Between the City and the Sea:
Experiencing Identity in a Changing Landscape

Jen Kriegel

A thesis submitted in partial fulfillment of the requirements for the degree of:

Master of Architecture
Master of Landscape Architecture
Univsercity of Washington
2020

Committee:
Ken Oshima
Julie Johnson

Program authorized to offer degree:
Architecture
Landscape Architecture

University of Washington

Abstract

Between the City and the Sea: Experiencing Identity in a Changing Landscape

Jen Kriegel

Co-Chairs of the Supervisory Committee:
Professor Ken Oshima, Department of Architecture
Associate Professor Julie Johnson, Department of Landscape Architecture

This thesis considers the challenges rural communities face to their traditional ways of life and identities, investigates methods other, global communities use to react to these changes, and finally, offers a possible solution for a community in Puget Sound's Stillaguamish Estuary. Central to this thesis is the question: how can a community take on demographic and climate based challenges without losing its existing self-identity in the process? The methods used to answer this include a deep site analysis, with an especial focus on local history, and my own personal experiences and attachment to the place, as the chosen site is my own home town.

BETWEEN THE CITY AND THE SEA

Experiencing Identity In A Changing Landscape

Acknowledgments

The Stillaguamish Tribe whose ancestral home shares this site

The community of and surrounding Stanwood

My family, especially my parents

My cohort, both in Landscape Architecture and Architecture

The guidance of my committeev
Ken Oshima
Julie Johnson

Jen Kriegel
M.ARCH + MLA Thesis Document
June 2020

[0.1] Farmland adjacent to Stanwood

Contents

1

INTRODUCTION

[3.1] Watercolor impression of the Stillaguamish Delta

[3.2] A farm near Stanwood

1.1 Introduction

This thesis considers the challenges rural communities face to their traditional ways of life and identities, investigates the methods communities across the globe use to react to these changes, and finally, offers a possible solution for a similar community in Puget Sound's Stillaguamish Estuary.

Small farming communities all over the world are facing existential threats from all sides: the encroachment of the sea and the cities; the rising of floods and a growing population; the erosion of land and a way of life. Many of these places are no longer recognizable as the small, farming based communities they once were. As people move into formerly rural communities from larger cities, changing the demographics and ethos of the place, those who remember a different place must learn to adapt. Similarly, everyone who chooses to join these communities must recognize the existential threat they face from climate change and all of its affects. It is possible to save these places from extinction, maintain the memory of their traditions and the fundamental aspects of their cultures. It will, however, require a radical rethinking in what it means to be a part of such a community.

This thesis studies community identity in the face of demographic change and sea level rise. A site's identity is its persona - the way it presents to people, those visiting and those who have lived there all their lives. Identity is always an interpretation, and always slightly different for each person. Just as every person brings a unique perspective to a place, every place offers a unique identity to the person viewing it. In this way, the identity of a site is adaptive, responsive, and created over time. A place's identity changes with the people who occupy it, and both adapts to those people's views and responds to their needs and notions. Over time, many identities will begin to overlap, and thus the identity of a place become increasingly complex.

The community studied in this thesis is my own hometown of Stanwood, Washington. Stanwood sits on Puget Sound, most famous for being the small town one must pass through to access Camano Island. It is also located beside Port Susan, a globally important bird sanctuary and nature reserve which includes thousands of acres of mudflats, saltmarsh, and the estuary of the Stillaguamish River. Already the town is looking to the future: new parks are being considered, bike paths built, and some of the berms that once protected farms from flooding removed. However, new buildings are still going up on the flood plain, houses are built on the edge of the mud flat, and roads continually widened.

When I was born, it was a small community of fewer than 2,000 people; it has since grown to over 7,000. The rapid growth is largely due to an increase of commuters who want more space and a quieter life. Many of them commute to Everett to work at Boeing; some commute all the way to Seattle. Although the farms are still there, protected by zoning and often still owned by the original families, the farmers are by now a minority. Stanwood is becoming less a farming town, and more a suburb. Many thousands of people annually travel through the town to visit one of the two popular state parks on Camano Island, a popular weekend destination for urbanites looking to get away.

Reconciling all of these changes so that the community can grow sustainably, but without forgetting its past, is a massive challenge and the fundamental goal of this thesis.

Research Questions

What are methods already being used by communities to preserve the culture of a traditional rural way of life, while embracing change and moving towards the future?

What are the demographic and climate-based challenges and opportunities facing Stanwood?

