

**Tsleil-Waututh Nation**  
**səlilwətał**

PEOPLE OF THE INLET



# Active Transportation Network Plan (ATNP)

March 2023

**Who we are as Səlilwətał**

**TSLEIL-WAUTUTH NATION**

**DECLARATION**

*We are the Tsleil-Waututh Nation, the People of the Inlet.  
We have lived in and along our Inlet since time out of mind.  
We have been here since the Creator transformed the Wolf  
into that first Tsleil-Wautt, and made the Wolf responsible for this land.*

*We have always been here and we will always be here.  
Our people are here to care for our land and water.  
It is our obligation and birthright  
To be the caretakers and protectors of our Inlet.*

*Our people descended from powerful Hereditary leaders, Waut-salk and Sla-holt  
We know where we come from and we know who we are  
We respect our heritage and  
Nothing can change our history and our truth.*

*Our people travelled far and wide on our traditional territory, they paddled  
Our waters and climbed our mountains.  
They understood the richness that our traditional territory held, and in  
Understanding this, they knew our land.  
Our ancestors were responsible for our rivers, streams, beaches and forests  
Of our traditional territory.  
Our people knew our land well because it was for the benefit of everyone.*

*Our Tsleil-Waututh Nation is moving into our future.  
Our children and our land are our future.  
Our future will bring enough for our children's children to thrive.  
We are looking forward,  
We are ready to meet the next millennium.*

*Therefore, be it known far and wide that our Tsleil-Waututh Nation, the  
People of the Inlet, are responsible for and belong to our traditional territory.  
Let it be known that our Tsleil-Waututh Nation is a Nation unto itself,  
Holding traditional territory for its people.*







# ACKNOWLEDGMENTS

We would like to take this opportunity to express our gratitude to everyone who has contributed to the development of the Tsleil-Waututh Nation Active Transportation Network Plan. We acknowledge the following individuals, groups, and organizations who have played a crucial role in this project:

The Active Transportation Network Plan has been entirely guided by the Community. We would like to extend a special thank you to TWN Members and Community Members who played a crucial role in the development of the Plan. The input, ideas, and feedback has created a Plan that reflects the needs and values of the Tsleil-Waututh Nation.

Thank you to the project team who have worked tirelessly to ensure the successful completion of this project. We would like to thank Urban Systems Ltd. for their expert guidance and support in developing this plan. Your professionalism, expertise, and commitment have been invaluable.

Finally, we extend our thanks to the Ministry of Transportation and Infrastructure for their financial support through the B.C. Active Transportation Infrastructure Grants Program.

3178



*TWN Admin Building Front Doors*



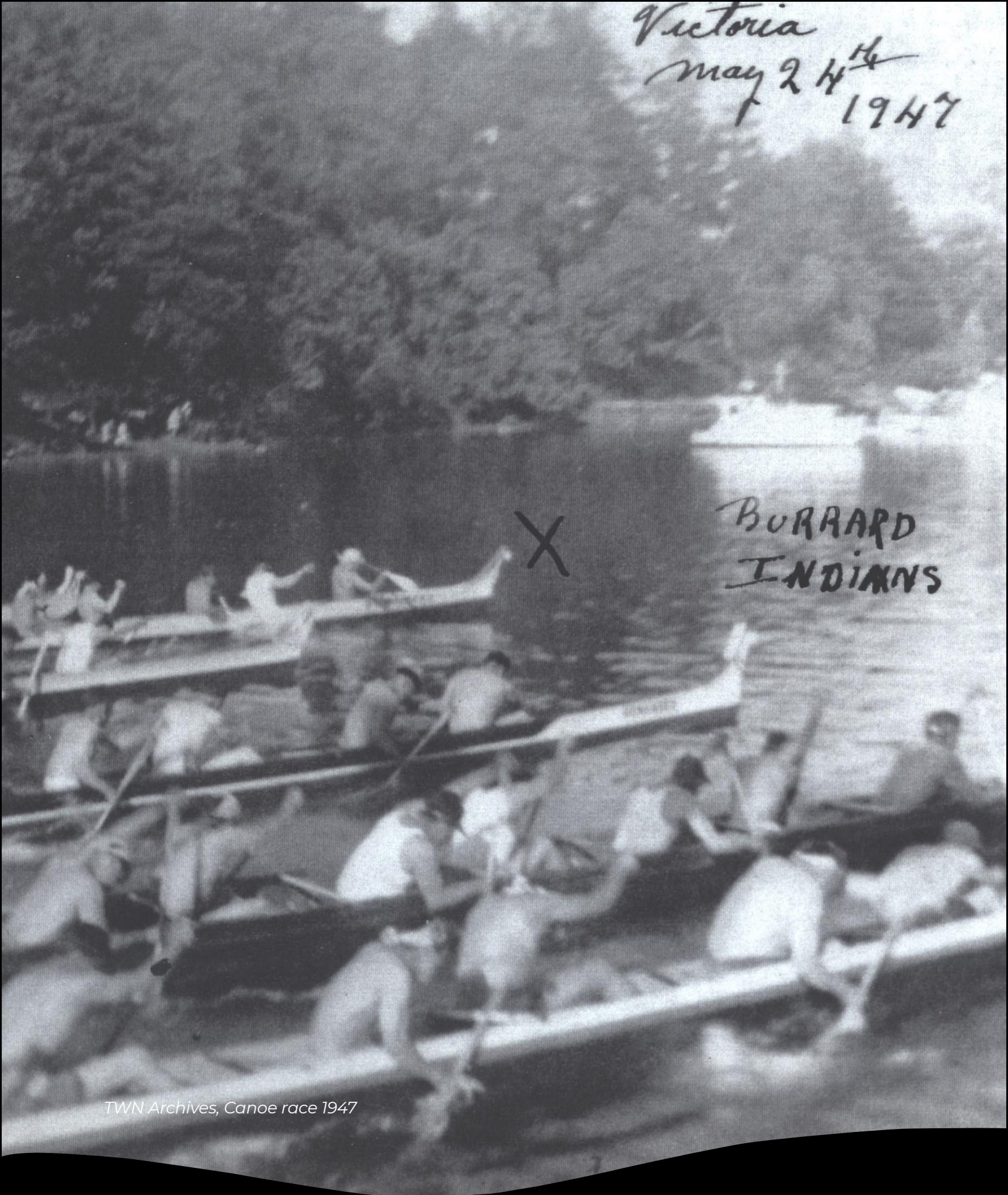
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Victoria  
May 24<sup>th</sup>  
1947

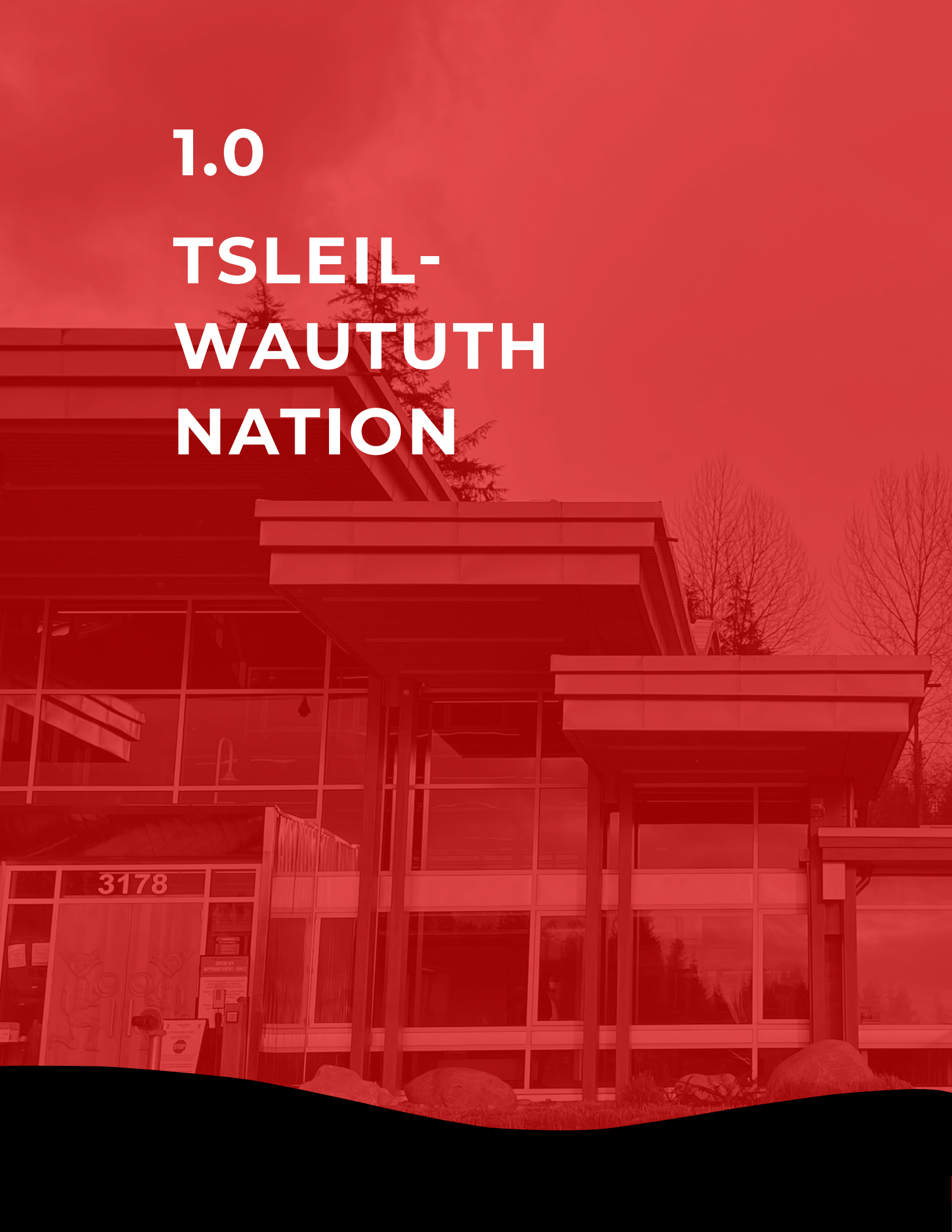


BURRARD  
INDIANS



**1.0**

**TSLEIL-  
WAUTUTH  
NATION**



## 1.1

# WHO WE ARE

---

Tsleil-Waututh people have lived along the shores of Burrard Inlet since time out of mind. The name Tsleil-Waututh means People of the Inlet in our hə́hqəmiḥə́ language. Our ancestors lived in villages around what is now called the Burrard Inlet.<sup>1</sup>



In 1869, Canada carved out the Tsleil-Waututh Nation reserves from our Territory. sʔəθnəc (Burrard Inlet #3) is the largest of reserves, and home to our current Tsleil-Waututh village. Located on the North Shore of the Burrard Inlet, west of the Indian Arm, Burrard Inlet #3 is 276 acres in size.

<sup>1</sup> For more information on who we are, see <https://twnation.ca/our-story/>



Tsleil-Waututh people are stewards of the lands, waters, and air—protecting and cleaning up the environment. We respect our culture and laws, while providing opportunities for economic development, public spaces, and affordable housing so future generations of Tsleil-Waututh people can live and thrive in our community.



*Indian Arm (Photo Credit - Jeff Sisson)*



## 1.2

# WHO WE ARE THROUGH ACTIVE TRANSPORTATION

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Before contact, our oral history has taught us that our ancestors' survival was dependent on cycles of hunting, harvesting and preserving foods and trade, using our land and water transportation networks.



Photo Credit - Mario Bartel The Tri-City News 8





*West Coast War Canoe*

### **OUR PRIMARY MEANS OF TRAVEL WAS VIA CANOES AND ON FOOT.**

Our ancestors travelled on deer trails that ran between village sites, inland and foreshore resource sites, and spiritual/ceremonial sites. Some of these trails still exist and are used today while some have been significantly impacted by development within our traditional territory.

### **CANOES FORMED AN INTEGRAL PART OF OUR HISTORY PRE-CONTACT.**

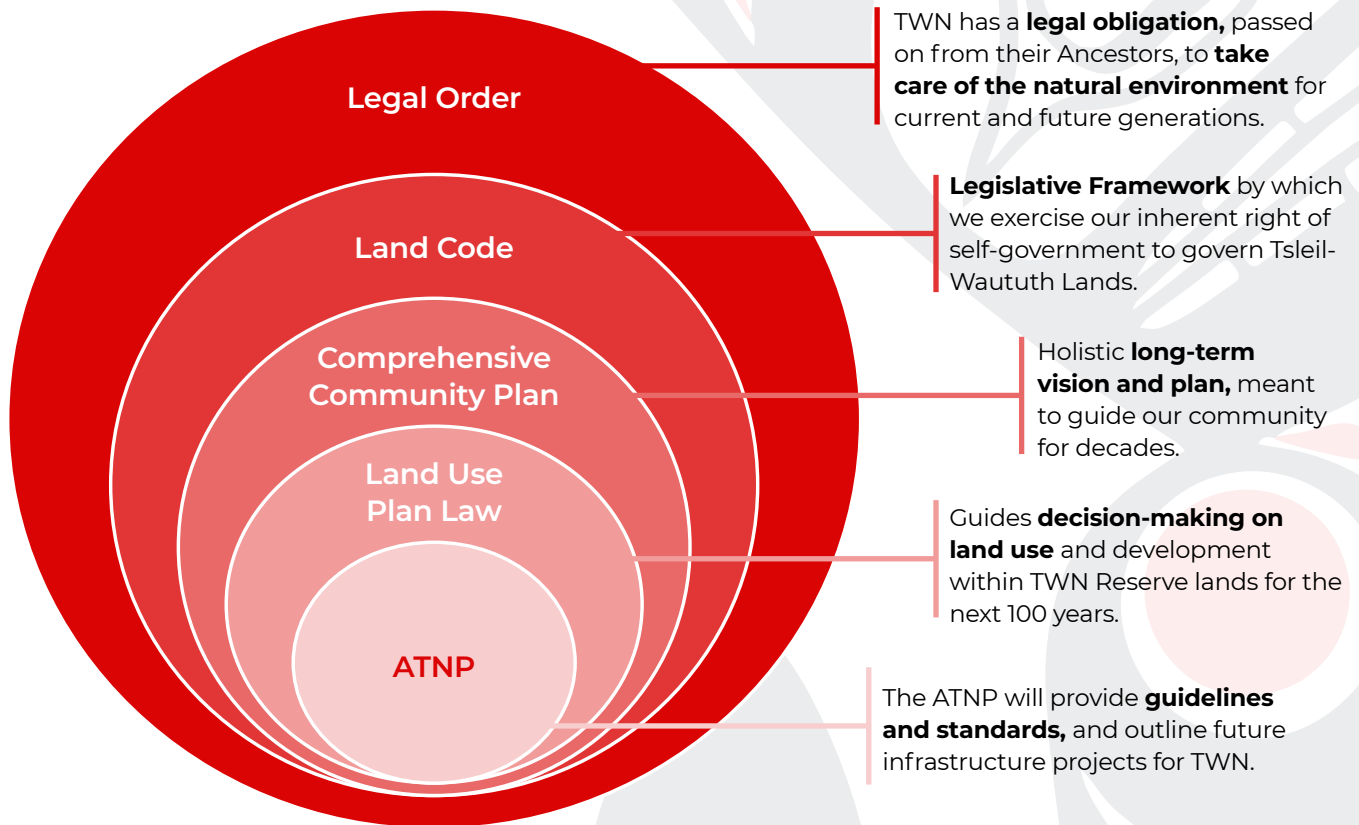
In our seasonal round, planks for winter houses were transported by canoe and used to construct the smaller summer structures. In mid-July or early August, most of the Tseil-Wautt, as well as other Coast Salish groups, travelled to the Fraser River to catch and dry the most favoured type of salmon: sockeye. The canoe tradition has been a constant in the Burrard Inlet, and Tseil-Waututh people have participated in the annual cycle of canoe festivals since they began in the 1920s.

**THIS HISTORY INFORMS AND GUIDES THIS PLAN.**

# 1.3

## Law & Active Transportation

### 1.3.1 Land Use Governance Framework



### 1.3.2 How does TWN Governance Framework & Plans relate to Active Transportation?

The ATNP is aligned with TWN's Land Use Governance Framework and existing Plans. Including:

#### COMPREHENSIVE COMMUNITY PLAN (2015)

We adopted our Comprehensive Community Plan (CCP) in 2010 and updated it in 2015. It is a long term vision and plan. It is established to guide our community for decades. The CCP shares our vision:

ʔi ct kʷəh̓et kʷə xʷəlməxʷaʔt̚ štəhi:m  
ʔiʔ  
həli ct wə niʔ ʔəw taʔəltəlxʷ ʔ  
syəwəh̓ət ct

*To maintain our identity as Tsleil-Wautt people, respecting our past and being mindful of our future, sharing a collective vision for a healthy, holistic community in harmony with our surroundings; guided by our spiritual, emotional, mental and physical teachings, thriving in our cultural excellence.*



We see many relations between active transportation and the CCP, including:

- » ensuring our community is a vibrant, safe, and enjoyable place;
- » supporting wellbeing;
- » taking care of the TWN Lands; and
- » incorporating our culture, traditions, and language.

## LAND USE PLAN (2019)

The Land Use Plan provides a vision, principles, and guidelines for the next 100 years.

