THE CURRENT STATE OF WALKING IN THE CITY OF NORTH VANCOUVER

NOVEMBER 2017

city of north vancouver

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INTRODUCTION

INTRODUCTION

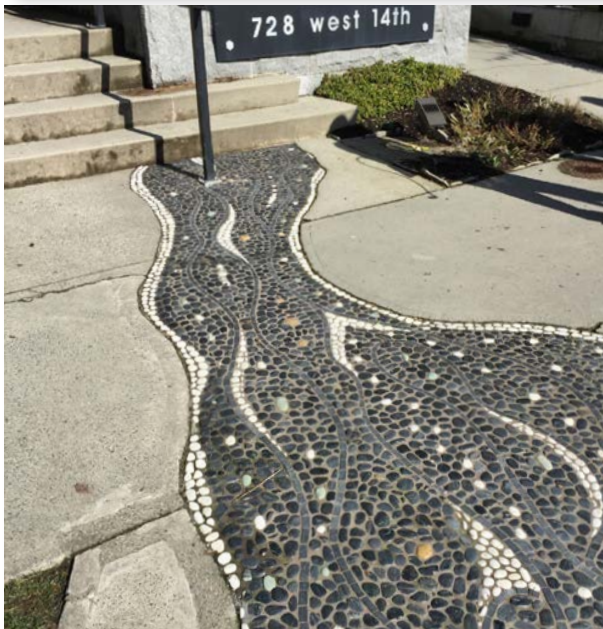
The City of North Vancouver (CNV) is a vibrant and compact community on the North Shore of Burrard Inlet in Metro Vancouver. With approximately 53,000 residents living in a compact area of approximately 12 square kilometres, the City has one of the highest population densities in Metro Vancouver, and this will increase as the City's population is expected to grow steadily in coming years.

The City is already a walkable community, as its high population density, compact urban form, grid street network, and extensive sidewalk and greenway network, combine to provide excellent opportunities for residents to incorporate walking into their everyday lives. The City is interested in promoting walking as an attractive and convenient mobility choice for residents of all ages and abilities. Encouraging walking helps the City work toward achieving its commitments to reduce transportation-related Greenhouse Gas (GHG) emissions and helps to promote a healthy environment and community.

Sustainable transportation is a key priority in North Vancouver. The City's 2014 Official Community Plan (OCP) includes the goal of providing a balanced transportation system that encourages more sustainable modes of travel including walking, cycling and transit. The OCP recognizes that increasing the provision of accessible and convenient transportation choices as attractive alternatives to single occupant vehicles will help reduce local and regional GHG emissions and will foster a healthy lifestyle for the community. Improving active transportation options has demonstrated health benefits, facilitates physical activity, and improves public safety and the perception of safety.

The City's 2008 Long-Term Transportation Plan also focused on prioritizing sustainable transportation choices, recognizing the City's street network is largely built-out and that focusing on sustainable transportation can help the City to plan for and accommodate growth. The plan for the pedestrian network as identified in the Long-Term Transportation Plan focuses on three key features: Pedestrian Areas and Generators, Pedestrian Treatments, and Greenways. This Pedestrian Plan builds on these directions to improve walking in the City.

Walk CNV will establish goals, and objectives as well as corresponding directions and actions for improving walking related policies, standards, infrastructure and programs. The detailed actions will prioritize pedestrian investments throughout the city including new sidewalks, curb ramps, crosswalks, and many other improvements that make it easier to walk in the City. By developing Walk CNV and continuing to promote walking as an attractive and convenient form of transportation for people of all ages and abilities, the City can work to reduce automobile dependence and GHG emissions, increase physical activity and improve public health outcomes, increase social connections, and reduce infrastructure demands.

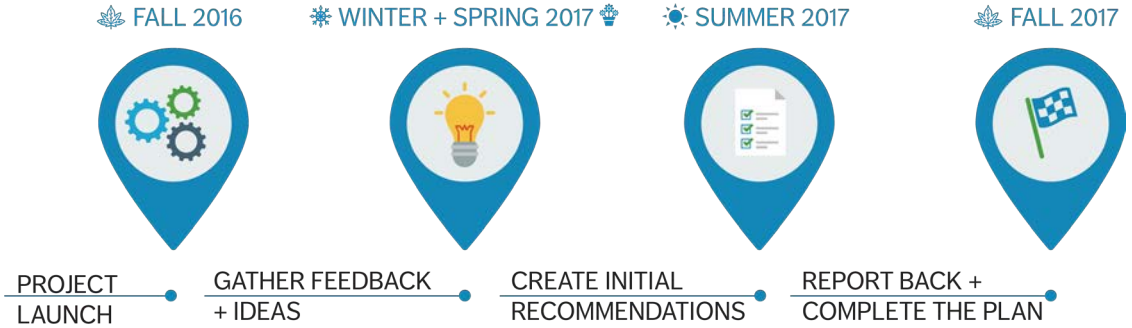


Plan Process

Walk CNV is being developed over a four-phase process over a 12-month period that began in the Fall of 2016. We are currently in the second phase of the process, focusing on understanding existing conditions, gathering feedback and ideas, and exploring options to improve walking in the City. A significant component of this second phase of work has been to hear from residents and stakeholders to better understand the existing conditions for walking in the City today and what are some of the opportunities for making it a better place to walk. The information presented in this report comes directly from this second phase of work.

Based on the information collected in Phase 2, the project team will begin to develop and create some initial recommendations for the Pedestrian Plan and report back this information for public input in the Summer of 2017. The Walk CNV process will be completed in Fall 2017 with the development of the final Plan.

FIGURE 1 - WALK CNV PROCESS TIMELINE



Public Engagement

The second phase of the Walk CNV process involved gathering feedback and ideas from residents and stakeholders. The feedback and ideas received are presented throughout this report and will be incorporated into the final recommendations and priorities presented in the Pedestrian Plan. Through this phase of work, we have interacted with hundreds of residents through the following engagement activities:

Pop-Up Engagement: The Walk CNV project team set-up pop-up tents at two locations (Lonsdale Quay and Civic Plaza) on two separate occasions. These locations were selected because of the high foot traffic and a diversity of residents. The pop-ups were used to spread awareness, encourage people to complete the online survey, and provide an opportunity to have direct conversations. During the pop-up engagement information about the project was handed out to approximately 400 residents and stakeholders.

Interactive Survey: An interactive survey was available online and through hardcopy for all residents to complete between January 25, 2017 and March 6, 2017. In total, 365 people completed the survey.

Walkabout Series: Three community walkabouts were completed over two Saturdays in March 2017. The walkabouts occurred in three neighbourhoods of the City and provided attendees an opportunity to walk with the project team and explore the challenges and opportunities for walking in North Vancouver. Approximately 18 people participated in the walkabouts.

Committee and Stakeholder Meetings: Several City Advisory Committees including the Integrated Transportation Committee (ITC), the North Shore Advisory Committee on Disability Issues (ACDI), and the Children and Youth Committee (CSYAT) have been engaged with as Walk CNV has been developed. Additionally, a Steering Committee made up of City staff from various departments was established to assist the development of Walk CNV.

Targeted Engagement: The City has also engaged with targeted groups of residents and stakeholders including youth and school aged children as well as seniors. This includes meetings with the Lions View Seniors Planning Society and students at Sutherland Secondary School.

Online Engagement: Several online tools were used to enhance the public engagement opportunities, allowing residents to participate at their convenience. A project website, email, Facebook and Twitter were also used as other components of the online engagement strategy.

PART TWO

SETTING THE CONTEXT

SETTING THE CONTEXT

2.1 BENEFITS OF WALKING

Walking is the most common form of transportation, as every trip begins and ends by foot. The City recognizes that an increase in trips made by walking will result in a more balanced transportation system that encourages healthy and active living, creates a more livable community, and results in a cost-effective and efficient solution in terms of the community's infrastructure investments. The City already has an extensive network of sidewalks and off-street shared use trails and pathways and by making future improvements, people of all ages and abilities will be provided with safe and convenient facilities for walking. The benefits to supporting an active walking culture include economic, health, environmental, safety and societal.

Economic Benefits

Promoting walking can contribute to the development of a healthy and diverse local economy. Walking supportive design can encourage residents to take walking trips to local businesses, instead of driving to services further away in adjacent communities. A walk-friendly atmosphere can attract more visitors to neighbourhoods, who will in turn be patrons of local services and amenities. Further, having options that support residents to walk in their neighbourhoods can decrease congestion and increase attractiveness of the area for both locals and visitors. Decreased congestion also helps make the movement of goods and transit more efficient. In addition, individuals engaging in more walking can see real benefits from less financial resources dedicated to automobile use. Specific economic benefits of walking include:

- ***Investing in walking infrastructure and programs can stimulate the local economy by generating tourism revenue, supporting local business, and increasing property values.*** A walkable community can encourage more livable and enjoyable places to be, with a stronger sense of place and freedom of mobility. This can attract businesses, residents and visitors (and spending dollars) to certain areas.
- ***Walking can reduce transportation costs for a household.*** Transportation costs are second only to housing costs as a percentage of household spending in North America[1]. Spending on transportation is disproportionately high among low and moderate-income families and walking presents an affordable option. Using walking for transportation reduces household transportation spending, and in some cases, active transportation and transit use can eliminate the need for an extra vehicle or can reduce the need for a vehicle at all, especially if car share is an available option. Various studies have examined the 'operating costs' of active transportation, in relation to other more cost-intensive modes such as driving. For example, a study by the Sierra Club estimates that walking costs approximately $70 per year. The Canadian Automobile Association estimates that driving costs owners about $9,000 annually in operating costs (Note: costs for walking can be attributed to walking shoes/clothing, while car ownership costs can include fuel, maintenance, and insurance). While these numbers may vary city to city, and depends on personal use, there is clear evidence that there are great personal savings available through engaging in more walking activity. These cost savings can result in people having larger disposable incomes, and some studies have found that people walking are "competitive consumers" who tend to spend their money more locally than motorists, while shopping with greater frequency[2].

Health Benefits

Research and scientific evidence has shown the importance of physical activity on an individuals' health. Regular physical activity, even at a moderate intensity, reduces the risk of early death and numerous chronic diseases. Physical activity has been shown to improve psychological well-being, and prevents weight gain and obesity[3]. While the benefits of walking on health have been well documented, low levels of physical activity in children and adults are still prevalent throughout the world, including Canada. The World Health Organization has identified physical inactivity as

[1] *http://www.fhwa.dot.gov/livability/fact_sheets/transandhousing.cfm*
[2] *Clifton, K., et al. (2012). Consumer Behavior and Travel Choices: A Focus on Cyclists and Pedestrians. https://nacto.org/wp-content/uploads/2015/04/consumer_behavior_and_travel_choices_clifton.pdf*
[3] *TransLink. (July 4, 2013). Media Report. Walking Cycling and Transit Investments Lead to Healthier People. http://www.translink.ca/en/About-Us/Media/2013/July/Walking-cycling-and-transit-investments-lead-to-healthier-people.aspx*

one of the main leading risk factors for global mortality, and as an underlying factor for many chronic diseases[4]. Walking is the most affordable and accessible way to add exercise to a daily routine. Walking is an active form of transportation that promotes healthy and active living. There are many health benefits associated with walking including[5]:

- Obesity prevention;
- Reduced risk of cardiovascular disease, Type 2 Diabetes and metabolic syndrome and some cancers;
- Improved strength and bone density, leading to an enhanced ability to do daily activities and avoid falls;
- Improved mental health and mood; and
- Increased chance of living longer.

Physical activity is closely tied to physical and mental health with our aging population. Research has shown that both non-communicable diseases (cancer, cardiovascular disease and diabetes) and cognitive impairment diseases (Alzheimer's, dementia) show positive impacts by long-term physical activity. These diseases are a major concern for aging populations and typically challenging to treat due to the long duration over which an individual's condition deteriorates. Seniors often see the largest impacts from walking but are also greatly impacted by the walking infrastructure. A continuous sidewalk network that is well-lit will allow older members of the community to access services and social networks that are essential for maintaining both physical and mental health[6]. The City has been working with other North Shore communities to raise awareness and develop a community action plan so that people with dementia can experience a better quality of life and live as independently as possible in the north shore.

Physical activity is also a concern for children. The non-profit organization Participaction gave Canadian Children a score of D- for overall physical activity. The lack of physical activity has a major impact on the physical and mental health of our children as well as academic and motor skill development. Vancouver Coastal Health suggests children need physical activity throughout the day in the form of both organized sports and activities and a stronger use of active transportation. This is consistent with the goal of North Vancouver's Safe and Active Schools program to encourage students to use active modes to travel to and from school.

Through the My Health My Community, initiative, which is a partnership between the health authorities operating in Metro Vancouver, a survey of residents of Metro Vancouver was conducted to understand how health is affected by lifestyle choices, community involvement and neighbourhood characteristics. The survey was conducted between June 2013 and July 2014, over 28,000 residents 18 years and older participated in the survey. It is unclear how many respondents were from the City of North Vancouver. Below are some of the results specific to the City:

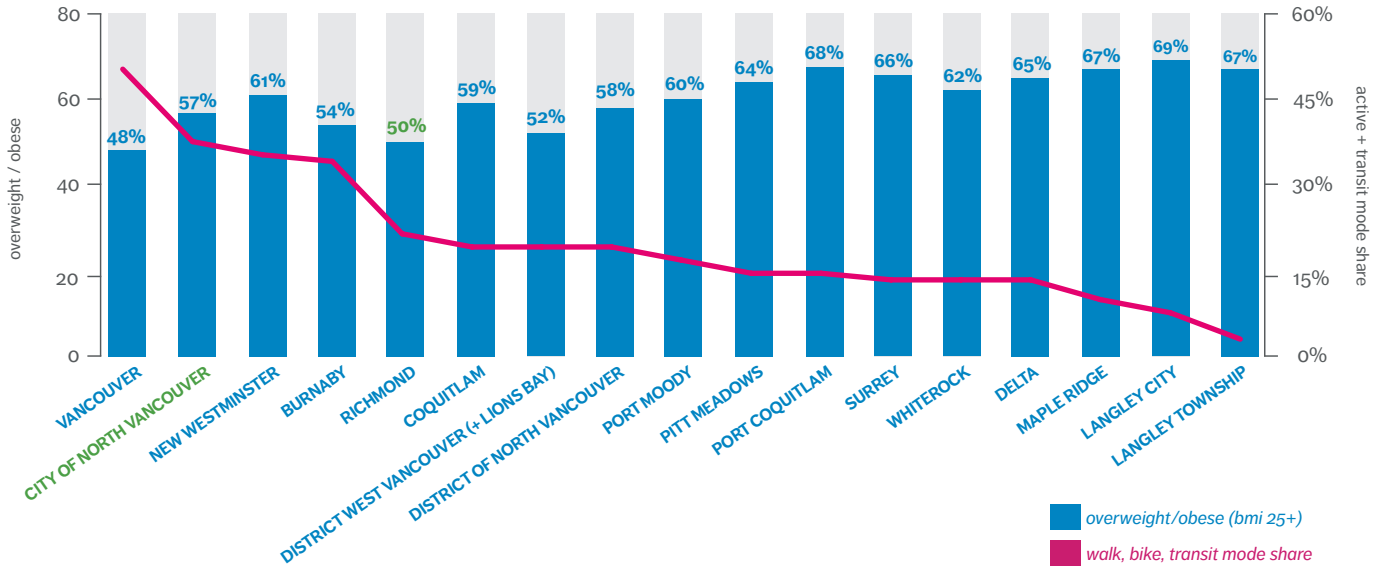
- **72%** of respondents reported walking more than 30 minutes or more a day in total.
- **39%** of respondents reported walking for recreation 30 minutes or more a day.
- **28%** of respondents reported walking for utilitarian purposes 30 minutes or more a day.
- **23.7%** of North Vancouver Respondents said that traffic in the area makes walking difficult.