How can the Stanwood community take on these challenges without losing its own self-identity in the process?

Methods

This thesis includes firstly a study of precedents, including relevant literature and precedent sites, all of which I have previously visited. The personal experience of a landscape is an important factor, and it therefore makes sense to primarily study existing site which I have in-person experience with.

A large portion of this paper is dedicated to an in-depth site analysis. I consider this one of the most important parts of the design process. The site analysis includes a section describing the Stanwood area from my own perspectives and experiences. This is followed by a Landscape Character Assessment, a method of site analysis used in the United Kingdom. Finally, there is a section on what Stanwood looks like today.

The final part of this thesis is the design solution, which is based on precedent studies, the site analysis, and my own personal experiences of the place. The study of local history is especially important to the design, as is my own attachment to the landscape.

[3.3] Mudflats adjacent to Stanwood

2

PRECEDENT & LITERATURE REVIEW

[2.1] Farmland in the Stillaguamish Delta.

[2.2] Recently plowed fields.

2.1 Literature Review

As time passes, people flee the gray, lifeless cities for more land, more trees, more lawn – more connection to nature. As the population increases, and despite increasing percentages of the population living in cities, the suburbs, small towns, and rural settlements are filling up with people fleeing urban life. And each step outward the cities takes, another step must be taken by those escapees who dread urban life. The time has come where every place on earth is, if not inhabited by towers and concrete, certainly heavily impacted by cities. Indeed, in most of the world, the time has come where cities are virtually limitless. Rather than allowing this ceaseless march outwards to ever more – and ever less – wild areas, it is time to bring that wildness back to humans.

In his seminal essay "The Trouble with Wilderness: Or, Getting Back to the Wrong Nature.", William Cronon discusses America's historic interactions with nature, especially the way in which we consider nature separate, and often superior, to urban areas (15). Among other things, he points out that the "true wilderness" of national parks and other remote areas is only really accessible by the wealthy (15). Cronon also suggests that by believing nature is something out there, we neglect the nature we live alongside, even in cities (24).

An urban tree, planted and pruned by a homeowner, is still part of nature, according to Cronon. He urges us to recognize that nature is all around us, that there is more than one way to interact with nature, and more than one definition of nature.(15) He is one of the first to suggest that nature is everywhere, and humans are everywhere, and that we should not discount the nature in cities as domesticated, nor should we consider the nature of national parks "pure" simply because it is distant from cities. This paper suggests that a new era requires a new definition and relationship with nature.

Similarly, Lawerence Culver in "Confluences of Nature and Culture" recognize that the Jeffersonian ideal remains deeply embedded in the minds of many environmentalists, and Americans in general, the authors recognize that humans require both nature and the city to form a rich, fulfilling life, ecosystem, and environment (1). He argues that despite a long history of western thought viewing nature and the city as opposites, the two are not only intimately intertwined, but each essential to the survival of the other (16).

This essay offers a background on American relationships to nature, cities, and wilderness, which is especially important in a place where traditional views of these ideas intersect. It also proposes that the city and nature are not opposite and cannot

be differentiated. Even in rural America, farmland often borders parks, nature reserves, and other wilderness areas. All of these lands are part of nature, but farmland is not considered natural (Culver 15).

Maria Kaika argues in "The Urbanization of Nature" that a defining aspect of modernity is man's attempts to purify, tame, or civilize nature, but unlike many would have hoped, in the process society did not equalize (12). Over time, the two opposing forces of nature and cities have merged, with what Kaika calls the urbanization of nature, and we continue to try to balance the two in a world where the boundaries of cities are limitless (14). Similarly to the Culver reading, this article questions the boundaries of cities and nature. It adds an element of social justice, as well as the idea that cities are boundless, and nature is boundless.

All of this academic thought on wilderness and nature is somewhat opposite to the thoughts of classic nature writers of decades past, who bemoan the loss of wilderness. J.A. Baker wrote the British classic The Peregrine when, later in his life, he became obsessed with the increasingly rare Peregrine Falcon, and so spent years haunting his home county of Essex, where the birds overwinter, hoping for glimpses of the last remains of the species. The book was first published in 1967, before Essex saw the boom of development that would hit a few decades later. Even at that time Baker is calling for the protecting the landscape from the encroach of modernity, so that Peregrines and other birds may continue to thrive (32).

