

Tsleil–Waututh Nation



Towards Sustainable Housing

Exploratory Design Guidelines for
the New Community Subdivision

March 2020

Our Team

This document was designed and developed by the SCARP studio team with guidance from, and in collaboration with, SCARP studio instructors and TWN staff. Our studio team is composed of four Masters of Community and Regional Planning (MCRP) students, who are working to support the planning process for TWN's new community subdivision, as our second-year studio project.

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Acknowledgements

We are thankful that we have been able to partner with TWN on this exciting project. We hope that the Exploratory Design Guidelines and other research findings are of value to TWN and the development of the New Community Subdivision.

In particular, we would like to thank:

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We are grateful that we have been able to live and conduct this work on the traditional, ancestral and unceded territories of the Tsleil-Waututh, Squamish, and Musqueam Nations.



Tsleil-Waututh Nation
PEOPLE OF THE INLET



Executive Summary

This project is a partnership between the 2019-2020 SCARP studio team and the Tsleil-Waututh Nation, and was designed and advanced to provide materials and resources to support the development of a new community subdivision in line with the vision and objectives of the Tsleil-Waututh Nation Land Use Plan (2019). The ultimate product of this partnership has been this report and the Exploratory Design Guidelines contained herein, which provide provisional recommendations for the new community subdivision.

This report, and the enclosed Exploratory Design Guidelines, are meant to enhance and promote conversation amongst the community regarding the design and development of the new community subdivision. They have been drafted through a process including a literature review, analysis of the Land Use Plan (2019) and complementary planning documents, and through an engagement session with the community. This report has been divided into three parts. Part 1 provides relevant background information, the site and planning context, and project methodology. Part 2 outlines guiding documents that directed the team's work. Part 3 comprises the Exploratory Design Guidelines, which includes:

- Built Form
- Public Realm and Streetscape
- Paths and Trails
- Parks and Open Space
- Stewardship
- Building and Landscaping Materials
- Neighbourhood Character

Due to limitations in time and available resources, the Exploratory Design Guidelines are best understood as provisional recommendations, which require further research and engagement with the community before implementation.

In addition to the Exploratory Design Guidelines, this report also identifies areas for further investigation by Tsleil-Waututh Nation, most of which would receive consideration in design guidelines, including: building heights, phasing, funding, subsidized housing delivery, community space usage, rainwater management, flood protection and resilience, and underground utilities. Given the exploratory nature of this document, further investigations are important in developing future design guidelines to fully reflect the vision of the Nation, and function as complete design guidelines for the new community subdivision.

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Glossary

These definitions are taken from the TWN Land Use Plan (2019):

Amenities - anything that improves the quality of life in an area, beyond the bare essentials for health and safety. Community amenities could include community facilities (like a gym, daycare, or health clinic), commercial businesses (like a grocery store, restaurants, or services) or outdoor spaces (like trails and parks).

Community Members - refers to anyone who lives within the Tsleil-Waututh "village", including TWN Members and their families who may not be Members, but are part of the community, participating in community activities and using community facilities.

Density - when referring to housing, this is a description of how many housing units are allowed in a certain area, or lot. For example, low density might be a detached house or duplex, meaning only one or two housing units on a lot, while high density might be an apartment building with many units on a lot.

Exploratory - is a description used for Policies and Objectives that require further research or engagement before a decision can be made.

IR#3 Residents - refers to everyone who resides on TWN reserve land. Including TWN Members, Community Members, Leaseholders, and renters, who make their home on IR#3.

Objective - in this Exploratory Design Guideline and in the Land Use Plan, Objectives are goals, or descriptions of what TWN hopes to achieve in certain areas or categories.

Opportunities - are ideas that have been suggested throughout this planning process by Community Members or staff for which no clear consensus has emerged as to whether or not they should be pursued.

Policy - description of what action will be taken and what guidelines will be followed to achieve a given Objective.

Riparian Area - are the areas bordering on streams, lakes, and wetlands that link water to land. The blend of streambed, water, trees, shrubs and grasses directly influences and provides fish habitat. The Riparian Areas Protection Regulation is a BC provincial legislation that requires local governments to enact bylaws that protect riparian areas during residential, commercial, and industrial development.¹

Row Houses, Townhouses - these are types of medium-density housing in which each unit has its own door to the outside, but units share a common wall and often look similar. They are usually 2-3 stories and may include shared green space, parking, and other amenities.

TWN Members - refers to the legal Members of the Tsleil-Waututh Nation under the TWN Membership Code, who (at the age of 18) have voting rights within the Nation and have an interest in Tsleil-Waututh Nation reserve lands and resources.

(Dwelling) Unit - a dwelling unit, is a self-contained home for one individual or family, with its own entrance from the street or a common corridor and including a washroom, kitchen, sleeping and living space.





Part 1: Introduction

1.1 Purpose, Application, and Intent

1.1.1 Project Scope

The purpose of *Towards Sustainable Housing* is to support TWN in planning and designing a new community subdivision, and to explore ways in which this new neighbourhood can achieve and implement the vision and objectives of the TWN Land Use Plan (2019) (LUP),² while also helping to establish TWN as a leader in innovation and environmental stewardship. To achieve this goal, this project's primary deliverable is this document, which includes a project summary, the Exploratory Design Guidelines, and appendices. These tools and documents can be used to help guide the development of the new community subdivision in order to achieve the objectives and principles established in the LUP.

This document was designed and developed by the SCARP studio team with guidance from, and in collaboration with, SCARP studio instructors and TWN staff. Through this consultation and design process the scope of this document has been focused upon the residential and recreational aspects of the new community

subdivision, and includes: built form, public realm and streetscape, paths and trails, parks and open space, stewardship, building and landscaping materials, and neighbourhood character. These aspects were chosen as they represented the desired focus of the community, as set out in the LUP and engagement input, and were achievable given the available time and resources. With this scope in mind, this project utilized existing policy documents,³ academic and industry research,⁴ and TWN community engagement data to produce the Exploratory Design Guidelines, which are to serve as a starting point for future discussions regarding community design and provide limited guidance for the current design process for the new community subdivision.

Figure 1 below highlights the process and key phases of this project.

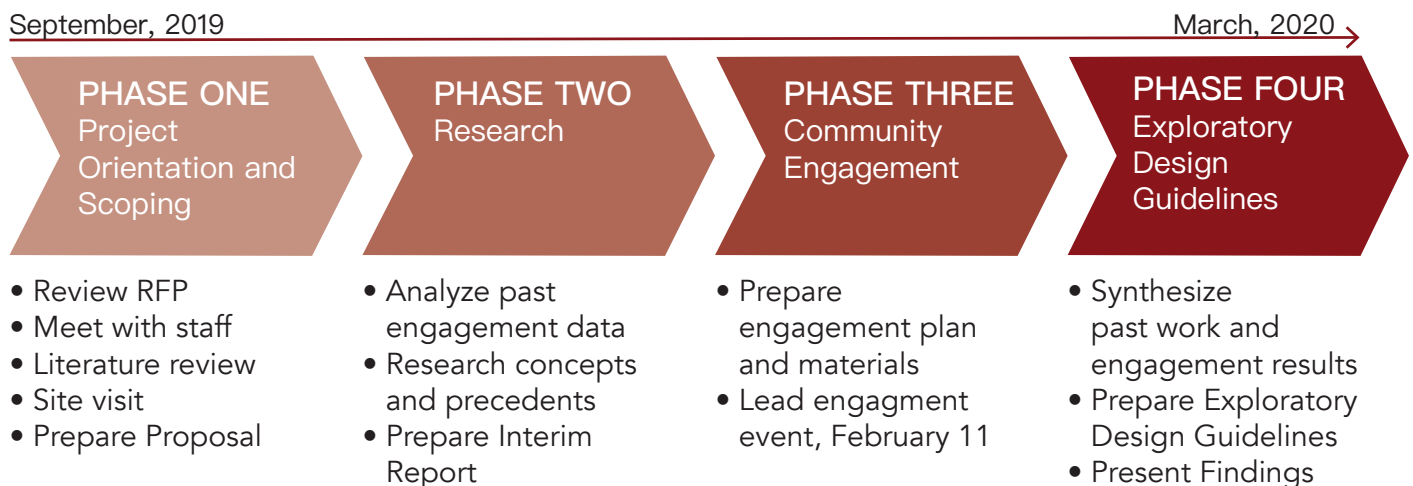


Figure 1. Project Process

1.1.2 Application and Intent

The purpose of the Exploratory Design Guidelines is to enhance and promote conversations amongst the community related to the design and development of the new community subdivision. Within this document are design recommendations intended to provide inspiration and information for this discussion. These recommendations have been produced through engagement with TWN Members and reflect designs successfully implemented in other municipalities and regions. Further, these Exploratory Design Guidelines are intended to illustrate the planning value which the community may obtain through carrying out a design guidelines development process.

These design guidelines are exploratory as they require further research and/or engagement before a concrete decision can be made, and are therefore meant for the consideration of the TWN Community rather than as implementation-ready guidelines. As these guidelines have been drafted based on limited community consultation a fuller representation of the vision, goals, and aspirations of the community will require ongoing engagement and research.

1.1.3 Organization

This document is organized as follows:

Part 1: Introduction

Introduction provides a summary of the purpose of this project as well as the relevant background information for the project, including a description of the overall existing context, identity of the area, and outline of the engagement and planning process underlying this project.

Part 2: Vision, Principles, and Policies

Vision, Principles, and Policies reviews the relevant guiding documents and input provided through community engagement which apply to the new community subdivision. These documents represent the source material which was relied upon when examining design components. They include applicable portions of the Land Use Plan (2019) and other community policy documents.

Part 3: Exploratory Design Guidelines

Exploratory Design Guidelines provides a preliminary sample of complete community design guidelines. Included in these exploratory design guidelines are built form, public realm and streetscape, paths and trails, parks and open space, stewardship, building and landscaping materials, and neighbourhood character.



1.2 Planning Context

1.2.1 Overview

The necessary context for this project concerning the new community subdivision was derived initially from the Land Use Plan (2019) (LUP), and further developed through conversations with TWN staff, site visits, and community engagement. Through this analysis, it was determined that the need for new housing is most relevant to this project.

Of the 500+ TWN community members, about half live at Burrard Inlet IR#3.⁵ The neighbourhood faces continued pressure to support more housing due to population growth and band-members wanting to return to live on reserve. These pressures are exacerbated by spatial constraints due to the surrounding municipality, the District of North Vancouver (DNV) and the Burrard Inlet; and sustainability challenges, such as maintaining limited forested areas. As such, there is a desire from the community to develop with consideration.

Other sustainability challenges include regional integration and mobility. The Tsleil-Waututh reserve features limited community amenities within walking distance and limited public transportation options. This is exacerbated by the surrounding suburban, single-detached typology of the DNV.

These factors warrant a discussion around values and the future: the urgent need for new housing, the necessity of ecological preservation, the consciousness of sustainability in transportation and access, and the desire to be ambitious with new development. The challenge for TWN is to determine the best way to proceed given all these considerations, with an end-goal of satisfying the varied needs of the community.



1.2.2 Housing Background

The new community subdivision is being developed in response to a growing population across the TWN community and band members wanting to return to living at Sleil-Waututh (or IR#3).

According to the LUP, “[TWN’s] community population has regrown from a low of around 13-35 after the epidemics in the early 1800’s to approximately 510 at the end of 2016, with about 270 of those TWN Members living on Burrard Inlet IR#3 in 114 homes.”⁶

The LUP also provides preliminary population projections that see the Tseil-Waututh population growing from 510 Members in 2016 to 2,263 by the year 2116. Based on the proportion of primary household maintainers, and the historical proportion of on-and-off-reserve band-members, by 2116 there could be 898 total TWN households, with 514 of those households on reserve.⁷

The existing need for housing will be exacerbated by a growing population. This means there is a substantial need for planning new housing at IR#3: “As of 2017, there is a current housing stock of 114 member homes on reserve across approximately 33 acres of residential land. The population projection model estimates a need for an additional 400 housing units on reserve over the next 100 years. In the shorter term, the model predicts a need for an additional 2-3 homes every year over the next 45 years and then an increase to 4-7 new homes every year after 2061.”⁸

Housing Needs

Some additional data that substantiates the housing need projections can be found in the 2018 TWN Housing Needs Assessment and LUP.