It guides decision-making on land use within TWN Reserve Lands.

The Land Use Plan gives direction on active transportation, including:



**CONNECTING  
TO LAND**



**ENSURING  
FREE AND  
SAFE TRAVEL**



**CONNECTING TO  
COMMUNITY AND  
AMENITIES**



**CARING FOR OUR  
ENVIRONMENT**



**PRIORITIZING  
WELLBEING**



## CLIMATE CHANGE RESILIENCE PLAN (2021)

The Climate Change Resilience Plan (CCRP) sets a path to build community resilience to climate change over the next 10 years and beyond. It is the result of a two-year planning process.

Our approach to climate action is through low-carbon resilience. This means finding ways to respond to climate change impacts (“adaptation”). While also reducing greenhouse gas emissions (“mitigation”) on reserve.

This approach honours our traditional practices as stewards and guardians of our lands. Working together to build resilience in balance with nature.

It includes a Climate Action Toolkit that outlines climate actions across five key Focus Areas. One of the focus areas is reducing our greenhouse gas emissions which supports active transportation.



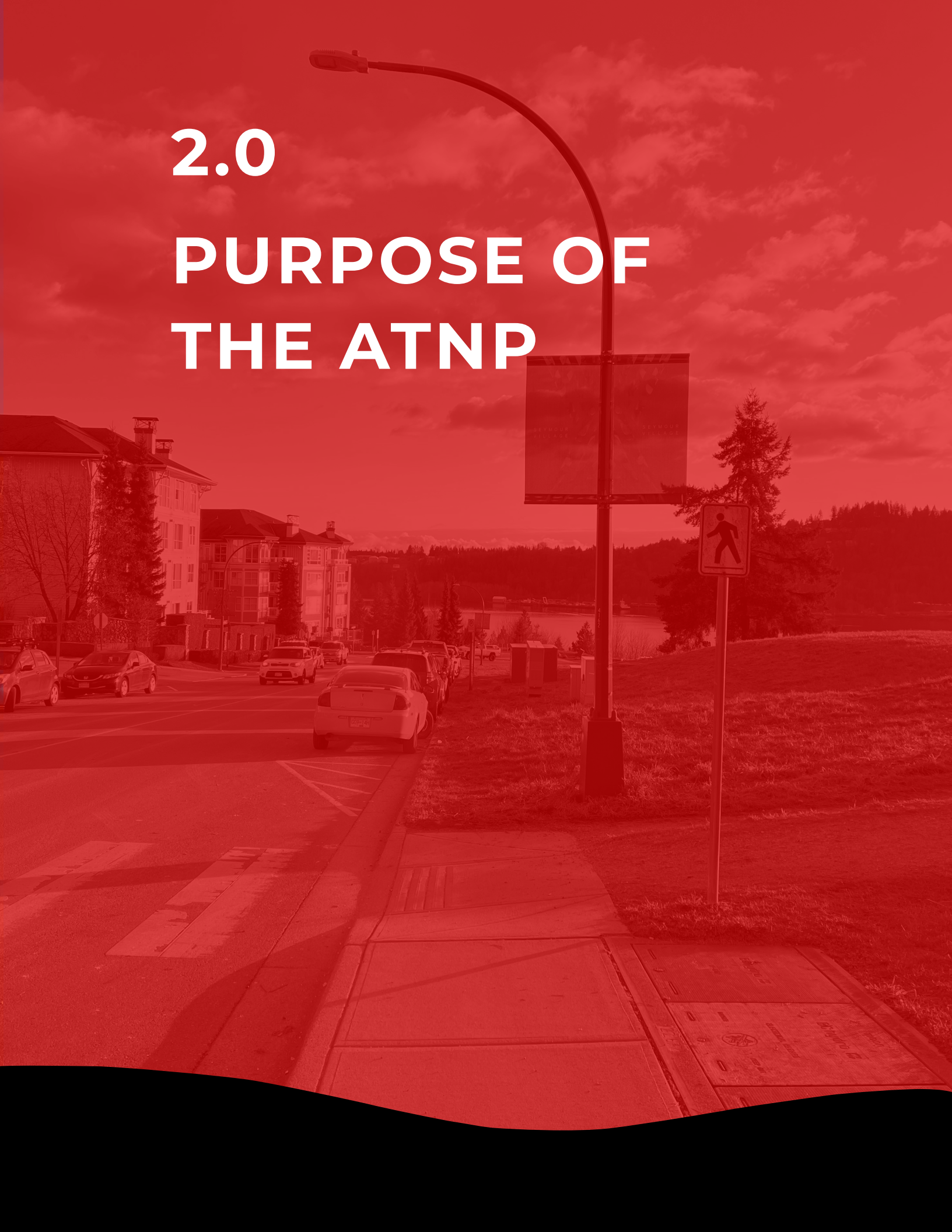


*Tsleil-Waututh Nation Reserve and TWN Admin Building (Photo Credit Jeff Sisson)*



**2.0**

# **PURPOSE OF THE ATNP**



## THE PURPOSE OF THE ATNP

*is to make it easier to walk, bicycle, roll, and paddle within TWN Lands.*



The ATNP focuses on active transportation for Burrard Inlet #3, however, many of the ideas in the ATNP can be used on all TWN Land.

### THE ATNP AIMS TO:

**1**

Encourage more people to make trips by walking, biking, rolling, and paddling instead of by car

**2**

Create conditions for a healthier community

**3**

Reduce transportation-related greenhouse gas emissions

**4**

Enhance cultural expression and reconnect Members

**5**

Support the objectives and initiatives of other community plans

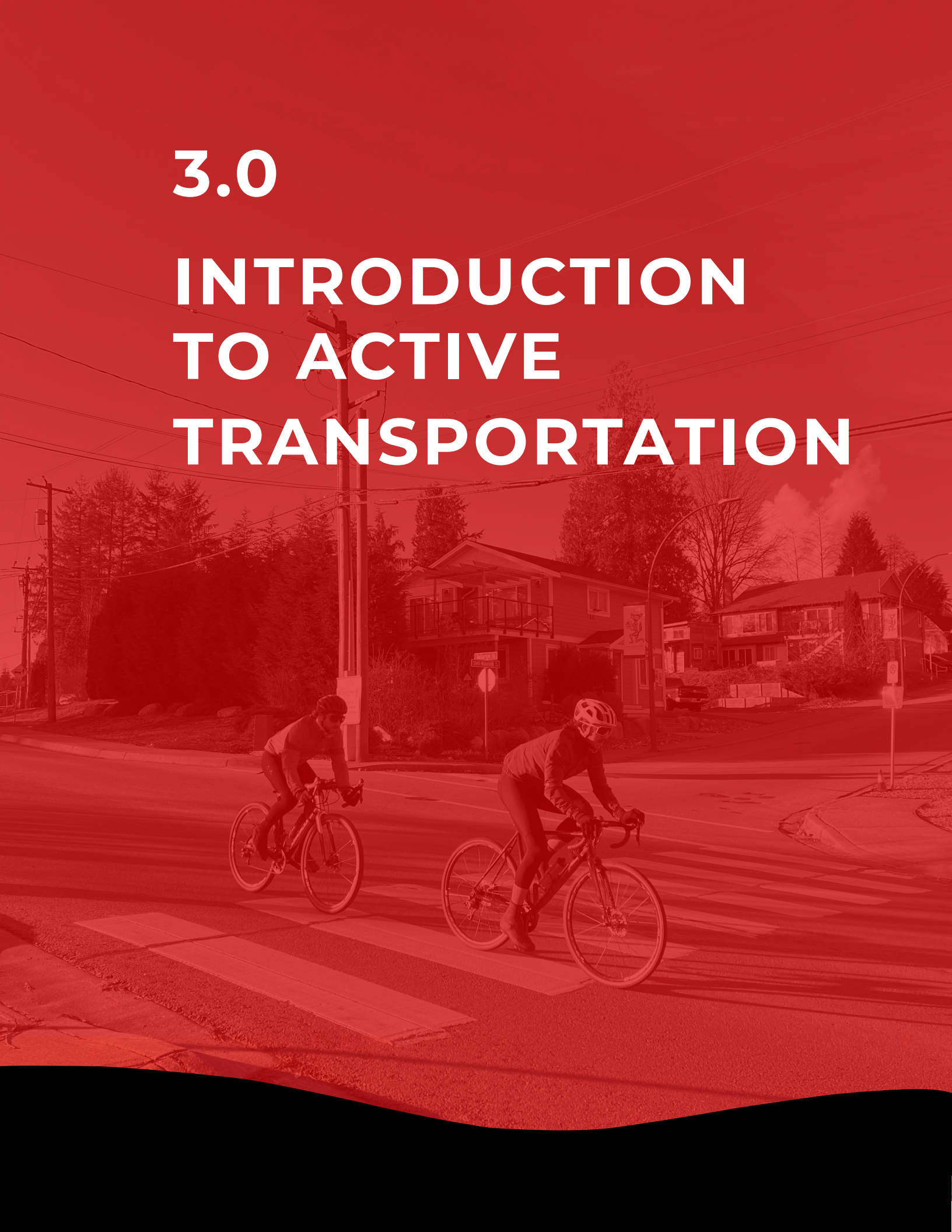
The ATNP includes a list of projects that can make active transportation safer and more comfortable. This can be done by installing more sidewalks, trails, creek crossings, benches, etc.

The ATNP also recognizes the importance of working with the District of North Vancouver, TransLink, and Metro Vancouver to provide better active transportation networks for TWN.



**3.0**

# **INTRODUCTION TO ACTIVE TRANSPORTATION**



*Active transportation is fun and a great way to get out, enjoy TWN Lands, interact with others, and feel good!*

# WHAT IS ACTIVE TRANSPORTATION

Active transportation is walking, biking, rolling or paddling to a destination. Any type of human-powered transportation is active transportation. It can include using a skateboard, in-line skates, scooters, wheelchairs, or strollers.



It can also include winter activities like snowshoeing or water-based activities like canoeing (paddling).

E-scooters, electric skateboards, and other small electric vehicles are also considered active transportation. People using these devices often share the same infrastructure as people walking, biking, or rolling.



# WHY ACTIVE TRANSPORTATION IS IMPORTANT

Active transportation is important for many reasons.

More active transportation infrastructure can reduce how often people use a car.

It can make transportation within a community feel safer and more comfortable.

It can encourage more physical activity and time spent outdoors.

It can reduce greenhouse gas emissions and support climate resilience.

Many of the benefits offered by active transportation will address broader community goals identified in our other plans. These include our Comprehensive Community Plan (CCP), Land Use Plan (LUP), and Community Climate Change Resilience Planning (CCCRP).



*Tsleil-Waututh Nation Whey-ah-Wichen Canoe Festival 2022 canoe race start (Photo Credit - Jeff Sisson)*



Some of the benefits of active transportation and why it is important to TWN are described below:



## **PROVIDE SPACE TO CONNECT WITH LAND AND CULTURE**

TWN culture has a deep connection to the land and water. Protecting TWN land and waters for our community now and for future generations is important to our Members.

Connections to the land and the Inlet are important to continue our culture and traditions. Ensuring TWN culture, tradition and language are forever a part of the TWN Members' way of life is a goal of the CCP.

Projects in the ATNP will help to support this goal. The ATNP promotes opportunities to include TWN culture and language into daily life. Signage and storytelling around trails, pathways, and other important destinations will create spaces for our Members to enjoy the land together.



## SAFETY BENEFITS

Active transportation supports the creation of a safe place to live, learn, work, and play. Slow moving cars, sidewalks, and trails can make it safer for people to move within their community. Children can play on local streets and Elders can move at their own pace.

Research shows that Indigenous Peoples are much more likely than non-Indigenous Peoples to be hurt in collisions with motor vehicles<sup>2</sup>. Research also shows that Indigenous communities receive less investments in transportation infrastructure meaning they have fewer sidewalks and trails than non-Indigenous communities.

The CCP and LUP identify a need for improvements to enhance safety in the TWN community.

Investing in active transportation infrastructure is an important step to increase safety in the community for everyone.

<sup>2</sup> Williams Naomi G, G. K. (2022). Motor vehicle collision-related injuries and deaths among Indigenous Peoples in Canada: Meta-analysis of geo-structural factors. *Canadian Journal of Rural Medicine*, 51-60.



## HEALTH BENEFITS

Walking, biking, rolling, and paddling offer both physical and mental health benefits. Studies have found that people travelling by active transportation are in better health. Active transportation provides practical, everyday opportunities for people to be physically active.

Research shows that people living in communities with more sidewalks, trails, and crosswalks, have lower levels of obesity and high blood pressure, and are generally healthier<sup>3</sup>.

Health research shows that a lack of physical activity and obesity are contributing factors in the significant increase of chronic disease such as cardiovascular disease and diabetes in Indigenous communities. These health problems were unheard of in traditional Indigenous communities.

Healthy and active living is an important goal for TWN. The CCP documents our approach to health and wellness. This includes encouraging and supporting TWN Members to adopt and maintain a healthy lifestyle. Our LUP also addresses how land use decisions affect the health and wellness of our community.

Active transportation will also provide more opportunities for outdoor recreation to connect with our lands.

Increasing physical activity levels through active transportation will contribute to our community's health and wellness goals.

Overall, active transportation will promote a higher quality of life in our community. The development of the ATNP is a step towards achieving our overarching community goals.

<sup>3</sup> Xiaohu Yue et al. (2022). Using Convolutional Neural Networks to Derive Neighborhood Built Environments from Google Street View Images and Examine Their Associations with Health Outcomes. *International Journal of Environmental Research and Public Health*.





## ENVIRONMENTAL BENEFITS

Transportation trips (made by motor vehicles) are one of the largest contributors to greenhouse gas emissions. Increasing the number of trips by active transportation can reduce air pollution and greenhouse gas emissions. Encouraging more active transportation will promote sustainable access to our lands.

TWN takes great measures to reduce negative environmental impacts arising from development. The CCP, LUP, and CCCRP identify our environmental goals and commitment to climate resilience and stewardship. Core principles are connection to nature, eco-friendly development, and preservation of ecological values to address climate change.

Sidewalks and trails have a lower impact on the land when compared to wider roads. Additionally, investment in active transportation infrastructure will reduce our dependency on cars. This will lower greenhouse gas emissions and contribute to cleaner air. Active transportation is one way to ensure greater protection of the environment long-term.



## ECONOMIC BENEFITS

Using ATNP reduces household costs. When people and families choose walking, biking, rolling, and paddling instead of driving a car, they spend less on transportation.

These savings can be reinvested back into the community by buying food, art, and supporting local businesses. Investments in trails, sidewalks, and seating will make it easier for our Members to access resources and destinations by active transportation.

Building active transportation infrastructure is also an example of economic development for TWN. It will connect our community to the larger active transportation network on the North Shore. This will help TWN attract businesses that will generate revenue for our community. Ensuring that economic development revenue contributes to enhancing TWN quality of life is an important goal of the CCP.



## PARTNERSHIPS

The ATNP also creates an opportunity to think about ways to enhance transportation connections outside of TWN Lands. This includes working with the District of North Vancouver, TransLink, and the Ministry of Transportation and Infrastructure to ensure that people can travel to and from TWN Lands safely and comfortably by all modes.



*Renaming Ceremony, Children of Takaya Drummers and Dancers*



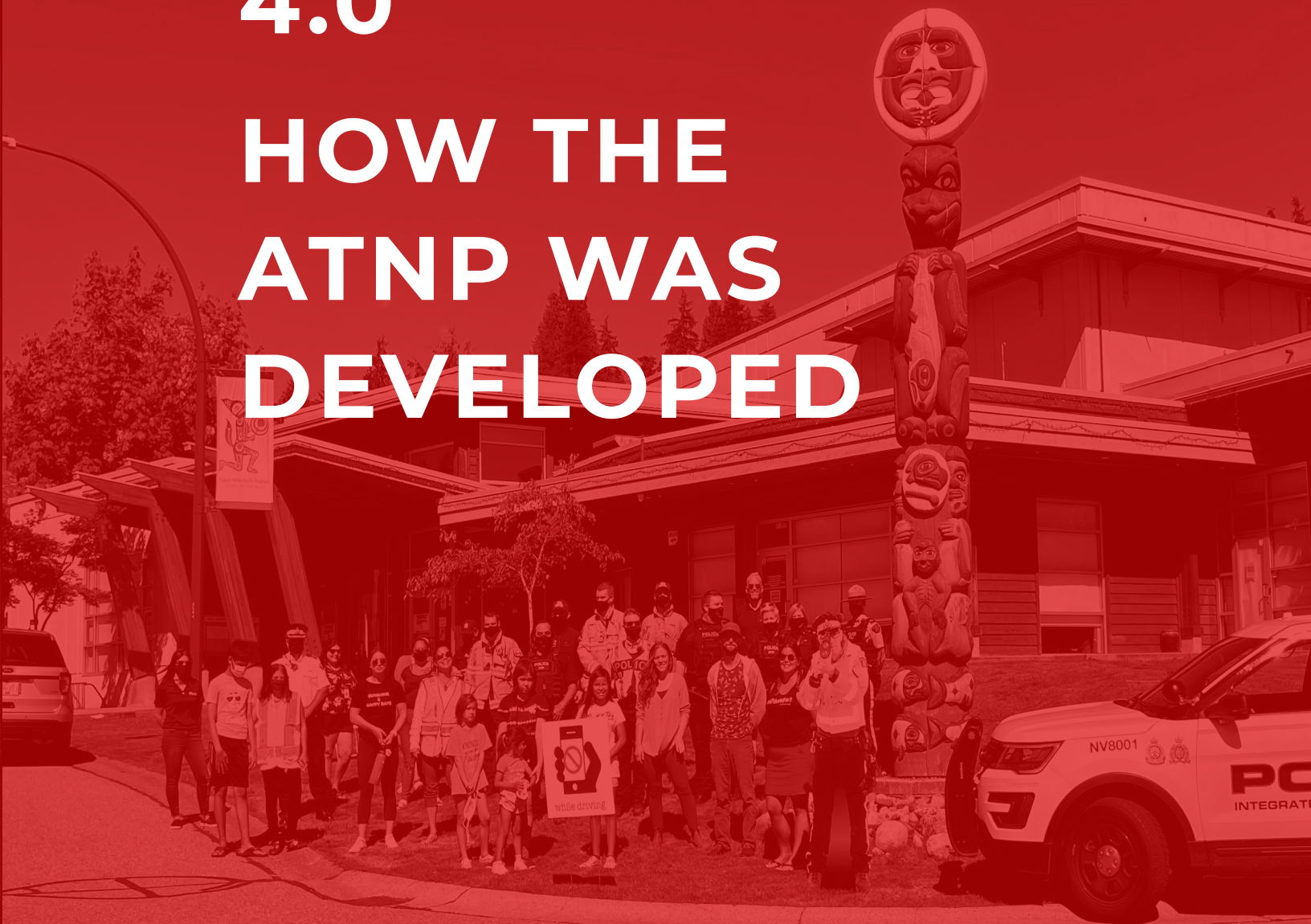


TWN Forest on reserve.