This book calls for human advancement to halt so that nature may be preserved. Not that humans must entirely stop advancing, but that they should stop spreading into the remaining wilderness, lest we lose important species and ecological functions. In a way, Baker was correct, especially in the county of Essex he explored which, due to its proximity to London, has seen enormous growth in the decades since he wrote the book. However, the Peregrine is not extinct, and much of the Essex landscape is protected in various ways. Not only has his writing had a lasting impact, the results offer hope that there is more than one way to protect wilderness.

One of Baker's followers is Robert Macfarlane, who wrote his own classic of the genre, The Wild Places. In this novel, Robert Macfarlane travels throughout the British Isles searching for any remaining pockets of wilderness. What he finds are small areas where humans still have not altered the land, or places where humans have long since left. He finds a huge variety of wild places left, from beaches to woods, and mountains to salt marshes. His book is a classic in British nature writing, and a call to arms for preserving what wilderness is left

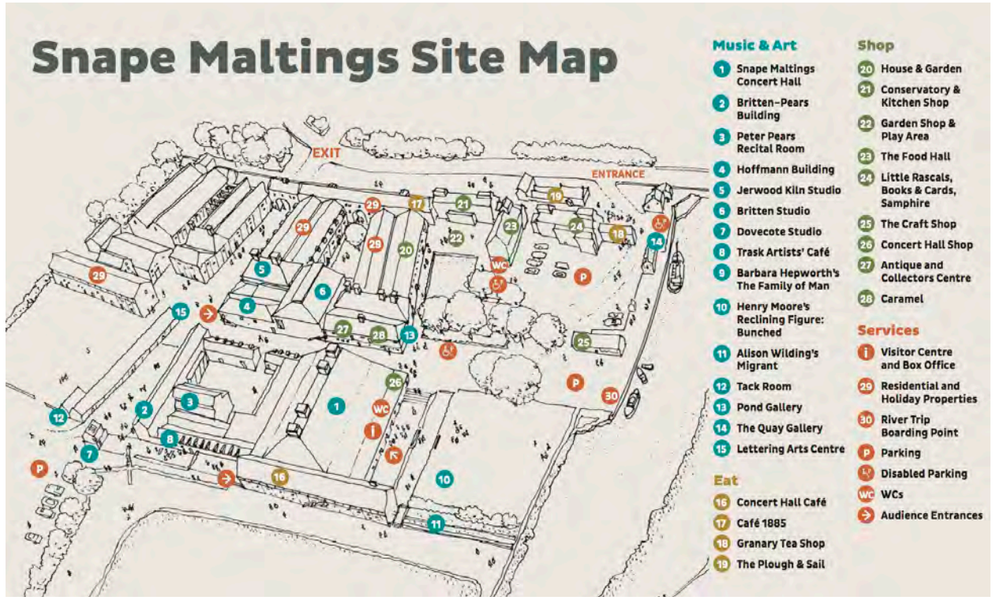
This work fits into an interesting side of the wilderness debate, where Macfarlane searches for the last remaining vestiges of wilderness in the British Isles, and constantly calls his reader to protect these places. What the book fails to realize, however, is that there is wilderness everywhere, even in the farms and highways he dislikes. He even finds a "wild" place in Essex where there is a ruin of a manor house that has been taken over by a forest; Macfarlane acknowledges that the wild will always outlive human habitation, and once humans leave take over again (278). This is somewhat the opposite of his apparent argument – that we must protect the wild places at all costs, or they will be forever destroyed. Taking it all together, we can acknowledge that the places of ecological importance should be protected, and that places humans have apparently destroyed may still be revived.