The 2018 TWN Housing Needs Assessment found 65 housing requests from the TWN community. Of these 65 requests there were: 35 requests for single-bedroom housing; 10 requests for two-bedroom housing; 14 requests for three-bedroom housing; and 4 requests for four-bedroom housing.

1.2.3 Planning Area

IR#3 sits on the north shore of the Burrard Inlet, bordered by the DNV to the north, east, and west, with the Burrard Inlet itself as its southern border. Dollarton Highway, built on land appropriated by the DNV, separates the southern end of IR#3 from the foreshore, which complicates the community's access to the inlet. Due to the single-family suburban typology of the surrounding DNV, access to transit is limited. These borders are a significant consideration when making planning decisions with the reserve lands.

Figure 2 outlines where the new community subdivision sits within Sleil-Waututh. The site is bounded by single family community member houses to the south, George Creek to the west, Thomas Creek to the east, and

residential properties to the north that are within the DNV. Access will be provided through eastward extensions of Spa-ath Road and Ghum Lye Drive which will both require crossings at George Creek. A further connection of Spa-ath to Apex Avenue with a crossing over Thomas Creek may be considered in the future. The total development area including roadways and parks is approximately 10 hectares.

Existing Site Conditions

The area is undeveloped other than some deforestation in the northern portion, tree clearing in the proposed right-of-ways, and a lacrosse field in the south.

The area is accessible by foot and TWN Community Members often use it for walks and other recreational purposes.

The remaining forest is second or third generation growth, as the area was hand-logged right up until the development of Dollarton Highway (after which logs could no longer be skidded to the Inlet).⁹

The central area of the site was previously used as a waste disposal area and contains fill material consisting of mostly excavated material from other construction areas and of different quality and thickness.¹⁰



Figure 2. The New Community Subdivision site in relation to adjacent on- and off-reserve land.

1.3 Community Engagement

1.3.1 Engagement Event

The studio team held one community engagement session on Tuesday, February 11th, 2020 at the TWN land tenure membership-only meeting. This session was meant to gather community input on the new community subdivision. The engagement consisted of two activities: one sticky-note brainstorming exercise, and one visual survey with three questions addressing: 1) built form, 2) street design, and 3) building material. Some of the materials used in the first activity are shown in Figure 3 below. During these activities, the SCARP studio team conversed with participants to capture qualitative data.

1.3.2 Engagement Findings

The engagement responses focused on built-form, sustainability, community amenities, preservation of current forested areas, affordability, and the timeline for development. Respondents generally agreed with the need for higher density residential areas, but wanted development to mitigate the negative impacts of density, such as the loss of privacy. Respondents also indicated a desire for improved pedestrian experience through slowing traffic. Additionally, respondents expressed a desire for higher quality residential accommodations noting a need for high quality materials and professional trades people.

The engagement survey questions, responses, and a complete analysis are included in the appendices:

- Appendix A: Summary of TWN LUP Engagement Results
- Appendix B: Summary of TWN input from SCARP studio booth at Feb 11, 2020 TWN Land Tenure engagement event.

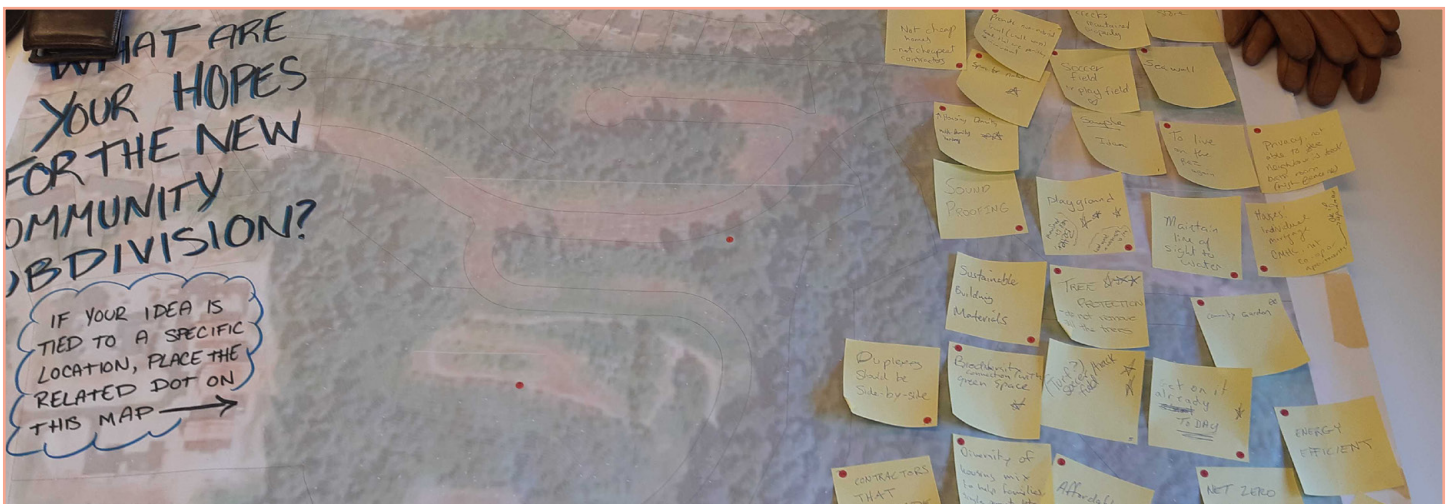


Figure 3. Sticky notes placed by community members in response to the question "what are your hopes for the new community subdivision at the community engagement event on February 11, 2020.

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Part 2: Vision, Principles, and Policies

2.1 Vision for the New Community Subdivision

2.1.1 Land Use Plan Vision

The Tsleil-Waututh Nation's Land Use Plan (2019) (LUP) offers a vision for the overall reserve lands, which includes the area designated for the new community subdivision. This vision provides guidance for the TWN community and parties working with so that development of the Nation's reserve lands can achieve the Nation's desires and goals. The vision is as follows:

"Tsleil-Waututh 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."¹¹

As the Exploratory Design Guidelines are intended to inform the development of the New Community Subdivision, the content and recommendations herein are grounded in this vision.

The LUP contains further policies and objectives that have a specific bearing on the contents of these design guidelines:

- Honour Tsleil-Waututh culture and values with every land use decision;
- Align all activity and development on Tsleil-Waututh (IR#3) with the 2009 Tsleil-Waututh Nation Stewardship Policy;
- All developments on reserve will meet or beat Canadian environmental laws;
- Where possible, use *hən̓q̓əmi̓n̓əm̓* language in signage, wayfinding, place and building names throughout TWN reserve lands;
- Preserve and enhance a sense of place within the community that represents the Tsleil-Waututh identity on TWN reserve lands;
- Before the granting of a development permit, any new development on reserve will complete necessary due diligence as determined by TWN, including, but not limited to, environmental, archaeological, and geotechnical investigations;
- Consider the development of design guidelines for all new developments to address issues such as energy efficiency, climate change adaptation, beautification, representation of Tsleil-Waututh culture, etc.¹²

2.2 Guiding Design Principles

2.2.1 Overview

Building on the overall vision for the TWN reserve lands found in the LUP, and analysis of input gathered during the LUP engagement process, this studio project identified a set of guiding principles as a foundation for developing the exploratory design guidelines for the proposed new community subdivision. As guiding principles they support the overall vision from the LUP and represent recurring themes found within the analysis of the LUP and engagement results. These guiding design principles support the broader goal of sustainable housing and development that help reflect the priorities of TWN members and assist in providing a distinctly Tsleil-Waututh identity to the new neighbourhood.

In total, five guiding principles were derived from the analysis of the LUP and the LUP engagement process. These are: Affordability, Adaptability, Tsleil-Waututh Identity, Connectivity, and Stewardship. While other principles were present in the LUP, the analysis performed as part of this project concluded that these were of the most significance and relevance to the development of the new community subdivision, and were of the highest concern to the TWN community.





Affordability

Affordability represents a clear desire from TWN members that future housing be within financial reach. TWN is not immune to the affordability concerns affecting the Lower Mainland and will need to produce its own unique solutions. Affordability can encompass a variety of physical and social strategies: from denser buildings to collaborative living models.



Adaptability

Adaptability reflects a long-term, multi-generational approach to housing. It emphasizes the design and construction of housing types which decrease barriers to residency and mobility. Adaptability also emphasizes the role of the family and community in caring for one another and providing support across generational lines.



Tsleil–Waututh Identity

Indigenous Identity honours and brings to the fore TWN's aim to represent their culture in the community. It emphasizes processes through which TWN might express their distinct identity in the built environment.



Connectivity

Connectivity seeks to strengthen the bonds between people and the land. This guiding principle emerged from the themes of connection to nature and connectivity through movement evident in the community's objectives.



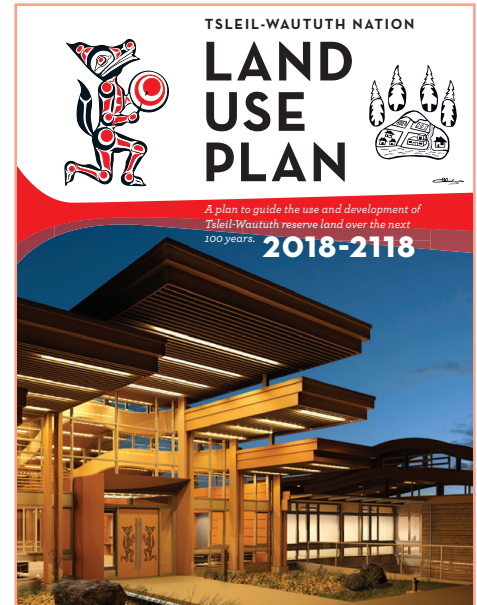
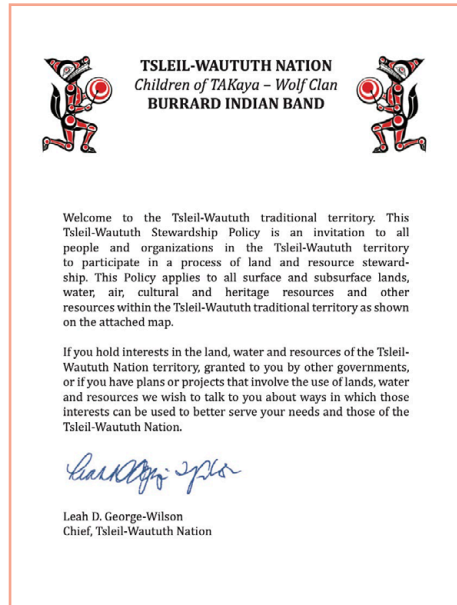
Stewardship

Stewardship speaks to TWN's traditional relationship to the lands, waters, air, plants, and animals. In the development of this neighbourhood, TWN will maintain its duty to the restoration and protection of the environment. This can include retaining forest and riparian areas along creeks, and ensuring new buildings and energy sources are the most eco-friendly available.

2.3 Existing Community Policies

2.3.1 TWN Policy Documents

A variety of existing TWN policies apply to development sites like the new community subdivision. When considered holistically, these policies establish a general framework that will shape development and support the Nation's objectives. As such, these policies form the legal basis from which the Exploratory Design Guidelines will be generated.