Figure 2 presents the findings of the My Health My Community survey, looking specifically at the percentage of municipal residents that are considered overweight or obese with a Body Mass Index (BMI) greater than 25, and the combined mode share of walking, cycling and transit based on 2011 National Household Survey. Based on these results, it appears that municipalities with lower walking, cycling, and transit mode shares tend to have a higher percentage of residents with a BMI greater than 25. Some key

[4] *Badland, H.,et al. (2014). The development of policy-relevant transport indicators to monitor health behaviours and outcomes. Journal of Transport & Health.*
[5] *Transportation Research Board Institute of Medicine of the National Academies. (2005). Does the Built Environment Influence Physical Activity: Examining the Evidence?" Transportation Research Board Special Report 282*
[6] *Transportation and Health in Metro Vancouver. my Health my Community. www.myhealthmycommunity.org*

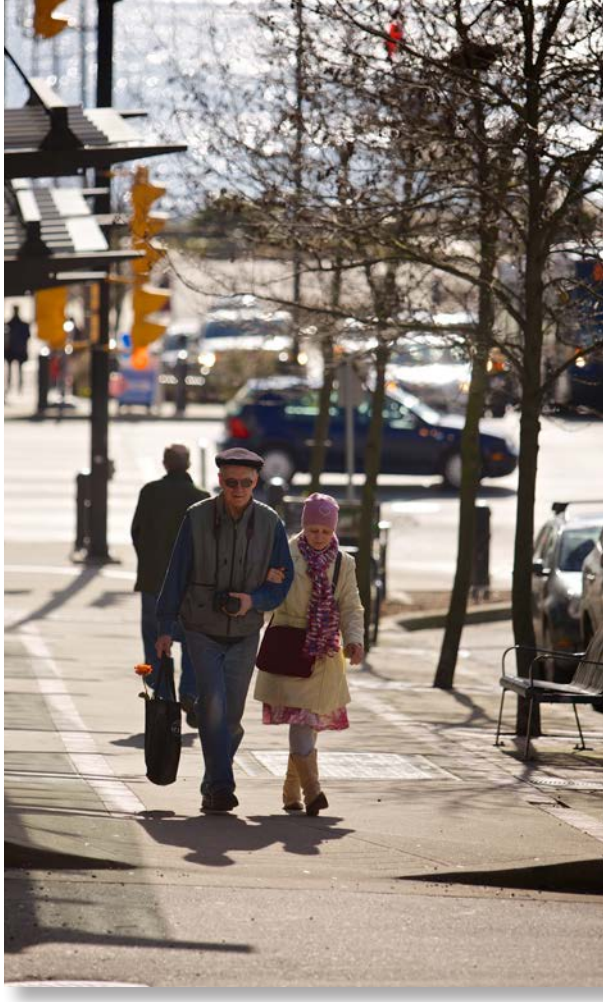
highlights from reviewing the survey results are that the City of North Vancouver is already doing quite well within the Metro Vancouver context with the 5th highest walk, bike and transit mode share. It is also doing well in terms of health indicators, with the second lowest percentage of residents with a BMI greater than 25 within Metro Vancouver.

FIGURE 2 - PERCENTAGE RESIDENTS OVERWEIGHT / OBESE AND WALK, BIKE & TRANSIT MODE SHARE (MY HEALTH MY COMMUNITY[7] / 2011 NATIONAL HOUSEHOLD SURVEY[8])



Environmental Benefits

Walking has many environmental benefits such as, reducing the number of motorized vehicle trips, traffic congestion, and air pollution. Walking helps to reduce GHG emissions by limiting the use of personal automobiles. Promoting walking can help in efforts towards climate change mitigation, while supporting the protection and improvement of North Vancouver's natural environment. Walking has a low environmental impact, as the act of walking generates virtually no GHG emissions or air pollution, minimal noise and light pollution. According to iCANwalk's Canadian Vehicle Survey, the average car emits 4 tonnes of carbon dioxide in a year and vehicles



[7] *My Health My Community study- https://www.myhealthmycommunity.org/Portals/0/Documents/Community%20Profiles/CityofNorthVan_final.pdf*
[8] *2011 National Household Survey*

contribute to about 30% of total greenhouse gas emissions in Canada. Research suggests Canada would save about 3.8 million tonnes of greenhouse gas emissions each year if every Canadian left their car at home just one day a week. This is the equivalent of talking about 800,000 cars off the road[7].

The table below (**Table 1**), illustrates the C02 emissions produced from a 1.6 km trip completed twice a day, five days a week for a year. This calculation what made based on the assumption that 62% of trips are made by motorized automobile, this number is based on the 2011 National Household Survey travel to work/school data. The table shows how the total emissions would be reduced based on a shift from motorized automobile to walking for this type of trip over a year. For example, a shift from 11% of trips made by walking to 35% walking trips, would result in a reduction of nearly 5,000 tonnes of C02 emissions per year.

TABLE 1 - CO2 EMISSION PER YEAR BASED ON A SHIFT IN MODE SHARE (20-MINUTE WALKING TRIP TWICE A DAY)

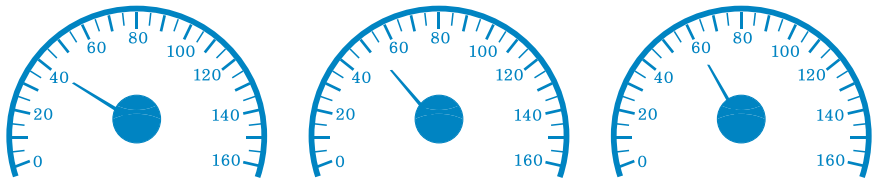
MODE OF POPULATION TO SHIFT TO WALKING	TOTAL	EMISSIONS
100%	0	T CO2 e / year
35%	3833	T CO2 e / year
25%	5250	T CO2 e / year
15%	6667	T CO2 e / year
0%*	8792	T CO2 e / year

** Represents current 62% dependent on driving 5 days a week*

Safety Benefits

Walkable environments contribute to a safer transportation system by making walking more visible resulting in reduced risk of collisions. Streets designed for slower vehicle speeds feel safer for people walking. Studies have shown that slower motor vehicle speeds exponentially increase survival rates for people walking involved in collisions with vehicles. The graphic presented below comes from research presented by the City of Edmonton. It has also been found that as walking rates increase, rates of collisions with motor vehicles decrease. This is known as the "safety-in-numbers" principle[8].

FIGURE 3 - SPEED LIMITS VS LIKELIHOOD OF FATALITY



Societal Benefits

High levels of walking in a community is viewed as a good indicator of sustainability and liveability. The 'millennial' generation is a generation where car ownership is declining, based on recent studies. Peak vehicle ownership coincided with the baby boomers' peak driving years, significant growth in rising wages, low fuel prices, cheap credit and suburbanization[9]. Building safe and comfortable walking facilities can provide affordable and accessible transportation choices, transportation alternatives for youth and seniors who may not have access to an automobile, and encourages social interaction that builds strong communities. Walking creates opportunities for face-to-face interactions with members of the community and builds trust, respect, understanding and a sense of co-operation.

[7] *Settlement.org. What are the environmental benefits of walking and cycling? http://settlement.org/ontario/housing/living-in-ontario/green-living/what-are-the-environmental-benefits-of-walking-and-cycling/*
[8] *OCED (2013). Cycling Health and Safety. OECD Publishing http://dx.doi.org/10.1787/9789282105955-en*
[9] *Active Transportation in Canada – a resource and planning guide - http://www.fcm.ca/Documents/tools/GMF/Transport_Canada/ActiveTranspoGuide_EN.pdf*

2.2 COMMUNITY PROFILE

Land Use

The City's location provides residents with numerous amenities, including beautiful parks and trails, a scenic waterfront with views of Burrard Inlet, and abundant recreational activities. The City is home to employment and tourist destinations as well as the Lonsdale Regional City Centre. The Lonsdale Regional City Centre is identified in the Regional Growth Strategy as the "downtown" for the entire North Shore. The City's OCP supports the role of Lonsdale as a Regional Centre and has focused on locating high trip-generating uses such as high density residential and commercial activity in the area. This type of land use is also conducive to encouraging walking trips. The OCP identifies additional residential and commercial capacity in Central Lonsdale and in Frequent Transit Development Areas (FTDAs) which are in the East 3rd Street area and the Marine Drive Area. Generally, the density of residential and commercial land use decreases as one moves farther east/west from Lonsdale Avenue, except where there are nodes of density near key transit corridors. **Figure 4** shows may important destinations within the City of North Vancouver and destinations within the District of North Vancouver that are within a five-minute walk of the City. These destinations include:

- **Commercial areas:** this includes a variety of uses such as retail outlets, office space and grocery stores to name only a few.
- **Comprehensive development areas:** this includes site specific development areas that are planned in an integrated manner and can include some form of commercial use.
- **Parks**
- **Schools and other institutional facilities**
- **Other destinations:** this includes the hospital, municipal hall, library and recreation centres

A Compact Municipality

The City has a compact land area of approximately 12 square kilometres, which results in a population density of approximately 4,465 people per square kilometres. This makes it currently one of the highest density municipalities in Metro Vancouver behind only the cities of Vancouver and New Westminster. Compact communities are ideally suited for active forms of transportation, including walking, as a variety of destinations are often within a shorter distance. The OCP identifies the ongoing pursuit of a sustainable compact and complete community with a mix of housing with a balance of jobs, transportation options and recreational amenities.

Neighbourhoods

The City is made up of eight distinct neighbourhoods:

- Westview
- Tempe
- Mahon
- Central Lonsdale
- Grand Boulevard
- Marine-Hamilton
- Lower Lonsdale
- Moodyville

These neighbourhoods range in land use, housing types, and commercial activity. Within higher density neighbourhoods such as Central Lonsdale and Lower Lonsdale, sidewalks tend to be wider and pedestrian amenities are more abundant. This is the case along streets such as Lonsdale Avenue and Esplanade Avenue. Other important walking facilities are found in neighbourhoods throughout the City, many City parks are in these lower-density neighbourhoods, primarily along creeks and waterways, which are abutted by environmentally sensitive areas. The OCP and Long-Term Transportation Plan note the importance of increasing sustainable means of transportation, optimizing the existing road network, and supporting traffic calming initiatives to contribute to the overall safety and livability of the City's neighbourhoods.

FIGURE 4 - COMMUNITY CONTEXT

Destinations

The City has several major community recreation centres that provide accessible, affordable, and inclusive recreation programming. Their service offerings include sports and fitness, arts and cultural activities, multiple special events and community education courses. These facilities provide highly valued opportunities and supports for physical activity, healthy lifestyles and social interaction. Improved transportation options to and from these community centres are a natural extension of the City's community and recreational goals for its residents.

Recreation Facilities:

- John Braithwaite Community Centre
- Harry Jerome Recreational Complex
- Memorial Community Centre
- Mickey McDougall Community Centre
- North Shore Neighbourhood House

Municipal or Assembly:

- Municipal Hall
- North Vancouver City Library
- Centennial Theatre
- BCIT Marine Campus
- Lions Gate Hospital
- Schools, parks, green spaces

Shopping:

- Lonsdale Quay Market
- Capilano Mall
- Park and Tilford
- Westview Shopping Centre
- The Shipyards

Topography

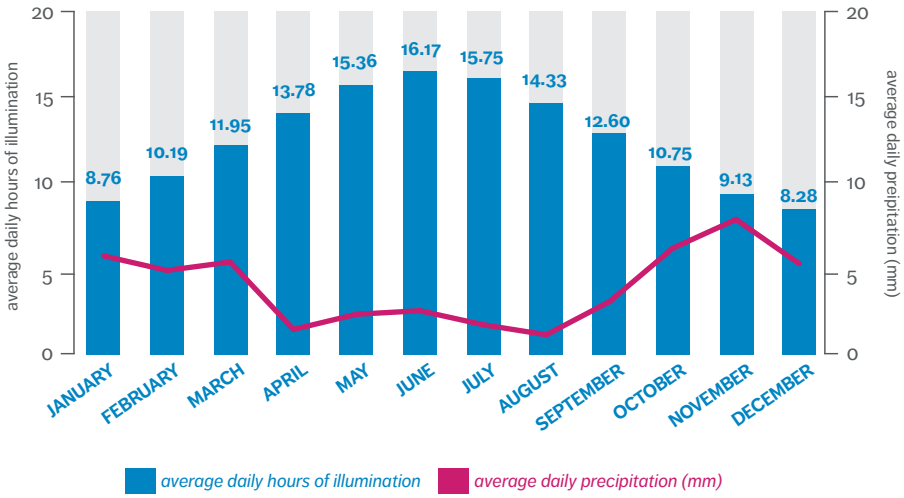
The City is characterized by its unique hillside topography. The rise in elevation is the steepest in Lower Lonsdale, north of 18th Street (east of Lonsdale Avenue) and in some of the City's natural areas (**Figure 6**).

The topography can make walking challenging for some members of the community such as individuals with mobility challenges, older residents, and some visitors are likely to find walking steep hills more difficult[11]. As the impact of topography varies by individual it is difficult to say at what degree slope becomes an issue. The topography also allows for stunning views and undeveloped natural areas.

Weather

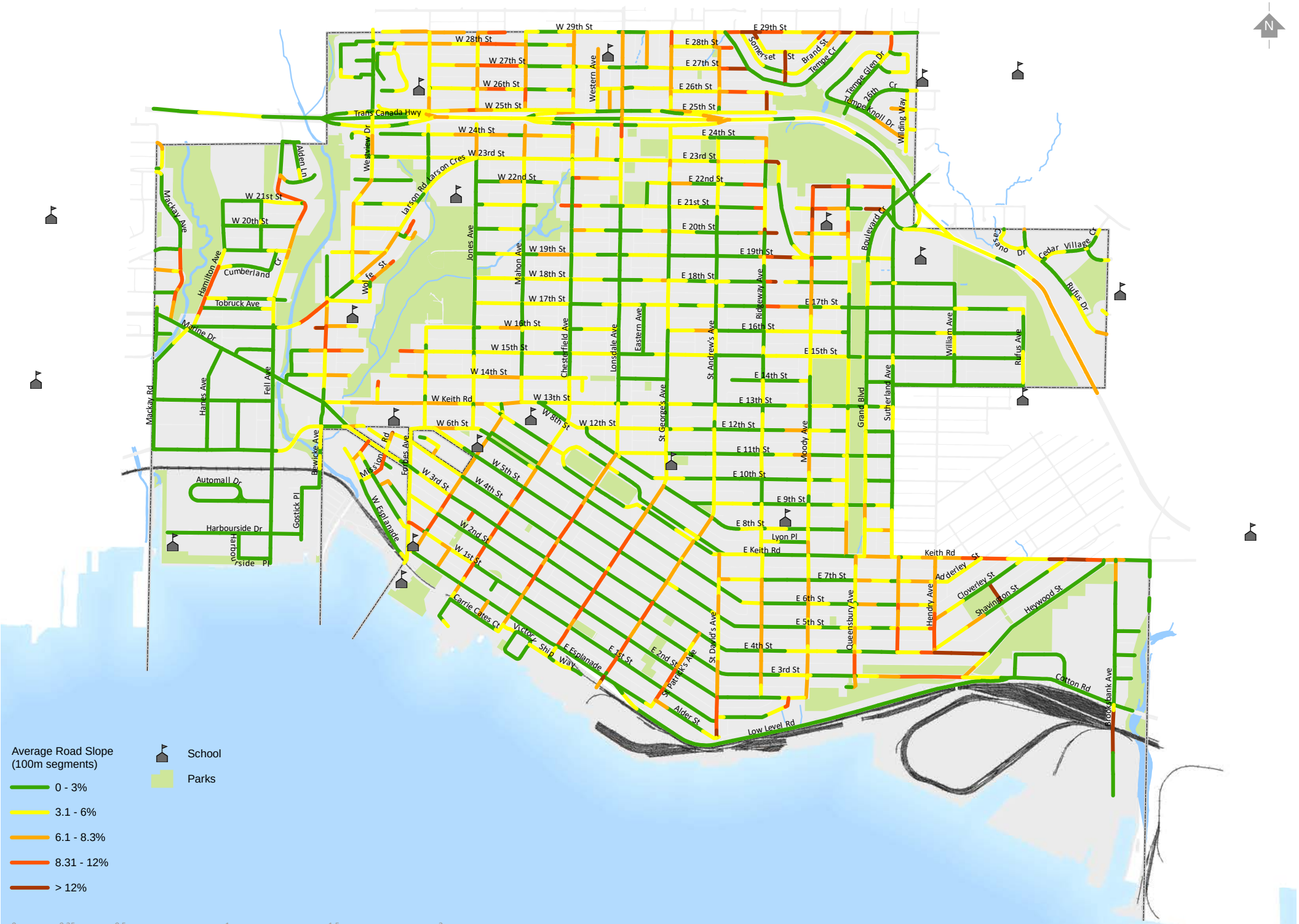
Living on the west coast means that residents of Metro Vancouver experience cool and rainy weather many months of the year. As seen in **Figure 5** below, during the months where the average daily hours of illumination are the lowest, the daily average level of precipitation are the highest. These are also the months with the highest percentage of report ICBC collisions as discussed in more detail below and seen in **Figure 12**.

FIGURE 5 - AVERAGE DAILY HOURS OF ILLUMINATION VS. AVERAGE DAILY PRECIPITATION IN METRO VANCOUVER (NATIONAL CLIMATE DATA & NATIONAL RESEARCH COUNCIL CANADA 2016)



[11] *Rodriguez, D. A. & Joo, J. (2004). The Relationship Between Non-Motorized Mode Choice and the Local Physical Environment. Transportation Research Part D: Transport and Environment, 9, 151-173*

FIGURE 6 - AVERAGE SLOPE OF ROADS IN THE CITY OF NORTH VANCOUVER



2.3 DEMOGRAPHICS

Demographics play a significant role in influencing transportation choices and travel patterns. This section summarizes key demographic characteristics that will be used as a basis to inform the direction of Walk CNV.