Snape Maltings

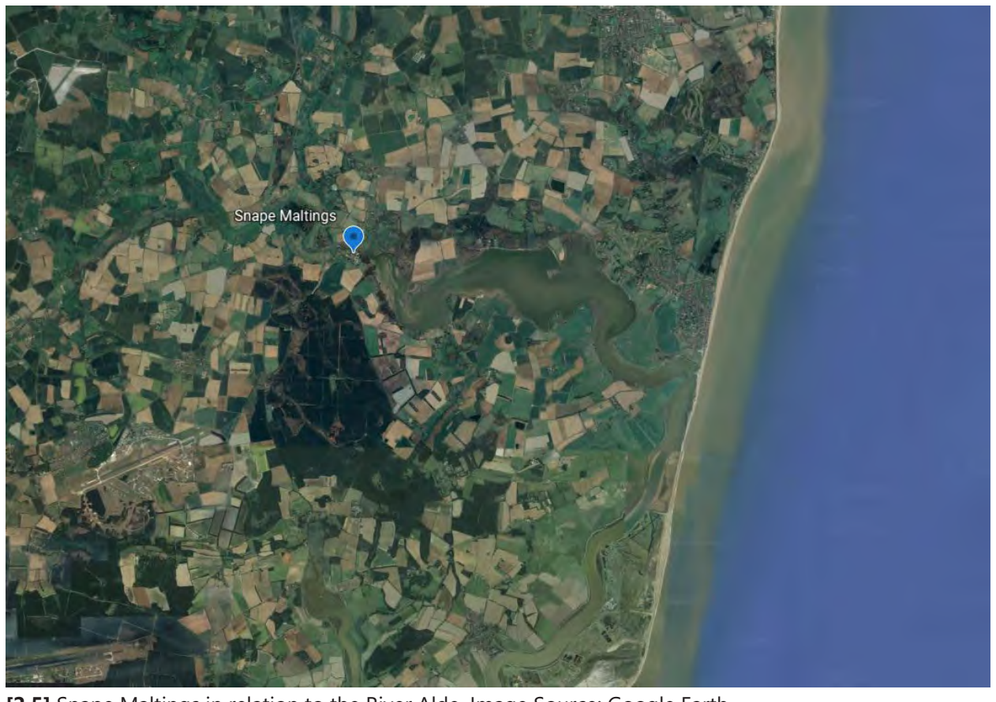
Snape Maltings lies about 80 miles from London as the crow flies, although it is a 100 mile drive. It takes a bit more than two hours in a car, and over three by train, to get there, although the nearest train station is still a few miles away. The maltings sit on the edge of the Suffolk Coast and Heath Area of Outstanding Natural Beauty, a designation given by the British government where natural beauty of a place is considered exceptional, and should be preserved. Notably, no large area of the United Kingdom is uninhabited, and AONB's, despite being designated for their natural beauty, are always inhabited to a greater or lesser extent and have been for many centuries, if not millennia. The Suffolk AONB is designated for its exceptional coasts and heathlands, and contains within its boundaries the estuaries of multiple rivers.

The county of Suffolk lies on the east coast of England, and Snape Maltings on the estuary of the River Alde and about 4 miles inland, though from the maltings to the coast the terrain is quite flat. The maltings at Snape have been around since Victorian times, but in the mid-20th century, famed English musician Benjamin Britten decided to

[2.3] Snape Maltings in relation to London. Image Source: Google Earth.



[2.4] Site map and key of Snape Maltings. Image Source: Snape Village.



[2.5] Snape Maltings in relation to the River Alde. Image Source: Google Earth.

set up a school of classical music there, adapting and reusing the existing buildings. The school continued to thrive after his death, and is now a world-renowned music hall and school, just a few hours from London. The campus shows every possibility of adaptive reuse, but also the challenges and consequences, and necessity, of bringing urban life into a place. The maltings also connect to miles of public pathways and views over the estuary, where attempts to preserve the saltmarshes and save the village from sea-level rise are visible.

The county of Suffolk, including the village of Snape and its neighbor, the coastal town of Aldeburgh, have been a primarily agrarian economy for centuries, though not with supplement from other industries – during the Roman occupation of Britain, and for a few centuries after, Aldeburgh was an important ship building port. For the last few centuries, Suffolk supplied London with much needed produce and grain. The nearby town of Dunwich was in 1000AD the tenth largest town in England, and served as an extremely important port from the time of the Roman occupation until it vanished in a storm in the 13th century. Aldeburgh has been a reasonably popular seaside destination since Victorian times, renowned for its quiet, natural beauty, access to the recreation, including sailing and miles of walking trails, and its most famous inhabitant, Benjamin Britten.

[2.6] Converted maltings overlook the River Alde.

The house where Britten and his partner Peter Pears lived in Aldeburgh is now a museum, and the maltings themselves dominate the village of Snape. It attracts classical music students from all over the world, and holds numerous performances throughout the year. The campus now includes multiple performance halls and practice rooms, administrative areas, multiple restaurants and cafes, a number of permanent shops, and a farmer's market. People travel from all over the country to visit, especially since the expansion of the campus to include shops and cafes has made the school a worthwhile daytrip, interesting for more than just performances. The maltings sit directly beside the River Alde and connect to miles of trails that can take one to Aldeburgh in a few hours walk. Direct access to miles of farmland and estuary adds to the appeal, and many patrons take a walk down the estuary when they have exhausted all the shops.