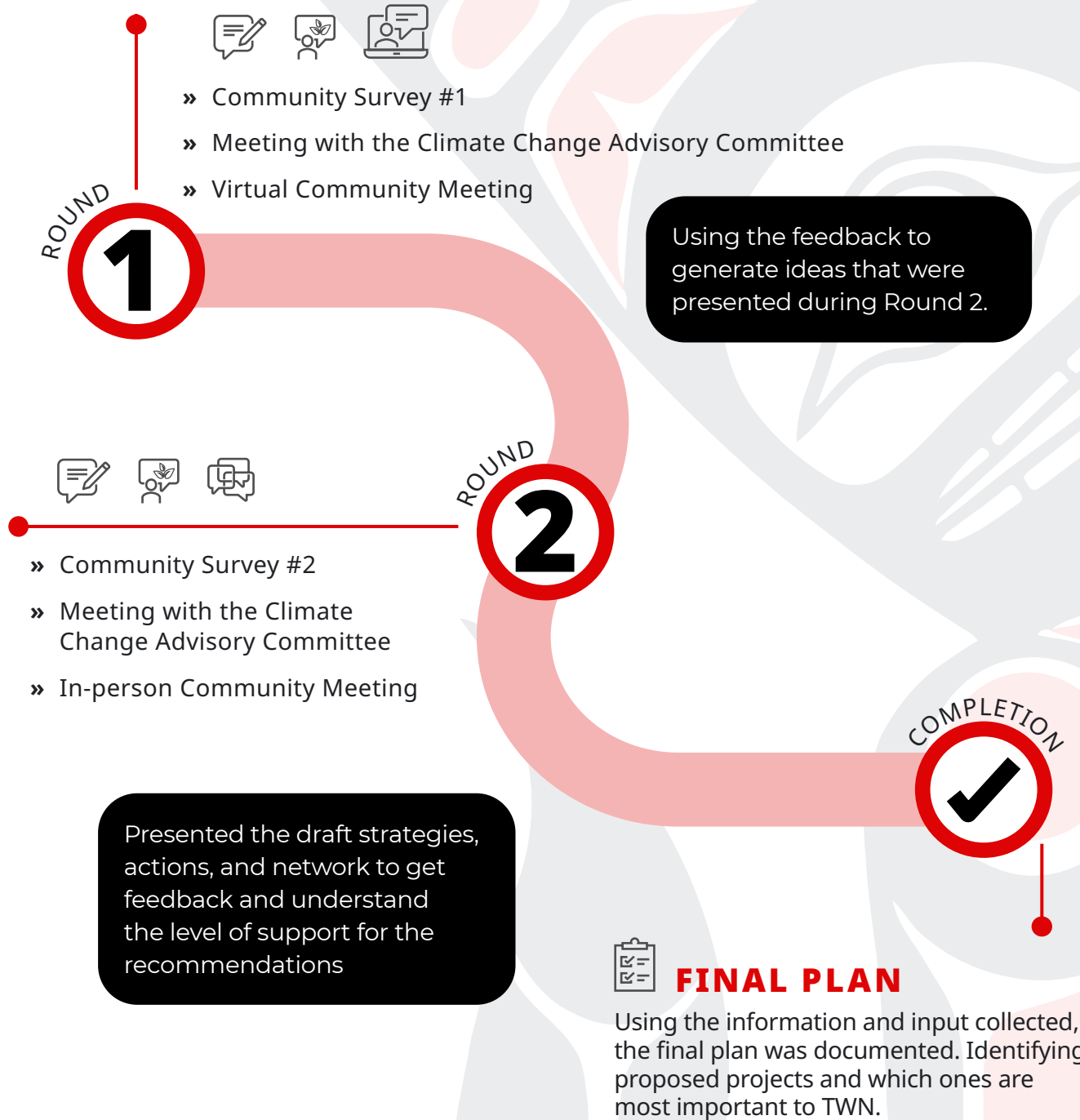
# 4.0

## HOW THE ATNP WAS DEVELOPED



The recommendations in the ATNP are based on the experiences and input from TWN Members, Community Members, leaseholders, and staff.

Several events were held to collect input for the ATNP:







## COMMUNITY SURVEYS

Staff hosted two surveys, both online and paper, in January 2022 and September 2022.

### THE FIRST SURVEY

JANUARY 2022

**83**

responses

TWN Members,  
Community Members,  
and TWN staff

**318**

responses

Leaseholders

The first survey focused on understanding how people move through the community and what prevents people from walking, biking, and rolling more.

### THE SECOND SURVEY

SEPTEMBER 2022

**62**

responses

TWN Members,  
Community Members,  
and TWN staff

The second survey focused on understanding what actions and infrastructure projects should be implemented first to make walking, biking, and rolling easier in the community.



## **CLIMATE CHANGE ADVISORY COMMITTEE MEETINGS**

Staff hosted two meetings with the Climate Change Advisory Committee (CCAC).

### **THE FIRST MEETING**

**FEBRUARY 23, 2022, VIRTUAL**

During the meeting we discussed the relationship between active transportation and other projects within the community, including the shoreline adaptation project. We talked about some of the issues and opportunities for walking, biking, rolling, and accessing the foreshore, and generated ideas for community engagement.

### **THE SECOND MEETING**

**JULY 27, 2022, VIRTUAL**

During this meeting we discussed the ideas that have been identified by Community Members and staff to improve safety and make active transportation more comfortable and enjoyable.



## **COMMUNITY MEMBER MEETINGS**

Staff hosted two meetings with TWN Members and Community Members.

### **THE FIRST MEETING**

**APRIL 20, 2022, VIRTUAL**

The purpose of the meeting was to introduce the project, review the community survey results, and to collect input on existing issues and opportunities for active transportation.

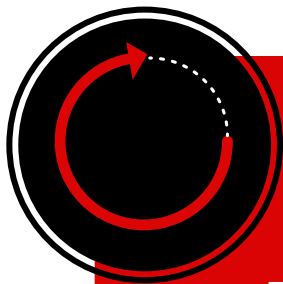
### **THE SECOND MEETING**

**SEPTEMBER 28, 2022**

**IN-PERSON AT THE TWN ADMIN BUILDING**

The purpose of this meeting was to identify and confirm future infrastructure projects and priorities using a mapping exercise.





## ***PROJECT UPDATES AND NOTIFICATIONS***

Project updates about the project process and upcoming engagement events and survey results were shared on the Members Portal, through the newsletter, and social media.



## ***EVENTS AND FUN!***

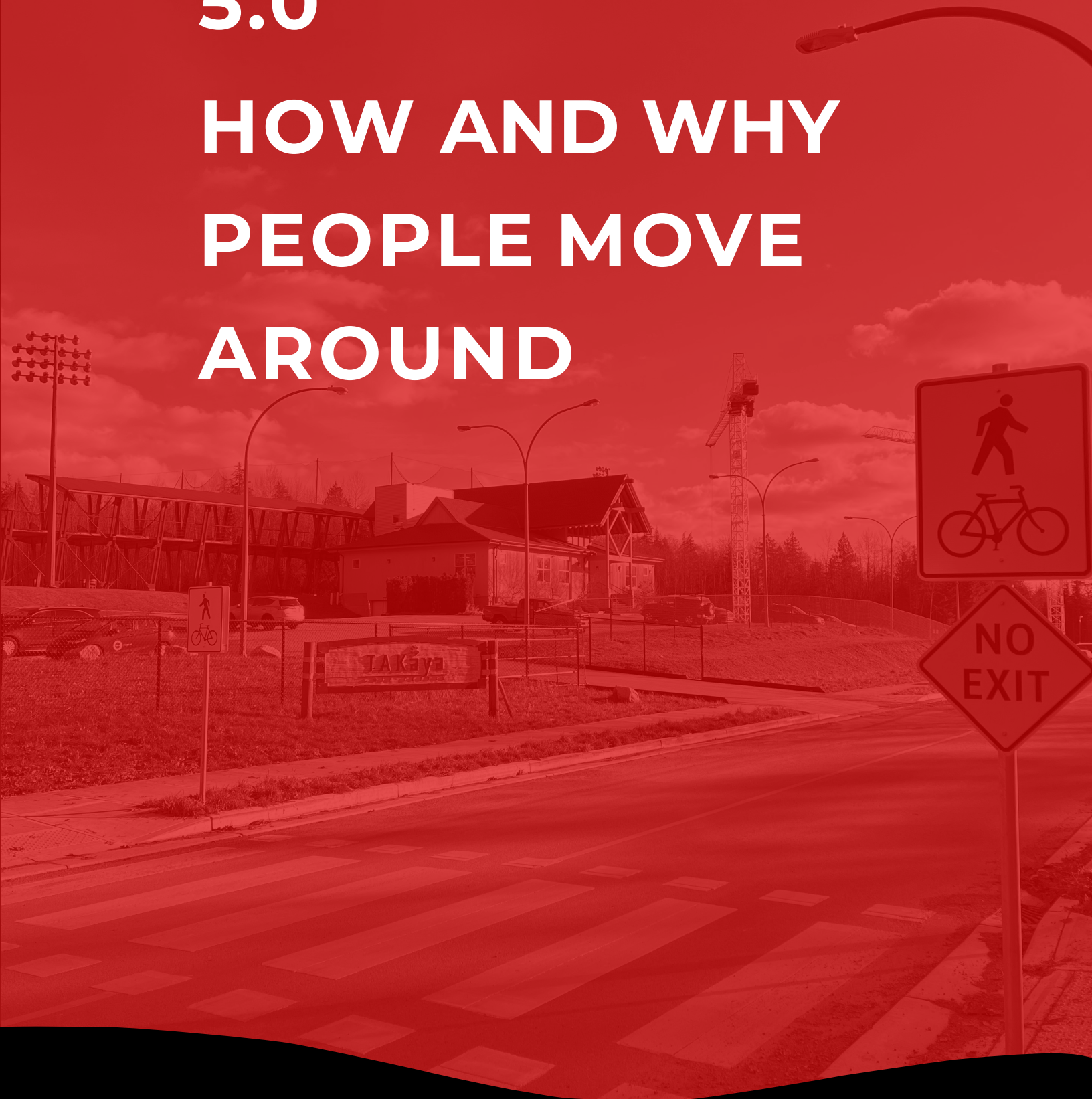
TWN held a digital “Kilometer Club” using Strava to build awareness of the ATNP and encourage Members to be active. There were 21 people registered for the TWN Strava group and 4 participants were randomly selected to win a prize.

The program ran from April 15 to May 21 2022. To enter this challenge, participants downloaded the Strava app on their smartphone and joined the club “TWN Active Transport Kilometer Club,” to start recording walks, hikes, and runs. Each week the top three participants with the highest number of KMs walked and the highest number of activities logged was entered in a prize draw.

The Kilometer Club encouraged participants to use active transportation, to visit friends and family, for exercise, and fun.

**5.0**

# **HOW AND WHY PEOPLE MOVE AROUND**



The information collected from surveys, events, conversations, and available data can help to understand where and why people are walking and cycling. This information can also help find ways to encourage people to travel by active transportation more.

# HOW ARE PEOPLE MOVING AROUND

## 2021 CENSUS DATA

Based on the **Census** and **Community Survey**, we know that most people drive to destinations, and a smaller number of people walk, bike, or take transit.

Data is collected through the **Canadian Census** on how people living on TWN Lands travel to work and to school. This information represents all individuals living on TWN Lands, including leaseholders.



**4%**

take public **transit**.



**7%**

walk



**87%**

people travel by **motor vehicle** either as a driver (84%) or as a passenger (3%)



**1%**

take **other** methods like taxi, motorcycle, etc.



**1%**

bicycle



# WHY ARE PEOPLE MOVING AROUND

Based on input from the **community survey**, which includes input from TWN Members, Community Members, leaseholders, and staff, and **conversations** with Members we know:

## TOP REASONS FOR CHOOSING ACTIVE TRANSPORTATION:



ENJOYING NATURE,  
THE LAND, PARKS, OR  
TRAILS



EXERCISE



SPEND TIME WITH  
FAMILY, FRIENDS  
OR CONNECT WITH  
COMMUNITY MEMBERS

- » Accessing transit was another reason many people **walk, bike, or roll**.
- » Very few people are **biking**. When people do bike it is for exercise and recreation, to travel to work, or to attend community meetings or events.
- » Some people are travelling by **transit**. When people do take transit, it is to access food, to get to/from work, and to run errands/attend appointments.
- » Most people **drive or carpool** to access food or restaurants, for social activities, or to run errands and attend meetings.

# WHY AREN'T PEOPLE WALKING AND CYCLING

THE TOP BARRIERS FOR ACTIVE TRANSPORTATION ARE SHOWN BELOW



**NO SIDEWALKS  
OR TRAILS**



**POOR CONDITION OF  
SIDEWALKS OR TRAILS**



**POOR LIGHTING**



**STEEP HILLS**

Some other reasons people are not using active transportation:

- » Destinations are too far away.
- » Vehicle traffic (motor vehicle speeds and noise and the amount of traffic).







*Different types of active transportation routes and infrastructure. Both existing and what could be built in the future, are described here:*

### **REQUESTED TRANSPORTATION ROUTES:**

These are routes that were requested during discussions and engagement events that were held during the development of the ATNP.

### **SIDEWALKS:**

Sidewalks are intended for pedestrian use. They are usually located beside a roadway. Sidewalks are typically concrete but can also be asphalt.



### **TRAILS:**

Trails are typically maintained unpaved trails. They are hard packed and wide enough to accommodate two people walking side-by-side. Trails are typically proposed off-street and in the forest. Trails that are located on TWN Private Lands are for TWN Members only.

### **PROPOSED DNV SPIRIT TRAIL:**

The Spirit Trail is a pathway project planned to provide a connection across the North Shore. There are some sections of the proposed route that are complete and others that are still proposed.

### **DEER PATHS:**

Deer paths are trails people use that are located within the forest that are not officially maintained by TWN. Deer paths that are located on TWN Private Lands are for TWN Members only. These paths are gravel or dirt pathways, they are usually quite narrow and not marked with signage and are used for a variety of purposes including for traditional and cultural reasons. They often follow existing wildlife paths through the forest.

### **MULTI-USE PATHWAY:**

Multi-use pathways are shared by people walking, biking, and using other forms of active transportation such as skateboarders and in-line skates. Typically, multi-use pathways allowing for bi-directional travel for a wide range of users with varying ages, abilities, travel speeds, and devices. Multi-use pathways are located adjacent to roadways and are typically paved.



### **DISTRICT OF NORTH VANCOUVER (DNV) TRAIL:**

DNV Trails are located within the District of North Vancouver and under the District's jurisdiction.

**PROTECTED BICYCLE LANES:**

A protected bicycle lane is a dedicated bicycle facility (used only by people cycling) that is physically separated from motor vehicles and pedestrians. Separation can include a curb, planters, bollards, and more.

**NEIGHBOURHOOD BIKEWAY:**

Neighbourhood bikeways are streets with low motor vehicle volumes and speeds that have been enhanced to varying degrees to prioritize bicycle traffic. Neighbourhood bikeways should include signage and pavement markings and can also include a range of traffic calming and diversion measures to facilitate through movement by bicycles, while reducing motor vehicle volumes and speeds as necessary.

**CROSSWALK:**

A portion of the roadway at an intersection or elsewhere indicated for pedestrian crossing by signs or by lines or other markings on the surface.

**RECTANGULAR RAPID FLASHING BEACONS (RRFB):**

Flashing lights that can be activated by a pedestrian at a crosswalk. The flashing amber lights that alternate back and forth attract motorists' attention and alerts them to stop to allow people to cross the street.

