity partners in the region. From member municipalities with active social planning departments and staff to regional groups engaged in social equity research, reporting, and advocacy.
- Continue to revisit equity measures and targets with partners. Social equity is not a static issue; it is dynamic and changes with communities and regions as they develop and grow over time.

## 1 Project Overview

### 1.1 Purpose

The purpose of this research is to examine equity in regional growth management and to advance Metro Vancouver’s understanding of equity considerations as they relate to regional growth management and land use policy and planning. In turn, this will provide an important lens for the update to *Metro Vancouver 2040: Shaping Our Future (Metro 2040)*, the regional growth strategy.

### 1.2 Process

#### 1.2.1 Overview

The research and review set out to:

- explore how regional government agencies or transportation authorities across North America and Internationally are defining and embedding equity in their policy, plans, and practices;
- outline gaps and opportunities in *Metro 2040* and where a clear definition of equity could be embedded and used to address inequities, and;
- identify potential measures for evaluating equity in regional growth management.

This was conducted through:

- a preliminary desktop scan of academic and online research and the development of a working definition for equity for the purposes of this work;
- development of an equity evaluation framework;
- evaluation and review of North American and international policy documents and planning and selection criteria for interview candidates;
- interviews with selected candidates; and,
- review and gap analysis of *Metro 2040*.

#### 1.2.2 Desktop Scan of Existing Equity Research

As an initial step, preliminary academic and online research was conducted to review current approaches to and definitions of equity as it relates to policy and planning, and to inform a preliminary research framework for evaluating selected plans and policies.

To guide the evaluation and research, the following working definition of equity was established:

*The promotion of justice and fairness and the removal of systemic barriers that may cause or aggravate disparities experienced by different groups of people. This can include the many dimensions of identity, such as socioeconomic status, ethnicity, sex, age, disability, gender, sexuality, religion, indigeneity, class, and other equity related issues.*

The general definition could be applied to a broad range of growth management policy areas, including housing, land use, transportation, parks and recreation, and more.

An equity evaluation framework was developed to review planning documents from other jurisdictions. This included the following criteria:

- Document type (i.e. regional plan, land use specific, transportation, other policy document)
- Equity definition (explicitly or implicitly as a part of policy language)
- Language specificity for equity – explicit (specifically discusses equity), implicit (uses synonyms/euphemism, e.g. “inclusiveness”), inferred (is concerned with equity issues)
- Population group characteristics (ethnic minorities, women, LGBTQ, socio-economic status, immigrants, children, people with disabilities, single parents, Indigenous, etc.)
- Equity issues (access, opportunity, discrimination, obstacles, health, affordability, etc.)
- Governance and process (advisory committees involved, guidelines, equity specific consultation, etc.)
- Policy embeddedness (direction setting, guiding, policy, monitoring)
- Regional growth policy areas (infrastructure and services, land use, transportation, housing, environmental, climate, etc.)

### **1.2.3 Interviews**

A list of potential candidate agencies was compiled. Selection criteria took into account applicability to Metro Vancouver with respect to legislated authority, size, and structure and variable approaches to equity.

A total of 12 candidates and plans were identified and 9 were interviewed as a part of the consultation process.

Short interviews were conducted with selected agencies. The interviews were guided by an initial review of the relevant plan and key questions about:

- The governance structure of the jurisdiction interviewed
- The overall structure and approach to equity and current equity policies
- Definition of equity
- Experience with incorporating an equity lens within their policy and lessons learned.

### **1.2.4 Policy Review**

Selected agencies and candidate documents were evaluated using NVivo software (a qualitative data analysis computer software) with automatic coding features to support identification of equity-based themes using the established evaluation framework as described above.

A set of codes based on the evaluation framework captured the nature (e.g., language clarity and strength) and depth of their policy (i.e., at what policy level from vision or goal language to specific policies, indicators, or thresholds).

In addition to the coding, qualitative comments were captured within the policy and the presence and nature of targets, monitoring, and other resources.

A content analysis of the plans' identified overarching themes of equity, based on the evaluation framework. These themes were used to organize sample policies, monitoring elements (e.g., indicators or measures), and other policy tools and resources for each planning topic.

#### **1.2.5 Metro 2040 Review**

The evaluation framework was also applied (in the same way as described above) to review and analyze *Metro 2040*. This review was to evaluate its current status and incorporation of equity and equitable themes within land use, transportation and growth management and to identify gaps and opportunities for future consideration.

## 2 Review of Growth Management Plans from Other Jurisdictions

### 2.1 Plans Reviewed

A total of 12 plans across North America and Internationally were reviewed as a part of the research process. These included:

#### Canada

1. Regional District of Nanaimo, Shaping Our Future Regional Growth Strategy (*Nanaimo RGS*)
2. The City of Toronto, Toronto's First Resilience Strategy & follow up with the Equity Office (*Toronto's Resilience Strategy*)
3. Province of Ontario, A Place to Grow: Growth Plan for the Greater Golden Horseshoe (*Growth Plan for the GGH*)
4. Saskatoon North Partnership for Growth Regional Plan, Saskatoon North Partnership for Growth (*Saskatoon North P4G*)

#### United States

5. San Diego Association of Governments – San Diego Forward, Regional Plan (*San Diego Forward*)
6. Puget Sound Regional Council, Vision 2050: A Plan for the Central Puget Sound Region (*PSRC Vision 2050*)
7. Sound Transit Adopting an Equitable Transit Oriented Development Policy (*Sound Transit Equitable TOD Policy*)
8. Regional Plan Association, The Fourth Plan for the New York-New Jersey-Connecticut Metropolitan Area Making the Region Work for All of Us (*RPA The Fourth Plan*)
9. City of Minneapolis, Minneapolis 2040 – the City's Comprehensive Plan (*Minneapolis 2040*)
10. Los Angeles County Metropolitan Transportation Authority – Metro Equity Platform Framework (*LA County Metro Equity Platform*)

#### International

11. Auckland Council, Auckland Plan 2050 (*Auckland Plan 2050*)
12. City of Stockholm, Vision 2040 A Stockholm for Everyone (*Stockholm Vision 2040*)

### 2.2 Governance Structure of Other Jurisdictions Reviewed

Governance structures are important for interpreting the use and effectiveness of a policy. Some plans are implemented through bodies with full legislative or Council authority, while others are empowered through the ongoing agreement of participating jurisdictions. The table below lists the plans reviewed under four categories of jurisdiction:

- **State/Province:** Plan is produced and implemented through senior government departments/ staff
- **Upper Tier Regional District:** The regional government has final authority over topics covered by plan and can make requirements of local government within plan boundaries
- **Participatory Regional Government:** Plan is the product of and implemented by agreement of participating jurisdictions.
- **City:** A non-regional plan under the jurisdiction of a municipal government.

Figure 1: Jurisdiction of plans reviewed.

State/Province	Upper Tier Regional Jurisdiction	Participatory Regional Government	City
<ul style="list-style-type: none"> <li>• Province of Ontario, A Place to Grow: Growth Plan for the Greater Golden Horseshoe</li> <li>• Los Angeles, Los Angeles County Transportation Authority – Metro Equity Platform Framework</li> </ul>	<ul style="list-style-type: none"> <li>• Auckland, <i>Auckland Plan 2050</i></li> <li>• Stockholm, <i>Vision 2040: A Stockholm for Everyone</i></li> </ul>	<ul style="list-style-type: none"> <li>• Nanaimo Regional District, <i>Shaping Our Future Regional Growth Strategy</i></li> <li>• San Diego, <i>San Diego Forward, Regional Plan</i></li> <li>• Vision 2050: <i>A Plan for the Central Puget Sound Region</i></li> <li>• Sound Transit, <i>Adopting an Equitable Transit Oriented Development Policy (Sound Transit Equitable TOD Policy)</i></li> <li>• New York-New Jersey-Connecticut Metro Area <i>Making the Region Work for All of Us</i></li> </ul>	<ul style="list-style-type: none"> <li>• Minneapolis, <i>Minneapolis 2040 - The City's Comprehensive Plan</i></li> <li>• City of Toronto, <i>Toronto's First Resilience Strategy &amp; follow up with the Equity Office</i></li> <li>• Saskatoon, <i>Saskatoon North Partnership for Growth</i></li> </ul>

## 3 Research and Analysis

### 3.1 Desktop Review of Current Articles & Information on Equity in Growth Management

As an initial step, a desktop scan of the current literature and approach to equity in planning was conducted. The number of documents and articles that define and discuss equity, alongside identifying approaches to realizing it within the urban context is growing. Several themes emerged more prominently and are summarized below.

#### 3.1.1 Key Themes

##### *Participation and equitable outcomes*

An increase in dialogue on equity is instrumental in advancing equitable outcomes. However, diverse representation (diversity) in decision-making and the participation (democracy) of “harder to reach” groups, or engagement of those systematically disadvantaged in a planning process is important but not enough to ensure just outcomes are achieved (Fainstein, 2014). If the aim is equity, policies with a specific aim to improve conditions for disadvantaged, equity-seeking groups should be a planning focus. This may mean providing additional resources or shifting resources from other groups, in effect, an “unequal” distribution of resources, but an equitable one.

##### *Target planning and investment to “equity-seeking groups” will result in economic growth.*

Equity and economic growth are not competing objectives. Regional economic growth is more robust when equity is at its heart. A growing body of research shows that pursuing economic growth alone does not support equitable outcomes. In fact, the sole pursuit of economic growth does not always result in the best economic outcomes either (Investing in Place, 2016). In practice, targeted investments within “equity-seeking” communities (those who have been identified as disadvantaged, as measured by indicators of need) tend to offer the best outcomes, both for equity and for economic growth. This is explained with the concept of “just growth.”

##### *Organizations may want to improve equity, but are often the source of inequity themselves.*

Organizations must account for and be aware of how their own leadership and bureaucratic processes can function as instruments of exclusion. Literature focused on this area identifies that “systemic barriers” within an organization aggravate disparities within their current operations and often have a history of inequitable decision-making. In order to move towards equitable outcomes, a more thorough investigation of its own practices must be conducted and recognized. Furthermore, a government should not understand itself as the force that will correct inequity, for instance, while supporting inequities caused as a by-product of the free market allocation of land (i.e. real estate and development industries). Bias built into decision-making and development review processes must be scrutinized.

A good example of this are the documented equity issues around Transit Oriented Development (TOD). Hulchanski et al.’s (2017) research identifies the equity divide around new TOD. Research outlines how this best practice in regional growth

management can result in displacement, or drive up real estate prices near rapid transportation, resulting in public investments which disproportionately benefit higher income brackets or favours privileged communities. That TOD policies can often displace existing communities, often those less supported and privileged, was not the original intent of the approach. An equitable framework for policy evaluation is required in order to guard against the risks of such unintended consequences. Strategies known as "eTOD" or Equitable Transit Oriented Development" that mitigate the displacement caused by TOD are now being developed (Hersey et al., 2015).

*Equity is not a silo.*

Inclusion and equity cannot be siloed within a governance organization, and the equity lens cannot include some groups but not others (Myrdahl, 2018). Equity is a complex and multifaceted topic that cuts across policy domains. In order to be effective, pro-equity governance must reflect this diversity. Equity policy that remains siloed within an equity office or a social planning department will not be able to respond to the full spectrum of equity issues that cut across bureaucratic domains. Likewise, equity policy should be inclusive of all groups who have equity claims.

*Integrated Indigenous directions promote reconciliation and more equitable outcomes.*

Rather than symbolic inclusion of Indigenous people into municipal affairs, governing bodies must strive for cultural pluralism to be integrated into government operations (Walker and Belanger, 2013).

Five areas where efforts can be most meaningfully directed are:

1. Relationship-building, this includes declarations, Community Accords and Memorandum of Understanding (MOU);
2. Sector-specific Protocol Agreements on areas of mutual agreement
3. Joint governance and management;
4. Urban Reserves, services and compatibility agreements, and regional relationships; and,
5. More nuanced Aboriginal Citizen participation and engagement.

Taking these steps (and others) can build reconciliation and collaboration with Indigenous communities into the planning frameworks. Rather than creating a stand alone "Indigenous affairs policy", a broader approach of equitably integrating Indigenous interests as a lens to be applied across departments is a recommended approach (Mohammed, Walker, Loring and Macdougall, 2017). Identifying and working on specific Calls for Action of the Truth and Reconciliation Commission are a great place to begin making concrete commitments to reconciliation.

*What is measured, matters.*

Identifying the appropriate data set and metrics is important in telling the story, making decisions and measuring of progress towards greater equity. There is a need to measure the benefits and consequences of policy amongst groups and individuals. Equity metrics should reflect each community's concerns and priorities and include the involvement of those affected (Littman, 2014).

Additionally, how equity is measured will also depend on what type of equity is being pursued. Horizontal equity (equal distribution across groups) and vertical equity (special consideration given to disadvantaged groups) will need to be measured and evaluated across different impacts, with different units of measurement, and for different categories of people (Ibid.).

*Impactful equity goals must be accompanied by objectives and measures.*

A study of 18 North American cities (Manaugh, Badami & El-Geneidy, 2015) found that while progress has been made since the early 2000s towards including social equity goals in urban transportation plans, more focus still tends to be placed on economic and especially environmental goals. When they are defined, "social equity goals are in many cases not translated into clearly specified objectives, and even in cases where there are such objectives, measures for assessing achievement of the objectives ... are often lacking" (Manaugh, Badami & El-Geneidy, 2015, p. 172). Truly balancing social equity with environmental and economic considerations requires careful consideration of diverse goals (for which multi-criteria decision making is a useful approach), and additional effort directed towards clearly specifying equity objectives and measures to ensure that equity goals can be adequately translated into action.

*Develop Equity as a mainstream approach.*

Establishing an understanding and maintaining tools for equity in planning and implementation is necessary. Research identifies a benefit to developing equity as a mainstream approach across disciplines and ensuring justice is a key working principle. For example, literature suggests staff training to support the implementation of an equity lens at the organizational level. Consulting with "early adopters" for strategies is also noted as a fruitful approach (Jacobson, n.d.).

As an example, Sweden's organization of municipalities and county councils (Sveriges Kommuner och Landsting) makes use of a specific model for gender mainstreaming, meaning "the inclusion of a gender equality perspective in the planning, decisions, implementation and follow-up of an activity" (Jacobson, n.d.). This model includes benchmarking, which consists of comparing two or more organizations' methods and processes of gender mainstreaming to identify, share, and implement potential improvements. This model consists of specific steps and is often implemented in clusters (i.e. the process is commenced and concluded by joint meetings of several clusters of mentors and benchmarking organizations) for a more systemic approach.

*Use Equity Planning to Minimize Structural Violence.*

Structural violence "arises from institutions and social practices that prevent people from meeting their needs and enacting self-expression" (Mohammed, Walker, Loring & Maccougall, 2017). Unequal distributions of power and resources, built into social structures or a part of laws and policies, can create the conditions for structural violence to emerge. Infusing an awareness and a drive towards equity into the ethos of a government can help to lessen the bind of structural violence on affected groups (Ibid.). This requires sustained efforts within each organizational Division and Group (not just

planning) to recognize and understand those people and groups for whom equity is most important and how operations impact these groups.

### 3.2 Interview Findings

Common observations were identified through the interviews with other jurisdictions and compiled into the following key messages. Some of these messages and "lessons learned" are similar to those found in articles and literature on equity. However, the information reflects various organizational approaches and notes on how equity is operationalized within different jurisdictions.

#### 3.2.1 Equity with Growth and Area Improvements

It is important to recognize and acknowledge that growth and area improvements or protection of no-growth areas (for example, single-family housing only neighbourhoods) is not necessarily positive or neutral. The benefits and negative consequences of urban growth or no-growth policies are inequitably shared among groups and individuals. Government investment and policy decisions can improve quality of life and support growth for some, but also for example, cause displacement and hardships for communities (in the case of TOD) and restrict potential for aging in place, greater housing options, affordability and diversity in communities (in the case of protecting single family neighbourhoods (noted with the decision to up zone single family neighbourhoods in Minneapolis – however, this was largely in part, addressing a historical pattern of racial segregation but also serving those who couldn't afford a single family home or those that were looking to downsize and stay in the same neighbourhood). Understanding who benefits and who does not, needs to be evaluated with policy and investment decisions for improved equitable outcomes.

#### 3.2.2 Governance – a legacy of inequity

Inequity is a historical accumulation of decades of inequitable decisions, based overtly on systemic bias or through lack of representation. Correcting this history not only involves improving current governance practices/decision making procedures, but also:

- A review of that history and the tools/instruments of inequitable governance, and;
- substantial capacity building at the organizational level.

#### 3.2.3 Clearly define equity

Defining equity emerged as a recommendation from places that did not have a definition for equity, or a clear definition, or where structured frameworks took a perspective that equity was "assumed" as part of good planning practice.

Several interviewees noted that a clear definition must be accompanied by a strong understanding of the difference between equality (being equal) and equity (providing different supports to achieve the same or equal opportunity).

Additionally, a common discussion emerged on the need to shift organizations (in particular, councils and committees at the regional level) from a focus and discussion of

geographic equity to the larger understanding of equity amongst citizens within their communities.

#### **3.2.4 Data as a foundation**

Understanding data needs (through a clear definition of equity) appeared to be a key first step. Those organizations with a more advanced equity agenda emphasized the use of data to understand the context but also to help support their decision-making, defend actions and highlight how their actions were interconnected within an organization. Some mentioned that obtaining and discussing good data was a sobering finding for a population that saw themselves as progressive.

Reviewing data needs and obtaining good data at a local and regional level as baseline information benefits long term tracking. In particular, local community data and demographic analysis of communities and their evolution and mobility provided a better picture of how policies played out in different communities.

With a data plan in place to identify inequitable conditions, engagement was targeted to fill data gaps. It was noted that often data from traditional sources (e.g. Census) can be inadequate for evaluation of equity for marginal groups. Thus, some data and information can only be collected by talking to equity-seeking groups. Where data was identified as important for understanding an equity issue, a budget was allocated to collect that data. The budget included honoraria for people to engage, organized childcare onsite or childcare reimbursement for parents attending during the consultation process, covered travel costs, and offered food (culturally appropriate) where consultation was scheduled through mealtimes. The resulting data would be understood as worth paying for, similar to that of other high quality and important data sets that would be paid for elsewhere. In this case, the experts are marginal groups, and the data they have is their experience to inform policy and planning.

#### **3.2.5 Engagement and outreach**

Building good data sets relies in part on engagement and outreach. Many consultations stressed the importance of engagement and engaging on how to consult equity-seeking communities. In particular, the most successful organizations looked for ways to remove any barriers that might prevent certain populations from being able to engage on issues and policy (such as a need for childcare, travel and travel costs, food, accessibility, etc.) in the communities of which they worked. Additional good practice measures include materials in formats relevant to communities – for example the use of multimedia, providing information in multiple languages, allowing sufficient time for engagement, and hosting multiple events to maximize participation and build substantial relationships. Other practices noted were utilizing equity based working groups, community advisory committees or an ongoing community advisory board (e.g. an advisory board development of a “community budget”). Equity supportive jurisdictions also took a leadership role. These organizations hosted conferences and invited Indigenous leaders, youth, etc. to hear specifically from equity-seeking groups. These conferences also offered speaker series and opportunities for neighbourhoods, community leaders and community groups. Such venues were also used to co-develop a

planning process for their neighbourhood or equity-seeking group. Many jurisdictions also mentioned the importance of ensuring that a wide range of staff be engaged directly with communities, in particular those traditionally less called upon to conduct engagement (e.g. engineering/infrastructure) and not just planning, communications or a specific outreach team.

### **3.2.6 Use equity as a tool for resource allocation and investment**

Equity advanced organizations who had an established definition of social equity, sought data that informed equity issues and provided for equity-based engagement, also emphasized the use of equity as a tool for investment, amenities, and access. Aware of equity issues in the region, these jurisdictions provided targeted supports and resources, such as anti-displacement strategies (for people and businesses) to those negatively impacted by policy decisions and changes.

## **3.3 Policy Document Review of other Jurisdictions**

The following section provides findings and explores how equity is defined and addressed in other regional government agencies' growth management plans and regional planning practices from the perspective of land use and transportation.

### **3.3.1 Evaluation of Equity “Embeddedness” in Policy**

The degree to which equity is embedded in policies was evaluated to assess how each document represents and considers equity.

The four policy levels analyzed are listed below in order of increasing detail:

- **Direction Setting:** Vision and goals
- **Guiding:** Principles and guidelines
- **Policy:** Specific and supporting policies
- **Monitoring:** Performance measures, indicators, evaluation criteria or frameworks

Measures of embeddedness used were:

**Coverage:** The number of times equity-related policies occur (explicitly, implicitly, or implied) in each document at each policy level.

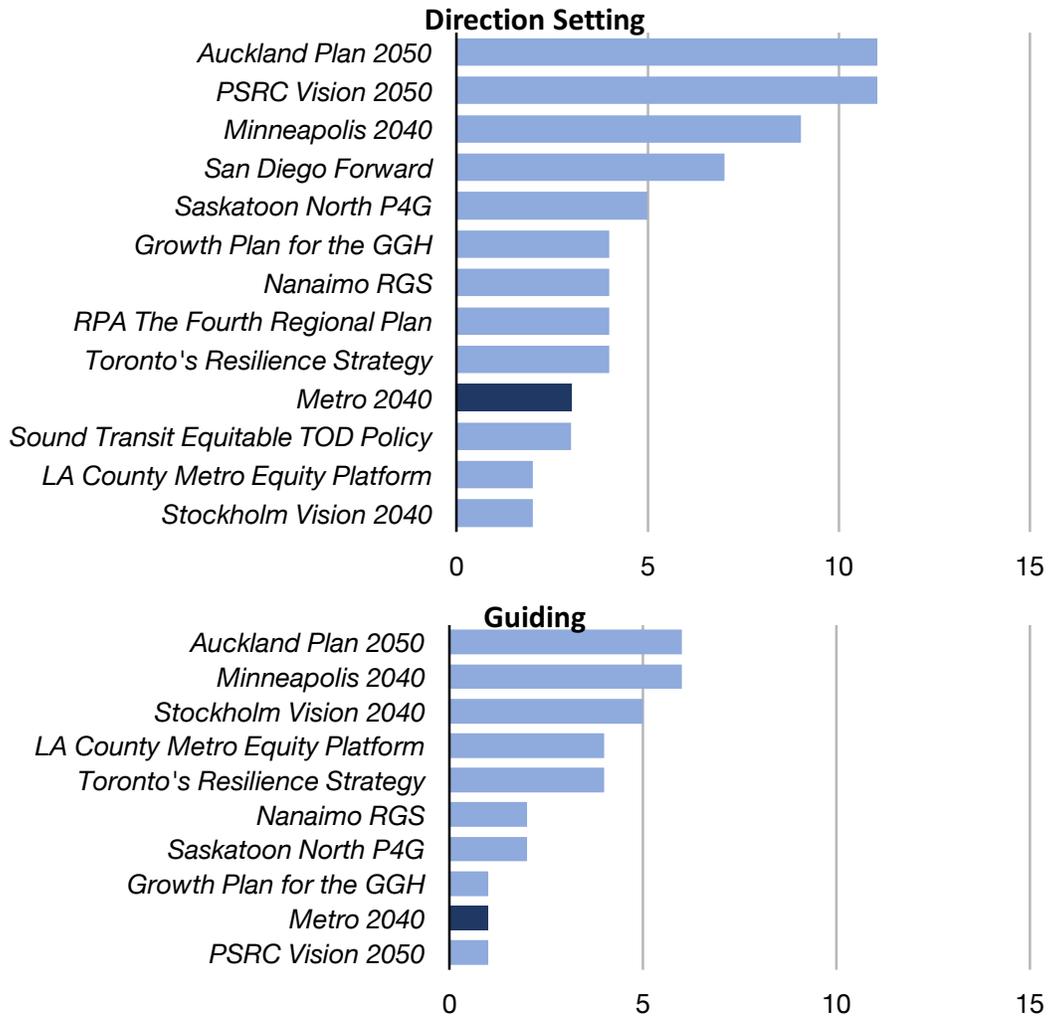
**Depth:** The most detailed policy level in each document.

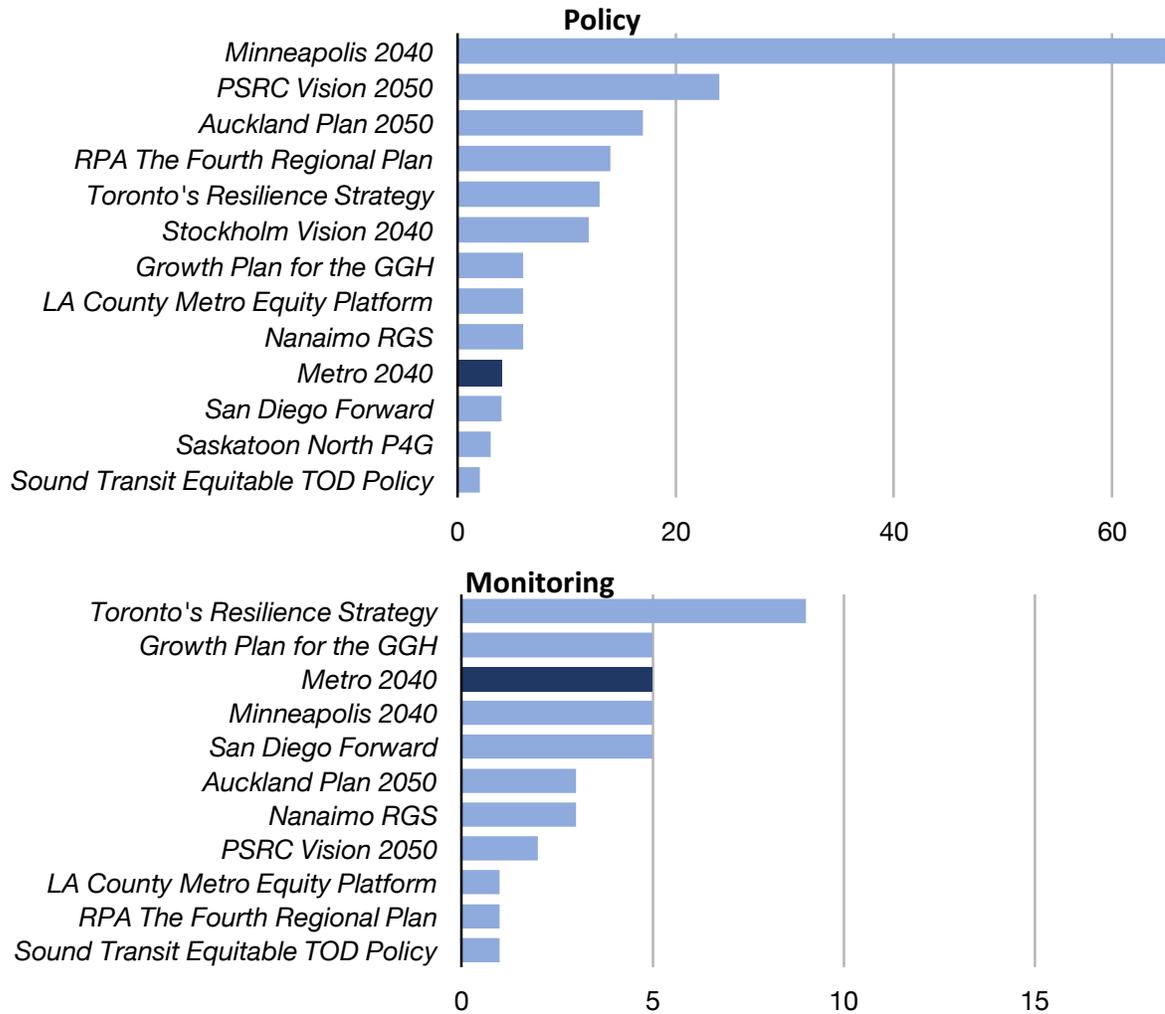
**Comprehensiveness:** The number of policy levels included in each document, weighted for more detailed levels. For example, if a document has equity language at the *direction setting* (1), *guiding* (2), *policy* (3), and *monitoring* (4) levels, the comprehensiveness score would be 10 (the sum of the weights).