A Growing City

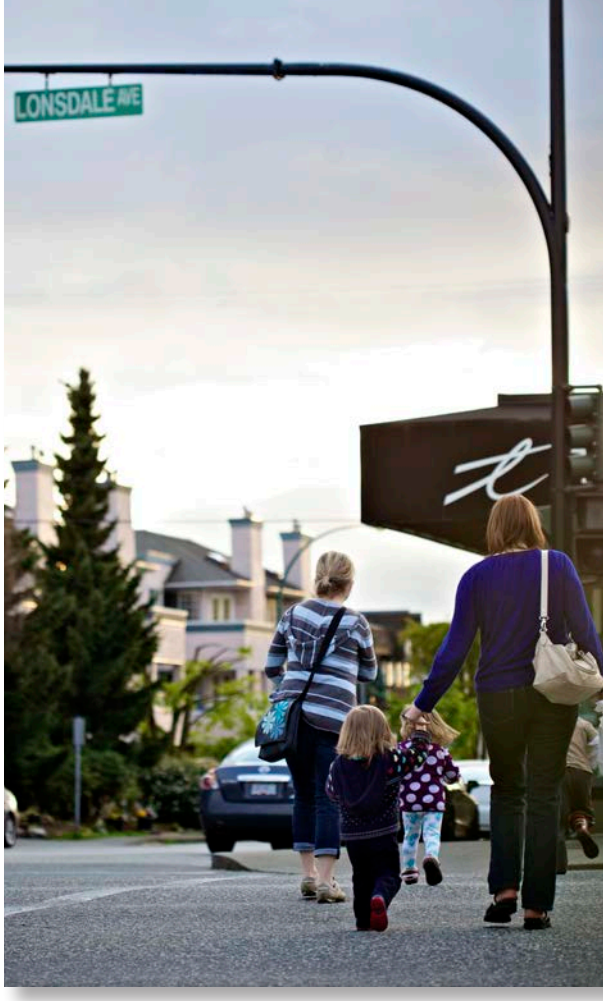
As outlined in the OCP, much of the land in the City has already been developed and the City is not seeing as large a population growth when compared to some other Metro Vancouver municipalities. However, as redevelopment occurs and densification continues, the City is seeing steady growth in both population and employment. It is projected that growth will occur at approximately 1.3% per year through to 2031 and decreasing to 1% between 2031 to 2041 as shown in **Table 2**. It is important to note that over the past few years, the City has seen population growth that is greater than anticipated as can be seen in the table.

TABLE 2 - CNV REGIONAL GROWTH STRATEGY PROJECTIONS
(CNV OCP / STATISTICS CANADA 2016 CENSUS / METRO VANCOUVER 2040: SHARING OUR FUTURE, METRO VANCOUVER 2011)

	2011 (CENSUS)	2016 (CENSUS)	2021 (PROJECTION)	2031 (PROJECTION)	2041 (PROJECTION)
POPULATION	48,168	52,898	56,000	62,000	68,000
DWELLING UNITS	24,206	26,426	25,600	28,000	30,200
EMPLOYMENT	30,422	34,630	34,000	37,000	40,000

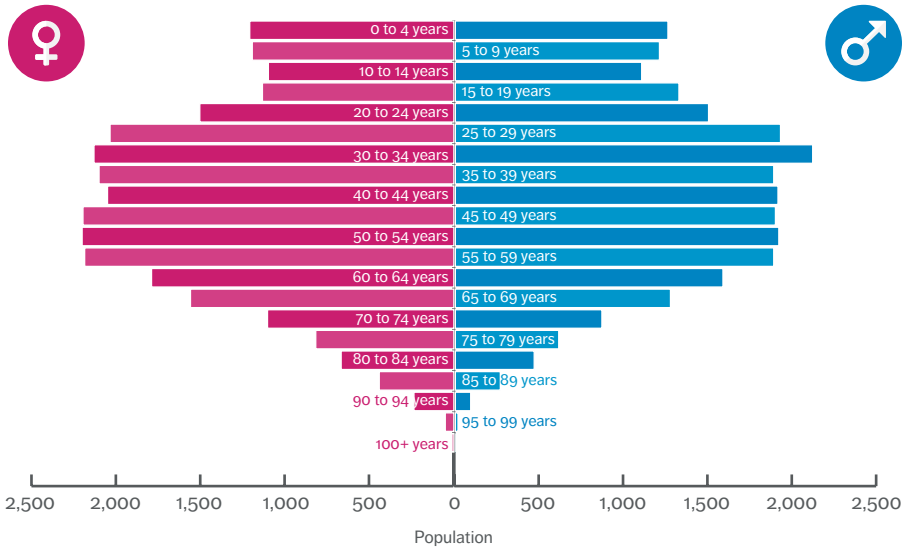
Age of Population

Based on Statistics Canada data (2016), roughly 39% of the City's population is under the age of 35 (**Figure 7**). People in this age group tend to rely more on transit, walking, and cycling to access schools and services. Studies suggest those born between 1981 and 2001 – are a generation where car ownership is declining and higher rates of walking, cycling and transit. Residents over 65 also make up a significant segment of the population, accounting for approximately 16% of the population. The needs and travel patterns of older residents are unique and a range of mobility options is important to ensure that an aging population can participate in their communities at all stages of their lives, regardless of ability. The City's OCP noted that, City residents under 25 years old have the lowest automobile mode share (58 %), while seniors (65+) have the highest at 74%[12].



[12] *2014 City of North Vancouver Official Community Plan*

FIGURE 7 - CITY OF NORTH VANCOUVER POPULATION BY AGE & GENDER (STATISTICS CANADA 2016)



2.4 POLICY CONTEXT

Walk CNV is closely linked to, and will be informed by, many of the City's key planning documents that contain pedestrian-related policies, plans, and goals. Many of these documents include broader aspirations for growth and transportation. These documents also provide specific directions on how walking and other forms of active transportation can become an integral part of the City's transportation system. Walk CNV can reinforce and help further the goals and policies found in other documents.

The following is an overview of five overarching municipal plans and programs that will play a significant role in informing the development of Walk CNV.

Official Community Plan (2014)

The current OCP was developed in 2014 to guide the City to 2031 and beyond with a key focus on creating a Sustainable City. The plan includes goals and objectives specific to walking and transportation. Three transportation goals were established as well as a list of objectives that will help to accomplish each goal.

There were also a number goals from other sections beyond transportation that have an influence on Walk CNV, some of them include:

- Prioritize walking, cycling, transit and goods movement over single-occupancy vehicles
- Integrate Land Use and Transportation Planning to reduce the need for car travel.
- Support a safe, accessible, resilient, and affordable transportation system.
- Enhance the distinctive sense of place and livability of the City though high-quality design and maintenance of urban form.
- Enhance well-being and quality of life for all community members.
- Support the independence and well-being of older City residents.
- Provide a variety of public spaces for community engagement and stewardship.

The goals established prioritize building a City that relies heavily on walking to reduce traffic, emission of greenhouse gases and connect the City for all residents. The plan also notes that the relatively small geographic area puts the City in a strong position to continue to increase the active transportation mode share with careful planning and implementation.

Long-Term Transportation Plan (2008)

The Long-Term Transportation Plan was created in 2008 to serve as the "road map" to allow the City to achieve many of the transportation goals and

objectives established in the 2002 OCP, now superseded by the 2014 OCP. The Plan outlines the city's transportation goals, policies and infrastructure investment priorities for all modes of transportation, with a strong focus on prioritizing sustainable modes such as walking, cycling and transit.

The pedestrian component of the Plan includes three sections and focuses on connecting areas of the City and filling in gaps within the walking network. Many of the walking specific recommendations from the Long-Term Transportation Plan will be reviewed through Walk CNV including reviewing and updating the priority pedestrian areas and infrastructure improvements.

Sidewalk Assessment and Implementation Program (Initiated 2009)

This report was created to ensure the best approach was taken in the City for enhancing facilities to support walking as a primary mode of transportation. This Program integrates with the Transportation Plan and OCP of the time and identifies walking facility gaps and opportunities. Using the results from the assessment, an implementation plan was created that categorizes sidewalk improvements into high, moderate, and low categories based on six criteria such as distance from transit, proximity to schools, and probability of conflict. This assessment and implementation program will be reviewed and updated as part of the Walk CNV process. Since its development, this document has been updated annually.

Network Screening Study for Road Safety Strategy (2017)

The City recently completed a Network Screening Study to aid in the development of a Road Safety Strategy (RSS). The main objective of Network Screening Study is to update the list of high risk locations previously identified in the 2005 Network Screening Program that can benefit from road safety improvements to meet the needs of all road users, while complying with Vision Zero, particularly as it relates to vulnerable road users. Five years of ICBC claim data and RCMP Traffic Accident System (TAS) records were reviewed as part of the Network Screening Study, and a ranking was developed based on four safety performance measures. This study also reviews collisions involving pedestrians and results of the work are included in this Discussion Paper.

Parks and Greenways Strategic Plan (2002)

The Parks and Greenways Strategic Plan was developed in 2002 to establish key priorities surrounding the parks and greenways that are an integral part of North Vancouver. Many of the priorities of the Plan adopted 16 years ago still align with the current vision of the 2014 OCP. The plan establishes a proposed system of trails and greenways to connect the key parks and destinations around the city.

Other City plans and initiatives that will inform Walk CNV include:

- Housing Action Plan (2016)
- Traffic calming policies and various plans (2001 – 2016)
- CNV4ME Child, youth + Family Friendly Strategy (2015)
- Safe & Active School Travel Program (since 2013)
- North Shore Area Transit Plan (2012)
- Esplanade, Marine Drive, and Lonsdale Streetscape Design Guidelines (2005, 2010, and 2011)
- Social Plan (1998)
- Living City
- Dementia Friendly City
- Subdivision Development Control Bylaw
- Policy for sidewalk installation (2010)

PART THREE

WALKING IN THE CITY TODAY

WALKING IN THE CITY TODAY

3.1 EXISTING CONDITIONS FOR WALKING IN CNV

As noted, walking is the most common form of transportation, as every trip begins and ends by foot. When a suitable network exists within a community – such as having a complete and connected sidewalk network, safe crossings, and major destination close to where people live – walking can be a practical and attractive form of transportation for almost all short trips throughout the year. The City has an extensive network of walking facilities including sidewalks, trails and pathways. The City has approximately 135 km of roads, of which over 112 km have sidewalks on one or both sides of the street. There are also over 30 km of designated Greenways and trails in the City of North Vancouver.

The City has made significant progress in expanding and improving the conditions for walking around the City, through new sidewalk and pathway infrastructure, the installation of new curb ramps, and inviting pedestrian areas which includes the installation of amenities such as public art, benches and landscaping. However, there are still opportunities to fill in network gaps and enhance the environment for walking to help encourage more trips by walking within the City. The following section summarize the existing conditions for walking in the City.

Greenways and Trails

There are two popular greenways within the City of North Vancouver, the Spirit Trail and the Green Necklace, as seen in **Figure 8**.

The Spirit Trail is an important regional walking connection. Once completed, the Spirit Trail will extend from Horseshoe Bay to Deep Cove connecting the three North Shore municipalities. The City has been working with the federal and provincial governments, other North Shore municipalities, First Nation communities and other agencies to create the Spirit Trail. The City's portion of the Spirit Trail is approximately 6.5 kilometres in length. In 2007, City Council set an ambitious goal of completing the City's portion of the trail within a 10-year timeframe, and are on target for 2017.

The City is also in the process of completing the Green Necklace, a 7 km greenway loop around Central Lonsdale, original proposed in the City's original 1907 town plan. The two previous phases of work were completed in 2005 and 2015 respectively. The completion of the Green Necklance is a phased multi-year project that is scheduled to be completed in 2018.

In addition to the greenways the City also has an extensive network of existing and proposed trails and pathways in parks such as Mahon Park, Mosquito Creek Park and Heywood Park (**Figure 8**). These trails help to provide connections between City neighbourhoods, and some provide connections to the District of North Vancouver.

Trails also increase an individual's access to parks, green spaces, and other places for recreation. They are often considered more of a destination than a transportation route. It is important to note, trails in the City are not always lit and may not be a reliable transportation connection after dark.

FIGURE 8 - EXISTING TRAIL NETWORK

Sidewalks

Sidewalks form the backbone of a well-connected walking network. There are approximately 200 km of sidewalks within the City. As shown in **Figure 9**, sidewalks are located on one or both sides of most of the streets within the City. A large percentage of arterial and collector roads (97%) have sidewalks on one or both sides of the street. In addition, 88% of local streets have sidewalks on one or both sides. Many of the streets without sidewalks are located north of 23rd Street or in the Marine-Hamilton neighbourhood. The City has committed to installing sidewalks on both sides of the street of all roads in the City where physically feasible. It is important to note that this map does not address the quality or width of existing sidewalks.

Sidewalk Requirements

The City's Subdivision and Development Control ByLaw, No. 8014 outlines the City's current practices regarding the installation of new sidewalks based on road classification and Pedestrian Area, as follows:

Major Arterials & Pedestrian Precinct Areas:

- Sidewalks on both sides of the street
- Minimum width 3.0 metres

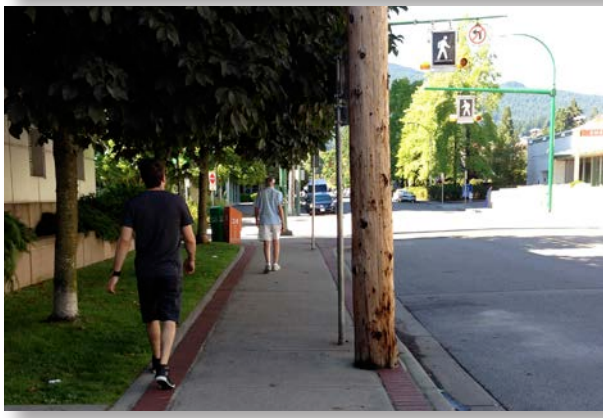
Collectors and Minor Arterials & Primary Pedestrian Generators:

- Sidewalks on both sides of the street
- Minimum width 2.0 metres
- Commercial frontage also considers opportunities for outdoor dining or space for the sale of goods.

Local Roads & Secondary and Low Pedestrian Generators

- Sidewalks on both sides of the street in around Secondary Pedestrian Generators and one side of the street in areas identified as Low Pedestrian Generators.
- 1.8 metre sidewalk if there is a boulevard between the edge of the sidewalk and the roadway.
- 2.0 metre sidewalk if the sidewalk is located adjacent to the roadway.

In ideal conditions, when installing new sidewalks, the City will provide a boulevard between the sidewalk and the roadway. There are times when this is not possible, such as when new sidewalks are being built on steep slopes or where there are mature street trees and space is a constraint. There are several types of sidewalks and walking facilities that offer a range of comfort in the City. These can range from pedestrian only off-street pathways and multi-use pathways which provide physical separation from moving vehicles. Other types of walking infrastructure include various widths of concrete sidewalks to unpaved pathways located at the side of the street.



