



FERNDALE

City Center Plan

Whatcom County, Washington

WWU Urban Planning Studio
A WWU Sustainable Communities Partnership Program
Winter 2019

AN URBAN TRANSITIONS
STUDIO PROJECT

FERNDALE
CITY CENTER PLAN
WHATCOM COUNTY
WASHINGTON



Huxley College of the Environment
Western Washington University
Bellingham, Washington 98225 USA
2019

A downloadable PDF file of this report is available at
http://faculty.wvu.edu/~aferan/UTS_2019_Ferndale.pdf



Table of Contents

Authors and Contributors to the Study ... 4	
A Message to the Community ... 4	
1.0 INTRODUCTION ... 5	
1.1 History of Ferndale ... 5	
1.2 Vision, Goals ...5	
1.3 Community Engagement: Workshop Analysis ...6	
1.4 Community Engagement: Development Sector ...6	
1.5 Demographics and Population Projects ...8	
2.0 CITY CENTER RELATIONSHIP TO PLAN POLICIES ... 10	
2.1 Relation to 2016 Comprehensive Plan ... 10	
2.2 Relation to Growth Management ... 11	
3.0 HUMAN CAPITAL (subject to change) ... 12	
3.1 Human Capital Resources ... 12	
3.2 Affordable Housing ... 14	
3.3 Homelessness ... 15	
4.0 PHYSICAL FORM AND CHARACTER ... 16	
4.1 Physical Form and Character ... 16	
4.2 Identify and Place ... 17	
4.3 Neighborhood Connectivity ...16	
4.4 Design Guidelines ... 17	
5.0 CITY CENTER REGENERATION STRATEGY ... 19	
5.1 Methods ... 19	
5.2 Infill Capacity Analysis ... 20	
6.0 PLANNING AND SUSTAINABILITY PRINCIPLES ... 22	
6.1 LEED ND Sustainability Principles	
7.0 LAND USE AND URBAN CHARACTER ... 25	
7.1 Land Use Plan Alternative 1 ... 25	
7.2 Land Use Plan Alternative 2 ... 29	
7.3 Land Use Plan Alternative 3 ... 34	
8.0 MOBILITY, STREETScape AND PARKING PLAN ... 36	
8.1 Mobility Plan Alternative 1 ... 36	
8.2 Mobility Plan Alternative 2 ... 41	
8.3 Mobility Plan Alternative 3 ... 44	
9.0 PARKS, PLAZAS, AND PUBLIC SPHERE ... 46	
9.1 Parks and Trails ... 46	
9.2 Plazas ... 47	
9.3 Pedestrian Space ... 49	
9.4 Wayfinding ... 50	
9.6 Safe School Routes ... 51	
10.0 ENVIRONMENTAL RESOURCES AND HAZARDS ... 54	
10.1 Enhancement Plan ... 54	
10.2 Hazards Mitigation Plan ... 55	
11.0 CAPITAL FACILITIES AND TRANSPORTATION ... 59	
IMPROVEMENTS ... 59	
12.0 SUSTAINABILITY ASSESSMENT (LEED ND) ... 62	
13.0 REFERENCES ... 64	
14.0 APPENDICES ... 65	
14.1 Community Meeting Appendix ... (separate cover)	
14.2 LEED ND Appendix ... 65	

To the Community Of Ferndale

2019 WWU Student Authors

Team 1

Joseph Chang
Reace Fant
Andrew Randall
Nick Schmeck
Jacob Sutton
Morgan Thompson
Dawson Van Cise
Zoe Watson, *Team Leader*

Team 2

Samara Almonte
Marie Blue
Aisaya Corbray
Logan Chantelois
Andrew Graminski
Brian Kirk
Liam Pollom
Millka Solomon
Allison Tompkins, *Team Leader*

Team 3

Samantha Adams
Cosmos Cordova
Nate Cottnair
Adam Crutcher, *Team Leader*
Tyler Holladay
Maya Lewis
Brannden Nokes
Aidan Simpson
Madison Swindler

Instructor

Nicholas Zaferatos, Ph.D., AICP

SCP Coordinator

Lindsey MacDonald

Copy Editing

Ashley Hill

This study is a collaboration conducted under WWU's Sustainable Communities Partnership Program between the City of Ferndale's Community Development Department and Huxley College's Urban Transitions Studio Program.

The City of Ferndale is a growing community in need of revitalization to their central downtown core. Surrounded by parks, schools, and neighborhoods, with improved connectivity and intensified development, the downtown has potential to be much more than just an area to commute through.

Students have been tasked with creating land use and mobility alternatives for the downtown core during the course of the 2018-2019 academic year. The planning studio series consists of three courses. In Studio I, students were tasked with data collection and multi-faceted analysis of downtown Ferndale in preparation for the design and policy development work in Planning Studio II. This planning study is the result of research and analysis compiled over a 10-week period to formulate a downtown revitalization plan that promotes more intensive uses for the benefit of the entire community of Ferndale. Strategies for implementing the planning concepts will be more fully examined in the subsequent Studio III course in the Spring.

The project was conducted by the three student teams under advisement of Professor Nicholas Zaferatos. Using skills acquired from previous planning coursework, the teams have formulated planning to revitalize downtown Ferndale. The class held a community workshop to gauge community preferences. Students have prepared a series of recommendations that reflect input received from the community during the workshop, current Ferndale downtown development policies, the consideration of principles and best management practices supporting sustainable development planning, and the goals and policies of the Washington State Growth Management Act.

Project objectives include increased connectivity, mobility improvements, improvements to parks and public space linkages, increased density throughout the downtown core, and changes to land uses that meet future population, job growth, and market demand through a more urbanized and sustainable downtown.

The program would like to extend our appreciation to several members of the community that have supported this planning study, participated in the workshop presentations, and provided a mid-quarter critique of student concepts. In particular, our thanks are extended to Sara Fassett, John Rockwood, Mayor Jon Mutchler, Francine St. Laurant, Claire Bertuleit, Ramon Lianos, and to Ferndale staff Jori Burnett, Haylie Miller, Riley Sweeney, Jesse Ashbaugh, and Kevin Renz.

1.0 Introduction

1.1 HISTORY OF FERNDALE

Before the first settlers arrived to the land where current-day Ferndale is located, the Coast Salish peoples of the Lummi Nation were the original occupants that inhabited and cultivated the natural resources north of Bellingham Bay. The Lummi Nation honed their skills in fishing to such a degree that allowed for their population and culture to thrive. But around 1857, local Lummi populations had plummeted due to conflicts between Haida tribes and intensified through exposure to foreign diseases.



Figure 1.1 Lummis in traditional dress

The first settlers to Ferndale arrived in 1859, including John Tennant and his wife Clara, whom sources say was the daughter of Lummi Chief Chowitzit. They received a land allotment which consisted of an approximately one mile plot of land. More settlers began migrating to the region around

Ferndale seeking to find wealth from timber, gold, and coal. But as many of the settlers soon realized, the search for gold in the region was limited, so settlers then began turning to different uses of their land. Settlers began staking homestead claims and clearing their land to develop ranches and farms.

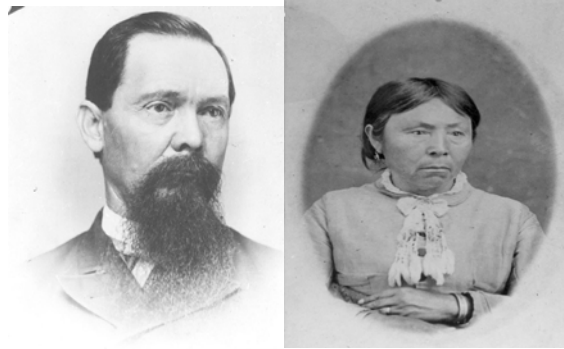


Figure 1.2 John (left) and Clara (right) Tennant

Traveling by river was a viable means of transportation by using rafts and logs to transport people and goods across the river. This eventually caused the logs to jam, obstructing the flow of the river. This log jam became a prominent part of the town, as the jam had existed for more than four years before locals took the effort upon themselves to relieve the jam, which was cleared by 1887. The log jam was a significant event at the time in shaping the local character and identity of the town, so much so that originally Ferndale was known as “Jam.” Just two years after the “Jam” was cleared, however, Alice Eldridge, the community’s first school teacher, proposed that the name of the city be changed to Ferndale, taking inspiration from the

wild ferns growing around the school house.

As Ferndale entered the 20th century its timber and lumber industry was the foundation of the city’s economic sustenance and culture. But it was not long before other industries joined the local economy. By the early 20th century dairy and poultry had become a mainstay economy in the city, and with the addition of the railroad, these industries transitioned Ferndale’s economy into an export market. In 1949 the latest rendition to the Ferndale bridge was built oriented towards the automobile and is still in use today. The bridge came at the perfect time for Ferndale as Interstate-5 was built shortly after in 1970 and led to a new housing and population boom. With the freeway in place, people began to commute for work from Ferndale into Bellingham and other communities along the I-5 corridor. The last major boom to affect Ferndale was in the introduction of heavier industries related to aluminium and oil refining at nearby Cherry Point. Ferndale has since remained largely a bedroom community and the economic life of the downtown has been slowly losing the vitality it once held.

1.2 VISIONS and GOALS

Ferndale seeks to promote a high quality of life through preserving and enhancing the unique and diverse character of the city. They envision this preservation by protecting open space and natural resources, and providing recreational opportunities. The City of Ferndale plans to ensure an efficient and safe transportation network along with desirable economic development in addition to the provision of public safety improvements and affordable city services. Ferndale aims to establish a close-knit

1.0 Introduction



Figure 1.3 Nooksack River

and engaging relationship with the citizens through active public participation, stewardship of public funds, and intergovernmental cooperation. The city is seeking development that will contribute to the future generations of Ferndale and provide opportunities for economic prosperity.

Ferndale's unique history has always remained a large part of the city's identity, but as the location of downtown begins to lose appeal to competing

neighboring towns and the expanse of the city continues to grow outward in tandem with the I-5 corridor, a revitalization of the urban core is paramount. The growth forecast for Ferndale, in combination with uncertain environmental changes, competing demands for scarce resources, and a desire to preserve and enhance Ferndale's unique sense of place, will at times test the community's ability to adapt. Ferndale's long-range and development plans focused primarily on responding to residential growth while attempting to protect the



Figure 1.4 WWU students and Ferndale citizens at Community Workshop

downtown core from further economic erosion. Ferndale seeks to develop a densified mixed use downtown core that uniquely stands apart from neighboring competing regional economic centers of development.

1.3 COMMUNITY ENGAGEMENT - WORKSHOP ANALYSIS

1.3.1 OVERVIEW

On January 23, 2019, Western Washington University Urban Planning students held a community visioning workshop at the Ferndale Pavilion Building for residents to share their preferences regarding the revitalization of the downtown. During the event, residents were divided into five groups rotated through a series of five workshops in 15-minute intervals. The goal for the event was to gauge public interest in the redevelopment potential in order to better understand the community's preferences, ideas

1.0 Introduction



Figure 1.5 Leader Block: and example of a successful redevelopment in downtown

and visions for Ferndale’s downtown future. The alternative plans presented in this report were informed by the findings from the workshop events that addressed several topics, including land use and infill, the use of the public sphere, a visual preference survey, transportation and mobility alternatives, and risks associated with natural hazards. For access to the full report, refer to the supplemental appendix *2019 Ferndale Workshop Summary*.

1.4 COMMUNITY ENGAGEMENT - DEVELOPMENT SECTOR ANALYSIS

On February 20th, 2019, student researchers met with twelve members of the community representing the development industry, real estate, property owners, and the Chamber of Commerce.

Participants were asked a number of informal questions regarding approaches in facilitating coordination between the city and the development community concerning the revitalization of the historic downtown.

Participants were enthusiastic about the prospect of revitalizing the downtown, particularly regarding opportunities for high density development and other incentives for stimulating investment. They generally viewed the city of Ferndale as a bedroom community containing a wide range of family households characterized by current development trends of two and three bedroom units in new residential developments. Participants noted that Ferndale is a desirable location for first time home buyers and many have been attracted to the availability of residential condominiums,

townhouses and traditional single family homes. The participants noted that a current development project consisting of 44 condominiums located outside of the study area is currently serving as a market test project for developers interested in judging future market demand. The developers expressed hope that the condominiums may serve as a market signal to other developers, in order to further stimulate the development of high density residential development.

1.4.1 Issues and Concerns

Parking

One deterring factor associated with high density development was the minimum required onsite parking for residential development. The space required for these developments, often one space per unit or per bedroom, required more land area than is available within the downtown area.

Another concern was the availability of street parking. Main street parallel parking locations were criticized as too small and not meeting the city code. These Main Street parking locations are not sufficient to address the minimum parking requirements for new business and residential mixed use development in the downtown. However, they noted a high number of available parking locations on 1st Avenue, 2nd Avenue and Alder Street that are largely under utilized throughout much of the day.

Proximity to Bellingham

The participants questioned whether higher density multifamily development was sufficiently in

1.0 Introduction

demand in the Ferndale economy. Many occupants of multifamily units are students and young professionals and recognized that the majority of these individuals were living closer to or within the Bellingham area. They reflect the likelihood for more demand for properties that produce housing for ownership rather than for rental.

Frontage Improvements

The participants noted frustration at the city's requirements to provide frontage improvements for land proposed for new development. The frontage improvement issues identified included the requirement to improve 75% of the roadway, while later landowners developing properties opposite would only pay 25% in the absence of "Latecomer" Fee. Additional concerns voiced included the requirement for corner lots and parcels with alleyways to improve multiple areas, as well as the concern of the existing "patchwork" of repaved streets and sidewalks. The developers noted that the frontage improvements increase the overall cost to development, and this cost is typically passed on to the consumer.

Institutional Processes

The participants also expressed concern regarding the permit application process. While they appreciated the timeliness of the pre-application process, developers expressed frustration at the disconnect between the approval of a pre-application from the City Planning Department, and additionally incurred costs to implement the requirements of the Public Works Department. In some cases developers had to scrap entire projects



Figure 1.6 Kids playing in the Riverwalk Park fountain

because of unforeseen additional costs that had rendered the project financially infeasible.

1.4.2 Proposed Ideas to Address Concerns

The participants offered several suggestions to address these concerns, as follows:

- Reducing parking requirements for select projects identified as "catalyst" projects.
- Reducing the required parking minimums for mixed use developments.
- Assurances from the city to extend the time frame for incentive programs.
- Creating better consistency, flexibility and transparency from the city, especially during the application process.
- Waiving or reducing fees associated with Pre-Application and Technical Review Committees.
- Implementing a "Late Comers" fee requirement to fairly compensate for the advanced costs

incurred from 75% frontage improvements.

- Implementing a city wide discretionary budget, including a plan for sidewalk connectivity, with an emphasis on linkages to schools.
- Imposing a flat fee by the city for frontage improvements as opposed to the current policy of placing the cost burden on developers.
- Limiting frontage improvements for corner lots to one side.
- Creating a flat rate for waste facility fees.

1.5 DEMOGRAPHICS AND POPULATION

1.5.1 Population

According to Ferndale's current comprehensive plan the city "is forecast to grow more rapidly than any community in Northwest Washington." By 2036 Ferndale expects to add approximately 7,000 people and up to 4,000 jobs (1). This expected growth poses challenges as well as opportunities. An increased population will affect the way land is used, increase service demands, and impact the local economy. In order to ensure that Ferndale places its

1.0 Introduction

best foot forward toward planning for positive and sustainable growth, it will be important to consider both the current as well as projected populations and demographics that comprise and will shape the future of the city's character. The following are general population statistics derived from the Ferndale Comprehensive Plan (Chapter 2, pp. 57-59) and US Census Bureau Data.

- As of July 1, 2017 the population of Ferndale is estimated to be 14,026 people.
- Ferndale and its Urban Growth Area are expected to grow from a 2013 population of 12,758 to 19,591 by 2036. This represents an increase of 6,833, or nearly 54% and reflects an average annual growth rate of 1.9%.
- Ferndale's employment (including the unincorporated Urban Growth Area) is expected to grow from a 2013 total of 5,372 jobs to 9,372 jobs in 2036, an annual growth rate of 3.2% that would increase the ratio of population to employment from 0.42 jobs to 0.48 jobs for every resident.
- The city's population density is expected to increase by nearly 782 people/square mile by 2036, from 1,973 people/square mile in 2017 to 2,755 people/square mile in 2036.
- The current downtown population is 1,314.
- The Ferndale Comprehensive Plan forecasts downtown population growth to 2,621.
- Current employment in the downtown is 660 people.
- The Ferndale Comprehensive Plan forecasts employment growth of 952 jobs in the downtown.

1.5.2 Demographics

The following table summarizes Ferndale's population demographics.

Table 1.1 Demographics

<u>Sex</u>	<ul style="list-style-type: none"> • Female 54.8% • Male 45.2%
<u>Age</u>	<ul style="list-style-type: none"> • Under 5 years old - 7.1% • Under 18 years old - 25.3% • Between 18 to 65 years old - 53.1 (median age, 36 years old) • Over 65 years old - 14.5%
<u>Race</u>	<ul style="list-style-type: none"> • White - 74% • Hispanic or Latino - 13.9% • Asian - 5.1% • American Indian - 3.7% • Two or more races - 2.9% • Black / African Am. - 1%
<u>Edu- ca- tion</u>	<ul style="list-style-type: none"> • High school graduate - 90.1% • BA or higher - 25.4%

1.5.3 Project Site Area - Downtown Core Population Projections

The general site constituting the downtown has an average area of approximately one and half square miles. This compares to the total land area of incorporated Ferndale of just over seven square miles. This downtown planning study area is projected to have an infill capacity as follows:



Figure 1.7 Ferndale Farmer's Market

Table 1.2 Infill Projections

<u>Buildable sq. ft.</u>	3,165,243
<u>Commercial sq. ft.</u>	569,649
<u>Housing Units</u>	8,357
<u>Business Units</u>	512
<u>Population</u>	22,000

Comparing these population projections to the current population estimates for the downtown reflects a future population of 23,314 residents in the downtown core. This far exceeds the Ferndale Comprehensive Plan's population forecast of 2,621 and shows that, under each of the study's land use plan alternatives, the downtown has tremendous potential for accommodating Ferndale's residential and commercial growth.

2.0 City Center Plan Relationship to Comprehensive Plan

2.1 RELATION TO 2016 COMPREHENSIVE PLAN

The Ferndale City Center Plan aims to meet the objectives for growth and redevelopment set out in Ferndale's 2016 Comprehensive Plan. The 2016 Comprehensive Plan states that the anticipated population growth should be accommodated through residential development within the downtown area. Downtown Ferndale is the city's historic commercial district but over the last thirty years it has been in decline due to suburban residential development and shifts in regional shopping trends. Providing higher density housing opportunities within walking distance to shopping, services, dining, recreation and entertainment could effectively stimulate increased future population growth within the downtown.

The City Center Plan aims to increase housing, commercial, recreational, and community services within a walkable and attractive environment reflective of the current community. The City Center Plan describes the potential opportunities that a revitalized downtown can bring to the community. These opportunities are supported by the policies and strategies identified within both the Ferndale Comprehensive Plan as well as herein. Policy objectives that are supported by the City Center Plan are as follows:

2.1.1 Land Use Policies

- Increase density in the downtown by establishing minimum density and height requirements and reduced building setbacks.



- Encourage high density housing and mixed use commercial as the primary development form in the downtown.
- Develop policies to encourage public improvements such as street lighting, landscaping, park benches, and similar facilities in the downtown that are compatible with the efforts of other civic groups.
- Establish incentives for targeted development to ensure that development costs in the core area remain competitive.

2.1.2 Housing Policies:

- Encourage the development of a wide range of housing types with higher densities to meet the range of housing needs.
- Encourage residential infill development, mixed use development, and redevelopment in the downtown core.
- Promote affordable housing opportunities by instituting programs that increase the supply of housing while maintaining the character of Ferndale.

2.0 City Center Plan Relationship to Comprehensive Plan

- Meet housing needs for all income demographics of current and future residents.
- Establish housing strategies that pay particular attention the housing needs of the most disadvantaged, including accommodations for homeless populations.

2.1.3 Transportation Policies:

- Reduce congestion along Main Street to better accommodate traffic demand during peak hours.
- Promote strategies that enhance the pedestrian landscape along Main Street including traffic calming measures, street beautification, and sidewalk expansions.
- Increase connectivity throughout the downtown through the implementation of a comprehensive trail system, improved bike paths and facilities, and completion of a sidewalk network.
- Increase connectivity between neighborhoods and schools by establishing safe walk to school routes.
- Increase connectivity between the Historic Downtown and the retail center on the east side of the river through pedestrian friendly alternatives.

2.1.4 Parks and Recreation Policies:

- Link the Parks, Recreation, and Trails Master Plan with the Ferndale historic downtown area to achieve synergy that strengthens both the

Parks, Recreation, and Trails System and the downtown area.

- Prioritize the improvement and utility of existing park and trail facilities (including connectivity between residential areas and those facilities) to reduce the need for new park acquisition except where deficiencies exist.

2.1.5 Economic Development:

- Promote commercial growth and revitalization that serves residents and strengthens the tax base.
- Establish the downtown as a target area for new businesses within the region.
- Establish the downtown as the focal point of Ferndale’s unique identity.
- Create opportunities for live-work units within the downtown and surrounding neighborhoods.
- Anticipate and mitigate environmental concerns in the downtown’s economic growth.
- Provide a diverse supply of housing and job opportunities that can support the local population in the downtown.

2.2 GROWTH MANAGEMENT

The Growth Management Act (GMA) is Washington State’s land use management policy. The statute requires fast-growing cities and counties to develop

Comprehensive Plans to manage population growth. The City Center Plan directly relates to set goals within the city’s 2016 Comprehensive Plan. The City Center Plan therefore also seeks to comply with the GMA by attaining the following goals:

1. Concentrate urban growth to the downtown area.
2. Reduce sprawl through higher density commercial and housing opportunities.
3. Enhance connectivity to the downtown and its existing neighborhood.
4. Encourage development of affordable housing and a variety of high density housing types.
5. Promote the advancement of an economically healthy City Center.
6. Provide a wide range of recreational opportunities.
7. Protect environmentally sensitive areas.
8. Encourage public engagement throughout the City Center planning process.
9. Establish well maintained public facilities.
10. Preserve the historic character of the downtown.
11. Manage downtown development that protects shoreline resources.

3.0 Human Capital

Human capital is the measure of a person’s ability to maximize their resources. Human capital looks at a person’s health (physical, mental, access to health services, food, etc.), welfare (such as income or housing situation), and mobility (access to personal vehicle or public transit, ability to accumulate wealth or knowledge). Human capital varies depending on social class, gender, sexuality, and ethnicity. This section focuses on the human capital of Ferndale residents and provides recommendations to alleviate gaps between human capital needs and services.

3.1 EDUCATION

The future of a community is held in the hands of its youth. There is a need for educational and recreational programs that provide inclusive and accessible opportunities for youth outside the normal school hours. Children most at risk of not receiving these kinds of opportunities are most often children from minority communities. At Ferndale High School, 35% of the student body is from a minority community (the largest group being 18% Hispanic and 6% Native American or Alaskan Native). The biggest education gap is between White and Native American or Alaskan Native students. ProRepublica, a non-profit advocacy journalism group, found that within Ferndale High School, “Native American or Alaska Native students are 6.8 times as likely to be suspended as White students,” and “[White students are] 4.3 times as likely to be enrolled in at least one AP class.” Both Native American and Hispanic students are underrepresented in higher level high school education AP courses. Providing spaces for community tutoring programs and educational

Table 3.1 existing healthcare resources.

INSTITUTION	SERVICES	LOCATION
Unity Care Northwest	<ul style="list-style-type: none"> • Medical Services • Dental Services • Pharmacy • Pediatrics • Behavioral Health Services 	3rd Avenue, near Christ King Community Church
Ferndale Family Medical Center	<ul style="list-style-type: none"> • Women’s health care • Newborn care • Pediatrics • Preventive care • Chronic disease care 	Nordic Place, near the I-5 entrance
Women, Infants, and Children (WIC) Nutrition Education	<ul style="list-style-type: none"> • Supplemental foods • Health care referrals • Nutrition education 	Portal Way

resources could provide students with better access to these classes. Additionally, providing after school recreational and educational activities within the downtown and within walking distance of Ferndale High School could provide healthier, safer and more enjoyable after school activities for all of Ferndale’s youth.

Minority students also have limited space to explore their own identities. Providing community spaces and programs for youth to explore their cultural identity and interact with one another is an important resource for both youth and the community’s greater identity as a whole. The Ches Kwin club provides a good starting point for

Native American youth to explore their cultural and historical identities. However, there is still a lack of spaces for Hispanic students to explore and express cultural identity. This gap can be filled through the creation of spaces and educational opportunities outside the classroom such as clubs, after school activities, and educational programs. These spaces can also be physical public spaces (art, community center, parks, etc.) that promote the diversity of the community and give minority youth a sense of place as well as stake in the future of their city.

3.2 HEALTHCARE

The wellbeing of a community can be correlated

3.0 Human Capital

with access to a variety of medical services. Ferndale offers its residents a wide range of existing medical resources. The city has two main clinical centers, Unity Care Northwest and the Ferndale Family Medical Center. Unity Care Northwest is known for providing accessible medical services to low-income families through sliding-scale programs and accepting different forms of medical insurance. The Ferndale Family Medical Center also welcomes a variety of medical insurances. In terms of location, however, Unity Care Northwest is the most accessible clinic by public transportation and by walking. Located on 3rd Avenue, Unity Care Northwest is a block away from the 3rd Avenue at Alder Street WTA bus stop. However, the Ferndale Medical Center is located near a less

pedestrian-friendly location on Nordic Place. The City of Ferndale planned for an expansion of the Unity Care Northwest center, which began in 2018. The expansion is off Portal Way and is predicted to serve patients in the summer of 2019. The focus of the expansion is to increase access to dental health, pharmacy options for patients, and behavioral health and wellness services for the community. Additionally, the city has a Women, Infants, and Children (WIC) Nutrition Education office located on Portal Way near a WTA bus stop. The WIC office provides assistance for low-income pregnant, breast feeding, and non-breast feeding postpartum women.

Downtown development should emphasize mobility and access to the city's existing medical resources.

One recommendation is to make transportation and pedestrian improvements that would make services more accessible to existing and future residents. These improvements should emphasize non-automobile transport and support residents who may not have access to a car. Another consideration is the placement of future housing, particularly low-income housing, within the downtown. Future low-income housing projects should be located in areas close to existing resources and provide infrastructure for better access to existing resources.

3.3 CHILDCARE

According to the 2017 estimates from the US Census Bureau, 46.2% of Ferndale's households are unmarried. The average size of unmarried families in Ferndale is 2.5, with over 50% of unmarried families or non-family households being renters. Affordable housing for unconventional families and low-income families is addressed in section 3.4. The City of Ferndale has one YMCA as part of the Whatcom Family YMCA, located on Barrett Road. The Ferndale YMCA provides childcare services and after-school educational programs for its community members. The center is located a 5-minute walk from a WTA bus stop and the Ferndale Food Bank.

The city also has Head Start and Early Childhood Education and Assistance Programs (ECEAP) implemented in their preschools. The ECEAP program at Whatcom County serves children ages three to five years from income eligible families. Services for all types of families enrolled in this program include health assessments, nutrition education, mental health services, social service



Figure 3.1 Ferndale High School located just north of the study area.

3.0 Human Capital

referrals, home visits, and family support services.

This study recommends that the city support the increase in childcare and learning centers for low-income communities, especially as the downtown population increases. The YMCA is a program that requires a paid membership, which can make it inaccessible to some families. Although the ECEAP program offers a variety of family health and wellness services, it doesn't provide childcare.

3.4 AFFORDABLE HOUSING

There are 229 affordable housing units within the

city limits. This number should increase over the next 50 years to meet future population increases. Maintaining a surplus of affordable housing could deter an increase in homelessness and mitigate against gentrification. These will likely become larger areas of concern as Ferndale and its downtown grows. Affordable Housing Online writes that, "Households who pay more than 30% of their gross income are considered to be Rent Overburdened. In Ferndale, a household making less than \$2,843 a month would be considered overburdened when renting an apartment at or above the median rent. 54.52% of households who rent are overburdened in Ferndale." This illustrates

the need for more affordable housing opportunities in Ferndale. Figure 3.2 shows the four existing affordable housing apartments in Ferndale. There is currently only one affordable housing option in downtown Ferndale.

There is a need for more affordable housing opportunities within the downtown. The Policies and Land Use Alternatives within the City Center Plan identify housing as the major catalyst for downtown redevelopment. With this in mind the city should not only provide incentives for housing in general, but also affordable housing projects within appropriate areas of the downtown. These projects should be well connected with existing and future human capital resources within the city.

Protecting affordable housing is an important way to mitigate homelessness and gentrification. With revitalization, local property value may increase, and along with that the values of neighboring areas. Revitalization may lead to the inability of longtime homeowners and renters to remain in their homes. It may also deter future residents from moving into the downtown and its surrounding areas. The Kulshan Land Trust is an existing community resource that buys and sells homes with the stipulation that when the owners sell the home they do not resell the home at future market rates but at a set formula, keeping the home affordable even when demand is driving housing prices higher. Other control mechanisms should be implemented to mitigate an increased property tax for longtime residents.

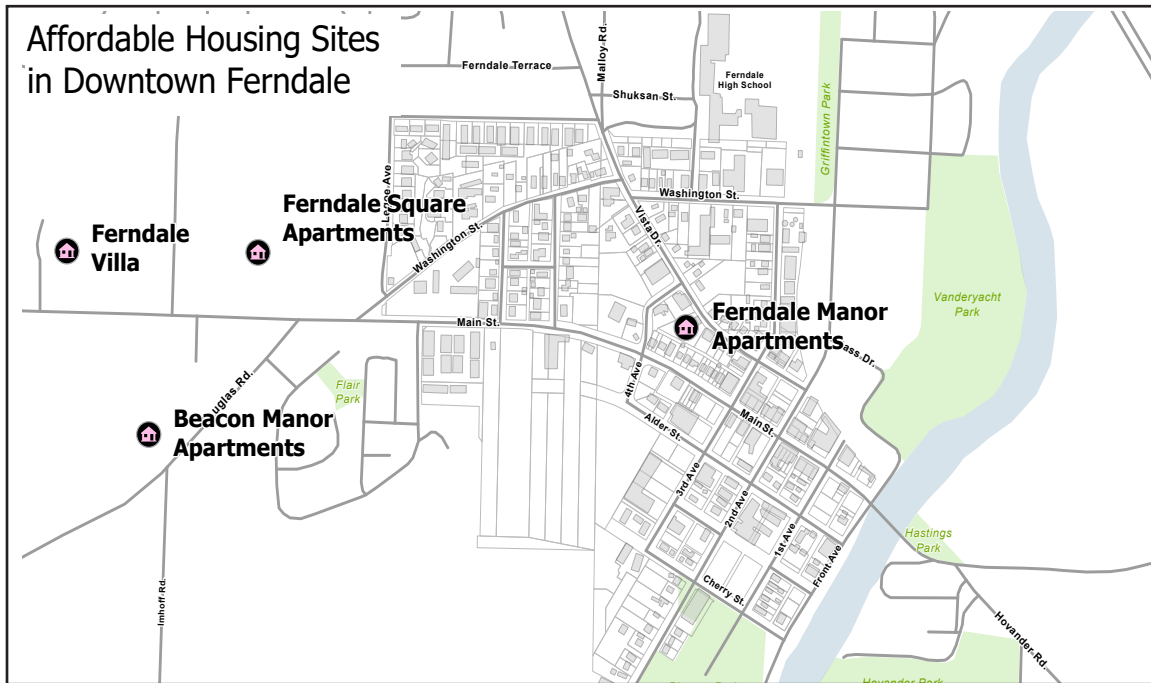


Figure 3.2 existing affordable housing in proximity to downtown.