**Language Specificity:** Equity language was either explicit (*uses the word “equity” or derivatives and equity is defined*), implicit (*uses synonyms/euphemisms of equity*), or inferred (*appears concerned with equity issues with specific language such as affordable housing or accessible transportation*)

The following charts show the number of policies related to equity at each policy level. *Metro 2040* is emphasized in darker blue to show how *Metro 2040* compares to other reviewed plans.

Figure 2 Number of policies related to equity at each policy level.





Equity coverage varied amongst documents. *Minneapolis 2040* and *Auckland Plan 2050* have the most equity references at all policy levels except monitoring. Notably, *Minneapolis 2040* stands out at the *Policy* level with 60 percent more references than the next document, *PSRC Vision 2050*. *Toronto's Resilience Strategy* has the greatest number of equity references at the *Monitoring* level, resulting in part from following an iterative implementation process of engagement, piloting, evaluating and scaling-up successful initiatives (e.g. Flood Resilience Charter).

Low coverage does not necessarily imply poor consideration of equity in some cases. Since the analysis explored equity in several different document types, comprehensive plans may appear to cover equity more thoroughly, while single-purpose documents may appear to have low coverage based on the number of references. For instance, *LA County Metro Equity Platform* and *Sound Transit Equitable TOD Policy* have few equity references because each entire document contains few, but lengthy and detailed equity policies. In many cases, high coverage reflects breadth of policy areas considered (i.e. *Minneapolis 2040* and *Auckland Plan 2050*), while low coverage indicates less references

but may include more detail (i.e. *LA County Metro Equity Platform* and *Sound Transit Equitable TOD Policy*). The report offers further discussion on this in section 3.3.3 Equity and Policy Areas.

On average, the reviewed documents consider equity in good *depth*. All documents had equity references at the *Direction Setting* and *Policy* levels. Most documents' most detailed policy level was *Monitoring*. Three of the reviewed plans state the intention to develop detailed monitoring plans, while seven have specific metrics. *Minneapolis 2040's* monitoring relates to an equitable planning process (i.e. meaningful, representative), others like *Nanaimo RGS* and *San Diego Forward* only address planning outcomes (i.e. affordable housing, safety). Of the two plans that did not exceed the *Policy* level, *Saskatoon North P4G* has a geographic perspective of equity and *Stockholm Vision 2040* is a guiding document describing an ideal future.

In general, the *comprehensiveness* of equity in the plans was high. Out of a possible 10, the average *comprehensiveness* score was 8.7. All documents addressed equity or contained equity related language in at least three policy levels.

Many plans used explicit language to identify and discuss equity. Several contained implicit language but clearly acknowledged issues of equity. Few inferred or assumed equity as part of good planning overall or dealt with policy areas related closely to equity but did not address it specifically.

Figure 3 Summary of documents and their depth, comprehensiveness score and language used in order of comprehensiveness.

Document	Depth	Comprehensiveness	Language
<i>Toronto's Resilience Strategy</i>	Monitoring	10	Explicit
<i>LA County Metro Equity Platform</i>	Monitoring	10	Explicit
<i>Auckland Plan 2050</i>	Monitoring	10	Explicit
<i>Growth Plan for the GGH</i>	Monitoring	10	Implicit
<i>Minneapolis 2040</i>	Monitoring	10	Implicit
<i>Nanaimo RGS</i>	Monitoring	10	Inferred or assumed
<i>PSRC Vision 2050</i>	Monitoring	8	Explicit

<i>Sound Transit Equitable TOD Policy</i>	Monitoring	8	Explicit
<i>RPA The Fourth Regional Plan</i>	Monitoring	8	Explicit
<i>San Diego Forward</i>	Monitoring	8	Explicit
<i>Stockholm Vision 2040</i>	Policy	6	Implicit
<i>Saskatoon North P4G</i>	Policy	6	Inferred or assumed

### 3.3.2 Definitions of Equity

Of the reviewed documents, approximately 60 percent used *explicit* language about equity, meaning the documents both used the term and defined “equity” from a social perspective and was found within policy areas. Minneapolis and the Greater Golden Horseshoe used the term equity but did not offer a concrete definition. Similarly, Stockholm does not use the term, but is clearly guided by equity. A vague or *implicit* equity definition does not necessarily indicate a poor understanding of equity. *Los Angeles County Metro Equity Platform* fundamentally views equity as access to opportunity, but also includes a process to develop a shared definition of social equity, acknowledging that equity must encompass multiple perspectives. Nanaimo and Saskatoon North defined equity from a geographic perspective, but still address themes that infer social equity. For instance, the *Nanaimo RGS* monitors food security, a theme essential to social equity.

There was an important distinction between geographic and social equity. These two categories of equity appeared differently in the documents depending on their governance. At the municipal scale, neighbourhoods can represent both geographic and social equity, given they correspond, which is often the case. At a regional level, geographic equity primarily meant municipal jurisdictions and their share of investment and taxation in the region. While this certainly affects social equity, it does not directly address it at the social scale, and so where social equity was outlined at the regional level, it was specifically stated in the social context and/or separated from geographic equity. For instance, Auckland Council’s, *Auckland Plan 2050* uses a form of geographic equity alongside social equity (see Deprivation Index at the end). Where these two were not clear in regional level documents, it correlated with expressed issues and need for further education and awareness of elected officials in order to shift thinking about their respective administration (i.e. the share of their municipal budget put to regional investments) to the impact of policy on people.

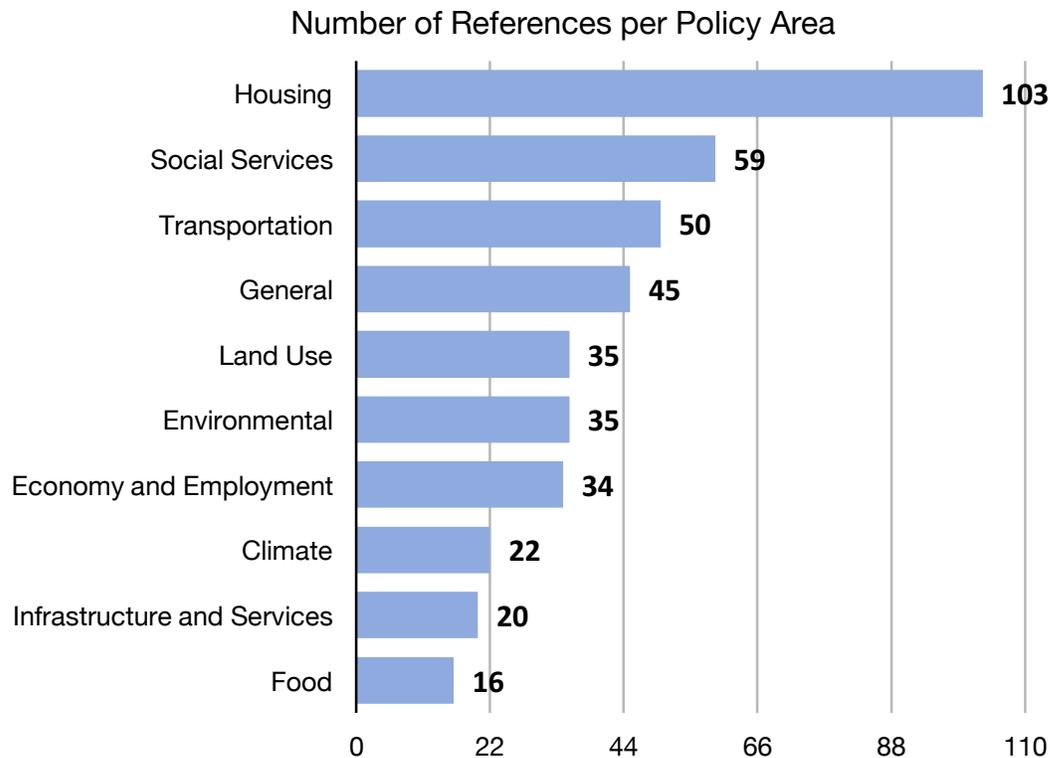
Definitions of equity also vary in their language and clarity regarding the difference between of “equal” versus “equitable” and the issue that being equal does not necessarily result in being equitable. Equity is to provide the necessary resources and support to ensure “equal” opportunity. At times, equitable policy may require “special” measures for equity-seeking groups that are not available to the wider population (and

therefore at risk of being perceived as unequal). However, different treatment, rather than treating everyone the same, is necessary to obtain equitable results. While a fundamental concept, this was often noted in the interviews as an important distinction to make and one that is sometimes missed by even staff and elected officials, described as a shift in thinking for some.

### 3.3.3 Equity and Policy Areas

The following are policy findings from the document review grouped by planning topic or theme. Each theme is described, followed by a summary of the theme in reviewed documents, population group characteristics addressed, and governance bodies and procedures related to the theme. A table of sample policy language at each policy level is also included at the end of each section.

Figure 4 Number of references per policy area.



### *General*

Many plans seek equity generally, not tied to a specific policy area. Issues are vague and undefined, but also include equitable representation and participation in the planning process itself.

Ten plans address equity generally with a total of 45 references. The two documents that do not address equity generally are *Sound Transit Equitable TOD Policy* and *LA County Metro Equity Platform* which are both policies that focus on transportation. *Minneapolis 2040* has the most general equity references, followed by *Toronto's Resilience Strategy*.

General equity is addressed most often at higher policy levels. Of the ten documents, none have general equity language at the Direction level, one at the Guiding level, eight at the Policy level and six at the Monitoring level. This indicates most reviewed documents connect equity to specific planning topic areas at broad policy levels but become more general about achieving equity at detailed policy levels.

Though general equity policies from reviewed documents touch on several population group characteristics, most references are to Indigenous people and racial and ethnic minority characteristics. Overall, there are 28 general equity references to Indigenous people, 23 to racial and ethnic minorities, and eight low socio-economic status references. No reviewed documents reference LGBTQ+, women or single parent characteristics related to general equity.

General equity procedures include engaging equity-seeking groups in planning and decision-making processes. Documents suggest finding new avenues for engaging under-served populations and more effectively using technology and data. *Toronto's Resilience Strategy* recommends applying the City's Equity Lens, a tool that helps identify and address barriers. The tool is a set of questions asked with planning, developing and evaluating a policy, program or service to diagnose barriers and identify, measure, and evaluate best practices within access, equity and diversity. All significant policy and program reports to Council are required to include an Equity Impact Statement to summarize an equity analysis (based on the three questions). In addition, the reports analysis and text should demonstrate that equity issues have been considered.

General equity policies achieve many of the key themes highlighted by desktop research and interviews. For Instance, several reviewed documents address organization-based inequity and promote interdepartmental collaboration through general equity policies. The emphasis on Indigenous people population characteristics suggests general equity policies promote reconciliation. However, lacking specificity risks overlooking certain equity-seeking groups or vague implementation and monitoring targets that are difficult to translate into action.

*Figure 5 Sample policy language (general):*

Policy Level	Sample Language	Source
GUIDING	While Indigenous peoples in Toronto face inequities, they are not listed as an equity-seeking group. Indigenous peoples are the original inhabitants of what is today Toronto, and have a special status recognized under section 35 of the Constitution. Many believe that Indigenous peoples do not seek equity but rather reconciliation and a restoration of the health, wellness, self-determination and sovereignty, which were eroded through historical and ongoing colonization.	<i>Toronto's Resilience Strategy</i>
POLICY	Early action in areas of growth and significant change also provides the opportunity to focus activity on addressing disparities before they become embedded.	<i>Auckland Plan 2050</i>
	Strengthen connections among individuals and networks while promoting social inclusion and cohesion	<i>Minneapolis 2040</i>
	Explore new methods and techniques to engage communities that have been traditionally underrepresented in heritage preservation to identify historic resources they consider valuable and conduct further research on these resources	
	The City prioritizes the most vulnerable people and highest risk in decision-making	<i>Toronto's Resilience Strategy</i>
MONITORING	1. Meaningful and Relevant Dialogue: The community feels that the dialogue has been meaningful and relevant to their interests and daily lives	<i>Minneapolis 2040</i>
	2. Inclusive Representation: The perspectives and participation of a broad range of community members are equitably represented in the plan	
	3. Contributions Have Impact: The public feels their input has been thoughtfully considered and sees their contributions reflected in the plan.	
	4. Empowering Experience: Community leadership and capacity has been built through the process	
5. Effectively-Used Resources: Government resources are used wisely and effectively		
	Creating and maintaining tools and resources, including data and outreach, to better understand how regional and local policies and actions affect our region's residents, specifically as they relate to people of color and people with low incomes.	<i>PSRC Vision 2050</i>
	Social equity analysis for minority, low-income, and senior populations	<i>San Diego Forward</i>
	After scaling up, the project will be evaluated and re-planned accordingly	<i>Toronto's Resilience Strategy</i>

### *Housing*

Housing was defined as people’s ability to live somewhere that is safe, healthy, and affordable. This included a search for issues such as reducing homelessness, supporting ownership, and providing a range of housing types and locations.

Housing had the most references of all policy areas with over 100 mentions of equity. All reviewed documents address housing equity except *Saskatoon North P4G*. *Minneapolis 2040* has the most housing equity references (23), followed by *PSRC Vision 2050* (16), *Auckland Plan 2050* (11) and *RPA The Fourth Regional Plan* (11).

Housing equity language is found at all policy levels. Of the 11 documents, seven have housing equity language at the Direction level, three at the Guiding level, nine at the Policy level and five at the Monitoring level. Thus, housing equity is mentioned in broad and detailed policies.

Policies from reviewed documents that relate to housing and equity cover a broad range of population group characteristics. The three main characteristics are ethnic and racial minorities (48), children and seniors (22), and low socio-economic status (13). No reviewed documents reference LGBTQ+ or single parent characteristics related to housing equity.

Complete communities are a common planning strategy that plans, particularly *Growth Plan for the GH*, use to promote housing equity. Complete communities contain amenities, are places with a good mix of housing, jobs, transit and services, designed to meet the needs and provide access to opportunities for diverse residents. Similarly, *Sound Transit Equitable TOD Policy* has strategies to promote housing equity by offering property discounts for affordable housing development near transit.

Equity is often implied in housing policies, which contributes to the high number of references. Making safe, adequate housing attainable theoretically increases all residents' housing opportunities, which is fundamental to success in other areas of life. Nonetheless, benefits and consequences of change may be inequitably distributed, so equity advanced documents include policies that specifically favour disadvantaged groups (i.e. *Minneapolis 2040*).

Figure 6 Sample policy language (housing):

Policy Level	Sample Language	Source
DIRECTION SETTING	Support and facilitate the provision of appropriate, adequate, attainable, affordable and adaptable housing	<i>Nanaimo RGS</i>
	Planning for a balanced distribution of affordable housing choices and jobs is critical to the success of the Regional Growth Strategy. Skyrocketing housing prices have displaced residents, particularly in major cities and near job centers.	<i>PSRC Vision 2050</i>
GUIDING	Secure and healthy housing is associated with the accumulation of greater intergenerational wealth and other benefits not available to those living in short-term or unhealthy homes. With the significant increase in the cost of housing in Auckland, decline in home ownership levels is resulting in fewer Aucklanders being able to fully prosper.	<i>Auckland Plan 2050</i>
POLICY	[Support] Maori aspirations such as developing kaumāua and papakānga housing	<i>Auckland Plan 2050</i>

	Explore new and different ways to buy, rent and manage our housing. This can include: <ul style="list-style-type: none"> <li>• Cooperative and collective ownership models</li> <li>• Rent-to-buy models</li> <li>• Encouraging long-term institutional landlords.</li> </ul>	
	Applying the policies of this Plan will support the achievement of complete communities that improve social equity and overall quality of life, including human health, for people of all ages, abilities, and incomes	<i>Growth Plan for the GGH</i>
	Minimize the involuntary displacement of people of color, Indigenous people, and vulnerable populations such as low-income households, the elderly, and people with disabilities, from their communities as the city grows and changes	<i>Minneapolis 2040</i>
	Encourage large medical, educational, and cultural institutions to grow within their existing footprint, especially where territorial expansion would result in a reduction of housing stock.	
	Support community driven innovative housing solutions, such as prefabricated and manufactured housing, 3-D printed housing, and tiny houses	
	A minimum of eighty percent of [Sound Transit’s] surplus property to be disposed or transferred, including air rights, that is suitable for development as housing, must be offered for either transfer at no cost, sale, or long-term lease first to qualified entities that agree to develop affordable housing on the property, consistent with local land use and zoning laws.	<i>Sound Transit Equitable TOD Policy</i>
MONITORING	<ul style="list-style-type: none"> <li>• Aucklanders’ sense of community in their neighbourhood</li> <li>• Aucklanders’ sense of safety in their homes and neighbourhood</li> <li>• Aucklanders’ quality of life</li> </ul>	<i>Auckland Plan 2050</i>
	<ul style="list-style-type: none"> <li>• Housing diversity by unit type</li> <li>• Number of new affordable housing units constructed</li> <li>• Subsidized housing wait lists</li> <li>• Level of homelessness.</li> </ul>	<i>Nanaimo RGS</i>
	Complete a Regional Housing Needs Assessment	<i>San Diego Forward</i>

*Social Services*

Social services were defined as people’s ability to connect to, contribute to, and be supported by their community. This included search topics such as culture, recreation, health, support services and education/training.

In total, the reviewed documents reference social services nearly 60 times. Of the 12 reviewed documents, *Saskatoon North P4G*, *Nanaimo RGS* and *Sound Transit Equitable TOD Policy* were the only documents that do not mention social service equity. *Minneapolis 2040* has the most social service equity references (16), followed closely by *Auckland Plan 2050* (15), and *Stockholm Vision 2040* (11).

Though commonly referenced, social service equity was not considered to the monitoring level of detail. Of the nine documents, five have social service equity

language at the Direction level, two at the Guiding level, six at the Policy level and none at the Monitoring level.

Though social service equity policies from reviewed documents touch on a broad range of population group characteristics, most references are about racial and ethnic minority characteristics. Overall, there are 26 social service equity references about racial and ethnic minorities, followed by nine children and senior references and six Indigenous people references. No reviewed documents reference LGBTQ+ or single parent characteristics related to social service equity.

*Growth Plan for the GGH* embeds social services into governance procedures. Cultural Heritage Resources are objects, sites, or locations of a traditional societal practice that is of historical, cultural, or archaeological significance, which are important for identity and wellbeing today. The GGH has committed to working with First Nations and Métis while developing and implementing plans to identify, use, and manage Cultural Heritage Resources.

Like housing, equity is often intrinsic to social services. As emphasized by *Stockholm Vision 2040*, access to social services is fundamental to residents accessing other opportunities. Without targets and measures, however, it is difficult to analyze progress and understand the distribution of benefits and consequences. Equity advanced plans include policies that consider horizontal and vertical equity (i.e. *PSRC Vision 2050*).

Figure 7 Sample policy language (social services):

Policy Level	Sample Language	Source
DIRECTION SETTING	Harness emerging technologies and ensure equitable access to high quality digital data and services	<i>Auckland Plan 2050</i>
	Health is more than just the absence of disease... Disparities increase for people of color and those with low incomes; they face more barriers to affordable, quality housing, health care, and healthy foods... Local plans should identify and address health disparities to improve health outcomes for all residents.	<i>PSRC Vision 2050</i>
GUIDING	Good social services ensure equal opportunities in life	<i>Stockholm Vision 2040</i>
POLICY	[Value] the importance of rangatahi and their skills, knowledge and world views as important to the health of the community	<i>Auckland Plan 2050</i>
	Partner with private, philanthropic, and other government institutions to target investments in arts and creative spaces, venues, and districts, particularly in communities where there are existing racial, ethnic, and economic disparities	<i>Minneapolis 2040</i>
Establish integrated delivery of social services across disciplines, such as housing, disability, physical health, mental health, child welfare, senior services, and workforce services, so residents can more easily access the services they need		

	Promote affordability and equitable access of public services to all communities, especially the historically underserved.	<i>PSRC Vision 2050</i>
	The region is a world leader in areas such as information technology, the creative professions, life sciences, environmental technology, social sustainability and human right	<i>Stockholm Vision 2040</i>

*Transportation*

Transportation was defined as an affordable, accessible and reliable transportation system that serves residents, rather than displaces them. This included search areas for supporting affordable housing near public transit and ensuring the transportation connects people to their homes, jobs, and other needs.

Transportation equity has nearly 50 references in total. All reviewed documents address transportation except *Saskatoon North P4G*. *Minneapolis 2040* has the most transportation equity references (11), followed by *San Diego Forward* (10) and *PSRC Vision 2050* (6).

Transportation equity language is found at all policy levels. Of the 11 documents, five have social service equity language at the Direction level, one at the Guiding level, seven at the Policy level and four at the Monitoring level. Thus, transportation is mentioned in broad and detailed policies.

Though transportation equity policies from reviewed documents touch on a broad range of population group characteristics, most references are about racial and ethnic minority characteristics. Overall, there are 24 transportation equity references about racial and ethnic minorities, followed by eight children and senior references and six low socio-economic status references. No reviewed documents reference LGBTQ+, women or single parent characteristics related to transportation equity.

No specific governance bodies or processes related to transportation equity were identified. However, while some documents reviewed are from regional or municipal planning agencies, others are from single purpose agencies, such as Sound Transit and LA County Metro, which specifically focus on policies that consider transportation equity in detail. *Sound Transit Equitable TOD Policy* focuses on locating equitable transit communities that are affordable, safe, diverse, and abundant in opportunities while developing strategies to minimize potential displacement of residents and businesses. *LA County Metro Equity Platform* focuses on equitable long-range transportation planning particularly through investments that leads to equitable benefits and internal equity training.

Driven by research about transportation planning as a source of inequity, recent transportation policies from the reviewed documents have become specific about equity-seeking groups and policy areas. For instance, *Sound Transit Equitable TOD*

Policy acknowledges people have unique transportation needs that should be given special consideration - an example of vertical equity. Moreover, several policies relate to other policy areas such as housing, employment, and social services. Equity is a key consideration for planning and investments. This specificity about equity does not follow through to the Monitoring policy level.

Figure 8 Sample policy language (transportation):

Policy Level	Sample Language	Source
DIRECTION SETTING	<p>The agency is committed to TOD that is equitable by ensuring that:</p> <ul style="list-style-type: none"> <li>• The processes to plan, develop and implement TOD are inclusive and reflective of the local community, with the goal of a shared station area vision between the agency, community and local jurisdiction.</li> <li>• TOD outcomes benefit and support existing low-income communities and residents of color.</li> <li>• Station areas include housing options for families of many sizes and various income levels, provide social and economic opportunity for current and future residents, and increase access to regional employment, health and educational centers.</li> </ul>	<i>Sound Transit Equitable TOD Policy</i>
GUIDING	The Long Range Transportation Plan (LRTP) must have a concentrated focus on equity.	<i>LA County Metro Equity Platform</i>
POLICY	Designate Production and Processing Areas that comprise large contiguous tracts of land historically used for industrial purposes, that are well-served by transportation infrastructure for both people and freight, and that contain building stock suitable for production and processing businesses to expand access to higher wage job opportunities	<i>Minneapolis 2040</i>
	Provide equitable and ample access to walking, bicycling, transit options, and a shared mobility economy: <ul style="list-style-type: none"> <li>• Increase connections to isolated areas of the city that were created by historic inequities</li> <li>• Support strategies to improve mobility for seniors and those with mobility challenge</li> </ul>	
	Ensure mobility choices for people with special transportation needs, including persons with disabilities, seniors, youth, and people with low incomes.	<i>Sound Transit Equitable TOD Policy</i>
	The Regional Plan reserves 10 percent of transit operations funding for seniors and persons with disabilities. Five percent of the funds are reserved for Americans with Disabilities Act (ADA) services. Additionally, the Regional Plan includes 5 percent of transit operations funds to support a coordinated system of services provided by social services agencies for “door-through-door” assistance for seniors and persons with disabilities.	<i>San Diego Forward</i>
MONITORING	<p>We will track progress against a set of measures.</p> <ul style="list-style-type: none"> <li>• Access to jobs</li> <li>• Household transport costs</li> <li>• Transport related deaths and injuries</li> </ul>	<i>Auckland Plan 2050</i>

	<p>Define metrics to evaluate outcomes and consider redirected actions if needed. It will be particularly critical to infuse equity-based performance metrics in Metro’s investment decisions. These cannot be the only investment considerations. Transportation is rife with tradeoffs. But equity metrics need to be definable, impactful, measurable, accountable, and at the front end of the analysis, not the back end.</p>	<p>LA County Metro Equity Platform</p>
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*Land Use & Growth Management*

Land use was defined as designated uses, growth areas, overlays, development patterns, etc. and its ability to promote equity.

Overall, land use has 35 references from ten of the reviewed documents that relate to equity. Having the greatest number of references, *Nanaimo RGS* mentions land use equity six times, while *Minneapolis 2040* and *PSRC Vision 2050* reference land use equity five times.

Land use equity policies are concentrated at broader policy levels. Of these ten documents, nine have land use equity language at the Direction level, four at the Guiding level, eight at the Policy level and none at the Monitoring level. Guiding level language tends to refer to historic land uses or future needs.

Land use policies do not distinguish a broad range of population group characteristics. Only four population group characteristics are specifically mentioned: Indigenous people (8), ethnic and racial minorities (7), children and seniors (5), and low socio-economic status (1). Overall, land use equity policies address all people in general.

*PSRC Vision 2050* is the only reviewed document in which equitable land use processes were identified. In order to inform development patterns, *PSRC Vision 2050* states that inclusive engagement will be conducted to identify and address the diverse needs of the region’s residents.

In general, land use policies from reviewed documents address equity minimally and implicitly. Reviewed documents tended to acknowledge how land use could impact issues such as climate change, emissions reduction, walkability, health, and the environment rather than equity. For instance, documents using tools such as boundaries and density targets (i.e. *Growth Plan for the GGH*) typically do not justify these metrics in relation to equity. Additionally, few documents acknowledge conventional land use planning as a source of inequity or structural violence.

However, some documents contain notable equity advanced elements related to land use. For instance, *Minneapolis 2040* uses racial disparity data to inform planning. *PSRC Vision 2050* uses engagement and consultation to inform development patterns. *Saskatoon North P4G* and *PSRC Vision 2050* acknowledge that Indigenous governments

engage in land use planning, so there is a need for government-to-government dialogue and collaboration.

Figure 9 Sample policy language (land use and growth management):

Policy Level	Sample Language	Source
DIRECTION SETTING	Auckland will follow a quality compact urban form approach to growth to realize the environmental, social, and economic benefits this approach brings.	<i>Auckland Plan 2050</i>
	Compact built form and intensification efforts go together with more effective transit and active transportation networks and are fundamental to where and how we grow. They are necessary to ensure the viability of transit; connect people to homes, jobs, and other aspects of daily living for people of all ages; and meet climate change mitigation and adaptation objectives.	<i>Growth Plan for the GGH</i>
GUIDING	Areas in Minneapolis with higher densities and a mix of land uses experienced disinvestment, in part because banks did not lend in those areas	<i>Minneapolis 2040</i>
	[The] fastest growing age group between 1986 and 2006 was the sector of the population over the age of sixty-five. This trend is expected to continue which has significant implications for land use, housing, and employment.	<i>Nanaimo RGS</i>
POLICY	Where land has been selected as Treaty Land Entitlement within the boundaries of a municipality, the associated municipality will engage in discussions with the First Nation to enter into a land use compatibility agreement.	<i>Saskatoon North P4G</i>
	Sound Transit acquires property for transit purposes. During acquisition of land sufficient to construct and operate the transit facility, Sound Transit considers how potential excess or surplus property after construction may be used for TOD, including such factors as size, configuration and relationship to a future transit facility. This consideration allows the agency to make intentional decisions about property acquisitions and how the final footprint of the agency’s constructed facility may allow future excess Sound Transit property or adjacent property to be effectively developed into agency or community TOD.	<i>Sound Transit Equitable TOD Policy</i>
	Use data on racial disparities and community asset mapping criteria to identify geographic areas most in need of reinvestment and where a coordinated approach would result in achieving Minneapolis 2040 goals, including but not limited to areas that have historically experienced disinvestment	<i>Minneapolis 2040</i>

*Environmental*

Environmental policies were defined as people’s ability to access natural spaces and live within a healthy environment. Issues include proximity to parks, water quality, and air quality.