Comprehensive Community Plan (2010)

Provides a shared vision for the community and 'maps out' how TWN intends to move forward over the next ten years and longer. It considers infrastructure and economic development, education, capacity building, social development, culture, and how these areas of consideration are implemented throughout the policy and programs that support the lives of Nation members.¹³

Stewardship Policy (2015)

The Stewardship Policy outlines TWN's expectations of all parties when operating on their traditional territory regarding sustainable management. In order to ensure the Policy is reflected in all lands managed or cared for by TWN, the Policy has been adapted to reflect the confines of the reserve lands, with a primary focus on Sleil-Waututh.¹⁴

Land Use Plan (2019)

The LUP provides the vision, principles, and guidelines for how land use and development will occur over TWN reserve lands over the next 100 years and will act as a tool for Council, TWN staff, Community Members, and other parties to ensure land use decisions reflect the community's values and priorities.¹⁵

2.3.2 New Community Subdivision Policies

Land Use Designations

The Land Use Plan (2019) (LUP) Law, adopted in 2019, stipulates that the lands for the new community subdivision shall be used for a mix of low density and multi-family residential development, parks, and community space. Lands adjacent to George Creek and Thomas Creek are designated as protected areas. These land use designations are shown in Figure 4.

Housing Mix

The LUP sets out objectives and policies regarding housing types and densities, designated as either low density or multi-family. These land use designations are designed to provide direction for housing land use to provide desirable options for housing to all community members.

- Low Density provides housing that adapts to the changing needs of families over time and includes housing types such as single detached dwelling and row housing. This land use designation also includes elements such as access to green space, universal design, and environmental sustainable housing practices.¹⁶
- Multi-family provides for higher density housing, improving affordability, access to community amenities, and transportation networks. This housing type can include apartments, row housing, and townhouses.¹⁷

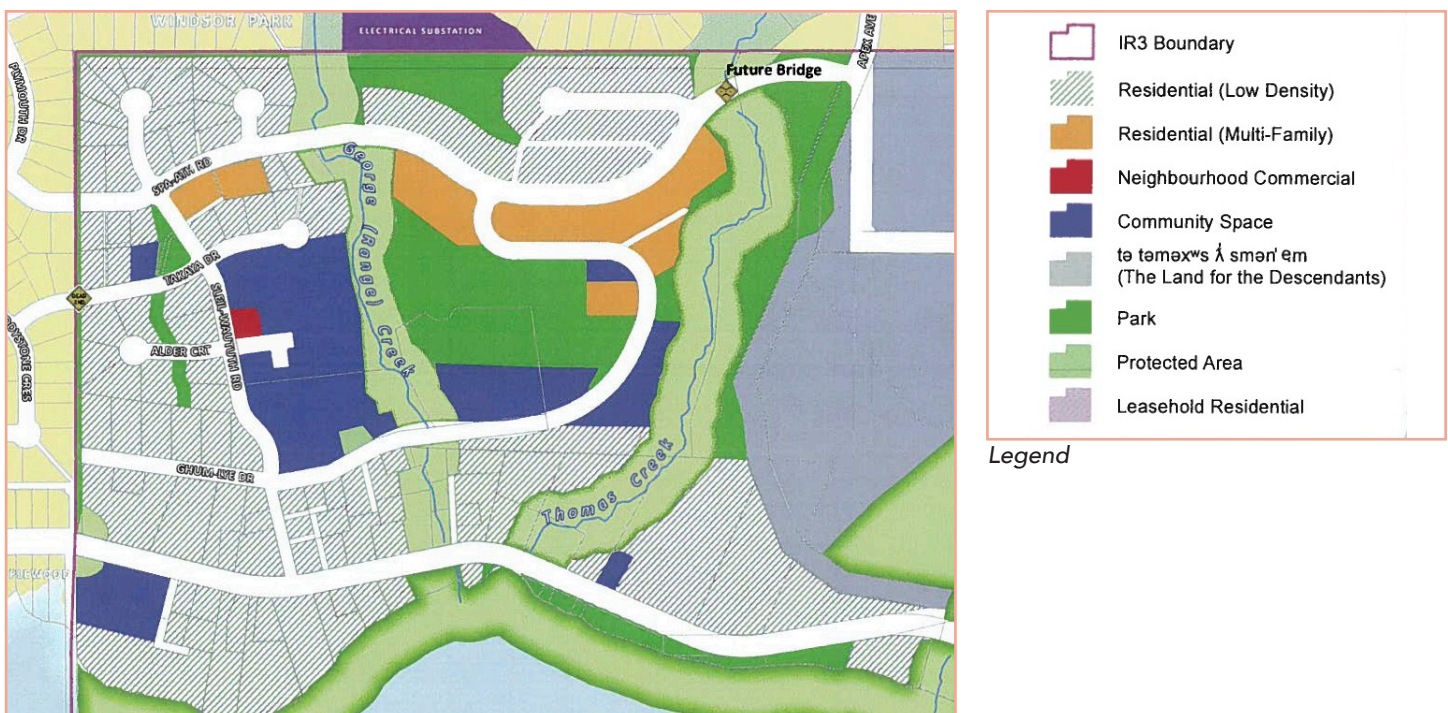


Figure 4. Map of IR#3 from the Land Use Plan Law (2019), including the New Community Subdivision Site.

Community Amenities

Community amenities within Tsleil-Waututh reserve lands generally fall within one of two land use designations within the LUP:

- Parks: The LUP prioritizes parks for recreational use by local residents of all ages and abilities in order for them to connect with nature, exercise, play and relax. Parks and open spaces also provide social and cultural space for TWN Members.¹⁸
- Community Spaces: Community space land is intended for the development of buildings and spaces that provide administrative, health, recreation, education, and cultural amenities for residents on TWN lands.¹⁹

Transportation and Mobility

A transportation analysis was conducted in advance of the drafting of the LUP, in order to provide recommendations on how transportation within the reserve could be improved.²⁰ The recommendations that pertain most directly to the new community subdivision include providing sidewalks along road networks for pedestrian access and upgrading trails throughout the reserve. These recommendations have been adopted by land use designations within the LUP which will apply to the new community subdivision.

Conservation and Ecology

The development of the new community subdivision is being undertaken to provide housing for community members. However, this new development must also maintain the Tsleil-Waututh commitment to stewardship of the environment. As such, the project will be designed and constructed to minimize the impact on the area's ecology and conserve natural beauty. In accordance with the LUP Law, all developments on reserve will meet or beat Canadian environmental laws.²¹



Figure 5. Existing playground at IR#3.

2.3.3 External Policy Documents

A number of policy documents from surrounding jurisdictions may also be influential in TWN's development plans, including the following examples.

District of North Vancouver Community Plan (2011)

This Plan outlines DNV's vision of a sustainable community. It situates the District in its regional context, and outlines its strategic directions and planning priorities.²²

Port Metro Vancouver Land Use Plan (2014)

This Plan outlines the Port of Metro Vancouver's commitment to steward Port lands and waters responsibly relating to social, economic, and environmental trends. Much of the lands and waters discussed are in TWN's traditional territory.²³

District of North Vancouver OCP (2017)

The section on Village Centres outlines the vision, goals, objectives and policies for the local area directly adjacent to IR#3: Maplewood Village Centre. The Plan acknowledges the expected growth of TWN's membership and reserve lands, and that TWN should be consulted and considered a potential partner on many projects.²⁴



Part 3:
Exploratory Design Guidelines

Preamble

This section contains select components of design guidelines, representing those sections best supported by the existing research and community input. These components offer a starting point for the neighbourhood's design. While they do not cover all aspects which might be reviewed in an official community design guide, they do provide an overview of effective design guidelines and can stand as the base for future development, supported by a further community engagement and integration of industry best practices. Each subsection here contains a description of the design element within the larger community context, a summary of the community input and research which informed the intention behind the preliminary recommendations, and a list of design recommendations and options to best implement these design components.



3.1 Built Form

3.1.1 Overview

Background

The new community subdivision will have a residential zone located in the northern half of the development.

Intent

This residential development will help address the TWN housing waitlist and future demand from community members. Input from the community has indicated that while increased density is understood to provide necessary housing for future residents, steps should be taken to mitigate what the community identified as negative outcomes from increased density, such as prioritising privacy and providing a mix of housing types.

3.1.2 Housing Types

The composition of new development should include a variety of housing types to provide a mixture of options for residents relating to aspects such as space, affordability, and lifestyle. Housing types should include single detached homes, row housing, and multi-unit buildings.

- **Single detached homes** should occupy no more than half of the land developed within the residential area, and can include ancillary housing units or secondary suites.
- **Row housing** units have shared walls, but often include private entrances and outdoor space such as back and front yards.
- **Multi-unit housing** entails multi-story buildings with multiple units on each floor, such as walkup or apartment buildings, as show in Figure 6.



Figure 6. Example of multi-unit housing inspired by natural materials.²⁵

3.1.3 Housing features

- a. Construction of units containing shared walls should include sufficient sound proofing to reduce the sound from other units in most situations.
- b. Common areas should be provided for multi-unit housing to increase the availability of amenities such as outdoor cooking space, green spaces, laundry services, without reducing personal space within units.
- c. Building design should implement the principles of universal design so as to increase accessibility for all users and improve housing adaptability.
- d. Architectural design of row housing should incorporate facades and roof forms, as well as clearly identified entrances, to differentiate individual units and provide interest and variation along the street.
- e. Balconies should be integrated into the building, to increase privacy in relation to other units, while remaining open to the street to provide "eyes on the street" surveillance for public areas.
- f. Surrounding landscaping should be used to create interesting and visually attractive streetscape, designed with and respecting nature.



Figure 7. Example of Universal Design elements including wide doors and sidewalks to increase accessibility.²⁶



Figure 8. Example of a shared courtyard and firepit between apartment buildings.²⁷

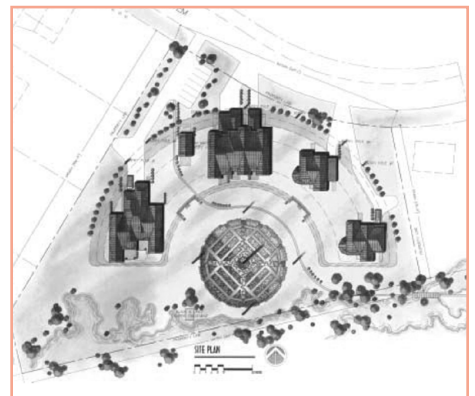


Figure 9. Example of mixed housing types laid out around shared garden from Seabird Island First Nation.²⁸

3.2 Streetscapes and Public Spaces

3.2.1 Overview

Place

Three streets are proposed for the new subdivision: Spa-ath Road, Ghum Lye Drive, and an unnamed cul-de-sac. Spa-ath and Ghum Lye will be extensions of existing streets, providing access to the new subdivision, while the cul-de-sac will branch off of Spa-ath, as shown in Figure 10.

Intent

Preliminary community engagement showed a desire to prioritize environmental stewardship in street design along with ensuring the safety and comfort of pedestrians. Through this input two types of roadways have been proposed, each featuring numerous possible design options which will support the roadways' focus.