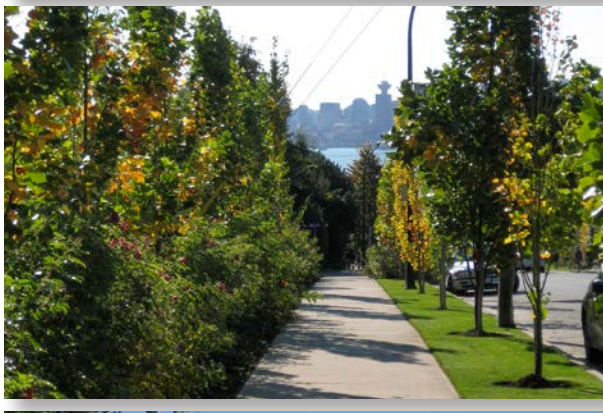
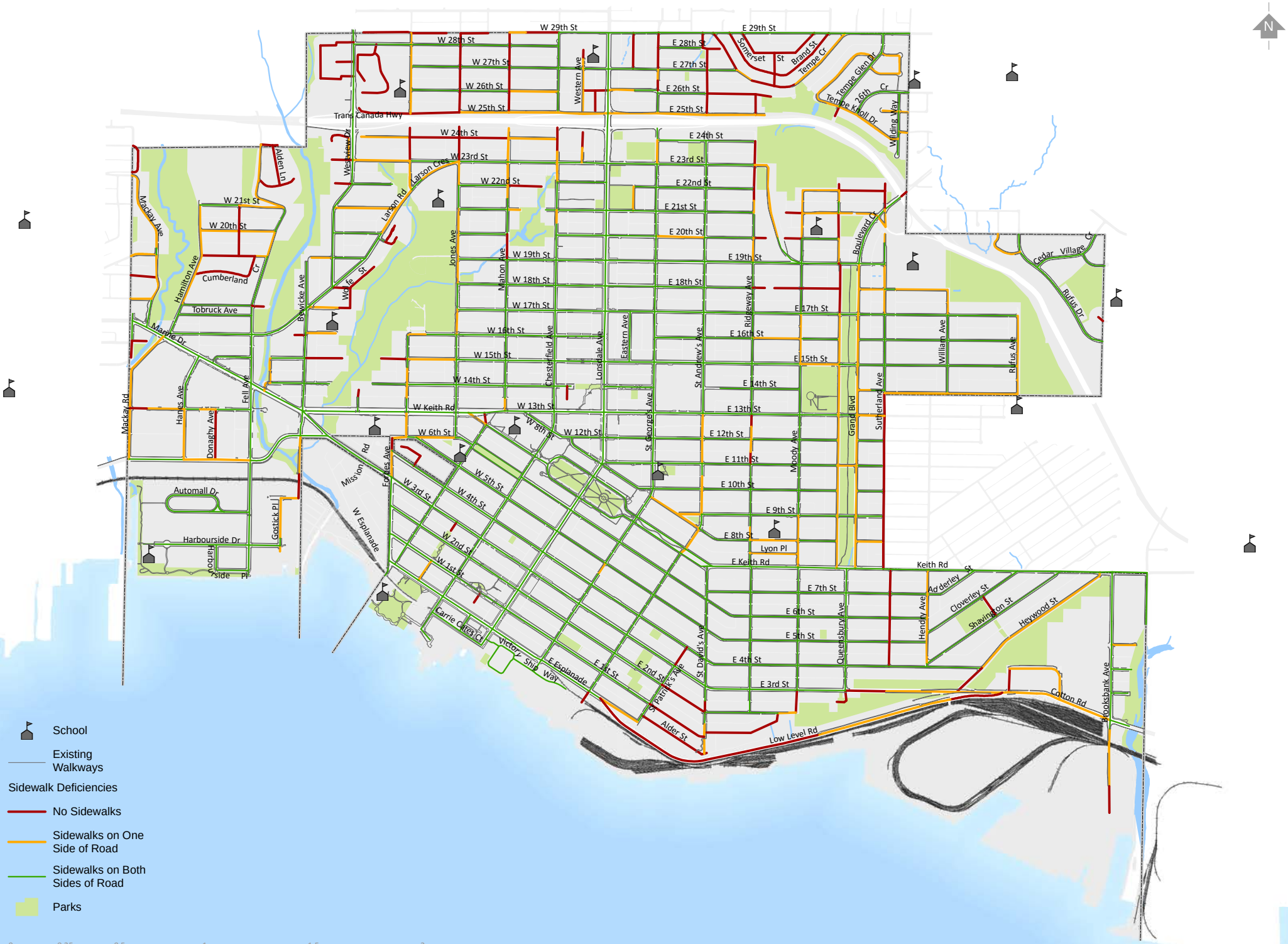


FIGURE 9 - EXISTING SIDEWALK NETWORK



Sidewalk Assessment

The City developed a Sidewalk Assessment and Implementation Program in 2009 to ensure the best approach was taken in the City to support walking as a primary mode of transportation through the installation of new infrastructure. The specific objectives of the assessment were to:

- Identify sidewalk needs;
- Establish priorities;
- Assign appropriate weighting;
- Prioritize improvement options;
- Development planning level cost estimates; and
- Ranked list of sidewalk projects.

Each project was given a high, moderate, or low priority ranking. Prioritization was based on several evaluation criteria, including severity, probability of conflict, access to transit, proximity to schools, pedestrian demand, and if it had been identified as a priority in other planning documents.

High priority projects were located along streets such as Mahon Avenue, Larson Crescent, and Moody Avenue, several which have been installed since the completion of this study. Moderate priority projects were found on Jones Avenue, and St. Andrews Avenue. Several of the moderate priority projects have also been completed. Lower priority projects were located on local streets including, several streets north of the Trans-Canada Highway, and streets in the Marine-Hamilton and Moodyville neighbourhood. Many of these projects have not been completed.

Crossings

Crossing treatments allow people walking to confidently and safely across busy streets and play an important role in creating facilities that are accessible for people of all abilities. Marked crosswalks are provided at several locations in the City, including both intersection and mid-block crossings. In addition, numerous locations in the City that have full or pedestrian signals and 8 locations with special crosswalks (**Figure 10**). There are also dedicated active transportation overpasses in the City (**Figure 10**).

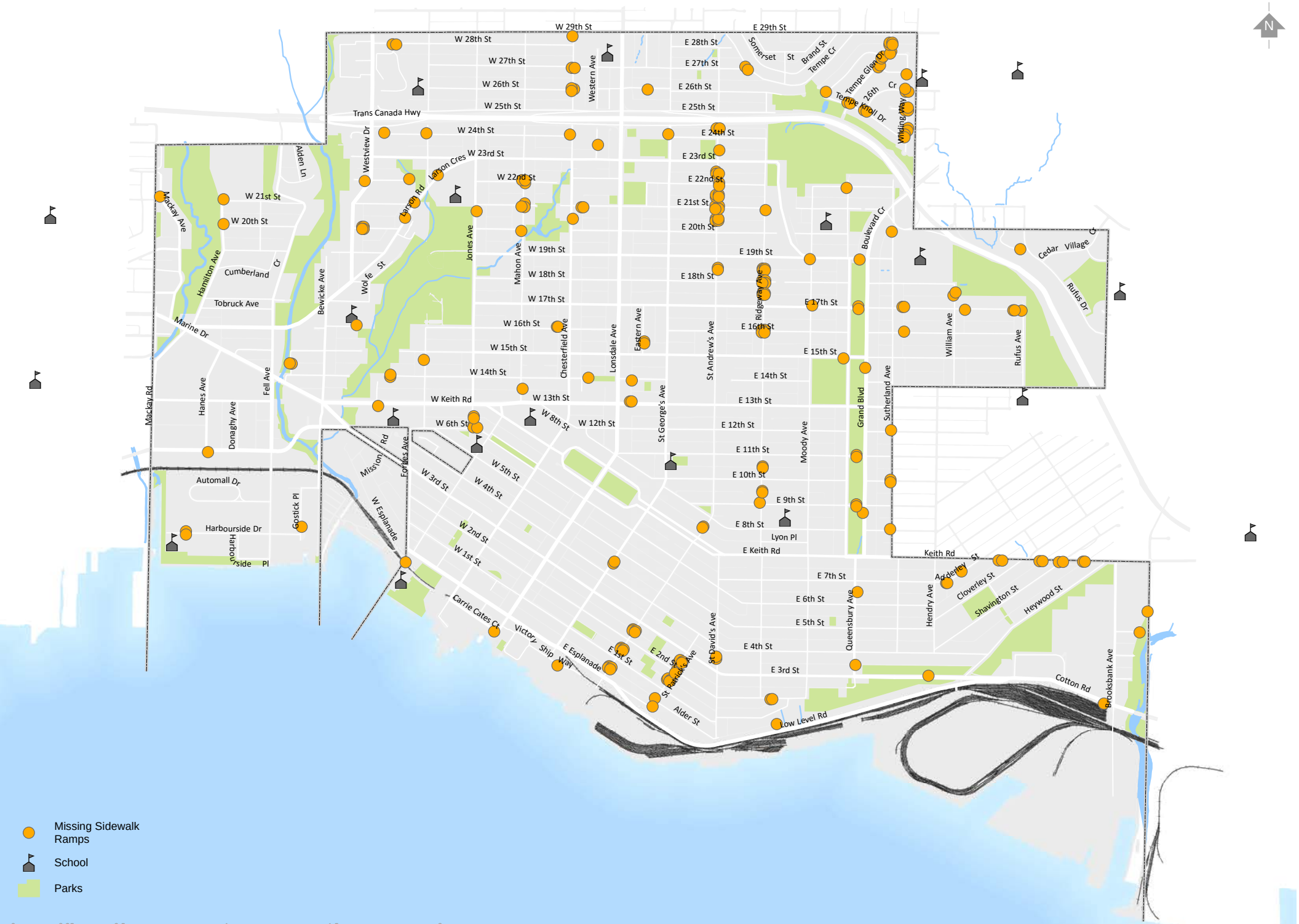
An important component of intersection crossings is accessibility. This includes the presence and location curb ramps. **Figure 11** identifies the intersections and mid-block crossings within the City that are missing sidewalk ramps. The City has identified 216 locations where sidewalk ramps are missing. It is important to note that this map does not take into consideration the quality of existing ramps.

All signalized intersections in the City have pedestrian activated pushbuttons and pedestrian countdown timers, except for the highway overpass crossings at Lonsdale Avenue and Westview which are under BC Ministry of Transportation and Infrastructure (MoTI) jurisdiction. Several signalized intersections along Lonsdale and Chesterfield and several other locations have audible signals. However, the majority of signals are not audible.

Accessible pedestrian signals (APS) provide non-visual indications to pedestrians who are blind, deaf, or partially sighted to assist them to independently cross a street. By indicating when a crossing interval begins, These non-visual signals can also provide directional guidance that can assist in the crossing of non-perpendicular intersections and multi-lane crossings. Accessible pedestrian signals provide audible and vibrotactile indications that confirm when it is legal to make a street crossing not only for pedestrians who are blind, or deafblind, or partially sighted, but also for many other users who may benefit from non-visual prompts, such as children, seniors, and people with cognitive disabilities. However, across Canada and even Metro Vancouver, the operations and features of APS is not standardized.

FIGURE 10 - TRAFFIC SIGNALS AND SPECIAL CROSSWALKS

FIGURE 11 - LOCATION OF MISSING SIDEWALK RAMPS

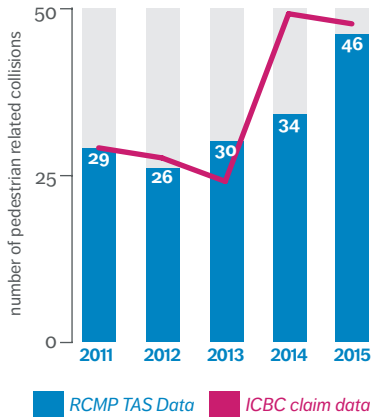


Safety

As noted above in the review of existing policies and studies that will have an impact on Walk CNV, the City has completed a Network Screening Study to aid in the development of a Road Safety Strategy (RSS). Five years of ICBC claim data and RCMP Traffic Accident System (TAS) records were reviewed as part of the Network Screening Study, and a ranking was developed based on four safety performance measures.

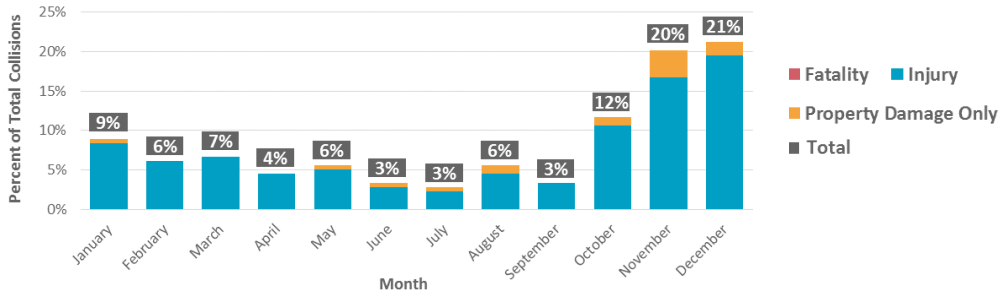
On average, the study found that there is an average of 33 (RCMP) and 35.8 (ICBC) reported pedestrian-related collisions per year from 2011 to 2015, respectively. 2015 had the highest number of pedestrian-related collisions (46) in the five-year study period according to RCMP TAS data. 2015 and 2014 had a high number of pedestrian-related collisions (48 to 49) in the same period according to ICBC claim data. Overall, the trend showed an increase of pedestrian-related collisions (**Figure 12**). This trend was seen for all types of collisions, not only collisions involving people walking. Indicating that, in general, the number of motor vehicle related collisions are increasing throughout the City.

FIGURE 12 - NUMBER OF COLLISIONS INVOLVING PEOPLE WALKING PER YEAR (RCMP AND ICBC COLLISION DATA)



When looking at collision distribution by month, it is found that the winter season (November to February) experienced the highest number of pedestrian-related collisions (53% to 56% of total collisions), according to the RCMP TAS and ICBC claim data. This may be related to the dark and rainy conditions that characterize these months.

FIGURE 13 - COLLISION DISTRIBUTION BY MONTH WITH SEVERITY (ICBC CLAIM DATA)



Amenities

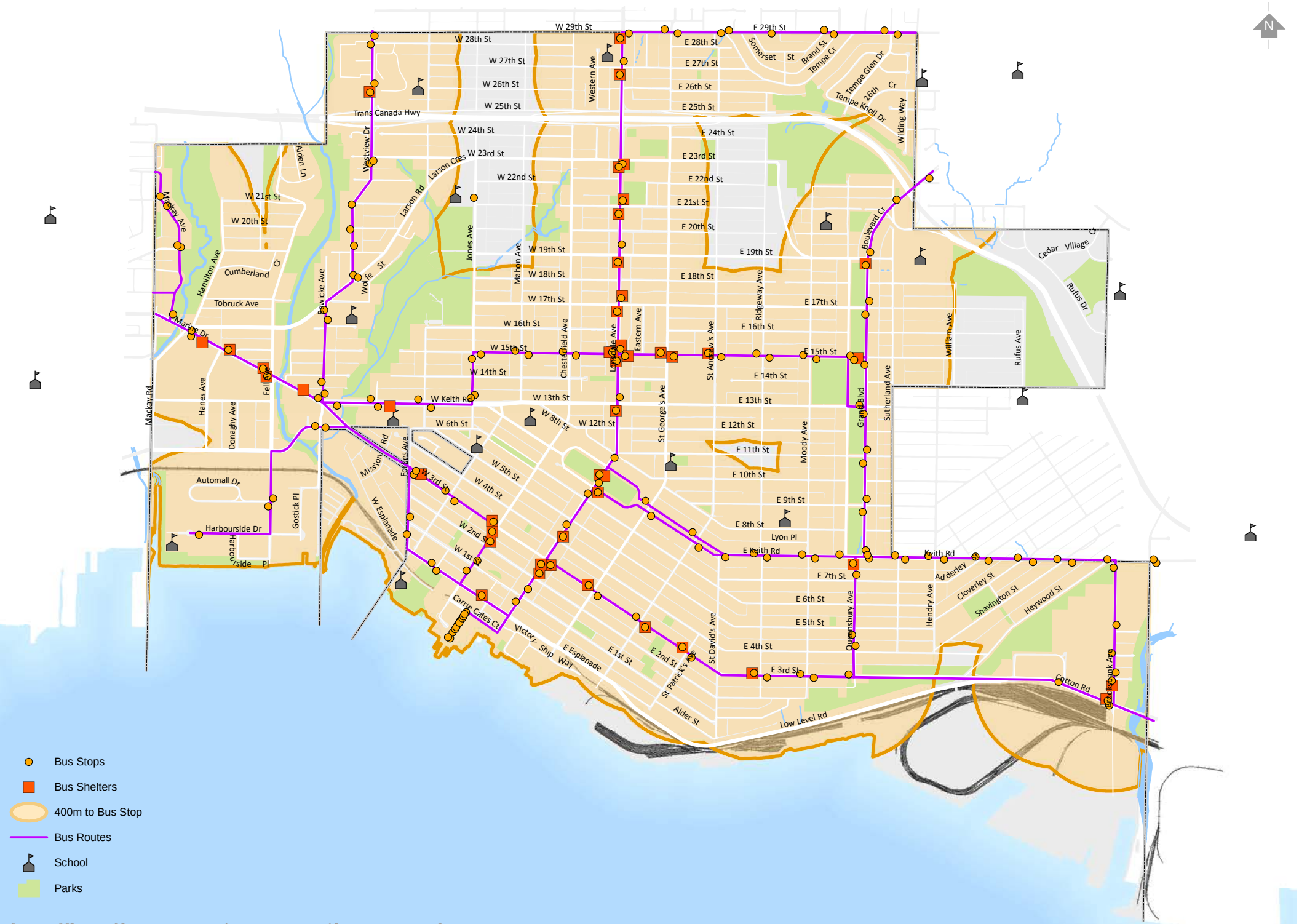
Amenities help make walking more fun, interesting and enjoyable by providing places for people to stop and rest, see interesting views, and create an environment where people want to stay a linger. These types of amenities exist throughout the City in the form of benches, street art, garbage bins, water fountains, pavement markings and other fixtures. This summer the City initiated a pilot to provide additional outdoor seating at restaurants in Lower Lonsdale and at Lonsdale at 18th Avenue to help enhance and add vitality to public spaces. Many of the amenities listed above are typically concentrated in areas with high numbers of people walking such as, parks and along the Spirit Trail, Green Necklace and Lonsdale Avenue.

Transit Integration

As many transit trips begin or end on foot, it is important to consider how well the sidewalk and trail network is integrated with transit services and facilities. Walk CNV is an opportunity for the City to look at ways to improve walking connections to and from transit stops and exchange and infrastructure and amenities at bus stops to enhance the customer experience. The City's transit network includes approximately 165 bus stops, of which approximately 25% have permanent bus shelters (**Figure 14**). Most bus stops in the City of North Vancouver are considered accessible (89%), which is the highest in Metro Vancouver (excluding Bowen Island). Figure 14 also shows that nearly 84% of the City's landmass is within 400 metres of a bus stop, indicating a bus stop is within a 5 minute or less walking distance for most residents.