3.0 Human Capital

3.5 HOMELESSNESS

Ferndale Emergency Resource Network (FERN) is a network of community members dedicated to training and coordinating emergency response. Utilizing FERN, the community in Ferndale could benefit from workshops that target disaster preparedness and educate community members on plans and resources. These workshops could incorporate drills or practices of city-wide emergency procedures, evacuation plans, and other early warning systems. As for the human capital element of Ferndale emergency management and hazard mitigation, Ferndale should focus on reaching homeless and vulnerable populations.

The homeless population in Ferndale is low, however, Ferndale planners should make projections and plans in the case that homeless populations increase. All Ferndale emergency management and hazard mitigation plans should anticipate and respond to growing populations.

The Ferndale Community Service Cooperative is a non-profit organization established in 2006, located on 2nd Avenue, near the downtown. The main services it provides for homeless and at risk residents are domestic violence advocacy, free hygiene items, and computer access. Other smaller centers within the cooperative include a food bank, clothing bank, giving store for the holidays, and free school supplies for low-income students.

One recommendation to increase human capital and equity within the Ferndale community is by providing better shelter and emergency facilities that are accessible to homeless or at risk populations. Additionally, vulnerable people can be further secured in the community through better access to afford-

able housing. The city of Bellingham has enacted a temporary housing ordinance that Ferndale could reference that identifies the locations, capacities and resources available for temporary shelters.



Figure 3.3 Homeless campground

4.0 Physical Form

The purpose of this section is to identify important elements of urban design that may be applied to the future downtown neighborhood. Recommended design guidelines serve to help guide future development that is humanely scaled and that reflects the desires of residents and the capacity for development. The issues addressed in the following

tables are central elements in designing a downtown that results in a strong sense of place. The design elements include physical space, physical amenities, zoning regulation, social considerations, and community preferences for the use of the downtown. The following recommendations have been categorized into four sections: physical form

and character, identity and place, neighborhood connectivity, and design guidelines. The recommendations presented in this plan are largely based on feedback gathered from the community at a visioning workshop organized by WWU and the City of Ferndale.

Table 4.1 Physical Form and Character - Land Use

DESCRIPTION OF ISSUES	OPPORTUNITIES FOR IMPROVEMENT
High Density Residential	In the commercial core, implement high density residential development and mixed uses: <ul style="list-style-type: none"> • Desirable when promoting a walkable and accessible downtown core • Building types should include condominiums, townhomes, multifamily, and mixed-use commercial (minimum 30 units/acre)
Medium Density Residential	Residential development, duplexes, multifamily developments (minimum 18 units/acre) should exist on the periphery of the commercial core in the downtown neighborhood.
Commercial Core	Highest density in downtown area: <ul style="list-style-type: none"> • Allowed uses include retail, service, food (restaurants and bars), office/business and mixed-use residential • Types of development include mixed use development (3-5 floors) (minimum 30 units/acre) • Creates desirable spaces of interaction, cohesive and centralized downtown
Commercial Transition	Mixed use zone in downtown area: <ul style="list-style-type: none"> • Allowed uses include retail, service, food, office/business, and residential • Businesses located on the bottom floor with residential above • Types of development include a mix of buildings with heights 2-4 floors and mixed use development (minimum 30 units/acre)
Public Institutional	Public buildings, recreational center, publicly owned social gathering places.
Parks/Open Space	Lands reserved for parks and recreation and protection of critical areas.

4.1 PHYSICAL FORM AND CHARACTER

The Physical Form and Character section is intended to address desirable land use types in the city center that foster a strong sense of place. The community has expressed a desire for more mixed use in the downtown core as well as higher density residential uses. The recommendations presented in Tables 4.1 and 4.2 provide an outline of how the community can achieve sustainable development goals and improve the functionality and habitability of downtown.

4.2 NEIGHBORHOOD CONNECTIVITY

Connectivity is important for downtown Ferndale’s accessibility to its surrounding areas. It is paramount that the City Center be accessible by all ages, income groups, and forms of transportation. Providing safe and convenient access to the downtown promotes its function as a centralizing hub for the city, as well as promoting further investment. Safe access also results in the downtown becoming a more pedestrian-scaled space. This can be accomplished through expanding crosswalks, bike paths, sidewalks, and loop trails so people have an ample space to commute and recreate. The recommendations for Neighborhood Connectivity are detailed in Table 4.3.

4.0 Physical Form

4.3 IDENTITY AND PLACE

The opportunities for improvement identified in the ‘Identity and Place’ section address strategies to improve the community’s sense of place. The physical organization of buildings and pedestrian space, as well as types of occupancy, are the primary focus. The community had expressed a desire to design public spaces in a more inclusive way. The recommendations provided in Table 4.4 could assist in promoting greater social gathering. The organization of space in the downtown core could enhance the community’s identity and relationship to the downtown core. Creating a diverse and inclusive downtown that can meet the needs of all residents could be promoted by the following design guidelines.

4.4 DESIGN GUIDELINES

The five sections detailed in Table 4.5 address design features that work toward creating a safe, pedestrian-scale, and effectively functioning built environment. Integrating both pedestrian and environmentally conscious features in downtown development can foster community inclusion and generate social and economic synergies that residents may take pride in and be eager to utilize.

Table 4.2 Physical Form and Character -

DESCRIPTION OF ISSUES	OPPORTUNITIES FOR IMPROVEMENT
Mixed Uses, Density	<p>Increase density and opportunity for housing in the downtown neighborhood:</p> <ul style="list-style-type: none"> • Mixed use buildings: commercial space and affordable rental options • Results: increases population, promotes security with “eyes on the street,” pedestrian-oriented downtown design, increased opportunity for social capital development • Enhances sense of place in the downtown
Streetscape Features	<p>Implement features to make the sidewalks a desirable place for social interaction:</p> <ul style="list-style-type: none"> • Enhance the streetscape and opportunity for social capital • Include benches and other places to sit • Address and enhance urban biodiversity through foliage, stormwater drainage areas, planters, and street lights

Table 4.3 Neighborhood Connectivity

DESCRIPTION OF ISSUES	OPPORTUNITIES FOR IMPROVEMENT
Crosswalks	Implementing crosswalks at desired locations enhances safety of neighborhood and promotes walkability of all ages.
Bike Paths	Bike paths can help to reduce car traffic on the main roads and help provide alternate forms of transport and increase connectivity between neighborhoods and surrounding parks.
Loop trails	<p>Create a network of trail systems that connect surrounding neighborhoods and parks with the downtown core:</p> <ul style="list-style-type: none"> • Emphasize parks through signage • Enhance urban trail systems connecting to parks and public spaces
Sidewalk	Sidewalk coverage should be expanded so that all downtown streets have sidewalks for safe travel.
Downtown relationship to other Ferndale neighborhoods	<p>Downtown Ferndale serves as the central hub of the community:</p> <ul style="list-style-type: none"> • Increased accessibility, connectivity • Opportunity for social capital growth

4.0 Physical Form

Table 4.4 Identity and Place

DESCRIPTION OF ISSUES	OPPORTUNITIES FOR IMPROVEMENT
Noise and Exhaust Pollution	<p>Insulating pedestrian areas from high traffic streets:</p> <ul style="list-style-type: none"> • Trees and other forms of urban biodiversity to provide a buffer • Reducing the speed limit reduces the noise and exhaust
Community “Theme”	<p>There is a desire for something that ties the community together and invokes a common sense of pride and place:</p> <ul style="list-style-type: none"> • Implement design standards that require a common element • Architectural styles or elements, common emphasis
Community Events and Space	<p>Establish consistent space and time for Ferndale oriented events:</p> <ul style="list-style-type: none"> • Enhance existing Friday Market at Centennial Park at varying times • Create a public gathering space such as a town square or market hall • Residents expressed a desire for events at Riverwalk Park
Commercial Mixed Use Core	<p>Incentivize local businesses to populate vacant space:</p> <ul style="list-style-type: none"> • Increase social capital and a community sense of place • Include recreation, food and drink, and necessities • Increased presence of people will increase the “eyes on the street”

Table 4.5 Design Guidelines

DESCRIPTION OF ISSUES	OPPORTUNITIES FOR IMPROVEMENT
Visibility	Commercial and mixed use store fronts should have large windows, garage doors, or outdoor seating to create a permeable transition between public and private space.
Urban Biodiversity	<p>Create permeability between the scenic surroundings and downtown core:</p> <ul style="list-style-type: none"> • Natural features of the region should be brought into the built environment • Variety of native plants can be incorporated into storm water drainage sites, parklets, sidewalk planters and trees, and urban green spaces
Sidewalk Space	<p>Sidewalk space should have spaces for people to stop and pause or to gather:</p> <ul style="list-style-type: none"> • Benches, outdoor seating, planters, parklets, tree lined boulevards • Public space should flow smoothly into private space (permeable)
Building Orientation	<p>Buildings should have their main entrance oriented to the street to provide continuous, attractive frontage:</p> <ul style="list-style-type: none"> • Corner businesses should try to have entrances facing the corner. This feature can break up monotony on a block
Signage	Promote use of public spaces such as parks by providing signs that advertise them and the opportunity for recreation or socializing.

5.0 City Center Regeneration Capacity

Ferndale’s current 20-year planning horizon projects the city’s population to increase by 6,883 additional people and 2,500 new housing units. The 2016 Comprehensive Plan projects that the downtown will absorb 18% of the total population increase (1,307 people). These projections are based on historical growth patterns within Ferndale. The 2016 Comprehensive Plan also states that the future growth of Ferndale will be denser than historic growth.

The City Center Plan has a 50-year planning horizon and includes three Land Use Alternatives aimed at concentrating growth within the historic downtown.

5.1 METHODS

Calculations for infill capacity were done using the city’s existing parcel data. Each Land Use Alternative was overlaid on top of the parcel data and received a “zoning type” designation. Calculations were then made to determine the total area of all parcels associated within each zoning type. After the total area was calculated for each zone, additional analysis determined: 1) the total square footage, 2) the buildable square footage, 3) the number of housing units that could be accommodated, 4) the total population accommodated, 5) the available commercial square footage, and 6) the number of potential new businesses that can be accommodated within each zone. The analysis was replicated for each of the

three land use alternatives. The parameters for each of the previously identified variables is as follows:

- **Buildable Square Footage:** Assumes that 80% of land could be developed with 20% reserved for parking and other uses. This also assumes a zero setback on all sides except for areas with parking.
- **Housing Units:** Calculated by dividing buildable square feet by 1,000 for each housing unit and then multiplying by the building height specified for each zone. This assumes that each housing unit is an average 1,000 square feet. The average building height is assumed to be as follows:

Table 5.1. Land Use Alternative 1

TOTAL DOWNTOWN AREA							
Area	Acreage:	Square footage:	Buildable sqft:	Housing Units:	Population:	Commercial Square footage:	Business Count:
Comm Core	13.77	599,821	449,866	720	1,893	449,866	180
Comm Trans	0	0	0	0	0	0	0
Res High	51.08	2,225,045	1,668,784	5,340	14,044	N/A	N/A
Res Med	26.41	1,150,420	862,815	1,381	3,631	N/A	N/A
TOTALS	91.26	3,975,286	2,981,464	7,440	19,568	449,866	180
OPPORTUNITY SITES							
Area	Acreage:	Square footage:	Buildable sqft:	Housing Units:	Population:	Commercial Square footage:	Business Count:
Comm Core	2.76	120,226	90,169	144	379	90,169	36
Comm Trans	0	0	0	0	0	0	0
Res High	15.64	681,278	510,959	1,635	4,300	N/A	N/A
Res Med	4.22	183,823	137,867	221	580	N/A	N/A
TOTALS	22.62	985,327	738,995	2,000	5,260	90,169	36

5.0 City Center Regeneration Capacity

TOTAL DOWNTOWN AREA							
Area	Acreage:	Square footage:	Buildable sqft:	Housing Units:	Population:	Commercial Square footage:	Business Count:
Comm Core	16.95	738,342	553,757	886	2,330	553,757	222
Comm Trans	39.09	1,702,760	1,277,070	2,043	5,374	1,277,070	511
Res High	11.51	501,376	376,032	1,203	3,165	N/A	N/A
Res Med	26.91	1,172,200	879,150	1,407	3,699	N/A	N/A
TOTALS	94.46	4,114,678	3,086,008	5,539	14,568	1,830,827	732
OPPORTUNITY SITES							
Area	Acreage:	Square footage:	Buildable sqft:	Housing Units:	Population:	Commercial Square footage:	Business Count:
Comm Core	3.86	168,142	126,106	202	531	126,106	50
Comm Trans	8.57	373,309	279,982	448	1,178	279,982	112
Res High	4.43	192,971	144,728	463	1,218	N/A	N/A
Res Med	5.17	225,205	168,904	270	711	N/A	N/A
TOTALS	22.03	959,627	719,720	1,383	3,638	406,088	162

- Commercial Core and transition zones: 3 story buildings less one floor for commercial use.
- Residential High: 4 story buildings.
- Residential Medium: 3 story buildings.
- Population: Calculated by multiplying number of housing units by 2.63. This assumes that each household will have the average of 2.63 people per household.
- Commercial Square footage: Assumes that

the first floor of every mixed use building will accommodate commercial uses, thus the buildable square footage is equal to commercial square footage. For residential areas, this was designated N/A.

- Business Count: Assumes that “small businesses” square footage is an average of 2,000 square feet.

Once each calculation was complete, each column was added to obtain final values. This analysis was prepared for two scenarios seen below.

- Total build-out capacity: Based on the proposed zoning densities, assumes all parcels in the downtown are developed as described above.
- Catalyst sites capacity: Calculates capacity only for the “opportunity sites,” to the densities specified above.

5.2 INFILL CAPACITY ANALYSIS

Each alternative emphasizes higher density housing, commercial and mixed use development. The City Center regeneration projections for each Land Use Alternative are presented within Tables 5.1-5.3.

5.0 City Center Regeneration Capacity

Table 5.3 Land Use Alternative 3							
TOTAL DOWNTOWN AREA							
Area	Acreage:	Square footage:	Buildable sqft:	Housing Units:	Population:	Commercial Square footage:	Business Count:
Comm Core	18.32	798,019	598,514	958	2,519	598,514	239
Comm Trans	0	0	0	0	0	0	0
Res High	25.06	1,091,614	818,710	2,620	6,890	N/A	N/A
Res Med	43.39	1,890,068	1,417,551	2,268	5,965	N/A	N/A
TOTALS	86.77	3,779,701	2,834,776	5,846	15,374	598,514	239
OPPORTUNITY SITES							
Area	Acreage:	Square footage:	Buildable sqft:	Housing Units:	Population:	Commercial Square footage:	Business Count:
Comm Core	4.6	200,376	150,282	240	632	150,282	60
Comm Trans	0	0	0	0	0	0	0
Res High	10.33	449,975	337,481	1,080	2,840	N/A	N/A
Res Med	6.971	303,657	227,743	364	958	N/A	N/A
TOTALS	21.901	954,008	715,506	1,685	4,431	150,282	60

6.0 Planning and Sustainability Principles

In focusing on the redevelopment and revitalization potential of the downtown, it is important to consider the principles of sustainability.

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (IISD, 2018). Sustainable development is a central component in urban planning and as such should be incorporated in planning processes. In order to ensure adherence with sustainability principles, this study has referenced performance metrics developed under the Leadership for Energy and Environmental Design (LEED) Neighborhood Development program.

By reviewing the checklist requirements outlined in LEED ND, planning teams were informed of the standards and design objectives that constitute sustainable community development while limiting the potential negative impacts associated with urban development. The goal in integrating LEED ND standards is to achieve green building and neighborhood development that maximizes human health and productivity while minimizing resource usage, waste production, and environmental impacts. Additionally, LEED offers certifications for buildings, communities, and cities that comply with the standards. The LEED ND checklist requirements and metrics that apply to the downtown revitalization are briefly reviewed in this section.

6.1 SUSTAINABILITY PRINCIPLES, HOUSING, DESIGN, EQUITY ELEMENTS

6.1.1 Smart Location and Linkage

This section of the requirements brings attention to the physical location of development in relation to ecosystems as well as accessibility to nearby services. “Smart location” implies that development should not impede existing habitats,

species, or water bodies but instead works to conserve and improve those natural resources. “Linkage” refers to equitable and accessible mobility options for the residents of the planned community. The criteria of smart location and linkage are described as follows:

Smart Location - New development should be located near existing development or within prior urbanized areas, as well as near public transit infrastructure.



Figure 6.1 Example of a bike facility that provides storage for bikes

6.0 Planning and Sustainability Principles

Imperiled Species and Ecological

Communities - The downtown redevelopment plan should be located away from affected species or ecological communities or, if unavoidable, the plan should provide a habitat conservation plan to mitigate environmental impacts.

Wetland and Water Body Conservation - New development or redevelopment should conserve wetlands and water bodies. If development affects wetlands or water bodies, the impact must be mitigated and limited.

Floodplain Avoidance - New development should be built outside of the floodplain or on previously developed infill sites to protect life and property from flooding. Urban development is permitted within existing urban areas subject to compliance with FEMA hazard prevention strategies.

Access to Quality Transit - New development and redevelopment should encourage multi-modal transportation and reduce the dependency on individual motor vehicles.

Bicycle Facilities - Development should promote bicycle transportation and reduce vehicle distance traveled. Each building located in a LEED ND neighborhood must have bike storage in close proximity to the main entrance.

Housing and Job Proximity - Development should encourage equitable communities with adequate housing and employment opportunities. Higher residential density in the project area is desirable.



Figure 6.2 Community gardens as an example of Local Food Production

6.0 Planning and Sustainability Principles

Site Design for Habitat or Wetland and Water Body Conservation - Site design should preserve native plants, wildlife habitats, and bodies of water. If the site has these elements it must work with wildlife preservation agencies to develop an impact avoidance strategy.

Restoration of Habitat or Wetlands and Water Bodies - New development should work to restore and manage previously damaged habitat, wetlands, and water bodies.

Long Term Conservation Management of Habitat or Wetlands and Water Bodies - Development should promote the conservation of habitat, wetlands, and water bodies with a 10-year plan for protecting onsite native habitats.

6.1.2 Neighborhood Pattern and Design

The requirements of this section concern the overall quality and design of neighborhood development to promote non-motorized transportation, general livability, and the public welfare. The criteria within this section are quite variable but all contribute to a healthier community.

Walkable Streets - Neighborhood development should reduce the vehicle distance traveled while promoting the public's health by providing safe, appealing street environments for walking.

Compact Development - Compact neighborhood development should be concentrated to promote livability and transportation efficiency.

Connected and Open Community - Neighborhod

development should promote multimodal transportation through development within existing communities with the intent of improving public health, daily physical activity, and reducing motor vehicle emissions.

Mixed Use Neighborhoods - Reduction of vehicle distance traveled is made possible by providing a mixture of services within neighborhoods that encourage daily walking and transit ridership.

Housing Types and Affordability - Neighborhood development should promote social equity with a range of economic levels, housing sizes, and age groups within a community.

Reduced Parking Footprint - Neighborhood development should minimize the requirements of excessive on-site parking to reduce environmental harm associated with parking facilities. This development should seek to reduce traffic and promote walkability.

Transit Facilities - Neighborhood development should encourage transit facilities with frequent stops.

Transportation Demand Management - Neighborhood development should discourage the use of motor vehicles by encouraging other modes of travel thus reducing energy consumption, pollution, and harm to human health.

Access to Civic and Public Space - Neighborood development should provide open space near housing and work places to enhance community participation and improve public health.

Access to Recreation Facilities - Neighborhood development should provide recreational facilities near work places and homes to enhance public participation and health.

Visibility and Universal Design - Design standards should be employed that accomodate a wide spectrum of people regardless of age or ability.

Community Outreach and Involvement - Neighborhood development should encourage community participation in the project design and planning decisions to fit the needs of the communi

Local Food Production - Neighborhood development should incorporate community-based food production to improve nutrition with better access to fresh produce. This can be accomplished through neighborhood gardens and proximity to farmers markets.

Tree-Lined And Shaded Streetscapes - Neighborhood development should consider incorporating tree-lined streetscapes which create a buffer from pedestrians and the street and encourages walking and bicycling while discouraging speeding. Shaded streetscapes reduce the heat island effect and improve air quality.

Neighborhood Schools - Neighborhood development should promote integration of schools and neighborhoods to promote community interaction. This will encourage walking and biking to school.

7.0 Land Use and Urban Character 1

7.1 LAND USE PLAN ALTERNATIVE 1

7.1.1 Introduction

Land use plans provide communities with the ability to determine the form by which future development takes place. Depending on the community's preferences, land use plans can provide consistency to a community's character as they provide for different types and intensities of land use development that may occur. This section reviews the current Ferndale zoning designations for the downtown, as well as the recommended land use plan alternatives formulated in this planning study which aims to attain greater infill densities and connectivity throughout the downtown core.

This plan emphasizes the development of specific parcels in the downtown core to provide for commercial and mixed use residential development. The area surrounding the central core of the downtown is generally proposed for medium to high density residential housing. The plan recognizes that sufficient single family detached housing currently exists throughout the city, and that higher density housing is a viable and marketable land use within the downtown core. The multiple parks around the City Center provide excellent public open space amenities and the plan proposes to focus greater attention on current park utility as well as on trail connectivity between the parks and increased connectivity between the City Center and the surrounding neighborhoods.

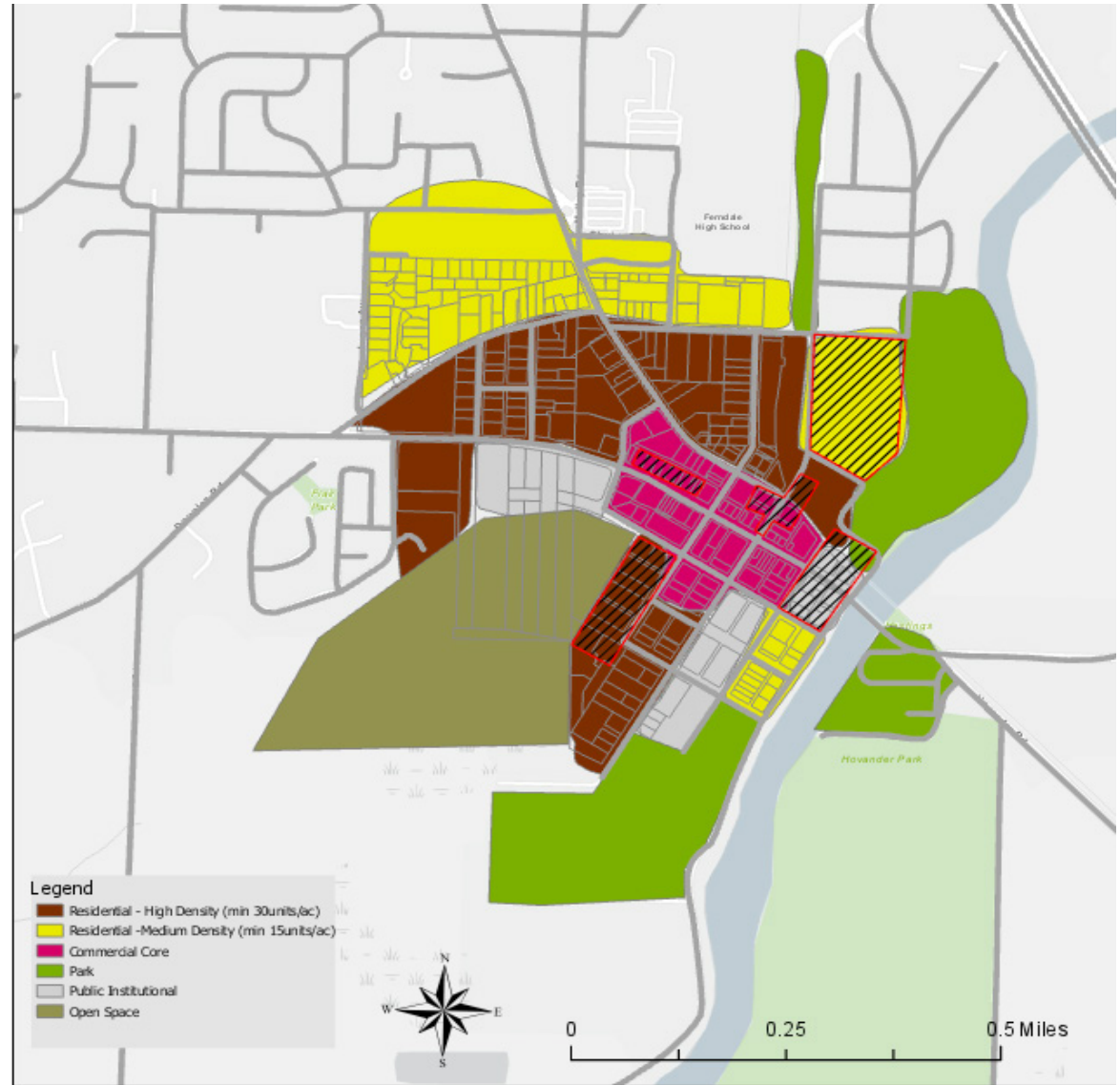


Figure 7.1 Land use plan alternative 1

7.0 Land Use and Urban Character 1

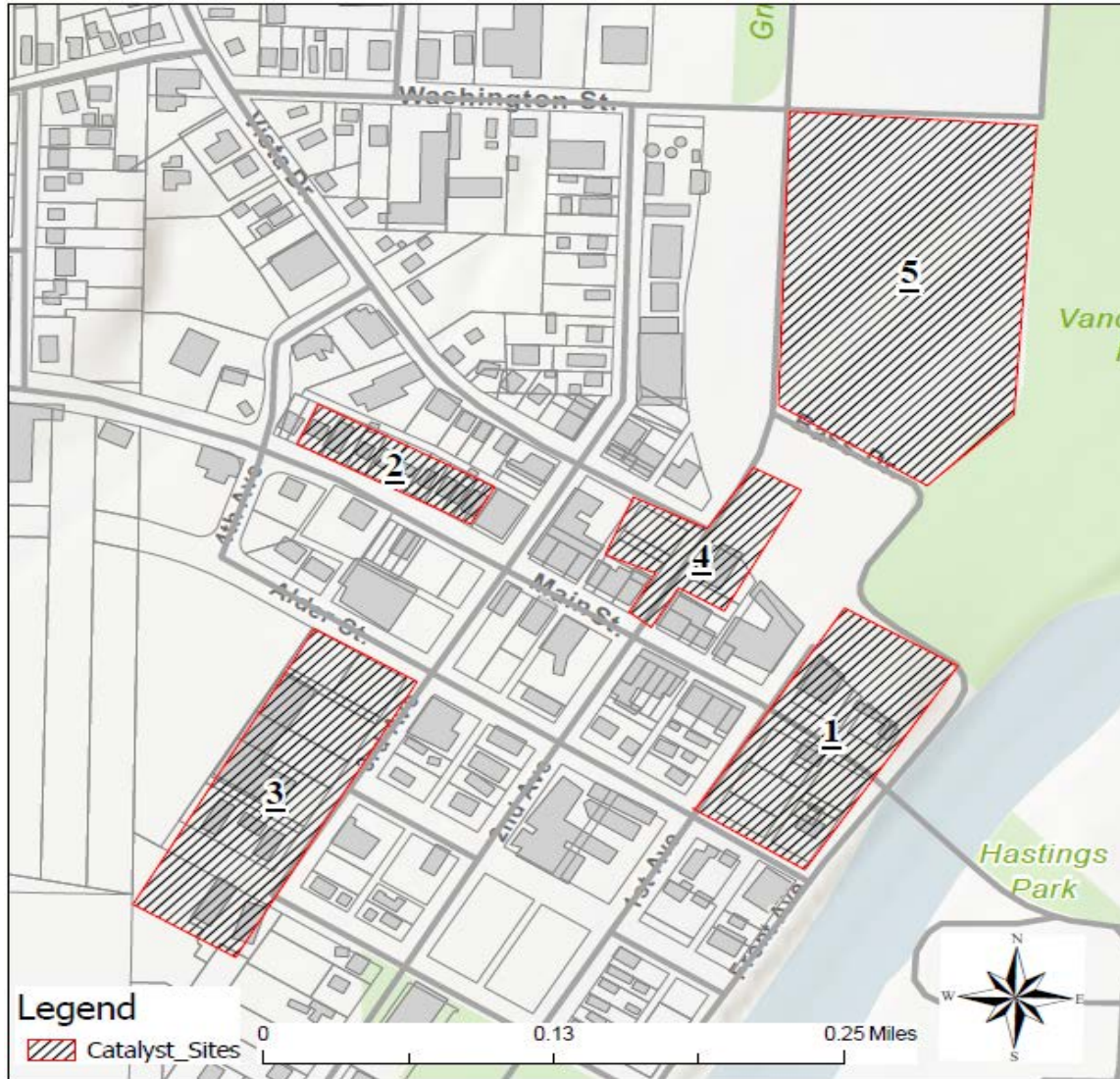


Figure 7.2 Proposed catalyst sites with land use alternative 1

7.1.2 Proposed Catalyst Sites

Catalyst Sites are sites of opportunity for development that have the potential to support new businesses and residents in the downtown. These sites were identified in an earlier analysis of land values and improvement values as being under utilized, and through community input received at the workshop. The following describes the five identified sites containing such under utilized parcels of land and which constitute catalyst sites for prioritized development.

1. This site should be redeveloped in a land use that serves as a welcoming introduction entering into the downtown. It's location adjacent to the Main Street bridge provides a unique opportunity to create a public space that would be visible from those entering Ferndale from the East. Additionally this site is identified as suitable for an institutional use to serve as a linkage space integrating the waterfront park to the south with park areas to the north.
2. The parcels in the catalyst site area are currently comprised of single family homes. This catalyst site has the potential to be redeveloped as mixed use, multi-story buildings to increase the density in the downtown commercial core.
3. This catalyst site could be utilized for the development of an urban village, consisting of higher density residential and mixed uses. Currently this site is occupied by an under utilized commercial mall, with a surface parking lot dominating the site. This site was identified by workshop participants as a priority

7.0 Land Use and Urban Character 1

stable and resilient development occurs.

7.1.4 Urbanizing City Center

The City Center represents the commercial core of Ferndale, extending from the Main Street bridge to Hamlin Avenue. The purpose of designating an area as a City Center is to accommodate the traditional uses of downtowns -- namely, the engagement of daily shopping, the provision of service, the concentration of jobs, and the activity of social interactions. Ferndale currently has a City Center (CC) zoning designation which includes a variety of uses, including, but not limited to, restaurants, offices, and multi-family residential.