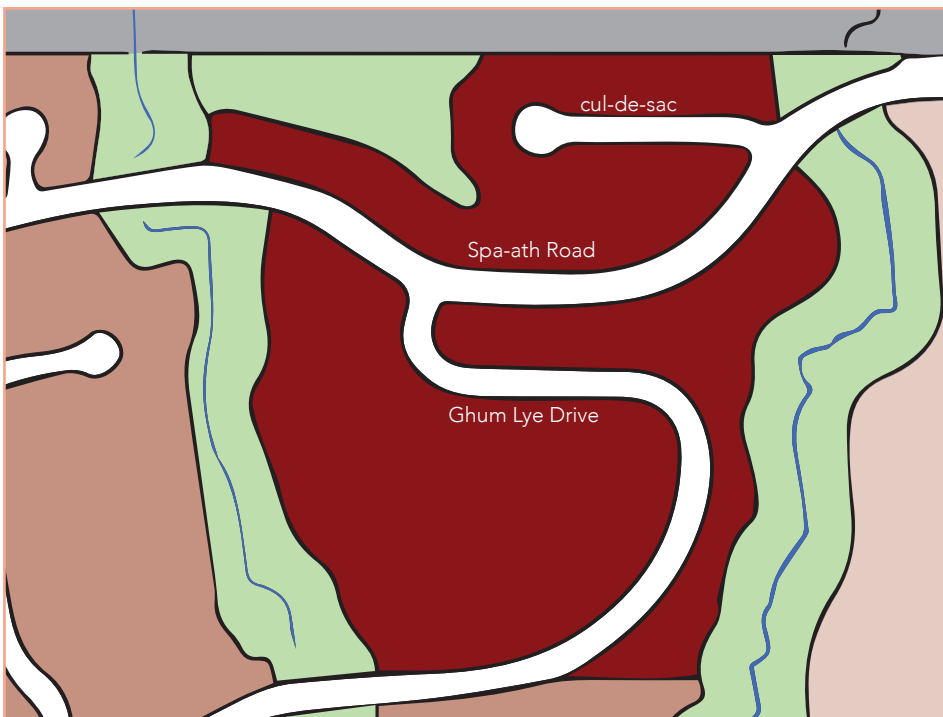


Figure 10. Site Map showing the three roads to be incorporated in the New Community Subdivision.

3.2.2 Environmentally Focused Streets

The streetscape is designed with elements which provide environmental benefits and calm traffic to improve the experience of active transportation users. These streets should include:

- a. Bioswales, strategically integrated into the streetscape, collect and filter water runoff before it reaches local waterways.
- b. Sidewalks on one or both sides of the roadway to permit pedestrian traffic.
- c. Narrow road width of 6-7m allows for vehicles to pass simultaneously while naturally slowing automotive traffic to improve safety for cyclists and pedestrian traffic.²⁹
- d. Concrete curbs, flush with the road surface, act as borders which visually narrow the road surface, encouraging drivers to proceed slowly, without removing usable driving area.³⁰
- e. Gently curving roadway to provide a unique streetscape and naturally reducing motor vehicle speeds and increasing safety for cyclists. See Figure 12.
- f. Separated green spaces using structural soil and providing limited street parking, which allows for water drainage and filtration while also providing limited on street parking.



Figure 12. The curvilinear nature of this right of way provides traffic calming effects.³¹

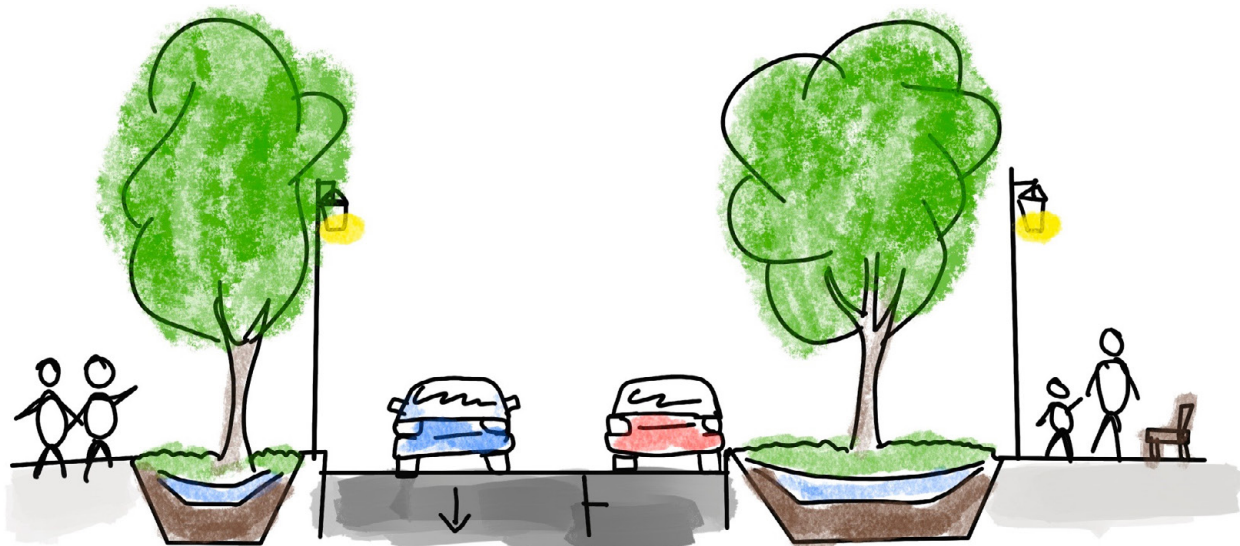


Figure 11. Conceptual cross section of a green street including narrow right-of-way and bioswales.

3.2.3 Pedestrian Focused Streets

Specific to the unnamed cul-de-sac, this street design prioritizes active transportation by significantly reducing motor vehicle speeds and increasing pedestrian space. Active transportation includes forms of travel that are powered by physical activity, such as walking and cycling. This street should include:

- Traffic calming measures such as speedbumps, narrow streets (6-7m in width), narrowed driving lanes (optional parking island), and unique paving stones that provide a tactile signal to drivers that the roadway is a space shared with non-motor vehicle users.³²
- Wide sidewalks that can accommodate large groups of pedestrians, cyclists, wheelchairs, and other active transportation users; and provide ease of transition between road and sidewalk to facilitate sharing space in public areas.
- Sidewalks should implement tactile indicators to improve accessibility to shared space users with visual impairments.
- Provide attractive landscaping and amenities such as benches and waste receptacles to support and encourage active transportation use.
- A multi-use pathway connecting to Spa-ath that excludes vehicular access at the west end of the roadway.
- Limited street parking to provide additional space for active transportation and public space.

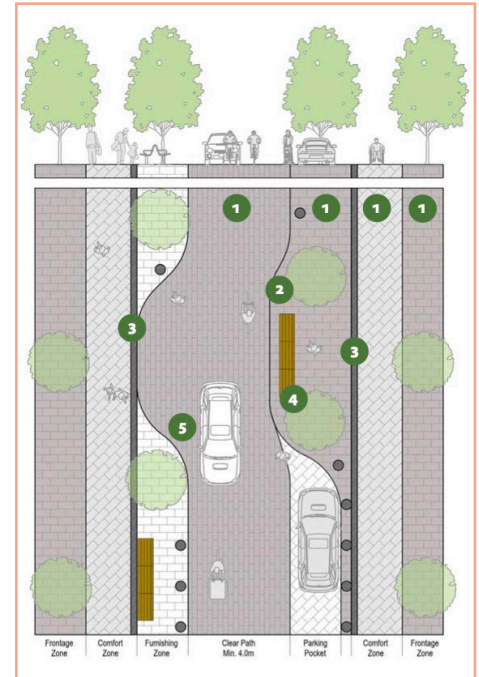


Figure 14. Differing paving material delineate intended use of space, while curvilinear road naturally slows traffic.³³

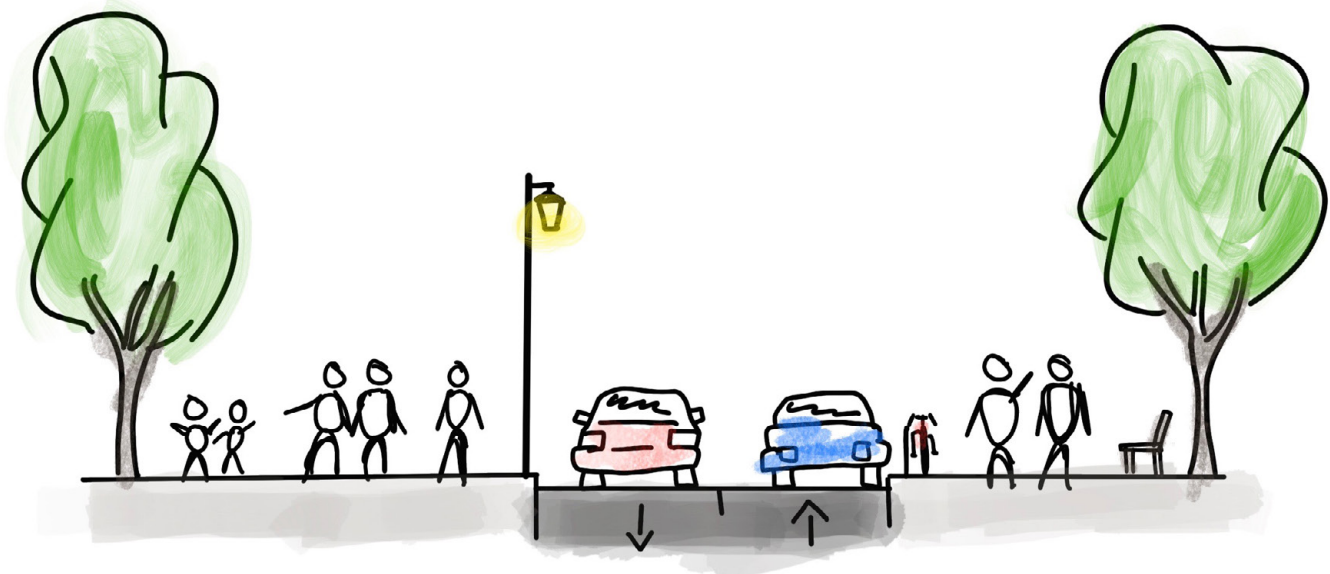


Figure 13. Conceptual cross section of a pedestrian focused roadway, including wide sidewalks and public seating.

3.3 Paths and Trails

3.3.1 Overview

Background

The new community subdivision will include sidewalks, pathways and trails as a network which connects all the key destinations within the New Community Subdivision as well as the wider IR#3 community.

Intent

The trail and pathway network will respect the land and people's connection with it. This will include identification of existing trails and consideration of whether to enhance or limit access to culturally significant and environmentally sensitive areas.

The design will honour the connection between the Tsleil-Waututh people and the Burrard Inlet by providing access to the foreshore and views of the water. Also of particular importance are trail connections with George and Thomas Creeks and eastern forest areas. The new neighbourhood sidewalk, pathway, and trail network will also promote walking, bicycling and other forms of active transportation throughout the community while providing safe pedestrian and active transportation options for people of all ages and abilities.

The design will include paved pathways that accommodate people of all ages and abilities, and natural trails that provide access while protecting sensitive environmental areas.

3.3.2 General Guidelines

- Begin and end with trailheads at the intersections between trails and other community amenities;
- Have trailheads including wayfinding signage including information on accessibility of the trail, recycling, garbage and pet waste receptacles, benches, and dog waste bag dispensers;
- Include Tsleil-Waututh ecological, sustainability, and language content wherever possible;
- Consist of products that are manufactured from sustainability sourced or with recycled content that are recycled at the end of their functional lifecycle, and durable in a Pacific Northwest Rainforest environment;
- Have right-of-ways that provide access throughout the community as well as utility servicing;
 - Right-of-ways are delineated in the LUP between the development areas. For example, the cul-de-sac should be accessible by active transportation through the park, limiting the travel distance required;³⁴
- Have design directed by community members, arborists, and landscape architects to ensure the incorporation of practices evaluating the health and value of trees and existing vegetation to preserve the ecology during construction and use of the trail network.



Figure 15. Paths and trails will increase connectivity to natural areas on-reserve.



Figure 16. recycling and garbage facilities, such as those outside the TWN Administration building, should be accessible from paths and trails.