**CURB RAMP:**

A curb ramp is a smooth, graded transition from the sidewalk to the road.

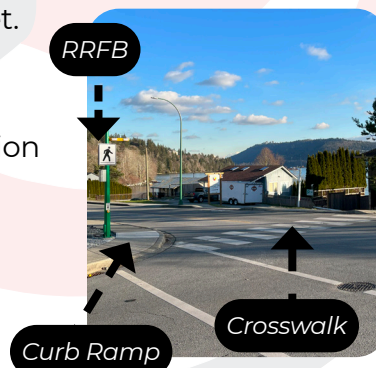
**POSTED SPEED:**

A speed limitation introduced for a variety of reasons (safety, economy, traffic control and government regulatory policy) aimed at encouraging drivers to travel at an appropriate speed for surrounding conditions.

**TRAFFIC CALMING:**

Consists of infrastructure that help to reduce motor vehicle speeds closer to the speed cyclists and other active transportation users are moving and/or reduce motor vehicle volumes, thereby making neighbourhood streets safer and more pleasant active transportation routes. Traffic calming measures can include:

- » Speed humps
- » Speed tables
- » Raised crosswalks
- » Curb extensions
- » Traffic circles
- » Raised median islands



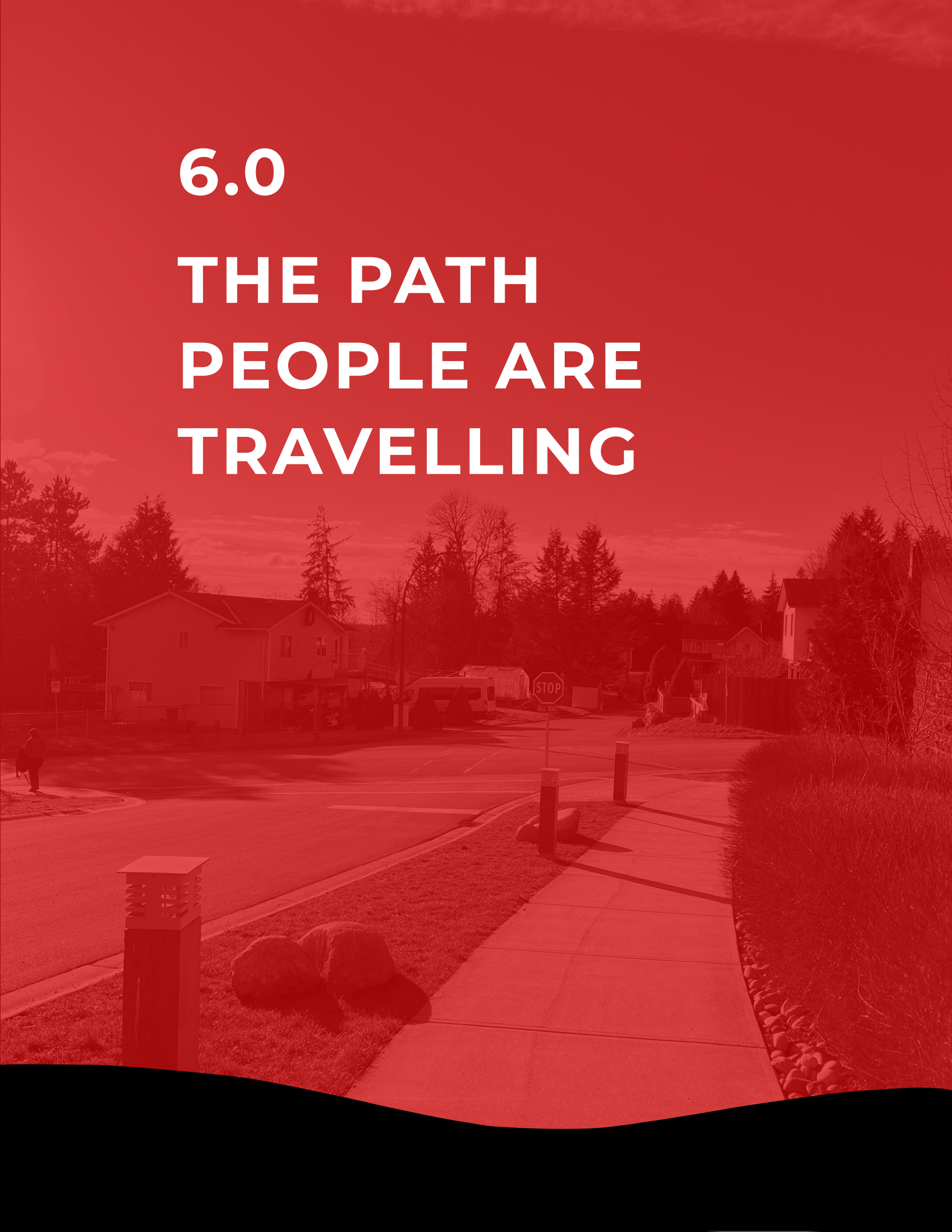






**6.0**

# **THE PATH PEOPLE ARE TRAVELLING**

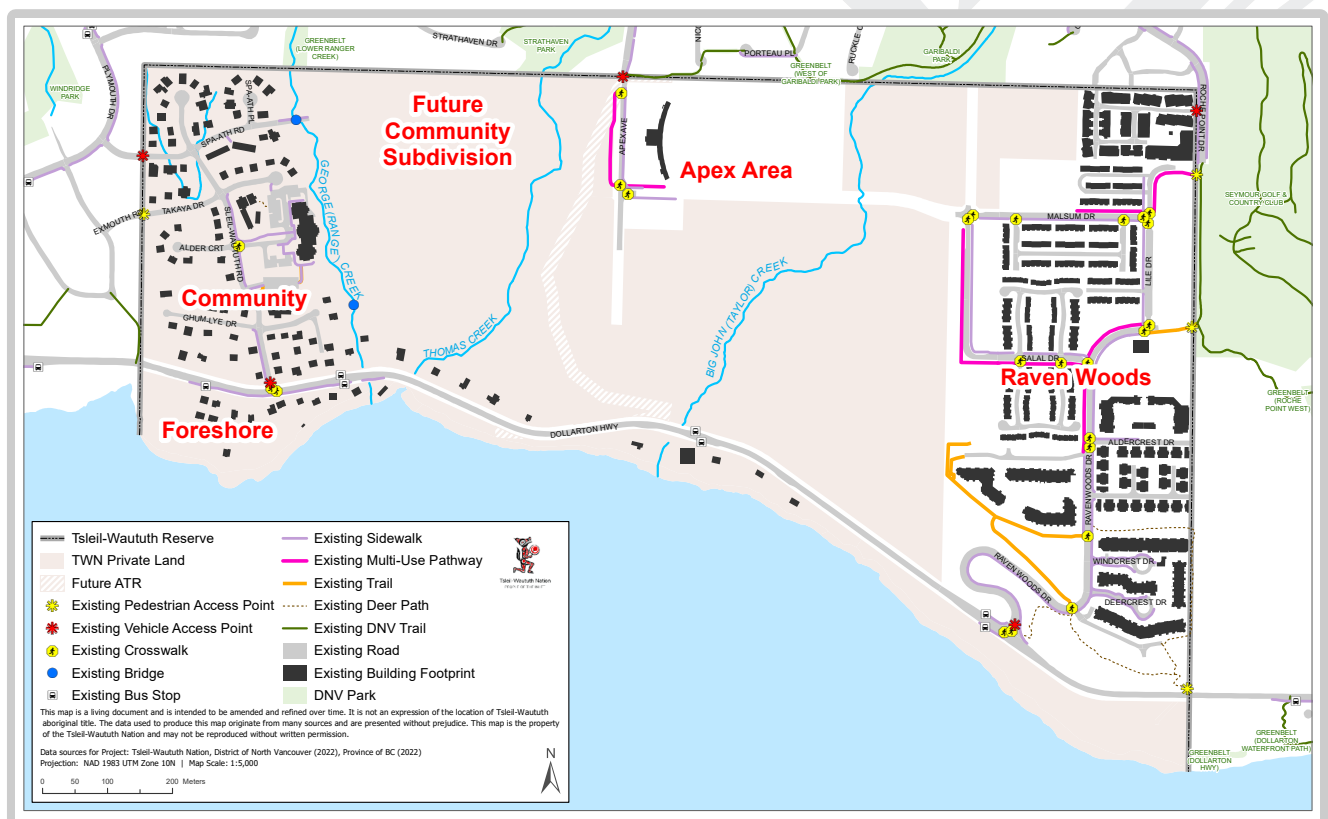


This section talks about the routes and conditions for active transportation within TWN Lands today. For more information about existing conditions see **Appendix B**, the Existing Conditions Report.

**TWN Lands are located at səliłwətał, a 276-acre area of land on the north shore of the Burrard Inlet west of Indian Arm<sup>4</sup>. There are five distinct areas within the TWN Lands:**

- » Community
- » Community Subdivision
- » Raven Woods
- » Apex Area
- » Foreshore

These areas are outlined in Map 1.



Map 1 - TWN Lands by Area

<sup>4</sup> Land Use Plan, 2019

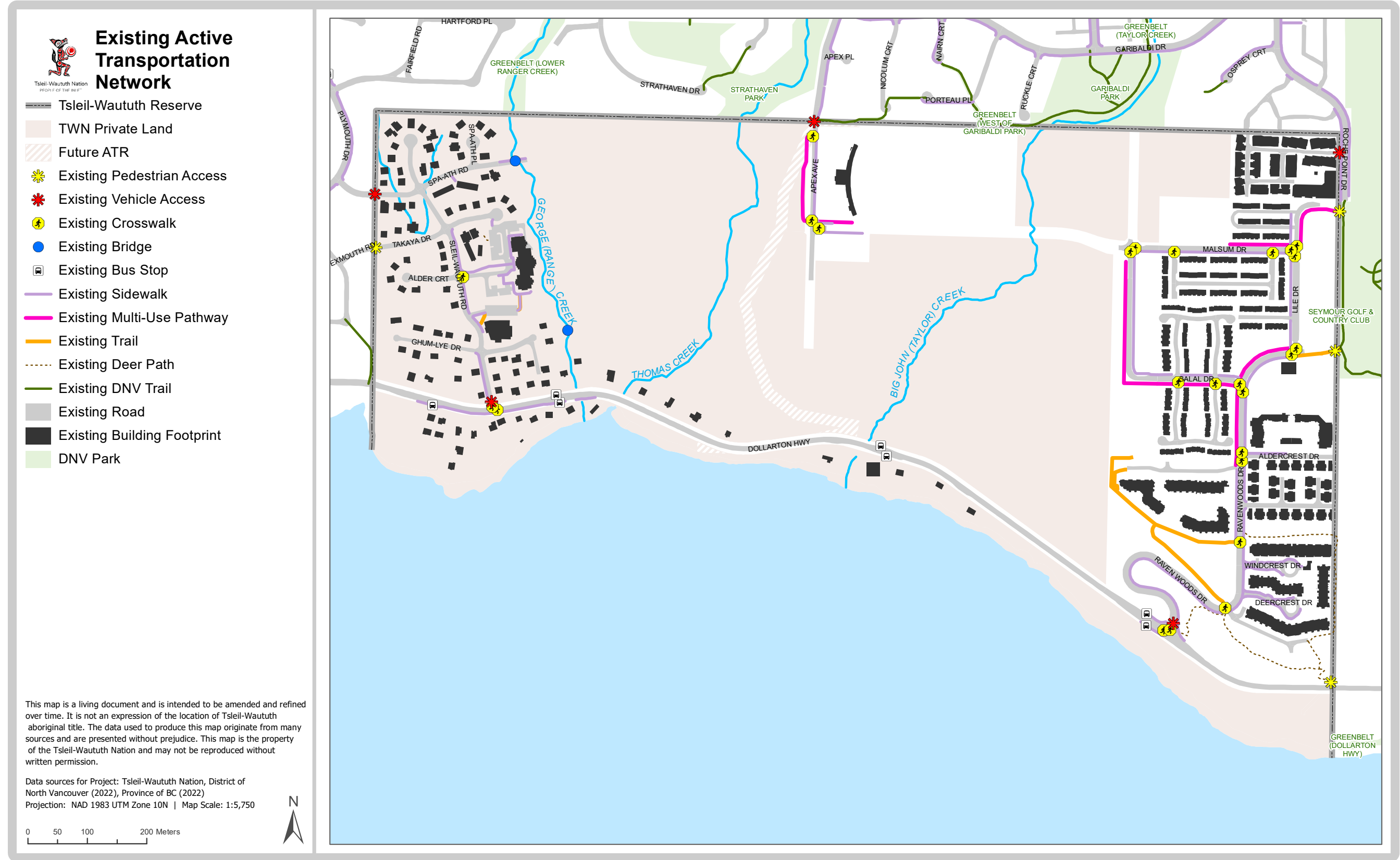
This section outlines the existing active transportation routes within TWN Lands.

The Existing Active Transportation Network Map (Map 2) shows the location of existing sidewalks, multi-use pathways, trails, deer paths, and DNV trails. These are the routes that are currently used for active transportation.

It is important to note that this map is a living document and is intended to be amended and refined over time. It is not an expression of the location of Tsleil-Waututh aboriginal title. The data used to produce this map originate from many sources and are presented without prejudice. This map is the property of the Tsleil-Waututh Nation and may not be reproduced without written permission.







Map 2 - Existing Active Transportation Network Map



# COMMUNITY

The western part of TWN Lands, the Community, is home to many TWN Members who live at səlilwətaʔ.

## DESTINATIONS:

The administrative buildings, community centre, school, playground, daycare, and other community services are in the Community.

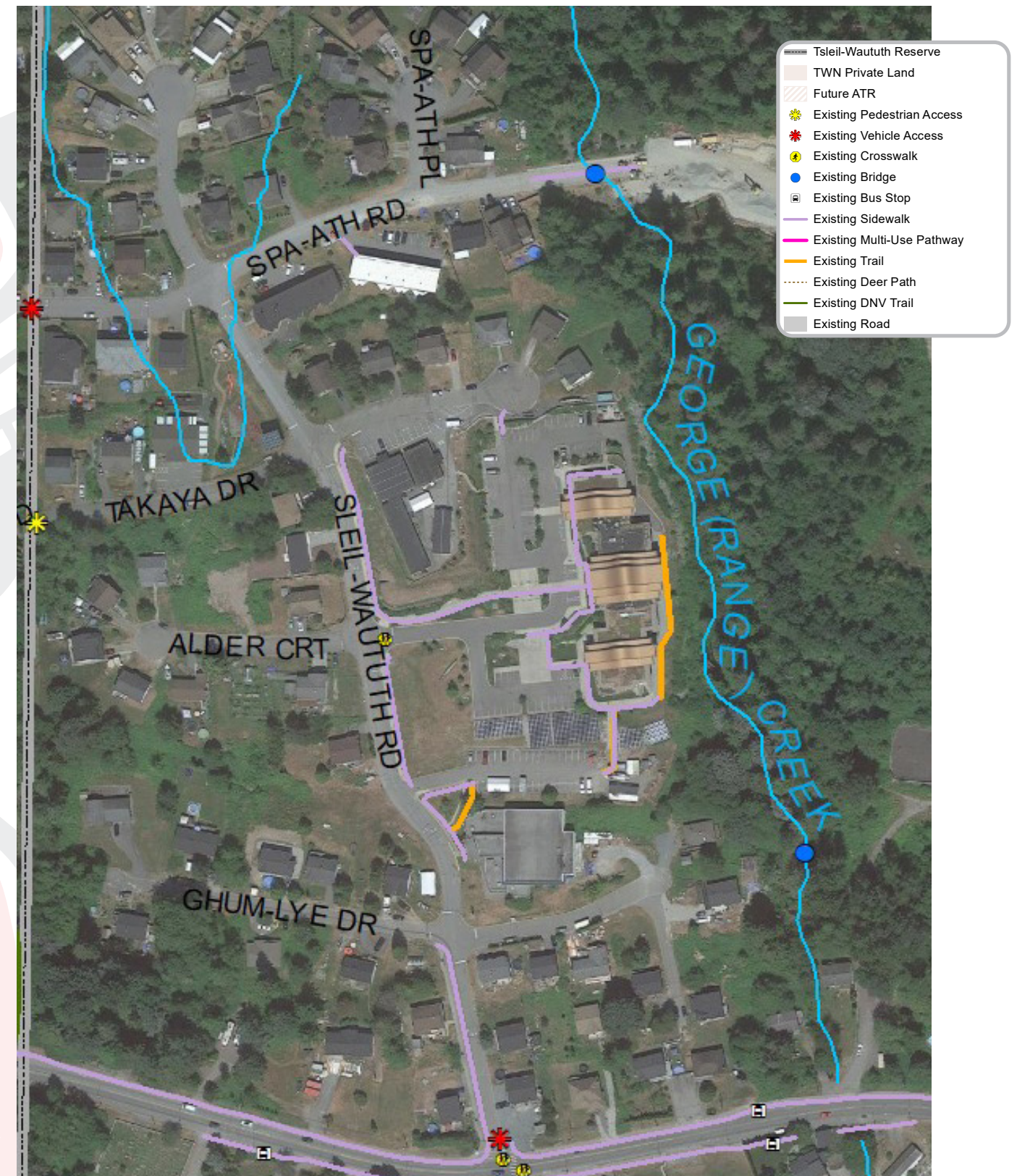




## ROADS AND PATHWAYS:



- » There are several roads within the Community that people travel on.
  - › Sleil-Waututh Road provides the north-south connection and access to Dollarton Highway.
  - › Ghum-Lye Drive, Alder Court, Takaya Drive, and Spa-ath Road provide east-west connections. Spa-ath Road connects to Plymouth Drive in the District of North Vancouver to the west.
  - › Work is underway to extend Spa-ath Road east to provide access to the new Community Subdivision area.
- » There are some **sidewalks** in the Community, but there are a lot of gaps and they do not provide a continuous walking route.
  - › There are sidewalks on one side of the street along portions of Sleil-Waututh Road and Alder Court.
- » Most **intersection crossings** are unmarked, and intersections are stop controlled (4-way stops).
- » The **posted speed limit** on streets within the Community is 30 kilometres an hour.
- » There are **speed humps** on Sleil-Waututh Road and Spa-ath Road between Sleil-Waututh Road and Plymouth Drive.
  - › Community survey respondents identified that motor vehicle speeds are an issue on TWN streets.
- » There are several **deer paths** that can be accessed from the Community, particularly from Ghum-Lye Drive and Spa-ath Road. Some of the deer paths are not accessible and there are challenging creek crossings.
- » People can access the **District of North Vancouver** using Spa-ath Road (turns into Plymouth Drive) and Dollarton Highway.
- » There is one **bus route** along Dollarton Highway (Route 212) and one along Ellis Street and Plymouth Drive (Route 215). Neither of these routes travel into the Community.