In 2012, TransLink developed the North Shore Area Transit Plan (NSATP) to guide the growth of the transit service network on the North Shore and to integrate with the services provided across Metro Vancouver. TransLink developed this plan to adapt to the changing dynamics of the North Shore communities that will see more residents staying on the North Shore for their daily work commute and growing demand will exist for people commuting into North Shore communities for work. The plan identifies rapid transit service in the City in both the north/south and east/west direction. Some of the key takeaways from the NSATP to be considered in Walk CNV include the desire to improve safety, accessibility and the overall customer experience at transit exchanges. It was noted in the 2015 Progress Update that the improvements to transit exchanges throughout the North Shore are currently in progress.

FIGURE 14 - THE CITY OF NORTH VANCOUVER TRANSIT NETWORK AND BUS STOPS



3.2 TRAVEL PATTERNS

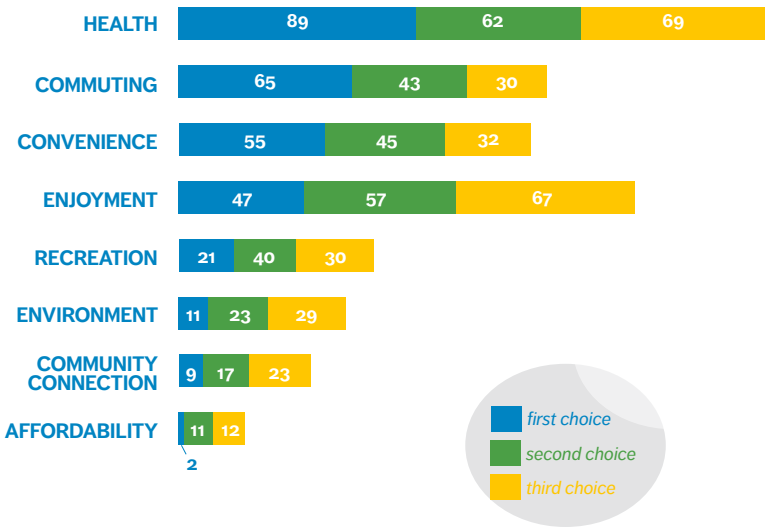
The following section outlines existing travel patterns for City residents based on 2011 National Household Survey data, 2011 TransLink Regional Trip Diary data and responses to the Walk CNV survey completed in early 2017. The survey was completed by 365 individuals.

Interest In Walking

As noted previously, promoting walking can help reduce automobile dependence and GHG emissions, increase physical activity and improve public health outcomes, increase social connections, and reduce infrastructure demands. Results from the 2017 interactive survey show that City residents believed walking is important for many reasons, with health, commuting, convenience and enjoyment being the top priorities for walking, as seen in **Figure 15**. The remaining priorities, ranked in order or importance, included: recreation, environment, community connection and affordability (**Figure 16**).

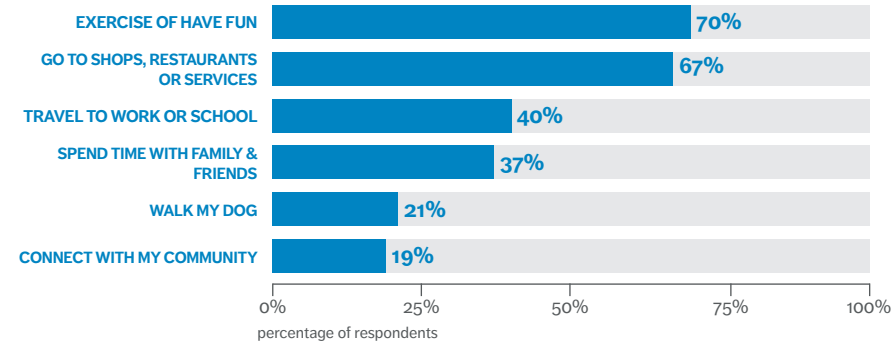
FIGURE 15 - PRIORITIES FOR WALKING (WALK CNV SURVEY HIGHLIGHTS)

FIGURE 16 - PRIORITIES FOR WALKING (WALK CNV SURVEY RESPONSES - 2017)



Respondents indicated they were interested in walking for a variety of reasons, with the most common reasons being for exercise or to have fun, and to go to shops, restaurants and other services. This shows people are walking for both utilitarian and recreational purposes within the City.

FIGURE 17 - REASONS FOR WALKING (WALK CNV SURVEY RESPONSES - 2017)



Mode Share (Commute Trips)

According to Statistics Canada's 2011 National Household Survey, approximately 11% of commute trips to work or school in the City are made by walking (**Figure 17**). An additional 23% of trips are made by transit, as most transit trips start and end on foot. This means more than 11% of residents are walking at some point during their trip to and from work. When compared to other municipalities in Metro Vancouver, the City has the second highest walking mode share, as seen in **Figure 18**. Over the last 15 years the percentage of trips made by walking has remained relatively stable.

Walking patterns vary significantly throughout the City. The highest proportion of walking trips to work are found in the census tracts that are in Central Lonsdale and Lower Lonsdale, with the lowest proportion of walking trip originating in the Marine-Hamilton neighbourhood.

FIGURE 18 - CNV WALKING TRANSPORTATION MODE SHARE (2011 NATIONAL HOUSEHOLD SURVEY)

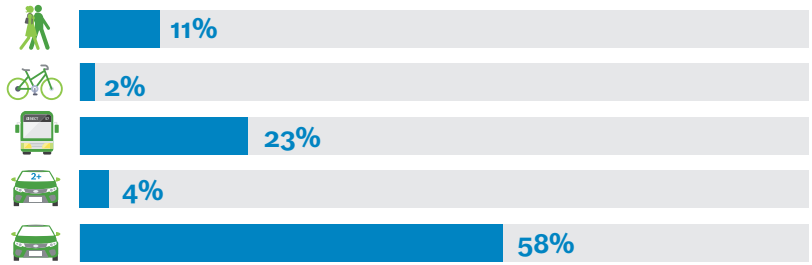
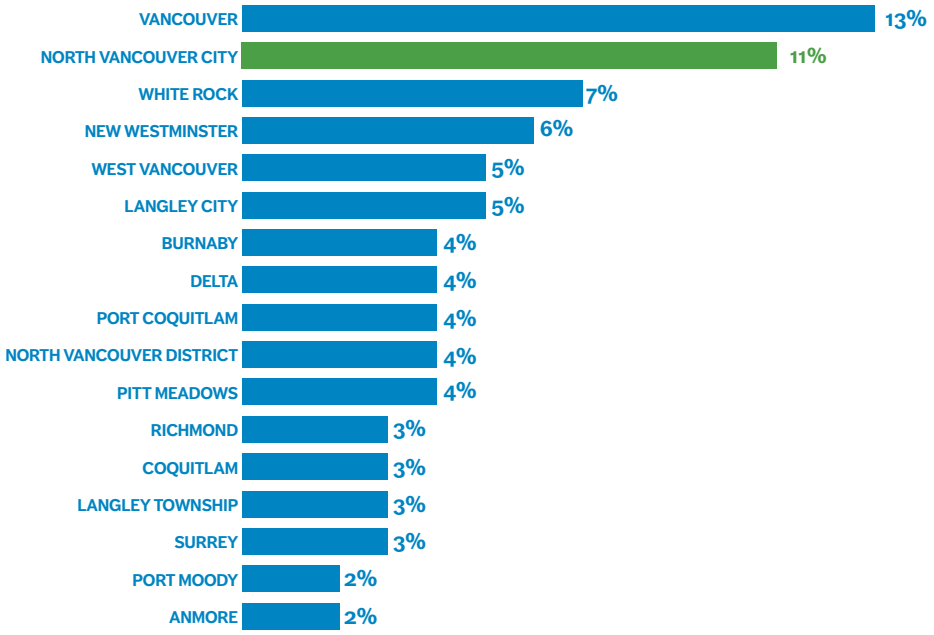


FIGURE 19 - CNV WALKING TRANSPORTATION MODE SHARE (2011 NATIONAL HOUSEHOLD SURVEY)

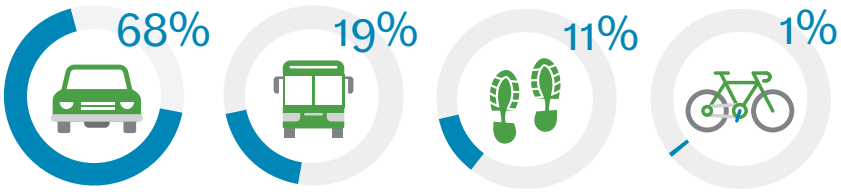


Mode Share (All Trips)

In 2011, TransLink conducted a Regional Trip Diary Survey to understand travel patterns throughout the Metro Vancouver region considering all trip types (not just commute trips to work or school). The survey found that approximately 11% of all trips in the City are made by walking (**Figure 20**).

The difference between Census Canada National Household Survey Data and the Regional Trip Diary Survey is the type of trips that are included. The National Household Survey includes only commute trips to work and school, whereas the data collected from the Regional Trip Diary Survey includes all types of trips including walking trips to shopping, entertainment, recreation and social activities. A comparison of the two data sources indicates that more people are walking for other trip purposes beyond commute trips to work and school.

FIGURE 20 - TRANSPORTATION MODE SHARE - CNV RESIDENTS
(2011 TRANSLINK REGIONAL TRIP DIARY – ANALYZED BY CNV)



Note: The remaining 1% are categorized under 'other'

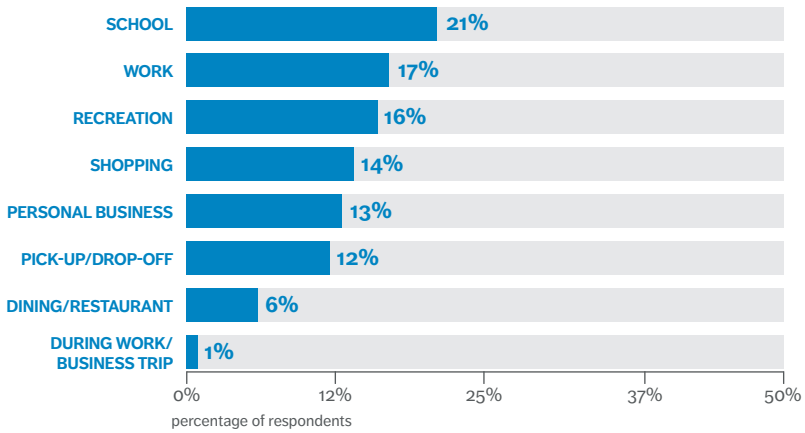
Distances

Most walking trips in the City are relatively short, based on the 2011 TransLink Regional Trip Diary 63% of walking trips are less than 1 kilometre (approximately a 10-15 minute walk), and a further 25% of walking trips are between 1 and 2 kilometres (approximately a 20-25 minute walk). As such, the majority of walking trips (88%) are less than 2 kilometres, or approximately 20-25 minutes. As a result, many of the walking trips that begin in the City remain in the City. While there are a percentage of walking trips that are to and from the District of North Vancouver, the majority remain in the City. This is important to consider because most areas within the City are within a 2 kilometre distance from Central Lonsdale and, as such, walking can be a practical travel choice for most trips within the City.

Trip Purpose and Length

As noted above, walking trips are made for a variety of reasons, including shopping, recreation, and traveling to school and work, as seen in **Figure 21**.

FIGURE 21 - CNV WALKING TRANSPORTATION MODE SHARE (2011 NATIONAL HOUSEHOLD SURVEY)

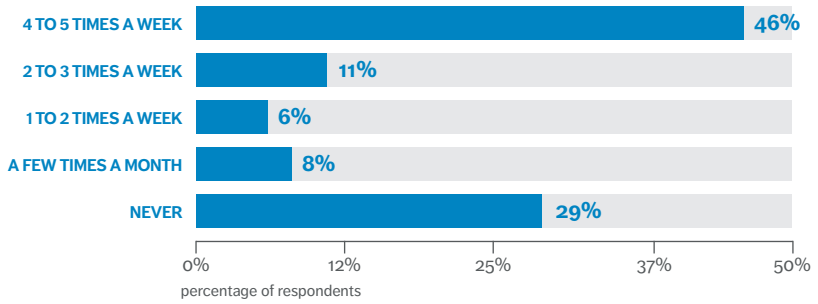


Walking To School

The City of North Vancouver's and the North Vancouver School District's Safe and Active School Travel Program focuses on encouraging healthy and sustainable transportation. This is done through encouraging changes in behaviour and making infrastructure improvements to address safety issues. In the fall of 2013, the North Vancouver School District asked families to complete an online travel survey. The results showed that for every seven families that walk to school, there were six other families that drove and one other family cycled.

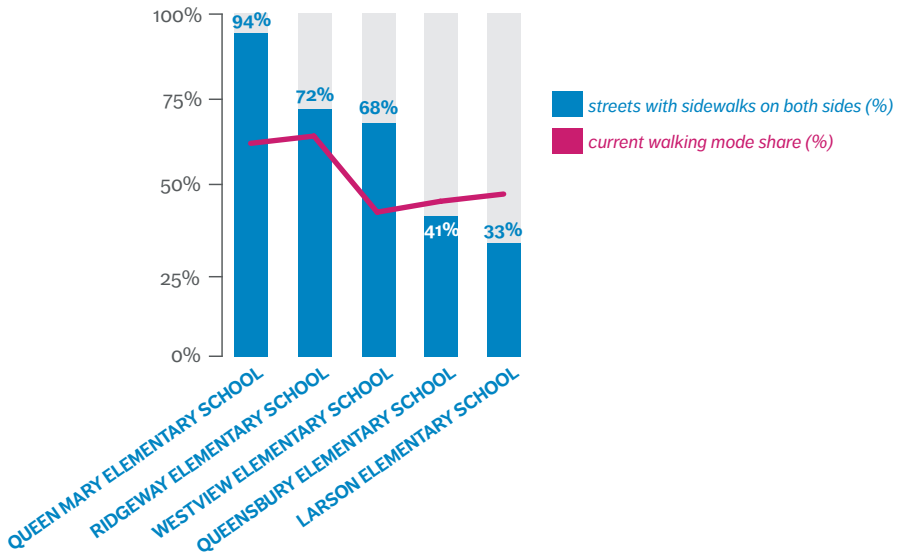
In 2017, the Walk CNV survey was used to better understand how school aged children in the City are travelling to school. Survey respondents that had school aged children were asked how often they walk to school. The interactive survey results show that nearly half (46%) of respondent's school aged children walk to school regularly (four to five times a week), while nearly a third (29%) never walk. A smaller proportion of respondents indicated that their children occasionally walk to school, with 16% walking to school one to three times a week, and 8% walking a few times a month (**Figure 22**). It is important to note that these results represent a portion of the 365 people that completed the Walk CNV survey and is not a representative sample.

FIGURE 22 - TRAVEL TO SCHOOL (WALK CNV SURVEY RESPONSES -2017)



Engineering and infrastructure is one component that can influence a family's choice to walk to school. **Table 3** shows the sidewalk coverage within 400 metres around each of the public elementary and secondary schools in the City. The results show that schools located in Lower/Central Lonsdale such as Queen Mary Elementary and Ridgeway Elementary have the highest sidewalk coverage with sidewalks on at least one side of over 98% of the streets. However, schools such as Larson and Queensbury Elementary, located north of 19th Street, have lower sidewalk coverage. The City has been making significant infrastructure upgrades related to walking, the City has completed, or is currently working on completing all identified infrastructure projects at the existing elementary schools and is about to start addressing upgrades around high schools.