In total, there are 35 environmental equity references. Nine of the reviewed documents address environmental equity, excluding *Saskatoon North P4G*, *Sound Transit Equitable*

*TOD Policy and LA County Metro Equity Platform. Minneapolis 2040 and PSRC Vision 2050* both have the greatest number of environmental equity references (8), followed by *Toronto’s Resilience Strategy* and *San Diego Forward* (4).

Though many documents do not consider environmental equity at the broadest or most detailed policy levels, several include environmental equity language at the Policy level. Of the nine documents, two have environmental equity language at the Direction level, one at the Guiding level, seven at the Policy level and three at the Monitoring level.

Environmental policies do not distinguish a broad range of population group characteristics. Only three population group characteristics are specifically mentioned: ethnic and racial minorities (11), children and seniors (2), and low socio-economic status (1). Overall, environmental equity policies address all people in general.

The *Growth Plan for the Greater Golden Horseshoe* somewhat embeds the environment into governance procedures. The *Greater Golden Horseshoe* acknowledges that the region has certain hydrologic and cultural heritage resources that are fundamental for wellbeing and prosperity. Planning to protect and manage these resources supports environmental equity.

Reviewed documents with environmental equity language tend to understand the interconnectivity of ecological and human wellbeing. Therefore, at the broadest and most specific policy levels (Direction Setting and Monitoring), equity is implicit; if the region's environment is improving so to must the wellbeing of residents. Policy level language, however, is more specific about people's needs for access of green space and the structural violence that lead to some populations bearing an inequitable burden of environmental degradation.

Figure 10 Sample policy language (environmental):

Policy Level	Sample Language	Source
DIRECTION SETTING	The region cares for the natural environment by protecting and restoring natural systems, conserving habitat, improving water quality, and reducing air pollutants. The health of all residents and the economy is connected to the health of the environment. Planning at all levels considers the impacts of land use, development, and transportation on the ecosystem.	<i>PSRC Vision 2050</i>
GUIDING	Sustainability Principles <ul style="list-style-type: none"> <li>• The interconnectedness and interdependence of natural and human systems are recognized and respected</li> <li>• The qualities of place that create pride and a sense of community are nurtured</li> <li>• Equity amongst all citizens and across generations, including future generations is ensured</li> </ul>	<i>Nanaimo RGS</i>

POLICY	While some parts of Auckland are well served with quality public places and spaces, others are not. Investment must therefore be specifically targeted at: <ul style="list-style-type: none"> <li>• those areas that undergo significant growth and where population densities are increasing</li> <li>• those parts of Auckland that are currently under-served and where it will make the most difference to quality of life.</li> </ul>	<i>Auckland Plan 2050</i>
	Ensure that all residents of the region, regardless of race, social, or economic status, have clean air, clean water, and other elements of a healthy environment.	<i>PSRC Vision 2050</i>
	Provide parks, trails, and open space within walking distance of urban residents. Prioritize historically underserved communities for open space improvements and investments.	
	Evaluate universal accessibility of all parks and open spaces, making improvements to ensure they are all accessible, enjoyable, and welcoming to all people regardless of age, geography, or cultural background.	<i>Minneapolis 2040</i>
Ensure that the people and communities in areas of environmental injustice experience the benefits of local and regional infrastructure investments		
MONITORING	Is the region's air quality improving?	<i>San Diego Forward</i>
	Monitoring, evaluating, and communicating the benefits achieved from green and blue infrastructure in Toronto and internationally, with the aim of prioritizing green and blue infrastructure within decision making and budgets at the City and for its partners.	<i>Toronto's Resilience Strategy</i>

*Economy and Employment*

Economy and employment were defined as people’s ability to make a living and pursue careers. Issues include small business support and job availability and proximity.

Overall, there are 34 references from the reviewed documents. Nine address economy and employment equity, excluding *Nanaimo RGS*, *Growth Plan for the GGH* and *RPA Fourth Regional Plan*. *Minneapolis 2040* has the most references (11), followed by *PSRC Vision 2050* (7) and *Stockholm Vision 2040* (5).

Economy and employment equity policy language is found at all policy levels. Of the nine documents, three have economy and employment equity language at the Direction level, two at the Guiding level, six at the Policy level and three at the Monitoring level.

Though economy and employment equity policies from reviewed documents touch on a broad range of population group characteristics, most references are about racial and ethnic minority characteristics. Overall, there are 14 economy and employment equity references about racial and ethnic minorities. No reviewed documents reference LGBTQ+, single parent, or children and senior characteristics related to economy and employment equity.

No specific governance bodies or processes related to economy and employment equity were identified.

Overall, economy and employment equity policy references are few, but highly specific. Most economy and employment equity language from the reviewed documents addresses and supported specific underserved groups. Compared to other planning topics, economy and employment equity Monitoring examples are all measurable. *Auckland Plan 2050* has specific metrics for Māori employment, which could be modeled for other equity-seeking groups (NEET rates, not in employment education or training).

Figure 11 Sample policy language (economy and the environment):

Policy Level	Sample Language	Source
DIRECTION SETTING	Advance Māori employment and support Māori business and iwi organisations to be significant drivers of Auckland’s economy	<i>Auckland Plan 2050</i>
	In 2040, all Minneapolis residents will have the training and skills necessary to participate in the economy and will have access to a living-wage job.	<i>Minneapolis 2040</i>
GUIDING	A role model as an employer.	<i>Stockholm Vision 2040</i>
POLICY	Training and education initiatives focused on those most in need	<i>Auckland Plan 2050</i>
	Foster a supportive environment for business startups, small businesses, locally owned and women- and minority-owned businesses to help them continue to prosper.	<i>PSRC Vision 2050</i>
	Support and recognize the contributions of the region’s culturally and ethnically diverse communities and Native Tribes, including helping the region continue to expand its international economy.	
	Identify and remove barriers, such as lack of technical support and challenges in accessing capital and physical space, to business creation and growth by residents of colour, Indigenous residents and low-income residents	<i>Minneapolis 2040</i>
	Prioritize use of land in Production and Processing Areas for production, processing and last mile distribution of products and services uses that have minimal or no air, water, or noise pollution impacts, and that provide quality living-wage jobs	
MONITORING	<ul style="list-style-type: none"> <li>• Māori in employment, education and training</li> <li>• Māori decision making</li> </ul>	<i>Auckland Plan 2050</i>
	Real per capita income compared with California and the United States	<i>San Diego Forward</i>

### Climate

Climate was defined as people’s ability to adapt to or mitigate the risks of climate change. Issues include natural hazards and low emission technologies.

In total, the reviewed documents reference climate equity 22 times. Only seven plans reference climate equity including *Minneapolis 2040*, *San Diego Forward*, *RPA The Fourth Regional Plan*, *Growth Plan for the GGH*, *Auckland Plan 2050*, *PSRC Vision 2050*,

and *Toronto’s Resilience Strategy*. *Toronto’s Resilience Strategy* has the most climate equity references (8) followed by *PSRC Vision 2050* (4).

Climate equity language is found at all policy levels. Of the seven documents, two have climate equity language at the Direction level, one at the Guiding level, five at the Policy level and one at the Monitoring level. However, language at the Monitoring level is minimal, suggesting the strongest climate equity language is found at broader policy levels.

Policies from reviewed documents that relate to climate and equity cover a moderate range of population group characteristics. The three main characteristics are ethnic and racial minorities (9), children and seniors (3), and Indigenous people (3). No reviewed documents reference LGBTQ+, single parent, women, or people with disabilities characteristics related to climate equity.

*Toronto’s Resilience Strategy* details the establishment of a Working Group dedicated to heat relief. The Working Group educates the public, reviews bylaws, and develops strategies to mitigate the impacts of heat for all residents. This Working Group helps people of all characteristics withstand the impacts of increasing heat.

Many of the reviewed documents connect climate change and natural hazards. Most of these documents with climate change equity language acknowledge certain residents may be more vulnerable to natural hazards resulting from climate change. However, few of these documents specify how to equitably distribute the financial burden of mitigating and adapting to climate change.

Figure 12 Sample policy language (climate):

Policy Level	Sample Language	Source
DIRECTION SETTING	VISION 2050 recognizes that "business as usual" will not be enough. As a result, VISION 2050 is a call for personal and institutional action to address long-term regional challenges, including racial and social inequality, climate change, housing affordability, and imbalance of jobs and housing around the region.	<i>PSRC Vision 2050</i>
GUIDING	Auckland is exposed to a range of climate change impacts... These impacts present challenges for Auckland, such as... [an] unequal distribution of impacts on Aucklanders, with those such as the elderly, the very young, those living in poverty or with chronic health issues more likely to be negatively affected.	<i>Auckland Plan 2050</i>
POLICY	Develop strategies to enhance our region’s ability to adapt to the consequences of climate change, including planning and design strategies to help communities to cope with hazardous events such as storms, heat waves, wildfires, or ongoing drought.	<i>San Diego Forward</i>
	Increase resilience by identifying and addressing the impacts of climate change and natural hazards on water, land, infrastructure, health, and the economy. Prioritize actions to protect the most vulnerable populations.	<i>PSRC Vision 2050</i>

	Pricing greenhouse gas emissions to fund climate adaptation and mitigation measures, transit, and investments in environmentally burdened neighbourhoods	<i>RPA The Fourth Regional Plan</i>
MONITORING	The City will consider the following factors in the review and update of the Wet Weather Flow Master Plan and Basement Flooding Program: <ul style="list-style-type: none"> <li>• Vulnerable populations and the ways they are impacted by flooding, including people living in basement apartments</li> <li>• Climate change adaptation.</li> </ul>	<i>Toronto's Resilience Strategy</i>

*Infrastructure and Services*

Infrastructure and services were defined as people having access to adequate, safe, and well-maintained major infrastructure. This includes services such as water, sewerage, waste, stormwater, and hazard prevention (i.e. dikes).

Combined, the reviewed documents have a total of 20 references related to infrastructure and services equity. Only seven plans reference infrastructure and services equity including *Minneapolis 2040*, *San Diego Forward*, *Toronto's Resilience Strategy*, *Saskatoon North P4G*, *Nanaimo RGS*, *Auckland Plan 2050* and *PSRC Vision 2050*. *PSRC Vision 2050* has the most infrastructure and services references (5).

Of the seven documents, three have climate equity language at the Direction level, none at the Guiding level, five at the Policy level and one at the Monitoring level.

Infrastructure and service equity policies do not distinguish a broad range of population group characteristics. Only three population group characteristics are specifically mentioned: ethnic and racial minorities (7), Indigenous people (4), and low socio-economic status (2). Overall, infrastructure and services equity policies address all people in general and typically did not outline or make the connection of infrastructure and services on equity of residents.

*Minneapolis 2040* emphasizes that City staff time must be devoted to interdepartmental and interagency planning and implementing district-wide development plans to ensure historically amenity deficient areas are not overlooked.

Overall, infrastructure and services equity language from reviewed documents is not highly specific. Policies focus on providing services to historically underserved areas. Policies also focus on providing infrastructure and services to areas with significant growth; however, the reviewed documents do not acknowledge that benefits and consequences of growth may be inequitably distributed. Taking a less common, but equally important perspective, *Minneapolis 2040* also emphasizes that some infrastructure may have adverse impacts on residents and that such negative consequences on equity-seeking groups should be avoided. Effective infrastructure and services policies depend on using data as a foundation to identify underserved areas.

*Figure 13 Sample policy language (infrastructure and services):*

Policy Level	Sample Language	Source
DIRECTION SETTING	The historic provision of public services often systematically and disproportionately created worse conditions for people of color and people with low incomes... To this day, people in these communities may lack access to reliable services and infrastructure, such as sewers, broadband, and parks. Looking to the future, there are opportunities to correct these past inequities... While certain facilities generate unavoidable adverse impacts, they can be mitigated by not siting facilities in a manner that unduly burdens certain communities or population groups.	<i>Minneapolis 2040</i>
POLICY	Efforts to maximise the investment in social services and infrastructure can focus on: • areas where there is current under-investment and areas where there is significant population growth and redevelopment	<i>Auckland Plan 2050</i>
	Plan for the provision of telecommunication infrastructure to provide access to residents and businesses in all communities, especially underserved areas.	<i>PSRC Vision 2050</i>
MONITORING	Basement Flooding Environmental Assessment Studies	<i>Toronto's Resilience Strategy</i>

### Food

Food was defined as food systems that support food security and food sovereignty. Search issues included provision of access to adequate, healthy food.

Food equity is referenced a total of 16 times in the reviewed documents. Only five documents reference food equity, including *RPA The Fourth Regional Plan*, *Nanaimo RGS*, *Minneapolis 2040*, *Toronto's Resilience Strategy*, and the *Growth Plan for the GGH*. *Toronto's Resilience Strategy* and *Growth Plan for the GGH* have the greatest number of references related to food equity (4).

Of these five documents, two have food equity language at the Direction level, none at the Guiding level, four at the Policy level and one at the Monitoring level.

Policies related to food and equity distinguish very few specific population group characteristics. There are two references to children and seniors and one reference each to low socio-economic status and newcomers. Overall, food equity policies typically address all people in general.

No specific governance bodies or processes related to food equity were identified.

Equity is often implied in food policies. Most food equity language in the reviewed documents refer to increasing access to food for all residents, regardless of their situation. Theoretically, increasing food availability helps all residents in other areas of life; however, equity advanced documents (i.e. *Minneapolis 2040*) also acknowledge that

some residents may face more barriers to accessing food than others even where food is abundant. Policies that support disadvantaged groups specifically are lacking.

Figure 14 Sample policy language (food):

Policy Level	Sample Language	Source
DIRECTION SETTING	Residents will have easy access to food, shelter, education, health care, arts and recreation, and information technology. Public services will be co-located in community hubs that are broadly accessible.	Nanaimo RGS
POLICY	Take proactive steps to attract new grocery stores to locations in low-income communities, including providing financial and technical support for grocery store expansion, remodeling or equipment upgrades	Minneapolis 2040
	Explore and implement regulatory changes to allow and promote more innovative practices such as mobile food markets and mobile food pantries or food shelves that bring food closer to under-resourced customers.	
	Expand convenient access to healthy, local, and affordable food options, including through urban agriculture.	Growth Plan for the GGH
MONITORING	The '5 A's' of food security: <ul style="list-style-type: none"> <li>• Available – sufficient supply</li> <li>• Accessible – efficient distribution</li> <li>• Adequate – nutritionally adequate and safe</li> <li>• Acceptable – produced under acceptable conditions (e.g. culturally and ecologically sustainable)</li> <li>• Agency – tools are in place to improve food security</li> </ul>	Nanaimo RGS

### 3.4 Equity and Indigenous Groups

Of the reviewed documents, seven specifically reference Indigenous population groups throughout. *Toronto's First Resilience Strategy* had the most references (99), followed by *Minneapolis 2040* (76) and *Auckland Plan 2050* (50). Some plans, particularly *Toronto's First Resilience Strategy* and *Saskatoon North Partnership for Growth Regional Plan*, have policy language that explicitly mention Indigenous people. Overall, there are references at all four policy levels with seven *Direction Setting*, 10 *Guiding*, 36 *Policy*, and 7 *Monitoring* references. Samples of this language are provided in the table below.

Plans inclusive of Indigenous content, often identify Indigenous groups as an equity-seeking group and as an external agency and governing authority. This includes an outline of obligations and description for a relationship of government-to-government interaction.

Several exceptions emphasize the uniqueness of Indigenous groups and point out that they should not be considered an "equity-seeking group" in the same way as others. An example is *Toronto's First Resilience Strategy*, which emphasizes that Indigenous groups are not an equity-seeking group. Rather, as the region's original inhabitants, Indigenous people seek reconciliation and restoration of health, wellness, self-determination and sovereignty, which were eroded by colonialism. This includes Section 35 of the Canadian

Constitution recognizing Indigenous peoples' special status and establishing the duty to meaningfully consult with First Nations.

Some plans include specific governance bodies and procedures related to engaging and supporting Indigenous people. To learn from Indigenous Elders and Knowledge Keepers about resilience, *Toronto's First Resilience Strategy* partners with Indigenous Climate Action. Toronto has an online Equity Lens tool that helps staff identify and address barriers faced by Indigenous people and communities. More specific plans support *Toronto's First Resilience Strategy*, including the Indigenous Affairs Strategic Action Plan. The Greater Golden Horseshoe works with First Nations and Métis to protect cultural heritage resources. Minneapolis has developed the Small Developers Technical Assistance Program, which supports Indigenous people to participate in real estate development.

None of the Canadian documents reviewed include a specific section to discuss reconciliation, what that means, why it's important and how it might be applied to planning and growth management.

*Auckland Plan 2050* is a good example of recognizing the status and needs of Indigenous groups throughout. It includes discussion on the value, importance, needs and impact of planning for Maori people.

This plan includes:

- Indigenous experience, perspectives and worldview and in part, this is a foundation for an approach and direction in regional planning.
- A clearly expressed partnership with Maori people and culture within Auckland including - the He Mihi (a welcome), as the plans introduction.
- An outcome of the plan itself (one of six), is "Maori Identity and Wellbeing" – "a thriving Maori identity is Auckland's point of difference in the world – it advances prosperity for Maori and benefits all Aucklanders".
- Outlines legislation and obligations to Maori peoples and communities.
- Recognizes and outlines the relationship with the independent Maori Statutory Board.
- Talks openly and specifically about structural issues and discrimination, both historically and in the present.
- Includes discussion of equity for Maori where relevant within individual policy sections.

Overall, most references are related to equity in general. The next policy areas with the most specific Indigenous people references are public services (6) and land use (5). No references about Indigenous population groups were classified as environmental or food policy areas.

Figure 15 Equity and Indigenous Groups

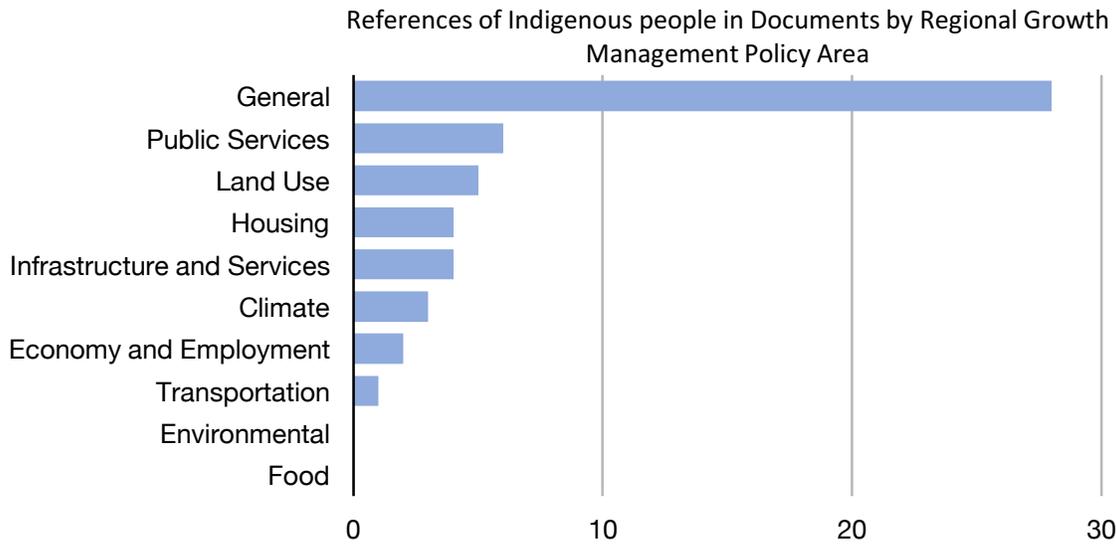


Figure 16 The following are examples of policy language that specifically mentions Indigenous people.

Policy Level	Sample Language	Source
DIRECTION SETTING	Residents of Toronto will know the history of Indigenous people on these lands, past and present, and are committed to knowing about, understanding, and acting on Truth and Reconciliation, for themselves and the City as a whole.	Toronto's Resilience Strategy
	Develop partnerships with First Nation communities and Aboriginal organizations based on respect for each other's jurisdiction and a common understanding of mutual interests.	Saskatoon North P4G
GUIDING	For thousands of years before colonization, it was a place where many Indigenous communities would meet to trade, exchange ideas, and solve resilience challenges; today, Toronto continues to be a place for creating innovative solutions to resilience challenges. Indigenous communities have a leadership role in building resilience.	Toronto's Resilience Strategy
POLICY	The City will also need to invest in its residents, especially residents of color and Indigenous residents, to ensure that it identifies and removes barriers to accessing and retaining housing	Minneapolis 2040
	Minneapolis' economy needs to continue to grow and innovate, and people of color and Indigenous people must have physical, personal and institutional access to this growth by addressing the growing racial disparities in Minneapolis' economy, identifying barriers that have reduced access to economic opportunities and developing strategies and programs...	
	The Regional District of Nanaimo (RDN) wishes to involve First Nations in its planning processes in the same way that it involves other levels of government. To this end, the RDN will: <ul style="list-style-type: none"> <li>• Encourage First Nations membership on the RDN's Advisory Committee;</li> <li>• Continue dialogue with First Nations regarding land use planning in the RDN and in neighbouring lands under First</li> </ul>	Nanaimo RGS

	<p>Nations jurisdiction for the purpose of building a mutual appreciation and understanding of land use planning processes;</p> <ul style="list-style-type: none"> <li>• Consider amendments to the RGS, after the settlement of treaties with First Nations, for the purpose of harmonizing plans for land use in the region;</li> <li>• Pursue the development of implementation agreements with First Nations...</li> </ul>	
	<p>Partnership for Growth members shall:</p> <ul style="list-style-type: none"> <li>• Engage in ongoing dialogue with First Nations and Aboriginal organizations to understand issues of joint interest, cooperate on strategic planning, and support regional development.</li> <li>• Where land has been selected as Treaty Land Entitlement within the boundaries of a municipality, the associated municipality will engage in discussions with the First Nation to enter into a land use compatibility agreement.</li> </ul>	Saskatoon North P4G
	Supporting strategies to improve the engagement of hard-to-reach and equity-seeking groups, including low-income, racialized, and Indigenous residents, newcomers, and youth;	Toronto's Resilience Strategy
	Conserve and promote cultural heritage resources to support the social, economic, and cultural well-being of all communities, including First Nations and Métis communities	Growth Plan for the GGH
MONITORING	[Provide] training for City staff on Indigenous cultural competency, as directed by the Truth and Reconciliation Call to Action	Toronto's Resilience Strategy
	The City will work with Indigenous partners (including Indigenous nations, communities and organizations) to identify the impacts on Indigenous peoples and work with Indigenous communities to ensure they benefit from the Strategy and ensure there are opportunities to lead the implementation of the Strategy.	

### 3.5 Review of Metro 2040

#### 3.5.1 Gap analysis

The following section identifies gaps and opportunities within the current Metro Vancouver regional growth strategy (*Metro 2040*). *Metro 2040* was evaluated using the same equity framework as other documents reviewed.

#### Equity Definition

Equity is not specifically defined in *Metro 2040* although it references “social justice” and “compassion”. Social justice being concerned with human rights and equality, however, differing but overlapping with the concept of equity. Equity includes social justice but emphasizes a targeted approach to provide equal opportunities for disadvantages groups.

“Metro Vancouver has an opportunity and a vision to achieve what humanity aspires to on a global basis - the highest quality of life embracing cultural vitality, economic prosperity, social justice and compassion, all nurtured in and by a beautiful and healthy natural environment” – (*Metro 2040*, p. iv).

### Language Specificity

Language used discusses equity aspects, but is implied rather than directly addressed. Some equity advanced documents address equity explicitly (i.e. *Auckland Plan 2050* and *PSRC Vision 2050*), while others (i.e. *Minneapolis 2040*) also imply equity through terms and phrases such as “fair and just opportunities and outcomes for all people,” and “benefits everyone.”

### Population Groups Mentioned

(in order of most to least references – number of references in brackets)

On average, reviewed plans for other jurisdictions include references to approximately 63 percent of the outlined “equity-seeking groups”. Slightly below the average, *Metro 2040* includes references to 50 percent. Like most of the reviewed documents, the most commonly referenced groups by *Metro 2040* include ethnic or racial minorities, Indigenous people, children and seniors, and low socio-economic status. Equity advanced documents (i.e. *Auckland Plan 2050*, *Minneapolis 2040* and *PSRC Vision 2050*) reference over 80 percent of the outlined “equity-seeking groups” and include policies that support member of the LGBTQ+ community, single parents, and women within some of the policy areas.

- Ethnic or Racial Minorities (26)
- Indigenous people (21)
- Children and seniors (5)
- Low Socio-Economic Status (3)
- Newcomers (1)
- Disabilities (0)
- LGBTQ+ (0)
- Women (0)
- Single Parents (0)
- Intersectional (0)

### Equity Challenges

(in order of most to least references – number of references in brackets)

On average, the reviewed plans include references to approximately 68 percent of the identified equity challenges. *Metro 2040* includes discussion on some of the identified equity challenges, including, access, affordability, health and opportunity. However, the plan does not directly discuss discrimination, obstacles and aspects of disparity. These three challenges are also the least referenced by plans overall. Equity advanced documents (i.e. *Auckland Plan 2050* and *Minneapolis 2040*) explore equity through a variety of terms and perspectives, mentioning all the identified equity challenges.

- Access (32)
- Affordability (29)
- Health (24)
- Opportunity (14)
- Discrimination (0)

- Obstacles (0)
- Disparity (0)

#### *Governance and Process:*

*Metro 2040* describes the active bodies for governance of the plan.

- **Bodies:** TransLink, Greater Vancouver Boards

Other bodies could include:

- An Independent Indigenous Statutory Board
- Community advisory panels and committees
- Partnering with Community-Based Organizations
- Working Groups for specific issues

*Note: Refer to Part 6 and Part 8 of the Local Government Act.*

*Metro 2040* outlines guidelines or commitments around equity specific consultation or engagement for coordination with First Nations groups.

- **Procedures:** Coordination with First Nations

Other procedures could include:

- Universal Design Manuals
- Equity training
- Make better use of technology and data
- Meaningfully engage all populations in developing plans for the future
- An Equity Lens

#### *Policy Embeddedness*

*(number of references in brackets):*

- Direction setting (3)
- Guiding (1)
- Policy (3)
- Monitoring (5)

Overall, *Metro 2040* has relatively low coverage of equity, ranking approximately 10th in number of equity references at the Direction Setting, Guiding, and Policy levels compared to the 12 other reviewed documents. Since equity is implied in *Metro 2040* and tends to acknowledge equity in several policy areas but lack specific policies on how equity will be achieved, this leads to a relatively low coverage count. However, *Metro 2040* explores equity in *depth*, ranking 3rd at the Monitoring level, the most detailed level. With language at each policy level, *Metro 2040* also has comparably high *comprehensiveness* to other reviewed documents.