While this CC designation provides a clear distinction between the City Center and the surrounding area, this plan alternative makes a number of recommendations to better accommodate a future resident population and to enable the center to more effectively serve as a city's primary commercial core. First, the plan suggests that the central city designation be expanded to include the block between the corner of 2nd Avenue and Maple Street, and the corner of 3rd Avenue and Alder Street. Second, the plan proposes that this area be rezoned as 'mixed use' to ensure that there is a balance of dense commercial and residential development in this area. Third, the plan recommends that rather than apply specific height designation in accordance with city zoning designations, a separate 'height designation' plan be developed based on Ferndale's topography. This will ensure that new, dense development maximizes Ferndale's natural scenery, especially the view of Mount Baker and the Nooksack River.



Figure 7.3 Conceptual design of the redevelopment of catalyst site #2

- area for redevelopment. Citizens considered this site for a potential small grocery store and as part of a mixed use development.
4. This site is located the middle of the City Center and is currently under utilized as a large parking lot. With increased pedestrian accessibility on and around main street, this site could be better utilized as a more intensive mixed use development emphasizing pedestrian oriented commercial spaces.
 5. This site could potentially be utilized for the development of a residential village consisting of higher density residential developments. Developing this site with accessibility to adjacent public parks can establish important pedestrian linkages between trails and the City Center. Currently, this site contains a few single family homes, but most of the property is comprised of open space. With the site prone to flooding, measures should be taken to ensure

7.0 Land Use and Urban Character 1

7.1.5 Upzoning for Future Growth

The proposal focuses on investment in the mixed use development in the City Center as a way to bring new businesses and residents to the downtown. Following prioritized investment in mixed uses in the City Center, further population growth should be accommodated by the expansion of high density residential uses adjacent to the City Center in the downtown district. Beyond the high density residential core, medium density residential should be provided as a transition zone to single family residential areas. Upzoning current areas of single family residential in the downtown will stimulate a concentration of population to support increased economic activity in the downtown as well as supporting greater reliance on pedestrian and bicycle modes of movement.

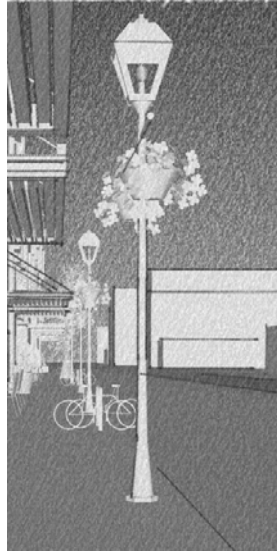


Figure 7.4 Streetlamp

Residential Density Recommendations

- City Center: Minimum 45 units / acre
- High Density Residential: Minimum 30 units / acre
- Medium Density Residential: Minimum 18 units / acre

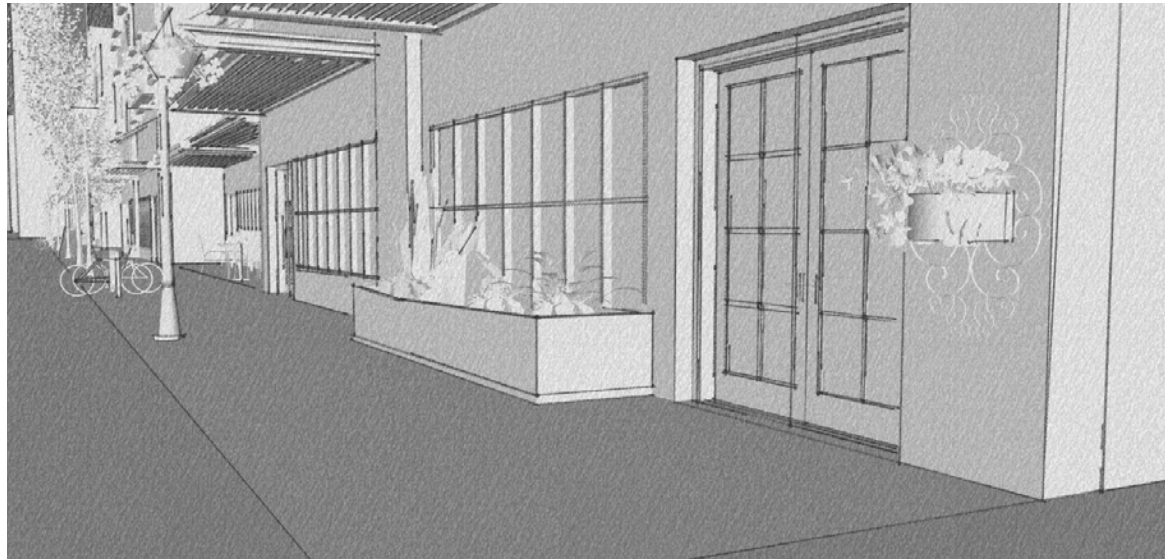



Figure 7.5 Streetview of mixed use development

7.0 Land Use and Urban Character 2

Table 7.1 Land use designation descriptions and requirements

DESIGNATION	DESCRIPTION	DENSITY	DEVELOPMENT REQUIREMENTS	
Commercial Core	Highest density in Downtown. Allowed uses include retail, service, restaurants, office/ business and mixed use residential.	30 units per acre minimum	Minimum height of 3 stories Minimum setback of 0ft	
Commercial Transition	Uses similar to that of the Commercial Core but allow for appropriate transition into neighboring residential areas	30 units per acre minimum	Minimum height of 2 stories Minimum setback of 0ft	
Residential High	Primarily high density residential development and mixed use. Mixed use development should be appropriate scale to residential uses.	30 units per acre minimum	Condominiums, townhomes, multifamily, and mixed use commercial	
Residential Medium	Uses similar to Residential High but allows for appropriate transition into adjacent neighborhoods. This zone incorporates existing residential development within the Downtown	18 units per acre minimum	Duplexes, triplexes and multifamily	
Public Institutional	Public and municipal buildings, publicly owned social gathering places		Public buildings, recreational center, other publicly owned social gathering places	
Parks and Openspace	Lands reserved for parks and recreation and protection of critical areas			

7.2 LAND USE PLAN ALTERNATIVE 2

Land Use Alternative 2 aims to increase the density of the downtown area through the designation of four land uses. Those designations are defined within this section. The parameters of each designated zone within the downtown are shown in the Land Use Alternative 2 Map (see Figure 7.2).

7.2.1 Land Use Designations

The proposed land use designations for Land Use Alternative 2 are detailed in Table 7.2. Each land use designation references a zone on the Land Use Alternative 2 map. Figure 7.2.1 shows the Downtown once density is increased within each zone.

7.2.2 Catalyst Sites

Catalyst sites are sites identified within Land Use Alternative 2 as opportunity sites and could offer significant benefits to downtown redevelopment. These sites should be incentivized by future downtown planning regulations and be made a first priority for redevelopment. The five catalyst sites aim to bring housing, commercial, mixed use, and cultural opportunities to the downtown.

1. Site 1 is comprised of a number of underutilized sites and is situated at the entrance to the downtown. This has the potential for being Ferndale’s “postcard appeal” because of its aesthetic advantages (views of the Nooksack River and Mount Baker and its proximity to the Riverwalk and

7.0 Land Use and Urban Character 2

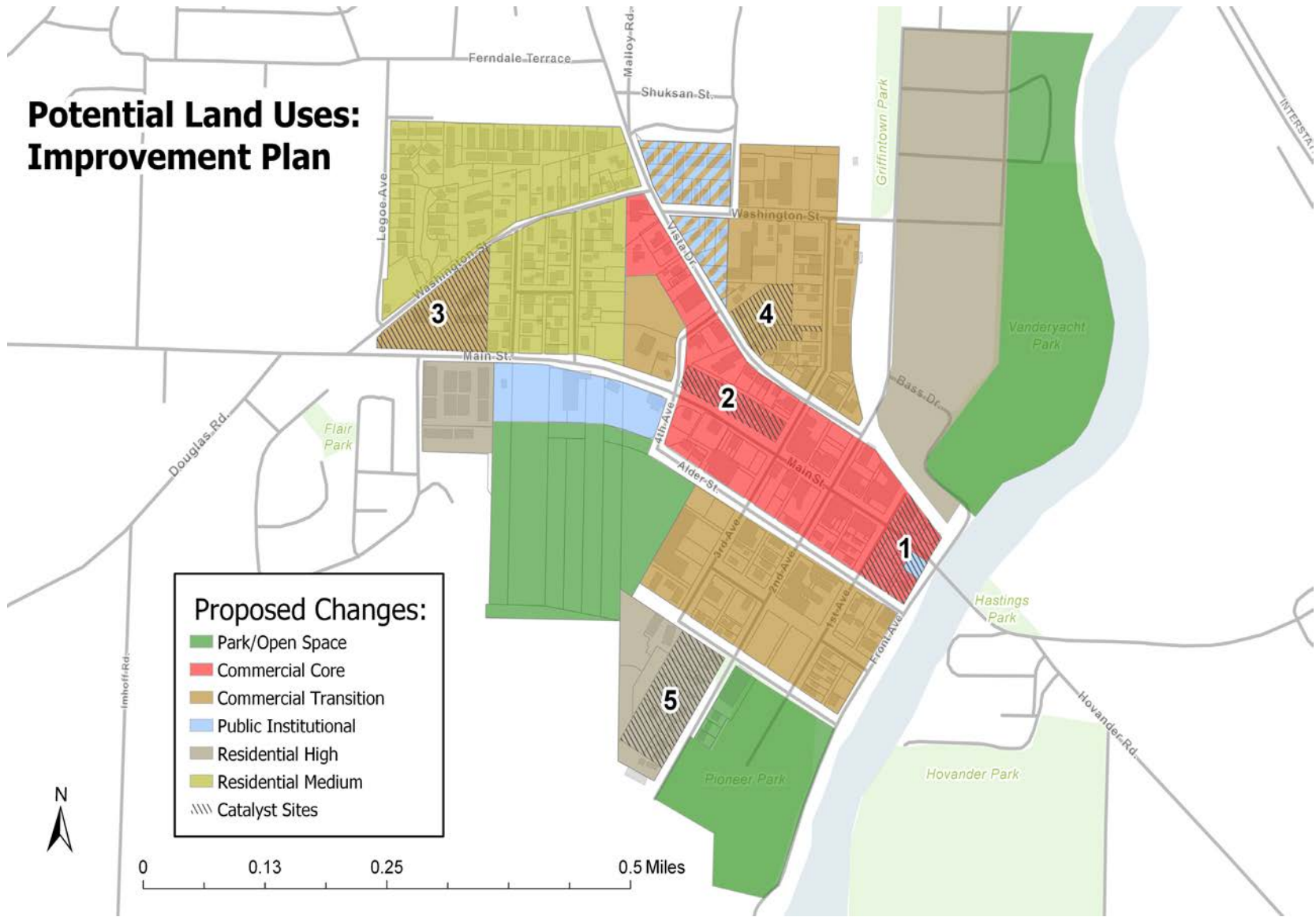


Figure 7.6 proposed Land use map of the City's Downtown area including catalyst sites.

7.0 Land Use and Urban Character 2

VaderYacht Parks).

2. Site 2 was identified as a catalyst site due to its prime location directly on Main Street and its prominent location entering the downtown when approaching from the west. As this area is currently comprised of single family housing and is surrounded by commercial uses, transitioning to a mixed use development with commercial space on the ground floor is warranted.
3. Site 3 is one of the largest existing parcels within the downtown and is surrounded by residential development. This site was zoned Commercial Transition and identified as a catalyst site for its potential to serve the surrounding residential areas.
4. Site 4 was identified as a catalyst in conjunction with the Mobility Plan. The underutilized parcels that make up site 4 could be sequestered by the city for roadway and pedestrian improvements in order to accommodate more development within the block.
5. Site 5 was chosen as a catalyst site for its aesthetic value (as it is surrounded by parks and natural greenery) and its convenient location adjacent to downtown. For these reasons, it was identified as a candidate site for high density residential development. Additionally, comments raised at the community workshop also identified this site as ideal for high density residential development.



Figure 7.7 conceptual infill map. Colored buildings represent future density projections. Red=Commercial core. Yellow= Residential Medium. Brown= Residential High. Blue=Public Institutional.



Figure 7.8 conceptual design for catalyst site 2

7.0 Land Use and Urban Character 3

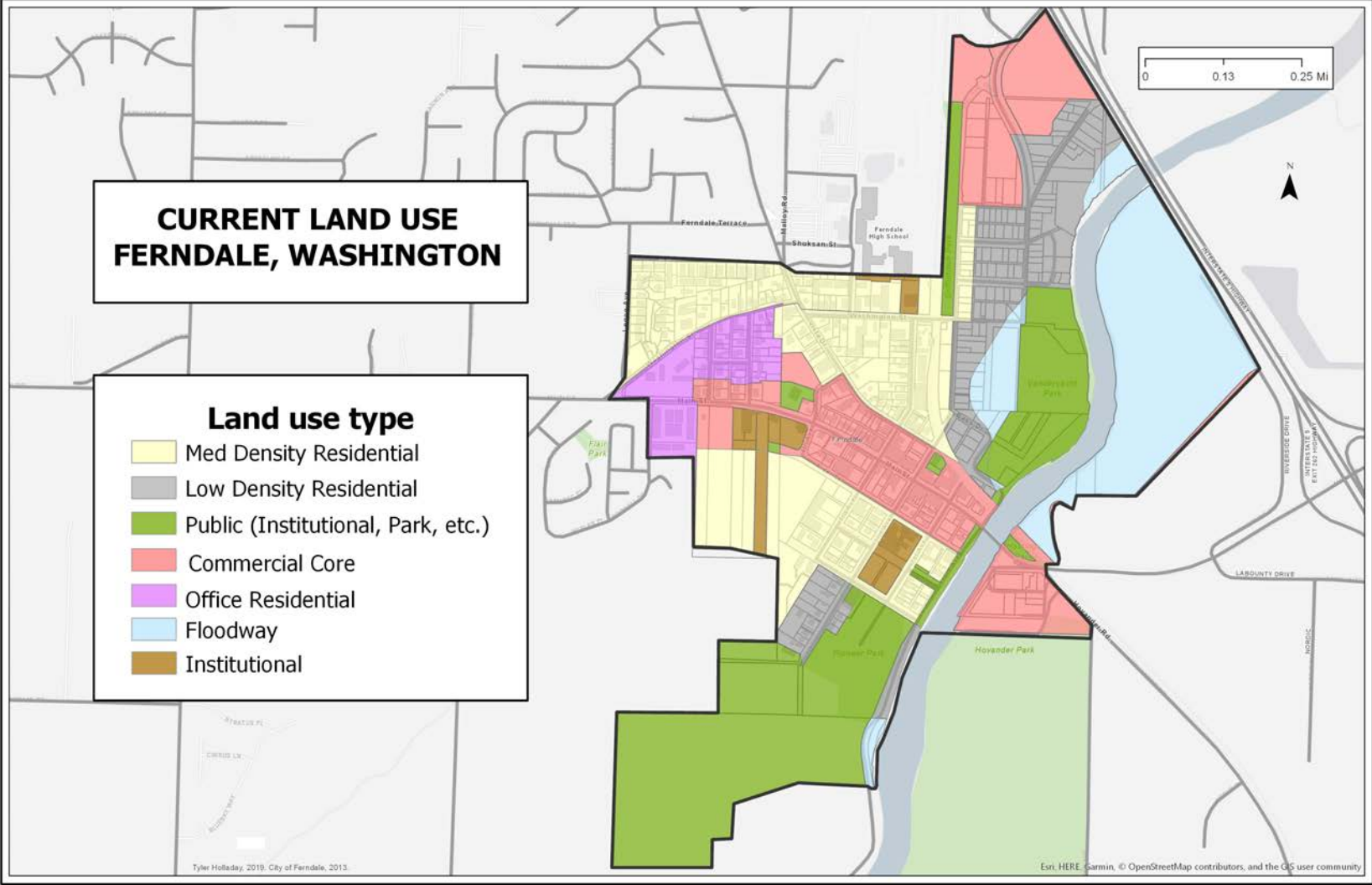


Figure 7.9. Current Ferndale Land Use Designation

7.0 Land Use and Urban Character 3

7.3 LAND USE ALTERNATIVES 3

7.3.1 Land Use Descriptions

Commercial Core

This is the highest possible commercial mixed use density. It includes uses such as retail, food service, office/business, and other services. While residential is included in this zone, the emphasis is on commerce. Buildings: Minimum 3 floors with density of 30-40 units/acre.

High Density Residential

This is the highest residential mixed use density. It includes commercial uses such as retail, food service, office/business, and other services. While some commercial is encouraged in this zone, the emphasis is on high density living (apartments, studios, live-work, townhomes). Buildings: Minimum 3 floors with density of 30 units/acre.

Medium Density Residential

This is the second highest density residential mixed use area. It includes fewer commercial uses and primarily focuses on moderate density residential (duplexes, condominiums, townhomes) This zone emphasizes higher density living. Buildings: Minimum 2 floors and minimum density of 18 units/acre.

7.3.2 Catalyst Sites

Catalyst sites, shown in figure 7.3.3, have been identified based on several factors. First, the identified sites reflect a land use value ratio that shows a lower improvement assessed value compared to the property's assessed land value. Sites that were vacant or had a low improvement value are considered highly developable. Some sites with high improvement to land value ratios have also been identified as catalyst sites due to their locational potential for conversion to higher economic uses. One example of this occurrence is the grainery site. With its close proximity to both the downtown and Griffintown areas, this site has the potential for higher value if converted to commercial services, potentially serving as a connection between the two districts. The catalyst site located on the east side of the river offers tremendous potential for riverfront oriented commercial mixed use development. Lastly, the light industrial catalyst site located at the northeast portion of Griffintown has good potential for converting to more intensive urban uses.

7.3.3 Land Use Alternative 3 Descriptions

The changes shown in figure 7.3.2 accommodate future population projections by encouraging higher density development throughout the downtown. Overall, the changes shown do not significantly contrast with current land use designations (Figure 7.3.1), but represent a further refinement to those designated land use districts by providing a more intensive level of development and emphasizing mixed use development.

7.0 Land Use and Urban Character 3

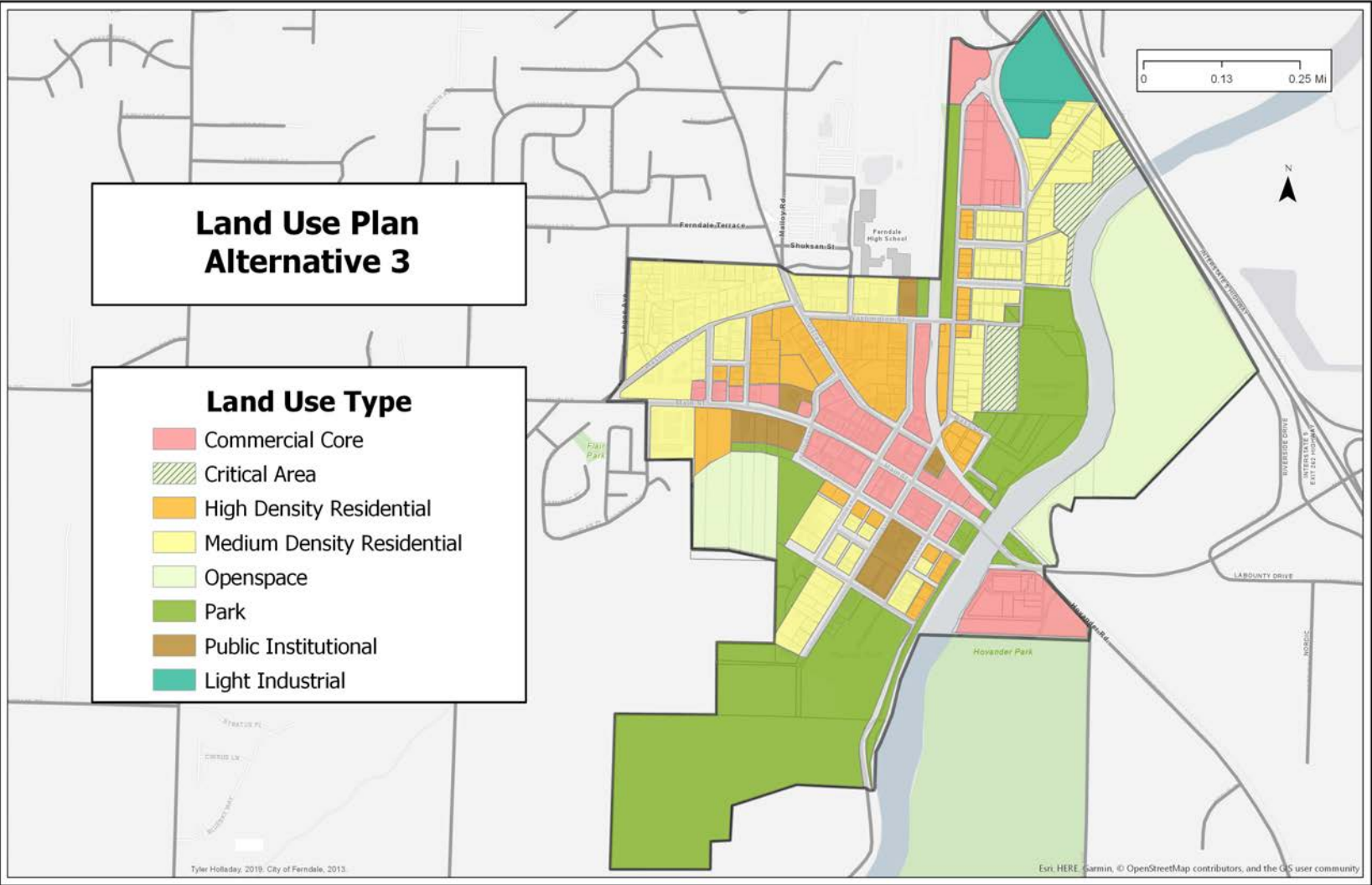


Figure 7.10 Land Use Plan Alternative 3

7.0 Land Use and Urban Character 3

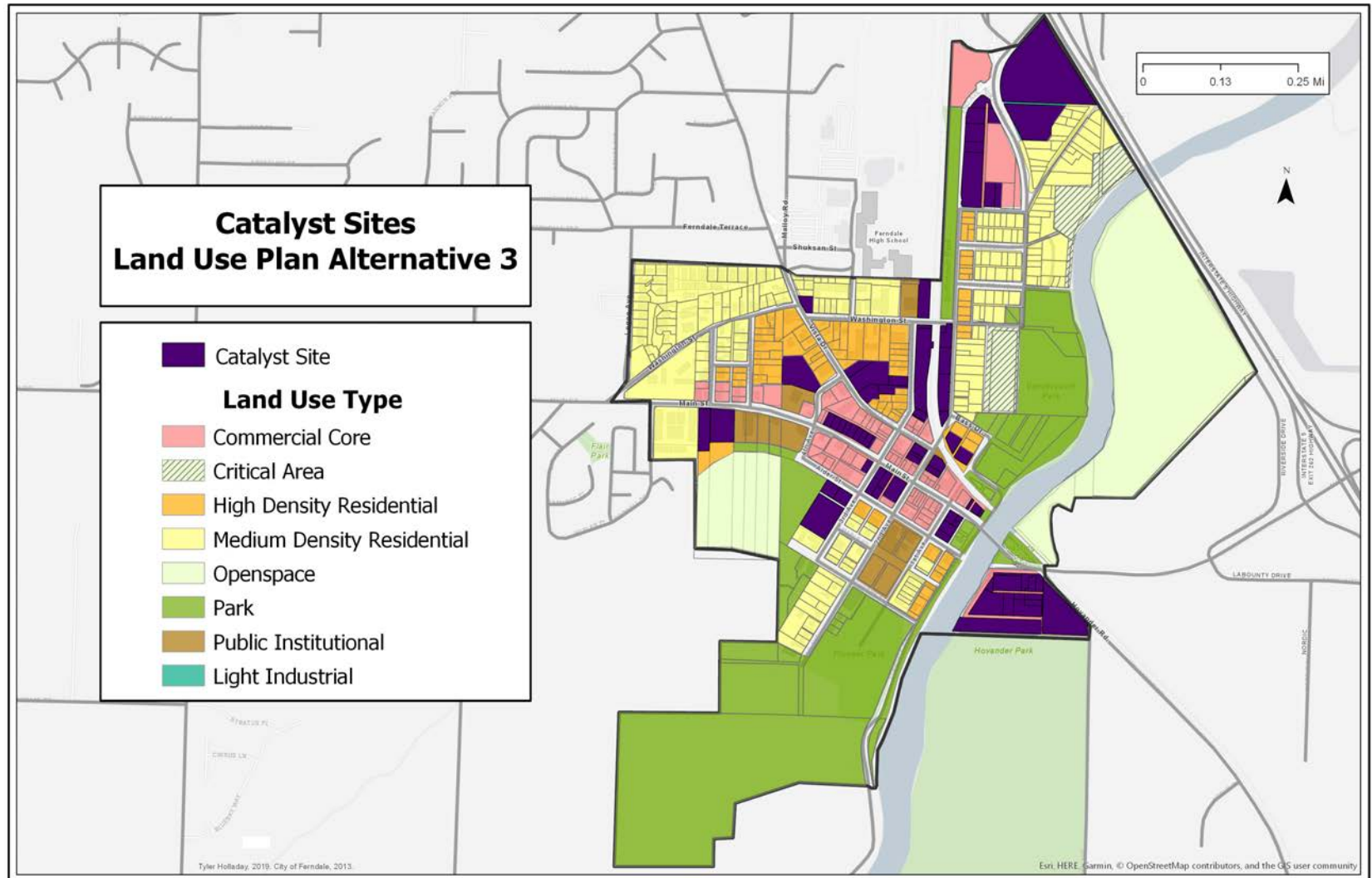


Figure 7.11. Land Use Type and Catalyst Sites

8.0 Mobility, Streetscape and Parking Plan 1

8.1 MOBILITY PLAN ALTERNATIVE 1

8.1.1 Introduction

Main Street is the primary east-west linkage of transportation systems connecting residential neighborhoods located to the north and east with the downtown. Main Street also provides the most direct route for many residents to access I-5. The main issue facing residents of Ferndale is the perceived travel time due to the, at times, heavy traffic along Main Street. Ferndale is expected to grow in population over the next 17 years, adding approximately 7,000 new residents by 2036. In order to support this increased demand, an additional east-west corridor has been proposed on Thornton Street north of Ferndale to provide additional access to residential areas. Access on Thornton may serve as a viable alternative to reaching residential neighborhoods via Main Street. However, it is widely perceived that Main Street will continue to serve as the main thoroughfare for residents transitioning to and from I-5.

In order to create an economically thriving downtown, the study suggests enhancing a number of identified catalyst sites, as outlined in the Land Use Plan, while also connecting the existing park system via a series of new connecting trails. Fostering a more thriving downtown requires improvements that help to create a more pedestrian friendly, walkable downtown area that is attractive to prospective businesses, residents, and visitors to Ferndale. This can be accomplished by a concerted effort to slow the flow of traffic through downtown, thus creating safer conditions for pedestrians to access local businesses in a revitalized urban core.

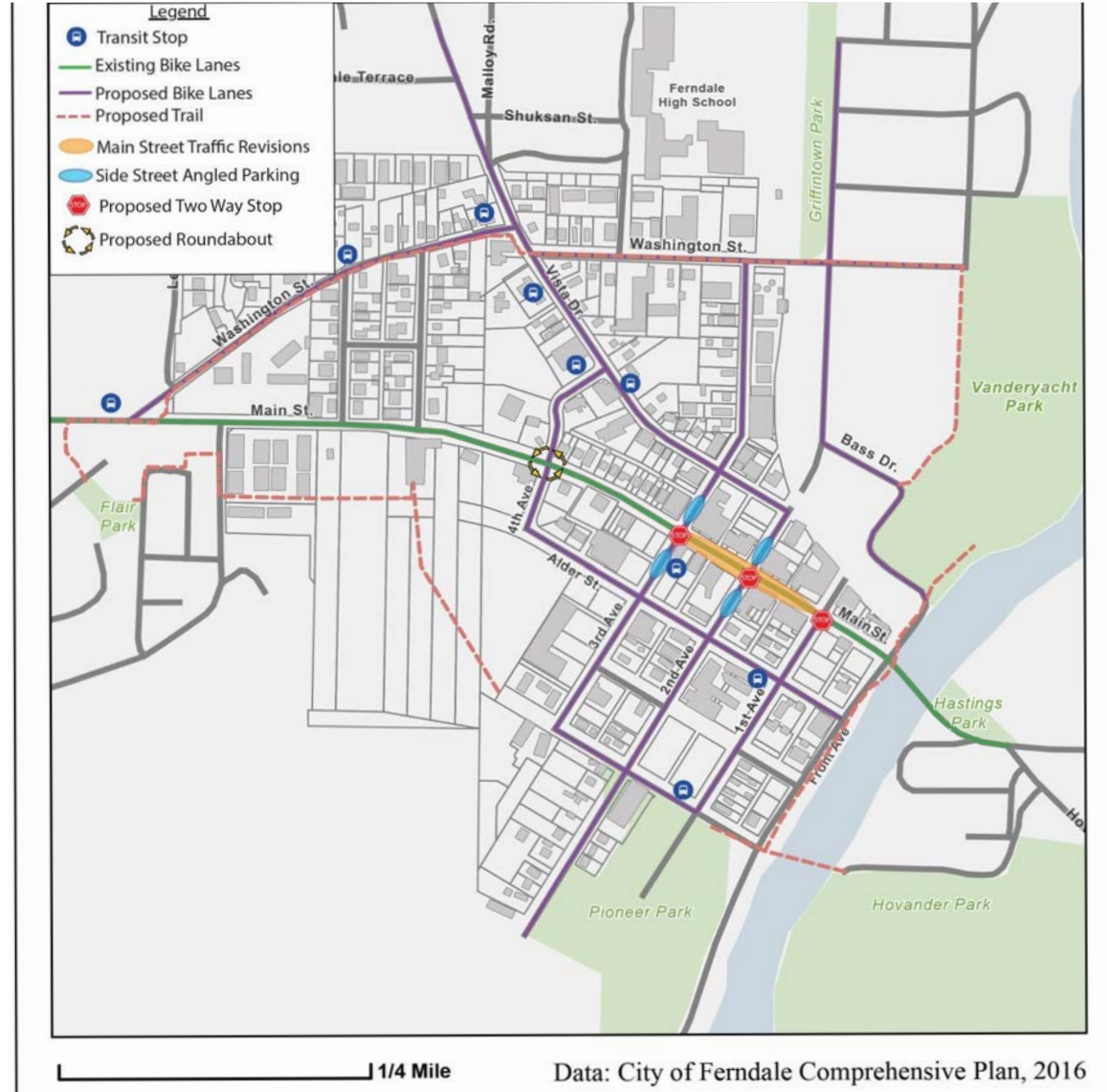


Figure 8.1 Mobility plan alternative 1

8.0 Mobility, Streetscape and Parking Plan 1

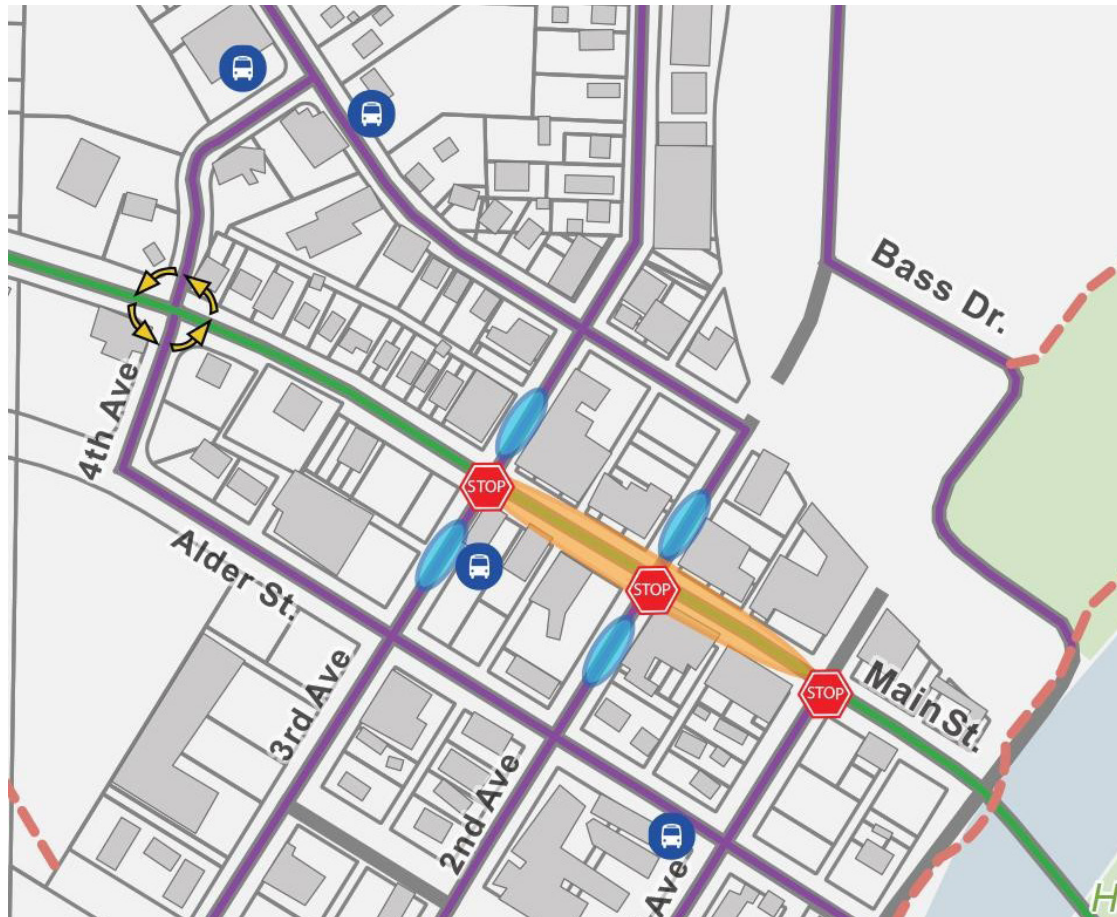


Figure 8.2 Proposed Downtown Traffic Revisions

8.1.3 Traffic Revisions

In order to facilitate the revitalization of downtown, the creation of a pedestrian-friendly, walkable downtown space that is safe for everyone is a prerequisite condition. To achieve this, the mobility plan alternative recommends two primary traffic revisions. The first revision is to change the vehicular traffic pattern along Ferndale's Main Street between 1st Avenue and 3rd Avenue. Second, the plan calls for a roundabout to be placed at Main Street and 4th Avenue. The recommended revisions to Main Street between 1st and 3rd Avenues include removing traffic signals and turn lanes. The purpose of removing traffic signals and turn lanes is to intentionally reduce vehicular traffic speeds through the downtown, by requiring vehicles to come to a full stop at these intersections. The replacement of traffic signals with two-way stops on cross streets will be added and Main Street will have the right-of-way. The plan further recommends the installation of traffic calming devices in the form of median islands in the center of the Main Street right of way, expanded sidewalk curbs to shorten pedestrian crossings, sidewalk expansions, and the provision of dedicated bike lanes. Each change suggested in the plan helps attain the goal for increasing a pedestrian-friendly space and slowing vehicle speed in the urban core.