Despite being a largely working class area, Snape and Aldeburgh have embraced the school made by Britten as an essential part of their culture. The school sells local crafts, the farmer's market is all local sellers, and even the restaurants use local produce when possible. Many jobs are available at the school itself, and the tourism it generates adds even more. Whether the locals originally loved it for the arts it brought, or put up with it for the boon to the economy it generated, it is certain that the area is now inextricably linked with Snape Maltings.

[2.7] Garden shop and historic buildings at Snape Maltings.

Dedham Vale AONB

Neighboring Suffolk to the west is the county of Essex, which throughout history was the perfect to encourage an agrarian society. The landscape is flat, dry and expansive – and most importantly arable – allowing for large-scale farming. It has a terrain and climate suitable for creating farmable land and lies in close proximity to major markets – particularly London – which made farming especially lucrative. Produce could easily be brought to London by barge and sold in markets, then manure brought back on those same barges from the city streets to fertilize the fields.

Even today, the farms of Essex vary in crops and use, largely depending on their proximity to rivers. In the floodplains only grass is cultivated and these areas are used for grazing livestock. Further away from the rivers and up the gentle slopes, a variety of crops are cultivated. This differs little from historic farming in Essex; around the 1840's, roughly three-quarters of Essex farmland was arable and cultivated for crops while the remaining quarter was pasture land for livestock (Hunt and Paim 162). In recent decades, the county has experienced rapid changes. The population is rising rapidly and more houses, buildings, and roads are built each year. House and rental prices in London are exorbitant and Essex, with its numerous and fast rail links to the capitol, is seeing a boom in popularity.

[2.8] Dedham Vale in relation to London. Image Source: Google Earth.

[2.9] Walking map of Dedham Vale AONB. Image Source: The Dedham Vale Society.

[2.10] Dedham Vale in relation to the River Stour. Image Source: Google Earth.

In the county of Essex, on the border with Suffolk, is Dedham Vale AONB, this time on the estuary of the River Stour. The town here is Manningtree, recently named one of the best villages to live in England, partially due to its hour train journey to central London. There is an ancient sea wall running beside Manningtree, as well as working maltings, industrial estates, and farms. Perhaps most interesting is that it also borders Dedham Vale Area of Outstanding Natural Beauty. This designation has meant that Dedham Vale has been preserved as a 19th-century farming landscape. The area was a favorite of the painter Constable. Comparisons between Constable's painted views and those of today show that very little has changed in the area – if anything, only that the trees have grown, died, and changed. All around the AONB, the county is rapidly growing, with motorways and suburbs taking over. Dedham Vale, however, is an example of landscape preserved for ecology, but still working farmland, lived in, used by the public, and connected to a growing town.

[2.11] The historic village of Dedham.

Dedham Vale has become an essential escape for many; its protected open space offers great public access to nature. It also offers a reminder of what England, and especially Essex, used to be, if somewhat romanticized in the form of a living Constable painting. The area gives us something to compare modernity to, and to see in great relief the growth over the last century. The preservation of this area connects users to the history of the region, especially as there are many historic buildings throughout, including the village of Dedham that has a shop, café, and museums run by the National Trust, which is partially responsible for protecting England's heritage.

[2.12] Sheep grazing in Dedham Vale.

Tawharanui Regional Park

Tawharanui Regional Park in New Zealand is an exemplar in multi-functional landscapes. This area was primarily farmland for a hundred years, but the community hoped it could become something more. It has since become a public park, nature reserve, and farming community, all in one.

The Tawharanui Open Sanctuary Society formed in 2002 to generate volunteering, educational programs, fundraising, and advocacy (TOSSI). The helped get a predator-proof fence built to protect the entire park (TOSSI), an essential conservation tool in New Zealand where many of the native birds are flightless and animals lost their prey response – a single invasive predator can wipe out an entire species population in an area in very little time. This fence has made Tawharanui an extremely important wildlife sanctuary, but on top of this. It integrates sustainable farming and recreation, making it the first open sanctuary in New Zealand. In addition to this, adjacent to the northern beach is a Marine Reserve extending half a mile in to the water, which is a no take zone where fishing is not allowed. This has helped marine species, as well as terrestrial species, thrive in the area.

[2.13] Tawharanui Regional Park in relation to Auckland. Image Source: Google Earth.