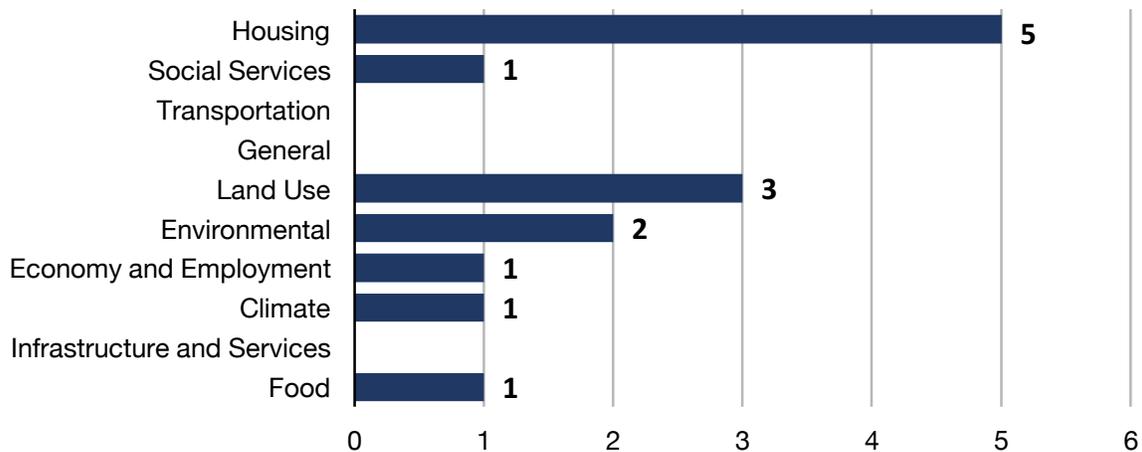
*Metro 2040* has the potential to monitor factors that impact equity. Currently, equity is not specifically mentioned at the Monitoring level of the plan nor are specific equity-seeking groups emphasized strongly. However, *Metro 2040* already tracks several metrics that could contribute to a strong equity monitoring framework. Potential metrics that are already available and can help (with additional data and analysis) provide a picture of equity outcomes for the region which, in turn, provide a basis for equity goal setting and monitoring of regional growth strategy outcomes are:

- Metro Vancouver Dwelling Unit and Employment Growth Targets for Urban Centres and Frequent Transit Development Areas
- Monitoring of energy consumption, greenhouse gas emissions, and air quality related to land use and transportation infrastructure
- Percent of land designated Industrial and Mixed Employment that is developed
- Climate adaptation planning efforts (proxy measure)
- Housing affordability, housing diversity, and complete communities and health

*Regional Growth Management Policy Areas*

The following graph shows *Metro 2040* equity references listed in the same order as the overall theme by theme policy review.

Figure 17 *Metro 2040* equity references by policy area.



Like most other reviewed documents, housing is *Metro 2040*'s policy area with the most equity references. Most housing equity references are at the Policy and Monitoring levels, demonstrating that *Metro 2040* considers housing in detail. Most of these policies focus on affordable housing, which implies equity, though specific equity-seeking groups are not mentioned.

*Metro 2040* has land use policies at the Direction Setting and Policy levels that implicitly promote equity. Like other reviewed documents, *Metro 2040*'s land use policies address all people in general and are focused more directly on transportation, services, retail,

culture, and urban aesthetics, rather than equity specifically. Other equity advanced documents inform land use by engaging with underserved groups and rely heavily on data about disparities (i.e. *Minneapolis 2040* and *Toronto's Resilience Strategy*).

Complete communities are a key avenue by which *Metro 2040* implicitly supports equity. By developing complete communities, *Metro 2040* will make improvements in multiple policy areas, including housing, social services, food, and the environment for all residents. Wellbeing in these policy areas also supports success in other areas of life. However, it does not explicitly consider that improvements may be inequitably distributed, and some residents may face greater obstacles than others that hinder them from embracing positive changes.

*"Metro Vancouver's role is to: support municipalities in the development of healthy and complete communities through regional strategies on affordable housing, culture, food, and parks and recreation (Metro 2040, p. 47)."*

In comparison to other reviewed documents, *Metro 2040* has a strong monitoring framework, particularly for environmental, economy and employment, and climate policy areas, but does not explicitly mention equity or equitable outcomes. Other equity advanced plans similarly do not include language about equity-seeking groups (i.e. *Minneapolis 2040* and *Toronto's Resilience Strategy*); however, data analysis and monitoring that specifically considers disadvantages groups helps ensure equitable outcomes are achieved with adjustments in policy or targeted policy, programs or investments. For example:

- **Environmental.** There is an emphasis on improving air quality which would benefit all residents. *Metro 2040* could specify which communities bear this burden most significantly or which residents may be most greatly impacted by poor air quality then target investment, or policy directed to achieve a more equitable outcome.
- **Economy and Employment.** Though not mentioned in *Metro 2040*, plans from other jurisdictions emphasized industrial lands can support a range of skilled to unskilled employment opportunities that can increase additional access to jobs. Mapping transportation networks, employment lands and communities where high proportions of equity-seeking groups live may provide additional insight to access of employment.
- **Climate.** *Metro 2040* measures communities' climate change preparedness. *Metro 2040* could also consider people and communities most vulnerable to natural hazards resulting from climate change and how to equitably distribute the costs of mitigating and adapting to climate change.

- **Agriculture.** Agricultural policy focuses on protection of rural lands from urban development but does not identify access to land for employment or small-scale agricultural production.

Other comparisons and differences found are as follows:

- Differing from other jurisdictions, *Metro 2040* lacks equity language related to transportation and general equity.
- Other jurisdictions acknowledge the need to rethink transportation planning and TOD considering research that shows conventional transportation planning is a source of inequity (i.e. *LA County Metro Equity Platform* and *Sound Transit Equitable TOD Policy*).
- General equity policies are used by equity advanced plans to promote interdepartmental learning and collaboration, equitable planning processes, and further seek reconciliation with Indigenous groups.

## 4 Opportunities for Incorporating Equity into the Metro Vancouver *Metro 2040* Update and Regional Growth Management

The review provides a number of opportunities for Metro Vancouver Regional Planning to consider in how to incorporate equity in the upcoming growth strategy update. A summary of these are described below.

### 4.1 Definition of Equity

Based on consultation and assessment of plan contents it is evident that developing a clear definition of equity is important for all policy areas including growth management. Providing overarching guidance, a definition is the reference point for creating and changing policy. A definition of equity can be explicit and stand alone or defined internally and referenced within the framework of the plan (regional vision) as well as the policies, strategies and actions within it.

In review of how equity is defined or referenced from other plans, a comprehensive definition might include the following key attributes, to be integrated in the planning document:

- What equity is. This would include the concept of agency, as well as understanding the difference between social justice, currently referenced in *Metro 2040*, and social equity.
- How equity differs from equality and why that is important
- What it means on a regional scale (not just geographic distribution of resources but also social equity for residents living across the region)
- Who it benefits (everyone, if done well)

It is also useful to outline the plan's overall approach to equity challenges (i.e. embracing opportunities or overcoming obstacles) and its application to regional growth management. This may fit within the definition or, as in the example of *Metro 2040*, this information may be appropriate in the section "Challenges and Responses." It may also be useful to acknowledge equity-seeking groups specific to the region.

Examples where and how definitions are applied:

- *LA County Metro Equity Platform* focuses on equitable long-range transportation. This includes a regional definition of equity and a list of "equity measures" that 30 partners from all over the region are asked to sign on to.

### 4.2 Overall Document Structure

Equity advanced documents maintain aspects in structure and format that bring equity forward as a key concept and value within growth management planning. In summary, these include:

- Provide a narrative or initial, detailed analysis of processes and events that lead to existing inequities, along with an acknowledgement of underserved populations and the jurisdiction or organization's historical or current role in these situations.
- Reference and outline existing inequities (as in bullet one) and fully integrate a response to these by explaining how policies will reduce disparities in the text or use of icons throughout the document (see examples below).
- Note where certain population groups have specific needs or face unique obstacles within policy. Explore and define these needs in conjunction with these equity-seeking groups (for example, describe and outline the recent challenges with TOD, land costs and affordable housing, as well as who is most affected by this may be appropriate in Goals 1, 4 or 5 of *Metro 2040*)
- Outline where the organization looks to engage with equity-seeking groups.
- Demonstrate that equity is not limited to one strategy, goal, policy area or section, but applies to all areas. Equity may often be considered only as a “social” category and therefore confined to policy areas with more obvious social components, such as affordable housing, as opposed to other areas, such as environment and climate change, where it is equally important but not necessarily as evident as to how equity applies.
- Use icons, images, graphics or quotes from residents throughout the region to express values and interests related to equity throughout the document.

Key highlights and examples of aspects that bring equity forward:

1. *Minneapolis 2040* is highly detailed, following the outline: Goals → 2040 Topics → Plan Policies. Each section includes a detailed overview of people and challenges. Additionally, the document frequently reiterates that certain populations have been and are currently disadvantaged, underserved by the City, and must be prioritised in order to have equal opportunities and quality of life.
2. *Auckland Plan 2050* includes Maori design throughout the document. The document also uses Maori language and narrative as an equal partner in the plan's values. This references the ongoing partnership between Maori and the Crown and the significance of Indigenous people. *Auckland Plan 2050's* iconography reflects that the document's content integrates Indigenous directions and promotes reconciliation.
3. *Toronto's Resilience Strategy* incorporates case studies. Some case studies are local projects *already* in action and others are from resilient cities around the world. The document incorporates these examples, as well as important terms and information in boxes throughout.
4. *Toronto's Resilience Strategy* also effectively uses icons to indicate equity-promoting policies and procedures. Early in the document (p.12), equity is identified as one of six challenges that the city faces and is represented by a simple icon that is placed next to policies addressing equity. Using this icon

highlights that equity is relevant to less obvious policy areas (i.e. climate). Other useful graphics include:

- Participation and equitable outcomes - Quotes from residents are used frequently throughout the document. The cover is composed of handwritten input from an engagement session that reflect the diversity of residents and challenges they face in Toronto. Another effective equity graphic is the engagement map on pages 40 and 41 showing which neighbourhood had the most participants, were supported by local champions, and already had resilience projects.
- Equity is not a silo - Pages 15 and 44/45 show how Toronto's documents fit together – including other documents directly related to equity – and maps partnering departments and organizations.
- Equity in action - throughout the document, there are inspiring images of work already in action (e.g. Toronto For All campaign)

#### 4.3 Data, Analysis and Assessment as a Foundation

The right data was identified as an important aspect in building a foundation for equitable policy. This involves building a data plan around equity, including identification of data needs and ways to tell the story of equity in the region. Utilizing this as a foundation for equitable choices and policy decisions was identified as a key to success.

For *Metro 2040*, this may include additional tables and maps that tell the story of equity in the region or expanding on those already tracked and included in the appendices or within the document. The mapping and data are used as a tool to target areas and evaluate equity outcomes of policy.

Metro Vancouver could also utilize Statistics Canada Census tract data and/or microdata source called the Public Use Microdata Files (PUMF), a subscription-based service for institutions that require unlimited access to all anonymized and non-aggregated data, would allow Metro Vancouver to conduct different types of analysis (i.e. cross tabulation using most Census data).

Key highlights and examples of data and metrics that support equitable decision-making:

- Puget Sound Regional Council uses opportunities mapping to assess the relative access to opportunities across the region and to track growth in areas based on an "Opportunity Index," which combines measures of five key elements of neighbourhood opportunity and positive life outcomes: education, economic health, housing and neighbourhood quality, mobility and transportation, and health and environment. The level of opportunity score (very low, low, moderate, high, very high) is determined by sorting all census tracts into quintiles based on their index scores. Areas of opportunity that experience greater proportions of growth may experience an increased risk of displacement and therefore are

monitored and targeted for investment and specific strategies. PSRC partnered with the Kirwan Institute for the Study of Race and Ethnicity at The Ohio State University to develop this series of maps.

- *Auckland Plan 2050* – uses the New Zealand Deprivation Index – a neighbourhood scale index that combines census data relating to income, home ownership, employment, qualifications, family structure, housing, access to transport and communications that helps identify areas at greater risk for equity related challenges.
- *Auckland Plan 2050* uses a series of indicators, consistent with central government guidance on urban development capacity, which support equitable analysis, including:
  - prices and rents for housing, residential land and business land
  - consents granted for urban development
  - population growth
  - housing affordability
  - price efficiency in the land and development market.
- See also, Minneapolis example of average income difference between equity and non-equity-seeking groups collected at the Census Tract level.
- *Auckland Plan 2050* has specific metrics for evaluation of equity-seeking groups and the regions progress to address their concerns and needs in order to provide equal opportunities. For example, Māori employment data collected - NEET (not in employment, education or training)

#### 4.4 Policy Directions for Equity in Growth Management

##### Equity Lens

Several jurisdictions suggest assessment of current and proposed policy to identify who benefits and who doesn't as an initial step in creating more equitable policy. In particular, this was important with transit-oriented development and those assumed benefits of any planning "best practices". Similarly, an equity lens could be applied in the *Metro 2040* update and for member municipalities to also employ a social equity lens, may further support equitable outcomes.

Key highlights and examples of incorporating an "equity lens":

- *City of Toronto, Toronto's First Resilience Strategy* developed an "equity lens" for policy development – this is a set of questions asked with planning, developing and evaluating growth management and/or other policy, program or service development to diagnose barriers and identify, measure, and evaluate best practices within access, equity and diversity.
- *City of Toronto, Toronto's First Resilience Strategy* also requires all significant policy and program reports to Board or Councils to include an "Equity Impact Statement" that summarizes an equity analysis and demonstrates that equity

issues have been considered and how this has affected or changed the policy decisions.

### Scenario Testing

Further to the equity lens, *Auckland Plan 2050* outlines scenario building as a method to test and refine policy outcomes under various conditions and therefore response to various complex issues. This method may be an option applied to specific policy changes or investments within the *Metro 2040* update.

### Target Policy & Programs

A key aspect noted for incorporating more equitable outcomes was to include specific and separate policy targeted to equity-seeking groups in order to promote vertical equity.

Key highlights and examples include:

- *Minneapolis 2040* has developed the Small Developers Technical Assistance Program, which supports Indigenous people to participate in real estate development
- *Growth Plan for the GGH* embeds social services into governance procedures. Cultural Heritage Resources are objects, sites, or locations of a traditional societal practice that is of historical, cultural, or archaeological significance, which are important for identity and wellbeing today. The GGH has committed to working with First Nations and Métis to develop and implement plans to identify, use, and manage Cultural Heritage Resources.

### Target Investment

Similar to targeted policy, equity advanced organizations also look to target investments to prevent or remediate known inequities, for example - areas where investment drives up land prices.

As with the concept of “just growth”, these organizations understand that underinvestment in areas within a region results in the region as a whole being less competitive overall, because, for example, a business might hesitate to locate there if the education and workforce development systems have not adequately resourced workers. As well, with inequitable conditions, social tensions over who will gain and who will lose make the regional cohesiveness needed to thrive far less likely.

Key highlights and examples of policy actions to address public investment:

- *Sound Transit Equitable TOD Policy* includes strategies to promote housing equity by offering property discounts for development of affordable housing near designated transit nodes in order to offset some of the displacement that occurs with TOD. Transit construction requires Sound Transit to purchase land for construction. When this is finished, the agency no longer needs some of this land. The policy outlines that 80 percent of its surplus property that is suitable for

housing is offered to qualified entities to develop affordable housing to families at 80 percent of initial area median income or less.

- *Auckland Plan 2050 – Sports Investment Plan* has drafted area focused equity plans that identify needs and outline specific changes to investment or strategies that will improve access and opportunities for targeted groups.
- *Minneapolis 2040* specifically targets disadvantaged groups over others with:
  - Transit infrastructure - using quantitative analysis to prioritize street projects based on the physical condition of the streets as well as equity criteria, defined as both the demographics of the areas served by the streets as well as modal needs along each street. This process is detailed in the 20-Year Street Funding Plan, which was created in 2016 and outlines the methodology of selecting capital street projects for improvement with a focus on racial and economic equity.
  - Housing policy for minimizing displacement of those most affected by new development that includes, mapping and tracking early indicators of neighbourhood change and rents to determine where programs should be targeted, evaluating City investments and their impact on households and displacement, implement tools (Advanced Notice of Sale) to protect areas at risk of displacement, prioritize preservation and rehabilitation of existing affordable housing, expand programs for homeowners, inclusion of affordable housing in new developments, analyze impact of property tax trends

### **Equity in Growth Boundaries, Complete Communities & Compact Urban Form**

The majority of plans reviewed support growth management organized around the concept of compact communities, establishment of urban and rural nodes connected with transit, and specific housing strategies to meet a variety of housing and affordable housing needs. With this, documents use equity relevant data to have a better understanding of equity within the region and where to identify growth, who is affected, and what policies, programs and investment might mitigate unintended negative consequences in order to provide the advantages of growth to all residents.

Examples include:

- *Auckland Plan 2050* uses equity data and mapping as a tool to consider how and where urban development is initiated, serviced and phased. With this, the development plan (a supporting plan to *Auckland Plan 2050*) looks to:
  - enabling sufficient capacity for growth across Auckland
  - embedding good design in all developments and new housing
  - sequencing and prioritising what gets delivered
  - leveraging existing infrastructure investments
  - aligning the timing of infrastructure provision with development.

- Puget Sound Regional Council is developing a displacement risk analysis tool to evaluate and better understand the potential displacement pressure of growth on communities. It uses demographic, economic, and physical factors to evaluate the risk of displacement at the census tract level. Data is combined to create a composite index that represents the risk of displacement for a geographic area. A map will be produced to show areas at higher risk of displacement throughout the region. This data will be used to assess how the different regional growth strategy alternatives assign growth to areas with higher displacement risk. This information may be used to consider changes to growth allocations and/or policies to address mitigating these concerns.

#### 4.5 Incorporating Diverse Perspectives – Internally and Externally

Equity advanced plans outlined governance, interdepartmental involvement and training as important factors in developing an understanding of equity internally, as well as engagement of equity-seeking groups in the development of policy to ensure it addresses and identifies the key equity challenges. Tools and resources for this category included:

##### **Internal organizational development:**

- Ensure not to create an equity silo within the organization and planning documents.
- Involve interdepartmental staff review of non-traditionally "social-related" departments.
- Implement external courses for interdepartmental learning and capacity building on equity
- Develop a similar equity training program for municipal partners or an "equity toolbox"
- Invite other departments (not just planning) to engagement events involving equity-seeking groups so they can hear about the issues firsthand.
- Employ a dedicated staff position to equity building initiatives across policy areas
- Develop a set of equity principles to provide more clarity and guidance of internal processes and increase coherence in application across Divisions and Groups.

##### **Engagement:**

- Develop policy to support engagement of diverse perspectives
- Maintain advisory bodies and innovation groups - equity based working groups, community advisory committees or an ongoing community advisory board, co-design labs
- Redefine "the expert" for data collection. Develop a framework for obtaining data from community members of equity-seeking groups that involves co-

- development of the process as well as data collection. Pay for these services through an honorarium, hourly or other means.
- Reduce barriers to engagement by offering travel subsidy, childcare or reimbursement of costs for childcare, honorarium for community leaders, food at events
  - Observe best practices for engagement and provide a wide variety of opportunities and outreach to equity-seeking groups for engagement on incorporating equity – focus groups, public opinion surveys, stakeholder forums, online, etc.
  - Include materials in formats relevant to communities – for example videos, use of multiple languages, and allowing the time needed for engagement and multiple events to build substantial relationships.

#### **Examples of including Diverse Perspectives:**

- To learn from Indigenous Elders and Knowledge Keepers about resilience, Toronto's First Resilience Strategy partners with Indigenous Climate Action
- Puget Sound Regional Council employs a not for profit organization called Government Alliance on Race and Equity (GARE)
- Puget Sound Regional Council also hosts a peer network to share information and discuss topics (including equity) on best practices and resources.
- *Auckland Plan 2050* Co-design lab was established to provide a neutral space to explore the "use of co-design and other innovative approaches to address complex social issues". A key focus is to provide space for multi-agency teams to collaborate, work alongside citizens and to support and broker innovative ideas and solutions.
- L.A. County Metro has an Office of Race and Equity with a Chief Officer dedicated to the implementation of equity throughout the Metro region.
- The City of Toronto has an established Office of Equity, Diversity and Inclusion with a Task Force on Community Access and Equity which supports a number of initiatives and action plans for equity.
- *Minneapolis 2040* emphasizes that City staff time must be devoted to interdepartmental and interagency planning and implementing district-wide development plans to ensure historically amenity deficient areas are not overlooked.
- *Auckland Plan 2050* includes Indigenous experience, perspectives and worldview and in part, offers this as a foundation for an approach and direction in regional planning.
- New York City Regional Planning Association - an advisory board – maintains a "community budget" and works in partnership as a liaison with communities providing recommendations, oversight and review of equity and policy related matters.

#### **4.6 Monitoring and Performance Measures**

*Metro 2040's* current monitoring framework is well-developed and could be further strengthened by directly considering how policies impact people differently. Final

performance measures and metrics, however, cannot be developed until regional social equity is defined for the updated *Metro 2040*, an assessment of available data, metrics identified and prioritized, and a monitoring program developed (see Conclusions and Recommendations). Section 4.3 Data, Analysis and Assessment as a Foundation provides examples of potential equity performance measures within plans reviewed.

However, the following provides a summary of some of the metrics identified within the overall review. It is not intended as an exhaustive list or specific set of recommended metrics. As outlined, in the most notable cases, metrics were combined and mapped for analysis, for example, the “deprivation index” or “quality of life survey” (Auckland Region) or “opportunity index” (Puget Sound Regional Council). These were used to target investment or policy changes for more equitable outcomes. As such, a performance measure and tracking outcome was also the change of the index over time.

Other potentially useful metrics to be considered, depending on initial definition of social equity, analysis of equity seeking groups and communities and key equity issues in the region, may include:

- land designation, urban containment and growth in priority areas as it relates to:
  - change in household income levels
  - change in prices and rents for housing, residential and business land or commercial lease rates
  - Indigenous lands and title, or Indigenous housing, areas with higher populations of urban Indigenous communities
- employment in priority areas, employment accessibility, employment areas and agricultural areas as it relates to:
  - growth of full/part time positions
  - education level, employment, qualifications
  - Indigenous NEET (not in employment, education or training)
  - business starts, training programs
  - types and scales of agriculture and agricultural businesses and employment in urban and agricultural areas
- air quality, environment and climate change as it relates to:
  - which communities or residents bear the burden of poor air quality or are most greatly impacted by poor air quality
  - hectares per person of park, natural areas, tree cover, or average number of minutes or kms from natural areas or park spaces for identified equity seeking communities/neighbourhoods
  - communities most vulnerable to natural hazards, in general, or resulting from climate change
  - distribution of investment, programs for mitigation and adaptation to climate change
- health, complete communities and transportation choices as it relates to:
  - population growth and diversity in ethnic background, age, gender, family characteristics
  - housing affordability, dwelling type and rates of ownership or tenure

- out of pocket travel cost by income, total travel time/delay by income, commute travel time and cost
- walkability and crime rates
- percentage of households with jobs in their community
- affordable housing located within a radius of transportation nodes, commercial services and community/neighborhood amenities

## 5 Considerations for Next Steps

It is important to acknowledge that equity-seeking groups live in Metro Vancouver and that past planning procedures and decisions may be a source of the inequity these residents face; however, regional planning and land use also provides tools to work towards greater equity. Data, research, investment, policies, and engagement that are specific to equity-seeking groups are fundamental to ensure these residents are better served, can overcome barriers, and embrace opportunities.

Equity is important and fundamental to the region's future prosperity and sustainability; growth has benefits and consequences that, if not distributed equitably, may hinder the region in maximizing potential benefits of the future.

This review finds that many plans address equity through policy areas that implicitly improve equity, such as increasing all residents access to housing, social services, and transportation. However, for greater effectiveness, all policy areas should consider and address how groups may be impacted differently.

Growth management tools such as growth boundaries, complete communities and compact urban form, also implicitly increase all residents' wellbeing in theory, but for greater effectiveness it is important to engage with underserved communities and specifically address their needs.

Working to establish a process that reflects a commitment to equity planning and include elements that explicitly target equitable outcomes are central to achieving greater awareness, understanding, inclusivity, and success overall.

Some considerations going forward in effectively addressing social equity in the update of *Metro 2040* includes:

- **Establish a Social Equity Working Group:** Convene a Working Group to RPAC made up of member municipalities with a social planning function (e.g., City of Burnaby, City of Vancouver, City of Surrey, City of New Westminster, City of Richmond) who have developed tools, approaches, and policies (including social equity lenses) to review this study and discuss the incorporation of social equity at the regional level. Such a group should also include key regional partners, including Social Planning and Research Council of British Columbia (SPARC BC), United Way, and Vancouver Foundation (who have been supporting leading

edge equity research in the region). Working together, the group's work could include supporting Metro Vancouver in:

- Developing a definition of social equity
- Developing potential regional targets and/or measures (using the findings of this report as a starting point)
- Developing a monitoring framework or recommendations to track social equity outcomes of the updated Metro 2040 plan.

This work should also be informed by and incorporate results of this study and the findings of the *Metro 2040 Performance Measure Review* study (2016) which included a series of relevant and still applicable recommendations around performance measures and monitoring.

- **Continue to collaborate with equity partners in the region.** From member municipalities with active social planning departments and staff to regional groups engaged in social equity research, reporting, and advocacy, Metro Vancouver should continue to work with equity partners in the region.
- **Continue to revisit equity measures and targets with partners.** Social equity is not a static issue; it is dynamic and changes with communities and regions as they develop and grow over time. As such, Metro Vancouver should commit to revisiting and reviewing equity measures and targets over time, and potentially more frequently than other Metro 2040 indicators that may change or evolve more slowly. Furthermore, over time, and with growing awareness of social equity in the larger region, regional values and priorities may shift around social equity.

## Glossary

This glossary provides definitions for terms, as used in this review.

### Equity Lens

Analyzing the impact of internal and external processes, as well as foundational assumptions and interpersonal engagement, on marginalized and under-served individuals and communities.

### Equity-Seeking Communities

Groups or communities that face significant collective challenges in participating in society.

### Geographic Equity

Municipal jurisdictions and their share of investment and taxation in a region.

### Just Growth

Equity is central to economic sustainability. If everyone in a region, including those with the fewest resources, is able to participate fully, the economy will grow stronger for the long haul.

### Horizontal Equity

The same treatment given to people in an identical situation.

### Social Equity

Each member of society is given fair, just, and equitable treatment by the political system in terms of public policies and services.

### Structural Violence

Social structures (economic, political, legal, religious, and cultural) that stop individuals and groups from reaching their full potential.

### Systemic Barriers

Policies, practices or procedures that result in some people or groups receiving unequal access or being excluded.

### Vertical Equity

Special consideration is given to disadvantaged Individuals or groups.

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To: Regional Planning Committee

From: Jessica Hayes, Planner, Regional Planning

Date: October 17, 2019 Meeting Date: November 8, 2019

Subject: ***Metro 2040* Housing Policy Review – Scope of Work**

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### **RECOMMENDATION**

That the Regional Planning Committee receive for information the report dated October 17, 2019, titled “*Metro 2040* Housing Policy Review – Scope of Work”.

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### **PURPOSE**

To provide the Regional Planning Committee with an opportunity to consider and provide feedback on the scope of work and process for the *Metro 2040* Housing Policy Review.

### **BACKGROUND**

As part of the update to *Metro 2040*, staff are conducting several thematic policy reviews. As signatories to the regional growth strategy, member jurisdictions will be involved in each of the policy reviews, through the Regional Planning Advisory Committee (RPAC), appropriate RPAC Subcommittees, and the Regional Planning Committee and MVRD Board.