The second revision proposed is the addition of a roundabout at 4th Avenue and Main Street. The roundabout serves as a mobility device that maintains the continuous flow of traffic while preventing vehicles from speeding into residential areas. The roundabout can also serve as a gateway landmark that identifies entry into the city center from the residential portion of the city to the west.

8.0 Mobility, Streetscape and Parking Plan 1

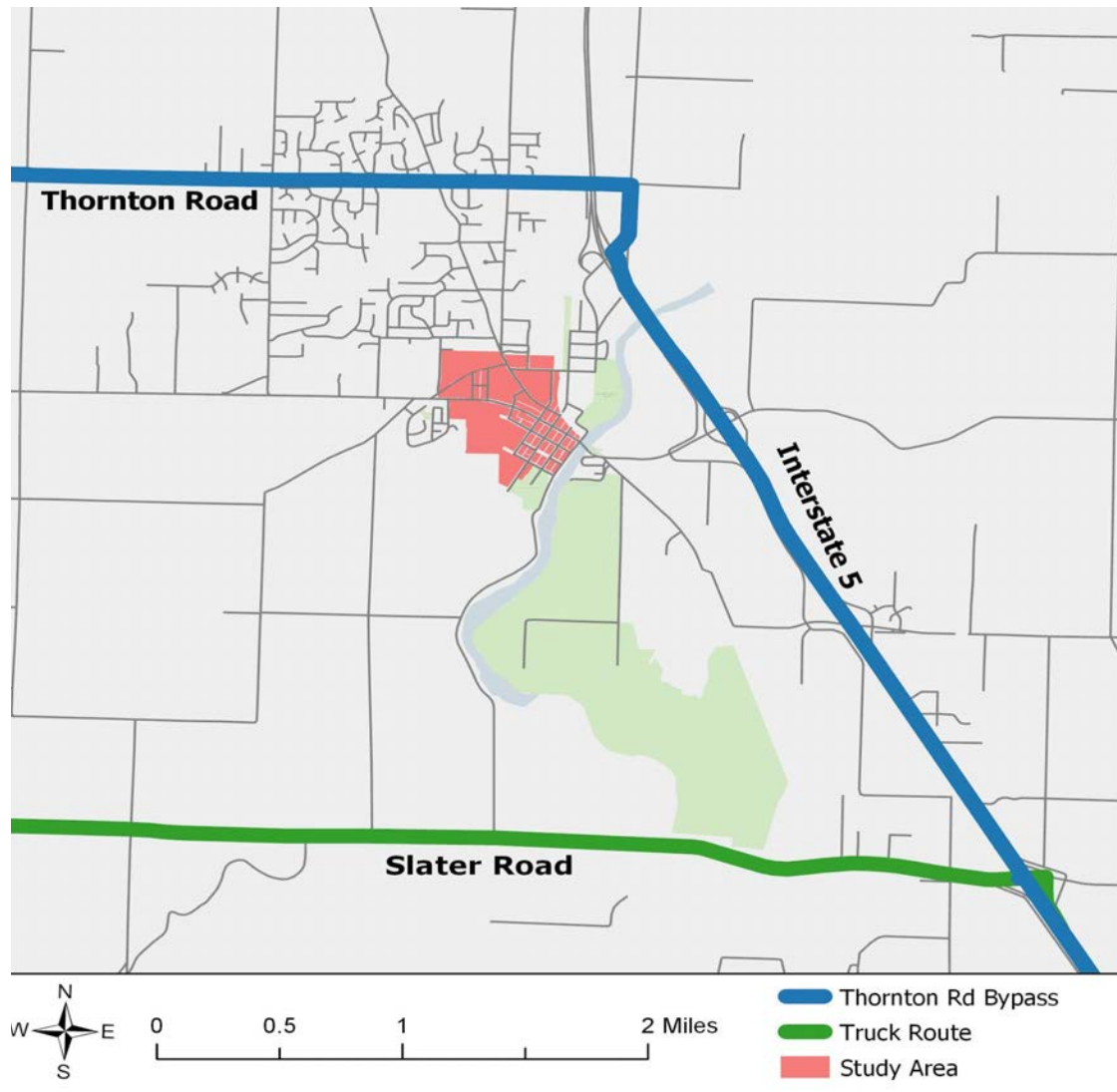


Figure 8.3 Alternative Transportation Routes to Bypass Main Street

8.1.4 Alternative Transportation Routes to Bypass Main Street

For the mobility plan to work effectively, the Thornton Road bypass and other identified truck routes are proposed, as shown in figure 8.3. If large commercial vehicles and a proportion of regional commuters avoid using the downtown as their main arterial, traffic can be significantly reduced. The presence of trucks continuously driving through a city's downtown creates noise and air pollution that reduces the pedestrian quality of the city center.

8.1.5 Parking Revisions

The current parking configuration in the downtown core consists of on-street parallel parking along Main Street, 2nd Avenue, and 3rd Avenue, while 1st Avenue provides for angled parking south of Main Street. Removal of turn lanes along side streets off Main Street (at 2nd and 3rd Avenues in particular) allows for current parallel parking spaces to be converted to angled parking, significantly increasing the number of parked cars that could be accommodated. Parking should also be redirected to the side streets, as vehicles transitioning from Main Street between 1st Avenue and 3rd Avenue will have the ability to turn right to access angled parking, or be routed to the roundabout on 4th Avenue to access parking located on the opposite side of Main Street.

8.1.6 Public Transit

There are three Whatcom Transit Authority (WTA) routes depicted available to Ferndale residents. These routes circulate from Route 27 to the Ferndale Transit Station and provide service to the downtown

8.0 Mobility, Streetscape and Parking Plan 1

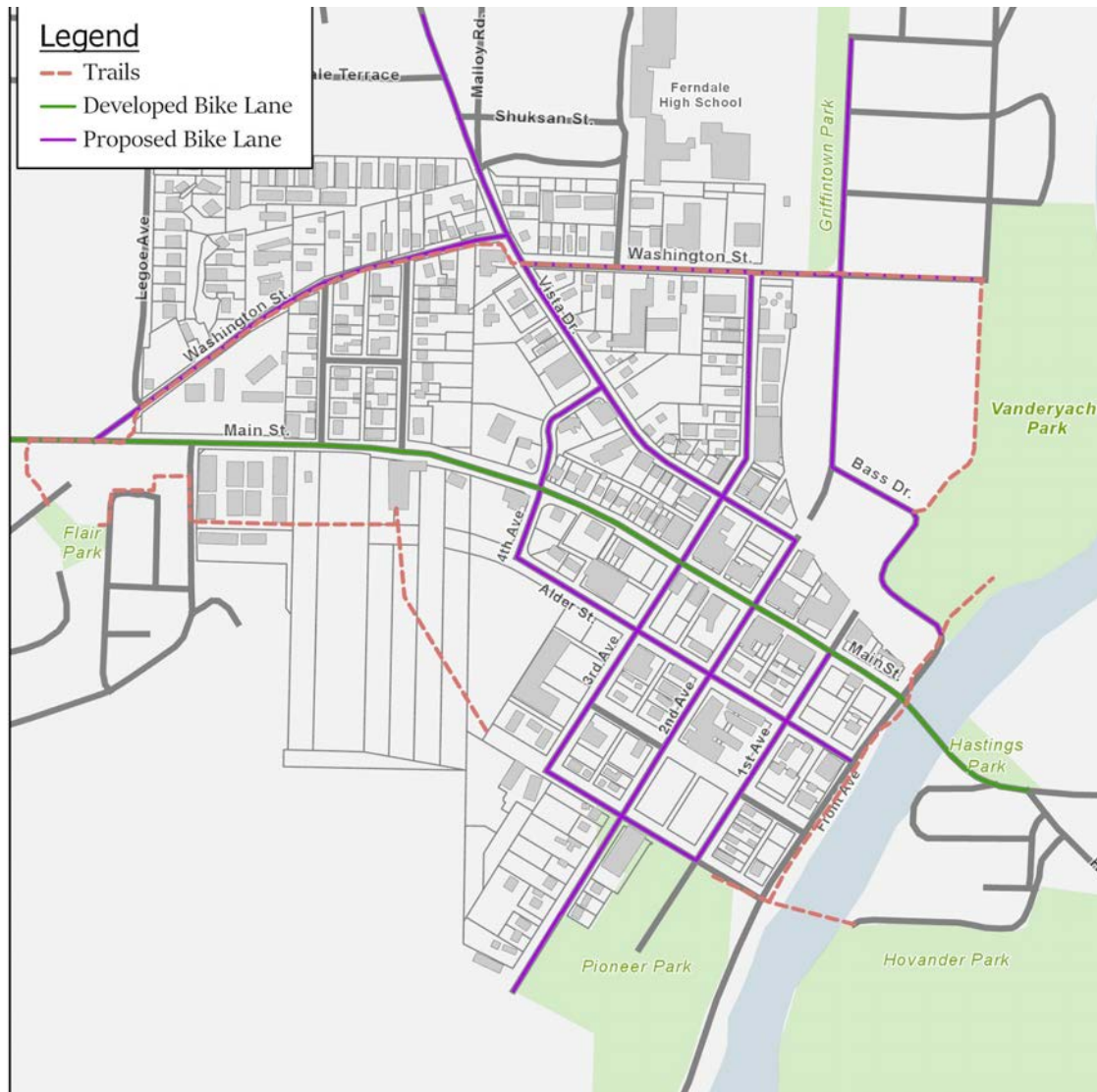


Figure 8.4: Depiction of Pedestrian and Bicycle Routes

vicinity and residential neighborhoods to the north. These routes can be seen in figure 8.4. Route 65 departs from the WTA Ferndale station onto I-5 going northeast to Nooksack. This route is used by individuals that are leaving the City of Ferndale and doesn't contribute to local service within the City of Ferndale.

The primary route that a majority of Ferndale residents depend on is Route 27. This transit route connects to the stop at WTA Ferndale Station. From the east side of the bridge, transit continues through Ferndale's downtown as it navigates into Ferndale's residential neighborhoods. This transit route provides connectivity between the outlying residential neighborhoods and the downtown and even provides a transportation transfer that allows passengers to access Route 65 or 75 depending on their destination.

Current transit routes should not be impacted by the mobility plan's recommendations. However, as the number of people living in the downtown core increases, and thus the public transit demand, WTA and the city should consider additional routes between downtown, the Ferndale Transit Station, as well as surrounding municipalities.

8.1.7 Multimodal Pathway

The goal of building more bicycle and pedestrian pathways is to increase connectivity between the downtown, the surrounding parks, the schools, the commercial retail center east of downtown, and other locations, as depicted in figure 8.5. These paths help increase accessibility for both pedestrians and bicyclists while reducing vehicular dependency.

8.0 Mobility, Streetscape and Parking Plan 1

The mobility plan proposes a pedestrian and cycling bridge crossing the river from Hovander Park to Pioneer Park. Eventually this trail could be extended to run parallel to the river to connect to the existing Centennial Riverwalk trail. There is currently a missing link with no safe pedestrian or bicycle access between VanderYacht Park and Centennial Riverwalk.

Additionally, the study proposes a network of trails that connect Pioneer Park to the Public Library, and a trail that connects the Public Library back to the existing sidewalk system, at the end of Cherry Street (near the intersection of Cherry Street and 3rd Avenue). This connection would provide the Central Elementary School and the Boys and Girls Club safe path access to the Public Library. This same trail system could be extended to connect Flair

Park to the locations mentioned above. The bike and pedestrian trail continues along Main Street to connect to Washington Street until it reaches VanderYacht Park.

8.1.8 Planning for a Better Downtown

The proposed traffic, parking, multimodal pathways, and street connectivity changes may impede the flow of traffic in downtown. However, with a more vibrant core facilitated through private development and public infrastructure investments, the perceived journey time may be more tolerable to commuters. Creating an extensive trail network will help draw people to the area, while maintaining a walkable environment in the expanded downtown.

Accompanying the various mobility recommendations, other sections of this report more specifically address recommendations for enhancing pedestrian uses of the public sphere, notably in the extension of sidewalks throughout the downtown and the promotion of business and social uses within the public right of way.

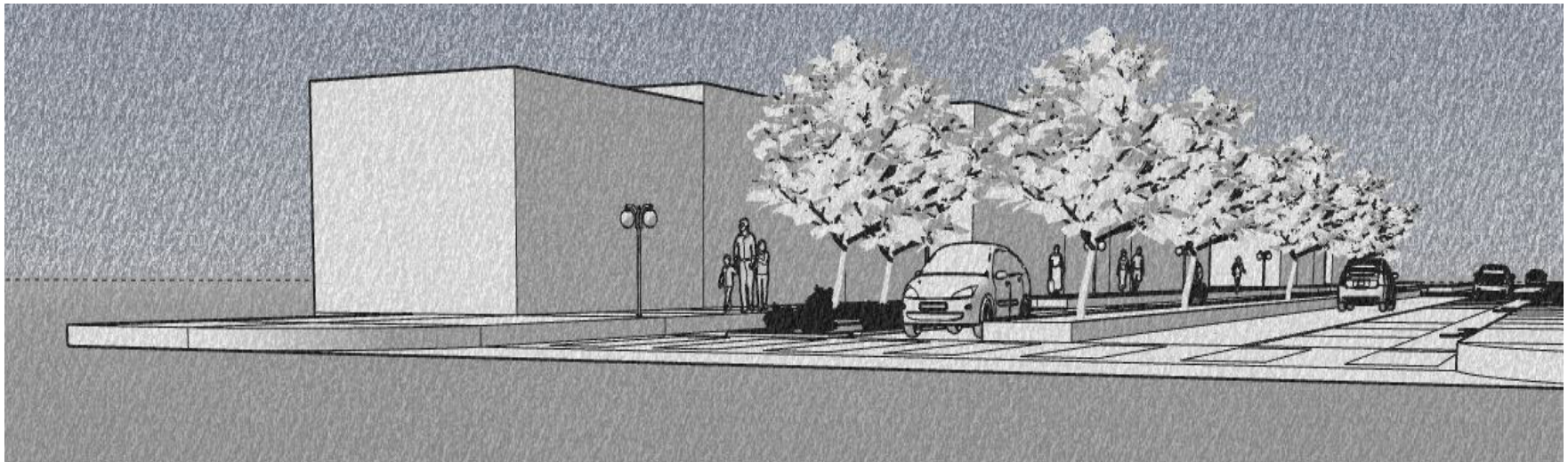


Figure 8.5 Model of the mobility plan

8.0 Mobility, Streetscape and Parking Plan 2

8.2 MOBILITY PLAN ALTERNATIVE 2

Mobility Alternative 2 aims to increase connectivity within the downtown area through the enhancement of the existing street network and the pedestrian sphere. This Mobility Alternative emphasizes the higher density land uses detailed in Land Use Alternative 2. The downtown area has some semblance of an existing street grid, but overall has limited connectivity within its boundaries and to surrounding areas. Large blocks north of Main Street, and a lack of sidewalks, does not allow for a pedestrian environment within the downtown area. Likewise, traffic is concentrated onto Main Street and causes congestion during peak hours. These issues result in limiting interaction among residents and visitors in the downtown. The transportation alternative map depicts four major improvement areas: 1) the Main Street Corridor, 2) the Main Street Bridge, 3) 2nd Street between Main and Vista Drive, and 4) the block north of Main Street between Washington Street and Vista Drive. Additional mobility improvements, including bike facilities, sidewalks, and pedestrian trails, are included within this section.

8.2.1 Street Network

These improvements are larger infrastructure projects and aim to reduce congestion along Main Street and increase connectivity to the north. Figure 8.1 shows the focus areas and improvements for the downtown street network. These improvements focus on automobile connectivity and traffic. Focus area one on the map proposes the reorientation and expansion of the existing Main Street bridge. The existing bridge can be reoriented to allow for three lanes of traffic. In conjunction with the bridge

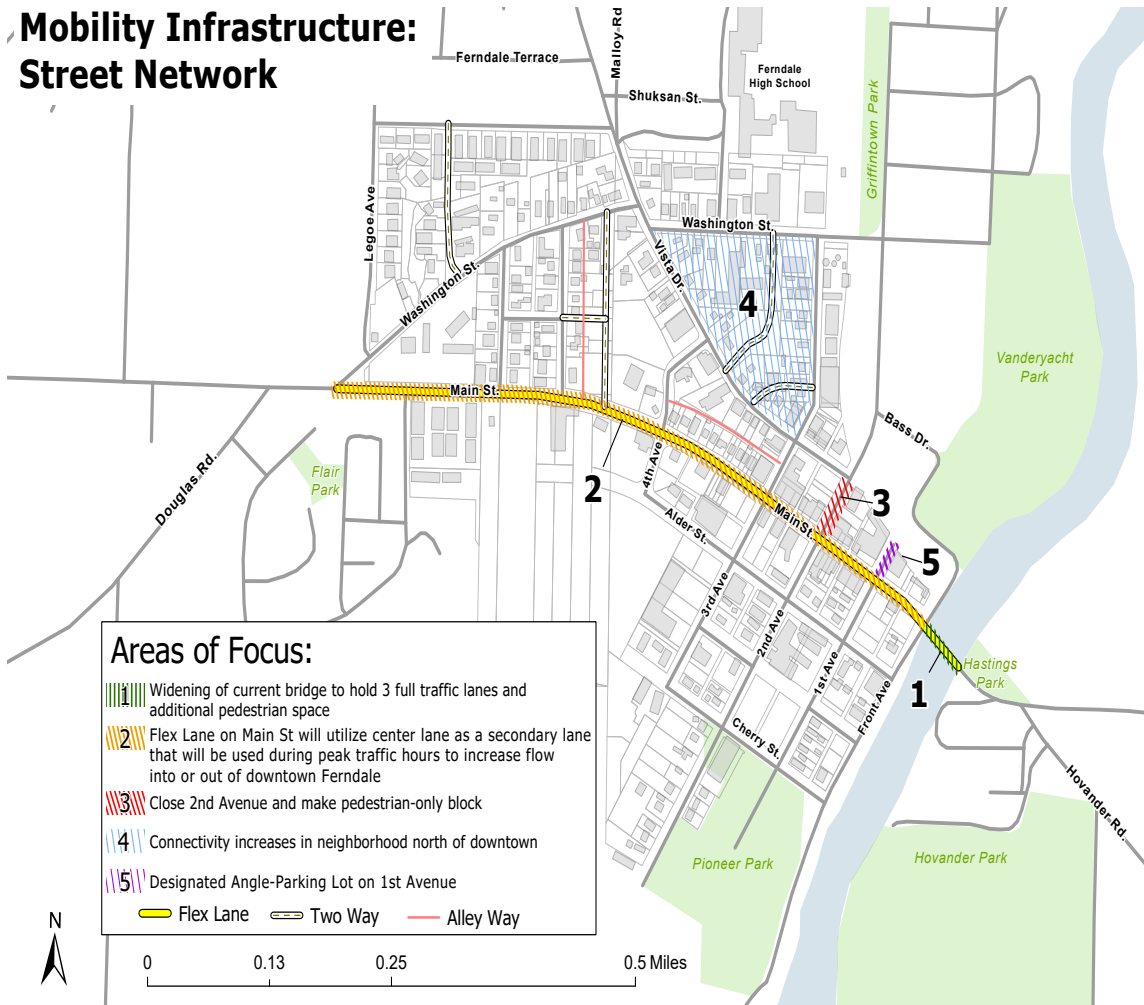


Figure 8.6 Street Network Focus Areas and Improvements

8.0 Mobility, Streetscape and Parking Plan 2

reconfiguration, the entirety of Main Street running through the downtown can be converted to three lanes. The middle lane can be converted to a “flux lane” which can alternate between westbound and eastbound traffic flow during peak hours. This should allow for a more continuous flow of traffic through the downtown area during peak hours. Signaled lights and additional signage can inform drivers of the flux lane’s direction.

The dashed white lines on the map represent proposed two-way streets. Although their placement on the map is somewhat arbitrary, their presence represents a need for increased pedestrian and automobile connectivity to the east and west of Vista Drive. These improvements have the potential to divide the current “mega-blocks” and allow for denser development within tighter block structures.

Along with these road improvements, the map also shows the location of potential alleyways. Focus area 4 is zoned commercial transition in Land Use Alternative 2. The up zone of this area does not match the existing streetscape and does not allow for higher density development. This was identified as a focus zone for the Mobility Alternative 2 because as density increases the street will likely have to be reconfigured to accommodate higher density and walkable infrastructure.

8.2.2 Bicycle and Pedestrian Network

Focus areas and improvement for the bicycle and pedestrian network are shown in Figure 8.2. The current sidewalk system throughout the downtown is incomplete. The proposed changes for sidewalk connectivity include completing all

existing sidewalks within the downtown (sidewalk improvements are highlighted in hashed dark blue on the map). A pedestrian trail system (hashed green line) can connect all existing and proposed parks within the downtown. There are two large improvements associated with the proposed pedestrian trail. The first is the expansion of the existing Main Street Bridge to accommodate larger pedestrian and bicycle friendly pathways on either side of the bridge. The second is a scenic boardwalk park through the wetlands in the southwest region of the study area. Several other pathways could be dispersed throughout downtown. These pathways could increase pedestrian connectivity and accessibility to shops, housing, recreational opportunities, and parks within the downtown.

Ferndale’s current bike lane runs down Main Street from 4th Avenue to the east side of the Main Street Bridge. The proposed bike facilities are lined in purple hashes on the map. Facilities can include major improvements including bike lanes (along arterials and major collectors) and smaller improvements such as bike boulevards along through streets. Increasing bike facilities can provide accessibility to alternative modes of transportation. Mobility Alternative 2 calls for bike lanes and sidewalks to extend to the shopping center on the east of the Nooksack River. These changes should increase non-automobile connectivity between existing shopping to the east and the downtown.

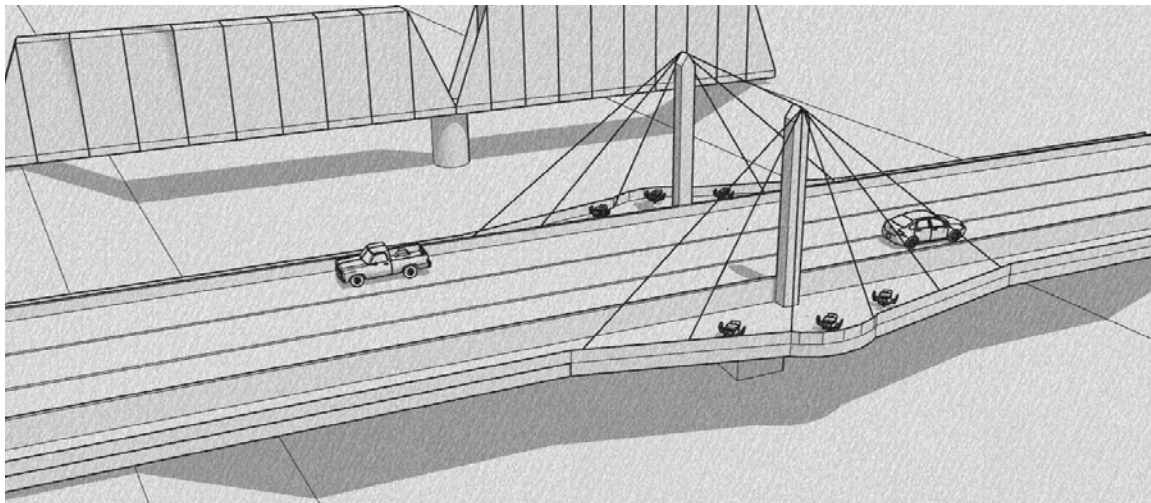


Figure 8.7 conceptual design for Main Street Bridge. Current bridge will be expanded for pedestrian lanes..

8.0 Mobility, Streetscape and Parking Plan 2



Figure 8.8 conceptual design for focus area 3

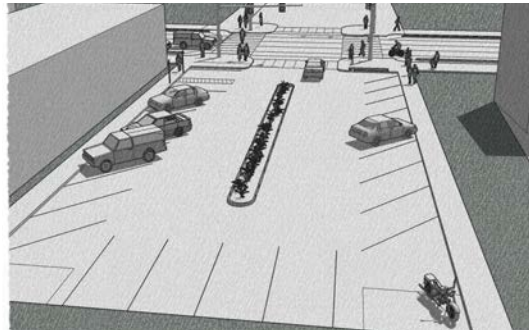


Figure 8.9 conceptual design for focus area 5



Figure 8.10 conceptual design for focus area 5

Mobility Infrastructure: Bicycle & Pedestrian

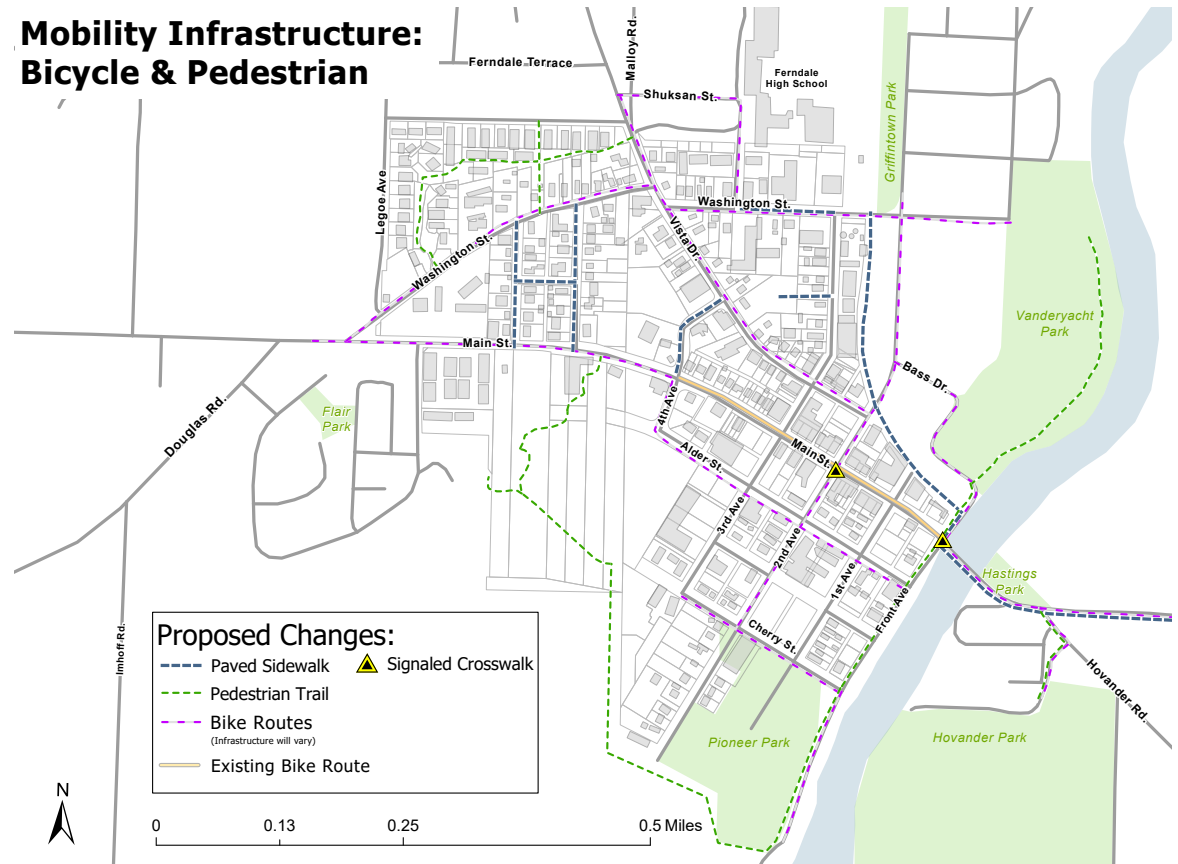


Figure 8.11 proposed Bike and Pedestrian Improvements

8.0 Mobility, Streetscape, and Parking Plan 3

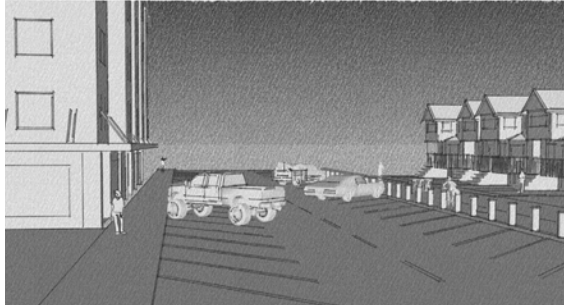


Figure 8.12 Alder Street view

8.3 MOBILITY ALTERNATIVE 3

8.3.1 Automobile Mobility

The recommendations regarding automobile traffic are to accommodate for the congestion concerns along Main Street. The plan aims to address this congestion by creating a westbound one-way for Main Street, and an eastbound one-way for Alder Street. This recommendation requires extending Alder Street over the Nooksack River for automobiles exiting town. The reconfiguration of traffic flows would include a roundabout at the junction of Hovander Road and Main Street.