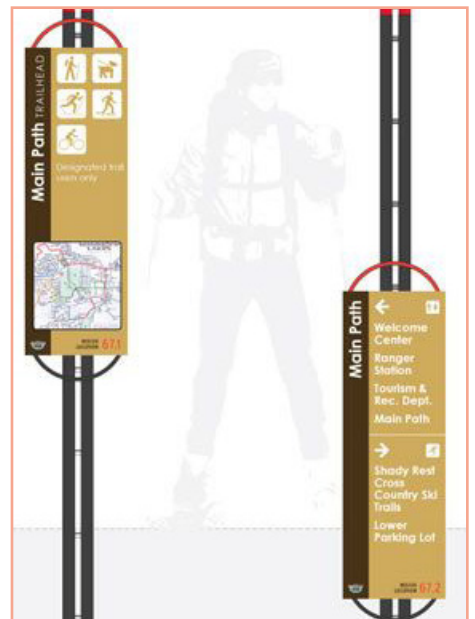


Figure 17. Example of trailhead wayfinding signage design.³⁵

3.3.3 Paved Pathways

- a. Should have a unified character through the whole length of the trail;
- b. Should have a slope a minimum of 5% and a maximum of 8%. The trails should avoid the use of stairs, allowing trail access for all age groups and mobility users;
- c. Will be lit with pedestrian scale lighting to provide minimum light levels for safety as well as for character and experience. The lights shall be high efficiency LED lights, with high cut off rates to reduce light trespass and which are 'Dark Sky' compliant;
- d. Will vary in width with a minimum width of 2.5m up to 4.0m;
- e. Will be paved or gravel with an identical resilient surfacing along its total length ensuring unity of character and ease of use for all mobility levels;
- f. Should use permeable pavers wherever possible;
- g. Should include benches, recycling and waste receptacles, wayfinding signage, bike racks, and interpretive material at strategic points;
- h. Will have a planted landscape treatment that ensures a unity of character.

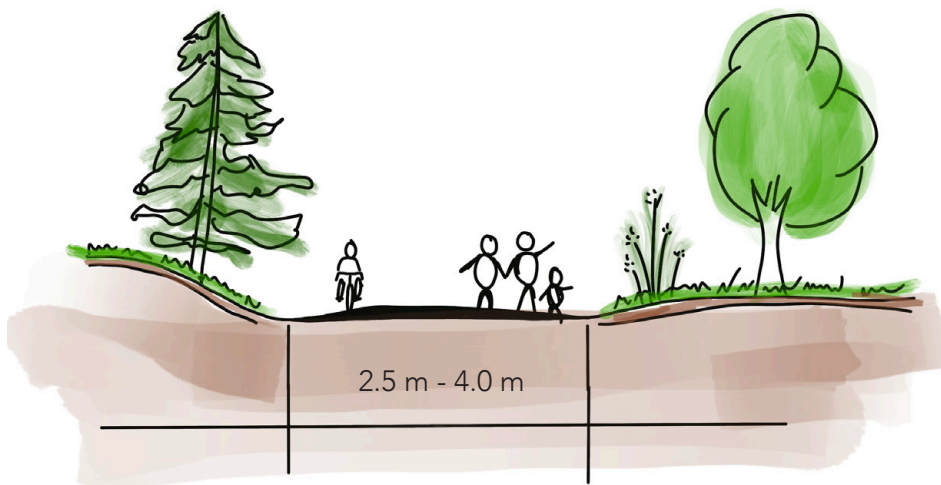


Figure 18. Conceptual cross section of a paved pathway, showing range of acceptable widths.



3.3.4 Natural Pathways

- a. Will be of a highly naturalized character;
- b. Can include varied slopes based on the location relative to trees and existing grades that may not be adjusted. This may not provide universal accessibility because staircases may be required and slopes may exceed 8% which would impede travel for limited mobility users;
- c. Should not be lit;
- d. Should vary in width with a minimum width of 0.9m to 1.2m;
- e. Will be paved with an aggregate (crushed rock) including an organic binder;
- f. Should avoid the use of any site furniture;
- g. Any landscaping, as needed, will consist of native plants consistent with the existing natural forest;
- h. Should utilize boardwalk trail over topography and sensitive areas;
- i. Should prohibit cycling to protect environmentally sensitive areas and pedestrian trail users.

3.3.5 Creek Crossings:

- a. The connection of the new community subdivision to the adjacent lands to the east and west may require creek crossings of both George and Thomas Creeks respectively. Creek crossings have the following additional requirements over and above the typical primary trail standard.
- b. Where the trail crosses the riparian area, an elevated boardwalk and bridge system with guardrails will be provided.
- c. The elevated boardwalk and bridge system should utilize built in lighting fixtures rather than pole mounted pedestrian lights to minimize the impact on the riparian habitat.

3.4 Parks and Open Spaces

3.4.1 Overview

Background

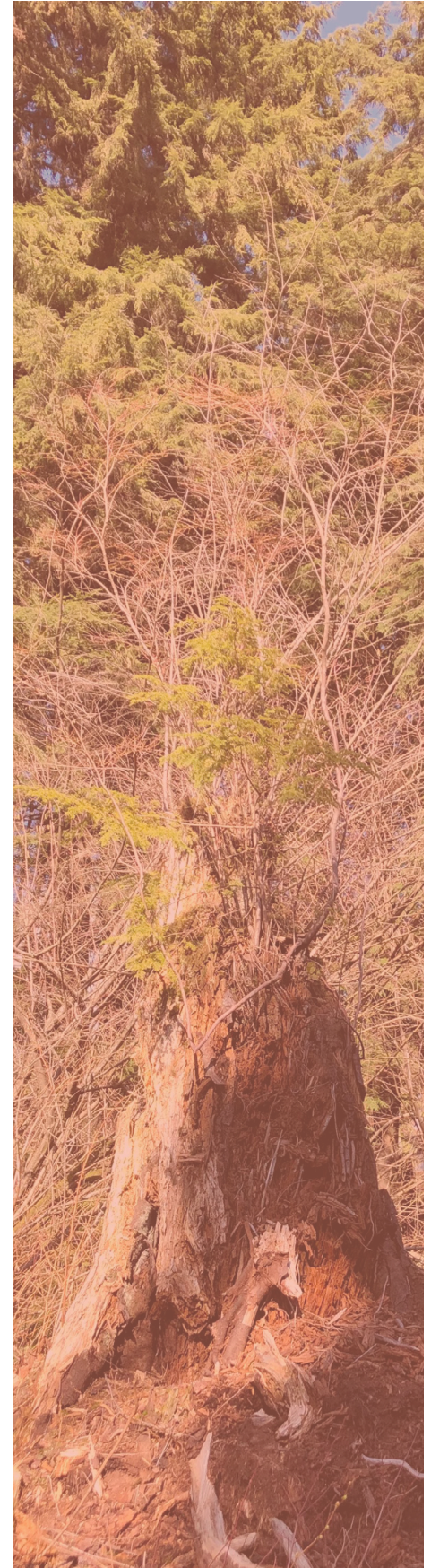
Two park areas are envisioned in the new community subdivision: a northern forested park and a central slope park. The northern forested park will be located north of Spa-ath Road in an existing treed area, while the central sloped park will be located near the centre of the new neighbourhood.

Intent

Community feedback has indicated a strong desire to preserve current access to nature and provide space for physical activities such as organized sports. The northern park will prioritize maintaining access to nature, while the central park will prioritize open space as a community amenity.

3.4.2 General Guidelines

- a. Provide a diversity of social places in varying scale, character and locations;
- b. Create flexible urban open space accessible to all Community Members;
- c. Weave the “forest” throughout the entire development;
- d. Focus and integrate the park and open spaces around the existing natural features, topography and vegetation;
- e. Enhance wildlife habitat and plant ecology connectivity throughout the site where possible;
- f. Provide all-weather and all-season uses and places; and
- g. Ensure the principles of Crime Prevention Through Environmental Design (CPTED)³⁶ are met.



3.4.3 Central Slope Park

A central slope park will focus on active recreation, play, community gathering, and environmental protection. Based on initial community engagement data a soccer field has been identified as being of interest for inclusion in this park, and as such will be the focus of this exploratory design segment. Additionally the central park will include play space for toddlers and children, community gardens, benches, and space for picnics.

The central slope park should be designed to include:

- a. Space for storage, maintenance equipment, sports equipment, and furnishings (ie. nets, benches, waste receptacles).
- b. A children's playground area constructed using natural materials including trees that are downed as part of the development process;
- c. A fitness circuit with five to seven stations will be created also utilizing natural materials;
- d. A picnic area with a sheltered portion to provide greater all-season usability for community members. Solar panels could be incorporated into the shelter or on the north or east sides of the park that have the best sun exposure;
- e. Pedestrian scale lighting for all open spaces. The lights shall be high efficiency LED lights, with high cut off rates to reduce light trespass and which are 'Dark Sky'³⁷ compliant.

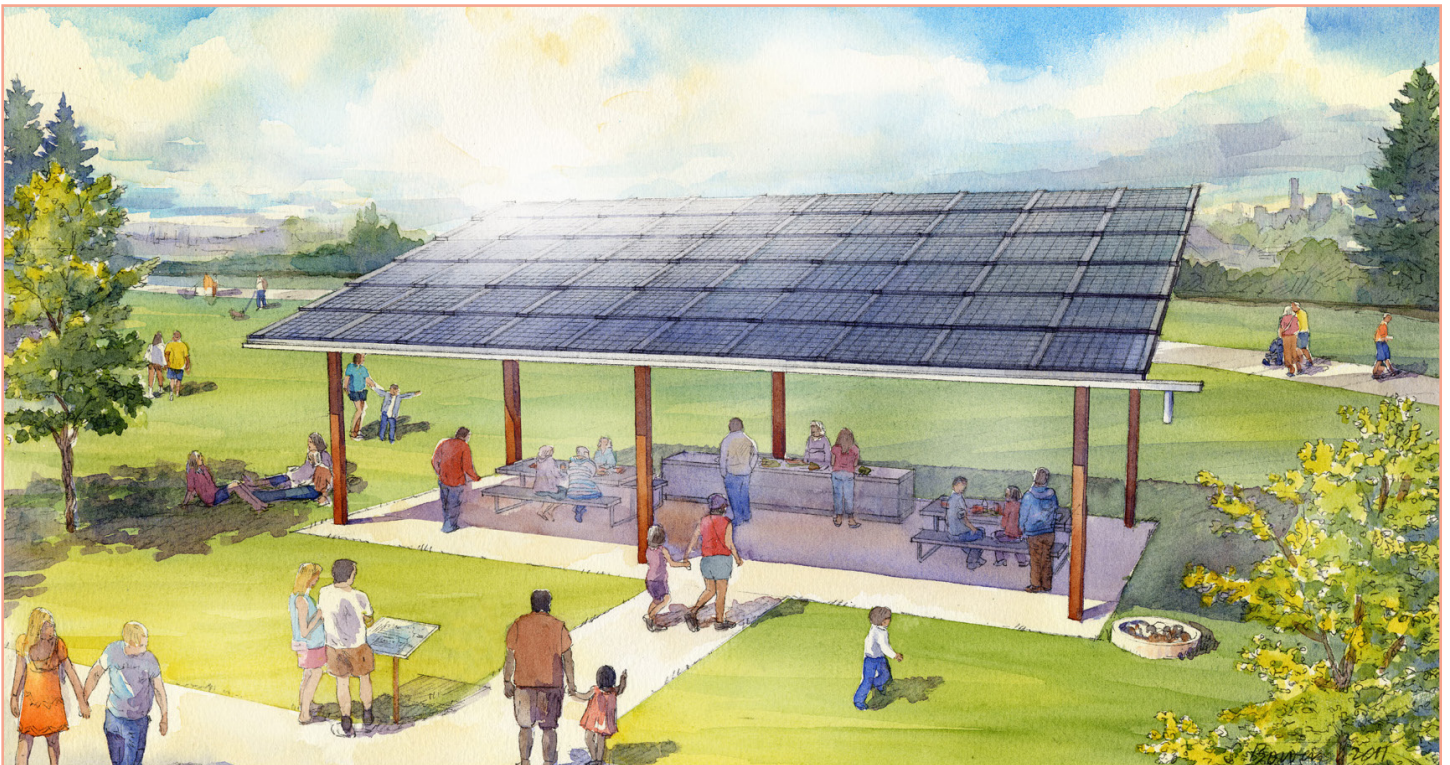


Figure 19. The park should include a sheltered picnic area, which could incorporate solar panels, as in this example.³⁸

Soccer Field:

Any soccer field built in the central slope park should be:

- f. A minimum of 40x60m to accommodate a 'Junior' field size suitable for children and youth up to the age of fifteen.
- g. Oriented along the length of the slope to reduce construction costs related to preparing the grade of the proposed area. This orientation may result in the rising or setting sun impacting participants' ability to see though it is the standard orientation on the North Shore.
- h. An irrigated grass field grown on a base of sand over a well draining subgrade is suitable for high usage, with period closure related to heavy precipitation.