# FORESHORE

The southern part of the community includes the Foreshore of Burrard Inlet. The area is bisected by Dollarton Highway, a major roadway that is under the District of North Vancouver's jurisdiction.

## DESTINATIONS:



There are homes on both sides of Dollarton Highway. Other destinations include the Canoe Shed and cemetery on the south side of Dollarton Highway. The Foreshore itself is also a major destination. People are required to cross Dollarton Highway to access it.







## ROADS AND PATHWAYS:

- » **Dollarton Highway** is a minor collector roadway under the jurisdiction of the District of North Vancouver.
- » Through TWN Lands, the **posted speed limit** on Dollarton Highway is 40 kilometers an hour.
- » A **speed reader board** is located just west of the intersection of Sleil-Waututh Road and Dollarton Highway. The board lets people driving eastbound along Dollarton Highway know how fast they are travelling.
- » Dollarton Highway is identified as a **designated bicycle route**. The facility is a shared use lane where cyclists share the lane with motor vehicles. This is not considered an all ages and abilities cycling facility and is not comfortable for most people.
- » There are **sidewalks** on the north side along most of Dollarton Highway, except for a 165-metre section east of Thomas Creek. There are no sidewalks on the south side along most of the street.
- » There are two designated **pedestrian crossings** (crosswalks) on Dollarton Highway within TWN Lands.
  - › There is a crosswalk with **Rapid Rectangular Flashing Beacons (RRFBs)** at Dollarton Highway and Sleil-Waututh Road and at Dollarton Highway and Raven Woods Drive.
- » Dollarton Highway is a **bus route**. There are seven bus stops within the TWN Lands. There are three on the north side for westbound buses and four on the south side for eastbound buses.
  - › There is a shelter at one bus stop along the corridor – on the north side, closest to Raven Woods Drive.
  - › One bus route runs along Dollarton Highway (Route 212) with service every 30 minutes during the day to every hour in the evenings.
- » **Safety** concerns on Dollarton Highway was an issue identified by community survey respondents.





# COMMUNITY SUBDIVISION

The Community Subdivision is the area east of the Community that is planned to be developed. The Land Use Plan designates the area as residential.



## DESTINATIONS:

The Community Subdivision will provide new homes for TWN Members and a new community park.

## ROADS AND PATHWAYS:

- » This area is currently **under construction**.
- » There are some existing **deer paths** in the Community Subdivision area.
- » The planned Spa-ath Road extension will have a **sidewalk** on one side of the street and a **multi-use pathway** on the other and will include a crossing over Thomas Creek.



# APEX AREA

The area currently referred to as Apex is located between the new Community Subdivision and Raven Woods. This is a temporary name for this area, the area will have a hāhāmīhā name in the future. The future vision for this area is currently being planned.

## DESTINATIONS:

Apex Area is the location of the Takaya Golf Centre driving range and future First Nations Health Authority (FNHA) building. Additional development in this area is expected to occur in the future.

## ROADS AND PATHWAYS:

- » There is currently one **road** through the Apex Area. Apex Avenue, which is a north-south running road that can be accessed from the District of North Vancouver, north of TWN Lands. The name of Apex Avenue is expected to change.
- » Apex Avenue has a **sidewalk** on one side of the street (east side) and a **multi-use pathway** on the other (west). Both the sidewalk and multi-use pathway are buffered by a grassy/landscaped area.
- » There is a painted **crosswalk** that can be used by pedestrians and cyclists. The curb ramps have tactile features for accessibility.
- » There is currently no formalized connection between the Community and Apex Area. There are some **deer paths**, however the crossing over Thomas Creek is not accessible.
- » There are plans to **extend Spa-ath Road east to Apex Avenue** and to construct a new roadway east of **Apex Avenue to the Raven Woods area** to connect with Malsum Road. This road is planned to have a multi-use pathway on one side and a sidewalk on the other.
- » A part of the **Spirit Trail** passes the northern extent of TWN Lands. Once completed, the Spirit Trail will provide a continuous pathway connection across the North Shore.
- » The closest **bus route** is located on Mt. Seymour Parkway in the District of North Vancouver and buses do not travel into Apex Area.





# RAVEN WOODS

The eastern part of TWN Lands is for market housing on 99-year leases. It is referred to as Raven Woods. Development on the 50-acre area has been ongoing for the past 25+ years and is expected to continue.

## DESTINATIONS:

This area is mostly residential. There is a private park located within this area.

## ROADS AND PATHWAYS:

- » Most of the roads in Raven Woods have some type of **walking or biking facility on both sides of the street**. Most have a sidewalk on one side and a multi-use pathway on the other.
- » Most pedestrian **crossings** are marked with zebra pavement markings.
- » There are **speed humps** at several locations on Raven Woods Drive.
- » There are **deer paths** located within Raven Woods, these are routes that are used but are not maintained by TWN. Deer paths that are located on TWN Private Land should only be used by TWN Members.
- » **Motor vehicles** cannot access the District of North Vancouver to the north (Roche Point Drive) through Raven Woods. However, there are walking and biking connections. The only motor vehicle connection is to the south, providing access to Dollarton Highway.
- » The **Roche Point Park Trail** runs parallel to a portion of TWN Lands through Roche Point Park.
- » A **bus route** is located along Dollarton Highway and buses do not travel into the Raven Woods area.











**7.0**

**COMMUNITY  
PRIORITIES AND  
VISION**



This chapter is a summary of the input from the community surveys, in person conversations, and meetings with the Climate Change Advisory Committee about what active transportation could look like on TWN Lands.

### TOP PRIORITIES FOR THE COMMUNITY:



**IMPROVE ROAD  
SAFETY FOR ALL  
USERS (PEDESTRIANS,  
CYCLISTS, DRIVERS)**



**CREATE OPPORTUNITIES  
TO ENHANCE TWN  
CULTURAL EXPRESSION  
IN THE BUILT  
ENVIRONMENT**



**REDUCE GREENHOUSE  
GAS EMISSIONS  
AND PROMOTE  
SUSTAINABILITY**

## IMPROVEMENT THEMES

We grouped what we heard about community priorities and vision into three themes:



### CONNECTIONS

Building more connections to improve active transportation on TWN Lands. This includes building more sidewalks, multi-use pathways, and trails. It also includes providing better access to transit and connections to the District of North Vancouver.



### SAFETY

Addressing safety concerns on local community and District of North Vancouver roads. This includes slowing down cars and making it safe and easy to cross streets and play in the community.



### EASE AND ENJOYMENT

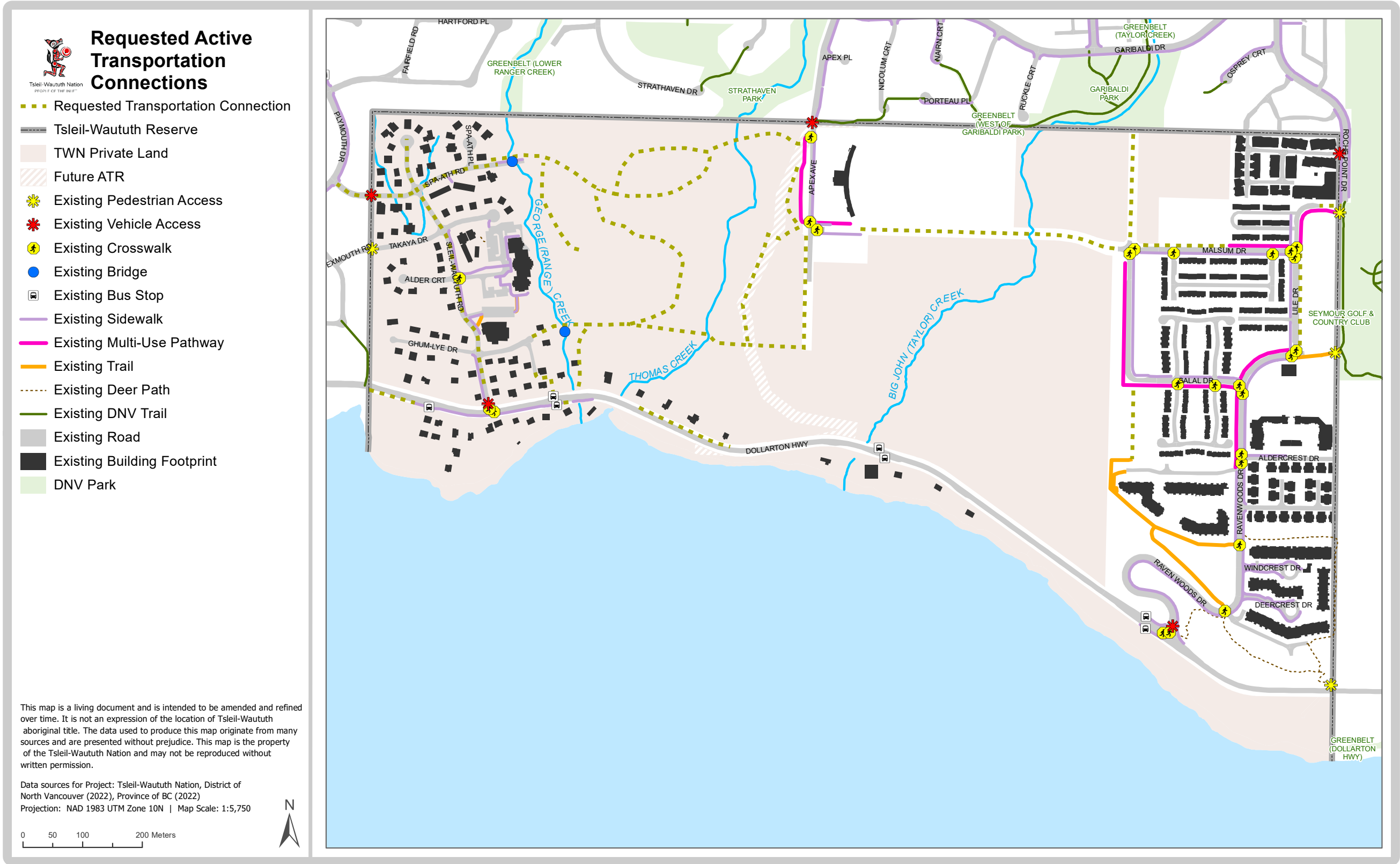
Creating a pleasant environment for active transportation. This includes providing more benches and places to rest and seeing more TWN art and culture around the community.

During conversations and meetings, several new active transportation projects were requested. This included:

- » new sidewalks, multi-use pathways, and creek crossings.
- » improved safety by reducing motor vehicle speeds and providing more crosswalks.
- » more art and expression of TWN culture.
- » additional benches and places to rest, more shade and weather protection, and bicycle parking.

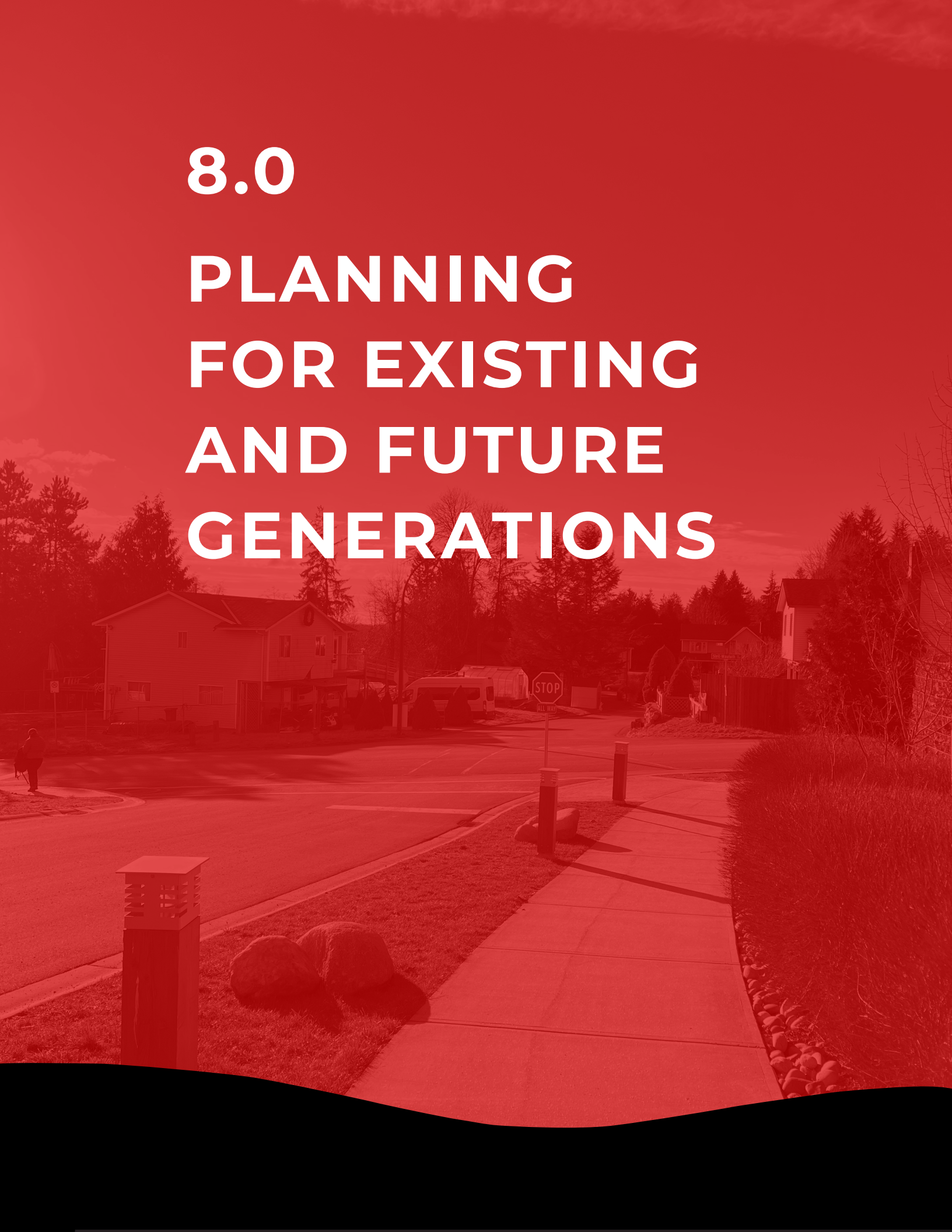
The map below (Map 3) highlights some ideas for new active transportation routes. The dashed lines are locations where people would like to see new sidewalks, multi-use pathways, and deer paths or trails.





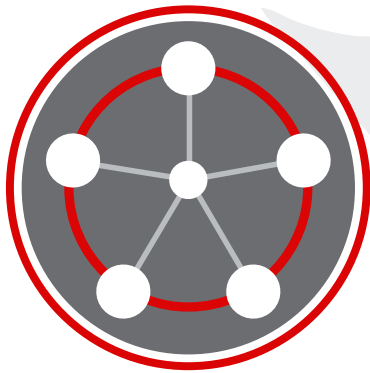
**8.0**

**PLANNING  
FOR EXISTING  
AND FUTURE  
GENERATIONS**





The following section outlines the actions and next steps for:



**CREATING MORE  
CONNECTIONS**



**IMPROVING SAFETY**



**IMPROVING THE EASE,  
ENJOYMENT AND  
COMFORT OF ACTIVE  
TRANSPORTATION**

These actions are intended to create an environment that encourages more active transportation and aligns with the vision and priorities of TWN.





# CONNECTIONS

## WHAT WE HEARD:

- » There are not enough sidewalks and multi-use pathways creating gaps and making it challenging to connect to destinations.
- » Some trails and creek crossings are in poor condition making it challenging to connect to different areas of the community.
- » There are not enough transit routes and services to connect people to other areas of the North Shore and Metro Vancouver.