To decrease poor visibility at the intersection of Washington Street and 2nd Avenue, the plan recommends limiting access to those streets. Utilization of Willard Street and Portal Way will allow drivers to access VanderYacht Park from both Washington Street and 2nd Avenue. In the interest of extending the grid network of downtown, the plan recommends continuing 1st and 2nd Avenues across the railroad tracks. However, it is recognized that negotiating with the railroad company may prevent the accomplishment of this recommendation.

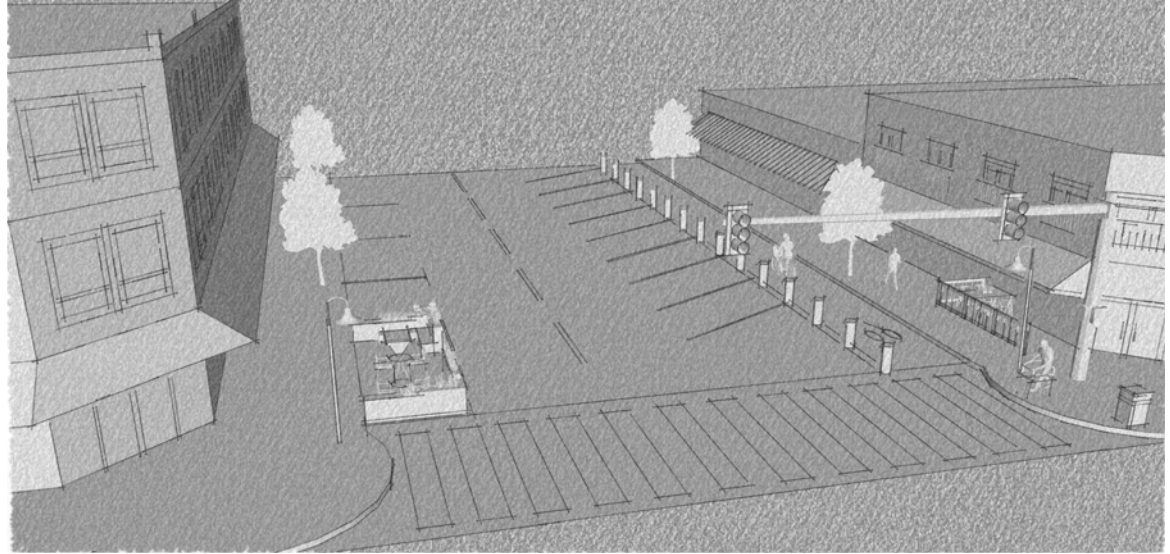


Figure 8.13 Main Street view

8.3.2. Bicycle and Pedestrian Mobility

In an effort to better serve cyclists and pedestrians, it is recommended that the city establish pathways by extending the trails and sidewalk networks. The plan shows the creation of a cycling and pedestrian loop through the study area that incorporates existing parks and bike lanes. Other recommendations include the addition of a boardwalk from Pioneer Park to the Ferndale Public Library, and the extension of Riverwalk Park under Main Street to connect with VanderYacht Park. To extend the park network to the east side of the Nooksack River, a pedestrian and cycling bridge is recommended to run between Pioneer Park to Hovander Park.

8.0 Mobility, Streetscape, and Parking Plan 3

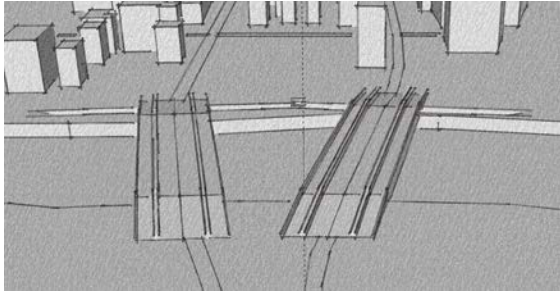


Figure 8.14 Alder and Main Street Bridges



Figure 8.15 Main Street and 4th Avenue proposed roundabout

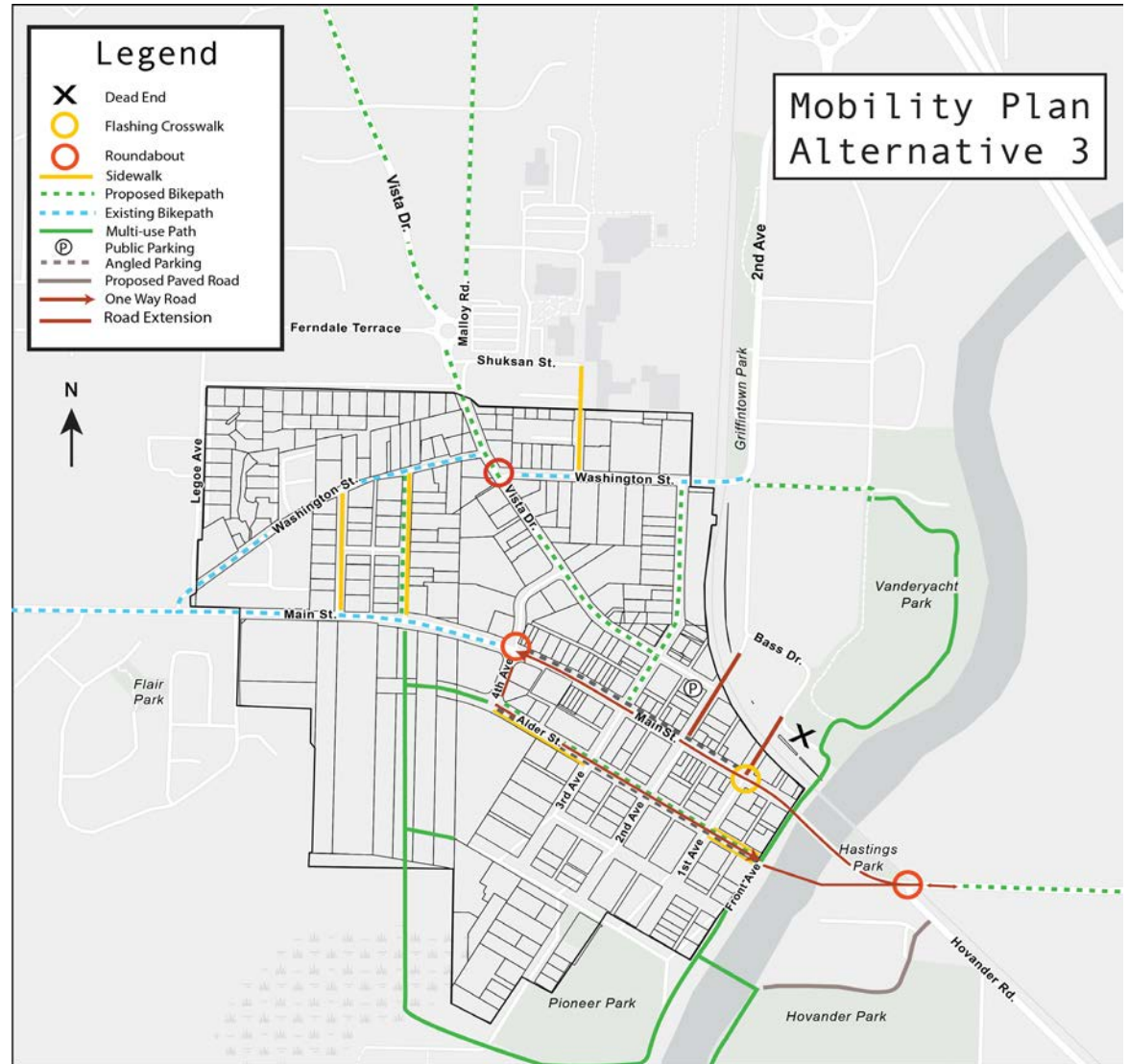


Figure 8.16 Mobility Alternative Map

9.0 Parks, Plazas, and Public Sphere

9.1 PARKS AND TRAILS

9.1.1 Current Parks and Trails

Ferndale residents currently have access to a large park system including Pioneer, VanderYacht, and Whatcom County's Hovander Park. These major parks are close to the downtown and provide residents with over 30 acres of open space for recreation within the downtown, along with 346 acres of county park land across the river. All of the parks offer great outdoor recreation on their own but are constrained by limited connectivity. Many of the parks in the downtown area are home to open fields and small trails. Although 70% of Ferndale's population is within a 10 minute walk of a park, a recent street skate park was removed, and the city continues to lack public spaces for informal recreational activities. Ferndale has a projected population increase of 2,000 people over the next 10 years and its current population is comprised of a high percentage of children and young adults. Many parks are accessible by car but lack safe routes for walking or cycling. Skating enthusiasts cannot depend on access to Bellingham's parks as a



Figure 9.1 Pioneer Park

bus from Ferndale to Bellingham's skate park takes an hour and twenty minutes. Currently, many of the parks offer trail systems but few are paved to offer bicyclists the opportunity to use them.

The trail systems extend approximately one and a half miles, all within existing park boundaries. Connectivity between these trails is limited and ends abruptly at park boundaries or requires pedestrians or cyclists to use narrow sidewalks or roadsides.

9.1.2 Potential for Parks and Trails

With ample public open space available to the downtown, the development of a coordinated trail system that improves connectivity between the existing parks, neighborhoods, and the downtown is identified as a top priority. This would increase access to and utility of existing park amenities.

9.1.3 Park and Trail Improvements

Improving connectivity between parks is a major recommendation of this study. As currently constructed, the park system in Ferndale lacks easy connectivity by walking or biking. The addition of multi use trails that avoid vehicular traffic would create a safer and quicker experience in accessing the various parks. Recommendations for the development of multi-use trails include a trail connection between VanderYacht Park and Pioneer Park by incorporating a tunnel that would traverse underneath Main Street to connect VanderYacht Park to the Centennial Riverwalk Park. This trail would continue south to Pioneer Park by using the current Riverwalk and extend the path along the dike adjacent to Front Avenue.



Figure 9.2 Example of a Rhododendron Garden

The addition of park improvements could also attract more visitors. The development of a community garden at VanderYacht Park would encourage more users to actively participate in gardening activities. A similar approach is envisioned for Pioneer Park where the southwestern portion of the park, which is currently a field, could be converted into a rhododendron and sculpture park. The addition of these features would make each park unique and provide more choices in visiting the parks.

A pedestrian bridge crossing the Nooksack River to connect Pioneer Park to Hovander Park would provide easy access for pedestrians and cyclists to traverse between the two parks. As it stands, one would have to walk across the Main Street bridge to reach the other park, a journey of about a mile. A pedestrian bridge connecting the two parks would provide quicker travel time as well as provide a scenic view of the Nooksack River.

A raised boardwalk between Pioneer Park and Ferndale Library could be an effective connecting

9.0 Parks, Plazas, and Public Sphere



Figure 9.3 Possible location for boardwalk leaving from the Ferndale Library

route between these two locations. The boardwalk should be designed with a minimum width of 10 feet in order to accommodate both cyclists and pedestrians safely. It would extend from the south side of the Ferndale Library parking lot to the parking lot at Pioneer Park. Connecting the boardwalk to Alder Street and Cherry Street would add other connecting links for pedestrians and cyclists.

Ensuring that pedestrians and cyclists can reach these parks and trails requires the installation of new bike lanes and sidewalks. Bike lanes on Vista Drive, Maloy Road, and 3rd Ave. would improve safe routes for cyclists destined for the downtown. Sidewalks on Golden Eagle Drive, Hamlin Avenue, and Sterling Avenue would provide pedestrians a safer walking route to VanderYacht Park as well as to the library.

Providing features for active recreational activities, such as a skate park, are beneficial for a community for a variety of reasons. First, skateparks provide a safe environment for skateboarding. The availability

Table 9.1 Length of proposed improvements to parks and trails

MULTI-USE TRAIL	
DISTANCE	TRAIL ADDITION/IMPROVEMENT LOCATION
12,071 Ft.	Total Loop West of Nooksack River. Vanderyacht → Pioneer Park → Downtown
1,932 Ft.	Pave gravel portion of Vanderyacht trail
1,062 Ft.	Extension of Riverwalk trail to Pioneer Park
1,920 Ft.	Repave of Pioneer Park trail
5,380 Ft.	Repave Hovander Park trail
1,816 Ft.	Construction of a pedestrian boardwalk from Pioneer Park to Ferndale Library through wetland area.
TUNNEL	
DISTANCE	IMPROVEMENT LOCATION
80 Ft.	Tunnel under Main, East of Nooksack River for connection of trails from Pioneer Park, Riverwalk Park, & Vanderyacht Park.
PEDESTRIAN BRIDGE	
DISTANCE	IMPROVEMENT LOCATION
325 Ft.	Connecting Cherry St. to Hovander Park

of space designated and designed for skating reduces injuries related to falls on irregular surfaces as well as reducing collisions with pedestrians or motorists. It also reduces damage to private or public property and liability costs to the city and property owners. “If a town doesn’t have a skate park, it is one” (Crizer 2013). Providing an adequate park will reduce the instances of youth who resort to skating whatever terrain they have available. Skate parks also have a positive economic impact on a community as people who wouldn’t normally visit are drawn in from outlying communities. Finally, skating is a gratifying form of physical activity and

providing this space is a practical way for future generations to curb sedentary activities and spend more time outside.

9.2 PLAZAS

9.2.1 Current Plazas

The city utilizes several parks to hold community events throughout the year. The Centennial Plaza adjoining the Riverfront Park and Main Street is used between June-October for the Ferndale Farmers Market, while Pioneer Park hosts popular

9.0 Parks, Plazas, and Public Sphere



Figure 9.7 Example of outdoor restaurant seating

community events including the Christmas Bazaar, Halloween Trick-or-Treating, and Old Settlers Weekend. These spaces provide residents an opportunity to gather with friends, family, and neighbors, but since these events occur only occasionally, it is important to also provide public spaces for everyday socialization in the downtown. This can be achieved through the addition of streetscape features like parklets, benches, and other outdoor seating. Some restaurants on and surrounding Main Street, including Leader Block & Chihuahua's, offer outdoor dining, but the general consensus from the community workshop indicated that the downtown generally lacks inviting streetscape features.

9.2.2 Proposed Improvements

To encourage greater community gathering and socializing, several recommendations are presented for enhancing streetscape features in the downtown.



Figure 9.4 Possible community garden at VanderYacht Park

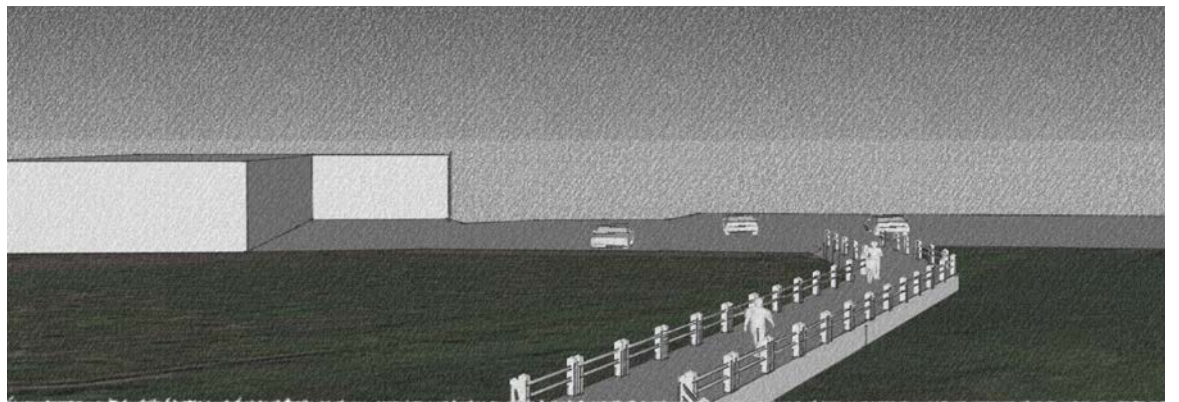


Figure 9.5 Boardwalk leading to the Ferndale Library

9.0 Parks, Plazas, and Public Sphere

9.2.3 Main Street Plaza

The city can implement a variety of improvements within the downtown to provide spaces where residents can gather and socialize. Widening sidewalks and building out street corners increases accessibility, and creates room for public benches, spill out restaurant seating, bike racks, planters, and other amenities. These additions would improve the overall aesthetic quality of the downtown, making it a more attractive place to spend time. Residents have also expressed interest in improving the continuity of the markets at the Riverwalk. Ensuring consistent event dates and times would help establish the events as part of the culture of Ferndale.

9.3 PEDESTRIAN SPACE

9.3.1 Pedestrian Space Defined

Quality pedestrian spaces serve everyone: pedestrians, bicyclists, transit riders, and drivers, and consider the needs of people with disabilities, older people, and children (McCann). The idea of pedestrian space in relation to this section is synonymous with “streetscape: the utility of the downtown streets and their periphery. The pedestrian space ethos contained in this plan is one that views streets not only as places for vehicular and pedestrian transport but as recreational spaces and settings for active and passive social behavior. Pedestrian space includes myriad environmental and infrastructural elements, including roadways, bike lanes, sidewalks, crosswalks, outdoor seating, street trees and other green infrastructure, street furniture, and pocket parks.

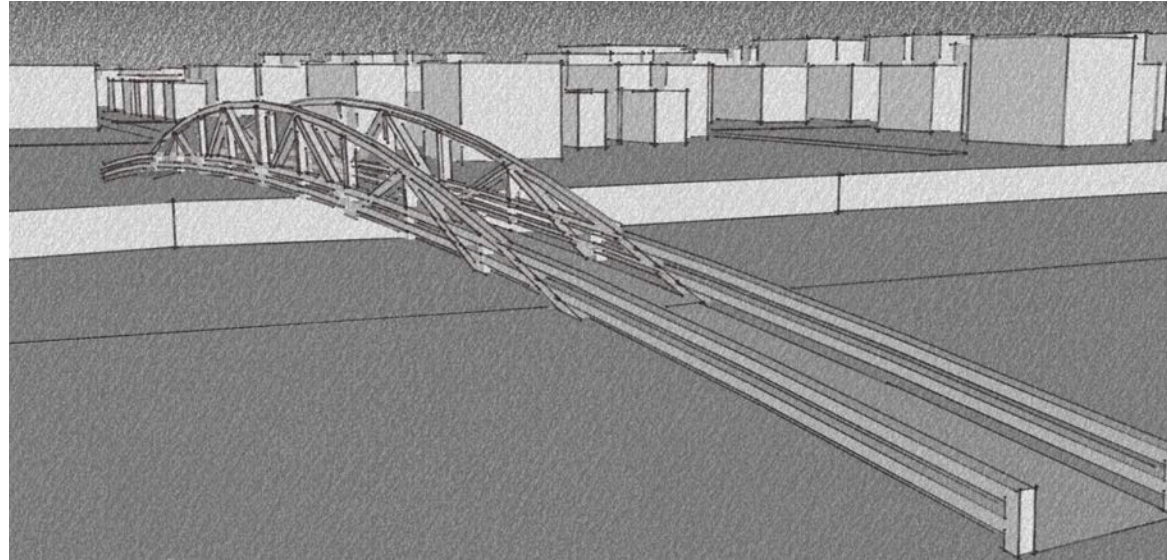


Figure 9.6 Pedestrian Bridge connecting Pioneer Park to Hovander Park

9.3.2 Current Pedestrian Space

Ferndale’s downtown core is particularly auto-centric. The presence of narrow (≤ 6 feet wide) and limited sidewalks, wide streets, various drive through services with vehicular curb cuts, a surplus of parking opportunities, and virtually no trees or other incorporated vegetation provide a less than inviting environment for pedestrians. This auto-centric infrastructure reduces opportunities for recreation, and negatively impacts pedestrian safety and perceived well-being in the downtown. Ferndale’s downtown is not currently a space that serves everyone.

9.3.3 Potential Pedestrian Space

Downtown Ferndale has the opportunity for introducing a more recreationally friendly pedestrian streetscape. The commercial core and surrounding areas have the potential to become a recreational hub. It could be a space that is a place to recreate while also being a place that connects to other surrounding recreational opportunities such as institutional facilities, parks, and open space. An increase in pedestrian traffic can benefit and encourage active uses such as retail, cafes, restaurants, residential, and offices (Duong). Ferndale’s downtown has the potential to become a place where pedestrians seek out recreation, where the community can congregate, and where residents can feel comfortable.

9.0 Parks, Plazas, and Public Sphere

9.3.4 Pedestrian Space Improvements

Consistent with improvements mentioned in the parks and trails section, a prioritized improvement the city can implement is widening its sidewalks. Increased sidewalk width, from ≤ 6 feet to anywhere between 10 - 16 feet, and bulging out sidewalk corners throughout the downtown, can introduce opportunities for further environmental and infrastructural pedestrian improvements. Those improvements should include pedestrian amenities such as street trees, landscaping, outdoor patio seating for businesses, street furniture and seating, bus shelters, trash receptacles, sidewalk displays, bicycle racks, bicycle repair stations, and pedestrian lighting. Increasing sidewalk space and incorporating these amenities better balances the use of street spaces in the downtown. This can provide development opportunities for place-making, including food trucks, breweries, cafes, farmers markets, fitness equipment, performance venues, arts, movie nights, dog parks, and community gardens (Duong).

9.4 WAYFINDING

9.4.1 Current

Ferndale has few examples of wayfinding around the City Center to guide visitors to and through the city. Currently, Ferndale has some signage for its parks, such as the sign for Pioneer Park before the Main Street bridge. However these signs are only for single locations and don't provide any additional information beyond the direction to the destination.

Additionally, there are roundabout signs at the Portal Way / I- 5 exit that the Department of



Figure 9.8 An example of current wayfinding

Transportation has placed, indicating the on/off ramps to I- 5, as well as the direction of the City Center and Thornton Street.

In 2017, the Port of Bellingham provided Ferndale with a \$10,000 grant to improve wayfinding in the city and there are plans for wayfinding improvements in the future. Thus far, signage to Pioneer Park provides visitors with the directions to Pioneer Village, Star Park, Pioneer Pavilion, the senior center, the Phillips 66 Ballfields and to the City Hall.

9.4.2 Potential

There are several important destinations that proposed wayfinding signs should identify in order for visitors to successfully navigate through Ferndale's City Center. These destinations include:

- Pioneer Park
- VanderYacht Park
- Centennial Riverwalk
- Hovander Homestead Park
- Ferndale High School
- Central Elementary School
- I-5 Northbound and Southbound
- Public Parking
- Library
- City Hall
- Municipal Court

Additionally, there are important destinations for pedestrians as well as the proposed city trails discussed in the mobility plan. These pedestrian-oriented destinations include:

- Ferndale High School
- Central Elementary School
- Main Street
- 2nd Avenue
- Vista Drive
- Centennial Riverwalk Park Trails
- VanderYacht Park Trails
- Pioneer Park Trails
- Hovander Homestead Park Trails
- Library

9.4.3 Recommended Improvements

The city can benefit from increased wayfinding in the downtown area. Community members made

9.0 Parks, Plazas, and Public Sphere

this very clear during the comment portion of the community workshop. Several locations that need wayfinding were identified. With the proposed trail system, increased wayfinding to the different paths will be necessary. Other locations that require increased wayfinding include public parking locations, and public buildings in the downtown. Certain recommended improvements such as new roundabouts will also require comprehensive wayfinding signage. Signage should also be located at each junction between proposed trails that indicate directions to destinations. A map of the downtown would help visitors to navigate among the city's facilities and businesses.

9.4.4 Approaches Into and Around Ferndale

Furthermore, there has been an identified need for better access to the city. Slater Road provides access to Ferndale from the south, particularly the industrial areas at Cherry Point and Ferndale's neighborhoods. However, at I- 5 Exit 260 for Slater Road, there exists no signage for Ferndale. One recommendation is to establish signage for Ferndale for semi trucks and passenger cars trying to reach the industrial areas and outer neighborhoods as a bypass away from the downtown and Main Street. This would alleviate traffic in the City Center. Vehicles would exit I- 5 at exit 260 (see site 1, Figure 9.10), following Slater Road to Imhoff Road, Mountain View Road, and reaching Main Street west of downtown. This would provide an alternate access route to the downtown as well as provide a bypass of the downtown. This could be signed as the 'Ferndale Bypass' so residents become familiar with the route. At Exit 260 a sign for Ferndale via Slater Road would alert drivers that Ferndale is accessible from this exit. Approaching Imhoff Road (site 2) at

2.5 miles, additional signage should direct drives toward Ferndale.

From Imhoff Road to Douglas Road (site 3), signage should be placed directing drivers to turn right for Ferndale and left for Mountain View Road.

At the stoplight intersection of Douglas Road and Main Street (site 4), there should be a sign reiterating: "Mountain View Road/Industrial Right" and "Downtown/City Center Left." At site 1 at Exit 260, there would need to be exit signs for Ferndale in addition to the current Slater Road and Lummi Island signs to alert drivers that Ferndale is accessible from this exit as well as from exit 262.

9.5 SAFE SCHOOL ROUTES

9.5.1 Current

In creating a pedestrian friendly downtown, the City of Ferndale has the ability to encourage a greater number of students to walk and bike to school. Safe walking routes to school aim to bring more activity into students' every day lives. With the increase in population Ferndale is expecting, safe access for pedestrians, and especially students, needs to be considered. As the alternative 3 mobility plan proposes, turning Alder Street and Main Street into one-way roads, widening sidewalks and improving safety with bike lanes will create a safer environment for students walking to schools.

9.5.2 Potential

Cities can create safe walking routes to schools in multiple ways. The Washington State Department of Transportation (WSDOT) has a Safe Routes to School program in which they partner with local

agencies to provide funding and technical assistance to create more pedestrian-friendly roads. If Ferndale does not utilize the Safe Routes program there are alternatives. Ferndale could implement traffic calming infrastructure to create roads that better accommodate pedestrians, in particular, those roads approaching schools. There are a number of methods that can be implemented to create safe walking routes to schools including: speed displays, high visibility crosswalks, crosswalk flags, bike lanes, curb extensions, raised intersections/ crosswalks and one-way streets.

9.5.3 Improvements

The alternative 3 mobility plan suggests incorporating several of these cited methods. The pedestrian section above also provides additional detail on the benefits of improving pedestrian spaces. Central Elementary School would require the greatest number of infrastructure improvements because these students are more vulnerable to automobile related accidents. Several residents at the community workshop mentioned the lack of adequate infrastructure for children going to and from Central Elementary School and the Public Library, so these recommendations focus specifically on that route. Ferndale High School and Vista Middle School should also implement several of these methods on approaching roads.

Listed below are infrastructure recommendations that could create safer walking routes to the elementary, middle, and high schools.

9.0 Parks, Plazas, and Public Sphere

Central Elementary School:

- Continuation of sidewalk on Alder Street east of the school to reach Riverwalk Park
- Raised crosswalks where 2nd Avenue, 3rd Avenue and 4th Avenue cross Main Street
- Re-painting of crosswalks where 3rd Avenue and 1st Avenue meet Alder Street
- Crosswalk flags at the meeting of 1st Avenue, 2nd Avenue, and Alder Street
- Crosswalk from Alder Street to proposed boardwalk to reach library entrance
- Speed humps on 4th Avenue before it turns into Alder Street

Ferndale High School:

- Continuation of sidewalk on Golden Eagle Drive
- Flashing crosswalk at entrance of high school

Vista Middle School:

- Speed displays approaching the school



Figure 9.9 Raised crosswalk to provide safer crossing for children

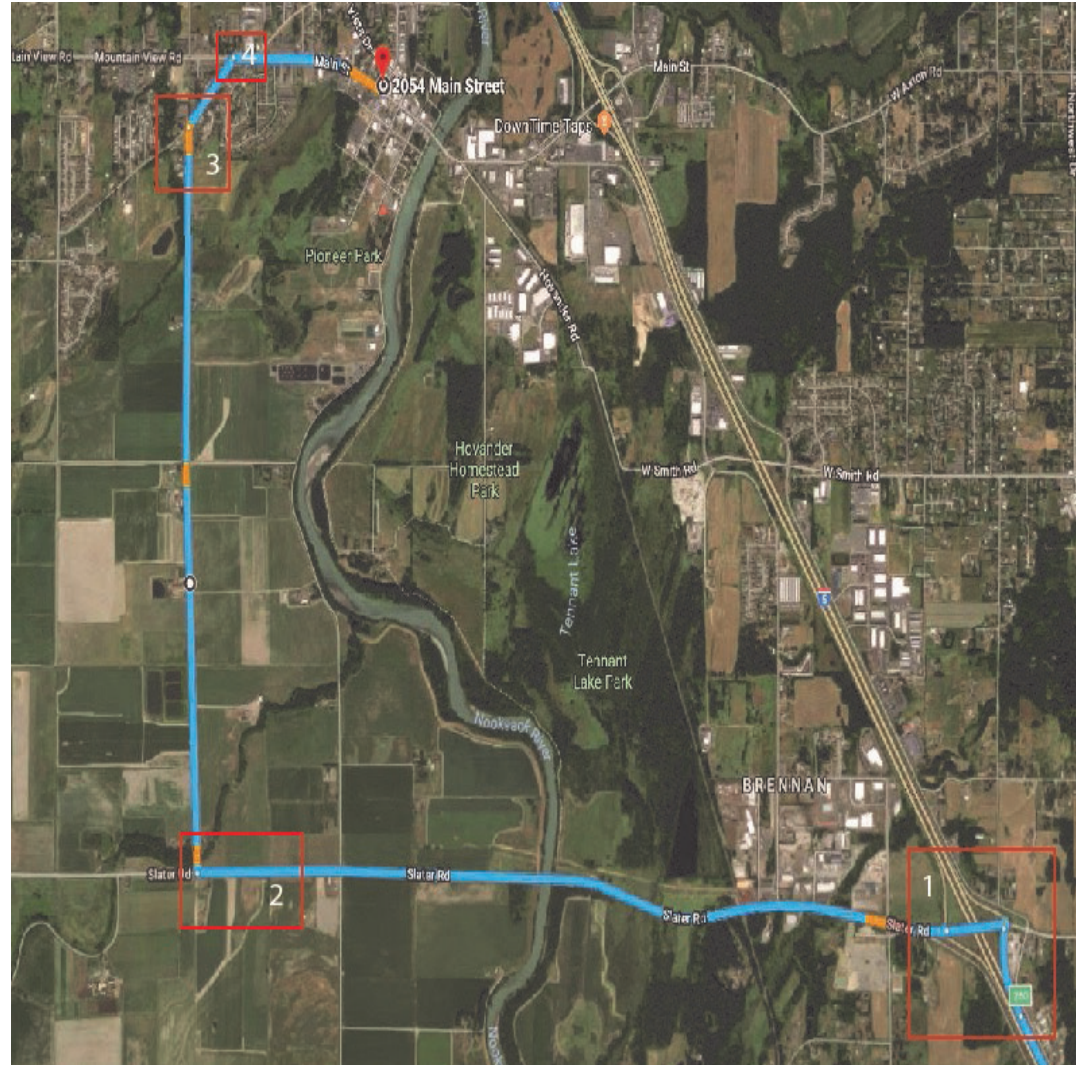


Figure 9.10 Route via Slater Road to access Ferndale

9.0 Parks, Plazas, and Public Sphere

Table 9.2 List of Improvements for Safe walking to Ferndale Schools

LOCATION	ISSUE	SUGGESTION	JUSTIFICATION
Crosswalks at Alder Street and 1st & 2nd Avenue	Lack of signage	Install flag poles for students.	Crosswalks near entrances of school should be clearly marked. Having a flag holder at each corner of the intersection allows students to carry a flag in any direction they go.
4th Avenue on the south side of Main Street	Fast automobile traffic moving towards Alder Street	Create a raised speed hump on 4th Avenue after crossing Main Street to slow cars for the corner.	Speed humps as you approach the corner of 4th Avenue and Alder Street
Crosswalks where 1st, 2nd and 3rd Avenue meet Alder Street	Inadequate paint job	Re-paint crosswalks preferably with a bright color.	Currently, the paint on these sidewalks is not complete. Adding stripes helps with driver visibility.
Sidewalk on Alder Street east of the Elementary School	Lack of sidewalk	Create sidewalk continuity to reach Riverwalk Park.	The block bordered by Main Street, 1st Avenue, Alder Street and the Riverwalk Park has the potential to be a great pedestrian-oriented plaza. There should be adequate accessibility for pedestrians/students.
Golden Eagle Drive	Lack of sidewalk/crosswalk outside of Ferndale High School	Create a raised sidewalk across from main entrance of high school. Complete sidewalk on at least one side of Golden Eagle Drive.	This would ensure pedestrian friendly roads adjacent to schools.
Vista Drive	No traffic calming infrastructure other than roundabout	Add a speed display sign after passing Ebir Drive when heading north to Vista Middle School.	This would serve as a reminder for drivers that there is a school zone coming up.
Alder Street	Lack of protection for pedestrians (students)	Add bike lanes.	This helps to create an extra buffer for pedestrians on the sidewalk.