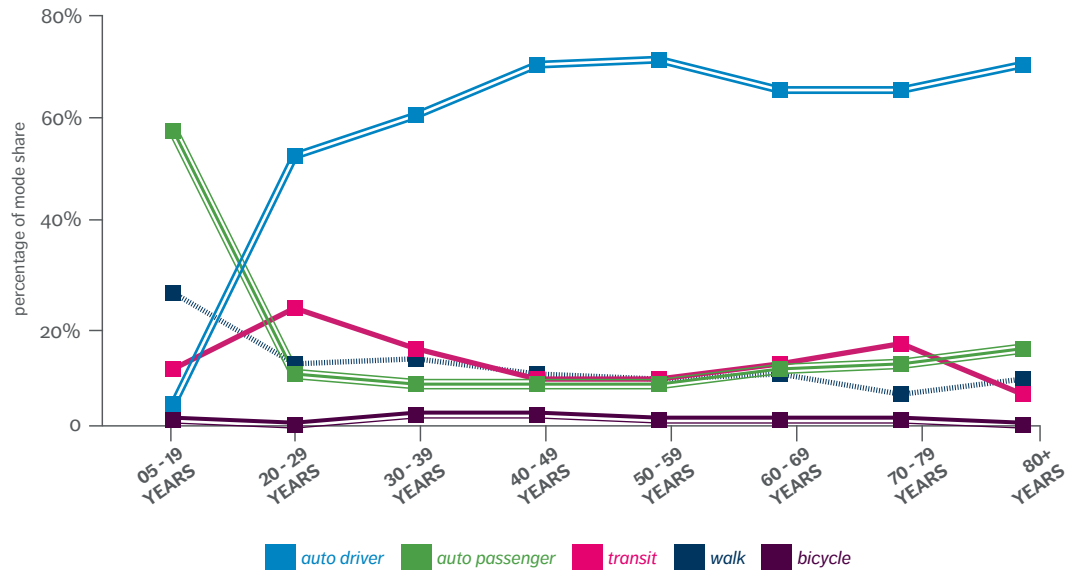
FIGURE 23 - SIDEWALK COVERAGE AND WALKING TRIPS

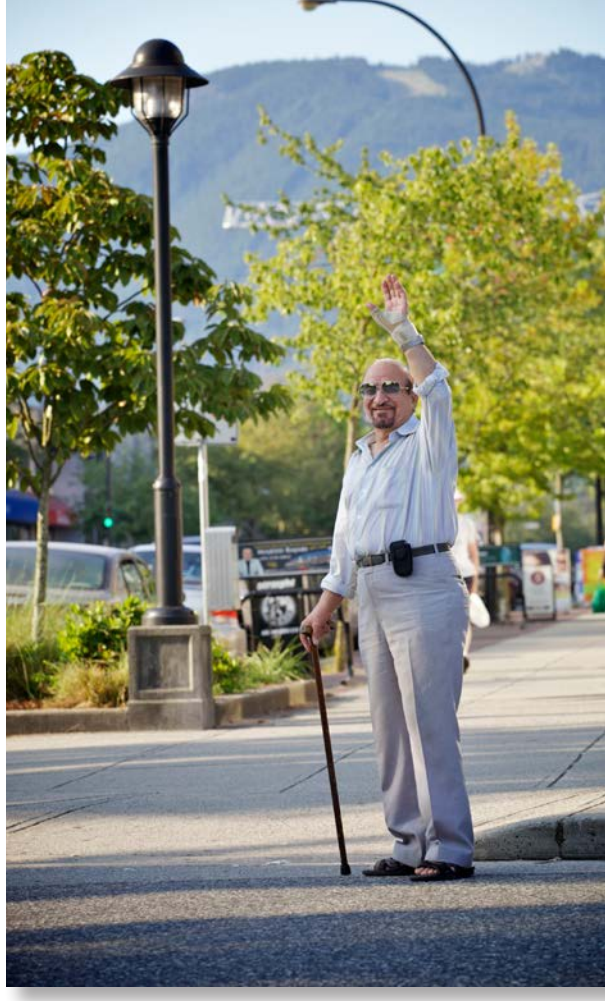


Walking Patterns By Age

Approximately 16% of the City's population is over 65 years of age and approximately 18% is under the age of 19. TransLink's Regional Trip Diary Survey data indicates that walking trips are highest among individuals between the age of 5 to 19, as over a quarter (26%) of trips made by this age group are made by walking. Walking levels decline over the age of 20, with a slight increase among the 30 and 39 age group, and among those 80 years of age or over (**Figure 24**). Encouraging walking at an early age can help normalize walking as a mode of transportation and build life long travel behaviours.

FIGURE 24 - MODE SHARE BY AGE GROUP (2011 TRANSLINK REGIONAL TRIP DIARY)

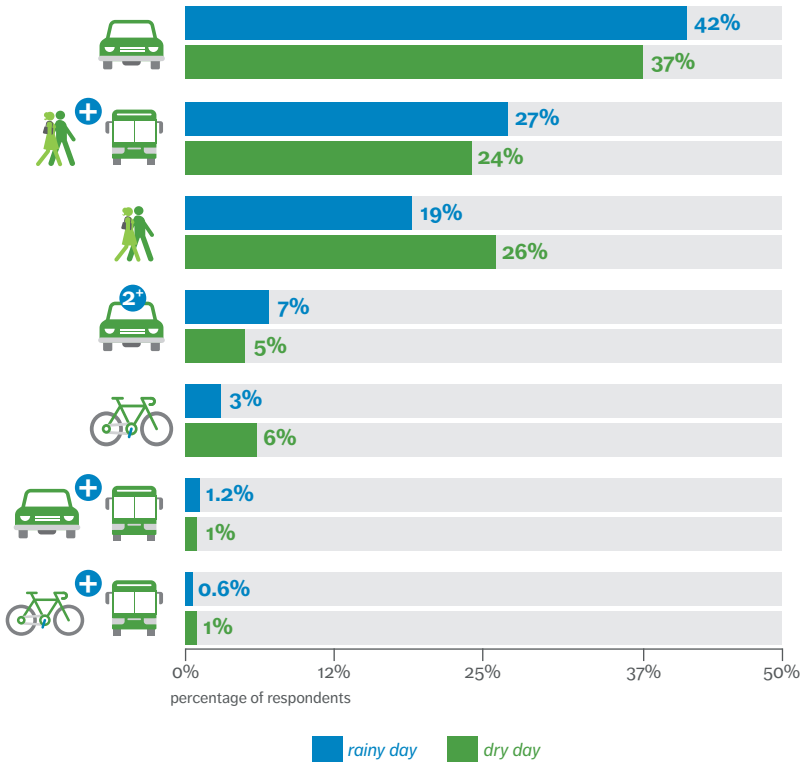




Weather

Respondents of the 2017 Walk CNV survey indicated that they were 7% less likely to walk as their primary mode of transportation when the weather is cold and rainy (19% of trips, compared to 26% on warm and dry days) (**Figure 25**). This graph shows respondents that walked all, or a portion of their trip. Approximately 50% of survey respondents walked at least a portion of their trip to work and school on both sunny and rainy days.

FIGURE 25 - WEATHER CONDITION BASED ON MODE CHOICE (WALK CNV SURVEY RESPONSES - 2017)



Destinations

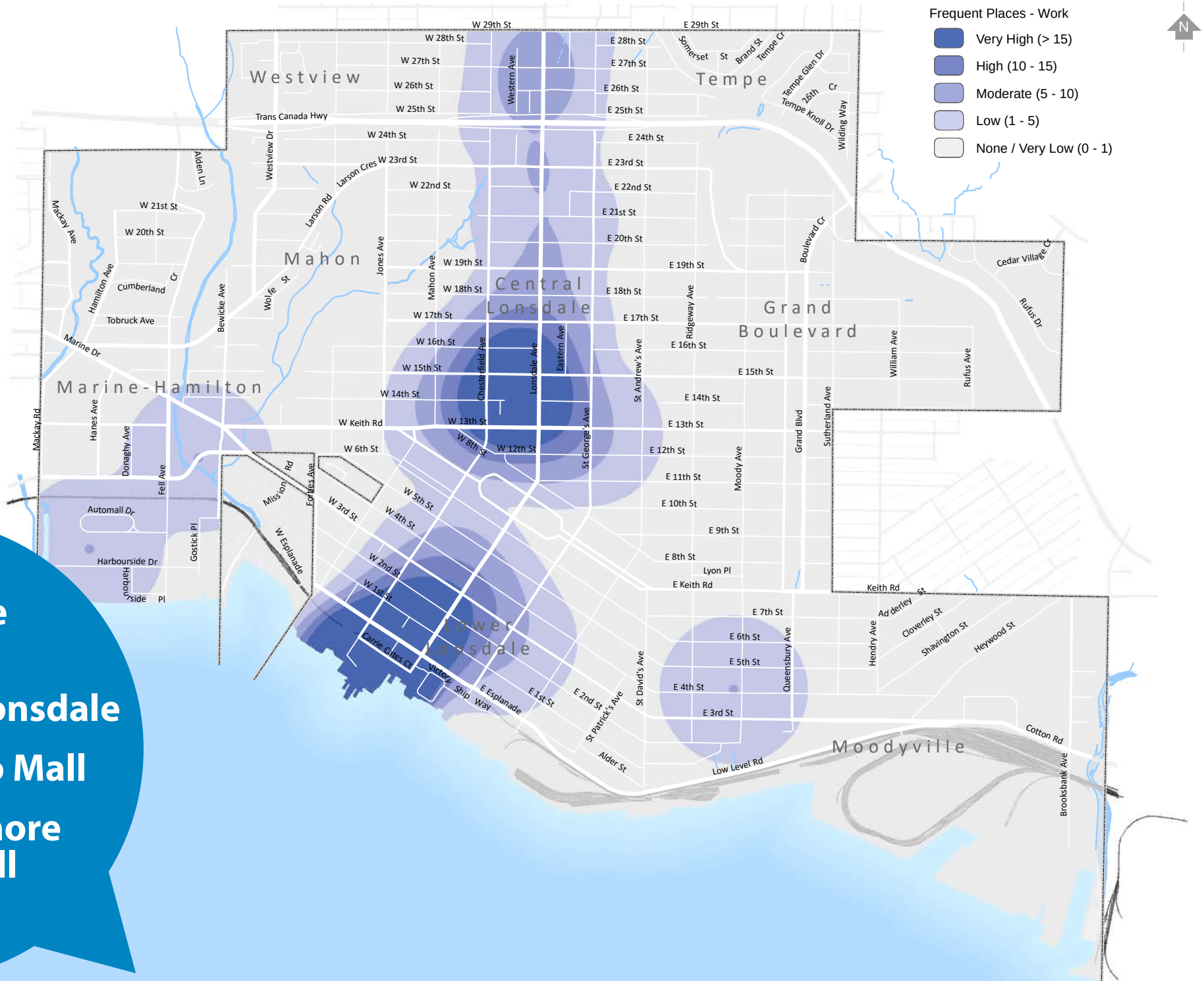
Respondents of the 2017 interactive survey were asked to identify locations they frequently walk to and from for daily tasks such as grocery shopping or going to work. Mapping the results of this exercise was particularly helpful to understand walking patterns within the City. It is important to note that these maps have been created based on the points provided by survey respondents and that there are some examples where destinations markers may have been misplaced or labeled. **Figure 26** to **Figure 30** show the distribution of these trips.

Some of the key findings show that people are:

- **Able to find many of their destinations** on or nearby Lonsdale Avenue.
- **Working** in Central and Lower Lonsdale and near the North Shore Auto Mall.
- **Shopping** along Lonsdale Avenue, Capilano Mall, Westview and Park and Tilford.
- **Accessing Groceries** in Central Lonsdale, Lower Lonsdale, Capilano Mall, Queensbury Avenue and Park and Tilford.
- **Going to restaurants** on Lonsdale Avenue, Lower Lonsdale, North Shore Auto Mall area and Queensbury Avenue.
- Accessing **recreational facilities** throughout the City including Harry Jerome Recreation Centre, Mahon Park, Grand Boulevard / Ray Perrault Park as well as Lower Lonsdale and the Spirt Trail.

Figure 30 combines the destinations identified above and illustrations the top walking destinations within the City including, Lonsdale, Capilano Mall, North Shore Auto Mall, along with various parks and green spaces. Finally, survey respondents were also asked to identify some of the great places in the City they like to walk. The results are illustrated in **Figure 31** and show that respondents identified great places that cover almost the entire City.

FIGURE 26 - FREQUENT WORK DESTINATIONS (WALK CNV SURVEY RESPONSES - 2017)



Lonsdale Avenue

Lower Lonsdale

Capilano Mall

North Shore Auto Mall

FIGURE 27 - FREQUENT SHOPPING DESTINATIONS (WALK CNV SURVEY RESPONSES - 2017)

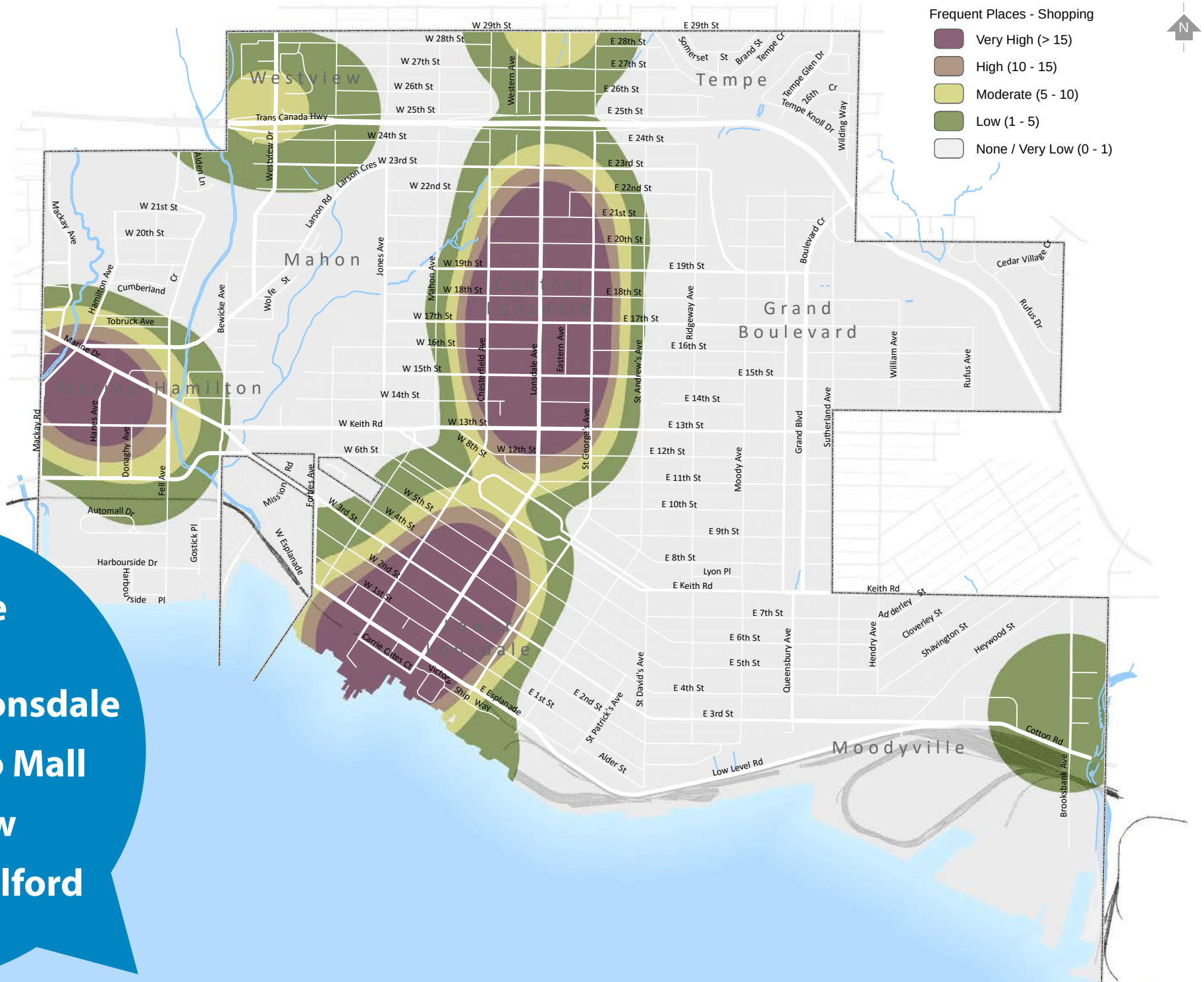


FIGURE 28 - FREQUENT GROCERY DESTINATIONS (WALK CNV SURVEY RESPONSES - 2017)

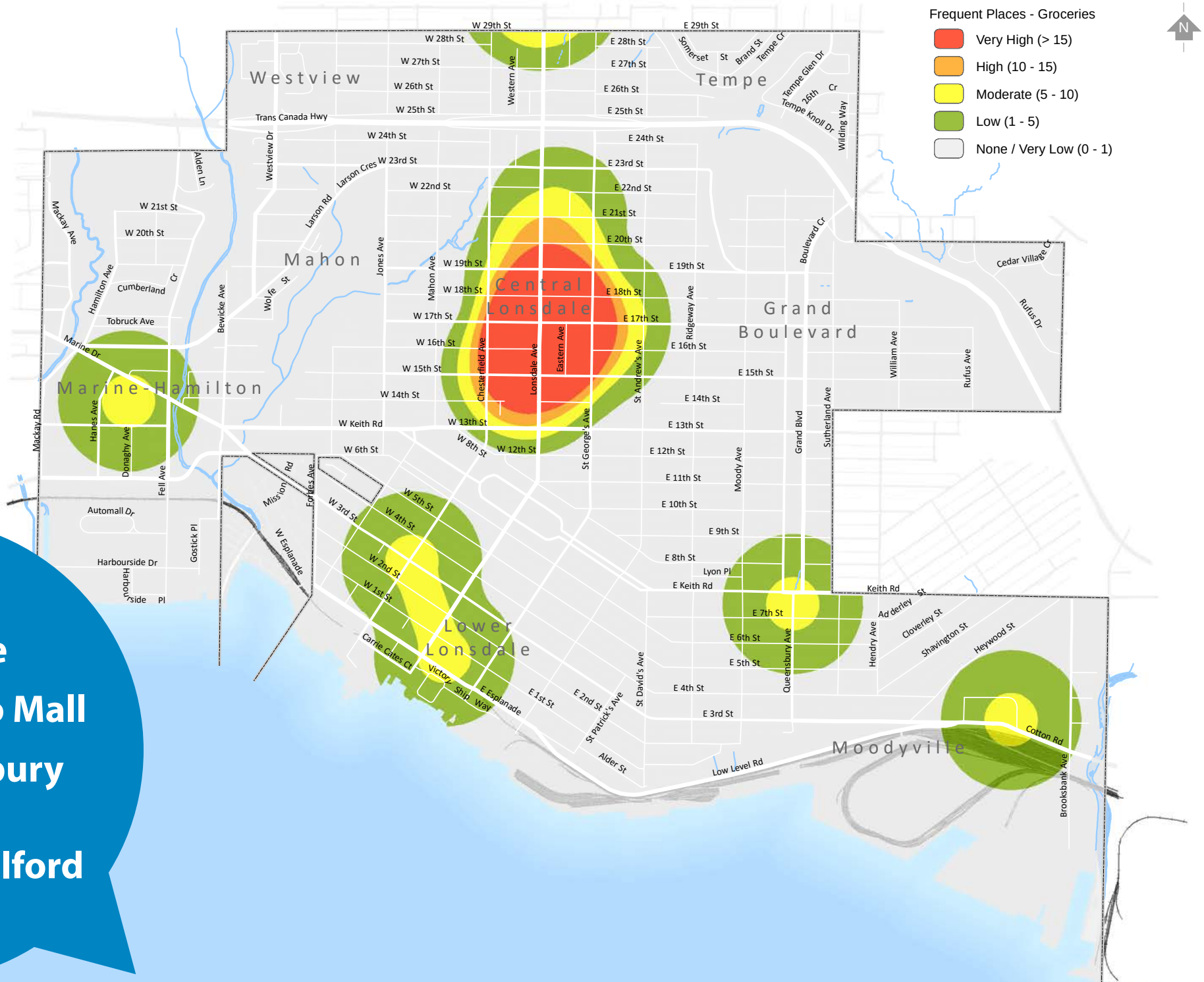


FIGURE 29 - FREQUENT RESTAURANT DESTINATIONS (WALK CNV SURVEY RESPONSES - 2017)