## ACTIONS

The actions under Connections focus on building more active transportation infrastructure on TWN Lands. Four actions have been identified to improve Connections.

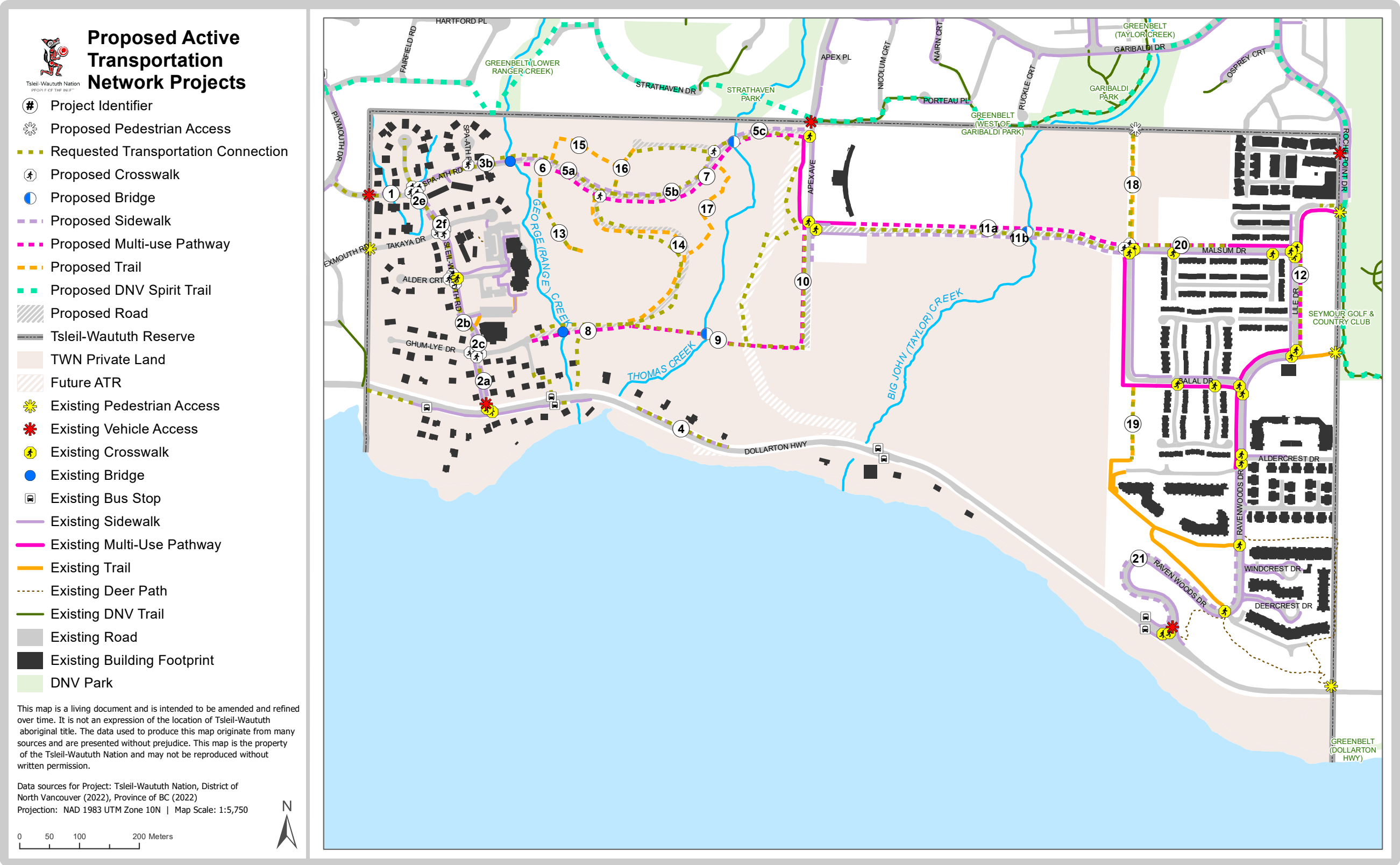




**ACTION 1: PROVIDE MORE ACTIVE TRANSPORTATION CONNECTIONS.****NEXT STEPS:**

- » Build streets that are comfortable for active transportation. This will be done by providing multi-use pathways adjacent to streets (Map 4 – pink lines).
- » Review the feasibility of implementing a multi-use pathway throughout TWN Lands, including Sleil-Waututh Road.
- » Fill in gaps in the sidewalk network on TWN Lands and Dollarton Highway, as seen in the proposed network map (Map 4 – light purple lines).
- » Provide trail connections within the community that provide off street connections to different parts of the community and the District of North Vancouver (Map 4 – orange lines).
- » Consider installing a multi-use pathway facility on the west side of Raven Woods Drive to connect the existing multi-use pathway and Dollarton Highway.
- » Avoid negatively impacting environmentally sensitive areas and areas of cultural significance while implementing the ATNP.





Map 4 - Proposed Active Transportation Infrastructure Projects as Outlined in Action 1



**ACTION 2 - CONFIRM THE NETWORK OF DEER PATHS IN THE COMMUNITY. UPGRADE AND PROVIDE NEW TRAILS WHERE APPROPRIATE.****NEXT STEPS:**

- » Complete an inventory of the existing deer paths on TWN Private Land to understand existing conditions and work with Elders and TWN Members to understand the use and purpose of trails within the community.
- » Prepare a map that shows deer trails on TWN Private Land and share with TWN Members.
- » Categorize the different trail types and identify the different characteristics, features, and amenities that would be located along each type (see **Appendix C** for more design details for the different trail types).

**ACTION 3 - CONDUCT A STUDY TO EXPLORE WALKING CONNECTIONS TO THE FORESHORE.****NEXT STEPS:**

- » Conduct a feasibility study to provide more walking connections to Dollarton Highway and the foreshore/beach for TWN Members. Explore opportunities to provide sidewalks on the south side of Dollarton Highway.
- » Align improvements to trails and beach access with planned shoreline adaptation measures, looking for opportunities to coordinate efforts.



## **ACTION 4 - ENSURE THAT STREET PROJECTS INCORPORATE ACTIVE TRANSPORTATION BEST PRACTICES.**

### **NEXT STEPS:**

- » Update the TWN Master Services Plan to ensure road cross sections incorporate best practice in active transportation facility design.
  - › BC Active Transportation Design Guide and the Transportation Association of Canada (TAC) identify the desired width of sidewalks at 1.8 metres. Current TWN design guidance is 1.5 metres.
  - › Consider adding requirements for protected bicycle lanes in the TWN Master Services Plan to provide a separated cycling facility, where appropriate (see Appendix C for more details).
- » Ensure best practices in accessibility are incorporated into all new or improved roadway and active transportation projects. This includes providing:
  - › Accessible slopes and grades, with appropriate landing areas and resting spots.
  - › Providing accessible ramps where applicable.
  - › Ensuring that surfaces are smooth, firm, slip resistant, and free of tripping hazards.
  - › Providing curb ramps for road access.
  - › Maintaining a Pedestrian Through Zone that is clear of vertical and horizontal obstructions.
  - › Providing year-round monitoring and maintenance.
  - › Provide detectable warning surfaces and intersection crossings.
  - › Audible pedestrian signals at signalized intersections.

## **ACTION 5 - ADDRESS GAPS IN THE TRANSIT NETWORK TO ENCOURAGE MORE TRANSIT TRIPS.**

### **NEXT STEPS:**

- » Continue to work with TransLink to review and improve transit service to and within TWN Lands. This may include providing routes and stops that are located on TWN streets within the Community, Apex Area, and Raven Woods.





# **SAFETY**

## **WHAT WE HEARD**

- » People are driving too fast.
- » There are safety concerns at intersections. They are not visible or well-marked.
- » Concerns over trails and routes being used by non-members.
- » Worries about personal safety while using trails in the community (e.g. fear of wildlife, encountering someone unfamiliar, and getting hurt or injured and not able to contact anyone).
- » Dollarton Highway is not comfortable or safe to walk on due to motor vehicle speeds, sightlines, and a lack of crossing opportunities.
- » Some people said that there wasn't enough lighting on walking routes and trails.

## **ACTIONS**

The actions under Safety focus on improving safety of local community and District of North Vancouver roads and trails through a variety of measures to make it safer to walk, bike, roll, and paddle. Four actions have been identified to improve Safety.



## ACTION 6 - REDUCE MOTOR VEHICLE SPEEDS ON TWN STREETS AND IMPROVE COMFORT AND SAFETY AT INTERSECTIONS.

### NEXT STEPS:

- » Implement more traffic calming measures at intersections along Sleil-Waututh Road to reduce motor vehicle traffic speeds on local roads and improve pedestrian visibility at intersections.
  - › This can include implementing raised crosswalks, raised intersections, curb extensions, and additional signage or pavement markings. Adding these features along with trees and landscaping can help make the street feel more narrow and slow drivers down.
  - › Existing speed humps can be removed and redesigned to create a bigger impact on cars.
- » Have discussions with TWN Members and Community Members about the possibility of installing speed reader boards along Sleil-Waututh Road.
- » Have discussions with TWN Members and Community Members about the possibility of reducing the posted speed limit within the Community. The speed limit could be reduced to 20 or 10 kilometres per hour.



*Example of Reduced Speed Limits used in Adam Lakes Band*



*Raised Crosswalk - City of Vancouver*



**ACTION 7 - WORK WITH THE DISTRICT OF NORTH VANCOUVER TO IMPROVE SAFETY ON DOLLARTON HIGHWAY.****NEXT STEPS:**

- » Continue to work with the District of North Vancouver to explore options to monitor and reduce motor vehicle speeds on Dollarton Highway. This can include using traffic calming infrastructure and landscaping to make the street feel narrower and slow down motor vehicle drivers.
- » Work with the District of North Vancouver to make it safer to cross Dollarton Highway. Encourage the District to:
  - › Review the location of existing crossings and explore opportunities to provide additional crossings and more direct connections to bus stops, the canoe shed, and the foreshore.
  - › Conduct a study (including a crossing warrant) to determine if an upgraded pedestrian crossing control is warranted at existing crosswalks on Dollarton Highway.
- » Work with the District of North Vancouver to ensure Dollarton Highway meets the standards for a Minor Arterial road as outlined in the District of North Vancouver Development Servicing Bylaw.
- » Work with the District of North Vancouver and TransLink to provide a bus shelter and bench at transit stops located near the Community.
- » Work with the District of North Vancouver to provide additional lighting along Dollarton Highway, particularly at crosswalks.
- » Provide active transportation connections to walking and cycling routes in the District of North Vancouver, and explore opportunities to provide connections with other Nations (Example: Project 18 as seen in Map 4).
- » Collaborate with DNV to assess possible opportunities for enhancing Dollarton Highway in terms of creating a safer and more reliable infrastructure for active transportation.



**ACTION 8 - EXPLORE OPPORTUNITIES TO MAKE PEOPLE FEEL MORE SAFE WALKING ALONG TWN TRAILS AND STREETS.****NEXT STEPS:**

Through ongoing conversations with TWN Members and Community Members, personal safety was identified as a barrier for active transportation. Personal safety concerns included, not enough lighting on streets, fear of wildlife, encountering someone unfamiliar on trails, and getting hurt or injured and not able to contact anyone. Opportunities to explore include:

- › Installing lighting (if felt appropriate) throughout the community. We heard from some people that there was a need for more lighting whereas others thought the existing lighting was adequate or there was already too much. Additional conversations and discussions will be required to confirm next steps.
- › Installing emergency phones along trails and multi-use pathways will help in delivering reliable emergency assistance when needed. Emergency phones are intended to improve individual safety and comfort knowing that someone can be contacted if an emergency comes up. Emergency phones can also be used to deliver information and assistance by giving directions, thus helping the user to navigate and feel oriented if necessary.
- › Provide wildlife interaction training and education to raise awareness of wildlife in the area, including signage at trailheads. Additionally, TWN can explore purchasing and renting equipment and gear that Members can use during walks or hikes to offer additional protection.



**ACTION 9 - ADDRESS CONCERNS OF NON-MEMBERS ACCESSING TRAILS, PATHWAYS, AND TWN COMMUNITY DESTINATIONS.****NEXT STEPS:**

- » Redirect leaseholder access away from deer paths on TWN Private Land.
  - › Provide information to leaseholders about the trails they are permitted to use as part of sales materials and newsletter updates. This material can also include maps that highlight TWN Private Land where they are not permitted.
  - › Appropriately sign and mark Leaseholder trails, consider colour coding trail markers to indicate trail users.
  - › Highlight alternative nearby trails in the District of North Vancouver, such as Roche Point Park Trail and the network of trails and pathways already established as part of the Raven Woods developments.
- » Install fencing and gates along paths to ensure people stay on designated routes and do not enter the forest. Fencing and gates will use natural materials (wood) and can incorporate TWN artwork.
- » Install signage that asks users to respect the privilege of using paths and being on TWN Land. The signage will outline the types of users permitted on the Trail (i.e. no mountain biking, motorized vehicles, etc.) The signs can also outline the conditions of using the trails, including staying on the designated trail, not smoking or littering, cleaning up after dogs, etc. Signage can be installed at trailheads and locations where trails intersect roadways.



*Example of Trail Signage Used By Matsqui First Nation*



# EASE, ENJOYMENT, AND COMFORT

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## WHAT WE HEARD

- » There is a lack of cultural expression throughout TWN Lands and a lot of opportunity to add more.
- » There is a need for more benches, tables, shade, and places to rest and gather.
- » Ensure that sidewalks and trails are maintained year-round. They need to stay smooth and free of cracks and cleared of leaves, snow, and ice in the fall and winter.
- » A lot of destinations are not within walking distance. Providing more destinations within walking distance could encourage more active transportation.

## ACTIONS

The actions under Ease, Enjoyment, and Comfort focus on creating a nice place to walk, bike, roll, and paddle that incorporates cultural expression, amenities, and can be used year-round. Five actions have been identified to make it easy, enjoyable, and comfortable to get around.



**ACTION 10 - PROVIDE MORE INFORMATION ABOUT TWN AND ABOUT TRAILS AND ACTIVE TRANSPORTATION ROUTES THROUGHOUT TWN LANDS.****NEXT STEPS:**

- » Develop a Wayfinding and Information Signage Strategy focusing on adding directional and informational signage/landmarks on new and existing paths and throughout TWN Lands. Signage can also provide information on culture, history, traditions, local species, important locations, and language. The guidelines should include information about the content and purpose of different types of signs, the type of information that should be included, where the signs should be located, and the materials used to manufacture the signs.
- » Implement signage based on the recommendations of the Strategy.



*Example of Trail Landmarking used by Adams Lake Band and Neskonlith Band*

**ACTION 11 - PROVIDE AMENITIES TO SUPPORT ACTIVE TRANSPORTATION.****NEXT STEPS:**

- » Develop design guidelines for Tsleil-Waututh to include details and specifications for amenities and landscaping. Including the types of plants and materials used, specific specs. A description of different amenities and design considerations can be found in **Appendix C.**
- » Install covered seating and landscaping along roadways, pathways, trails, and at key community locations/destinations.
- » Create community nodes, rest areas, gathering places throughout TWN Lands and along trails that are safe spaces for TWN Community Members. These nodes can have benches, picnic tables, fire pits, etc.
- » Provide more garbage and recycling bins along trails and routes in the community.
- » Provide short-term bicycle parking at all TWN community and administrative buildings.
- » Require multi-family developments to provide short- and long-term bicycle parking with accommodations for e-bikes and non-standard bicycles such as cargo bicycles or recumbent bicycles.



*Example of a covered Picnic Area on Salt Spring Island*



## TYPES OF BICYCLE PARKING



**Short-term bicycle parking** is typically outdoors and located in front of a building or within the public right-of-way. **Long-term bicycle parking** is typically indoors or covered and located within an enclosed space, making it more secure.



*Wave and Whale Tail Short-term Bicycle Parking in Tofino*

## ACTION 12 - PROVIDE MORE TWN CULTURAL EXPRESSION THROUGHOUT TWN LANDS TO SHARE COMMUNITY CULTURE AND HISTORY.

### NEXT STEPS:

- » Develop a program to incorporate TWN cultural expression throughout TWN Lands and as part of all active transportation projects, including projects identified in the ATNP. Identify potential projects, artists, and funding opportunities. This includes looking for opportunities to specifically include cultural expression into existing and planned transportation infrastructure. Some planned and potential projects include:
  - › Using hən̓q̓əmiḥəm̓ on street signs.
  - › Mural on the retaining wall that runs adjacent to Raven Woods Drive.
  - › Decorative crosswalks.
  - › Printed sidewalks (using coloured concrete).
  - › Community designed benches.
  - › TWN designed bus stops or art incorporated into a typical bus stop.
- » Provide new and enhance existing gateway features at entry points to TWN Lands created by community artists. Some examples discussed include, welcome poles, murals, banners, etc.
- » Any art added will follow TWN's guidelines regarding the type of art, materials used, and artist.





**ACTION 13 - ENSURE PEOPLE CAN WALK AND BICYCLE YEAR-ROUND IN ALL WEATHER CONDITIONS.****NEXT STEPS:**

- » Continue to work with partners/contractors to ensure timely snow removal on community roads, multi-use pathways and sidewalks. Timely removal would be in time for the morning commute.
- » Design active transportation infrastructure to facilitate drainage, snow removal, and snow storage and work to maintain facilities so they can be used year-round.
- » As noted in Action 11, provide covered rest areas and seating at various locations throughout the community.