10.0 Environmental Resources and Hazards

10.1 ENHANCEMENT PLAN

The greater Ferndale area has numerous natural resources that are valuable assets to the community. As part of the downtown Ferndale redevelopment study, it is important to identify and capitalize on these resources to ensure that the community has full access to the amenities that these resources provide. The primary natural resources in relation to downtown Ferndale include the viewsheds of Mount Baker, the Nooksack River, and surrounding wetlands.

10.1.1 Mount Baker

Mount Baker is a significant landmark on the horizon east of downtown Ferndale, the scenic view of which may be partially blocked to maximize density and fully utilize vertical space. Views of Mount Baker will benefit redevelopment projects by increasing property values and making dense vertical development in the urban core more attractive to potential buyers and/or renters. The City of Ferndale should consider building height and design restrictions to protect this natural scenic resource while encouraging denser infill development. The current applicable design standards for buildings heights in Ferndale are displayed in table 10.1.

There are a variety of ways the city could regulate view protection while allowing maximum building heights that encourage dense vertical infill development. Factors such as proposed site designs and building orientations should be considered. Scenic viewsheds can also be identified using a zoning overlay map to encourage developers to address the mitigation of potential view impacts.

Table 10.1 Applicable building heights

Zoning Designation	Maximum Allowed Building Height
Multifamily Dwelling Units	70 feet
Urban Residential Zone	55 feet
Mixed Use Commercial District	45 feet
City Center Zone	70 feet

10.1.2 Nooksack River

The Nooksack River is a cherished and well-utilized resource in the Ferndale community. It provides significant environmental and aesthetic value and a variety of opportunities for recreation, but it also creates challenges for development occurring within its proximity due to the intermittent risk of flooding. There are improvements that can be made along the Nooksack channel which would serve to both mitigate flooding and enhance the amenities offered by this important natural resource.

The City of Ferndale has already taken efforts to increase public access to the river along VanderYacht and Centennial Riverwalk on the west side of the Nooksack, and Hovander Park on the East. Much of the river lacks dense, buffering vegetation which could better serve to slow the movement of water during floods, as well as create shade to enhance conditions for fish habitat. Fish provide a source of recreation, are crucial part of this healthy ecosystem, and are a shared resource with the neighboring Lummi Nation. There are several species of salmon that utilize the Nooksack

River in addition to steelhead, mountain whitefish, and bull trout. All of these species are important to the health of the river ecosystem. The fish are also important to preserve because the Lummi Nation has treaty guaranteed fishing rights. Fishing is open to the public from September 1st to December 31st during most years. A popular fishing spot and boat launch is just south of downtown Ferndale near Hovander Park.

10.1.3 Wetlands

Wetlands are areas of land that are covered in water under normal conditions. Wetlands have an ecosystem with numerous plant and animal species that are unique to them. Ferndale has many regulated wetland areas which should be preserved for future generations. Wetlands are a valuable natural resource which provide a variety of services including, but not limited to, flood control, native plant habitat, fisheries habitat, recreation, and water purification. A primary benefit of wetlands is that they hold storm water. Just one acre of wetland can store up to one million gallons of water.

Partnership with Lummi Nation

The Lummi Nation has existing programs in place to preserve wetlands in Whatcom County. One of these programs is the Lummi Nation Wetland and Habitat Mitigation Bank. The City of Ferndale is within the service area of this mitigation project, as the Nooksack River runs through the city (see figure 10.1). The Wetland and Habitat Mitigation Bank is a program that assesses wetlands before a development takes place. After the assessment, the program mitigates for potential ecological damage, prior to the development. According to the

10.0 Environmental Resources and Hazards

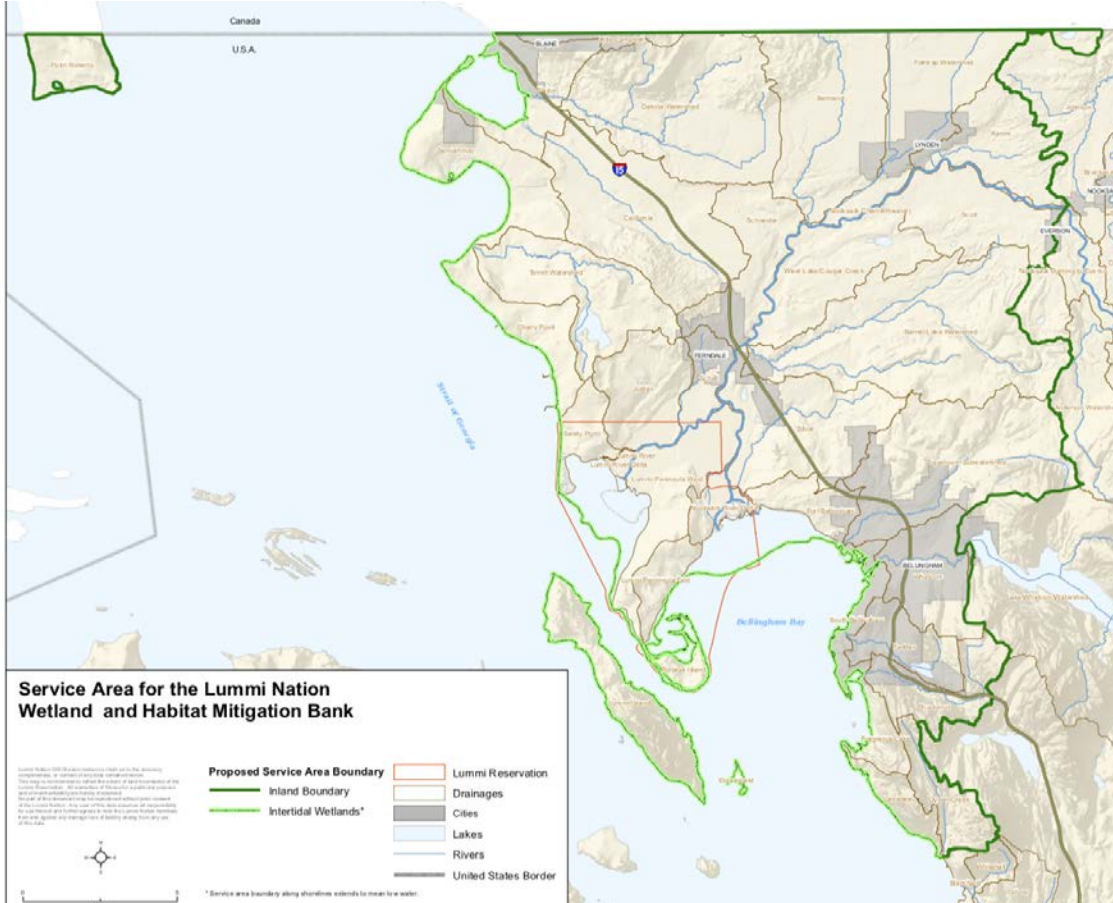


Figure 10.1: Service Area for Lummi Nation Wetland and Habitat Mitigation Bank

Environmental Protection Agency, mitigation banks are more effective than smaller, dispersed wetland mitigation efforts.

10.2 HAZARDS MITIGATION PLAN

10.2.1 Hazards Overview

Natural hazards are weather related or geological events that negatively impact human activities. Some examples of hazards are floods, earthquakes, and windstorms. Without proper precautions, these events can destroy property, roads, utility lines, hospitals, parks, and many more types of important infrastructure as well as threaten lives. Fortunately, there are strategies that can be used to reduce the negative effects of hazards. The following section provides a brief overview of the types of hazards that Ferndale has experienced or is at risk of experiencing.

Based on the information gathered from the community workshop and research results, the primary hazards that should be considered for the development of downtown Ferndale are flooding and earthquakes. Though there are several more hazards which pose risks to the greater Ferndale area, as seen in figure 10.2, many of these hazards pose lesser risks to the downtown. For the sake of ensuring the most productive use of research time in determining the best management and mitigation practices for downtown Ferndale, the focus will be on those hazards which pose the highest risks to the community.

10.2.2 Earthquakes

The Juan de Fuca tectonic plate runs alongside the coast of the Pacific Northwest. The movement of

10.0 Environmental Resources and Hazards

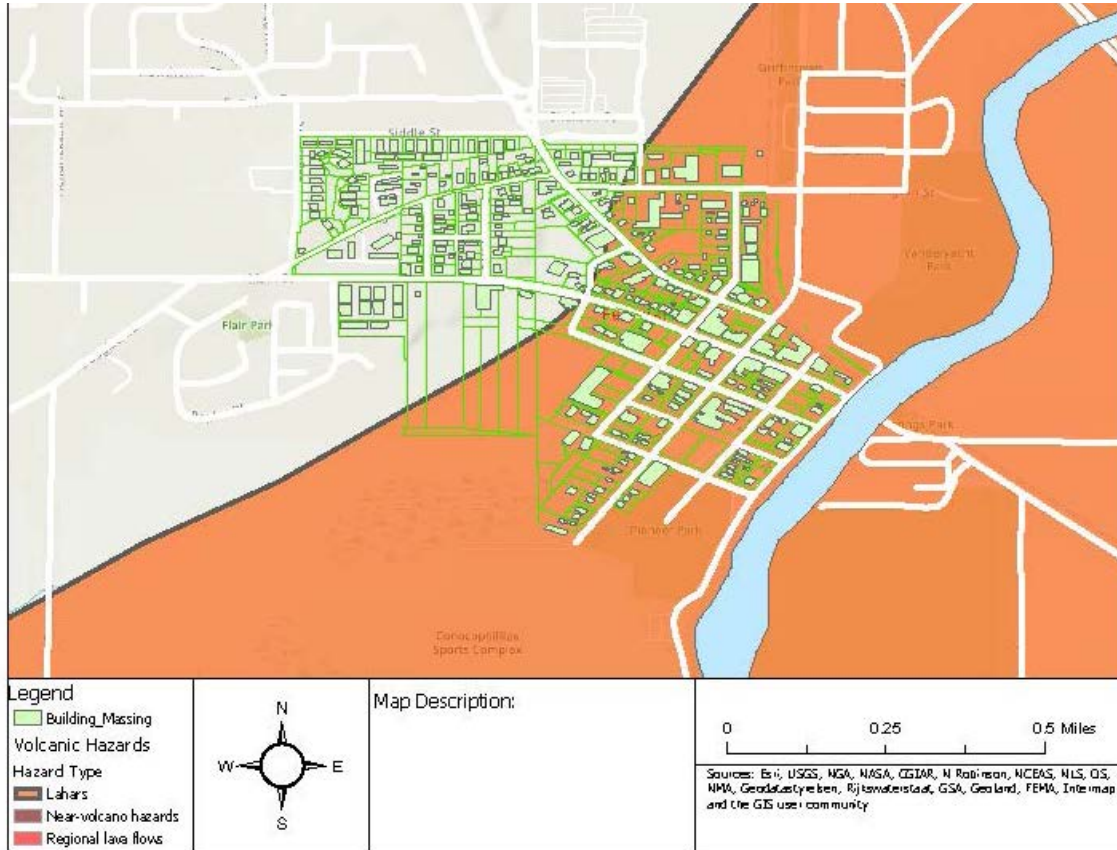


Figure 10.2 Ferndale Volcano Risk Map

the plates causes ground shaking which can damage property as well as disrupt roads, water pipes, gas lines, power plants, and other utilities. Although earthquakes are infrequent, they pose serious risks to Pacific Northwest communities. Earthquakes are unpredictable. It is important for buildings to be up to current structural standards so that impacts are as minimal as possible.

A secondary effect of earthquakes is liquefaction, which is of relatively high concern in Ferndale. Liquefaction is when loose, wet, soils are shaken by an earthquake and become nearly liquid. This is of concern to Ferndale because liquefaction most commonly occurs near rivers and coastlines.

The seismic soil classification of Ferndale is shown in Figure 10.2. A seismic soil classification helps to measure how much ground shaking will occur during an earthquake on a given type of soil. The classification of soil in downtown Ferndale is primarily C-D and D-E. These soil types make moderate to severe ground shaking a high likelihood during an earthquake.

10.2.3 Flooding

Flooding is amongst the most frequent natural hazards affecting Whatcom County. Late fall and winter floods are characterized by sharp rises in flow resulting from consecutive days of heavy rainfall. Continuous rainfall contributes to soil over saturation and the inability to retain excess water buildup and runoff. Flooding is the hazard that poses the greatest challenge for the revitalization of the downtown. Although floods pose little risk to human safety, they are the most common recurring hazard that can cause damage to property and infrastructure.

The extent of the flood zone poses a challenge to the study area, as many of the catalyst sites for development are within the floodplain and will need to incorporate flood mitigation techniques. During the community workshop, many community members expressed concerns regarding the effect of flooding on transportation in the region, especially along Slater Road. Improvements should be made to improve drainage around this area. There are a number of ways to ensure that the built environment is able to withstand typical flooding events. These measures include flood insurance, wet flood proofing, and elevation.

10.0 Environmental Resources and Hazards

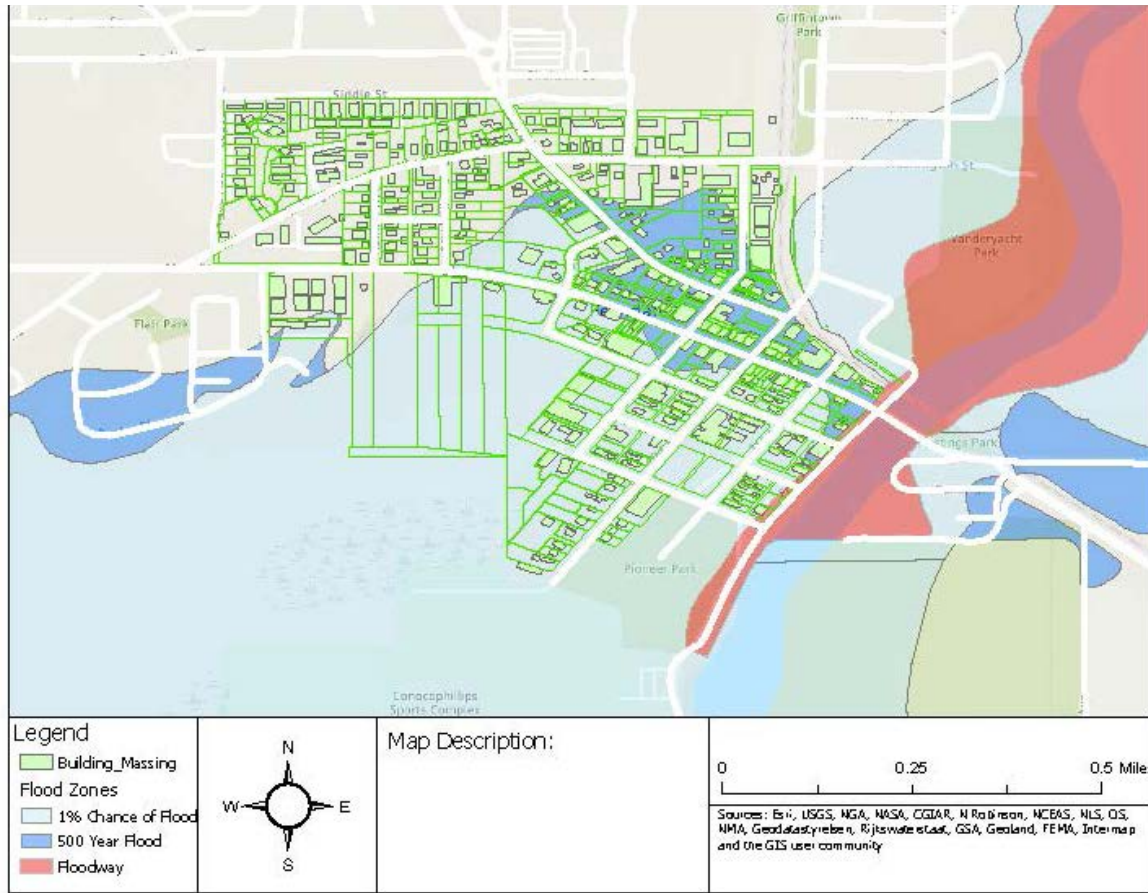


Figure 10.3 Ferndale Flood Map

10.2.4 Severe Storms

Severe storms encompass a wide range of severe weather, including but not limited to thunderstorms, high winds, freezing rain, and storm surge. Severe storms can be expensive as well as dangerous,

causing damage to transportation infrastructure, utility lines, and structures. Loss of power and heating can be especially dangerous during winter, especially for children or elderly people.

10.2.5 Volcanoes

Ferndale sits approximately 36 miles from Mount Baker, which marks the horizon east of the Nooksack river. Mount Baker is an active volcano and continues to pose serious risks to the communities that live along the Nooksack basin including Ferndale. An eruption would bring a massive flow of melted snow, mud, and ash down the mountain along the river, in an event known as a lahar.

10.2.6 Wildfire

Wildfire is a hazard that poses growing risks to life and property, and is of most concern to homes near forested areas in the Ferndale area. Wildfire also poses risks to timber, wildlife and habitat, and increases the risk of landslides and flooding.

10.2.7 Flood Mitigation Strategies

Flood mitigation includes all techniques which can be used in order to reduce damages from flooding events, through both built physical techniques and policy. The National Flood Insurance Program serves a key role in providing insurance to property owners and encouraging communities to implement other flood mitigation strategies.

Community Rating System Program

Ferndale is already participating in the Community Rating System (CRS) through the National Flood Insurance Program, which provides private entities in the floodplain with access to discounts on flood insurance of up to 15%. FEMA currently requires owners to purchase flood insurance, and Ferndale should continue to pursue the flood mitigation tactics suggested by the Community Rating System to help alleviate the extra cost of building in a

10.0 Environmental Resources and Hazards

critical flood risk area.

Wet flood proofing

Wet flood proofing mitigation techniques are intended to reduce the impacts of flooding by allowing for water to move through a structure in a controlled manner. Types of wet flood proofing include flood vents, protecting/raising utilities, and using flood resistant building materials. An example of what flood vents can look like is shown in Figure 10.3. Flood vents are installed in the foundation of residential or commercial structures that are at risk of flooding. The purpose of these vents is to prevent pressure build-up from floodwaters that can damage walls and foundations. Instead, the water is allowed to flow freely in and out of the crawlspace or basement area.



Figure 10.4 Flood Vents

Elevation

Building elevation is an effective, albeit costly, option for flood mitigation. Areas in the floodplain with slow moving water can potentially accommodate engineering and construction methods that keep living and/or commercial spaces out of flood water altogether. Examples of these types of construction could be a reinforced soft story for parking underneath the residencies themselves or a raised structure with empty storage space below.

10.2.8 Earthquake Mitigation Strategies

All new developments since the adoption of the International Building Code standards in 2000 must adhere to stricter development standards which account for seismic shaking. Even with these stricter standards, earthquakes still pose significant risks

to downtown Ferndale. The majority of buildings were constructed well before this benchmark year. The community expressed a desire to preserve the historic brick buildings in the downtown area. These buildings will require some seismic retrofitting in order to withstand a high magnitude earthquake.

Increase Community Awareness

A key component of earthquake preparedness is community awareness of earthquake risks. At the community workshop, some residents expressed that they did not know much about Ferndale's earthquake risk.

Retrofit Unreinforced Masonry Buildings

Many of the older buildings in downtown have unreinforced brick masonry, often on parapets, chimneys, and walls. These structures are in danger of falling off and injuring pedestrians and building occupants during an earthquake. Retrofitting these structures involves bracing and anchoring the unsecured masonry.

Protect Critical Facilities

Critical facilities include electrical power facilities, wastewater treatment plants, roads, water, hospitals, and many more. Protecting critical facilities is crucial because without them, the community cannot function and cannot begin to recover from an earthquake. Community members expressed concern for the safety of Ferndale's wastewater treatment plant. Protecting these facilities can include shutoff valves, backup generators, evacuation plans, and retrofitting bridges.

11.0 Capital Facilities and Transportation Improvements

11.1 Introduction

Capital facilities and transportation improvements listed below represent improvements recommended under each of the three plan alternatives. The tables describe the improvement project type, its location, the schematic details, and an estimated price. Each project corresponds to the alternative land use and mobility plan recommendations. The projects identified herein will be further evaluated for feasibility in the spring studio course during spring quarter that focuses on plan implementation.

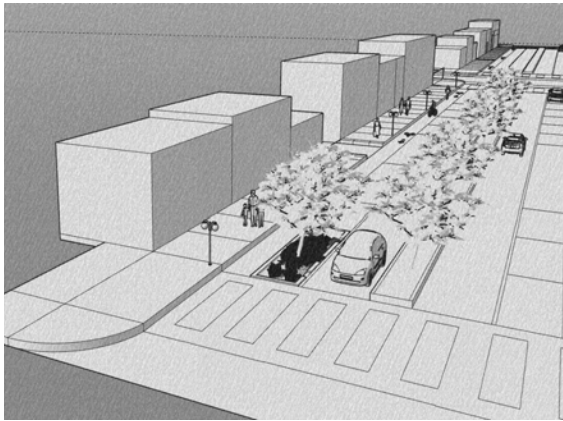


Figure 11.1 Model of raised median and other capital facility plans

Table 11.1 Land Use and Mobility Plan Alternative 1 Improvements

Project	Location	Schematics	Estimated Price
Roundabout	Main Street and 4th Avenue	N/A	\$85,000
Pedestrian Bridge	East Cherry Street to Hovander Park	325 ft	\$6,000,000
Pedestrian Boardwalk	West Cherry Street to Ferndale Library and Correll Drive	465 ft	\$465,000
Raised Median	Main Street from 1st Avenue to 3rd Avenue	600 ft long 6 ft wide	\$26,000
Pedestrian Platform	Underneath Main Street bridge	N/A	N/A
Sidewalk	Washington Street	2,800 ft	\$90,000
Trail	Washington Street to Bass Drive	1,000 ft (0.19 Miles)	\$91,000
Trail	Boardwalk to Correll Drive	225 ft (0.04 Miles)	\$19,000
Trail	Correll Drive to Flair Park	500 ft (0.1 Miles)	\$48,000
Trail	Flair Park to Washington Street	500 ft (0.1 Miles)	\$48,000
Bike Lane (one side)	Vista Drive	1,700+ ft (0.32 Miles)	\$43,000
Bike Lane (one side)	Washington Street	4,000 ft (0.76 Miles)	\$101,000
Bike Lane (one side)	Bass Drive	1,700 ft (0.32 Miles)	\$43,000
Bike Lane (one side)	4th Avenue	850 ft (0.16 Miles)	\$21,000
Bike Lane (one side)	3rd Avenue	2,200 ft (0.42 Miles)	\$56,000
Bike Lane (one side)	2nd Avenue	2,200 ft (0.42 Miles)	\$56,000
Bike Lane (one side)	First Avenue	1,100 ft (0.21 Miles)	\$30,000
Bike Lane (one side)	Alder Street	1,500 ft (0.28 Miles)	\$37,000
Bike Lane (one side)	Cherry Street	1,000 ft (0.19 Miles)	\$25,000
Addition of Park/Plaza Space	Catalyst site 1	35,000 square feet	N/A
Angled Parking	2nd Avenue 1 Block North and South of Main Street	N/A	N/A
Angled Parking	3rd Avenue 1 Block North and South of Main Street	N/A	N/A

11.0 Capital Facilities and Transportation Improvements

Table 11.2 Land Use and Mobility Plan Alternative 2 Improvements

Project	Location	Schematics	Estimated Price
Flex lanes	Main Street	3500 ft.	N/A
Pedestrian Bridge Expansion	Main Street Bridge	3 traffic lanes Additional pedestrian space	N/A
Pedestrian ZONE	2nd Street North of	35 ft.	N/A
Bike Lane	Main Street between Riverside drive and 1st	1550 ft.	\$39,000
Bike Lane	Bass Dr. between Main and Washington	2100 ft.	\$52,500
Bike Lane	Washington Street	4,000 ft (0.76 Miles)	\$101,000
Bike Lane	Main Street-4th-Alder	4,000 ft	\$101,000
Bike Lane	Cherry - 2nd - Bass Dr.	2,000 ft.	\$50,500
Bike Lane	Vista Dr - Shuksan St. between 2nd and Washington	3,500 ft.	\$88,000
Signal Crosswalk x2	1st and Main Street 3rd and Main Street	N/A	\$20,000
Paved Sidewalk	Main Street between Riverside drive and 1st	1550 ft.	\$50,000
Paved Sidewalk	Between 1st and Washington	1800 ft.	\$58,000
Paved Sidewalk	On fourth Ave. between Main St. and Vista Dr.	500 ft.	\$16,000
Paved Sidewalk	Hamlin Ave. between Main and Washington	640 ft.	\$20,000
Paved Sidewalk	Sterling Ave. between Main and Washington	760 ft.	\$24,000
Paved Sidewalk	Connecting street between Hamlin and Sterling	320 ft.	\$10,000
Trail/Boardwalk	Linking	5000 ft	\$5,000,000
Trail	Between Legoe Ave. and Washington St.	2000 ft.	\$183,000
Alley Restoration	Between Main and Vista	630 ft	N/A
Ally Restoration	Between Sterling and Vista Drive	850 ft.	N/A
Parking	1st street (North of Main)	N/A	N/A
Two way	North of Washington St. between Legoe and Vista	1000 ft.	N/A

Two way	Connecting Sterling as well as Main and Washington	1100 ft.	N/A
Two way	Connecting Vista to Washington (Improvement site 4)	720 ft.	N/A
Two way	Connecting Vista to 3rd Ave. (Site 4)	400 ft.	N/A

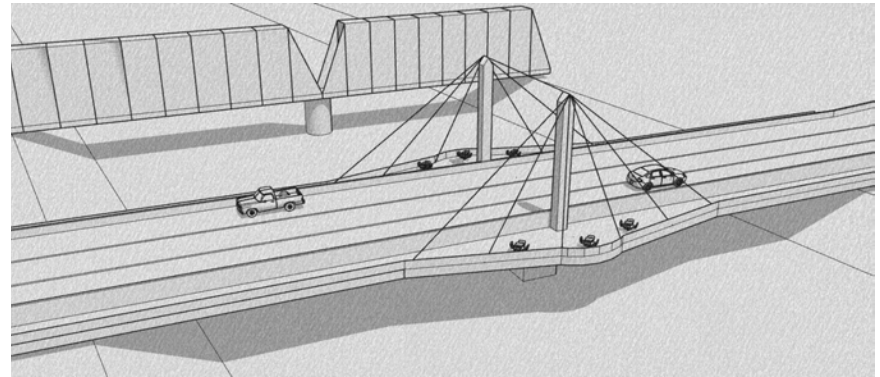


Figure 11.2 Model of bridge expansion

11.0 Capital Facilities and Transportation Improvements

Table 11.3 Land Use and Mobility Plan Alternative 3 Improvements

Project	Location	Schematics	Estimated Price
Pedestrian Bridge	Cherry Street to Hovander Park	325 ft.	\$6,000,000
Roundabout	Vista Drive and Washington Street	N/A	\$85,000
Roundabout	Main Street and 4th Avenue	N/A	\$85,000
Roundabout	Main Street and Hovander Road	N/A	\$85,000
Flashing Crosswalk	Main Street and First Avenue	60 ft.	\$22,000
Sidewalk	Both Sides of Hamlin Avenue	1,100 ft.	\$35,200
Sidewalk	Both Sides of Sterling Avenue	1,400 ft.	\$44,800
Sidewalk	Both Sides of Golden Eagle Drive	1,080 ft.	\$34,560
Pedestrian Tunnel	Under Main Street	80 Ft.	N/A
Pave Road	Nooksack River Access Road	1,100 ft.	N/A
Road Extension	First Avenue	180 ft	N/A
Road Extension	Second Avenue	250 ft.	N/A
Bike Lane	Alder Street	1,500 ft. (0.28 Miles)	\$37,000
Bike Lane	Sterling Avenue	1,400 ft. (0.27 Miles)	\$36,000
Bike Lane	Vista Drive	1,200 + Ft. (0.23 Miles)	\$31,000
Bike Lane	3rd Avenue	1,200 ft. (0.23 Miles)	\$31,000
Bike Lane	Malloy Ave	N/A	N/A
Bike Lane	Washington Street	700 ft. (0.13 Miles)	\$17,000
Pave Trail	Vanderyacht Trail	1,932 ft. (0.37 Miles)	\$178,000
Paved Trail Extension	Centennial Riverwalk Park	1,062 ft. (0.2 Miles)	\$96,000
Pedestrian Boardwalk	Pioneer Park to Ferndale Library	1,816 ft. long 10 ft. wide	\$1,816,000
Additional Park Space	5640 Fourth Avenue	3.97 acres	N/A
Streetscape Features	Main Street	N/A	N/A
Skate Park	N/A	N/A	N/A

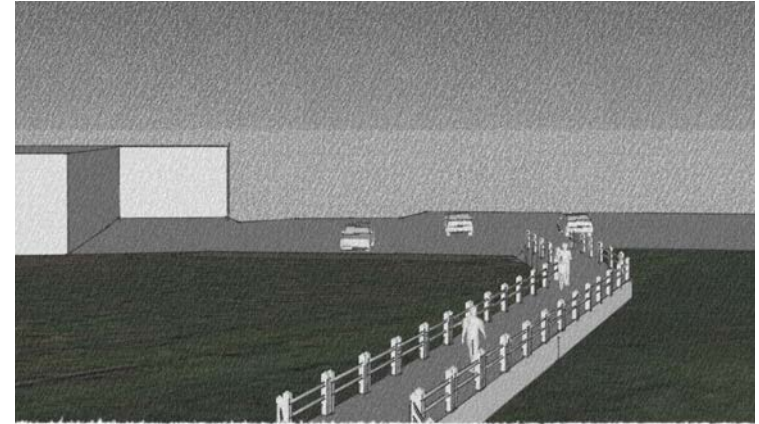


Figure 11.3 Model of boardwalk

12.0 Sustainability Assessment (LEED)

LEED Sustainability Principles

The LEED checklists for Smart Location and Linkage as well as Neighborhood Pattern and Design were applied to the planning study in addition to the three land use and mobility alternatives. The required components of each LEED section were met by each of the plans. Floodplain avoidance has been achieved by implementing mitigation strategies to existing and proposed new development. All three of the land use proposals received nearly identical scores. The only variance is in the score attributed to the compact development section, where the land use plan alternative 2 was rated lower because density estimates were lower than the other two land use alternatives. Some of the categories are marked 'N/A' indicating that the criteria was too detailed to adequately assess plan compliance regarding housing affordability, design, and statistics.