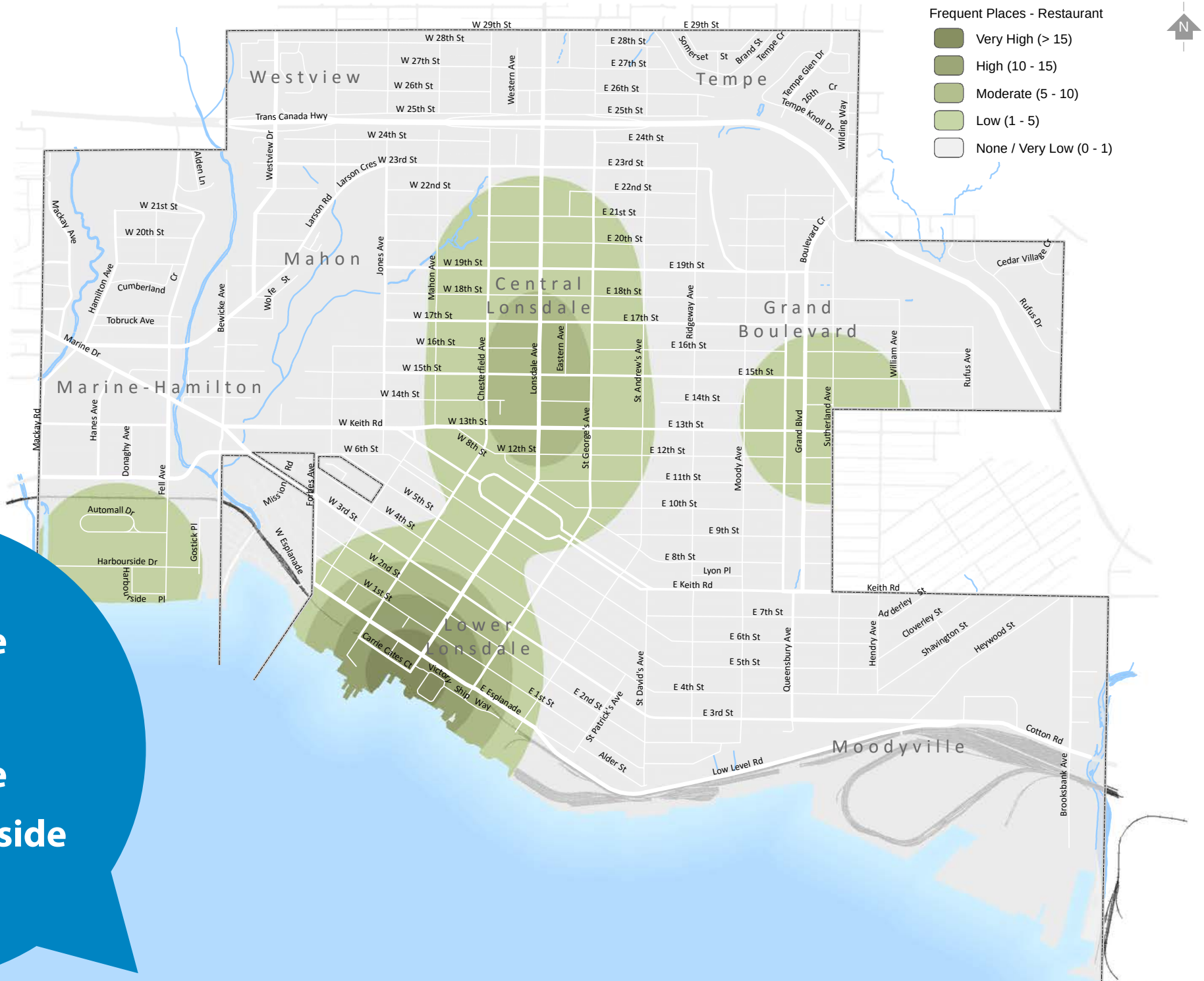
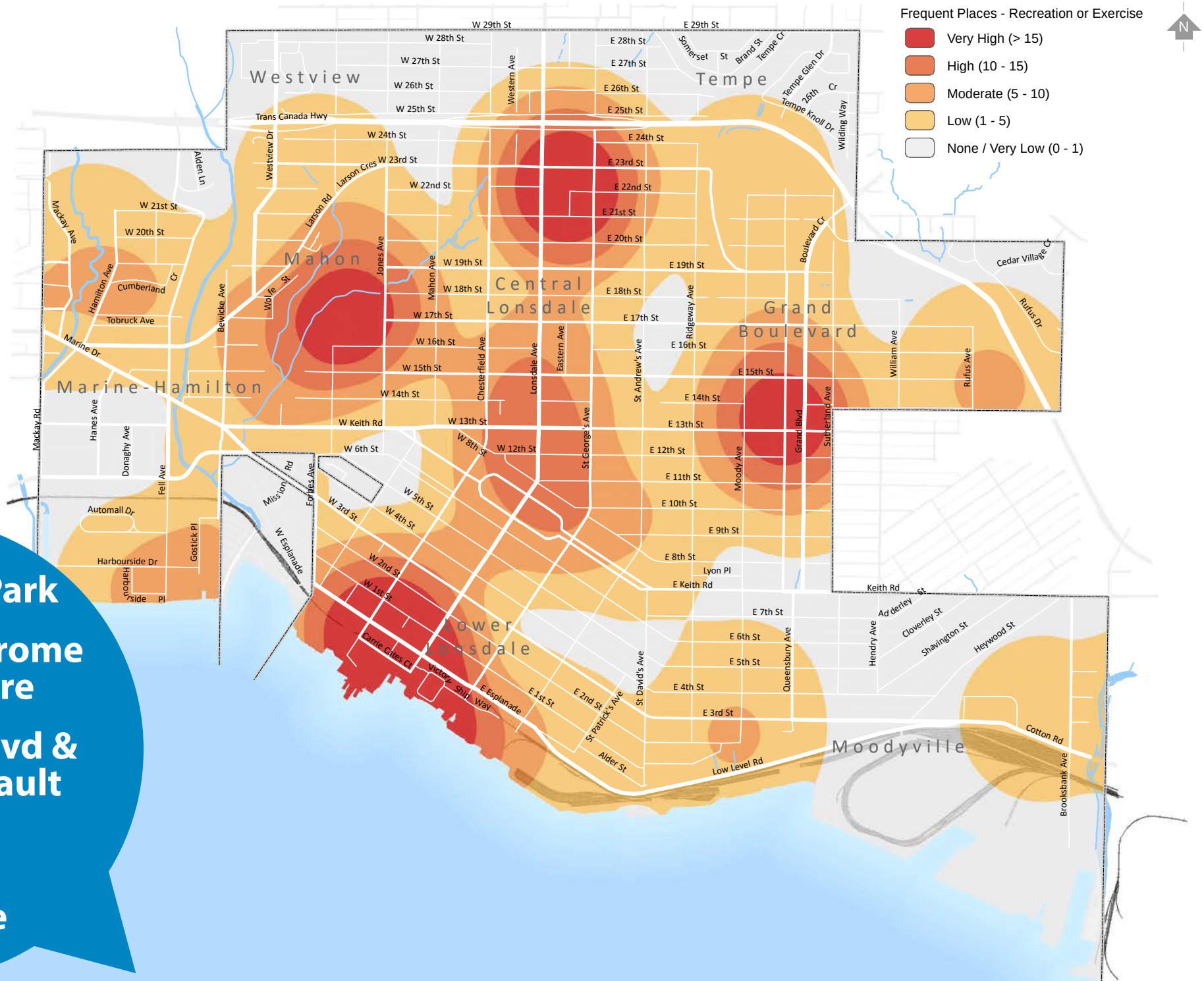


FIGURE 30 - FREQUENT RECREATION DESTINATIONS (WALK CNV SURVEY RESPONSES - 2017)



Mahon Park

Harry Jerome Rec Centre

Grand Blvd & Ray Perrault Park

Lower Lonsdale

FIGURE 31 - COMBINED FREQUENT PLACES (WALK CNV SURVEY RESPONSES - 2017)

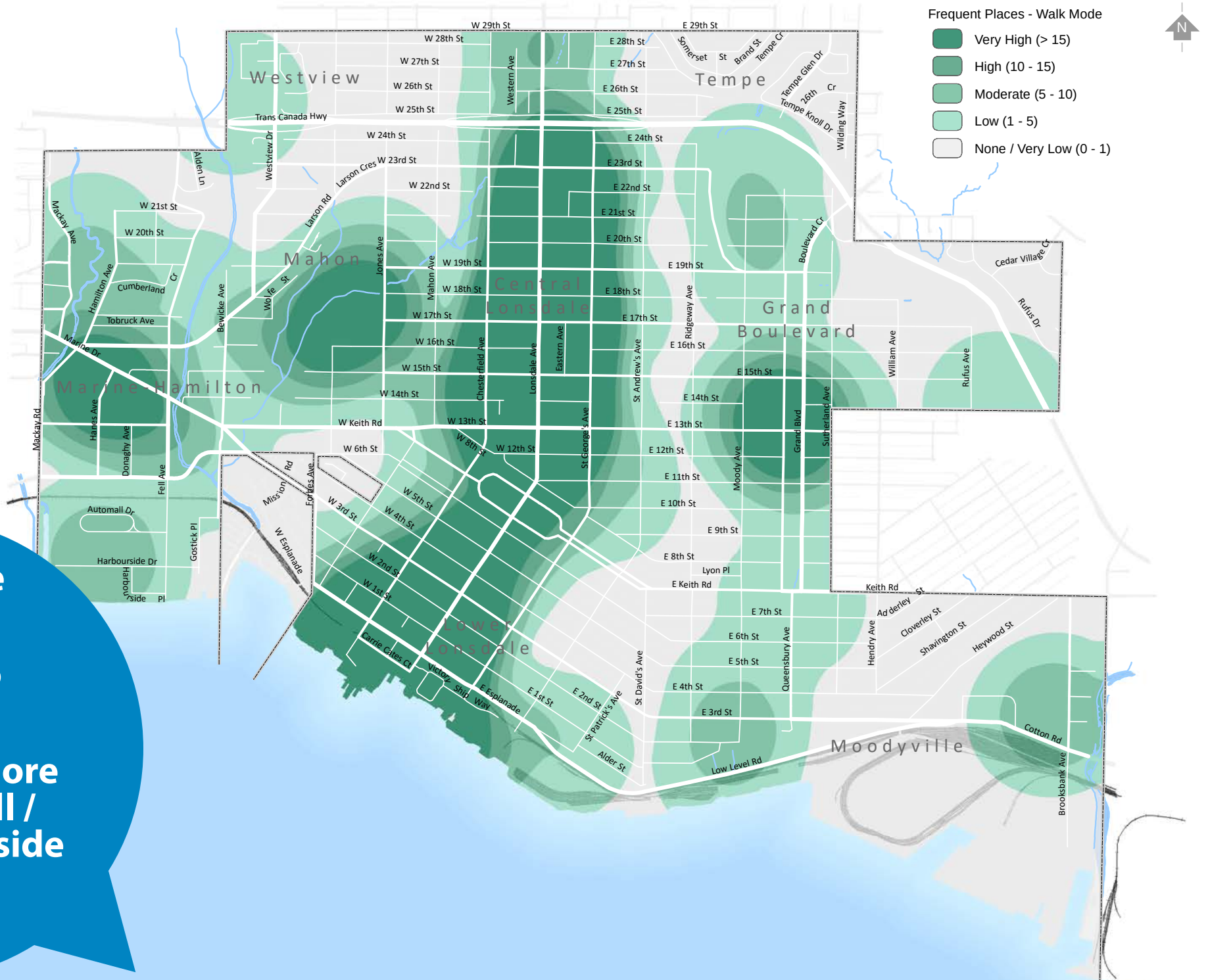
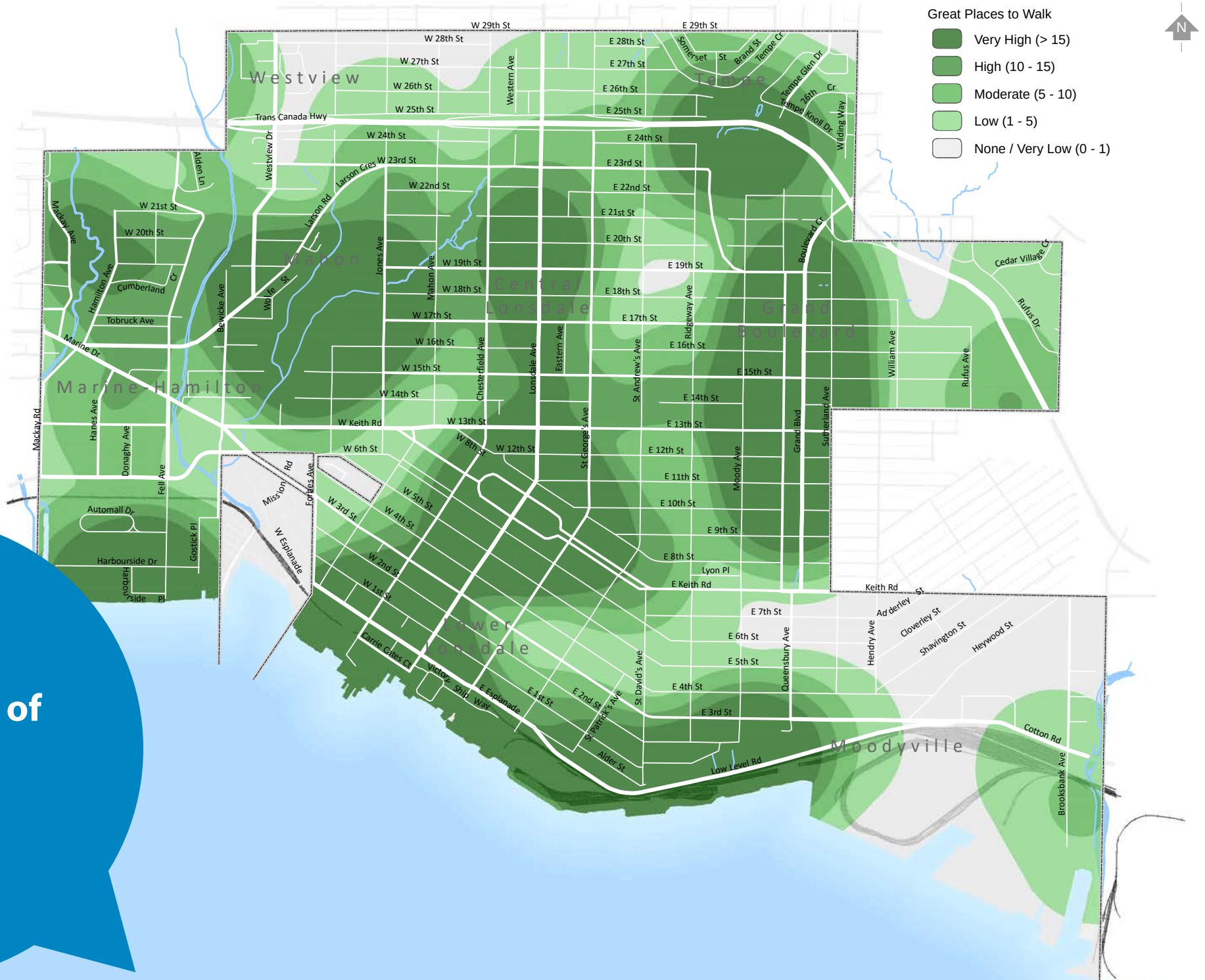


FIGURE 32 - GREAT PLACES TO WALK (WALK CNV SURVEY RESPONSES - 2017)



All areas of the City

Pedestrian Areas and Generators

The Pedestrian Plan, developed as part of the City's Long-Term Transportation Plan, defines four key pedestrian areas and corresponding design treatments that will help make the City more walkable over the long-term. The areas identified include:

- **Pedestrian Precincts:** Includes Lonsdale Avenue from the Quay to the Trans-Canada Highway (one block on either side) and much of Lower Lonsdale. These are areas where walking could be the primary mode of travel and should be made a priority. The land use is generally a mix of higher-density land uses that attract multi purpose trips.
- **Primary Pedestrian Generators:** Includes public secondary schools, community centre, Civic Plaza and other key employment areas. These are considered areas that will typically generate a higher than average number of walking trips.
- **Secondary Pedestrian Generators:** Includes auto-oriented commercial developments, playing fields and parks and public elementary and private schools. These are considered areas that will attract moderate volumes of people walking.
- **Low Density Pedestrian Areas:** Represents the remaining areas of the City where lower volumes of people walking is expected.