The purpose of the Housing Policy Review is to determine to what extent the goals, strategies, and policy actions in *Metro 2040* should be adjusted to better support current practices and changes in the housing policy landscape, and emerging regional aspirations related to the promotion of diverse and affordable housing choices. Staff are presenting the scope of work for the policy review for the Committee’s information and comment.

### **EXISTING HOUSING POLICY CONTEXT**

*Metro 2040*, adopted in 2011, provides the overall growth management framework for the region. *Metro 2040* coordinates and aligns regional land use and transportation planning, and directs growth into a framework based on a series of Urban Centres and in Frequent Transit Development Areas (FTDAs). *Metro 2040* calls for over two-thirds of residential and employment growth to occur in these transit-rich locations.

Goal 4 of *Metro 2040* aims to encourage the development of complete communities, and one of the strategies to achieve this goal is through policy actions that support the provision of “diverse and affordable housing choices” (S4.1) (see Figure 1).

In 2016, the MVRD Board adopted the *Regional Affordable Housing Strategy (RAHS)* to provide leadership on regional housing needs, and to advance the complete community objectives of *Metro 2040*. It is a related strategy focused on a single component of growth (i.e. housing) and is intended to provide further guidance to support the implementation of the policies of *Metro 2040*.

**Figure 1. Strategy 4.1 of Metro 2040**

**4.1 Provide diverse and affordable housing choices.**

- Requires that Metro Vancouver pursue the strategies and actions set out in the *Regional Affordable Housing Strategy (RAHS)*;
- Requires that Metro Vancouver maintain Housing Demand Estimates;
- Requires municipalities to adopt Regional Context Statements that include policies or strategies that will work toward meeting future housing demand; and,
- Requires municipalities to prepare and implement Housing Action Plans.

Furthermore, Metro Vancouver also has a related mandate to support diverse and affordable housing choices through the Metro Vancouver Housing Corporation (MVHC), and the goals and targets set out in the *Metro Vancouver Housing 10-Year Plan (2019)*.

**Provincial and Federal Policy Context**

Both *Metro 2040* and *RAHS* recognize that increasingly complex housing issues demand more innovative strategies and greater collaboration across all levels of government and with various housing stakeholders.

Since the adoption of *Metro 2040* and *RAHS*, both the provincial and federal governments have significantly increased their respective commitments to housing. In 2017, the Government of Canada's *National Housing Strategy* was introduced, and in 2018, the BC Provincial Government released *Homes for BC: A 30-Point Plan for Housing Affordability in British Columbia*. These plans, along with more recent budget commitments, have allocated much-needed funding to support affordable housing, and encourage partnerships between the public, private, and non-profit sectors to meet a diverse range of housing needs. There have also been a number of recent changes to legislation and regulations that have had a positive impact on the housing landscape, for example, updates to the *Residential Tenancy Act* to strengthen protections for renters, and the introduction of new legislation in British Columbia to support Residential Rental Tenure Zoning and require the completion of Housing Needs Reports.

**POLICY REVIEW PROCESS AND TIMELINE**

The primary objective of the Housing Policy Review is to identify recommended policy considerations to guide the development of *Metro 2050*, the update to the regional growth strategy. More specifically, the objectives of the Policy Review are to:

1. evaluate existing *Metro 2040's* goals, strategies, and policy actions relating to housing;
  - a. primarily those embedded in Goal 4 (S4.1), but also elsewhere in *Metro 2040*, i.e. any supportive policies in Goals 1 and 5, and structural options (how to configure Housing, Transportation, and Complete Communities in *Metro 2050*);
2. engage with member jurisdictions and key stakeholders to identify preferred policy considerations; and
3. recommend ways to integrate these policy considerations through new or revised policy wording through *Metro 2050*.

Similarly, the *Metro 2040* Transport Policy Review will consider Metro Vancouver’s supportive and advocacy role around sustainable land use and transportation policies and actions, in close collaboration with TransLink and the development of the Regional Transportation Strategy. In consideration of the Complete Communities context set out in *Metro 2040*, it is staff’s intent that the Housing Policy Review will be coordinated with the Transportation Policy Review to integrate transportation-oriented development related questions and analysis at strategic points and where appropriate during the review process and in the development of housing policy considerations.

On issues relating to Metro Vancouver’s Affordable Housing function and the Metro Vancouver Housing Corporation, staff will ensure that the Housing Policy Review considers the alignment and complementarity of the goals, strategies, and policy actions of *Metro 2050* with the vision and targets articulated for the region through the *Metro Vancouver Housing 10-Year Plan*.

### **Milestones and Timeline**

The policy review process will consist of the following four milestones, as described in greater detail below:

1. background research and review of current policy actions (*Where are we now?*);
2. stakeholder consultation and strategic direction (*Where do we want to go?*);
3. policy considerations (*How do we get there?*); and
4. policy recommendations (*Have we arrived?*).

Staff will involve RPAC, the RPAC Housing Subcommittee, and the Regional Planning Committee throughout the process and will report on the outcomes at each stage.

#### *Milestone 1: Where are we now? (Fall 2019)*

Staff will evaluate existing *Metro 2040* housing-related policy actions by:

- reviewing and evaluating the goals, strategies, and policy actions of existing internal plans and strategies (*Metro 2040, RAHS, Metro Vancouver Housing 10-Year Plan*);
- reviewing and analyzing the goals, strategies, and policy actions of existing external plans and strategies (*National Housing Strategy, BC’s 30-Point Housing Plan, regional growth strategies from other jurisdictions*);
- exploring best practices and emerging regional trends; and,
- identifying what is working, what is not working, and policy gaps (e.g. discussion paper).

#### *Milestone 2: Where do we want to go? (Winter 2020)*

Staff will host a *Metro 2040* Housing Policy Forum to present and discuss the results of the background research and review of current policy actions (e.g. discussion paper). RPAC members, RPAC Housing Subcommittee members, and other housing stakeholders will be consulted to identify initial policy considerations.

#### *Milestone 3: How do we get there? (Spring 2020)*

During this phase, staff will build on the findings of the background research and outputs of the Policy Forum to identify the most pertinent policy considerations for advancement. Based on the review and strategic directions received through consultation, staff will develop policy recommendations,

ensuring compatibility with the outputs of the Equity, Transport and Urban Centres + FTDA policy reviews, which are also currently underway.

*Milestone 4: Have we arrived? (Summer 2020)*

Finally, staff will present the results and final recommendations of the *Metro 2040* Housing Policy Review, outlining preferred policy options to the RPAC Housing Subcommittee, RPAC, Regional Planning Committee, and MVRD Board.

Staff welcome any input from the Regional Planning Committee on the proposed policy review scope of work and process described above.

**ALTERNATIVES**

This is an information report. No alternatives are presented.

**FINANCIAL IMPLICATIONS**

The 2020 Regional Planning budget includes \$4,000.00 to support the *Metro 2040* Housing Policy Review Forum, to be held in late February 2020.

**SUMMARY / CONCLUSION**

Adopted in July 2011, *Metro 2040* establishes policy actions to encourage the development of complete communities and support the provision of diverse and affordable housing choices in the region. The *Metro 2040* Housing Policy Review will evaluate existing *Metro 2040* goals, strategies, and policy actions relating to housing, engage with member jurisdictions and key stakeholders to identify preferred policy considerations, and recommend ways to integrate these policy considerations through new or revised policy actions in *Metro 2050*.

Staff will involve members of RPAC and the RPAC Housing Subcommittee, and the Regional Planning Committee throughout the review process, and will report on the outcomes at each stage. It is intended that RPAC and its Housing Subcommittee will be the primary advisory venues, with the Subcommittee providing more detailed and technical feedback and housing policy-related expertise, while RPAC will provide higher-level guidance and direction, and the ability to consider and integrate directions with other related and intersecting policy review areas.

Consultation and engagement will occur through regular Committee / Subcommittee reporting structures, and through a *Metro 2040* Housing Policy Forum to be held in late February 2020.

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To: Regional Planning Committee

From: Raymond Kan, Senior Planner, Regional Planning

Date: October 17, 2019 Meeting Date: November 8, 2019

Subject: ***Metro 2040* Transport Policy Review Scope of Work**

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### **RECOMMENDATION**

That the Regional Planning Committee receive for information the report dated October 17, 2019, “*Metro 2040* Transport Policy Review Scope of Work”.

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### **PURPOSE**

To provide the Regional Planning Committee with an opportunity to consider and provide feedback on the scope of work and process for the *Metro 2040* Transport Policy Review.

### **BACKGROUND**

The purpose of the *Metro 2040* Transport Policy Review is to review and identify options to update the transportation policies in *Metro 2040*, taking into account completed policy research, current practices, input from TransLink and member jurisdictions, and emerging and intersecting interests as informed by a review of practices in other jurisdictions.

### **ROLE OF TRANSPORT IN REGIONAL GROWTH MANAGEMENT**

The regional transportation system connects people to homes, jobs, schools, shopping and recreation opportunities throughout the region. The system must be planned and work in synergy with and support the land use patterns envisioned in *Metro 2040* otherwise time, resources and energy could be wasted, and result in increased congestion, negative impacts to the economy and quality of life, and a degradation of the natural environment.

Metro Vancouver encourages agencies responsible for transportation decisions to take into account the objectives of *Metro 2040*. Regional Planning regularly initiates, participates, and coordinates with TransLink, member jurisdictions, adjoining regional districts, the provincial and federal governments, and transportation service providers on all manner of transportation-related issues. Through the Regional Planning Division, Metro Vancouver also undertakes research to inform transportation and land use decisions.

### **METRO 2040 POLICY CONTEXT**

*Metro 2040* sets out the shared regional interest in the area of transportation and the relationships with land use and growth management. Goal 5 (Support Sustainable Transportation Choices) of *Metro 2040* recognizes that transportation and land use decisions are oftentimes made by different authorities, and that Metro Vancouver has no direct authority over the planning and delivery of transportation infrastructure and services in this region. Because transportation is an intersectional topic, Goal 5 emphasizes the coordination of land use and transportation decisions, and identifies actions for TransLink and other levels of government to consider implementing (see Figure 1).

**Figure 1. Key Transportation Elements in Goal 5 of *Metro 2040***

**Strategy 5.1 Coordinate land use and transportation to encourage transit, multiple-occupancy vehicles, cycling and walking**

- Provides profile to multiple occupancy vehicles as an important mode choice – this is timely with the introduction of ridesharing and the potential for an increase in single-occupancy vehicle trips. The 2017 Regional Trip Diary showed an increase in auto passenger mode share for the time in two decades. This is an example of policy ‘robustness’ – the policy remains relevant under different futures.
- Identifies the Board’s priorities for Frequent Transit Network (FTN) expansion to connect Urban Centres and Frequent Transit Development Areas.
- Articulates the roles of Metro Vancouver, TransLink, and the Province reflective of the governance around transportation at the time of preparing *Metro 2040*.
- Recognizes Metro Vancouver’s role in the provision of land use, growth management, and air quality information and forecasts, including evaluation of land use and vehicle emission impacts.

**Strategy 5.2 Coordinate land use and transportation to support the safe and efficient movement of vehicles for passengers, goods and services**

- Provides profile to safety, especially in the context of a denser region, complex travel patterns, and vehicle-involved conflicts. This policy presaged the Vision Zero movement.
- Recognizes the needs of different users of the transportation network.
- Recognizes interregional relationships with adjoining regional districts.
- Recognizes the importance of transportation system and demand management, in addition to capacity expansion.

**ANTICIPATED TRANSPORT-RELATED REGIONAL PLANNING AND POLICY ISSUES**

There can be many aspects to consider as part of the transportation subject area. The following planning and policy issues are anticipated to generate the greatest interest and require a higher level of effort in the strategy update. The list is based in part on the MVRD Board Strategic Plan, recent regional planning policy research and projects, current plans and policy documents, and current and emerging practices both within and outside the region. The *Metro 2040* Transportation Policy Review will be coordinated with the Housing Policy Review (the scoping for that work is provided under separate cover in this agenda) and TransLink’s work on *Transport 2050*. Equity will be an additional lens through which to inform and evaluate policy options.

**Figure 2. Preliminary List of Issues to be Considered During the Transport Policy Review**

Transport-Related Issues	Intersecting Themes				
	Housing	Urban Centres and FTDA's	Economy	Environment	Equity
Transit-oriented affordable housing	✓	✓	✓	✓	✓
Residential and non-residential parking	✓	✓	✓	✓	✓
Potential Board priorities for FTN and regional road expansion	✓	✓	✓	✓	✓
Transport impacts on health and safety	✓	✓	✓	✓	✓
Transport demand management		✓	✓	✓	✓
Non-residential major trip generating land uses		✓	✓	✓	✓
Climate change impacts on transport		✓	✓	✓	✓
New mobility technologies		✓	✓	✓	✓
Interregional connectivity			✓	✓	✓

**ENGAGEMENT**

The timeline for the *Metro 2040* Transport Policy Review is described below.

1. Review of Current Context (October 2019 – December 2019)
  - Review Goal 5 of *Metro 2040* and Regional Context Statements
  - Review current / emerging practices in other jurisdictions
  - Monitor *Transport 2050*, Housing Policy Review, Climate 2050, etc.
  - ⇒ **Deliverable: Memo #1 (what’s working well, what are the policy gaps)**
  
2. Explore Policy Options (January 2020 – March 2020)
  - Use Memo #1 to open up policy option conversations
  - Convene subject-based sessions (e.g. parking, TOAH)
  - Provide progress updates to RPAC
  - Continue to coordinate with *Transport 2050*, Housing Policy Review, etc.
  
3. Transportation Policy Options (April 2020 – June 2020)
  - Policy options
    - Proposed “Housekeeping” updates
    - Proposed areas for significant policy amendments
  - Structural options (configuring Transport, Housing, Complete Communities policies for *Metro 2050*)
  - ⇒ **Deliverable: Memo #2 (what we heard, policy options)**

Upon completion of Memo #2, staff will advance a report to RPAC and Regional Planning Committee setting out policy amendment recommendations. The second half of 2020 will be spent on policy drafting in collaboration with RPAC and TransLink.

**ALTERNATIVES**

This is an information report. No alternatives are presented.

**FINANCIAL IMPLICATIONS**

The Transport Policy Review will be undertaken within the regular work plan for Regional Planning. There are no additional costs anticipated.

**SUMMARY / CONCLUSION**

Transportation is a key component of *Metro 2040*. It intersects with other elements in the regional growth strategy, including the areas of housing, economy, and the environment. The purpose of the *Metro 2040* Transport Policy Review is to explore and identify options to update the transportation-related policies in *Metro 2040* taking into account completed policy research, current practices, emerging and intersecting interests, and informed by review of practices in other jurisdictions.

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To: Regional Planning Committee

From: Erin Rennie, Senior Planner, Regional Planning

Date: September 27, 2019 Meeting Date: November 8, 2019

Subject: **Growth in Urban Centres and Frequent Transit Development Areas 2006-2016**

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### **RECOMMENDATION**

That the Regional Planning Committee receive for information the report titled “Growth in Urban Centres and Frequent Transit Development Areas 2006-2016” dated September 27, 2019.

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### **PURPOSE**

To update the Regional Planning Committee on progress towards the regional growth targets set out in *Metro 2040*.

### **BACKGROUND**

*Metro 2040* sets out the collective vision for how the region will accommodate the additional one million people, 500,000 new dwelling units, and 500,000 new jobs projected for the region by the year 2041. Central to *Metro 2040*'s growth framework is a strategy to focus growth in a network of Urban Centres and corridors connected by frequent transit. This is supported by growth targets for Urban Centres, Frequent Transit Development Areas (FTDAs), and “all other areas” described in Table 2 of *Metro 2040* (Reference 1, page 18). This report presents recent custom Census data acquired by Metro Vancouver that shows the proportion of regional growth taking place in Urban Centres and FTDAs from 2006 to 2016.

### **METRO 2040 GROWTH TARGETS**

One of the roles of Metro Vancouver is to support member jurisdictions in implementing *Metro 2040*'s growth framework vision by monitoring the progress towards the established growth targets. The targets set out in *Metro 2040* are 30-year goals, meaning they are not expected to be achieved until the year 2041. This report provides an interim update towards those targets, but is not meant to provide an evaluation of progress. Real estate markets fluctuate and shift over time and it is unsurprising that not all targets are being met 10 years into the implementation of the strategy's 30-year goals.

The Urban Centre growth overlay in *Metro 2040* was defined prior to its acceptance by member jurisdictions, and so the targets were based on known geographies at that time. *Metro 2040* sets out targets calling for 40% of the region's total dwelling unit growth and 50% of the region's total employment growth to occur within Urban Centres throughout the region. This is further broken out by centre type (see Table 2, Reference).

Unlike the Urban Centre overlay, the FTDA targets were set before municipalities had begun defining geographies for FTDAs. As a proxy, staff defined regional FTDA targets using the future Frequent Transit Network Concept (Map B.1, Reference), i.e. an area generally 400m from the Frequent Transit

Network Concept and 800m from all Rapid Transit Stations, excluding large portions of the City of Vancouver, areas outside the Urban Containment Boundary, and areas that overlap with Urban Centres. The target for that area as a whole was set at 28% for all dwelling unit growth and 27% of all employment growth for the region. It was assumed at the time that member jurisdictions would identify areas along the Frequent Transit Network (FTN) as FTDA's over time; to date, 16 FTDA's have been identified in a small percentage of the potential area for FTDA's (see Table 1). As a result, it is not accurate or suitable to report on progress toward the FTDA targets but other approaches are available to provide a general sense of growth along the FTN outside of Urban Centres.

**Table 1. Geography Used to Set FTDA Targets vs actual Frequent Transit Development Areas**

	<b>Geography used to Set FTDA Targets</b>	<b>Frequent Transit Development Areas (FTDA's)</b>	
<b>What it is</b>	Potential areas for FTDA's.	Areas identified by municipalities through Regional Context Statements for higher levels of transit oriented growth.	
<b>Geographic extent</b>	All areas 400m from the future (potential) Frequent Transit Network and 800m from Rapid Transit Stations. Excludes areas outside the Urban Containment Boundary, areas that overlap with Urban Centres and most of the City of Vancouver due to transit coverage.	22 <sup>nd</sup> Street Station FTDA Braid Station FTDA Sapperton Station FTDA Carvolth FTDA Burquitlam FTDA Moody FTDA East 3 <sup>rd</sup> FTDA Marine Drive FTDA	Lower Capilano FTDA Lower Lynn FTDA 104 <sup>th</sup> Ave FTDA East Clayton FTDA Fleetwood West FTDA Cambie Corridor North FTDA Cambie Corridor South FTDA FTDA UBC FTDA
<b>Purpose</b>	Area used to calculate the corridor growth targets of 28% of dwelling unit growth and 27% of employment growth.	Growth overlays. Actual growth in these areas is calculated and reported.	

**GROWTH IN URBAN CENTRES**

**Dwelling Unit Growth**

Between 2006 and 2016, the region added 155,300 new dwellings units, 40.3% of which have been located in Urban Centres. This suggests that local policies, in coordination with increasing transit service in these areas are successfully supporting the target of directing 40% of dwelling unit growth to Urban Centres across the region. By breaking this out by centre type, a more nuanced story of the distribution of dwelling unit growth across the region in the first 10 years of the strategy can be seen.

Between 2006 and 2016 13.7% of the region's dwelling unit growth took place in the Metropolitan Core; the *Metro 2040* target for overall dwelling unit growth in the Metropolitan Core is 5%. During this same time period: 3.0% of the region's residential growth took place in Surrey Metro Centre (with a target of 5%); 12.6% took place in Regional City Centres (16% target); and 10.9% took place in Municipal Town Centres (13% target) (see Table 2).

**Table 2. Regional Residential Growth by Centre Type**

	Actual Dwelling Unit Growth 2006-2016	2040 Dwelling Unit Growth Target (2006-2041)
FTDA Total	2.7%	n/a
Urban Centre Total	40.3%	40%
Metropolitan Core	13.7%	5%
Surrey Metro Centre	3.0%	6%
RCCs	12.6%	16%
MTCs	10.9%	13%
All other areas	57.1%	32%

**Employment Growth**

179,010 new jobs were added to the Metro Vancouver region between 2006 and 2016; 14.6% of this employment growth took place in Urban Centres. *Metro 2040's* employment growth target for Urban Centres is 50% by the year 2041. 1.6% of the region's employment growth took place in the Metropolitan Core between 2006 and 2016; the Metropolitan Core is targeted to accommodate 10% of the region's employment growth by 2041. Surrey Metro Centre's share of regional employment growth was 3.9% between 2006 and 2016, close to the 5% share targeted for 2041. The employment growth in the Regional City Centres combined was 5.6% of all job growth, as compared to a target of 19%. Also during that period 4.0% of the region's job growth took place in Municipal Town Centres, a quarter of the 2041 target of 16%.

The data suggests that additional strategies and tools are needed to support the region's target of focusing new jobs in Urban Centres. The lower than targeted job growth in all the Urban Centre types also suggests that areas outside of Urban Centres and FTDA's may be competing with Urban Centres and FTDA's for employment growth (see Table 3).

**Table 3. Regional Job Growth by Centre Type**

	Actual Employment Growth 2006-2016	2040 Employment Growth Target (2006-2041)
FTDA Total	3.4%	n/a
Urban Centre Total	14.6%	50%
Metropolitan Core	1.1%	10%
Surrey Metro Centre	3.9%	5%
RCCs	5.6%	19%
MTCs	4.0%	16%
All other areas	82.0%	24%

**GROWTH IN FTDA'S**

**Dwelling Unit and Employment Growth**

Between 2006 and 2016 2.7% of the region's dwelling unit growth took place in the region's 16 identified FTDA's. During the same period, 3.4% of job growth in the region took place in FTDA's.

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## FTDA Targets

The *Metro 2040* Urban Centre and FTDA Policy Review process that is currently underway has highlighted the need to address the discrepancy between the geography used to initially set the FTDA targets and the FTDA that have been identified. Staff are considering formalizing a new geography called the Frequent Transit Corridor Network in *Metro 2050* to more effectively track progress towards the 28%/27% target. The Frequent Transit Corridor Network geography would be a custom geography approximately 400m from the FTN, 800m from rapid transit stations, excluding Urban Centres, and excluding areas outside the Urban Containment Boundary. Staff also suggest setting municipality-specific targets for FTDA in *Metro 2050*, recognizing that the residential and employment market can vary significantly across the region.

## GROWTH OUTSIDE OF URBAN CENTRES AND FTDA

### Dwelling Unit Growth

Between 2006 and 2016, 57.1% of the region's dwelling unit growth took place in areas outside of Urban Centres and FTDA. While this exceeds the target of 32% for "all other areas" outside Urban Centres and FTDA, the number undoubtedly masks much of the transit-oriented growth taking place in areas along the FTN that have not been identified as FTDA. Using Census Dissemination Block data along the 2016 FTN, staff have estimated that approximately 21% of the region's dwelling unit growth between 2006 and 2016 has taken place in areas roughly within 400 metres of the FTN (outside of Urban Centres)<sup>1</sup>. This estimate indicates, that generally municipal policies and market trends are supportive of focusing dwelling unit growth within walking distance of frequent transit. It also indicates that there are many places along the FTN where residential growth is happening have not been identified as FTDA.

Additional strategies, tools, and a stronger commitment to support focusing growth along transit corridors may be needed in *Metro 2050* to accommodate residential growth in a way that doesn't negatively impact traffic congestion and the region's shared greenhouse gas (GHG) emissions targets.

### Employment Growth

Between 2006 and 2016, 82% of the region's job growth took place outside of Urban Centres and FTDA. Similar to dwelling unit growth, this number masks transit-oriented growth taking place along the FTN outside of identified FTDA. Any recent transit-oriented job growth that isn't in an established FTDA cannot be measured nor can it be approximated because it is not available at the Census Dissemination Block level. Staff are exploring alternative means to understand the location of job growth in the region.

The data we do have highlights a possible miss-alignment of policies in *Metro 2040*; i.e. *Metro 2040* targets 50% of employment growth for Urban Centres and an additional 27% along the FTN, and also supports /encourages employment growth in lands designated as Industrial and Mixed Employment, many areas of which are outside of Urban Centres or FTDA. It is possible that a significant amount of job growth is taking place in Industrial and Mixed Employment lands, which would be considered supportive of other regional objectives. More analysis is required to assess whether employment

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<sup>1</sup> This data is derived from Census Dissemination Blocks which are less precise units of measurement than the Custom Census data used to measure growth inside Urban Centres and FTDA. Further, it does not include the Census Undercount. Calculations showed 19% growth between 2006-2011 and 24% growth between 2011-2016.

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dispersal (“job sprawl”) continues to be a problem in the region, as well as reassessing the target of 50% for all new jobs in Urban Centres and 27% along the FTN.

### **IMPLICATIONS FOR METRO 2050**

Recent Census data show that the region is on-track to achieve its targets for dwelling unit growth, but not on track to achieve its employment growth targets for Urban Centres. This suggests that the employment growth targets may need to be reassessed; staff will explore revising the employment growth targets in *Metro 2050*.

In addition, this suggests that new policies and tools may be needed to support the strategy’s objective to direct employment growth to centres and corridors served by transit. This could include new supports from the Provincial government, such as the creation of commute trip reduction legislation, similar to that implemented in Washington State that requires employers to take actions to reduce single occupancy vehicle trips; more research is needed on this and other possible directions. Staff also intend to explore how much employment growth is taking place on lands with an Industrial or Mixed Employment regional land use designation.

Given the discrepancy between FTDA geographies and the proxy geography used to set targets for growth along the FTN, staff are exploring formalizing a current and future Frequent Transit Corridor Network geography (for monitoring purposes only), as well as policies that make identifying FTDA simpler and more intuitive for member jurisdictions.

### **ALTERNATIVES**

This is an information report. No alternatives are presented.

### **FINANCIAL IMPLICATIONS**

Census data was obtained from Statistics Canada using funds approved in the Board approved 2019 Regional Planning budget.

### **SUMMARY / CONCLUSION**

To help achieve Goal 1 “Create a Compact Urban Area”, *Metro 2040* includes targets for the proportion of new dwelling units and jobs in the region located in Urban Centres and FTDA. An interim update to the region’s progress towards achieving these targets shows that the region is on track to achieving its Urban Centre dwelling unit growth target, but not on track to achieving the employment growth target. The data for both job and dwelling unit growth in FTDA is also low, but can be explained as 16 FTDA have been identified and the overall target was set in 2011 using a much larger geography. Additional monitoring work is required to better understand why some targets are not being met, and to explore new strategies, tools, and policy directions to better support member jurisdictions in their efforts to direct new growth to the regional growth strategy’s shared centres and corridors framework and create transit-oriented, complete communities.

### **Reference**

[\*Metro Vancouver 2040: Shaping our Future, Regional Growth Strategy \(Metro 2040\)\*](#)

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To: Regional Planning Committee

From: Raymond Kan, Senior Planner, Regional Planning

Date: October 21, 2019 Meeting Date: November 8, 2019

Subject: Regional Transit-Oriented Affordable Housing Fund Working Group

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### RECOMMENDATION

That the Regional Planning Committee receive for information the report dated October 21, 2019, titled “Regional Transit-Oriented Affordable Housing Fund Working Group”.

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### PURPOSE

To present the outcomes of dialogues with stakeholders and the establishment of the Regional Transit-Oriented Affordable Housing Fund Working Group.

### BACKGROUND

At its meeting on April 26, 2019, the MVRD Board approved a resolution directing staff to continue to explore options to collaborate with interested partners on a regional Transit-Oriented Affordable Housing (TOAH) fund, including identifying potential champions, and to report back to the Regional Planning Committee.

The regional TOAH Fund process is also consistent with the Board’s *2019-2022 Board Strategic Plan* direction to “encourage and protect affordable housing, specifically rentals, in transit-oriented locations”.