Generally speaking, each of the plan alternatives are close to meeting the sustainability criteria under LEED ND. Most of the points that were omitted were due to the lack of sufficient detail and data that would typically be required under an actual LEED ND review. Other sections of LEED ND were not considered as those sections assessed energy efficiency criteria that are not applicable at this stage of conceptual plan development. Since the plan is still in its conceptual stage of development, there is opportunity to further incorporate additional sustainability measures into each of the alternative plans.

Table 12.1.1 Smart Location and Linkage LEED Score

	POINTS POSSIBLE	Plan Alt. 1	Plan Alt. 2	Plan Alt. 3
Smart Location	Required	Y	Y	Y
Imperiled Species & Ecological Communities	Required	Y	Y	Y
Wetland and Waterbody Conservation	Required	Y	Y	Y
Floodplain Avoidance	Required	Y	Y	Y
Preferred Location	10	6	6	6
Locations with Reduced Auto Dependence	7	6	6	6
Bicycle Network and Storage	2	2	2	2
Housing and Jobs Proximity	3	2	2	2
Site Design for Habitat/Wetland - Waterbody Conservation	1	1	1	1
Restoration of Habitat/Wetlands - Waterbody	0	N/A	N/A	N/A
Long-Term Conservation Management of Habitat/Wetland/Waterbody	1	1	1	1
Total Points	24	18	18	18

12.0 Sustainability Assessment (LEED)

Table 12.1.2 Neighborhood Pattern and Design LEED Score

	POINTS POSSIBLE	Plan Alt. 1	Plan Alt. 2	Plan Alt. 3
Walkable Streets	Required	Y	Y	Y
Compact Development	Required	Y	Y	Y
Connected and Open Community	Required	Y	Y	Y
Walkable Streets	9	4	4	4
Compact Development	6	5	4	5
Mixed Use Neighborhood Center	4	4	4	4
Housing Type and Affordability	7	N/A	N/A	N/A
Reduced Parking Footprint	1	1	1	1
Transit Facilities	1	1	1	1
Transportation Demand Management	0	N/A	N/A	N/A
Access to Civic and Public Spaces	1	1	1	1
Access to Recreation Facilities	1	1	1	1
Visitability and Universal Design	0	N/A	N/A	N/A
Community Outreach and Involvement	2	1	1	1
Local Food Production	1	1	1	1
Tree-Lined and Shaded Streets	2	1	1	1
Neighborhood Schools	1	1	1	1
Total Points	36	21	20	21

13.0 References

Duong, S. (2016). Mixed Use for All. Retrieved from: https://www.txplanning.org/media/files/files/33fedfe7/Mixed_Use_for_All_Duong_Lockley_Arnold.pdf

IISD. (2018). Sustainable Development. Retrieved from: <https://www.iisd.org/topic/sustainable-development>

LEED. (2019). LEED | USGBC. Retrieved from: <https://new.usgbc.org/leed>

McCann, B. (2010). Complete Streets. American Planning Association. Retrieved From: <https://www.planning.org/publications/report/9026883/>

My Ferndale News. (January 10, 2019). Retrieved from: https://myferndalenews.com/pioneer-park-gets-2nd-of-series-of-wayfinding-signs_86201/

Safe Routes to School Program for local agencies. (August 29, 2018). Retrieved from: <https://www.wsdot.wa.gov/LocalPrograms/SafeRoutes/default.htm>

State Policies: Best Practices. (n.d.). Retrieved from: <https://www.saferoutespartnership.org/state/bestpractices>

U.S. Department of Transportation National Highway Traffic Safety Administration. (n.d.). Retrieved from: <https://icsw.nhtsa.gov/people/injury/pedbimot/bike/Safe-Routes-2002/safe.html#3>

The Top 6 Benefits of Public Skateparks. (n.d.). Retrieved from: <https://www.spohnranch.com/the-top-6-benefits-of-public-skateparks-2014-03-02/>

14.0 Appendices

LEED ND Grading Rubric

Smart Location (Required)

- Locate new development near existing development as well as public transit infrastructure. Essentially, we want to avoid sprawl. All projects must meet one of the following requirements; infill sites, adjacent sites with connectivity, transit corridor, or sites with nearby neighborhood assets.

Imperiled Species and Ecological Communities (Required)

- We intend to conserve at-risk species and ecological communities. Plan with respect to the state’s fish and wildlife agencies. Ideally, sites would be located away from affected species or affected ecological communities. However, if a site does affect species, then there must be a habitat conservation plan in place or an equivalent alternative.

Wetland and Water Body Conservation (Required)

- Conserve wetlands and water bodies. If development does affect wetland and bodies of water, we want to limit this impact. All development projects must comply with local, state, and national wetland and water body conservation regulations.

Floodplain Avoidance (Required)

- The location of the site should protect life and property from flooding. Additionally, it should promote open space and habitat conservation. In order to meet this requirement, a site must be developed on a site without flood hazard. If this is not the case, it should be developed on infill

or previously developed sites and comply with either the American Society of Civil Engineers Standard or the NFIP.

Preferred Locations (1-10 points)

- Development should be located within existing cities to reduce sprawl and promote overall environmental and public health. Additionally, this would help in conserving natural and financial resources required for infrastructure.
- Location type (1-5 points)
 1. Previously developed site that is not adjacent or infill (1 point)
 2. Adjacent site that is has been previously developed (2 points)
 3. Infill site that has not been previously developed (3 points)
 4. Infill site that has been previously developed (5 points)
- Connectivity (1-5 points)
Site must be located near existing connectivity. Refer to Figure 1 on how to receive points.
- Designated high priority locations (3 points)

INTERSECTIONS PER SQUARE MILE	POINTS
200-249	1
250-299	2
300-349	3
350-399	4
>400	5

Brownfield Redevelopment (1-2 points)
Development should encourage cleaning up contaminated sites.

- Brownfield site (1 point): A site that has experienced some sort of soil or groundwater contamination.
- High priority redevelopment area (2 points): Achieve option 1 requirement as well as locate the site in a high priority redevelopment area.

Access to Quality Transit (1-7 points)

- Development should encourage multimodal transportation and reduce dependence on individual motor vehicles. This will limit pollution outputs by such automotives.

Bicycle Facilities (1-2 points)

- Development should promote bicycle and transportation efficiency by reducing vehicle distance traveled. All projects must have short term bike storage within 100 feet of the main entrance of the building. Each land use requires a different amount of bike storage specified below.

WEEKDAY TRIPS	WEEKEND TRIPS	POINTS
60	40	1
76	50	2
100	65	3
132	85	4
180	130	5
246	150	6
320	200	7

14.0 Appendices

- Non Residential:
 - Short-term: 2.5% of peak visitors
 - Long-term: 5% of regular building occupants
- Multi-Unit Residential:
 - Short-term: 2.5% of peak visitors
 - Long-term: 30% of regular building occupants
- Retail:
 - Short-term: 2 per every 5,000 sq. ft.
 - Long-term: 5% of regular building occupants

- Additionally, development must meet one or both of the follow requirements:
 - Bikeable location (1 point): close to a bicycle network
 - Bicycle network (1 point): 50% of development units must be located within a bike network

Housing and Job Proximity (1-3 points)

- Development should encourage equitable communities with adequate housing and employment opportunities. In order to receive points, development must meet one of the following three options:
 - Project with affordable residential component (3 points)
 - Project with residential component (2 points)
 - Infill Project with a non-residential component (1 point)

Site Design for Habitat or Wetland and Water Body Conservation (1 point)

- Development should preserve native plants, wildlife habitats, and bodies of water. Sites may not have habitats, wetlands, or water bodies (1

point). However, if the site does have any of these elements, it must meet the requirements of option 1 or 2.

- Option 1: Sites with significant habitat: work with the state's Natural Heritage Program as well as fish and wildlife agencies.
- Option 2: Sites with wetlands and water bodies: identify and commit to current management practices.
- Option 3: Design to conserve 100% of all water bodies, wetlands, and land within 100 feet of water bodies and land within 50 feet of wetlands.

Restoration of Habitat or Wetlands and Water Bodies (1 point)

- Development should promote the restoration of native plants, wildlife habitats, wetlands, and water bodies that have been previously harmed by human activity. Restore native ecological communities/water bodies/wetlands, work with a biologist to ensure the restorative elements are in their natural state, and identify/commit to current management activities.

Long Term Conservation Management of Habitat or Wetlands and Water Bodies (1 point)

- Development should promote the conservation of habitat, wetlands, and water bodies. A 10-year management plan should be implemented for onsite native habitats.

Neighborhood Pattern and Design

Walkable Streets (Required)

- Development should promote transportation

efficiency and reduce vehicle distance traveled as well as promoting public health by providing safe, appealing street environments for walkability. The proposed project must meet all of the following:

- 90% of all new buildings must have an entry onto the circulation network or other public space.
- 15% of block length of the existing and new circulation networks within the project must have a building height to street centerline ratio of 1:1.5.
- Continuous sidewalks for walking on both sides of 90% of the circulation network block length within the project.
- No more than 20% of block length of the circulation network can be faced directly by garage and service bay opening within the project area.

Compact Development (Required)

- Development should conserve land as much as possible which promotes livability and transportation efficiency. Development must meet densities specified below:
 - Projects with Access to Quality Transit
 - Build at the following densities based on the walking distances to the transit service specified in that SLL credit:
 - Residential buildings within walking distance: 12 or more development units (DUs) per acre.
 - Residential buildings outside walking distance: 7 or more DUs per acre.
 - Non-residential buildings within walking distance: 0.80 or higher floor-area ratio.
 - Non-residential buildings outside walking distances: 0.50 or higher floor-area ratio.

14.0 Appendices

- All Other Projects
 - Build any residential units at a density at 7 or more DUs per acre.
 - Non-residential buildings at a density of 0.50 or higher FAR.
- All Projects
 - If only one of the residential or non-residential meet the minimum density requirements it still meets the prerequisite.

Connected and Open Community (Required)

Walkable Streets (1-9 points)

- To reduce vehicle distance traveled, improve public health by providing safe street environments that encourage daily physical activity.

ITEMS ACHIEVED	POINTS
2-3	1
4-5	2
6-7	3
8-9	4
10-11	5
12	6
13	7
14	8
15-16	9

Compact Development (1-6 points.)

- To conserve land and protect farmland by encouraging development in areas with existing infrastructure. Promotes walkability and improve public health.
- See chart dwelling unit per floor area ratio.

Mixed Use Neighborhoods (1-4 points)

- Reduction of vehicle distance traveled, encouragement of daily walking, transit use with diverse land uses. See table for points granted or deducted.

Housing Types and Affordability (1-7 points)

- Promotion of social equity with a range of economic levels, housing sizes and age groups within a community. See charts for housing categories.

Reduced Parking Footprint (1 point)

- Minimize the environmental harms that come with parking facilities.
 - Requirements: Either do not build new off-street parking or do it on the side or back of building, use no more than 20% of total development footprint for all new off-street parking, provide preferred parking for carpool and shared-use vehicles amounting to 10% of the new off-street parking.

Connected and Open Community (1-2 points)

- Conserve land and promote multimodal transportation by encouraging development within existing communities. Do this with intent to improve public health, daily physical activity, and reduce motor vehicle emissions.

INTERSECTIONS PER SQUARE MILE	INTERSECTIONS PER SQUARE KILOMETER	POINTS
300-400	116-154	1
> 400	> 154	2

Transit Facilities (1 point)

- Encourage transit use.

- Requirements: Work with transit agency serving the project to record all existing and new transit stops within the project boundary that will be warranted within two years of project completion. At these locations:
 - Confirm that they will be funded by developer or transit agencies, and install transit agency approved shelters.

Transportation Demand Management (1-2 points)

- Encourage multimodal travel reducing energy consumption, pollution and harm to human health by motor vehicles.
 - Provide transit passes valid for at least one year to each resident and employee located within the project during the first three years.
 - Provide developer-sponsored service (vans, shuttles, buses) as well as transit stop shelter and bicycle racks adequate to meet project demands.
 - Vehicle sharing within ¼ mile walking distance.
 - Unbundling of parking and parking fees with set fees for all off-street parking equal to or greater than the cost of monthly usage for public transit.
 - Guaranteed ride home program.
 - Flexible work arrangements with the goal of reducing vehicle trips during peak commuting hours.

Access to Civic and Public Space (1 point)

- Provide open space close to work and home enhancing community participation and improv-

14.0 Appendices

ing public health.

- Use entrances within a ¼ mile walk of 90% existing dwelling units.

Access to Recreation Facilities (1 point)

- Enhance community participation and improve public health by providing recreational facilities promoting physical activity and social networking near work and home.
 - At least one acre outdoor or an indoor facility of at least 25,000 square feet within a ½ mile walking distance of 90% of existing dwelling units.

Visibility and Universal Design (1 point)

- Increase usable area for a wide variety of people regardless of age or ability.
 - Universal design features throughout home including at least 5 monitor detecting, interior floor surfaces, or easy to grip mechanisms.
 - Kitchen features including hard surface flooring, plumbing with single lever controls.
 - Bedroom and bathroom features including at least one accessible bedroom with at least one full bathroom on the same floor.

Community Outreach and Involvement (1-2 points)

- Encourage community participation in project design and planning decisions to fit the needs of the community. Two options for either 1 or 2 points:
 - Option 1 (1point). Engage the community in the following ways:
 - Pre-design (meet with all involved and

affected before starting design)

- Preliminary Design (advertise and host a community meeting for comments on design)
- Modify preliminary design to fit community comments and wants
- Ongoing communication (establish and maintain communication between developer and community)
- Option 2 (2 points)
 - Comply with option 1 and have an, at least, 2 day interactive workshop open to the public
- Option 3 (2 points) Endorsement Program
 - Comply with Option 1 and get an endorsement from a non-governmental program that systematically reviews and endorses smart growth.

Local Food Production (1 point)

- Community based food production to improve nutrition with better access to fresh produce.
 - Neighborhood Gardens: permanent spaces with appropriate conditions and management (established community garden).
 - Community supported agriculture located within 150 miles of the project site to insure local support.
 - Proximity to farmers market located within 0.5 mile walking distance and will operate at least once weekly for at least five months annually.

Tree-Lined And Shaded Streetscapes (1-2 points)

- Encourage walking and bicycling while discouraging speeding, reducing heat island effect, and improving air quality.
 - Tree-Lined Blocks: trees in intervals of no more than 50-feet along at least 60% of the total existing and planned block lengths.
 - Shaded Sidewalks: provide shade from trees or permanent structures over at least 40% of existing sidewalks. Trees must provide shade within 10 years of landscape installation.

Neighborhood Schools (1 point)

- Integrate schools and neighborhoods to promote community interaction. The intent is to encourage walking and biking to school. Must include a Neighborhood Development Plan.

2019 Ferndale Workshop Summary

OVERVIEW

On January 23, 2019, Western Washington University Urban Planning students held a community visioning workshop at the Ferndale Pavilion Building for community members in order to provide input on the revitalization of downtown Ferndale, Washington. During the event, community members were divided into five groups rotated through each workshop in 15-minute intervals. The intention for the event was to gauge public interest on the redevelopment potential in order to better understand what the values, interests, ideas and visions were for community members in Ferndale. Included in this report are the summary and findings from the five workshop events that included: land use and infill, public sphere, visual preference survey, transportation and mobility, & natural hazards. After a brief description of the team's workshop and an analysis of the community input is summarized, with generalized data and materials used in the event provided in the appendix.

LAND USE AND INFILL

Participants were encouraged to use the type and intensity of current development within the downtown study area, coupled with their own knowledge, to discuss the potential for future development within the downtown. In addition to the information on existing development, participants were shown images of different levels of density and types of development in order to establish a common understanding of planning vernacular (e.g. mixed-use versus medium density residential versus high density residential).

Participants interacted with a map of the study area. The map (Figure 1.4.1), an aerial photo of downtown Ferndale and its periphery with the study area parcels outlined in yellow. Using a land-use key (see Figure 1), participants identified areas on the map where they would support infill development. Discussion was as broad as "I would like to see a rec center somewhere in the downtown area,"

to as specific as, "the parcel on the corner of First Ave and Main Street needs to be family-friendly restaurant." The following report details the findings from this workshop activity.

Analysis

Data analysis for this section was conducted using ArcGIS Pro. Three hundred foot buffers were placed around each pin point in order to observe the general areas where push pins were placed. Polygons were then drawn around the buffers to indicate the general areas where participants placed pins during the workshop (Figure 1.4.). Secondly, the exact pin locations were compared to sites deemed "easier to develop" during the previous research (Figure 1.4.3). Raw data and process maps can be found in the appendix.

Preliminary analysis of participants preferences as to where and what development they wish to see in downtown Ferndale revealed several trends. Referring to Figure 1.4.1, it seems fairly clear that citizens have a general idea of what Ferndale should be, designating sites which could be easily tied together in a master plan. It should be noted that the areas for "shops/restaurants" and "offices" were grouped into the category of "mixed-use", as most of these preferences overlap on the map. Thus, one can observe that a preference for "mixed-use" appears to dominate in the the downtown core (Figure 1.).

Another trend which was observed is the continuation of residential areas north and south of the downtown core. What should be noted here is that the northern residential area expands into the potential study area north of Vanderyacht Park. Participant interest in expanding residential development presents a viable reason for incorporating the potential study area into the downtown plan. Within the southern portion of the potential study area participants indicated that they would like to see more development, but are mostly unsure of what should they would like to see (see teal sections of Figure 2).

The third observation is the potential for connectivity

between parks and pedestrian friendly activities. Using the pins, participants laid out a connection of parks and trails around the circumference of the downtown area (see pink sections of Figure 1.). Given the high number of developable lands in these areas as a result of previous analyses, it appears that citizens agree that these areas would be prioritized for a trail/park system. In addition, there appears to be a relationship between "social/institutional" sites and the trail/park system. Social/institutional sites (see blue sections of Figure 1.) were interpreted by the public to be some form of public facility such as a swimming pool or a recreation center. Conveniently, these sites are placed periodically along the potential route of the trail system. This relationship could increase connectivity between social spaces within the downtown. The trail pattern identified by citizens would provide about two mile and connect parks, social spaces and the waterfront.

Figure 2, shows the relationship between the potential sites identified and the improvement sites selected by participants. Potential sites were determined through a land valuation analysis. These sites are considered underutilized or under developed and represent targeted areas for developing. Out of the 115 pins placed during the community meeting, 38 fall on parcels which were identified as potential sites in the land valuation analysis. 65 pins fell within 100 feet of lands surrounding the potential sites, which demonstrates citizen's preferences supporting the utilization underutilized and underdeveloped areas (Figure 2).

Identified Sites and Community Needs

Participants were encouraged to identify "underutilized" sites and discuss potential "land use needs" within the study area (note that underutilized in this context refers to qualitative preferences and is not intentionally related to the quantitative analysis discussed in the section above). This resulted in two general responses: First, participants identified underutilized sites but did not indicate what type of development they wanted on the site. Second, participants had identified several specific "needs" (i.e. a

grocery store, rec-center, family-friendly establishments, youth attractions, etc.) but did not know where they should be located on the map.

Several parcels received a variety of different land use preferences. These sites included:

- The corner of First Ave and Main Street,
- Corner of Washington Street and Vista Drive,
- The parcel just west of the library along Main street,
- The parcels along Third Ave currently making up the Pioneer Center strip mall,
- Two possible bridges over the River.

Participants discussed several desired attractions within the downtown area. Several of these attractions were associated with different sites but they were also talked about more generally in terms of location within the downtown area. The first site is located on the corner of First Ave and Main Street. Participants stated that this site is currently a car wash, which is kind of an eye sore as it is the first building one sees when approaching the downtown. This site also blocks access to the nearby Vander Yacht Park.

The next site is located at the corner of Washington Street and Vista Drive. This site is known to the locals as the “Washington Triangle.” During the meeting, community members expressed a preference for an after school center for teens. This site is about two blocks south of Ferndale High School and many participants thought this would be an excellent location for a social/family-friendly activity. This site also received several suggestions for use as a mixed use space such as restaurant or social gathering space.

The parcel immediately west of the library is a city-owned gravel lot, which many participants recommended to be an excellent location for a social gathering space or park. Many stated that a swimming pool was once located downtown and suggested that this site would make an excellent location for a pool. The parcels along Third Ave

currently making up the Pioneer center strip mall were identified as another underutilized site. This sizeable site contains a large parking lot that many participants identified as a possible site for a grocery store. Other participants suggested that this site may be better utilized as a mixed use development, perhaps with a smaller grocery store on site.

Two sites along the Nooksack River were identified as good locations for a pedestrian bridge. The northern site, could connect Vander Yacht Park with a footbridge to the east side of the river, which would provide a scenic recreational space for park users and pedestrian access to commercial uses east of downtown. The south site was identified for a pedestrian bridge connecting Cherry Street with Baker Street on the east side of the river. This would connect Centennial Riverwalk Park with the trail on the east side of the river and create another recreation site for park users. Other suggestions included the construction of a bridge to accommodate cars providing a secondary vehicular connection between the downtown and areas to the east.

Conclusion

The input received at the public workshop provided many valuable suggestions regarding preferred land use changes to the downtown. This input is essential in developing downtown planning alternatives. Information provided by the workshop participants support development planning and the proposal of new development policies. After analyzing public feedback, several preferred development priorities were identified:

- Mixed Use Core.
- Two new residential sites north and south of study area.
- Comprehensive trail and parks system.
- New potential study area northeast of downtown and across railroad tracks.

The feedback from this workshop identifies several potential opportunities for new development and redevelopment within downtown Ferndale. Moving forward, master plan

development should emphasize mixed use developments in Ferndale’s downtown core, residential development along the core periphery, a comprehensive trail and park system and urban development expansion into the area just north of Vanderyacht Park.

PUBLIC SPHERE: PARKS, STREETSCAPE, ‘SAFE ROUTES’, ART AND CULTURE

The public space, parks, streetscape design, art and culture charrette workshop presented a series of three presentations - 1) parks and ‘safe walking routes’ to schools, 2) streetscape, arts and culture, and 3) a written questionnaire, which covered a broad range of subjects relating to public space. The ‘parks and safe routes’ station (Figures .9, 10, & 11) allowed for participants to place green, yellow or red stickers or draw on the map with markers to indicate their preferences regarding safe walking routes for children. Sticky notes were also placed on maps for additional commentary.

In the ‘streetscape, arts and culture’ station (Figure 13) a tri fold presentation board was displayed of images of different ‘streetscapes’. The images were meant to act as visual preference surveys and to identify preferences. The questionnaire, provided for additional comment by providing a map of the project area and a series of leading questions (Survey 12) to prompt participant responses, such as “what would make downtown Ferndale a place you want to spend time in?”

Analysis

The residents of Ferndale seemed very interested in improving their downtown area and were not afraid to ask questions about the plausibility of proposing ideas. Through the visualization and discussion activities it became clear that Ferndale residents strongly supported designing public spaces that encourage public socializing Streetscape, Art, and Culture.

Many of the participants enjoyed the ability to compare

existing conditions in Ferndale examples illustrated from other communities. While most of the images presented contrasted with Ferndale, participants were creative in envisioning similar types of improvements in Ferndale's downtown. The participants were supportive of several streetscape features proposed as they were viewed as inviting for encouraging the public to sit and enjoy downtown public spaces. The parklets, benches, trees, and outdoor seating selections were widely popular in that they offered opportunity for socializing.

Multiple participants mentioned potential problems with outdoor lounging along Main Street, concerned with noise and exhaust pollution would limit the enjoyment of those public spaces the murals and other artistic features proposed were well-liked by the younger participants, but were less liked by elderly participants. The age demographics certainly had differing preferences when it came to design schemes. Additionally, the elder participants were keen on keeping the Ferndale's identity more consistent within the Pioneer theme. They enjoyed this historic and long standing quality of their town and wanted to capitalize on it but in a more subtle way than other towns such as Leavenworth., there was some disagreement among the younger and middle aged participants who were less supportive of the Pioneer scheme and preferred a more modern, vibrant downtown area.

Parks and Safe Routes

A map was presented depicting parks and safe routes to school to solicit participant recommendations for improvements. Each existing park identified was adored by the participants, but also suggested that minor improvements should be added, including improved park maintenance. Many comments focused on the importance for improved connectivity of the existing parks. Many participants stated that they use the Pioneer or Vanderyacht Park to launch their runs, but wished there were more 'looped' trails. Additionally, there could be a network of trail systems through wetlands, neighborhoods, and the downtown that connect Pioneer to Vanderyacht, and the addition of smaller parks in between. A pedestrian bridge

over the Nooksack connecting Pioneer to Hovander was recommended as well. The parks were viewed as having many beneficial qualities, but participants felt that better signage and overall upkeep would improve their usage. The participants were also adamant about utilizing the parks for more community events. As mentioned earlier, socializing with neighbors was very important. The parks within Ferndale have immense open spaces that could support for public markets and food trucks.

Safe School Routes

Access to the elementary school located within the downtown received limited feedback as most participants no longer have children attending elementary school, or relied on private vehicles to access schools. The one consistent criticism received concerned the lack of adequate sidewalks within the downtown area. One mother who pushes her toddler in a stroller mentioned that the curb cuts were extremely inconvenient. A lack of pedestrian crosswalks were identified, as well as the need for lighting to warn drivers that pedestrians are crossing the streets. Some parents noted that it would be helpful to have parent pickup locations at the intersections of Main and 1st or Main and 2nd.

General Questionnaire

A large number of participants filled out the general questionnaire. Most residents indicated they were happy with Ferndale's overall small-town feel, its sense of community, and its admiration of some of the newer improvements the city has made. Among the problems that participants mentioned, several comments were offered that included Traffic congestion, a lack of identity, and the current vacancy of buildings within the downtown area. It was made clear that many participants felt that the current downtown is lacking in places to eat, shop, and mingle. There were many creative uses suggested for the vacant buildings such as temporary art displays, local business opportunities, and possibly the addition of a multi-purpose sports complex.

VISUAL PREFERENCE SURVEY

A visual preference survey was presented where participants rated a number of images ranging from 'Strongly Like' to 'Strongly Dislike' to identify design preferences for future development in the downtown. The visual preference survey was divided into seven sections: architecture, height, density, setbacks, parking, sidewalks, and commercial and retail space. The participants were shown multiple images in each section to represent varying styles or designs. To track answers, the participants recorded their votes on a scantron. This information is useful to determine preferences for future urban infill development.

Analysis

Architecture

There were sixteen images shown under the category of "architecture". (See Figure 1.4.17 Based on the data collected, images that showed buildings with Americana style features in their architecture received the most positive feedback. Examples of American style architecture can be seen in Questions 1, 2, 8, and 9, for these questions, more than 50% of the participants responded with "Like" or "Strongly like".

The images that received the most negative responses were Questions 3, 4, and 10. These were images that showed little to no color differentiation in the building material, along with more modern style architecture. Most of the buildings had minimal to no ornamentation, and appeared cube-shaped to appeal to a more modern style of architecture. For these questions more than 50% of the participants responded with a "Strongly Dislike", or "Dislike". In addition to these images receiving low-ratings, images of downtown areas with a distinct theme were also unflavored by the participants. Images from Questions 5 & 15, which had a distinct theme received a majority of "Dislike", or "Strongly Dislike" responses. Lastly, it was surprising how many participants favored the architecture of an image from Leavenworth, Washington. About 39% of the participants voted "Like" for an image of down-

town Leavenworth.

Height

The images featured in the height section reflected buildings with different heights. Including one, two, three, four, five, and ten+ story buildings. All buildings with three stories or less floors were well liked by participants. With a building height of three stories, image 20 received the highest votes for strongly like. The least liked building was question 18 which depicted a skyscraper building. It is understandable that such a building does not meet the character of Ferndale. The medium height buildings with 3-4 stories received a majority of neutral votes. Picture 19 is interesting because it has only one story but presents a long stretch of businesses, it received a majorly neutral response. To maintain a pedestrian friendly, small-town feel, keeping buildings at a maximum of 3 stories appeared most consistent with the preferences of the participants.

Density

Nine images were illustrated in the Density Section (Figure 17, Q. 24-32), most individuals preferred Medium Density. In the Downtown Area, many expressed dislike for low density (Q. 28), as well as high density (Q. 26 & 27).

In Question 24-27, which presented images reflecting density per acre, densities of 18 Units per Acre were rated the highest liked, with less enthusiasm the more dense the images. 35 Units per acre was the threshold with the highest number of individuals choosing a “like” preference. In contrast, 50 units per acre received the highest dislike votes. Images depicting 75 units per acre, had an even lower rated preference. Images reflecting medium density, was received most positively with 37% choosing “like”, and 26% choosing “strongly like”.

Many images of density in this section focused exclusively on residential density.

Setbacks

Five setbacks were presented in the visual preference survey. Image 34 demonstrated the highest positive feedback showing a medium setback with stairs leading up to a building. Most images received negative feedback as dislike or strongly dislike. In the context of Ferndale, the responses indicate a desire for a pedestrian friendly, small-scale and walkable presentation of their downtown. The extreme variations of setbacks that the VPS presented did not give an adequate representation of the utility that sidewalks provide for both pedestrians and businesses and showed only either too constricted of a space or an unrealistically wide setback.

Parking

Eight images were shown in the ‘Parking’ section of the visual preference survey. The data collected shows that Ferndale residents would support a few types of parking in their city center. The overwhelming majority ‘Liked’ or ‘Really Liked’ on-street angle parking (74% positive and 11% neutral), small parking lots to the rear of establishments (56% positive and 29% neutral) and concealed or hidden parking garages (59% positive and 19% neutral). Less supportive alternatives include underground garages and large parking garages, there were no parking images that the participants unanimously rated poorly. On-street parallel parking on Main Street and behind-the-building parking lots are the most common parking options currently in downtown Ferndale.