**ACTION 14: PROVIDE MORE DESTINATIONS THAT ARE WITHIN WALKING AND CYCLING DISTANCE.****NEXT STEPS:**

- » Look for opportunities to create an environment that encourages walking and biking through the addition of community destinations and services (example: grocery/convenience stores, cafe, etc.) on TWN Land.
- » When updating the Land Use Plan Law, plan for diverse uses and community destinations and services on TWN Land.

**ACTION 15 - PROMOTE AND ENCOURAGE ACTIVE TRANSPORTATION.****NEXT STEPS**

- » Promote active transportation through various forms of programming and initiatives such as, competitions, challenges, canoe races, Kilometre Club, walk to school/ daycare/work week etc. and offer prizes.
- » Celebrate the installation of active transportation facilities and cultural expression projects with grand openings and events throughout the year.
- » Share materials and resources on the health benefits of active transportation and physical activity to encourage more trips.
- » Monitor and count how many people are walking, biking, rolling, and paddling through a community household survey or a count program. This can be done by installing automatic counters as part of new multi-use pathway projects or doing annual counts on existing routes and well used pathways.
- » Explore developing an initiative that offers rebates to TWN Members that purchase active transportation equipment, including a standard bike or e-bike (electric bike), scooters, snowshoes, etc.







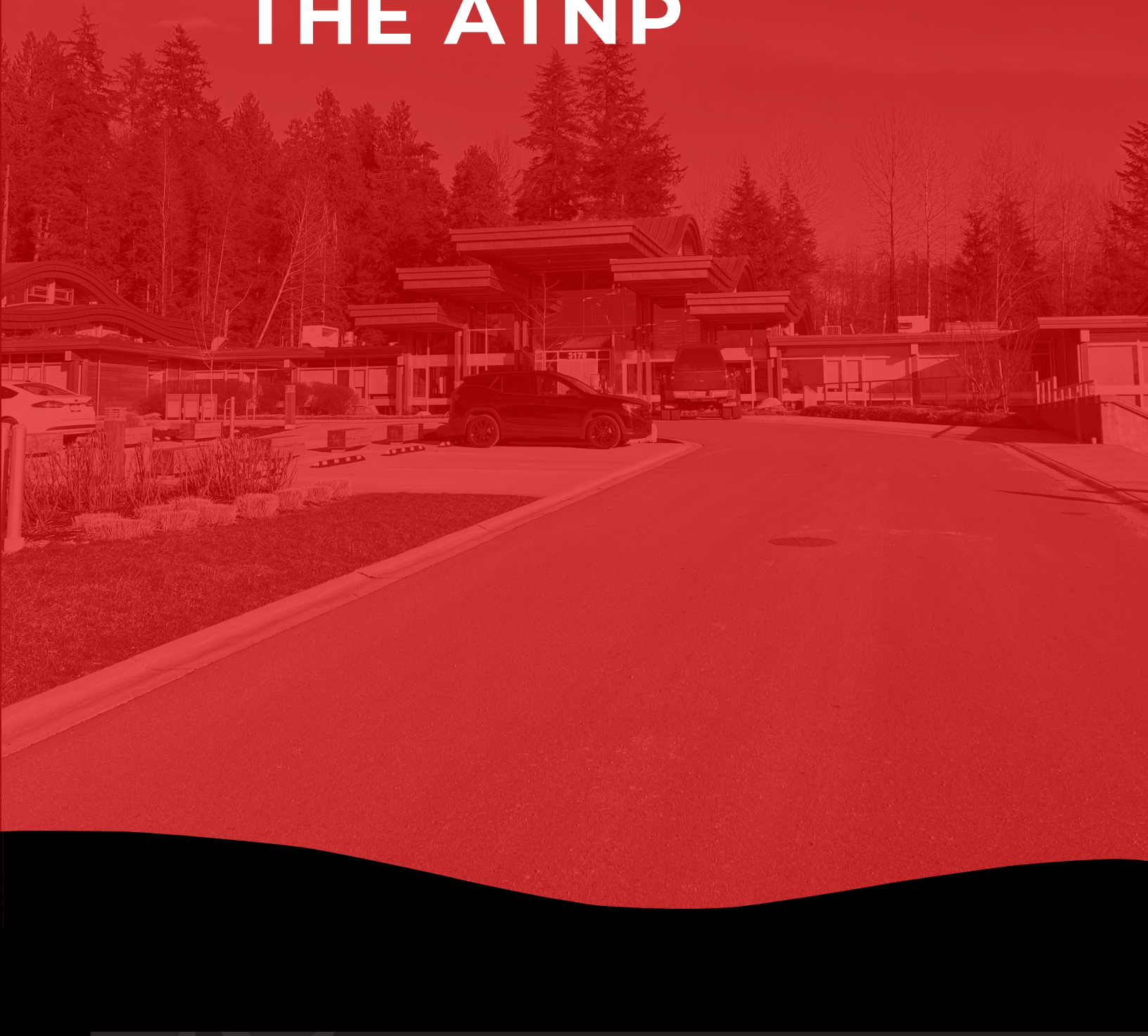
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FOR  
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CAUTION





**9.0**

# **IMPLEMENTING THE ATNP**





The strategies and actions developed as part of the ATNP are intended to guide TWN's policy, planning, capital investment decisions, and provide on-going operations and maintenance in support of active transportation over the next 10 years and beyond.

While the ATNP has been developed as a long-term plan, it will require financial investment, staff resources, additional community input and an implementation strategy to prioritize improvements as immediate (0-2 years), short-term (3-5 years), medium-term (5-10 years), and long-term (10+ years).



*Tsleil-Waututh Nation Reserve (Photo Credit - Jeff Sisson)*

# IMPLEMENTATION PRINCIPLES

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The implementation plan was developed based on the following guiding principles:

» **COMMUNITY AND STAKEHOLDER ENGAGEMENT WILL BE CONDUCTED PRIOR TO IMPLEMENTING THE RECOMMENDATIONS OF THE ATNP.**

- › The actions and infrastructure projects identified in the ATNP require more detailed input and technical work. TWN staff will continue to engage with TWN Members, Chief and Council, residents, community groups, and community partners to move forward with implementing the ATNP.

» **THE ATNP IS A FLEXIBLE AND LIVING DOCUMENT.**

- › While TWN is working towards implementing the proposed active transportation network and the strategies and actions outlined in the ANTP, there is some level of flexibility regarding the specific locations that are identified. The Plan presents recommendations and suggestions based on the engagement process and technical analysis; however, TWN will need to review the feasibility and develop designs for the proposed infrastructure projects. The implementation of the ATNP will also require ongoing community engagement as new projects are considered.

» **THE IMPLEMENTATION STRATEGY FOCUSES ON IMPLEMENTING INFRASTRUCTURE IN HIGH PRIORITY AREAS OVER THE NEXT 10+ YEARS.**

- › The ATNP is intended to be an action-oriented document, with the emphasis on implementing infrastructure projects and the immediate, short-term, and medium-term. After the first 10 years, TWN will conduct a comprehensive review and update of the ATNP to monitor progress and revisit its priorities.



# STRATEGIES AND ACTIONS

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An approach for implementing each of the actions identified in the ATNP is outlined in the tables below. These tables provide guidance with respect to:

- » **BUDGETING:** The assumed order of magnitude cost for each action has been provided. These costs are capital and/or operational depending on applicability. The number of dollar signs indicates a high-level cost assumed for each action:
  - › \$\$\$ – Major projects (\$1 million plus)
  - › \$\$ – Moderate (\$100,000 to \$999,000)
  - › \$ – Low (less than \$100,000)
- » Actions that present opportunities for funding support and partnerships have also been identified.
- » **TIMEFRAME FOR IMPLEMENTATION:** Each action is identified as either:
  - › Immediate-term – Within 2 years
  - › Short-term – Within 3 to 5 years
  - › Medium-term – Within 5 to 10 years
  - › Long-term – 10 years and beyond
- » Many actions will be implemented on an ongoing basis, in which case they are shown under each timeframe. It is important to note that timeline for implementation was determined based on several factors including, TWN Member support and input, alignment with other community initiatives, ease of implementation, partnership, and funding opportunities, etc.
- » **METHOD OF IMPLEMENTATION:** This column identifies how each action will be implemented: as a **capital project**, through ongoing **operations and maintenance**, or as a **policy or programming** initiative.
- » **RESPONSIBILITY:** This column suggests the primary and secondary responsibility for each action.

IMPLEMENTATION ACTIONS

CONNECTIONS

	BUDGETING		TIMEFRAME					METHOD OF IMPLEMENTATION			RESPONSIBILITY	
	Funding Partners Available	Magnitude*	Immediate (0-2 years)	Short (3-5 years)	Medium (5-10 years)	Long-Term (10+ years)	Capital	Operations and Maintenance	Policy and Programming		Primary	Support
Action 1: Provide More Active Transportation Connections.												
Build streets that are comfortable to walk and bike on. This will be done by providing multi-use pathways adjacent to streets.	✓	\$\$\$					✓	✓			TWN - Public Works	
Review the feasibility of implementing a multi-use pathway throughout TWN Lands.		\$							✓		TWN - Public Works	
Fill in gaps in the sidewalk network on TWN Lands and Dollarton Highway, as seen in the proposed network map.	✓	\$\$\$					✓	✓			TWN - Public Works	
Provide trail connections within the community that provide off street connections to different parts of the community and the District of North Vancouver.	✓	\$\$\$					✓	✓			TWN - Public Works	TWN - Treaty, Lands, and Resources
Consider installing a multi-use pathway facility on the west side of Raven Woods Drive to connect the existing multi-use pathway and Dollarton Highway.	✓	\$					✓	✓			TWN - Public Works	
Avoid negatively impacting environmentally sensitive areas and areas of cultural significance while implementing the ATNP.		\$							✓		TWN - Public Works	TWN - Treaty, Lands, and Resources
Action 2: Confirm the network of deer paths in the community. Upgrade and provide new trails where appropriate												
Complete an inventory of the existing deer paths on TWN Private Land to understand existing conditions and work with Elders and TWN Members to understand the use and purpose of trails within the community.	✓	\$						✓	✓		TWN - Public Works	TWN - & Community Development
Prepare a map that shows deer trails on TWN Private Land and share with TWN Members.	✓	\$							✓		TWN - Public Works	TWN - & Community Development
Categorize the different trail types and identify the different characteristics, features, and amenities that would be located along each type	✓	\$							✓		TWN - Public Works	
Action 3: Conduct a Study to Explore Walking Connections to the Foreshore.												
Conduct a feasibility study to provide more walking connections to Dollarton Highway and the foreshore/beach.		\$							✓		TWN - Public Works	
Align improvements to trails and beach access with planned shoreline adaptation measures, looking for opportunities to coordinate efforts.	✓	\$\$\$					✓	✓	✓		TWN - Public Works	
Action 4: Ensure that new transportation and development projects incorporate active transportation best practices.												
Update the TWN Master Services Plan to ensure road cross sections incorporate best practice in active transportation facility design.		\$							✓		TWN - Public Works	TWN - & Community Development
Ensure best practices in accessibility are incorporated into all new or improved roadway and active transportation projects.		\$						✓	✓		TWN - Public Works	
Action 5: Address gaps in the transit network to encourage more transit trips.												
Continue to work with TransLink to review and improve transit service to and within TWN Lands.	✓	\$							✓		TWN - Public Works	TransLink



SAFETY

	BUDGETING		TIMEFRAME				METHOD OF IMPLEMENTATION			RESPONSIBILITY	
	Funding Partners Available	Magnitude*	Immediate (0-2 years)	Short (3-5 years)	Medium (5-10 years)	Long-Term (10+ years)	Capital	Operations and Maintenance	Policy and Programming	Primary	Support
Action 6: Reduce motor vehicle speeds on TWN streets and improve comfort and safety at intersections.											
Implement more traffic calming measures to reduce motor vehicle traffic speeds on local roads and improve pedestrian visibility at intersections.	✓	\$\$					✓		✓	TWN - Public Works	
Have discussions with TWN Members and Community members about the possibility of installing speed reader boards along Sleil-Waututh Road.	✓	\$					✓		✓	TWN - Public Works	
Have discussions with TWN Members and Community Members about the possibility of reducing the posted speed limit within the Community.	✓	\$							✓	TWN - Public Works	
Action 7: Enhance safety and comfort for people travelling on Dollarton Highway and to the District of North Vancouver.											
Work with the District of North Vancouver to explore options to monitor and reduce motor vehicle speeds on Dollarton Highway.	✓	\$							✓	TWN - Public Works	TWN - Community Safety
Work with the District of North Vancouver to ensure Dollarton Highway meets the standards for a Minor Arterial road as outlined in the District of North Vancouver Development Servicing Bylaw	✓	\$							✓	TWN - Public Works	TWN - Community Safety
Work with the District of North Vancouver and TransLink to provide a bus shelter and bench at transit stops located near the Community.	✓	\$							✓	TWN - Public Works	TWN - Community Safety
Work with the District of North Vancouver to provide additional lighting along Dollarton Highway, particularly at crosswalks.	✓	\$							✓	TWN - Public Works	TWN - Community Safety
Provide active transportation connections to walking and cycling routes in the District of North Vancouver, including the Spirit Trail and encourage the District of North Vancouver to provide active transportation connections to TWN Lands on District roadways.	✓	\$\$					✓	✓	✓	TWN - Public Works	TWN - Community Safety
Action 8: Explore opportunities to make people feel more safe walking along TWN trails and streets.											
Through ongoing conversations with TWN Members, discuss strategies to address personal safety concerns identified including, a lack of lighting on streets, fear of wildlife, encountering someone unfamiliar on trails, and getting hurt or injured and not able to contact anyone.	✓	\$								TWN - Public Works	Community Safety
Action 9: Address concerns of non-members accessing trails, pathways, and TWN community destinations.											
Redirect leaseholder access away from deer paths on TWN Private Land.	✓	\$\$					✓		✓	TWN - Public Works	TWN - Treaty, Lands, and Resources
Install fencing and gates along paths to ensure people stay on designated routes and do not enter the forest.		\$\$					✓		✓	TWN - Public Works	TWN - Treaty, Lands, and Resources
Install signage that asks users to respect the privilege of using paths and being on TWN Land.		\$								TWN - Public Works	TWN - Treaty, Lands, and Resources

EASE, ENJOYMENT, AND COMFORT	BUDGETING		TIMEFRAME				METHOD OF IMPLEMENTATION			RESPONSIBILITY	
	Funding Partners Available	Magnitude*	Immediate (0-2 years)	Short (3-5 years)	Medium (5-10 years)	Long-Term (10+ years)	Capital	Operations and Maintenance	Policy and Programming	Primary	Support
Action 10: Provide more information about TWN and about trails and active transportation routes throughout TWN Lands.											
Develop a Wayfinding and Information Signage Strategy and add directional and informational signage on new and existing trails and throughout TWN Lands.	✓	\$							✓	TWN - Public Works	TWN - Treaty, Lands, and Resources
Implement signage based on the recommendations of the Strategy.	✓	\$\$					✓	✓		TWN - Public Works	TWN - Treaty, Lands, and Resources
Action 11: Provide amenities to support active transportation.											
Develop design guidelines for Tsleil-Waututh to include details and specifications for amenities and landscaping.		\$							✓	TWN - Public Works	
Install covered seating and landscaping along roadways, pathways, trails, and at key community locations/destinations.	✓	\$\$					✓	✓		TWN - Public Works	
Create community nodes, rest areas, gathering places throughout TWN Lands and along trails that are safe spaces for TWN Members.		\$\$\$					✓	✓	✓	TWN - Public Works	TWN - Treaty, Lands, and Resources
Provide more garbage and recycling bins along trails and routes in the community.		\$					✓	✓		TWN - Public Works	
Provide bicycle parking at all TWN community and administrative buildings.	✓	\$					✓	✓		TWN - Public Works	
Require multi-family developments to provide short- and long-term bicycle parking.	✓	\$							✓	TWN - & Community Development	TWN - Public Works
Action 12: Provide more TWN cultural expression throughout TWN Lands to share community culture and history											
Develop a program to incorporate TWN cultural expression throughout TWN Lands and as part of all active transportation projects, including projects identified in the ATNP.		\$							✓	TWN - Public Works	TWN - Treaty, Lands, and Resources
Provide new and enhance existing gateway features at entry points to TWN Lands created by community artists.	✓	\$\$					✓	✓	✓	TWN - Public Works	TWN - Treaty, Lands, and Resources
Action 13: Ensure people can walk and bicycle year-round in all weather conditions.											
Continue to work with partners/contractors to ensure timely snow removal on community roads, multi-use pathways and sidewalks.		\$\$						✓		TWN - Public Works	
Design active transportation infrastructure to facilitate drainage, snow removal, and snow storage and work to maintain facilities so they can be used year-round.		\$							✓	TWN - Public Works	
Action 14: Provide more destinations that are within walking and cycling distance.											
Look for opportunities to create an environment that encourages walking and biking through the addition of community destinations and services on TWN Land.		\$							✓	TWN - Public Works & Economic Development	TWN - Public Works
When updating the Land Use Plan Law, plan for diverse uses and community destinations and services on TWN Land.		\$							✓	TWN - Public Works & Economic Development	TWN - Public Works
Action 15: Promote and Encourage Active Transportation.											
Promote active transportation through various forms of programming and initiatives such as, competitions, challenges, Kilometre Club, canoe races, walk to school/daycare/work week etc. and offer prizes.		\$							✓	TWN - Community Development	TWN - Public Works & Community Safety
Celebrate the installation of active transportation facilities and cultural expression projects with grand openings and events throughout the year.		\$							✓	TWN - Community Development	TWN - Public Works & Community Safety
Share materials and resources with TWN Members on the health benefits of walking and cycling to encourage more trips.	✓	\$							✓	TWN - Community Development & Health and Wellness	First Nations Health Authority & Community Safety
Monitor and count how many people are walking, biking, and rolling through a community household survey or a count program.		\$					✓	✓	✓	TWN - Public Works	TWN - Health and Wellness & Community Safety
Explore developing an initiative that offers rebates to TWN Members that purchase active transportation equipment, including a standard bike or e-bike (electric bike), scooters, snowshoes, etc.	✓	\$\$							✓	TWN - Community Development & Health and Wellness	TWN - Community Safety