3.4.4 Northern Forested Park

The northern park will be situated in an area that is currently forested, and will provide access to nature, as well preserve the existing ecological space.

- a. Existing trees represent some of the most mature tree growth in the area. By protecting this area, a northern park will provide wildlife habitat, privacy, a buffer between the community and the BC Hydro electrical substation to the north, and slope retention.
- b. Trails, benches, and waste disposal should be provided to encourage and facilitate use and maintenance.
- c. Space could be made available for a dog park (on or off-leash) depending on feedback from the community and consideration for ecological and wildlife preservation.

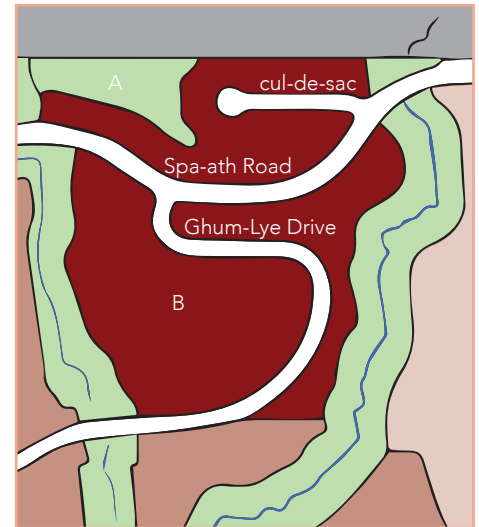


Figure 20. A denotes the site of the northern forested park and B, the site of the central slope park.



Figure 21. Many community members have expressed interest in including a soccer field in the central slope park.³⁹



Figure 22. Looking east along Spa-ath Road with what will be the northern forested park on the left.

3.5 Stewardship

3.5.1 Overview

Background

The Tsleil-Waututh people, as stewards of all the lands, air and water within their traditional territory, will strive to develop a sustainable new community subdivision, while minimizing the impact of these works on the surrounding ecosystem.

Intent

The development of the new community subdivision will have effects on the local ecology. This is a challenge and an opportunity to create a design and construction plan that puts the role of TWN as stewards of the environment at the forefront of the project.

3.5.2 General Guidelines

Integrating sustainability into the design, construction, and daily life of the new community subdivision can only be achieved through navigating difficult trade-offs. A source of guidance for these decisions can be found within existing sustainability rating systems such as the BC Energy Step Code, LEED Certification, and the Envision Rating System.

- a. Adhering to the BC Energy Step Code level 3 or higher is recommended to ensure energy efficient building design.
- b. The use of solar panels and electric vehicle changing stations to reduce greenhouse gas emissions should be explored.



LEED Certification

Leadership in Energy and Environmental Design (LEED)⁴⁰ is a green building certification program.

- a. Achieving Gold certification under the following Building Design and Construction (BD+C) rating systems is recommended for all housing within the new community subdivision.
 - LEED BD+C: Homes and Multifamily Lowrise. Single-family homes and multi-family residential buildings of 1 to 3 stories. Projects 3 to 5 stories may choose the Homes rating system that corresponds to the ENERGY STAR program in which they are participating.
 - LEED BD+C: Multifamily Midrise. Multi-family residential buildings of 4 or more occupiable stories above grade. The building must have 50% or more residential space.

Envision Rating System

The Envision rating system,⁴¹ developed by the Institute of Sustainable Infrastructure, can be used to assess the new community subdivision based on its five categories of credits. Each credit has multiple levels of achievement and is based on comparison to a 'business as usual' scenario. The Envision framework is free to use unless the Nation chooses to pursue an award of achievement for which a cost is associated with the independent verification process. The system is outlined in Figure 23 below.

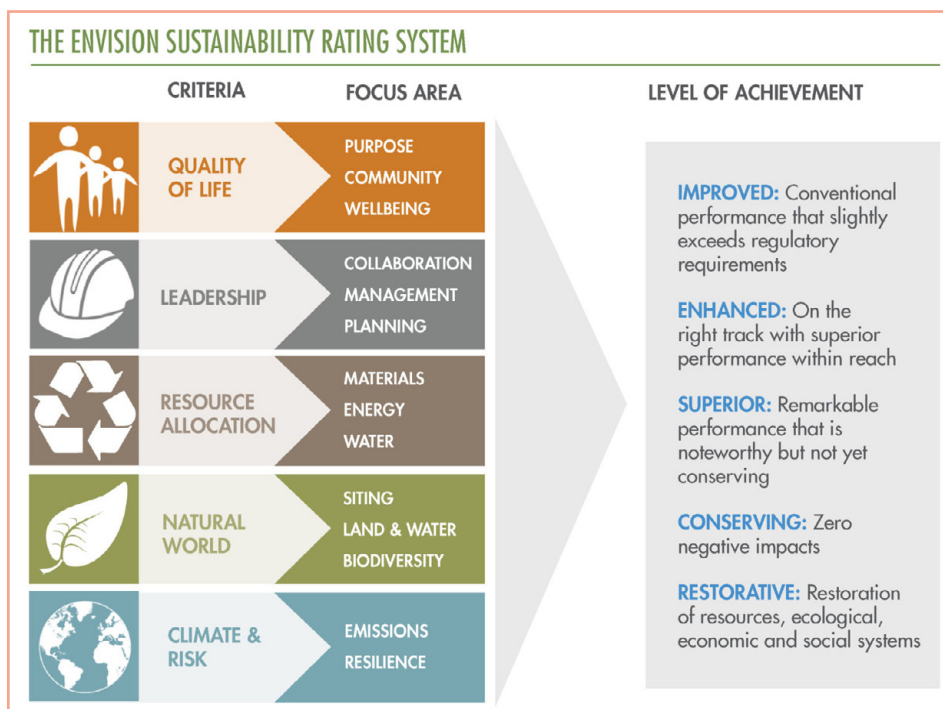


Figure 23. The Envision Sustainability Rating System is based on five criteria, each applied to a different focus area.⁴²

3.5.3 Construction Impacts

- a. The new community subdivision will require the use of heavy machinery throughout the construction process. Efforts should be made to minimize the potential environmental impacts resulting from these activities, including:
- Disturbance to native vegetation and ecosystems;
 - Slope instability from exposed soils;
 - Spills of harmful substances such as fuels to land or local creeks;
 - Erosion leading to sediment travelling into George and Thomas creeks;
 - Harm to wildlife, fish, and their habitat;
 - Harm to birds and their nests;
 - Introduction or spread of invasive plants; and
 - Soil disturbance harming native plant regrowth.

3.5.4 Environmentally Sensitive Areas

The environmentally sensitive areas that are within or adjacent to the new community subdivision site include George Creek and Thomas Creek. These creeks form the western and eastern boundaries of the project area, originating in the North Shore mountains and running down to the Burrard Inlet.

- a. In order to protect these sensitive habitats, several environmental management plans should be put in place during the development of the subdivision, including:
- Wildlife management;
 - Aquatic habitat protection;
 - Air quality and dust control;
 - Construction and waste management;
 - Invasive plant management;
 - Environmental monitoring;
 - Stormwater management;
 - Spill contingency and response; and
 - Cultural and archeological assessment and planning.

3.5.5 Wildlife Management

Protection of wildlife species is required due to the potential for at risk species to be present in the new community subdivision development area. Based on a preliminary assessment,⁴³ the following at risk species have the potential to be present: Pacific water shrew, Western screech owl, olive-sided flycatcher, red-legged frog, and Western toad.

- a. The clearing and grubbing of trees and other vegetation should be conducted outside of the active bird nesting window, approximately March 15 to August 15 for this area.⁴⁴
- b. If vegetation clearing is to occur during the nesting season, a Qualified Environmental Professional (QEP) must conduct an active nest survey prior to clearing. The QEP should provide a report with recommendations to avoid impacts to this species during the nesting season. Clearing should be coordinated with the construction phases of the new community subdivision so that land does not sit cleared for unnecessary extended periods of time. This will minimize potential for erosion and will retain wildlife habitat.
- c. As part of the new community subdivision, a crossing of George Creek at Ghum Lye Drive will be constructed. Similar to the crossing recently constructed on Spa-ath Road (Figure 25), the crossing is proposed to include two culverts, one for creek flow and one for wildlife passage.

3.5.6 Aquatic Habitat Protection

Neither George nor Thomas Creek have been recently observed to support fish populations, likely due to human influences and resulting changes in water conditions.⁴⁵ But the future possibility should not be ruled out. In order to protect future fish habitat:

- a. A protected area — known as the riparian setback area — consisting of a minimum 15m setback from the creek's high water mark should be implemented.⁴⁶
- b. This riparian area setback influences the developable area — such as on the east side of Ghum-Lye Drive where the lots are shallow — to avoid impacting the riparian area.
- c. During land clearing, excavation, and construction activities a riparian area setback of 30 m from the creeks high water mark is recommended.
- d. Further actions should include vegetation retention and the use of effective erosion and sediment control measures.



Figure 24. Feature of the existing crossing on the site.



Figure 25. The pacific water shrew is a species at risk that may be present.⁴⁷



Figure 26. Pacific Sockeye Salmon.⁴⁸

3.6 Building and Landscaping Materials

3.6.1 Overview

Background

The materials used in the new community subdivision will be an integral component of how the area looks, feels, performs and integrates into the surroundings.

Intent

The new community subdivision is envisioned to be a sustainable and innovative neighbourhood with high quality housing while maintaining affordability.

3.6.2 General Guidelines

- a. Exterior materials and detailing should connect with Tsleil-Waututh identity including connections to the Burrard Inlet site and linking with Pacific Northwest Rainforest context;
- b. All construction should showcase durability, performance and longevity through high quality craft of which community members will be proud;
- c. All buildings and landscapes should be designed for longevity through resilient materials suitable for the bioregion;
- d. Natural materials such as wood, aluminum or other metal elements, glass, stone and brick are appropriate. Wood elements should be protected from weathering;
- e. Priority should be given to locally sourced, reused, recycled, and recyclable materials, in that order.