As part of the Walk CNV process, these areas and generators will be reviewed and updated based on existing travel patterns and land use. The maps developed above based on the Walk CNV 2017 Survey, help to illustrate the pedestrian areas within the City and identifies the destinations residents are already walking to.

Regional Connections

As the City is bordered on three sides by the District of North Vancouver, walking connections between the two municipalities are important for residents of both municipalities. There are several destinations in the District of North Vancouver that are within walking distance of City residents and vice versa. Destinations such as schools, recreational centres and commercial retail are destinations for both City and District residents. There are several pathway and trail connections between the two communities through parks and in many locations along the border the walking conditions between the two municipalities integrate seamlessly. However, the Trans-Canada Highway creates a barrier for walking within the City itself and between the City and the District.

3.3 KEY ISSUES AND OPPORTUNITIES

Through input received from the interactive survey, public engagement events, discussions with City Advisory Committees and the project Steering Committee, several key issues and opportunities for walking in the City have been identified.

Issues

The issues identified in this section were mainly identified through the 2017 Walk CNV survey and have been discussed and confirmed through discussions with the City Advisory Committees and Project Steering Committee. The walking issues most commonly reported are shown in **Figure 33**. The survey included an interactive map of the City for respondents to identify specific challenges or areas for improvements. Respondents could drag and drop 'topic pins' onto specific locations and provide comments to help explain what challenge they have experienced or suggest improvements.

As seen in **Figure 34**, respondents were asked to identify infrastructure issues. These issues include locations where sidewalks or trails are missing or end, where the sidewalk or trail is narrow or in poor condition, locations where intersection safety is a concern, traffic volumes or speeds are high or where it's too dark. Respondents were also able to identify other infrastructure concerns. Some of the other concerns identified include short pedestrian signals, long waits to cross, limited sightlines, and several intersection safety concerns. The map shows a high concentration of intersection safety concerns along Lonsdale Avenue, particularly in Lower Lonsdale and at the highway overpass. There was a concentration of pins dropped where the Spirit Trail currently ends within the Squamish Nation. Traffic volumes and speed was identified several times along 3rd Street, and intersection safety issues were identified along Keith Road.

FIGURE 33 - TOP WALKING ISSUES (WALK CNV SURVEY RESPONSES - 2017)

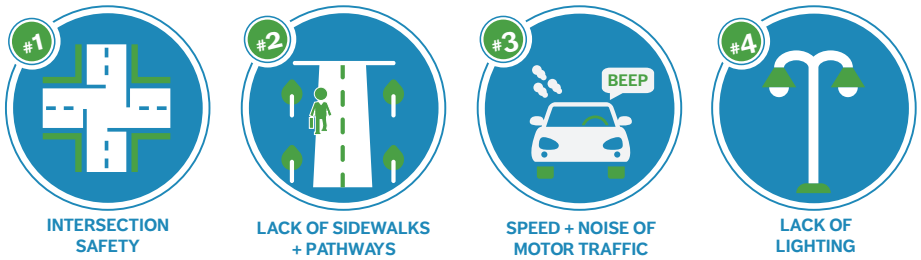
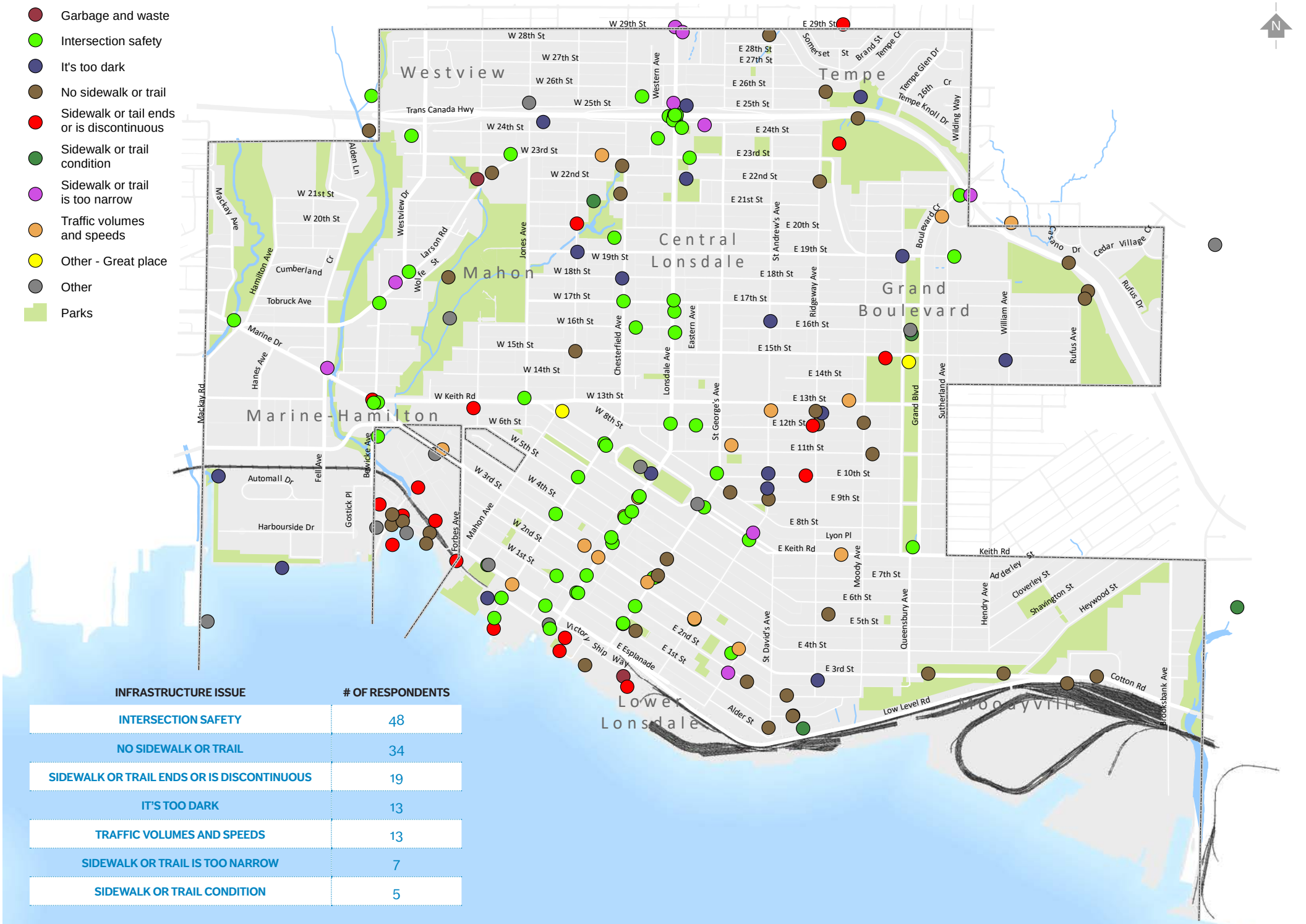


FIGURE 34 - INFRASTRUCTURE ISSUES (WALK CNV SURVEY RESPONSES - 2017)



INFRASTRUCTURE ISSUE	# OF RESPONDENTS
INTERSECTION SAFETY	48
NO SIDEWALK OR TRAIL	34
SIDEWALK OR TRAIL ENDS OR IS DISCONTINUOUS	19
IT'S TOO DARK	13
TRAFFIC VOLUMES AND SPEEDS	13
SIDEWALK OR TRAIL IS TOO NARROW	7
SIDEWALK OR TRAIL CONDITION	5

As seen in **Figure 35** on the following page, respondents also identified accessibility issues, such as locations where there are missing curb ramps, where curb ramps do not lead to the crosswalk, overgrown vegetation and sidewalk clutter. Respondents were also able to identify any other accessibility issues they had. Some of the other issues identified included locations where sidewalks are closed for construction, intersection safety issues, poor sightlines, and signal timing.

A concentration of missing curb ramps was identified along St Andrews Avenue. Concerns about closed sidewalks during construction along 13th Street, and some locations where overgrown vegetation and sidewalk clutter were also identified as issues. Accessibility issues were also discussed at meetings with the City's Advisory Committees and at the community walkabouts, during these conversations, similar input was received regarding existing infrastructure and accessibility concerns.

Based on the survey results, meetings with the City's Advisory Committees and other engagement that was part of the Walk CNV process the following key themes and locations have been identified as issues for walking:

Intersection safety

- Lonsdale Avenue (Lower Lonsdale)– vehicles not stopping for people in the crosswalk
- Lonsdale Avenue (highway overpass) – feels unsafe and uncomfortable for people walking
- Marine Drive and Bewicke Avenue – potential conflict with turning vehicles
- 3rd Avenue – vehicle speeds make it difficult to cross intersections
- Larson Crescent (near Carson Graham Secondary) – difficult to cross

Missing and discontinuous sidewalks and pathways

- Spirit Trail (Squamish Nation)
- Ridgeway Avenue
- St Andrews Avenue
- Sidewalk closures during construction and redevelopment

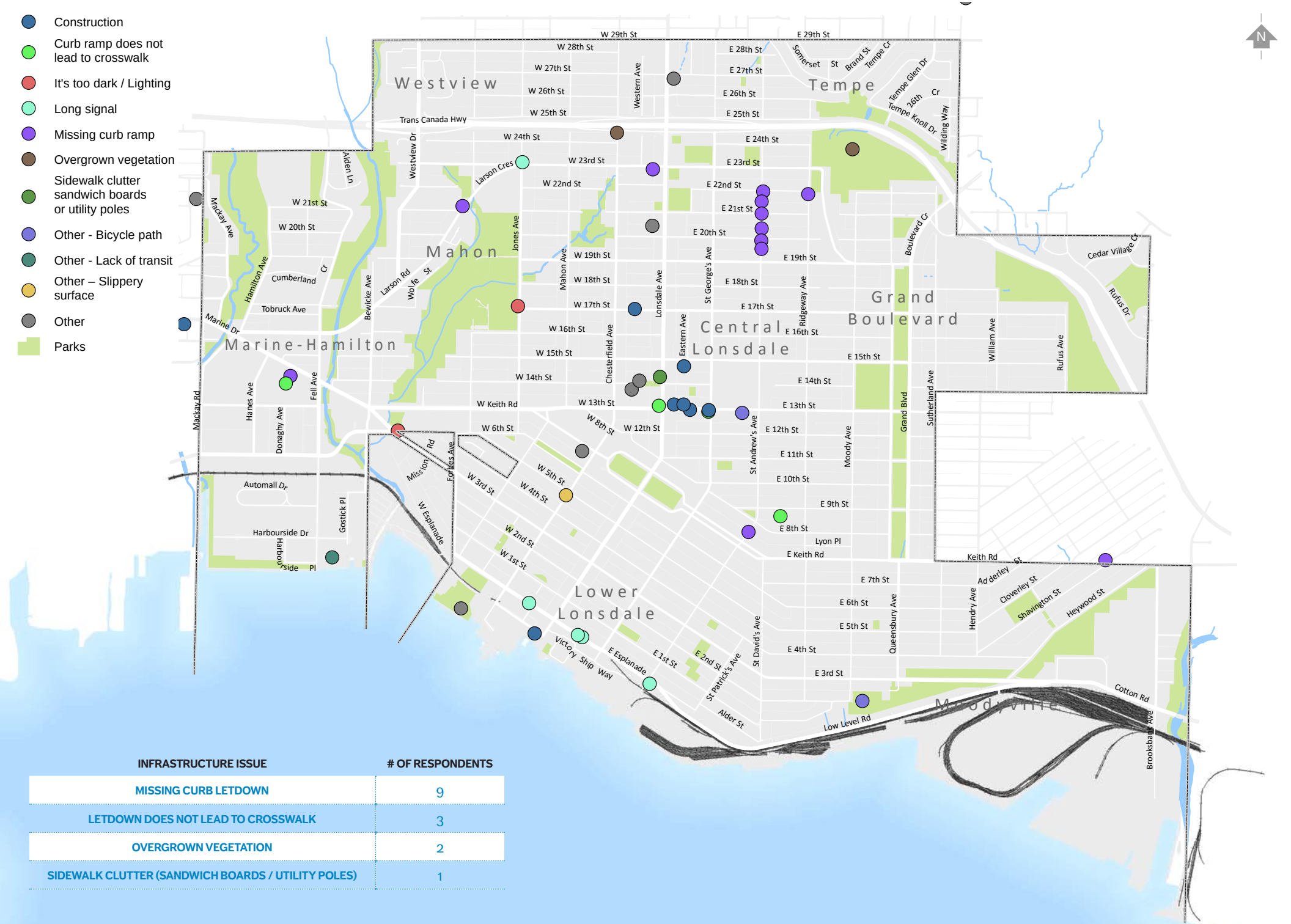
Accessibility

- Curb ramps at all intersections (particularly St Andrews between 19th Street and 23rd Street)
- Ensure curb ramps lead into the crosswalk

Lighting

- St Andrews Avenue between 13th Street and Keith Road
- Streets located adjacent to parks and greenways

FIGURE 35 - ACCESSIBILITY ISSUES (WALK CNV SURVEY RESPONSES - 2017)



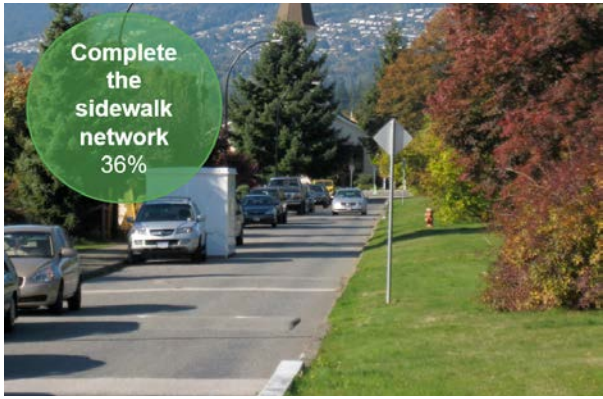
INFRASTRUCTURE ISSUE	# OF RESPONDENTS
MISSING CURB LETDOWN	9
LETDOWN DOES NOT LEAD TO CROSSWALK	3
OVERGROWN VEGETATION	2
SIDEWALK CLUTTER (SANDWICH BOARDS / UTILITY POLES)	1

Opportunities

Building on the issues identified above, it is important to note that during many of the same conversations with residents and stakeholders they expressed how enjoyable it is to walk within the City, with many people indicating that the scenery, access to trails and pathways, public spaces and plazas and numerous destinations already make walking in the City enjoyable.

Survey respondents were asked what they felt would help them walk more. The top suggestions were: ensuring sidewalks are properly maintained, making it easier to cross the street, completing the sidewalk network, providing more off-street pathways, and improving lighting.

Additionally, respondents were asked what could be done around the City to make walking more fun and enjoyable. The most common responses were to add more street trees and landscaping, public plazas, decorative crosswalks and sidewalks and public art. There were also several comments from other residents and stakeholders that suggested using and revitalizing existing alleyways as alternative walking routes and having more events that encouraged and prioritized walking could help raise awareness and make walking in the City more fun. Stakeholders and residents indicated that while there are several opportunities for improvement, particularly regarding intersection safety, accessibility, ensuring sidewalks and pathways are continuous and well-lit, there are already a lot of really great places to walk and a strong waking culture in the City.



PART FOUR

NEXT STEPS

NEXT STEPS

This is the first Discussion Paper prepared as part of the Walk CNV process, and summarizes existing conditions for walking in the City today based on technical analysis and public input received to date. Additional research has been completed during this phase of work on some of the best practices in infrastructure design specific to crossing treatments, street lighting and street furniture for the City of North Vancouver.

The next phase of work will on Walk CNV will focus on charting the course for the future of walking. Based on input received from the public and stakeholders and a review of best practices, future goals, objectives and principles will be developed to help guide the policy and infrastructure recommendations that will be identified in the final Plan.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