The following is the list of actions that have been identified as priorities to be initiated within the immediate (0 to 2 year) timeframe. This does not mean that other can't be started earlier, just that these are the areas to focus on initially:

» **CONNECTIONS:**

- › Complete an inventory of the existing deer paths on TWN Private Land to understand existing conditions and work with Elders and TWN Members to understand the use and purpose of trails within the community. (Action 2)
- › Conduct a feasibility study to provide more walking connections to Dollarton Highway and the foreshore/beach. (Action 3)
- › Update the TWN Master Services Plan to ensure road cross sections incorporate best practice in active transportation facility design. (Action 4)
- › Continue to work with TransLink to review and improve transit service to and within TWN Lands. (Action 5)

» **SAFETY:**

- › Have discussions with TWN Members and Community Members about the possibility of installing speed reader boards along Sleil-Waututh Road. (Action 6)
- › Have discussions with TWN Members and Community Members about the possibility of reducing the posted speed limit within the Community. (Action 6)
- › Address concerns of non-members accessing trails, pathways, and TWN community destinations. (Action 9)

» **EASE, ENJOYMENT, AND COMFORT:**

- › Develop a Wayfinding and Information Signage Strategy and add directional and informational signage on new and existing trails and throughout TWN Lands. (Action 10)
- › Develop design guidelines for Tsleil-Waututh to include details and specifications for amenities and landscaping. (Action 11)
- › Require multi-family developments to provide short- and long-term bicycle parking. (Action 11)
- › Develop a program to incorporate TWN cultural expression throughout TWN Lands and as part of all active transportation projects, including projects identified in the ATNP (Action 12).

# NETWORK PROJECT PRIORITY

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## NETWORK PRIORITIES WERE IDENTIFIED BASED ON A RANGE OF FACTORS:

- » Input received through the community survey, engagement events, and conversations.
- » Projects that enhance safety and provide connections to important destinations within TWN Lands.
- » Projects that were already planned or tied to other road and development projects.

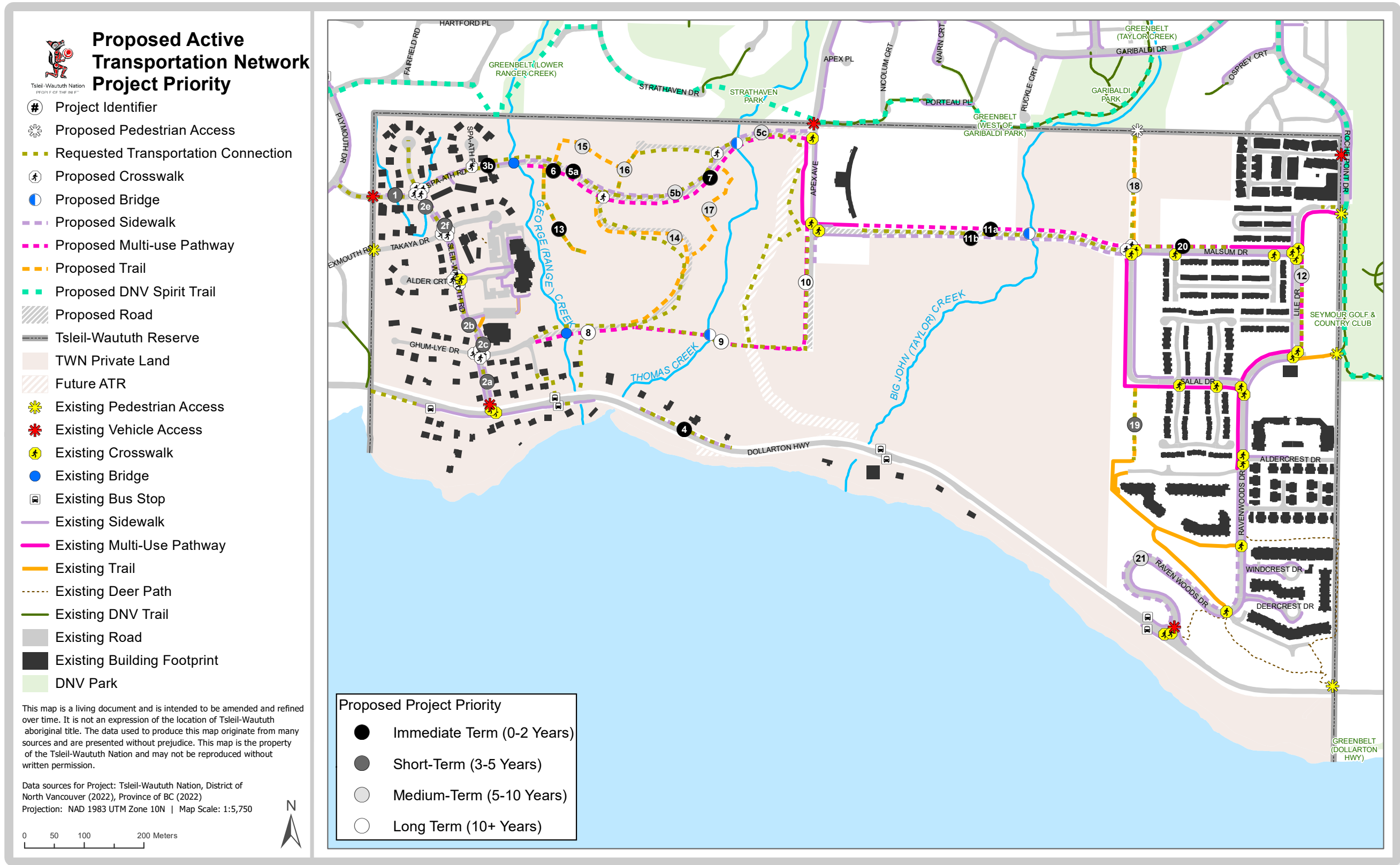
Map 5 shows the active transportation network project priorities. Network segments have been identified as:

- » Immediate-term – Within 2 years
- » Short-term – Within 3 to 5 years
- » Medium-term – Within 5 to 10 years
- » Long-term – 10 years and beyond

The ATNP is intended to be a flexible, working document. For example, if an opportunity arises to implement a project identified as a longer-term priority TWN should seek to maximize that opportunity.

TWN will continually review the feasibility and desirability of each project and will adapt the network as required.





The following tables list the type of project and the timeline for implementation as identified in Map 4 and Map 5.

PROJECT NUMBER	LOCATION	PROJECT TYPE	IMPLEMENTATION TIMELINE
1	Spa-ath Road	Sidewalk	Short-Term (3-5 Years)
2a	Sleil-Waututh Road	Sidewalk	Short-Term (3-5 Years)
2b	Sleil-Waututh Road	Sidewalk	Short-Term (3-5 Years)
2c	Sleil-Waututh Road	Sidewalk	Short-Term (3-5 Years)
2d	Sleil-Waututh Road	Sidewalk	Short-Term (3-5 Years)
2e	Sleil-Waututh Road	Sidewalk	Short-Term (3-5 Years)
2f	Sleil-Waututh Road	Sidewalk	Short-Term (3-5 Years)
3a	Spa-ath Road	Sidewalk	Immediate Term (0-2 Years)
3b	Spa-ath Road	Sidewalk	Immediate Term (0-2 Years)
4	Dollarton Highway	Sidewalk	Immediate Term (0-2 Years)
5a	Spa-ath Road	Sidewalk	Immediate Term (0-2 Years)
5b	Spa-ath Road	Sidewalk	Medium-Term (5-10 Years)
5c	Spa-ath Road	Sidewalk	Medium-Term (5-10 Years)
6	Spa-ath Road	Multi-use Pathway	Immediate Term (0-2 Years)
7	Spa-ath Road	Multi-use Pathway	Immediate Term (0-2 Years)
8	Pathway extension from Ghum-Lye Drive	Multi-use Pathway	Long Term (10+ Years)
9	Pathway extension from Ghum-Lye Drive	Multi-use Pathway	Long Term (10+ Years)
10	Apex Avenue pathway extension	Multi-use Pathway	Long Term (10+ Years)
11a	Segment 2-4 Apex Corridor	Multi-use Pathway	Immediate Term (0-2 Years)
11b	Segment 2-4 Apex Corridor	Sidewalk	Immediate Term (0-2 Years)



PROJECT NUMBER	LOCATION	PROJECT TYPE	IMPLEMENTATION TIMELINE
12	Lile Drive	Multi-use Pathway	Medium-Term (5-10 Years)
13	New trail community subdivision to future park	Trail	Immediate Term (0-2 Years)
14	New trail community subdivision area	Trail	Medium-Term (5-10 Years)
15	New trail community subdivision area	Trail	Medium-Term (5-10 Years)
16	New trail community subdivision area	Trail	Medium-Term (5-10 Years)
17	New trail community subdivision area	Trail	Medium-Term (5-10 Years)
18	New trail connection (north of Malsum Drive to DNV)	Trail	Medium-Term (5-10 Years)
19	New trail connection (south of Salal Drive)	Trail	Short-Term (3-5 Years)
20	Malsum Drive	Multi-use Pathway	Immediate Term (0-2 Years)
21	Raven Woods Drive	Sidewalk	Medium-Term (5-10 Years)

Table 1 - List of Proposed Active Transportation Network by Implementation Timeline

<b>Bridge (Big John)</b>	Immediate Term (0-2 Years)
<b>Bridge (Thomas Creek North)</b>	Immediate Term (0-2 Years)
<b>Bridge (Thomas Creek South)</b>	Long Term (10+ Years)
<b>Crosswalks</b>	Immediate Term (0-2 Years)

Table 2 - Additional Bridge and Intersection Projects

# INFRASTRUCTURE PROJECT COST ESTIMATES

Order-of-magnitude capital cost estimates (Class D Level estimates in 2023 dollars) for each proposed active transportation network projects are provided in **Appendix D**.

The cost estimates have been provided to identify the relative cost for planning purposes and should not be used for budgeting purposes. Additional costs not included in these cost estimates can be significant including, detailed project design, retaining walls, utility pole/box removal or replacement, etc. As a result, at locations where these types of treatments are required the cost will be significantly higher.

As summarized in Table 3 and Table 4, the identified cost to implement all recommended active transportation infrastructure, as identified in Map 4, is approximately \$5.9 million. This total does not include amenities (e.g., bicycle parking, benches, public art, etc.) or the maintenance of active transportation facilities or amenities. This total also excludes other funding opportunities. Wherever possible, the Nation will work with other agencies and levels of governments to establish cost sharing agreements or to seek grant opportunities to off-set total project costs. Potential funding opportunities are outlined in Section 11 and **Appendix E**.

FACILITY TYPE	LENGTH (METRES)	PROJECT TYPE
Sidewalk	2275	\$973,000
Multi-use Pathway	2278	\$526,000
Trail	1288	\$133,000
Active Transportation Creek Crossings	3 crossings	\$4,170,000
Crosswalks – including decorative crosswalks	16 crosswalks	\$296,000
<b>TOTAL</b>		<b>\$6,098,000</b>

Table 3 - Proposed Active Transportation Network Breakdown (by Facility Type)



<b>FACILITY TYPE</b>	<b>IMMEDIATE TERM (0-2 YEARS)</b>	<b>SHORT- TERM (3-5 YEARS)</b>	<b>MEDIUM- TERM (5-10 YEARS)</b>	<b>LONG TERM (10+ YEARS)</b>	<b>TOTAL</b>
<b>Sidewalk</b>	\$390,000	\$231,000	\$352,000	\$-	\$973,000
<b>Multi-use Pathway</b>	\$316,000	\$-	\$43,000	\$167,000	\$526,000
<b>Trail</b>	\$18,000	\$13,000	\$102,000		\$133,000
<b>Active Transportation Creek Crossings</b>	\$2,920,000	\$-	\$-	\$1,250,000	\$4,170,000
<b>Crosswalks – including decorative crosswalks</b>	\$296,000	\$-	\$-	\$-	\$296,000
<b>TOTAL</b>	<b>\$3,940,000</b>	<b>\$244,000</b>	<b>\$497,000</b>	<b>\$1,417,000</b>	<b>\$6,098,000</b>

Table 4 - Proposed Active Transportation Network Breakdown (by Facility and Implementation Timeline)

# IMPLEMENTATION RESOURCING AND MAINTENANCE

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As noted above, implementing the ATNP will require investment and resources. This includes staff resources and new equipment and materials for implementing and maintaining the active transportation network.

Ensure staff resources are available to implement the ATNP. Implementation of the ATNP will not only require capital resources, it will often require additional staff resources to implement the various actions identified. Planning and design support, whether as a designated staff position and/or through the hiring of consultants, can help to ensure the ATNP is implemented in a timely coordinated manner.

Continue to retain a contractor to adequately maintain facilities in all seasons. Winter maintenance is an important consideration, especially when snow and ice is combined with steep topography. Proactive (applying de-icing material before an expected snow event) and reactive (plowing and de-icing after the snow event) winter maintenance are important considerations.





*Tsleil-Waututh Nation Whey-ah-Wichen Canoe Festival 2022 (Photo Credit - Jeff Sisson)*



A photograph of a forest floor, heavily overlaid with a red tint. The image shows several tree trunks, some standing and some lying on the ground. In the foreground, a large log lies horizontally, with several smooth, rounded stones placed on top of it. The ground is covered in dry leaves and twigs. The overall scene is a natural, wooded environment.

**10.0**

# **MONITORING THE ATNP**



Measuring success of the ATNP means monitoring how well the TWN is working towards implementing the strategies and actions of the ATNP. An approach to measuring success must include a monitoring and reporting plan that is:

» **MEANINGFUL**

- › Monitoring should show meaningful results and point to where success is being achieved towards the goal, strategies, and actions within the ANTP.

» **MEASURABLE**

- › Monitoring needs to establish clear criteria that are measurable and for which data or information can be readily obtained.

» **MANAGEABLE**

- › Monitoring implementation should consider resource limitations and identify measures where information is accessible, and data is simple to collect.

The following section outlines the type of data that should be reviewed and monitored to understand how well TWN is working towards achieving the goal of the ATNP and encouraging more people to walk and bike.

Data, including Census data, ICBC, RCMP, and the Nation's inventory of existing facilities already exists, but it will be important to ensure that as new infrastructure projects are implemented the GIS database is updated.

KEY PERFORMANCE MEASURE:	METRIC	DATA
<b>Increase the number of trips made by active transportation.</b>	Walking, bicycling, and transit mode share (%)	Statistics Canada
	Count of people walking, cycling, rolling, and paddling on routes and trails (#)	Count Data (automatic counters can be installed as part of new projects) or annual manual counts can be conducted.
<b>Reduced collisions involving people walking and cycling on TWN streets and Dollarton Highway.</b>	Number of collisions involving people walking and cycling (#)	ICBC, RCMP, Health Authority
	Number of collisions involving people walking and cycling that involve an injury or fatality (#)	ICBC, RCMP, Health Authority
<b>Build active transportation facilities that are accessible for people of all ages and abilities.</b>	Total length of multi-use pathways (total km)	TWN
	Total length of sidewalks (total km)	TWN
	Total length of trails (total km)	TWN
<b>Make walking, biking, rolling, and paddling easy, enjoyable, and comfortable.</b>	Number of annual walking and cycling events including infrastructure grand openings (#)	TWN
	Number of wayfinding and information signage displays (#)	TWN
	Number of projects that incorporate TWN cultural expression and art (#)	TWN

Table 5 - Metrics of Success







# 11.0

## FUNDING THE ATNP





Active transportation has become a priority for regional, provincial, and federal governments. This encourages communities to plan for active transportation projects. Having a Plan supported by TWN Members and Chief and Council unlocks funding to build projects identified in the ATNP.

Initiatives such as TransLink's Major Bikeway Network, the Province's Active Transportation Infrastructure Grant, and the Federal Government's National Active Transportation Fund focus on offer financial support to communities building active transportation projects.

This is an exciting time for communities looking to promote and encourage more active transportation.

This Plan identifies a list of projects and actions to improve walking and biking on streets outside of TWN's Lands. This includes improvements on Dollarton Highway as well as bus stop amenities and transit service.

**Appendix E** lists of some of the funding opportunities available to implement projects identified as part of the ATNP.

**Tsleil-Waututh Nation**  
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**March 2023**