Figure 27. Industrial treatments can emphasize craft, quality, or character. This can include aluminum rooftops and glass facades. ⁴⁹⁵⁰

3.6.3 Building Materials

- a. Buildings should incorporate natural materials, such as cedar and reclaimed wood into façades.
- b. Buildings should incorporate accents with more industrial treatments, such as glass curtain walls and aluminum sidings.
- c. Materials with low environmental impact should be used whenever possible:
 - This includes the use of recycled and recyclable materials, locally sourced products, and materials with low embodied energy.
- d. Locally sourced material, such as cedar, should be encouraged.
- e. Avoid the use of evidently synthetic materials, particularly expanses of stucco or vinyl.
- f. Use of the following building materials is recommended:
 - Reclaimed wood materials
 - Natural wood materials, including cedar
 - Brick masonry, stone sidings
 - Wood and aluminum for windows
 - Standing seam metal roofing
 - Aluminum siding/roofing
- g. Use of the following building materials is acceptable:
 - Pre-finished metal, non-corrugated type emphasizing either vertical or horizontal arrangements
- h. Use of the following building materials is discouraged:
 - Extensive use of vinyl
 - Extensive use of engineered wood or overly synthetic materials
 - Extensive use of stucco

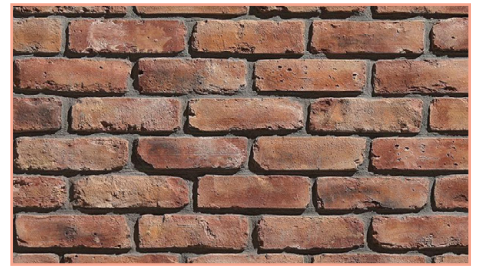


Figure 28. The subdivision's natural materials should be visible throughout. Materials like copper can be a good accent. Here is a sample of some materials the TWN community identified as desirable. In top-left to bottom order: reclaimed wood, locally-sourced cedar, stone masonry, brick masonry.^{51,52,53,54,55}

3.6.4 Landscaping Materials

- a. A select list of materials will be developed for use in all of the community in order to create unity among roadways, trails, parks, and open spaces.
- b. Materials used should fit into the natural materials design theme, reflective of the Pacific Northwest Rainforest context. Durable, sustainable, and locally sourced materials are preferred.
- c. Use of the following landscaping materials is recommended:
 - Locally appropriate stone and boulders;
 - Woody material such as logs and driftwood, preferably sourced locally, for use in soft landscape areas;
 - Heavy timber frames for outdoor structures.

3.6.5 Roadway Materials

Various paving materials will be used throughout the development area.

- a. Permeable paving should be used where drainage to adjacent soft landscape cannot be achieved.
- b. Use of the following roadway materials is recommended:
 - Permeable unit pavers;
 - Cast-in-place concrete;
 - Aggregate (crushed granite);
 - Wood decking for boardwalks. Sustainable composite wood products may be considered as an alternative to real wood where it is justified based on maintenance requirements;
 - Asphalt.



Figure 29. Local materials and heavy timber frames can make strong statements while grounding the subdivision in its surrounding environment.⁵⁶⁵⁷

3.7 Neighbourhood Character

3.7.1 Overview

Background

The design components of a community add to its character in innumerable ways from the built form, to the architecture, to the community amenities. While the character of a community is more than the sum of its parts, care and intention should be taken while choosing those components, as each presents an opportunity to contribute to the identity and character of the space. With the development of the new community subdivision this community has another opportunity to place its own unique identity on the place its members call home.

Intent

While other sections of this Exploratory Design Guide set out recommendations and options for assisting the community in its fulfilment of the LUP Vision, the creation and development of a uniquely Tsleil-Waututh character for the new community subdivision can only be achieved through participation and engagement of TWN members. In order to facilitate this process, this section contains considerations for the development process, and sets out examples that neighbouring Indigenous communities have implemented in their own territories, as inspiration for TWN members.



3.7.2 Process

Central to the proposed considerations are the concepts of community engagement and respect for the connection between people and the land. Considerations include:

- a. Engaging with TWN Community Members, leaders, elders, and staff where appropriate.
- b. Asking what decisions have been made previously, and how they have been received.
- c. Determining if the current proposition complements past choices or move the community in another direction.
- d. Determining whether there is an intended message or lesson involved.
- e. Determining the project's funding. If funding cannot be immediately secured, consider allocating space for future developments.
- f. Determining how the project fit into the LUP policies respecting culture, spirituality, and connection to the land.

3.7.3 Examples from neighbouring Nations

The following are examples from neighbouring nations, meant as inspiration for TWN's own initiatives:

- a. In some x^wməθkwəyəm territories, hənqəminəm language road signs have been integrated into existing road networks, in order to help create a sense of Indigenous identity within the community.⁵⁸
- b. At Seabird Island First Nation in British Columbia a medicinal garden was installed in their sustainability complex, providing access to important traditional plants.⁵⁹
- c. Kitasoo Townhouses in Klemtu, British Columbia have been modeled to resemble traditional longhouses from outside, while providing western townhouse units within.⁶⁰
- d. Government House in Mayo, Yukon had Na-Cho Nyäk Dun direct participation helping to build local skills, connections to the land, and foster a sense of local ownership.⁶¹



Part 4: Conclusion

4.1 Limitations

The scope and intent of the Exploratory Design Guidelines are best considered in light of the research and project limitations. Development design guidelines are regularly drafted over the course of a year or longer, and include multiple community engagements and significant research. While the studio team dedicated significant time and energy to complete this project, the full extent of resources available to some professional teams were not available here, nor did the studio team have the time that might otherwise have been dedicated. As such, some components and steps needed to be adjusted to fit the time and resources that were available. Below is an examination of the two most significant limitations; the extent of the community engagement and the use of expert analysis.

Identifying the importance of community input in any design guidelines, this project sought to integrate community engagement throughout its drafting. At the direction of TWN staff, the first phase of this project relied upon community engagement conducted prior to the commencement of this project and collected for use in developing the Land Use Plan (2019). The second phase included community engagement conducted by the SCARP studio team and focused on design guide specific information. This engagement included a relatively small segment of the TWN community who were present at an unrelated, land tenure event organized by TWN staff. While this engagement was informative it does not represent a significant portion of the total TWN community and as such the results are limited in the extent to which they can be interpreted as the desire of the community. Future development of TWN community design guidelines should include more extensive community engagement.

Recommendations in design guidelines regularly rely upon reports by planning, engineering, environmental, and other specialized experts. Because this project does not have the capacity to do this analysis itself, it has had to rely on precedent research, rather than project specific expert reports. All the content, context, and recommendations presented within this document should be reviewed by subject matter experts prior to proceeding to future design guidelines or implementation.

Because of these limitations, the Exploratory Design Guidelines should be recognized as a conversation starter/enhancer. A final product must ultimately incorporate more comprehensive planning and design process, including further public engagement, a full inventory of studies, and site-analysis.

4.2 Next Steps

Due to the scope of this project's process, several areas have been excluded in this document. In the ongoing development of design guidelines, these will be essential components to include. Although this is not a comprehensive list, we propose that the following areas be considered in the future:

- Building Heights
- Phasing
- Funding
- Subsidized Housing Delivery
- Community Space Usage
- Rainwater Management
- Flood Protection and Resilience
- Underground Utilities

This more comprehensive process should also be applied to several of the concepts already included in the Exploratory Design Guidelines. This is important as community engagement on amenities and features such as the sports field will also allow the community to contribute design ideas while generating excitement, support, and a sense of community ownership over the project.

To facilitate this kind of collaborative design process, new methods — such as a community-led working group — could be considered. As the new community subdivision comes closer to fruition, there will be opportunities for ongoing evaluation and reconsideration. Ongoing engagement can provide a strong mandate and a clear set of guideline or visioning documents.

The new community subdivision provides a chance to implement the best building practices, design concepts, and standards in environmental, economic, and social sustainability. It is an opportunity for TWN to showcase leadership in net zero or net positive development. With continuing discussion and development, these guidelines can support TWN in their ambitions to go beyond building new housing, and towards an inspirational and exemplary neighbourhood.



4.3 Notes

- 1 Riparian Areas Protection Regulation, BC Reg 178/2019. (n.d.). Retrieved from <http://canlii.ca/t/53pnx>.
- 2 Tsleil-Waututh Nation. (2019). *Tsleil-Waututh Nation Land Use Plan Law 2019*. pp. 32. Retrieved from <https://twnation.ca/wp-content/uploads/2019/07/TWN-Land-Use-Plan-Law-2019.pdf>.
- 3 These policy documents are explored further in Part 2 of this document.
- 3 See Bibliography for specific references and inspiration.
- 5 Tsleil-Waututh Nation. (2010). *Tsleil-Waututh Nation Comprehensive Community Plan*. Ratified by Council in 2010, as amended, s.3
- 6 Tsleil-Waututh Nation (2019). *Land Use Plan Law 2019*. pp. 15.
- 7 Tsleil-Waututh Nation (2019). *Land Use Plan Law 2019*. pp. 22.
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- 9 Tsleil-Waututh Nation (2019). *Land Use Plan Law 2019*. pp. 20.
- 10 EXP Services Inc. (2018, September 4). *Geotechnical Assessment Report: Proposed Tsleil-Waututh Nation Community Subdivision, Quadrant 2, Burrard Inlet Indian Reserve No.3 - DRAFT*.
- 11 Tsleil-Waututh Nation (2019). *Land Use Plan Law 2019*. pp. 10.
- 12 Tsleil-Waututh Nation (2019). *Land Use Plan Law 2019*. pp. 32.
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- 14 Tsleil-Waututh Nation (2015). *Stewardship Policy*.
- 15 Tsleil-Waututh Nation (2019). *Land Use Plan Law 2019*. pp. 9.
- 16 Tsleil-Waututh Nation (2019). *Land Use Plan Law 2019*. pp. 46.
- 17 Tsleil-Waututh Nation (2019). *Land Use Plan Law 2019*. pp. 50.
- 18 Tsleil-Waututh Nation (2019). *Land Use Plan Law 2019*. pp. 60.
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Appendix A: Summary of TWN LUP Engagement Analysis

A priority of the first half of this project is to identify significant values and priorities of the Tsleil-Waututh Nation (TWN) to help provide direction and recommendations in the final deliverables. TWN had completed a previous engagement series to inform the development of a new Land Use Plan (LUP), which would guide land use planning for the following 100 years. To supplement the studio team's engagement session, this project relied upon the responses gathered during the LUP development to form the basis of its engagement. In order to ensure this data was relevant to this project, analysis of the data focused on responses to questions concerning future development, housing, and amenities on reserve lands.

The word cloud above was created by compiling the qualitative responses provided in the TWN Land Use Plan Survey Spring 2016, and reflects the frequency of key words used by respondents when asked questions regarding the community's future and development.

Through review and analysis of the engagement data it became evident that there was no single direction indicated for future development. Respondents identified a variety of desires and values that could help guide land use, such as a strong desire for single family homes, high quality building materials and appliances, preservation of existing lands, protection of forested areas, access to water and creeks, development of a marina, development of local retail options, and significant focus on private space. While these are desirable additions to a neighbourhood, in application they require consideration on the use of limited space and resources.

An example of these varied needs is the desire for single detached housing, a typology typically associated with large lots and expensive ownership, while at the same time prioritizing affordability and preservation of the land for its natural beauty and connection to traditional activities. While posing slight challenges to moving forward, these varied needs also provide TWN with some direction as to what next steps might be needed. Most evident is the need for consensus building, which may be most readily achieved through dialogue and exploring the compromises and cost/benefits associated with each option. Through the review of various development designs, this project aimed to identify typologies that could embody the community's values, while maintaining the desirable qualities for single detached dwellings, for example.

After reviewing the engagement data and the LUP, the team selected four overarching land use objectives that may reflect the priorities set out in the LUP and advocated by respondents during the engagement survey. While not all priorities will be fully encompassed within these four objectives, a significant proportion have been included and a deeper analysis of the concepts which support these objectives this report will be a stepping stone towards the final deliverable of this project. All of which will help facilitate a more informed and complete discussion regarding future developments on TWN lands.



Figure 1. A word-cloud that visualizes priorities from TWN's LUP engagement.