### THE TRANSIT-ORIENTED AFFORDABLE HOUSING STUDY<sup>1</sup>

The Metro Vancouver TOAH Study is intended to expand the knowledge of practitioners and decision-makers about the challenges and opportunities to increase the affordable rental housing supply near the region’s Frequent Transit Network (Reference 1). Upon completion of Phase 1 of the TOAH Study in November 2017, the MVRD Board directed staff to undertake research on specific tools to support the delivery of transit-oriented affordable rental housing. Phase 2 of the Study was completed in April 2019 and comprised two research components:

1. The preparation of a business framework for a transit-oriented affordable housing revolving loan fund; and,
2. The review of policy tools and approaches available to municipalities to encourage the development of affordable transit-oriented rental housing and address the constraint of the high cost of land in the region.

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<sup>1</sup> In the TOAH Study, affordable rental housing is defined as purpose-built rental housing with rent affordable to household earning up to 80% of the regional median household income. The benchmark was \$60,000 based on 2016 Census data, or equivalent to \$1,500 per month rent.

Phase 2 was undertaken in partnership with the BC Non-Profit Housing Association, BC Housing, Ministry of Municipal Affairs and Housing, Canada Mortgage and Housing Corporation, TransLink, Urban Development Institute, and Vancity. The partner organizations / agencies allocated a significant amount of time to the project, and provided invaluable input on the Study's scope and research findings.

### **PHASE 2 KEY FINDINGS**

The Phase 2 research showed that for the TOAH funds operating today in the United States, a partnership is required amongst the philanthropic, private, and public sectors, and that a TOAH fund operates best in a simple governance structure under management by a financial professional. To move in the direction of design and implementation, a regional champion is required to lead the advancement of the initiative and bring key stakeholders together to continue to explore viable TOAH fund designs, partnerships, governance structure, revenue sources, and synergies with other policy and financial tools.

The leadership and organizing efforts should reside with an organization / agency that has the motivation, professional capacity, and the capital to be a lead investor and / or fund administrator. Identifying such an entity with a fiduciary stake in a TOAH fund could quickly narrow down viable options and enable fund creation and implementation. The research report undertaken as part of the Phase 2 work provided a roadmap to go from fund concept to fund operation (Reference 2).

### **TOAH FUND DIALOGUES**

Per the Board's direction, Metro Vancouver staff convened an interim working group<sup>2</sup>, comprising a subset of the study partners and representatives from the non-profit and market housing development sectors, to continue the exploration of a regional revolving loan fund as informed by the TOAH research. At its first meeting on July 8, 2019, the interim working group determined that additional non-market and for-profit housing developers needed to be engaged to help refine the understanding of financial gaps for affordable rental housing in the region.

Metro Vancouver, in collaboration with BCNPHA and Vancity, convened engagement sessions with non-profit housing providers and market housing developers on July 31 and August 14, respectively (see Attachments 1 and 2 for the meeting notes).

### **Draft Principles of the Regional TOAH Fund Working Group**

As a result of the engagement sessions and a subsequent meeting of the interim working group on October 21, 2019, a consensus emerged on a set of draft principles and a preferred path forward. These draft principles are generally consistent with the MVRD Board's Strategic Plan, key findings of the TOAH Study, and input received from non-market and market housing providers:

1. A Regional TOAH Fund will support the community housing sector in the delivery and / or acquisition of non-market rental housing units in close proximity to the Frequent Transit Network in the Metro Vancouver region.

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<sup>2</sup> The interim working group comprised representatives from BCNPHA, BC Housing, Ministry of Municipal Affairs and Housing, CMHC, Vancity, FCM, and other invited stakeholders representing the non-profit and market housing development sectors.

2. Close proximity to the Frequent Transit Network is defined as generally within 1,200 metres of a frequent bus corridor stop or rapid transit station (this distance radius is intended to recognize opportunities on the periphery of transit precincts).
3. A Regional TOAH Fund will provide low-barrier working capital through loans and grants.
4. A Regional TOAH Fund will leverage philanthropic and private sector social impact investors, with public sector support.
5. A Regional TOAH Fund is intended to be additive to other existing funding programs.
6. A Regional TOAH Fund is intended to be self-sustaining and independent of public sector funding in the long-term.

### **Working Group Membership**

The interim working group agreed that to move the process forward effectively, a formal Regional TOAH Fund Working Group should be established. Staff from the BC Non-Profit Housing Association, Vancity Credit Union, and Vancity Community Foundation have offered to lead the facilitation of the Regional TOAH Fund Working Group over the next six months. Metro Vancouver staff will continue to participate as a member. Other members of the Regional TOAH Fund Working Group will be confirmed over the coming weeks.

The near term work program for the Regional TOAH Fund Working Group will include the following tasks:

- Refine the draft principles;
- Develop a preferred fund structure and offerings;
- Engage with the community housing sector;
- Engage with potential social impact investors;
- Explore start-up funding sources (e.g. CMHC grant programs)

A subsequent phase of work will include the following tasks:

- Select fund administrator;
- Secure investments; and
- Develop an implementation plan

The Regional TOAH Fund Working Group is anticipated to convene regularly over the next six months. Staff will provide the Regional Planning Committee with regular updates, as appropriate.

### **ALTERNATIVES**

As this is an information report, no alternatives are presented.

### **FINANCIAL IMPLICATIONS**

There are no financial implications associated with this report. Metro Vancouver staff's involvement in the TOAH Fund Working Group is through in-kind support.

## **SUMMARY / CONCLUSION**

At its meeting on April 26, 2019, the MVRD Board passed a resolution directing staff to continue to explore options to collaborate with interested partners on a regional TOAH fund, including identifying potential champions, and to report back to the Regional Planning Committee.

Since that time, staff convened an interim working group of the study partnership to engage non-market and for-profit housing providers on a TOAH Fund concept. Based on the dialogues, the interim working group has agreed to establish a formal Regional TOAH Fund Working Group led by BCNPHA, Vancity Credit Union, and Vancity Community Foundation. Metro Vancouver staff will continue to participate on the Working Group. Other members of the Regional TOAH Fund Working Group will be confirmed over the coming weeks.

Based on the engagement, Phase 2 key findings of the TOAH study, and the MVRD Board Strategic Plan, a set of draft principles have been identified to guide the group. On the basis of these principles, the TOAH Fund Working Group will refine these principles and continue to explore the design of a TOAH Fund.

The establishment of the Regional TOAH Fund Working Group is a significant milestone in Metro Vancouver's contribution to research and policy discourse on the integration of affordable rental housing and transit in the region. While Metro Vancouver staff will continue to participate on the Working Group on an in-kind basis, other partners have come forward to lead the next phase of dialogue and exploration to design a regional TOAH Fund.

## **Attachments**

1. Engagement with Non-Profit Housing Providers (July 31, 2019)
2. Engagement with Market Housing Providers (August 14, 2019)

## **References**

1. [Transit-Oriented Affordable Housing Study Webpage](#)
2. [TOAH Fund Business Framework for Metro Vancouver \(ECONorthwest, 2019\)](#)

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**Transit-Oriented Affordable Housing Fund  
Engagement with Non-Profit Housing Providers  
July 31, 2019**

Participating Organizations

Atira Women's Society	New Commons Development/New Market Funds
CMHC	New Vista Society
BC Housing	Vancouver Native Housing Society
BCNPHA	Vancity Community Foundation
Bloom Group	Vancity Credit Union
Brightside Community Homes Foundation	Metro Vancouver
Lookout Housing and Health Society	

Regrets

Community Land Trust	Catalyst Community Developments Society
Lu'ma Native Housing Society	Federation of Canadian Municipalities
Ma'kola Group of Societies	Ministry of Municipal Affairs and Housing
Anhart Community Housing Society	

**General Discussion**

**Local Governments**

- Lengthy municipal approval processes add to holding costs
- Cost of municipal fees and obligations e.g. provision of EV chargers, transit passes

**Relocating Tenants**

- Gap in cash flow from lost rent revenue during redevelopment
- Capital cost involved in relocating tenants (e.g. hiring support worker)

**Pre-development**

- Earlier seed funding is desirable to prepare pro forma and allow non-profit to shop around for other grants and financing, or be eligible for other forms of predevelopment assistance
- Need for more grants/equity early on
- Recognition that government grants and support are unlikely to last forever
- Recognition of a potential need to create a fund that can support affordable housing development regardless of political changes or program changes

**Construction/Post-Construction**

- High and rising cost of construction
- More and more projects are requiring a letter of credit in order to obtain financing

**TOAH Fund Design**

- A TOAH Fund would require a lot of work to design and set up
- Need greater clarity on proximity to transit and other eligibility criteria

- Uncertain about the appropriate fund size that would make a difference and offset the time cost of applying.
- Any new fund may require more work and resources on the part of non-profit applicants
- Need to align any new fund with existing funding programs, such as a one-stop shop.

**Discussion of Potential Uses of a TOAH Fund**

<b>PRE-DEVELOPMENT</b>
<p>1. Support Costs of Early Stage Predevelopment Expenses</p> <ul style="list-style-type: none"> <li>• Early stage predevelopment work required in order to become eligible for later-stage government predevelopment funds</li> <li>• Preparation of financial feasibility and environmental studies</li> </ul>
<p>2. Support Costs to Retain Technical Support</p> <ul style="list-style-type: none"> <li>• Hiring a preferred/pre-approved consultant that would enable a project eligible for the 'Nexus Lane' in municipal approval processes (this would require buy-in, coordination, and joint program development with municipalities)</li> <li>• Supporting or creating a shared staff resource to support non-profits</li> <li>• Hiring in-house staff within non-profit organizations to build capacity and to enable continuous redevelopment projects</li> </ul>
<p>3. Support Development Costs as Required by Local Governments</p> <ul style="list-style-type: none"> <li>• Municipal fees that are not waived by local governments (DCC, DCL, application fees), including securities (landscaping, hard infrastructure)</li> </ul>
<p>4. Support Costs related to Tenant Relocation</p> <ul style="list-style-type: none"> <li>• Costs associated with relocation (e.g. hiring a relocation consultant)</li> <li>• Supporting a temporary rent supplement/rent bank to support tenant relocation to other rental housing</li> <li>• Partial replacement of lost rental revenue during construction</li> <li>• Partial replacement of lost rental revenue due to municipal requirements to preserve existing rental rates in new units</li> </ul>
<b>CONSTRUCTION</b>
<p>5. Support Costs related to Incremental Rise in Construction Cost</p> <ul style="list-style-type: none"> <li>• Cost of construction can change between predevelopment and time of approvals; offset incremental cost of construction</li> </ul>
<p>6. Act as Assurance for Letter of Credit</p> <ul style="list-style-type: none"> <li>• Assurance for letter of credit or guarantees to obtain government financing for construction</li> <li>• Assurance for letter of credit required by local government servicing agreements (landscaping, off-site engineering works)</li> <li>• Support cost of providing securities required by local government servicing agreements</li> </ul>

<b>POST-CONSTRUCTION</b>
<ol style="list-style-type: none"> <li>1. Fund serves as “equity partner” in mixed-use/mixed-income projects <ul style="list-style-type: none"> <li>• Rather than just loans, the fund acts as a partner that has an equity stake in the project for the long-term and can provide patient capital through the life of the asset.</li> <li>• Impact investors would share in the revenue at low percentages</li> </ul> </li> </ol>
<b>ACQUISITION</b>
<ol style="list-style-type: none"> <li>1. Support acquisition of inclusionary units delivered as part of a market project</li> </ol>

Other Considerations:

- Package of loan and equity products to support a range of needs
- Fund should be stackable with other funding programs
- Fund should be coordinated with other funding programs
- Work with a small group of non-profit housing providers to establish a portfolio approach for a fund.
- Low interest financing is currently available; a fund may not need to compete with current products

**Transit-Oriented Affordable Housing Fund  
Engagement with Market Housing Providers  
August 14, 2019**

Participating Organizations

CMHC	Ledingham McAllister
BC Housing	Liveable City Planning
BCNPHA	Vancity Credit Union
Hollyburn Properties	Metro Vancouver

Regrets

Anthem	The Molnar Group
Boffo Properties	New Market Funds/New Commons
Concert Properties	Development
Federation of Canadian Municipalities	PCI
Intracorp Properties	Reliance Properties
Marcon Developments	The Salient Group
Ministry of Municipal Affairs and Housing	

**General Discussion**

**Integrated Land Use and Transit Planning**

- Integrating land use and transit planning is crucial to set early and consistent expectations
- The biggest risk for any developer is gaining certainty on what can be built on a piece of land, and what kind of development capacity (density) is allowed; need to reduce this risk by doing the planning work upfront
- There is a lack of station area planning e.g. Nanaimo Station
- Need a region-scale master planning process to 'de-risk' development opportunities near transit

**Local Governments**

- Municipalities should have a dedicated multidisciplinary team to expedite rental projects
- Municipalities should provide flexibility in policies/regulations, e.g. inclusionary requirements can be satisfied with cash-in-lieu or portable to other development sites; have parking maximums instead of minimums (constructing parkades adds to construction cost and time)

**Inclusionary Projects and Incentives**

- Single-ownership or single-tenure buildings is preferred for operational efficiency
- Density bonusing is desirable, but depending on affordable rental housing requirements, additional strata/market rental density may not provide a proportional financial return (due to increasing marginal construction costs and reduced rent revenues)
- Inclusionary housing requirements may hurt financial viability of wood frame projects more

## Discussion of Potential Uses of a TOAH Fund

<b>TARGET USERS</b>
1. Opportunity to incentivize small/medium-size rental providers to redevelop; a large number of legacy rental building owners would want to add more units to their portfolios
2. Larger market developers would have less interest in a fund because of the size of their projects, and they already have the financial capacity and access to financing to make projects viable.
<b>PRE-DEVELOPMENT</b>
3. Funding the preparation of land use plans in station areas and corridors, and establishing expectations for housing capacity and affordability will send the right signals to the development community, de-risk the development process, and improve the pace of delivery of affordable rental housing.
4. Support cost of tenant relocation (staff resourcing, temporary modular housing, rent bank)
<b>CONSTRUCTION</b>
5. Support cost of GST payments associated with market projects with inclusionary units
<b>POST-CONSTRUCTION</b>
6. Less crucial for market developers; more important are predevelopment costs and uncertainty around the planning/approval processes

### Other Comments

- Considerable interest in working together on tenant relocation solutions (developers, BC Housing, Metro Vancouver, BCNPHA, etc.); Metro Vancouver will be working with a UBC SCARP group to develop potential tenant relocation solutions in 2019/2020; UDI is convening a tenant relocation subcommittee
- Engage LandlordBC
- Occupancy standards should evolve to reflect changing expectations for co-living arrangements
- Need to validate the expectations for larger units (3-bedrooms)
- To be resilient to changes in vehicle ownership and parking demand, build the parkade on a flat slab so that the space can be repurposed.

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To: Regional Planning Committee

From: Sinisa Vukicevic, Senior Planner, Regional Planning

Date: October 17, 2019 Meeting Date: November 8, 2019

**Subject: Scope of Work for Updating *Metro 2040's* Population, Dwelling Unit, and Employment Projections**

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### **RECOMMENDATION**

That the Regional Planning Committee receive for information the report dated October 17, 2019, titled "Scope of Work for Updating *Metro 2040's* Population, Dwelling Unit, and Employment Projections".

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### **PURPOSE**

To provide the Regional Planning Committee an opportunity to consider and provide feedback on the scope of work for updating Metro Vancouver's population, dwelling unit and employment projections as part of the update of the regional growth strategy, *Metro 2040*.

### **BACKGROUND**

Population, dwelling unit and employment projections for the region, sub-regions and member jurisdictions are key components of *Metro 2040*. As part of the update, Regional Planning is undertaking a process to update these projections, extending the timeline to the year 2050 as well as considering improvements to the methodology. Updated projections are foundational for all types of planning, including for member jurisdictions, as critical inputs for the regional water and liquid waste utilities demand planning and for TransLink's transportation demand modelling. In addition, updated projections will assist in assessing the current growth targets for Urban Centres and Frequent Transit Development Areas when developing *Metro 2050*.

### **METRO 2040 POLICY CONTEXT**

*Metro 2040* sets out the regional federation's vision and goals for how to manage anticipated growth to the region over the long term in a way that: contains and structures growth to support the development of complete, connected and resilient communities; protects important lands (e.g. agricultural, conservation and industrial); and supports the efficient provision of urban infrastructure including transit and utilities. The policy actions for Metro Vancouver and member jurisdictions in *Metro 2040* are fundamentally based on projected growth to the region to the year 2050.

Over the last 8 years of implementation, Metro Vancouver has identified a number of opportunities to improve the regional, sub-regional and municipal projections, including:

- The projections are based on 2011 Census data – there is a need to update the projections using the 2016 Census data, including the Census undercount of 4.3%; and then 2021 when available.
- The current projections are out of date – they haven't been updated since 2015 as a result of accepted Regional Context Statements, and many of those RCSs are a number of years old. Significant policy, financial and political changes have occurred since that time that may influence growth projections.
- Extend population, dwelling unit and employment projections to the year 2050.
- Current projections do not adequately account for the number of Non-Permanent Residents.
- There is an opportunity to reassess the allocation of population in the region to better reflect trends in municipal growth and recent municipal policy changes.
- Assess growth targets for *Metro 2050* policy areas (e.g. Urban Centres, FTDA's).

### **Work Completed to date**

In September 2018, the Planning Analytics team of Regional Planning issued the *Metro Vancouver Growth Projections 2016-2061*. Those projections were provided to members for review and comment. The document provided three sets of preliminary projections tables for initial review and consideration: Population projections 2016-2061; Occupied dwelling unit projections 2016-2061; and Employment projections 2016-2061. All of the projections use 2016 as a base year and include projections to the years 2046, 2051, 2056, and 2061; those projected years were not included in *Metro 2040* and are needed to inform long range utility, growth and transportation planning.

### **Proposed Tasks and Timeline for the Population, Dwelling Unit and Employment Projections Update**

The update of the projections will be focused on updating figures based on 2016 Census data, and expanded the time horizon to the year 2050. Metro Vancouver's process in preparing regional growth projections includes establishing baselines or benchmark estimates, and projecting future activities based on adopted municipal planning policies (e.g. OCPs, local area plans), as well as considering historical trends and the external forces considered in the recently completed Long Range Growth and Transportation Scenarios project.

It is intended that the updated projections will support the development of new / updated policies for *Metro 2050*. The process will require considerable technical analysis and collaboration with member jurisdictions over a two-month period planned for the Summer of 2020.

The projections update will have 4 phases:

1. Draft baseline population, dwelling unit and employment projections to the year 2050 (including revisions to November 2019 – based on 2016 Census data, including the undercount and improved methodology for Non-Permanent Residents and employment);
2. Identify projections for First Nations separate from member jurisdictions to support local and regional planning and where available;
3. Apply any proposed policy directions as part of the *Metro 2050* update to population projections; and
4. Consult with member jurisdictions.

It is anticipated that completion of this work will result in updated population, dwelling unit and employment projections in *Metro 2040's* Table 2 and Table A.1.

Regional Planning staff will continue to work closely with TransLink staff on the development of *Transport 2050*, the Regional Transportation Strategy. Updated projections are critical to the scenario modelling work that is to be undertaken for TransLink to evaluate potential directions for the Strategy.

#### **ENGAGEMENT**

The key stakeholders for the updated population, dwelling unit and employment projections are member jurisdictions, TransLink and other organizations / agencies that are expected to participate in the implementation of the regional growth strategy and the *Climate 2050* plan. Consultation will primarily occur through RPAC and, possibly, re-instating the RPAC Forecasting and Data Task Force.

#### **ALTERNATIVES**

This is an information report. No alternatives are presented.

#### **FINANCIAL IMPLICATIONS**

The Update to the Population, Dwelling Unit and Employment Projections will be undertaken as part of the regular Regional Planning work program. There are no additional costs anticipated.

#### **SUMMARY / CONCLUSION**

Updating the population, dwelling unit and employment projections intersects with several elements of the regional growth strategy, including transportation, housing, economy, and the environment. Updated projections are critical inputs for the regional water and liquid waste utilities demand planning, to TransLink's transportation demand modelling, and the development of *Metro 2050*.

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## Towards a 'Roadmap' for Engaging Communities in Climate Action

Tackling the Climate Emergency through neighbourhood-based climate action programs

Delegation Summary, Metro Vancouver Climate Action Committee, 15 November 2019

### Why we need to mobilize citizens on climate action

- The Climate Emergency and the urgency of meeting climate change targets over the next 11 years (eg. cutting CO<sup>2</sup> 45% by 2030) calls for involvement from all sectors, including changing citizen behaviour and community action in all neighbourhoods
- However, there is currently **no 'roadmap'<sup>1</sup> for community engagement** on climate change. Despite policy leadership by governments in BC, there is recognized need to improve public awareness and literacy around climate targets and feasible local solutions. Many excellent initiatives for education & engagement on climate change have been undertaken by cities and NGOs, but often these have not been well coordinated, evaluated, or translated into action at the community level.
- There is a pressing need for these interventions - where effective – to be sustained through multi-year programs and scaled-up across our neighbourhoods, through a systematic **engagement/mobilization strategy** to build capacity and implement citizen action on solutions.

### How to develop a Strategy for engaging communities on climate solutions

- Research shows that **collective action** on climate change which is **local, visible, and socially rewarding**, involving peer pressure & teamwork, training of champions, and local government support, can reach beyond the 'green keepers', transform attitudes, and deliver rapid cuts in carbon emissions. For example, organized volunteer action in Palo Alto California led to **30% reductions in carbon footprints** across 25 blocks, while raising emergency preparedness & improving neighbourliness. Pilots in Vancouver eg. the Resilient Neighbourhood Program, Evergreen's Green Bloc process, & UBC's Citizens Coolkit program also show that increased citizen capacity & lighter footprints are feasible.
- The spike in public interest & youth action around the Climate Strikes **presents a timely opportunity to foster community-based grassroots initiatives**, empowering youth, parents, champions, etc. to focus their energy on positive volunteer action on the ground that aligns with & builds support for city policies.
- UBC's CALP researchers and Evergreen recently held workshops & discussions with over 30 leading BC engagement practitioners, NGOs, academics and community stakeholders, on scaling up climate action. There was consensus that a **coherent strategy** is needed to coordinate the multiple players and programs on climate engagement and related priorities, to improve efficiency, assess progress towards targets, and build a case for sustained support of organized, scaled-up community action.
- Analysis of community engagement strategies in Canada & abroad suggests 3 levels of organization:
  - Level 1: An overall Social Mobilization Strategy** at regional or city scale: this would provide a mandate, evidence-based principles for effective engagement, appropriate approaches to engagement of target audiences in the community, alignment with local or higher level policies, & overall organization plan.
  - Level 2: Broad programs** targeting particular community sectors or engagement channels, eg.:
    - Place-based approaches, to reach citizens and youth where they live (getting beyond the 'usual suspects' to reach the less interested or under-engaged).

<sup>1</sup> The term 'roadmap' here refers to a broad strategy for engagement, not to the Climate 2050 Roadmaps which provide goals/actions for specific issue areas such as transportation, buildings etc.



## Metro Vancouver - Climate Action Committee

### Company Overview

Portable Electric is a company based in Vancouver that locally manufactures clean, silent, portable battery-electric power to replace gas and diesel generators across a range of sectors.

- Our technology provides the best overall solution - we enable optimal performance while reducing costs, employee time and GHGs compared to traditional generators. We have partnered with cities to power a number of events and jobs sites, and have identified a range of city applications.
- We have sold to brand names such as Warner Brothers, Paramount and Toyota and other companies around the world - from the US to the UK, to Singapore and Australia and have over 400 rentals on the West Coast in 2019. We are developing larger units that will provide more power and achieve greater GHG reductions to make a significant contribution towards climate goals.
- We have created 19 full-time jobs in 2019 and plan to create 20 more in 2020.
- We source the majority of our parts - batteries, inverters and electrical components locally from five businesses in the lower mainland (within 100 km).

### Key Messages

- We commend Metro Vancouver for its efforts to date to protect our airshed and for its plans to regulate Tier 2 and 3 non-road diesel emissions. We are encouraged by actions many members of the committee are taking.
- We think more can be done to incent innovation in the portable power space - a sector primed for innovation that still relies on outdated technologies.

### Defining the Problem

- A significant amount of GHG reductions are required to meet Metro Vancouver's goal of becoming a carbon neutral region by 2050 and to meet IPCC targets that numerous members have adopted.
- Currently the portable power sector is not innovating at a pace needed to meaningfully contribute to achieving these goals. Targeted policy tools are not yet in place to incent this change.
- Existing generators are inefficient, polluting, harmful to human health and disruptive due to loud noise. Currently no information is known about how many generators are sold each year, how many are currently in use and operate in close proximity to people in various sectors, including film, events, entertainment, buildings and construction.

## Defining the Solution

- New policies and programs are needed to provide incentives for the portable power sector that will generate positive outcomes, including: improving air quality, protecting our ecosystem and human health, reducing GHGs, fostering local cleantech innovation and creating jobs.
- BC's electric vehicle rebates and target to phase out gas vehicles by 2040, the City of Vancouver's plan to implement tiered pricing for generators, and the Township of Langley's "Electric First" policy that prioritizes electric equipment in their Low Carbon Mobility Plan are examples that could be adopted.
  - Market signals are key to providing clear direction and enough lead times to business.
  - In its October 18 meeting, this committee discussed how revenues could be used for projects in order to reduce GHGs.
- Portable Electric aims to surpass its goal of achieving 10,000 tonnes of GHG reductions by 2021 with 262 units in operation. By partnering with industry and government, PE has a goal to achieve 500,000 tonnes of GHG reductions over 10 years with 220 larger units.
  - PE's technology also uses far less energy. A recent traffic light upgrade with the City of Vancouver and BC Hydro was 9 times more efficient than a generator.

## The Ask

- That Climate Action Committee members consider applications to replace gas and diesel generators within their jurisdictions and share key contacts with Portable Electric to discuss opportunities, including partnerships for grants.
  - PE is also open to discussing group purchasing opportunities.
- That Metro Vancouver continue to take a leadership role in climate action and encouraging local cleantech innovation by assessing and adopting specific policy tools and programs to incent change in the portable power sector that will deliver results and contribute to the region's goals.
- That Metro Vancouver fund a study to understand impacts to human and ecosystem health from gas and diesel generators and prioritize focus areas. The region is well-positioned to carry out a study given their existing air quality monitoring and access to low cost monitors.

### ON TABLE

Chair Carr & Members of Climate Action Committee.

Re: Item 5.1 on today's agenda and the report by Air Quality Planner, Julie Saxton.

Three points crucial points not explained in staff report.

#### #1 Air Quality in Lions Bay

Extract from Lions Bay Air Quality Report

Results indicate that air quality in Lions Bay did not exceed any of Metro Vancouver's air quality objectives during the period of the study and was generally better than air quality measured at other air quality monitoring stations in the region. Sporadic occurrences of elevated levels of fine particulate matter for short periods were recorded.

Relatively elevated levels of fine particulate matter were measured during the study, although this occurred for short periods (single hours) and infrequently (approximately 1% of the time). Weather conditions during the study period generally represented a range of temperatures and rainfall expected in the winter and consequently the results are considered likely to be generally representative of air quality in Lions Bay normally expected during the winter. Therefore the results of the study suggest that it is unlikely that exceedances of ambient air quality objectives will occur in Lions Bay, particularly in the winter, other than during exceptional events, such as incursions of intense wildfire smoke or in situations when dispersion is sufficiently restricted that air contaminants can build up.

The reason for this bylaw is a concern over air quality in Metro Vancouver but Lions Bay is in a different airshed and does not have an issue in this regard.