Sidewalks

Among the sidewalk section the most popular theme were sidewalks that had activity and other functions. These images had chairs, lamp posts, lots of plants, newspaper stands that gave the sidewalks a busier feel. What also came out as very popular on the survey was very wide sidewalks.

Commercial and Retail Space

Commercial and retail spaces that were the most popular images were those with no setbacks and large windows.

Every image with a setback received negative reviews. This reflects a community preferences for a more walkable feel in the downtown. One Image that had no setback but windows that could not be seen through received negative votes across the board suggesting that the combination of no setbacks and no windows can be viewed as negative.

TRANSPORTATION AND MOBILITY MAPPING

Summary

The transportation and mobility mapping workshop consisted of 3 tables to gain community feedback on preferences regarding different modes of transportation, including pedestrian, bicycle, and motorized transportation.

Analysis

Motorized Transportation

The majority of problem areas identified in this exercise result from the current congestion experienced on Main St. during peak traffic hours, thus many respondents suggested improvements that would reduce congestion and improve mobility for all modes of transportation. There were an overwhelming number of comments concerning the current condition of the intersection at 1st Ave. and Main St. Many were wondering why a former traffic light was removed and expressed frustration over the congestion and their experienced difficulties with turning across Main St, crossing as a pedestrian, and the negative impact on surrounding businesses. The suggested opportunities for improvements included installing a pedestrian light to indicate crossings, a 4-way stop, and techniques for redirecting traffic. Several comments suggested changing Main & Alder to one-way streets in order to combat congestion and prioritize the pedestrian experience on Main St. It was suggested that a roundabout could be placed on 1st & Main, to redirect traffic between the two one ways and reduce congestion. Additionally, there were various suggested locations for an additional bridge to redirect traffic and reduce congestion if Main and Alder were to be made one-way roads.

Several comments concerned the intersection of Hovander Road & Main Street. Many again expressed frustrations over congestion and the difficulty experienced when turning onto Main Street. Suggested ideas for improvement included stretching the turn lane to allow more cars to pull out or having another roundabout in this location. Several respondents were concerned with the behavior of motorized traffic on Main Street before crossing the bridge into the city center and commented on the dangers of speeding in the area and stressed the need for traffic calming infrastructure such as a pedestrian crosswalk. The area was also viewed as problematic due limited accessibility across Main St. from congestion and a median blocking access to adjacent businesses.

There were many comments on parking, less regarding the concern over the lack of parking, but rather the difficulties that congestion along Main St. creates for parking. A majority of respondents suggested or supported the idea of angled parking along Main St and one also suggested additional angled parking near the intersection of 4th Ave and Alder St. Although one respondent pointed out visibility concerns with the angled parking off of 1st Ave near Central Elementary School, and how it's difficult to see children when backing out. Several comments included complaints about an "under-utilized" private lot off the block of Vista Drive and 3rd Avenue and suggested that it become public.

Pedestrian Transportation

A recurring problem mentioned by workshop attendees was the lack of sidewalk continuity. In many places within the study area, residents find it difficult to walk to their destination because of a lack of sidewalks. Some streets only have sidewalks on one side of the road, limiting their options of moving about the city on foot. Another problem mentioned multiple times is the lack of connectivity between Pioneer Park, the Riverwalk and Vanderyacht Park - residents would love to access these three parks on a continuous, safe sidewalk.

Bicycle Transportation

The largest area for improvement was connectivity of parks in the city. Finding a safe way to travel from Vanderyacht Park to Pioneer Park was presented multiple times with many suggesting a path traveling underneath the Main St. Bridge. Many members of the meeting brought up large-scale improvements such as a boardwalk connecting the Ferndale Library to Pioneer Park along with a pedestrian/bike bridge connecting Hovander and Pioneer Park. These suggested improvements were brought up as way to improve connectivity of safe cycling routes in the city. Bike lanes extending for a longer distance on Main St. along with bike lanes being added on Vista Dr. were improvements most attendees agreed upon. Some proposals of protected bike lanes were heard, as various community members felt unsafe while cycling, especially along Main St. Most of the suggestions made were to improve cycling as a recreational activity and less as a means of transportation to travel to work.

Angled Parking

Participants liked the idea of angled parking, but not along Main Street. The question of whether there was enough room was brought up on multiple occasions. Some suggested that angled parking would be a good addition to some of the side streets to Main, allowing residents to park in the downtown core, but not on the busiest street. Other participants also questioned the feasibility of having angled parking and a bike lane, thinking that it would be unsafe to have drivers attempt to back out with a bike lane behind them. Overall angled parking had a positive response.

Protected Bike Lanes

Protected bike lanes got a mixed response from the participants. The majority that responded liked the idea, but maybe not located on Main Street, where again the width of the road was drawn into question. Some participants used this space to show support for additional trails around the downtown not just for biking. Negative responders stated that bikers should just bike in the road,

and that there are not enough bikers to warrant a bike lane anyway, something that many people seemed to be concerned about.

Flashing Crosswalks

Flashing crosswalks got the most positive response compared to the all of the other pictures, as well as the picture with the most comments. There was not a single negative comment about flashing crosswalks. Many comments included recommendations for where to place them. The intersection of 1st and Main was the intersection that participants were most concerned about.

Crosswalk Flags

Crosswalk flags generally got a negative response from participants. Members were concerned about how easy it would be for people to steal the flags, as well as how it made some people uncomfortable to use them. It seems as though residents would much rather have a flashing crosswalk where applicable. Bike Racks: Overall it seems like bike racks had a positive response. People again questioned how many people actually bike in Ferndale, but some respondents liked the idea of artistic bike racks or those that could combine with other elements on the sidewalk. One person had the interesting idea of trying to implement motorcycle racks on the sidewalk, as there is a decent motorcycle community in Ferndale. This would allow for parking spaces on the street to be freed up, where a motorcycle would normally park.

Outdoor Seating

Outdoor seating was one of the other popular pictures discussed by the community. Overall there was a very positive view of outdoor seating for the downtown of Ferndale. There were a few worries, including sidewalk width, as well as wheelchair accessibility, and if they would be usable during the fall and winter months. One member went as far as to say that Ferndale should come up with its own theme, similar to that of Leavenworth.

General Suggestions

The suggestion page was for any participants to add an additional comment that was maybe not related to any of the pictures provided. Participants used this space to make a variety of suggestions. Such as changing the library parking lot, requiring more flower pots and planters downtown, and what sort of stores should move in. Many comments revolved around the problems of parking downtown, as well as where to find parking, by creating way finders. This was extremely helpful in getting some suggestions from the community.

NATURAL HAZARDS AND RESOURCES

Summary

Natural hazards are environmental phenomena that can pose risks to human safety and property. Ferndale is exposed to many hazards, including flooding, earthquakes, severe storms, landslides and liquefaction, volcano, and wildfire. The purpose of the workshop described in this document was to gain an understanding of the community's perception of risks posed to Ferndale from natural hazards, and to use this information to inform sustainable development in Ferndale.

Analysis

The methodology of the first part of the workshop may have slightly skewed the workshop due to any accidental biases the presenters conveyed. There could have been more emphasis on the frequency of each hazard event, as some community members were highly concerned about lahar flows, which are an extremely rare occurrence. The second part of the workshop could have skewed results in that we failed to account for people with mobility issues. The map with pins was located far away from some of the community member seating. It was noticed that some of the participants were not able to easily move from their seats to the map to put a pin in. In an effort to facilitate this by offering to put in pins for them, but this experienced limited success as there were not enough of workshop members available to do so.

Community Development Preferences

Areas of Concern

Based upon community feedback, the area around Pioneer Park is of concern to protect from flooding. Additionally, flooding near Douglas St. and the railroad are a concern to community members as is the loss of power.

Public Damages

Based upon community feedback, half are highly concerned about the personal and public cost of natural hazards. The other half was not very concerned. Emphasis was placed protecting Pioneer Park and the wastewater treatment plant as they are deemed valuable to the community.

Understanding of Hazards

Based upon community feedback, residents are not informed about emergency management systems in Ferndale. They would like to see more public education on this matter and potentially more emergency systems put into place. These systems should include maps, evacuation signage, and radio and messaging systems.

Sites of Concern

Based upon community feedback, mitigation for natural hazards should be focused on Pioneer Park and surrounding areas, the library, all areas along the Nooksack River, and the wastewater treatment plant.

The residents of Ferndale see flooding as both the primary hazard and the primary risk to the community. Parks are of special concern. Additionally, a few residents were concerned about earthquake risk, especially after they saw the soil type's map of the city. Earthquakes were another concern, especially to the older brick buildings in the downtown.

Conclusion

Through this workshop, the Ferndale community has provided insight towards their perceptions of natural hazards and hazard risks. Using this insight, the risks posed by natural hazards can be factored in to work towards sustainable development and in Ferndale and reduce the impacts that natural hazards have on community members. After collecting the information from the community in relation to the hazards that the downtown area faces the overarching theme suggests that roads, parks, and the older buildings of the downtown area are of the highest community concern. The recommendation at hand as time goes forwards and plans begin to develop in relation to the downtown that these concerns be addressed. The community expressed that the main roads leading in and out of town should be raised so as not to be affected negatively by flooding, making note that the flooding of roads such as Slater road., when flooded, result in an overwhelming influx of traffic in the downtown that then incurs gridlock.

The older buildings of downtown and buildings that are to be constructed in the future should be earthquake-proofed to a degree that building facades and other extremities do not pose a falling hazard to the citizens that are on foot in the downtown area specifically Main St. as it has the highest concentration of old historical buildings. Parks are highly valued by the community and concern about the constant state of flooding within the park has been raised as well as methods in which to mitigate the flooding. At this time, we have no recommendation to address this other than any development of park amenities in the future should be raised above flood level so as to reduce damages and upkeep. Lastly, we suggest that The City of Ferndale implement some form of public information system that addresses routes of evacuation and refuge as well as alternate routes to follow in flood events when low lying roads are affected.

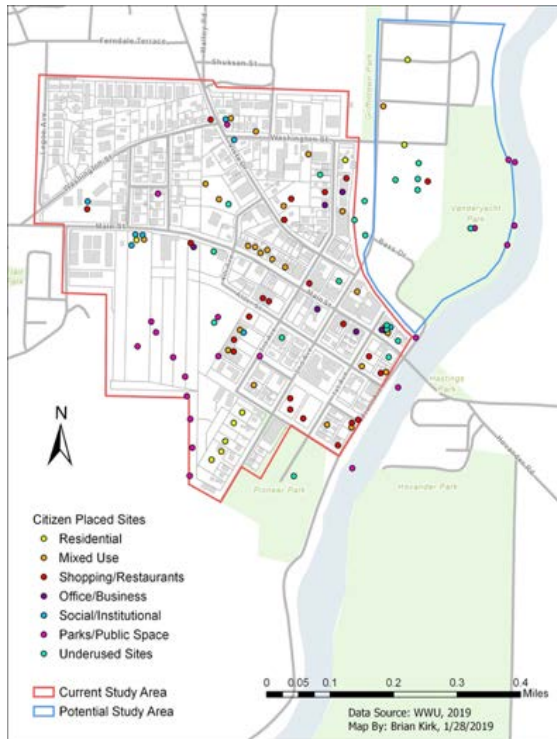


Figure 1. Exact locations of push pins placed by participants during the meeting.

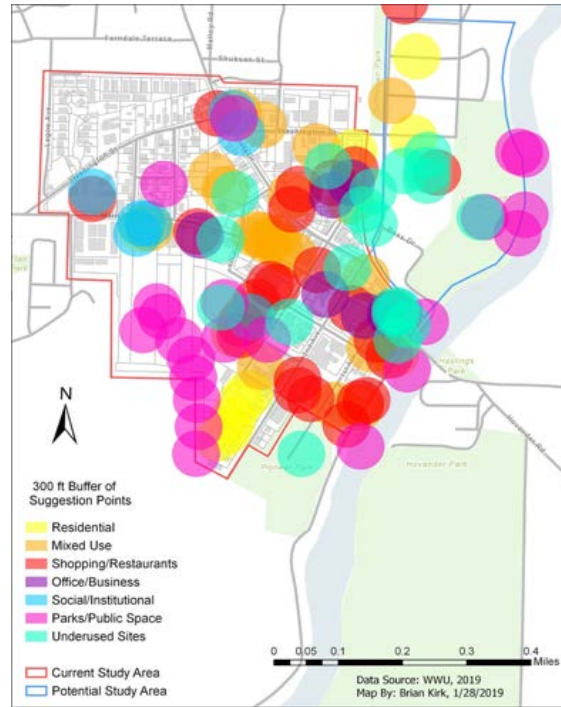


Figure 2. 300 ft buffers generated around each point to perform analysis and determine general areas which pins were placed. This was used to create Figure 1's polygons in order to observe trends of preferences.

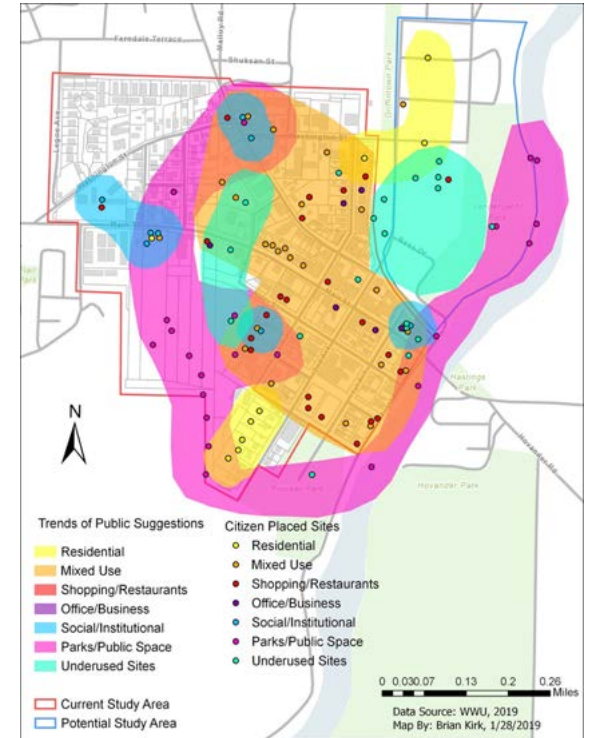


Figure 3. Final polygons compared with raw data points collected at the meeting. This demonstrates the general intent of the polygons to group points together in a logical manner. Some outliers can be observed as well, but this does not mean they were ignored entirely.

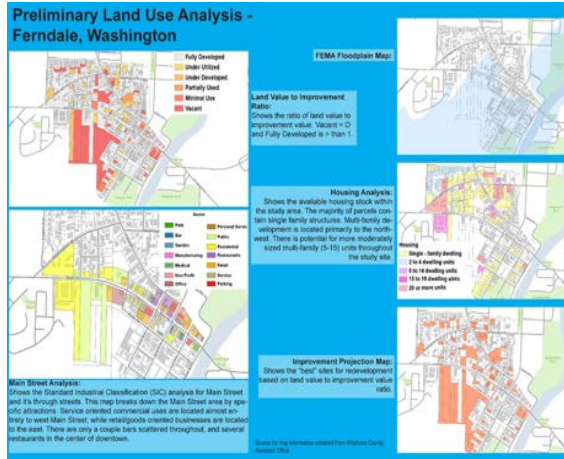


Figure 4. Preliminary Land Use Analysis

Natural Hazards in Ferndale

Flooding



Flooding is amongst the most common and concerning natural hazard affecting Whatcom County. These late fall and winter floods are characterized by sharp rises in flow resulting from consecutive days of heavy rainfall. Continuous rainfall contributes to soil over saturation and the inability to retain excess water buildup and runoff.

Landslides and Liquefaction



Geologic hazards can be attributed to a number of factors, including but not limited to topography, soils, rerouting of drainage by development, and de-vegetation. Whatcom County has been experiencing geological hazards over the past century and Ferndale contains seismically sensitive soils.

Earthquake



Ferndale, and the entire Pacific Northwest, is at risk of earthquakes. The Juan de Fuca tectonic plate runs alongside the coast; its movement causes ground shaking which can damage property as well as disrupt roads and other utilities. Although earthquakes are infrequent, they pose serious risks to Pacific Northwest communities. Earthquakes are unpredictable and it is important for buildings and safety codes to reduce the total damages done.

Volcano



Ferndale sits approximately 36 miles from Mount Baker, which marks the horizon east of the Nooksack river. Mount Baker is an active volcano and continues to pose serious risks to the communities that live along the Nooksack basin, including Ferndale, as an eruption would bring a massive flow of melted snow, mud, and ash from the mountain along the river in an event known as a lahar.

Severe Storms



Severe storms encompass a wide range of severe weather, including but not limited to thunderstorms, high winds, freezing rain, storm surge, etc. Severe storms can be expensive as well as dangerous, causing damage to transportation infrastructure, electric lines, treefall and structure damage. Loss of power/heating can be especially dangerous during winter, especially for children or elders.

Wildfire



Wildfire is a hazard that poses growing risks to life and property, and is of most concern to homes near forested areas in the Ferndale area. Wildfire also poses risks to timber, wildlife and habitat, and increases the risk of landslides and flooding.

Figure 5: Information on Natural Hazards based in Ferndale addresses the natural hazards to which the city is exposed. This presentation was designed to educate community members about how and why certain natural hazards occur. The visual representation covers flooding, earthquakes, and severe storms, and landslide/liquefaction, volcano, and wildfires.

Community Survey Results

Question 1. Elaborate on pin-point area of concern, in other words explain why the region you pinned on the map is a concerning area for our natural hazards study?

- “Flooding near Douglas, Near Railroad and recycling center”
- “Pioneer Park as a lot (15) of structures that are OLD 1860-1960s with many artifacts of the past. These need protecting- can't rebuild old log cabins of 12-18’ old growth cedar.”
- “Severe weather such as high winds that result in power loss.”

Question 2. How concerned are you about the costs of personal or public damages from the natural hazards described?

- “Not really”
- “I don't know enough about the likelihood of the events happening to be concerned about the cost”
- “Quite concerned”
- “Not really”
- “Damages caused from the historical pioneer park cabins.”
- “Very concerned- my main concern is volcanic risk/ eruption.”
- “Flooding. Protection of City's water treatment plant next to the Nooksack River.”

Question 3. How informed do you feel about emergency management systems dealing with natural hazards in Ferndale? If informed, do you feel that these systems are adequate in addressing hazard risks?

- “Not at all”
- “Not very informed”
- “Not sure of planning of emergency systems, not sure how adequate they are”
- “Somewhat concerned about damage from a major

earthquake. I live on a second-floor apartment. Also severe storms -> trees and branches falling on buildings or cars (potential threat)”

- “Not informed about Ferndale”

Question 4. What historic buildings, public facilities or private properties should be given the most attention to protection from natural hazards?

- “Schools , other meeting places”
- “Pioneer Park, library and schools”
- “Most things along downtown Main St. Properties that are alongside Nooksack (e.g. Condos on Riverwalk).”
- “Protect the library”
- “Pioneer Park, the downtown library and Star Park.”
- “Pioneer village in Pioneer park and the Sewage Plant”
- “Pioneer Park Village”
-

Question 5. Do you have any other comments, questions, suggestions or concerns about the hazards that pose a risk to the downtown Ferndale area?

- “Kill the moles”
- “Additional signage, maps, information to direct people in times of disaster. Radio signals/messages”
- “Earthquakes will not be friendly to our old buildings”
- There were many miscellaneous comments from community members regarding natural hazards. These comments are listed below.
- “My questions regarding natural disasters center around the refineries. How safe are we? What is being done to ensure continued safety and how would we be alerted of situations. Issues of air quality??”
- “It would be very beneficial for the county to build up both Slater & Hovander road. to prevent flood closure”
- “Slater. Between bridge & Ferndale road.”
- “Pioneer Park would be ruined if there was a big flood as well as Central Elementary. Build up land next to river to decrease flooding.”

- “Flooding: More protection at Vanderyaht park to keep water from that area. Wind & storm: Place electrical underground in downtown area to reduce / eliminate outage concerns.”
- “Build a dike along the river to protect from flooding. Dredge river and Bellingham Bay”
- “I would be interested in seeing an evaluation of the old masonry buildings along Main Street for possible earthquake retrofit or pros/cons of retrofit vs. rebuild”
- “There is a park called Cedar Creek Park near Aquarius Drive that has a creek running down the middle and two parks on either side. It has virtually no drainage and basically becomes a marsh when it rains”
- “County to put on every property assessment statement any hazard zone the property is on, so they are reminded annually”
- “Build up slater road, so flooding doesn't congest the traffic or close it”
- “South Church road. Connector. Build up low-lying areas and better drainages”

Parks and ‘Safe Routes’

- Hovander Park parking lot maintenance needs improvement (0)
- Concern over downtown access to VanderYacht through car wash (-)
- Washington Street pedestrian improvements (+)
- Vista Drive sidewalks (going up the hill) (0)
- Desire for greater emphasis and development around boat launch at edge of Hovander on Nooksack River (this one guy would not let it go)
- Greater establishment of community events
- Residents enjoy Riverwalk events
- Slight concern over Friday Market at Riverwalk
- Desire for greater continuity (less changing of time dates, greater reliability to establish in the culture of Ferndale)
- Intersections of Main and 1st, and 2nd Ave safety

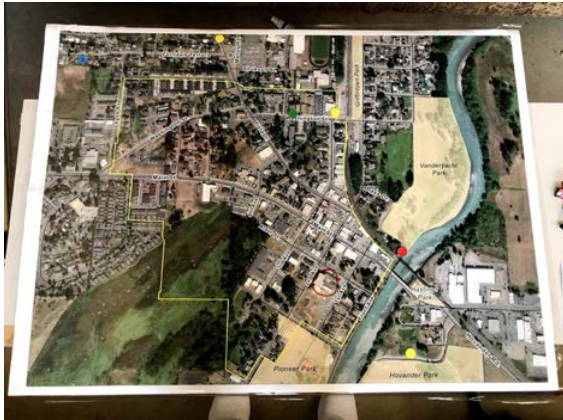


Figure 9

- and traffic concerns
- Main and 1st (-)
- removed stoplight
- Main and 2nd (0)
- Main intersections for parent pick up @ Central Elementary as well for students walking home
- Centennial Riverwalk (+)
- VanderYacht/Car Wash issue (-)
- Desire for smaller downtown grocery, corner store type
- One resident explained that where the Rite Aid is now, there used to be a Thriftway store that was liked

Traffic concern

- park accessibility issue
- Pioneer Park (+)
- Wetland areas (+)
- VanderYacht/Car wash issue again (-)
- Desire for better pedestrian connectivity along river-front, connect Pioneer, riverwalk, vanderyacht (and hovander?)
- Ambiguity of Griffintown Park (0)
- No strong reactions, undefined space
- Access to VanderYacht Park (-)
- strongly affected perceptions of otherwise nice space
- Off of Washington Street
- Potentially useful Central E info:
- busses load alongside school on 2nd Ave
- Alder on north end largely underutilized
- Car/parking lot traffic on 1st Ave

General Notes:

- Historical emphasis in Parks is a good thing
- Looping trails rather than out-and-backs
- Park signage, sense of place
- People seem confused by Griffintown (not negative view necessarily)
- People enjoy Riverwalk events, market
- Potential expansion?
- Food trucks, etc.
- Vista Drive sidewalks for school walkers, and for



Figure 11

- access to the downtown for people who live outside the immediate vicinity
- Potential pedestrian bridge between Pioneer Park and Hovander
- General feeling residents are more responsive to recreational opportunities of the downtown
- Main Takeaways:
- Pedestrian connectivity between green spaces
- Connecting trails, wetlands
- Integration of VanderYacht into downtown

What is working?

- 3rd Avenue as a lunch spot
- Pioneer Village Park
- Nice green spaces
- Strong sense of community
- Leader Block
- Riverwalk park
- Farmers Market
- The library



Figure 10

- Small community feel
- Cost of living

What is not working?

- Pedestrian opportunities
- Traffic congestion (8)
- Main street
- 1st and main street stoplight
- Parking shortage (3)
- Lacking identity (2)
- Should focus on the future with nod to the past
- Shops look old and are not appealing
- Lots of empty storefronts (3)
- Uninviting entrance (car wash and glass store at entrance)
- Downtown is not aesthetically pleasing
- Sidewalks
- Too narrow and inconsistent
- No family shops
- No place for younger people (2)

What would you like to see incorporated into the downtown?

- More restaurants (7)
- Family friendly
- Wineries/ breweries
- Cafes
- Food trucks
- Community outreach (2)
- More stores / shops (4)
- Sporting goods store
- Food co-op
- Attraction for outside visitors
- Use vacant buildings to “house” temporary art/craft vendors.
- Incorporate common theme for town (3)
- Leavenworth style, Pioneer Park theme
- Wooden signs like the outlaw saloon
- Lighting, signage, decor
- Large grocery stores (2)
- Specifically Fred Meyer / Walmart

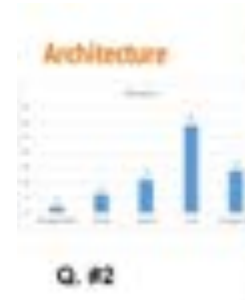
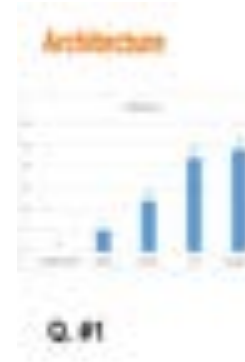
- Sports complex (2)
- Multipurpose for concerts
- Wider sidewalks
- More art, murals, sculptures
- Live music
- Art center
- Outdoor seating (2)
- Connection between parks
- Family friendly social gathering places for the fall and winter
- Shared office space for micro-businesses

Describe ferndale in five words or less.

- Small town county living
- Whiny spoiled teenagers
- Friendly place to live
- Not very interesting for people
- Old, uninspiring & bad traffic flow
- Friendly, quiet, boring
- Great community without clear direction
- Needs a lot of help!!
- Small town feel
- Dated, traffic congestion, need infill
- Stuck in the past

What else would you like to share?

- Need new roads to help congestion (2)
- Potential to be a recreation hub
- Need more/ better sidewalks
- Teach existing businesses how to promote themselves
- More art!!
- Better utilization of Hovander and the river



Architecture



Q. #3



Architecture

Q. #7



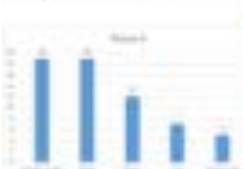
Architecture



Q. #11



Architecture



Q. #4



Architecture



Q. #8



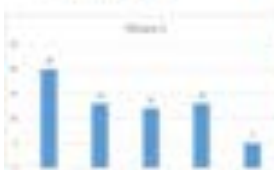
Architecture



Q. #12



Architecture



Q. #5



Architecture



Q. #9



Architecture



Q. #13



Architecture



Q. #6



Architecture



Q. #10



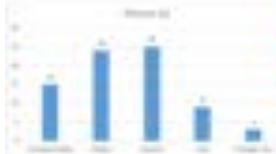
Architecture



Q. #14



Architecture



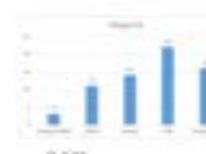
Q. #15

Height



Q. #19

Height



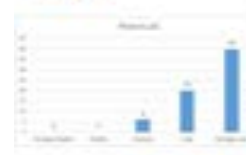
Q. #23

Architecture



Q. #16

Height



Q. #20

Density



Q. #24



Q. #25

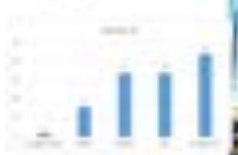


Q. #26



Q. #27

Height



Q. #17

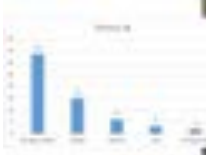
Height



Q. #21



Density



Q. #28

Height



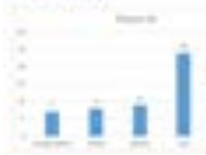
Q. #18

Height



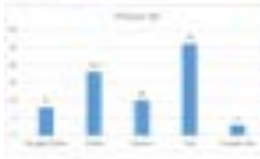
Q. #22

Density



Q. #29

Density



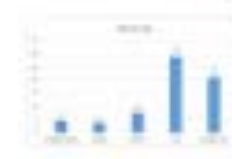
Q. #30

Setbacks



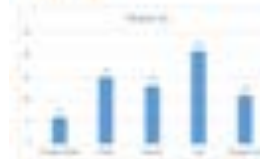
Q. #34

Parking



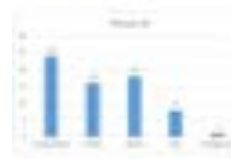
Q. #38

Density



Q. #31

Setbacks



Q. #36

Parking



Q. #39

Density



Q. #33

Setbacks



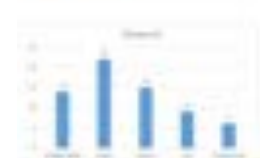
Q. #36

Parking



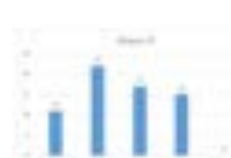
Q. #40

Setbacks



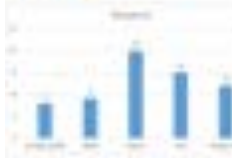
Q. #33

Setbacks



Q. #37

Parking



Q. #41

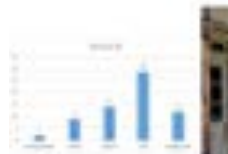
Parking



Q. #42



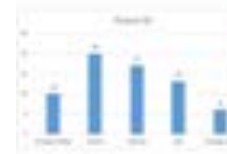
Commercial and Retail Space



Q. #46



Commercial and Retail Space



Q. #50



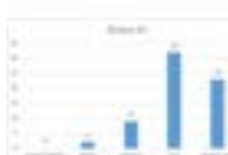
Parking



Q. #43



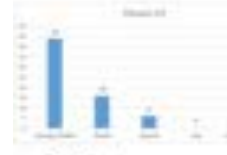
Commercial and Retail Space



Q. #47



Commercial and Retail Space



Q. #51



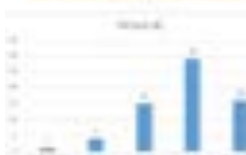
Parking



Q. #44



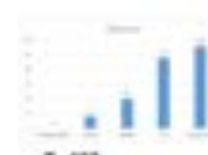
Commercial and Retail Space



Q. #48



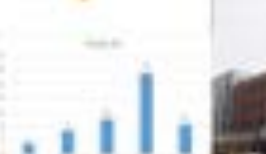
Commercial and Retail Space



Q. #52



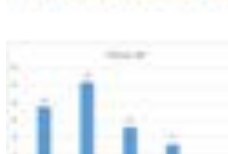
Parking



Q. #45



Commercial and Retail Space



Q. #49



Commercial and Retail Space



Q. #53



Commercial and Retail Space



Q. #54

Sidewalks



Q. #58

Sidewalks



Q. #55

Sidewalks



Q. #59

Sidewalks



Q. #56

Sidewalks



Q. #60

Sidewalks



Q. #57

Sidewalks



Q. #61

*Ferndale
City Center Plan*



WWU Urban Transitions Studio
WWU Sustainable Communities Partnership Program
2019