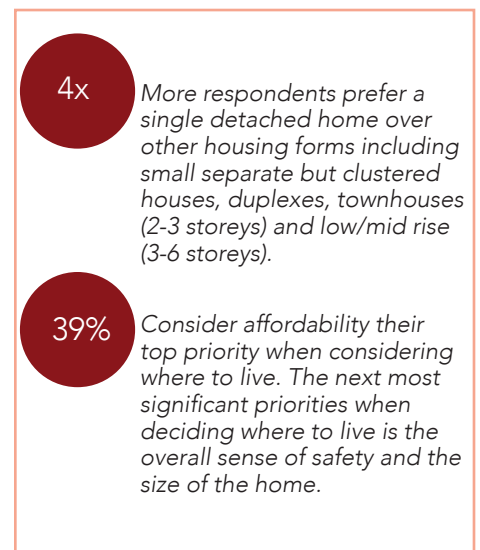


Figure 2. The desire for certain kinds of housing and affordability are needs that the subdivision has to reconcile.

Appendix B: Summary of 11/02/20 Community Engagement

Context

On Tuesday, February 11, 2020, the studio team conducted a public engagement at the TWN administration building. This engagement was designed to collect input from TWN community members regarding the proposed residential subdivision. The engagement took place as part of a land tenure meeting organized by TWN staff. The engagement consisted of 4 prompts, grouped into two activities (using visual survey questions and an interactive mapping exercise). During these activities, the team would converse with participants to capture quotes that contextualized the quantitative data. No identifying information was collected during this engagement.

Methods

Activity One consisted of a topographic map of the new subdivision area, with the question "What are your hopes for the new subdivision" alongside the poster. Participants were invited to write responses on sticky notes (as many per person as they were interested in), which were then placed alongside the map. Participants could also write stars on existing sticky notes to second those ideas (once per note). The sticky notes included numbered, red dot stickers for participants to indicate where on the map their responses were referring, if applicable.

Activity Two consisted of three questions related to the built form of the new development. Responses to these questions were recorded in a survey with multiple choice answers. The team also provided space on the survey sheets for open ended responses and comments.

1. **Housing Built Form:** Participants were provided with 3 possible (A to C) combinations of housing typologies (single detached, row housing, multi-unit), each representing 80 housing units, and asked which they preferred for the new subdivision. These options represent increasing levels of built form with "A" using all available land for development and featuring the largest proportion of single detached houses and "C" using the least land for development and utilising only multi-unit and row housing.
2. **Street Type:** Participants were provided with 3 conceptual street types and asked to choose their preferred option for each of Spa-ath Road, Ghum-Lye Drive, and an unnamed cul-de-sac. Participants were advised that each option provided space for vehicles, street parking options, space for pedestrians, and were similar in cost. Each type of street then focused on a particular aspect of street design: "A" for vehicle (free flowing traffic), "B" for environment (water filtration and green space), and "C" for pedestrian (multi-use pathways and reduced vehicle movement).
3. **Construction Material:** Participants were provided with 5 categories of building materials (masonry, cement, wood, metal, and other), each with multiple examples, and asked to select which they preferred as siding or accents for homes in the new development. Brief information was provided for each category of material such as relative cost, durability, and sustainability.

Appendix B: Summary of 11/02/20 Community Engagement

Question 1: Housing Built Form Options

• There are currently 63 applications for on-reserve housing at TWN, and the community is growing.
 • Each Option below represents a mix of housing forms that would create 80 units of additional housing. The Options each come with different benefits and trade-offs.

• **Which Option best represents how you would like the housing in the new Community Subdivision to look?**

Legend:

- Detached Housing: houses of approximately the same size as those existing on reserve
- Attached Housing: Each rowhouse takes up approximately half the lot width of a single detached dwelling. Units share side walls, but each has independent access to the outdoors
- Apartments: These represent small-scale walk up apartment buildings, each envisioned with approximately four-stories and sixteen units.

OPTION A:

Key Features:

- Most closely approximates the housing built form of the existing on-reserve housing, but with the addition of several rowhouses.
- All developable land is used to accommodate 80 residential units in this model
- More detached homes than in B or C
- There is little to no space for shared community amenities such as a seniors' centre or additional park or nature conservation space
- There is little to no space left for future development as the community grows

OPTION B:

Key Features:

- Mid-level built form option, reaching 80 units with fewer buildings than Option A
- Allows for a few community members to live in single detached dwellings
- Predominant dwelling types are rowhouses and walk up apartment buildings
- More potential for shared community space and amenities, and more opportunities for nature conservation
- Some space still available for potential future development

OPTION C:

Key Features:

- The highest intensity built form option, with all 80 units in either row-house or apartment form
- Highest potential for shared community amenities and spaces
- The most space is left undeveloped, either for nature conservation or future development as needed

Question 2: Street Design Options

• How you move through the new community subdivision will influence the type of community that the subdivision will become.
 • There are currently three primary roadways envisioned in the new subdivision; Spa-ath Road, Ghum-Lye Drive, and an unnamed cul-de-sac. Below are three options for the form that these roads could take.

• **What type of road do you think would be the best fit for each of the roads (Spa-ath, Ghum-Lye, and the cul-de-sac)? Use the options below or provide a comment on another option that you prefer.**

OPTION A:
Vehicle Orientated

Key Features:

- Vehicles able to travel in both directions at a time without reduction in speed.
- Unincumbred vehicle flow that results in reduced pedestrian safety and experience.
- Separated sidewalks or multi-use paths
- Parking provided on street at curbside spaces.

OPTION B:
Environment Orientated

Key Features:

- Narrow lanes reduce vehicle speeds and limit traffic to one direction at time which makes streets more safe for non-vehicular traffic.
- Swales and retention ponds provide natural water filtration which improves stream health.
- Parking provided on semi-permeable grassed surfaces which also reduce stormwater runoff.
- Sidewalk or multi-use path for pedestrians.

OPTION C:
Pedestrian Orientated

Key Features:

- Speed reduced by traffic calming measures (ie. speed bumps, narrow lanes or paving stones).
- Roads are shared spaces for vehicles, bicycles, and pedestrians.
- Wide sidewalks merge with roadways to provide multi-use gathering spaces.
- Paving stone materials would increase cost while also reducing stormwater runoff.

Question 3: Building Material Options

• What will the buildings of the new subdivision be look like? Is it bold? warm? modern? rustic? charming?
 • Provide your input on what sidings and accents that the new community subdivision will showcase.

• **Which of the building materials shown below do you like? What is missing?**

OPTION A:
Masonry Siding

A1: Brick

A2: Stone

Key Features:

- Materials are efficient, natural, and long-lasting.
- The cost is high and sustainability is moderate.

OPTION C:
Wood Siding

C1: Engineered

C2: Cedar

C3: Reclaimed

C4: Fir

Key Features:

- Generally recyclable and renewable.
- Available regionally and can be locally sources
- Medium to high cost and maintenance.

OPTION D:
Metal Siding

D1: Aluminum

D2: Corrugated

D3: Copper

Key Features:

- Strong, resistant to fire, insects, rot, and mold.
- Durable and can often be recycled.
- Medium to high costs and low maintenance.

OPTION E:
Other Options

E1: Glass

E2: Vinyl

Key Features:

- Glass provides natural light but lacks privacy
- Vinyl is a low cost synthetic material

Figure 1. These posters were used at the engagement event to provide the information community members needed to complete the survey in Activity 2.

Limitations

Due to the timeline of the studio project and the opportunities for engagement, this project could not conduct multiple engagement sessions. However, the engagement was a rich opportunity that did point towards principles and considerations that will ground, inform, and guide further work on this project. Hopefully, the methodology of this engagement may be useful for planning future engagement sessions by TWN.

Findings

In total, 23 survey responses were provided and 34 individual sticky notes were placed. The engagement received over 30 statements (or quotes) from participants.

Quotes

In reviewing statements made by respondents, preliminary analysis shows a focus on built-form and affordability; maintaining privacy and security; community cohesion; enhancing community amenities; environmental protection; and sensitivities towards the long wait-time. Below are some examples of paraphrased statements made to the team. Every effort has been made to retain as much of the original meaning and wording as was used by the respondents.

Built Form and Affordability

"We need individual mortgages, not co-ops, not apartments. People need their own house."

"Higher density is key. I want my own house but I don't want to be selfish."

"People who come home will want multiple bedrooms for children."

"Can one type of housing, like housing for those on social security, supplement another?"

"A single tower would save land and open up the area for rentals."

"If you can afford a house at TWN, then you shouldn't be investing in it. Your investment will not appreciate in value."

Maintaining Privacy, Security, and Quality

"Whatever it is, it's got to be sound-proof."

"There is a desire for no traffic from outside community going through subdivision"

"You shouldn't be able to see through your neighbour's washroom windows"

"They should just have no street parking. People can park at home."

"There should be lots of space separating cars and people."

Appendix B: Summary of 11/02/20 Community Engagement

Community Amenities

"The new subdivision should prioritize carpooling and transit over personal vehicles"

"A longhouse would be nice, but not in the community, more to the east"

"We need a playground."

"The maintenance cost for a soccer field would be too high to justify, but some kind of athletic area would be good."

Community Cohesion

"The new subdivision should not be hodgepodge. Houses on Dollarton are so far apart, so cars speed right through."

"The new subdivision should feel like an intentional community"

Wait-Time

"It's important to get it right, because we've been waiting so long"

"When will they get started? It's been so long."

Activity I: Hopes for the New Subdivision

Based on themes from TWN, the team sorted the stickies participants posted into these categories: Overall Character, Built Form, Public Realm and Streetscapes, Accessibility and Connectivity, Parks and Open Space, Sustainable Design Elements, Materials, and Other ("Process").

Based on responses, general trends among the participants can be identified. Interest in affordability, higher-density, and adaptable housing was more numerous than desires for single-family style housing. There was a lot of interest in sustainable design elements (including tree protection, space for nature, and connection with green-spaces/biodiversity). Concern about housing materials quality was also prevalent. A soccer field or playground were the most commonly requested community amenities.

Appendix B: Summary of 11/02/20 Community Engagement

Activity II: Surveys

Each of the survey activities provided insights. For Question One (Housing Built Form): a preference was indicated for the medium mixture which included all 3 types of housing typology, while leaving some space for future development and/or nature conservation and shared spaces. Responses to the first survey on built-form demonstrated a notable preference for the second, mixed density option (B=11.5), with a moderate balance of those who preferred the lightest or heaviest options (A=5.5; C=6). Overall, while there are strong advocates for a traditional suburban single-family housing community, there is also a lot of sentiment for the options which will optimize residential capacity and affordability.

For Question Two (Street Type), a strong preference was indicated for having an environmentally focused roadway along Spa-ath and Ghum-Lye, with respondents favouring the environmental and pedestrian focused roads for the cul-de-sac. Also notable was the number of respondents who requested no street parking at-all across the three roads.

Question 3 (Building Materials) respondents indicated a stronger preference for stone, wood fiber, and reclaimed wood with some preference for cedar, aluminum, copper, and glass. With respect to building materials, multiple comments were recorded regarding the importance of quality materials, whatever they may be, and the use of competent and skilled construction for homes.

Your Input on the New Community Subdivision

1. Housing Built Form
Please circle your preferred Option:

2. Road types

A B C

Indicate your preferred option for each road by writing A, B, or C in the space provided. Please write only one letter on each line:

Spa-ath Road _____

Ghum-Lye Drive _____

Unnamed cul de sac _____

3. Building Materials
Which building material(s) would you prefer?

| A: Masonry | B: Cement | C: Wood | D: Metal | E: Other |
|------------|------------|----------------|----------------|-----------|
| A1: Brick | B1: Stucco | C1: Engineered | D1: Aluminum | E1: Glass |
| A2: Stone | B2: Fiber | C2: Cedar | D2: Corrugated | E2: Vinyl |
| | | C3: Reclaimed | D3: Copper | |
| | | C4: Fir | | |

Any Further Comments?

Figure 2. The survey used to gather responses for Activity 2.