#### #2 Financial Implications for Residents who are not considered low income

Stats Canada peg low income as \$25,000 and state that in Lions Bay 7.5% of residents are in this bracket. Metro, for housing assessment, defines low income as 80% or less of the regional medium household income (RMHI), which would be around \$50,000. This is going to provide relief for very few and financial hardship is a reality many would face if they could not heat with wood.

#### #3 Lions Bay's response to climate initiatives in perspective.

You will notice from the survey responses many residents have already willingly replaced older heating devices with modern high efficiency ones. Lions bay have in the past and will continue to promote this cleaner and greener initiatives. We intend to put legislation in place through our building permit process that will require all building permit applicants comply with the new regulations.

What we are actually asking is not that we be exempt but that it be recognized that the drivers are different for us and we be given the opportunity to grandfather existing homes while providing for compliance over a longer time period.

#### Summary of Presentation to Metro Vancouver Climate Action Committee, 11/15/19

Metro Vancouver is the third largest film production center in North America. Filming is a huge part of this region, and is visible in every neighbourhood. In 2018, we created over 70,000 direct and indirect jobs each year, with a \$3.65 billion spend. There were over 6,985 of location filming days in Metro Vancouver in 2018 (attached), burning 6,286,500 liters of diesel with potential GHG emissions of 16,910 tCO<sub>2</sub>e.

In order to meet the ambitious goals of this committee, we believe you need to immediately begin to address clean infrastructure for filming. We, the industry, are ready to make bold moves to reduce our GHGs. The results will be immediate and quantifiable. But we need your support.

The film industry is years away from being able to technically support all of the productions in Vancouver with portable clean power sources, indeed there is yet to be an electric generator on the market that can supply 400 amps of power continuously for an entire day.

In addition, each production is transient, so any individual production is not able to make any infrastructure modifications as we are only “renting” the properties that we shoot on – sometimes for no more than a day or two of filming. However we pay very well for the use of these properties. We have the budgets for power and we will pay for access to clean power, but we will need Metro Vancouver, the jurisdictions and municipalities to provide the access points.

The City of Vancouver and the Vancouver Parks Board have both recently passed motions unanimously (attached) to help the film industry transition from diesel to clean energy.

We would like to work with you to provide real life, financially viable, and immediate actions that will significantly lower the GHGs of local film production. We are asking Metro Vancouver, member municipalities and jurisdictions to create policy, infrastructure, and regulations that encourage, mandate and facilitate access to clean grid power, reducing our emissions. (letters of support attached)

We have a fantastic opportunity – we have a clean grid. Replacing diesel generators with clean electrical power and other zero emission options means a reduction of +/- 1 tonne of CO<sub>2</sub> per access point, per day of use. At the Vancouver Art Gallery, this has translated to an elimination of over 40 tCO<sub>2</sub>e in the last 12 weeks. (see attached)

Working with the film permit offices, we can generate a map of the most commonly used locations for base camp parking, equipment truck parking and ultimately set – and find an approach to reduce generator fuel dependency at each site.. The site would need to pay the upfront cost for access. Each production will be charged a fee for the use of the drop, and the revenue will go to pay off the drop; and

to create revenue for the next power drop installation. With the current surge in film production in our city – we should be able to make huge inroads into the electrification of our industry very quickly.

Additionally, it is imperative that we coordinate these power drops with the new EV charging networks being installed throughout the city. A simple access point during installation would turn Level 2 and 3 charging units into clean energy for film.

The following questions need to be asked at any popular film site:

- Is there a power source nearby that can be adapted for film use?
- Are there EV charging stations that can be accessed for power?
- Is there a way to park the unit more efficiently to reduce the number of generators used to power the trailers and trucks?
- Is there an opportunity to place a power drop in a common area where it would benefit the community and the film industry?

Tie-ins run between \$50,000 - \$250,000 depending on proximity and access to clean power. The city is currently using an average cost of \$130,000 per tie in and has yet to determine what it will charge productions for access to clean power.

However, many of these sites already have accessible power, or are slated for EV charging installations. So the costs will drop considerably. Filming costs vary throughout, but I generally pay a minimum of \$5,000 per filming day for the use of public parks and property. Depending on the frequency of the site, and cost of installation – recoupment can be relatively quick.

The Film Industry has the will, the need and the knowledge to work with your film offices and staff to maximize clean power opportunities. The unions, the producers, the studios, the location managers and even the two largest equipment houses, Sim International & William F Whites have signed letters of support for this initiative for both the Vancouver Parks Board and Vancouver City Council – both of which passed this motion unanimously earlier this year. The Metro Vancouver Climate Action Committee also has our support. (see attached)

We need unification of policies and practices across all levels of government to create a new industry-wide standard. Each production can and should be an example to the community & the world of sustainable practices. Collectively we would have massive, quantifiable results, in a very short time frame; and demonstrate to the world a model of sustainability. We are visible and we are vocal.

The Metro Vancouver film industry can and should be at the forefront of sustainable production, and a global example. With your help – we will be.

Thank you in advance for your attention to this matter,

Clara George – Producer

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To: Climate Action Committee

From: Geoff Doerksen, Air Quality Planner  
Ken Reid, Superintendent, Environmental Sampling and Monitoring  
Planning and Environment Department

Date: October 23, 2019 Meeting Date: November 15, 2019

Subject: **Metro Vancouver Near-Road Air Quality Monitoring Study**

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### RECOMMENDATION

That the Climate Action Committee receive for information the report dated October 23, 2019, titled "*Metro Vancouver Near-Road Air Quality Monitoring Study*".

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### PURPOSE

To provide the Climate Action Committee with information on both the *Metro Vancouver Near-Road Air Quality Monitoring Study* and a recommended approach for reducing emissions of and exposure to traffic-related air pollution.

### BACKGROUND

Vehicle emissions are a significant source of air contaminants in our region. Nearly half the population of Metro Vancouver now lives near a major roadway and within range of vehicle emissions – a known risk factor for a range of health issues. The federal government initiated monitoring studies in Metro Vancouver and Toronto to characterize air quality near major roads and inform the development of a national near-road air quality monitoring strategy.

Metro Vancouver's *Integrated Air Quality and Greenhouse Gas Management Plan* contains strategies and actions to reduce air emissions from vehicles, which support air quality improvements near roads and the goal to *protect public health and the environment*. As part of the *Clean Air Plan*, Metro Vancouver's updated air quality management plan, it is intended that a program to reduce exposure to and emissions of traffic-related air pollutants will be developed.

This report provides a summary of the *Near-Road Air Quality Monitoring Study* completed in Metro Vancouver, details of the key findings and the approach for reducing emissions of and exposure to traffic-related air pollutants.

### NEAR-ROAD AIR QUALITY MONITORING STUDY

Emissions from motor vehicles are one of the largest sources of air contaminants in Metro Vancouver. Vehicles emit air contaminants from the combustion of fuel, as well as brake and tire wear. While vehicle emissions are highest at the source, impacts can occur up to 250 metres from a major road. Multiple traffic-related air pollutants (TRAP) have been identified with adverse health effects. Living and spending time near a major roadway has been identified as a risk factor for a number of respiratory symptoms and cardiovascular problems. Approximately 10 million Canadians live in areas

where they are exposed to TRAP, about 32% of the total population. In Metro Vancouver, over one million people or nearly half of the population resides near a major roadway.

The federal government initiated the Near-Road Air Quality Monitoring Study to: characterize air quality near major roadways, determine public exposure to TRAP, and inform the development of a national near-road monitoring program. The study was a partnership amongst Metro Vancouver, Environment and Climate Change Canada, the University of Toronto and the Ontario Ministry of the Environment, Conservation and Parks. It was conducted in both Metro Vancouver and Toronto. Environment and Climate Change Canada was the study lead and provided instrumentation, supplies and infrastructure, as well as funding for researchers at the University of Toronto.

Metro Vancouver led the Vancouver study, and staff participated in planning, carried out all monitoring operations, and provided equipment from existing air quality program inventories. Metro Vancouver established its near-road monitoring station adjacent to a major roadway on Clark Drive, a busy car and truck route, at East 11<sup>th</sup> Avenue. A second location was a reference site located away from traffic for comparison, and was located at Sunny Hill Children's Hospital on Slocan Street. With the completion of the study, Metro Vancouver has committed to continue monitoring the near-road environment at the Clark Drive station to further understand the impact of TRAP, track changes over time and evaluate the effect of emission reduction initiatives.

Metro Vancouver has prepared a detailed technical report focused on the monitoring study in our region, as well as a summary report intended for the general public (Attachment). The University of Toronto has prepared a report on the findings from studies in both cities.

The study included measurements of several air contaminants that are currently measured in the regional air quality monitoring network including: particulate matter, nitrogen oxides, black carbon, ground-level ozone, volatile organic compounds, and carbon monoxide as well as meteorological measurements. Monitoring for ultrafine particles (particles less than 0.1 micrometres in diameter, compared to PM<sub>2.5</sub> which is 2.5 micrometres) was a new monitoring capability introduced to the Metro Vancouver monitoring network as part of this study. At the Clark Drive near-road station, a traffic sensor continuously collected information on traffic volume and vehicle types.

#### **KEY FINDINGS OF THE STUDY**

**Air contaminant concentrations are considerably elevated near major roadways** in comparison with the reference station located away from traffic. On average the near-road station measured higher concentrations of traffic related air pollutants with increases of 28% for nitrogen dioxide, 71% for nitric oxide, 55% for nitrogen oxides, 30% for carbon monoxide, 30% for fine particulate, 64% for black carbon and 46% for ultrafine particles. The University of Toronto report revealed that Canadians are buying trucks at a higher rate than passenger cars, with truck sales increasing by 20%. As vehicle emissions improve, these heavier vehicles offset the improvements with more wear and tear on road surfaces, on tires, and brakes all of which contribute to airborne particles including metals in the air.

**Large trucks are a main contributor to the amount of air contaminants associated with major roadways** with higher correlations found between large trucks and contaminants, especially for black carbon and ultrafine particles, compared with other vehicles. There is a clear correlation between

poorer air quality and the hours and days when large trucks are typically on the roads. For example, concentrations of near-road contaminants dropped significantly on weekends, when large truck traffic volumes also decline, even though the number of passenger vehicles remained relatively steady. Large trucks make up only 6% of the total traffic measured at the Clark Drive monitoring station, but they contribute a disproportionate amount of vehicle-related emissions. The University of Toronto report identified that there was a mix of older, higher emitting trucks and newer low emitting trucks with emission treatment systems. A majority of emissions are believed to originate from the minority of older, higher emitting trucks and the report suggests these trucks should be identified and repaired, retrofitted, removed or relocated away from populated areas.

**The highest concentrations were measured when the wind was blowing from a nearby major intersection** towards the near-road station. During these times average concentrations were as much as: five times higher for nitric oxide; two times higher for carbon monoxide, nitrogen dioxide, and ultrafine particles; and almost three times higher for black carbon.

**Concentrations near a major roadway can vary considerably from hour to hour and day to day.** For example, the highest concentrations are associated with peak traffic during the day and lower concentrations were found during non-peak times and when winds are blowing away from the direction of the adjacent major roadways.

#### **REDUCING EXPOSURE TO TRAFFIC EMISSIONS**

Several recommendations are made in the Metro Vancouver *Near-Road Air Quality Monitoring Study* report to reduce traffic-related emissions and exposure to traffic related air pollutants, and track improvements in air quality in the near-road environment.

A key recommendation is to: develop a program to reduce exposure to traffic related air pollutants and reduce emissions of traffic related air pollutants. The development of the program should make use of the considerable work that has already been done to identify strategies to reduce exposure to traffic-related air pollutants in the region.

In 2013, Metro Vancouver conducted the *Reducing Exposure to Traffic Emissions (RETE) Project*, in partnership with TransLink, the BC Ministry of Environment, as well as a larger steering committee (consisting of local, regional and provincial government agencies, health authorities, academia and non-government organizations) to identify exposure reduction strategies.

The project established 28 provincial/regional and 32 local/municipal strategies to consider. Strategies were recommended to shape the community and environment so that residents' exposure to TRAP is reduced through design and mitigation, as well as recommendations to reduce overall vehicle emissions from traffic. The project recommended strategies that contribute to communities' existing strategies and plans for vibrant, compact communities, and resolve the dilemma that can exist between TRAP exposure reduction and smart growth infill development objectives. The strategies recommended in the RETE project included the categories: land use; design; transportation management; and education/outreach. The strategies are intended to reduce, mitigate and prevent exposure to TRAP.

The project also indicated that no particular agency or level of government has the sole mandate and responsibility to undertake on its own the reduction of exposure to traffic emissions. Key strategies and roles were identified for various agencies to take action as well as areas to collaborate.

Metro Vancouver is currently developing a new air quality and greenhouse gas management plan, the *Clean Air Plan*, which will build on the existing plan and identify opportunities for accelerated emissions reductions, including greenhouse gas emission reduction actions. These actions will help protect human health and the environment and avoid dangerous levels of climate change. The *Clean Air Plan* will be the near-term implementation plan to achieve Metro Vancouver's air quality targets.

The *Clean Air Plan* will focus on actions that Metro Vancouver can implement under its delegated authority, and will also identify actions for others. Strategies to reduce exposure to traffic related air pollution will be included in the transportation issue area, aligned with Metro Vancouver's longer-term *Climate 2050* strategy. The findings of the near-road monitoring study are expected to provide additional rationale to support transportation-related actions.

The near-road study results also support work being done by the City of Vancouver, who within their climate emergency response, include a 'big move' for pollution-free cars, trucks and buses. This includes a goal that by 2030, 50% of the kilometres driven on Vancouver's roads will be by zero emission vehicles.

#### **ALTERNATIVES**

This is an information report. No alternatives are presented.

#### **FINANCIAL IMPLICATIONS**

Metro Vancouver provided equipment for the *Near-Road Air Quality Monitoring Study* from existing air quality program inventories, as well as with contributions from partner agencies. Ongoing operation of the Clark Drive near-road monitoring station is included in the 2019 and 2020 budgets for air quality monitoring, as part of the regional network of air quality monitoring stations and the mobile air monitoring unit.

#### **SUMMARY / CONCLUSION**

Metro Vancouver has completed a study to examine the air quality effects of traffic close to major roads. The study establishes an important baseline of information about existing emission and exposure levels, and contributing sources. One of the principal study recommendations is to develop a program to reduce exposure to traffic related air pollutants and reduce emissions of traffic related air pollutants and include actions and strategies in the *Clean Air Plan* that is currently under development.

#### **Attachment** (33313160)

Metro Vancouver Near-Road Air Quality Monitoring Study – Summary Report – November 2019

#### **References**

[Reducing Exposure to Traffic Emissions](#) (2013)

33312671



# Metro Vancouver Near-Road Air Quality Monitoring Study Summary

November 2019

4730 Kingsway, Burnaby, BC, V5H 0C6  
[www.metrovancouver.org](http://www.metrovancouver.org)

November 2019



Clean air is vital to the livability of our region. It makes Metro Vancouver a desirable place to live, work and play. But our clean air doesn't happen on its own. Carefully monitoring and understanding the impacts of air contaminants is essential to protecting our air quality and minimizing risks to public health.

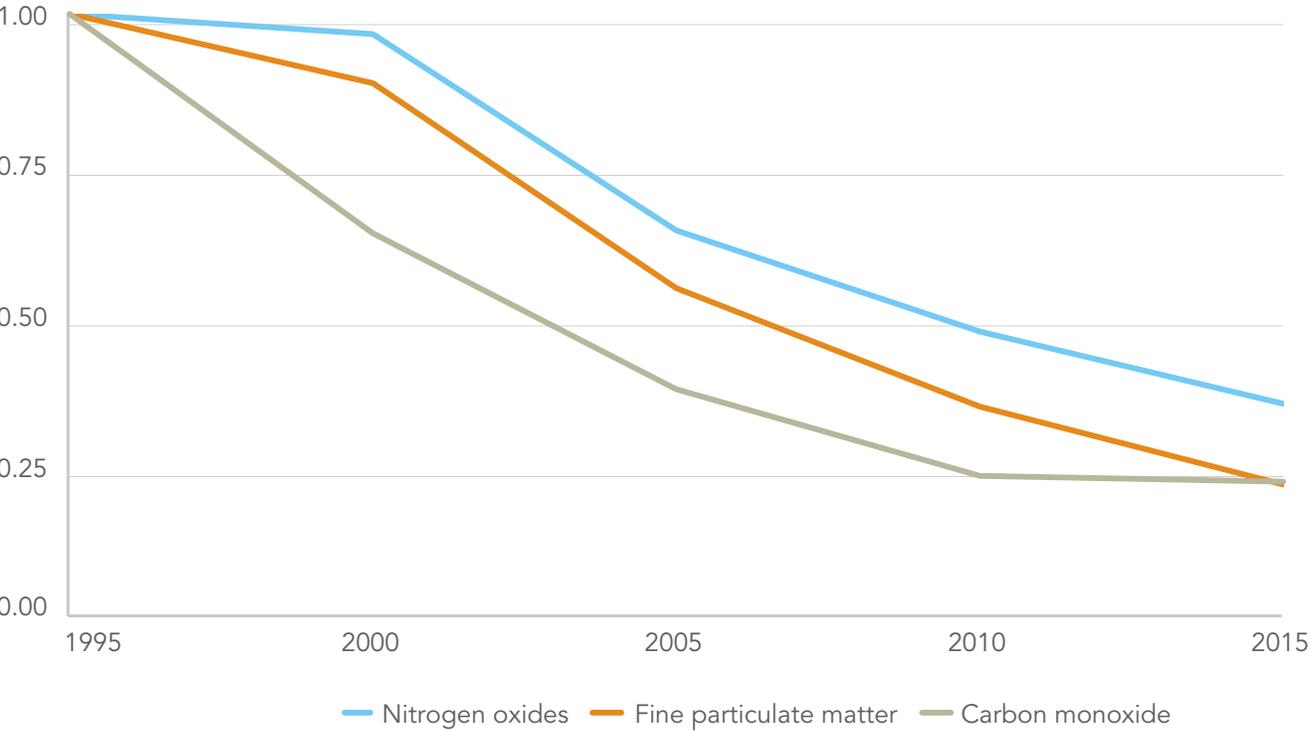
Most of the time Metro Vancouver residents enjoy good, and steadily improving, air quality. Even so, vehicle emissions are still a significant source of air contaminants in our region. And nearly half the population of Metro Vancouver now lives near a major roadway and within range of vehicle emissions – a known risk factor for a range of health issues.

To better understand the impacts of traffic-related air pollution near major roads, Metro Vancouver collaborated with Environment and Climate Change Canada, the Ontario Ministry of the Environment, Conservation and Parks, and the University of Toronto on a two-year (2015 to 2017) monitoring study. This national study included new monitoring in both Vancouver and Toronto. Information from the study will help determine public exposure to air contaminants and will inform a national near-road monitoring strategy for urban areas in Canada.

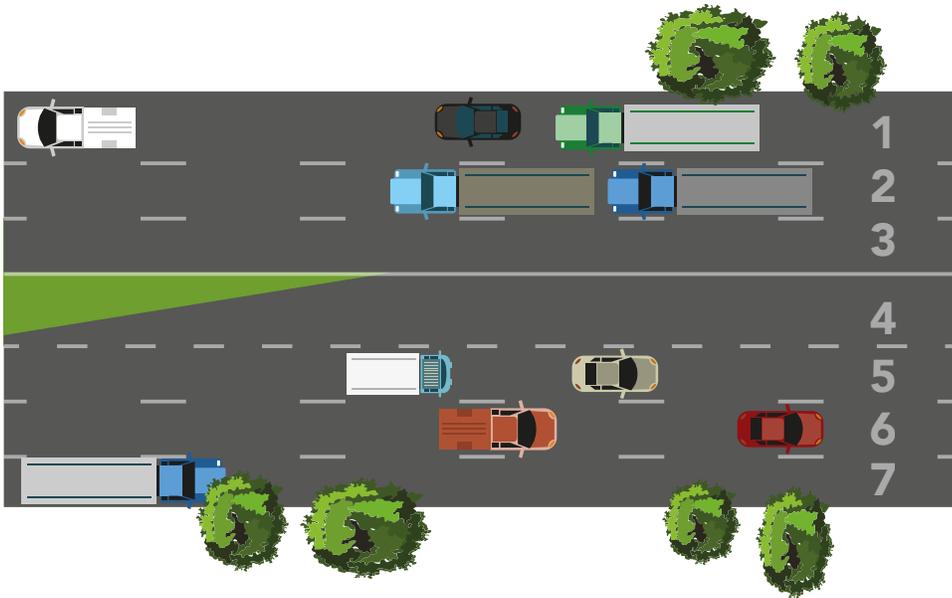


### Many of us live near major roads

Regional air quality in Metro Vancouver has improved steadily over the past several decades, in part because of stricter vehicle emission standards and the AirCare vehicle emissions inspection program that have reduced major air contaminants that cause smog and harm health.

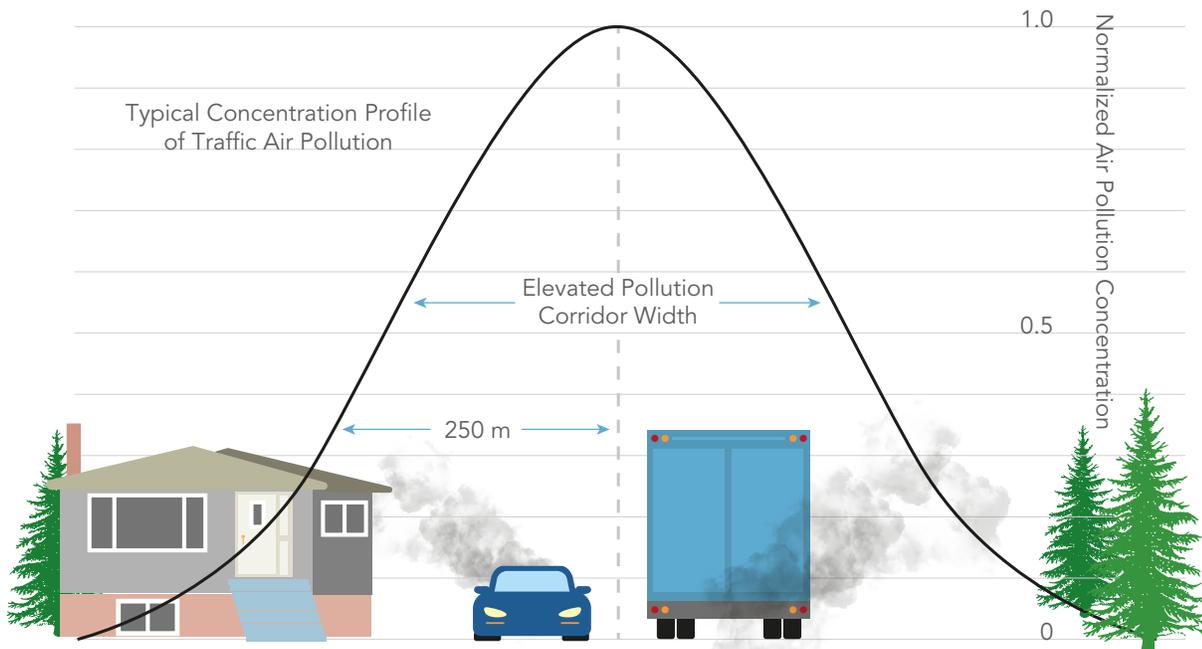


VEHICLE EMISSIONS OF TRAFFIC-RELATED AIR POLLUTANTS CONTINUE TO DECLINE IN METRO VANCOUVER, RELATIVE TO 1995.



MAJOR ROADWAYS HAVE AN AVERAGE DAILY TRAFFIC VOLUME OF 15,000 VEHICLES OR MORE AND ARE USED BY A VARIETY OF VEHICLE TYPES.

Despite local improvements in vehicle emissions, Canada’s urban areas, population and use of vehicles continue to grow. Around 10 million Canadians, 32% of the total population, now live within 250 metres of a major roadway and in range of vehicle emissions. This percentage is higher in Metro Vancouver, where over one million people – nearly half the population – live within 250 metres of a major road.



TRAFFIC-RELATED AIR POLLUTANTS CAN BE ELEVATED UP TO 250 METRES FROM MAJOR ROADS.



## Vehicle emissions have health impacts

Vehicles emit air contaminants from the combustion of fuel (mainly gasoline and diesel), as well as brake and tire wear. This traffic-related air pollution, while highest at its source, can have impacts up to 250 metres from a major road.

Exposure to traffic-related air pollution is a significant public health issue in Canada. Living or spending time near a major roadway is a known risk factor for a number of respiratory symptoms and cardiovascular problems.

Many air contaminants are linked to particular health impacts. Metro Vancouver monitors a range of health- and traffic-related air pollution at 31 air quality monitoring stations throughout the region.

Diesel vehicles are considered the most critical source of traffic-related air pollution. Diesel-exhaust particles are one of the most harmful vehicle-related air contaminants and a known carcinogen. Although diesel engines are more fuel-efficient than gasoline engines, they emit considerably more particulate matter.

Black carbon and ultrafine particles are both linked to diesel emissions, and are emerging as pollutants of significant public concern. Metro Vancouver has measured black carbon for many years, while ultrafine particles were measured in the region for the first time as part of the near-road monitoring study.

Black carbon is commonly emitted from diesel engines. It is a significant component of fine particulate matter and is small enough to be easily inhaled into the lungs. It is closely linked with cancer risk. Black carbon is also a major contributor to global climate change.

Ultrafine particles are both naturally occurring and emitted from combustion sources, including vehicle emissions. These microscopic particles, about 1/500th the width of a human hair, can penetrate the tissue of the lungs after inhalation and then enter the bloodstream and circulate throughout the body.

A 2019 study estimated that air emissions from transportation in Canada are associated with 1,400 deaths and 12 billion (USD) dollars of health damages.<sup>1</sup>

A separate 2019 study found that Canada has the third highest overall rate of traffic-related childhood asthma (per 100,000 children) cases behind only Kuwait and the United Arab Emirates, among 194 countries analyzed. The high rate in Canada is influenced by traffic-related pollution levels and overall asthma rates.<sup>2</sup>

<sup>1</sup> Anenberg, S.; Miller, J.; Henze D.; Minjares, R.; and Achakulwisut, P., 2019. *The global burden of transportation tailpipe emissions on air pollution-related mortality in 2010 and 2015.*

<sup>2</sup> Achakulwisut, P.; Brauer, M.; Hystad, P.; Anenberg, S.C., 2019. *Global, national, and urban burdens of paediatric asthma incidence attributable to ambient NO2 pollution: estimates from global datasets*

## The Metro Vancouver Near-Road Air Quality Monitoring Study

You may have driven past the near-road air quality monitoring station at Clark Drive and 11th Avenue in Vancouver without realizing. In fact, the station may have measured emissions from your vehicle. Metro Vancouver operates the station on Clark Drive, a busy roadway and truck route in a densely populated neighbourhood. The station measures near-road traffic-related air pollutants that impact health.

Metro Vancouver selected the Clark Drive station location based on traffic volume and neighbourhood population density. While the Clark Drive station is located in Vancouver, it is representative of other roads and neighbourhoods throughout the region with similar traffic. The Clark Drive station has been collecting data since May 2015.

A second air quality monitoring station was established three kilometres east of the Clark Drive station and away from heavy traffic routes for comparative purposes. Metro Vancouver also collected additional comparison data from sites within its regional air quality monitoring network.

The near-road monitoring station measured a wide range of air contaminants, along with weather and traffic, using many of the same specialized instruments found throughout Metro Vancouver's wider air quality monitoring network.

The monitoring instruments operated continuously, providing data every hour of the day on vehicle pollutants, weather and traffic.



CLARK DRIVE STATION AIR QUALITY MONITORING EQUIPMENT.

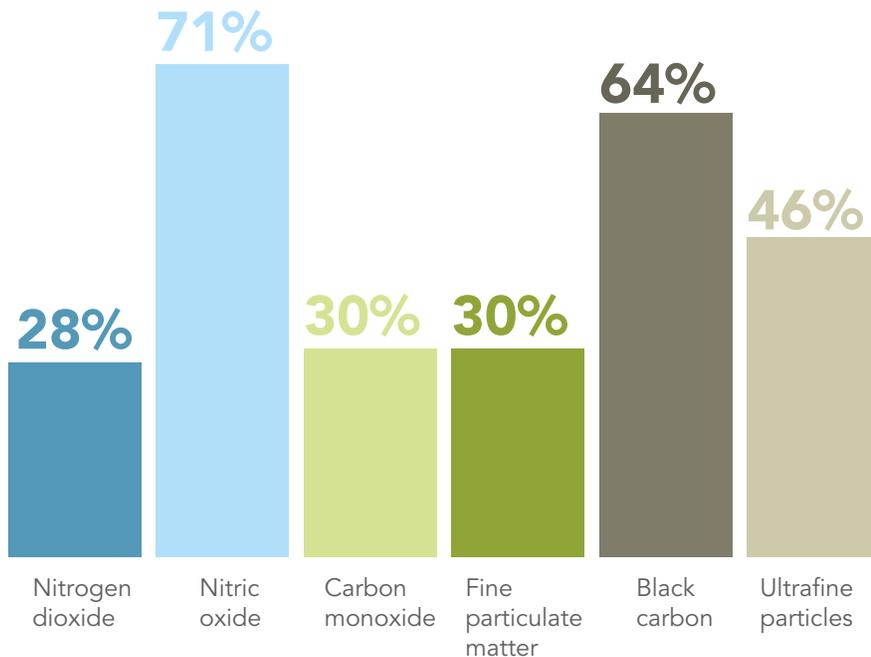
At the same time as the Metro Vancouver near-road study, Environment and Climate Change Canada, the Ontario Ministry of the Environment, Conservation and Parks, and the University of Toronto measured vehicle pollutants at two near-road sites in Toronto. One was located along Highway 401, an 18-lane highway described as the busiest in North America. The second monitoring station was near a four-lane roadway within downtown Toronto.

Together, the Vancouver and Toronto sites represent a trucking route, highway and downtown road, and bring into focus the current state of near-road pollution in Canada.

A summary of the Vancouver and Toronto study findings, prepared by the University of Toronto, is available at [www.socaar.ca](http://www.socaar.ca).

## Air quality is worse near major roadways

Air quality monitoring at the Clark Drive site in Vancouver shows that air contaminant concentrations are considerably higher near major roadways. Comparing data collected from the comparison monitoring sites reveals that these elevated concentrations are a direct result of the volume and type of vehicles on Clark Drive, and diesel emissions in particular.



TRAFFIC CONTRIBUTED TO SIGNIFICANT INCREASES OF MEASURED AIR CONTAMINANTS AT THE CLARK DRIVE MONITORING STATION, RELATIVE TO THE COMPARISON STATION.

On occasion, the monitoring data exceeded Metro Vancouver's annual air quality objectives for nitrogen dioxide and fine particulate matter. Air quality objectives and standards are health-based targets which define the acceptable outdoor concentration of key air contaminants.

**Given the elevated nitrogen dioxide concentrations, near-road environments with exposure to diesel traffic may be challenged to achieve the more stringent 2020 Canadian Ambient Air Quality Standards (CAAQS)<sup>3</sup> for this pollutant.**

About a quarter of the fine particulate matter measured in the near-road environment was black carbon, an indicator of diesel exhaust. While there are no federal, provincial or Metro Vancouver objectives for black carbon, it is a pollutant that is a concern for its impacts on both health and climate change. The monitoring study also found twice the amount of ultrafine particles in the near-road environment compared to the comparison site farther away from traffic.

<sup>3</sup> The Canadian Ambient Air Quality Standards (CAAQS) are national air quality management standards for key pollutants. Metro Vancouver is reviewing its air quality objectives to account for the more stringent CAAQS that come into effect in 2020.

## Large trucks are a main contributor to near-road air pollution

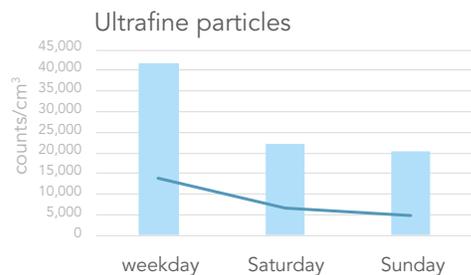
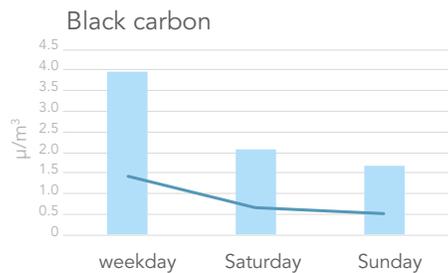
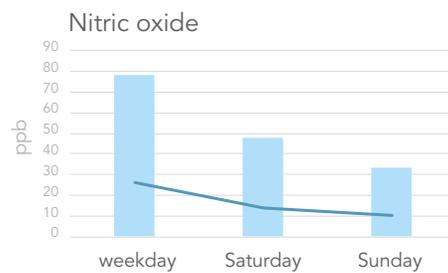
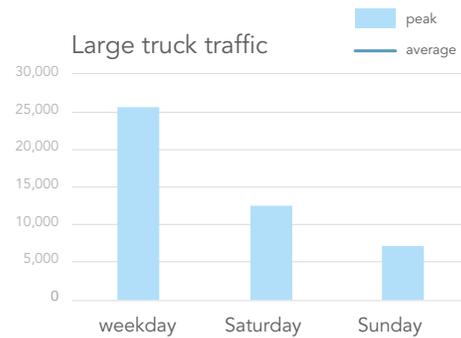
Emissions from different types of vehicles vary significantly. While most passenger vehicles on the road are fuelled by gasoline, the majority of large trucks (i.e., semi-trailer trucks) still consume diesel.

Large trucks make up only 6% of the total traffic measured at the Clark Drive monitoring station, but they contribute a disproportionate amount of vehicle-related emissions. The elevated air contaminant concentrations at the Clark Drive site, including nitrogen oxides, black carbon and ultrafine particles, are due more to the large trucks travelling this road, rather than total volumes of traffic.

The impact of diesel-fueled trucks on near-road air quality is supported by comparing the Clark Drive results with other monitoring sites used in the study. Although influenced by other factors, vehicle air contaminants at Clark Drive, a major truck route, were similar to results collected from the Toronto highway site, one of the busiest roads in North America.

The study results show that vehicle type, large trucks in particular, rather than traffic volume, is a main contributor to the amount and type of air contaminants associated with major roadways.

There is a clear correlation between elevated air contaminant levels and the hours and days when large trucks are typically on the roads. For example, concentrations of near-road air contaminants dropped significantly on weekends, when large truck traffic volumes also decline, even though the number of passenger vehicles remained relatively steady. On average, carbon monoxide and fine particulate matter concentrations were 1.5 times higher on weekdays compared with Sunday, nitrogen dioxide and nitric oxide concentrations were twice as high, and black carbon and ultrafine particle counts were nearly three times higher.



REDUCTION IN TRUCK TRAFFIC AND CORRESPONDING AIR CONTAMINANT CONCENTRATIONS DURING WEEKENDS.

Higher concentrations were also measured when winds were blowing from the direction of a major intersection near the monitoring site. **The study showed that concentrations near major roads can vary considerably from hour to hour and day to day.**



## Next steps

Vehicle emissions have significantly improved over the last several decades, contributing to overall improvements in the region's air quality. These trends are expected to continue, as newer and cleaner vehicles, including electric vehicles, replace existing cars and trucks while use of public transit and active transportation increases.

Nonetheless, the results of the near-road monitoring study show that traffic-related air pollution near major roads continues to be significant. Many roadways throughout the region carry comparable amounts and types of traffic to those measured at the Clark Drive monitoring station, meaning that a significant portion of the population is exposed to similar concentrations of air contaminants. **Metro Vancouver is committed to continue monitoring the near-road environment at Clark Drive, to further understand the impacts of traffic-related air pollutants and track changes.**

A key recommendation of the *Metro Vancouver Near-Road Air Quality Monitoring Study* is to **develop a program to reduce emissions and exposure to traffic-related air pollutants.** This program would draw from a range of strategies, including land use policy, infrastructure design, and transportation management, and would require support from multiple levels of government, from individual municipalities to the provincial level.

A significant portion of any program to reduce emissions and public exposure to air contaminants will include **increased education about the health impacts of traffic-related air pollution and transportation decisions.** Key topics for public education include the benefits of active transportation, adverse effects of motorized transport, risks of exercising near busy roads and truck routes and short-term mitigation options such as upgrading heating and ventilation systems in nearby buildings to improve indoor air quality. Other groups, including the trucking community, could also be engaged on the impacts of vehicle pollution.

Metro Vancouver is currently developing an updated air quality management plan, the *Clean Air Plan*, which will identify opportunities for accelerated emissions reductions in our region, including near major roadways. The near-term actions in the *Clean Air Plan* will help protect human health and the environment, while reducing greenhouse gas emissions, through incentives, education and regulations. These emissions reductions align with *Climate 2050*, Metro Vancouver's long-term strategy to support achieving a carbon neutral and resilient region by 2050.

You can learn more about Metro Vancouver's air quality programs at [metrovancouver.org](https://www.metrovancouver.org).



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To: Climate Action Committee

From: Joshua Power, Senior Policy and Planning Analyst  
Jason Emmert, Senior Planner  
Planning and Environment Department

Date: October 22, 2019 Meeting Date: November 15, 2019

Subject: **National Industrial Symbiosis Program (NISP) Canada Pilot Results**

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### **RECOMMENDATION**

That the Climate Action Committee receive for information the report titled “National Industrial Symbiosis Program (NISP) Canada Pilot Results”, dated October 22, 2019.

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### **PURPOSE**

To inform the Climate Action Committee of the results of the National Industrial Symbiosis Program Canada pilot, a Sustainability Innovation Fund project initiated in 2017.

### **BACKGROUND**

At its meeting on February 24, 2017, the MVRD Board adopted the following resolution:

*That the MVRD Board approve the allocation from the GVRD Sustainability Innovation Fund for the following projects:*

- a) Exploring Innovative Access and Pricing Mechanisms for a Multipurpose Direct Current Fast Charger for Electric Vehicles at Metrotower III ("DCFC at MT3"): \$100,000 in 2017 and \$50,000 in 2018;*
- b) National Industrial Symbiosis Program (NISP) - Canada - Metro Vancouver: \$80,000 in 2017 and \$20,000 in 2018*

Industrial symbioses advance circular economy approaches by transforming wastes from one business into higher value inputs for another business, resulting in environmental and cost benefits. This report summarizes the results of the NISP Canada pilot project which began in October 2017 and was completed in July 2019.

### **OVERVIEW OF THE NATIONAL INDUSTRIAL SYMBIOSIS PROGRAM MODEL**

Originally piloted in the early 2000s, the National Industrial Symbiosis Program (NISP) was brought to scale in 2005 by UK-based company International Synergies. The program aims to help businesses of all sizes in various sectors come together to find uses for unwanted materials.

By creating industrial symbioses that transform wastes from one business into higher value inputs for another business, some of the benefits include diversion of materials from landfill, reduction of disposal needs and raw material production, and the realization of both cost savings and environmental benefits for the participating businesses. Although NISP is primarily focused on

material exchange, the program also helps businesses find new commercial opportunities for other resources such as unused energy, research expertise, transportation, and logistics.

The NISP model relies on a facilitated workshop structure to identify potential resource matches and uses dedicated local practitioners to help businesses turn those matches into real life projects. NISP has been implemented in 21 countries and has resulted in reductions in solid waste, greenhouse gas emissions, water use, and other environmental benefits. The NISP model has been endorsed by numerous global organizations, including the G7, OECD, EU and Global Green Growth Forum as a practical means for shifting businesses to a low carbon, circular economy.

### **DELIVERY OF THE NISP CANADA PILOT**

In September 2017, Metro Vancouver entered into a contribution agreement with Light House Sustainable Building Centre, a Vancouver-based not-for-profit, to pilot Canada's first National Industrial Symbiosis Program (NISP). The NISP Canada pilot was conducted in two distinct regions: Greater Edmonton in Alberta and Metro Vancouver. Other funding partners included Western Economic Diversification, City of Edmonton, City of Surrey, City of New Westminster, Innovate BC, BC Energy & Mines, BC Ministry of Agriculture, BC Citizen Services, and BC Municipal Affairs & Housing.

The NISP Canada pilot aimed to demonstrate that comparable benefits to those achieved internationally can be realized in Canada. Results from the pilot program will help inform the model for a long-term and fully national program.

In Metro Vancouver, the objective of the pilot was to explore the potential for the NISP model to drive waste reduction, greenhouse gas emission reduction, economic diversification, job creation, and clean tech sector growth. The pilot was centered on a series of six facilitated workshops that were delivered throughout the region from October 2017 to February 2019.

Metro Vancouver's participation and financial support of the pilot helped ensure that all six of the workshops planned for Metro Vancouver were delivered and that dedicated practitioner support for local businesses was available.

### **RESULTS OF THE NISP CANADA PILOT IN METRO VANCOUVER**

Over the course of six workshops, the NISP Canada pilot produced over 1,300 potential resource matches in the Metro Vancouver region from local businesses (see Attachment). Due to the high number of potential matches, practitioners applied prioritization criteria, such as focusing on those matches with high potential landfill diversion, cost savings, or greenhouse gas emission reduction.

As the implementation of synergies is still ongoing, the data for potential outcomes is limited; however, if the Metro Vancouver synergies prioritized for active follow-up (96 in total) were fully implemented, they have the potential to result in:

- 12,900 tonnes of CO<sub>2</sub>e emissions avoided;
- 2,600 tonnes of waste diverted from landfill; and
- \$408,000 in direct economic benefit to participating businesses.

The NISP Canada pilot identified that small and medium-sized enterprises, which make up the majority of businesses in BC, are lacking institutional support to take advantage of the economic opportunities in resource efficiency, and encounter significant barriers to entry. For this reason, relatively few businesses advanced their potential resource matches on their own and significant practitioner support was required to move matches towards implementation. For this reason, sufficient resources to support the dedicated NISP practitioners is key to the program's success.

#### **ALIGNMENT WITH CLIMATE 2050 AND INTEGRATED SOLID WASTE MANAGEMENT PLAN**

Climate 2050 is an overarching long-term strategy that will guide our region's policies and collective actions to transition to a carbon neutral and resilient region over the next 30 years. Metro Vancouver is implementing Climate 2050 through ten issue area Roadmaps, which will describe long-term goals, targets, strategies and actions to reduce regional greenhouse gas emissions and ensure that this region is resilient to climate change impacts.

The *Integrated Solid Waste and Resource Management Plan* sets out the goals, strategies and actions for managing solid waste in the region. The NISP Canada pilot directly supported three goals in the Plan:

Goal 1: Minimize waste generation

Goal 2: Maximize reuse, recycling and material recovery, and

Goal 3: Recover energy from the waste stream after material recycling

Transitioning to a low carbon, circular economy is expected to be an important cross-cutting theme for the *Climate 2050 Roadmaps* and the update of the *Integrated Solid Waste Management Plan*.

#### **NEXT STEPS FOR NISP CANADA**

Through the NISP Canada pilot, Light House Sustainable Building Centre has gained significant attention, allowing it to continue past the pilot phase. In BC, workshops have continued with support from the Vancouver Economic Commission and the City of Victoria. NISP Canada is continuing to receive funding from City of Edmonton, and new opportunities to apply the NISP model have arisen in Washington State.

In the short term, Light House Sustainable Building Centre anticipates that grant-funding, especially from government, will be the main source of funding for NISP to carry on and expand to new regions. Over the next three to five years, with interest in the circular economy growing nationally and internationally, Light House Sustainable Building Centre anticipates there will be opportunities to develop alternative funding models for industrial symbiosis and related circular economy initiatives.

#### **ALTERNATIVES**

This is an information report. No alternatives are presented.

#### **FINANCIAL IMPLICATIONS**

The pilot program relied on funding from eight agencies and three levels of government for a total project cost of \$1 million. The NISP Canada Pilot is now complete and was carried out with the support of \$80,000 in 2017 and \$20,000 in 2018 from the GVRD Sustainability Innovation Fund.

## **SUMMARY / CONCLUSION**

Industrial symbioses are created by transforming wastes from one business into higher value inputs for another business, resulting in environmental and cost benefits. The National Industrial Symbiosis Program (NISP) relies on facilitated workshops to identify resource matches and uses dedicated local practitioners to help businesses turn those matches into real life projects.

The NISP Canada pilot in Metro Vancouver and Greater Edmonton was designed to help inform the model for a long-term and fully national program. In Metro Vancouver, the objective of the pilot was to explore the potential for the NISP model to drive waste reduction, greenhouse gas emission reduction, economic diversification, job creation, and clean tech sector growth.

The NISP model is well-aligned with many of Metro Vancouver's strategies, namely the *Climate 2050 Roadmaps* and the update of the *Integrated Solid Waste Management Plan*, where transitioning to a low carbon, circular economy is expected to be an important cross-cutting theme. Although implementation is still ongoing, if the Metro Vancouver synergies prioritized for active follow-up (96 in total) were fully implemented, they have the potential to result in 12,900 tonnes of CO<sub>2</sub>e emissions avoided, 2,600 tonnes of waste diverted from landfill, and \$408,000 in direct economic benefit to participating businesses.

NISP Canada is continuing beyond the pilot phase with additional activity in Metro Vancouver, other parts of BC, and in Washington State. The pilot provided a foundation for the growth of the program and it is anticipated that further benefits will be realized if the program continues. Grant-funding, especially from government, is expected to be the main source funding for NISP Canada in the short term if the program is to carry on.

## **Attachment**

Executive Summary: National Industrial Symbiosis Program (NISP) Canada Pilot Performance Report

3316188



TURN WASTES INTO VALUABLE RESOURCES

BE PART OF THE CIRCULAR ECONOMY

DELIVER ON GOVERNMENT PRIORITIES

## Executive Summary: National Industrial Symbiosis Program (NISIP®) Canada Pilot Performance Report

Industrial Symbiosis transforms: 'waste' resources into value-added inputs for other business. Industrial Symbiosis is a key, *practical* means for shifting businesses to a low carbon, circular economy.

Circular business models will gain an ever greater competitive edge in the years to come because they create more value from each unit of resource than the traditional linear 'take-make-dispose' model. Accelerating the scale-up promises to deliver substantial macroeconomic benefits as well as open up new opportunities for corporate growth. World Economic Forum 2014

Our feasibility study<sup>1</sup> concluded that **the UK-developed NISIP® model achieves the most industrial symbiosis in the shortest amount of time.** The NISIP® model is delivered regionally; uses facilitation to engage businesses and identify symbiosis opportunities; requires regionally-based practitioners dedicated to helping businesses implement symbiosis. There is no cost for businesses to participate in workshops or access NISIP® practitioners.

The NISIP® model supports **UN Sustainable Development Goals**

- ✓ **Goal 8: Promote inclusive and sustainable economic growth, employment and decent work for all**
- ✓ **Goal 9: Build resilient infrastructure, promote sustainable industrialization and foster innovation**
- ✓ **Goal 11: Make cities inclusive, safe, resilient and sustainable**

### Delivering the NISIP® Canada Pilot

Although the NISIP® model had been adapted to 35 countries, Canada's unique geography, federal structure resulting in multiple environmental regulatory jurisdictions, and SME-dominated economy raised questions regarding the applicability and achievable benefits in Canada. So, a pilot was required.

NISIP® Canada was piloted in the Metro Vancouver and Greater Edmonton regions for 20 months (Oct 2017-May 2019) pilot, including 6 facilitated workshops and the retention of 2 full-time practitioners **per region**. The pilot was a program of Light House Sustainable Building Centre, a Vancouver-based not-for-profit. The pilot was funded by Western Economic Diversification, Metro Vancouver, City of Edmonton, City of Surrey, City of New Westminster, Innovate BC, BC Energy & Mines, BC Ministry of Agriculture, and BC Citizen Services and Community Development (now BC Municipal Affairs).

<sup>1</sup> National Industrial Symbiosis Program Model Feasibility Study for Canadian Adaptation. Light House Sustainable Building Centre Society. 2016.

### The NISIP® Canada pilot was a great success!



**Already \$6.3M in cost savings and/or new revenues for participating businesses**

**Government ROI of 7 to 1.**

*Awesome initiative with a huge potential to help organizations to divert more from the landfill.*

- M. Capriles, Goodwill Industries of Alberta

**1,900 potential material, water, or energy 'waste' resources id'd to date**

**253,800 tonnes of waste diverted from landfill.**

*IS presents a great opportunity to reduce our ecological footprint while improving our business efficiency.* – J. Thwaites, LUSH Cosmetics



**23,800 tonnes of CO<sub>2e</sub> emissions avoided<sup>1</sup>, equivalent to more than 5,000 passenger vehicles driven for one year<sup>1</sup>**

*Fantastic concept. Great for industry.* - C. Kiff, Kruger Products

**350+ businesses engaged, starting 'from scratch' in terms of regional business awareness of the model and pilot!**



### Selected Outcomes by Region

Outcome	BC	AB
Additional Sales	\$236,600	\$1,269,600
Cost Savings	\$171,600	\$4,670,100
Total Direct Economic Benefit	\$408,200	\$5,939,700
GHG Emissions Avoided (tonnes CO <sub>2e</sub> )	12,900	11,000
Waste Diverted to Landfill (tonnes)	2,600	251,200
Industrial Water Savings (m <sup>3</sup> )	1,000	1,152,000
# Resources Identified	2,302	1,824
# MWE Resources Identified	950	952

Given that only 160 out of more than 3,500 potential matches have been actively nurtured by practitioners so far, and we are still awaiting data from many of those, **the benefits from NISIP® Canada could be far, far greater.**

**The NISIP® Canada pilot was a success. NISIP® Canada should continue, as it catalyses profitable private sector circular, low carbon economy activity with no new regulations required.**

The pilot demonstrated the **importance of facilitated industrial symbiosis**; The NISIP® Canada practitioners were a crucial element of success, working directly with businesses to help them evaluate and implement their opportunities.

**NISIP® Canada now stands as an exemplary demonstration of regional, provincial, and national action on the low carbon, circular economy agenda.**

**Governments at every level should continue to support NISIP® Canada's valuable contribution to Canadian efforts to tackle our global climate and ecological crises.**

**Selected Symbiosis Case Studies<sup>2</sup>**

**Theatrically Heating Students**

**Great Northern Way Scene Shop (GNWSS)** is one of Metro Vancouver’s most significant producers of sets for regional theatre, opera, and film sets, generating clean wood waste which currently goes to landfill. Practitioners identified a match between GNWSS’s wood waste and **BCIT’s** new wood-fired district heating system. Once BCIT’s new boiler is purchased and installed (estimated late 2019), GNWSS wood waste will begin heating students (buildings) at BCIT! This synergy is highlighted in a [video \(https://vimeo.com/277699619\)](https://vimeo.com/277699619) produced by Metro Vancouver, showcasing NISP® Canada.

**Fashion-friendly Tissue**

**Kruger Products** produces facial tissue at its New Westminster plant. They achieved FSC® certification in 2011, the first tissue company in Canada to do so. **Fabcycle** operates firmly in the circular economy, collecting textile waste from apparel production and facilitating its reuse. Fabcycle was seeking heavy duty tubes to help organize the textiles in the storefront. During a site visit to Kruger, a NISP® practitioner noticed cardboard tubes in the waste bin, resources which weren’t originally tabled at a workshop. The practitioner was able to broker the transfer of tubes from Kruger to Fabcycle.

**Pallets are Paramount in Edmonton**

**Paramount Pallet** is the largest provider of pallets, including recycled pallets, in Canada. **Paramount Pallet** has collected used pallets from **The City of Edmonton, Shell Canada’s Scotford Complex, GEEP Canada, Goodwill Industries, and Univar Canada.** Univar saved \$3,000 in disposal costs. Shell provided 1,200 pallets, diverting 3 truckloads from landfill. For GEEP, this synergy utilizes 12 trucks full of pallets or 142 tonnes of wood. Paramount was able to clean and repair the 1,172 tonnes of pallets collected from these partners so far, representing \$14,000 in new revenues. More synergies are pending!

**Getting an Energy Boost from (Waste) Coffee**

**Tim Horton’s (Devon)** is a franchise operation for the iconic Canadian doughnut and coffee shop. The location generates food waste, including significant quantities of coffee grounds. One of **EcoGrowth’s** technology developments is a waste-to-energy system that runs on biomass. **EcoGrowth** collected 1 tonne of food waste from Tim Horton’s in Devon to test in its technology. If this works, then an EcoGrowth system may be installed at the Tim Horton’s to turn waste back into energy (hot water) to use back on site.

**Selected Synergies Under Development**

**Gruger Family Fungi** produces a compost-like ‘old’ fungus material. **Delta Remediation** is testing this waste because it appears as if it could work as an oil absorbent. The potential quantities involved are still confidential, but both parties report that this could result in a significant synergy, not to mention the repurposing of agricultural wastes into a new biobased product.

**Urban Granite** makes stone counter-tops. While cutting them to size, this process generates stone scrapping calculated in \$3-5 thousand of dollars per month in disposal fees. **Devlin Construction** is evaluating the stone off-cuts to determine if it can crush and reuse them as base road material.

**Newlyweds Foods** produces herb and spice blends, among other food industry inputs. Its waste streams include a food-grade waxy residue. **Groundstream** is testing this residue for use in its biofuel systems or in its biofuel log production as a biobased binding agent.

A **major chocolatier** generates spent coconut oil, which has the potential to fuel a Renewable Natural Gas facility. With the help of **FortisBC**, the chocolatier will investigate the use of this, and possibly some of its other biobased wastes, to support the growing demand for RNG in BC.

**Canadian Mattress Recycling** generates waste leather and zippers from furniture recycling. **Our Social Fabric** is investigating collecting the leather and zippers to support its efforts to upcycle used textiles into new products.

**Cartem Donuts** is investigating the use of this off-spec chocolate from **Emkao Foods** and off-spec blueberries from **Sidhu Farm** as ingredients for its donuts.

**NISP® Canada Knowledge Gained**

Canadian businesses keen but extremely busy. NISP® Canada needs more practitioner site visits to shepherd implementation e.g., sample collection. NISP® Canada could benefit from more practitioners per region (more funding) and more time between workshops e.g., 3 per year instead of 4.

To better engage manufacturers NISP® Canada struck partnerships with manufacturing associations. ‘Manufacturing’ has changed rapidly in Canada; we saw participation from new manufacturing types like micro-breweries / micro-distilleries; scrap textile clothing manufacturers; algae-based aquaculture; and value-added cannabis.

Regulations were only cited as a barrier once, and only because of uncertainty in new industries (algae-based aquaculture and cannabis.)

NISP® Canada regions will generally be smaller than a province. Urban regions will be 50-75 km radii from urban centres. Rural regions will be larger and must be resourced for greater practitioner travel as well as more practitioner site visits.

The NISP® pilot was run on a **cost-recovery basis** Grant-funding, especially from government, will be the main short-term funding model. However, **it is crucial that government agencies consider that not all low carbon, circular economy solutions involve capital projects; it is difficult for NISP® Canada to fit in such funding programs, despite its ability to deliver on stated policy objectives.** The NISP® model lends itself well to alternative financing which will be explored in future



<sup>2</sup> Specific quantitative outcomes are generally not shown as most companies prefer to have their results confidential and included only in our aggregate outcomes.