[2.14] Map of Tawharanui Regional Park. Image Source: North Shore Tramping Club.

[2.15] Tawharanui Regional Park on the Tawharanui Peninsula. Image Source: Google Earth.

The Tawharanui Penninsula is a mere fifty miles from Auckland; it takes less than an hour-and-a-half to drive between the two. The land the park occupies was once a single, massive private farm on the end of the peninsula (Pure New Zealand). The elevation there is dramatic, and as a result wide views of the Pacific Ocean are never more than a few minutes' walk away. A sandy beach on the north side of the peninsula is considered one of the best swim and surf spots near Auckland (Pure New Zealand). There is abundant, shady ground for picnics, and camping sites available. One trail leads through a variety of New Zealand ecologies, from the beach, through forest and meadows, and even past a protected breeding area of rare native birds. Several miles of trail are accessible to the public, leading through farmland and native habitat, and taking the walker to panoramic views.

The paths crisscross throughout the park, taking you through fields where cattle graze alongside endangered birds. There are some areas dedicated entirely to wildlife, some primarily farming, and a stretch of beach particularly loved by humans. All of these uses play wonderfully together, and it is a stunning example of how humans can learn to work alongside nature.

[2.16] Cattle graze at Tawharanui Regional Park.

[2.17] Tawharanui Marine Reserve.

3

LANDSCAPE CHARACTER ASSESSMENT

[3.1] Dairy farm and railroad tracks north of Stanwood

[3.2] Road leading to Stanwood

1.1 Experiencing Stanwood

The place I call Stanwood has always been a place of opposing forces and constant change. Two large rivers mingle on its banks; two land masses almost touch. It is an important nesting ground for shorebirds and a home to numerous birds of prey. Salmon are abundant in the rivers, sought after by people and animals. Indigenous tribes hunted and fished here since time immemorial. What made a good hunting ground also made a good logging mill. Here European-settlers battled the forces of nature, logging the forest and opening the land. When their town on the river finally became well established, the river moved. Dikes went up to keep the unruly river in check, but the Stillaguamish is a volatile body and its waters do not like to obey. The river wants freedom, too. Humans adapt, and the cleared and diked land could now be used for farming. The small settlement became a trading post, then a town in its own right. The town expanded into two, battling over resources for a few decades, until coming together again. A logging town quickly changed to a farming town, and soon after a shelter for urban workers. What better place for those who want to live among nature, away from the cities, than in a town where it has already been tamed?
The vast natural resources of the Stillaguamish and Skagit estuaries attracts people to the banks; animals will maintain our occupation long after we are gone. Stanwood itself lies at the confluence of these two estuaries, overlooking the bays where the rivers meet the sea. The Skagit River's southernmost slough meets Puget Sound just north of the town; the main channel of the Stillaguamish used to run directly to the south. The Skagit River empties in Skagit Bay, the Stillaguamish into Port Susan Bay. The estuaries are uniquely close in the region, and together create thousands of acres of vastly important wildlife area, including region's most important bird habitat and a Pacific Northwest specialty: mudflats.

On a clear day at low-tide, the mudflats seem to stretch for miles; it looks as if the water is a mirage, and the mud lasts forever. Port Susan Bay is especially shallow, and protected by the curve of Camano Island to the west and the mainland to the south. The land nearly meets at Stanwood, separated only by a half-mile of shallow tidal marsh. This land in the estuaries, mudflats and marshes, looks solid and walkable, but only for the shorebirds, and other small animals. As soon as a person sets foot on it, the land seems to revert to water. Much squelching and struggling is necessary to get unstuck, and the feat is not often tried again. Many people leave a walk on the beach with mud encased up to their ankles and splattered up their backs – the dogs come back coated

to their bellies with it. This is not a sandy resort; if the beaches are not muddy, they are rocky, clogged with driftwood and everything covered with barnacles. Bare feet often come back cut open, to top off the mud and encrusted seawater. This remains a wilder place than most. It is more beautiful for its wildness, and more dangerous for its beauty.

The tides rapidly change – many a person has been stranded by the tide, or boats left on their sides, lost without the water. Tides push back on the river as well, and it is not uncommon to cross the bridge over the Stillaguamish twice in one day, commenting once on how high the river is, and once on how low. The elevation rises slowly through the estuary, creating an enormous variety of habitat zones, from the aquatic and mudflats, to salt water marshes, grass and meadowlands, and eventually forests. The Stillaguamish is an especially silty river, with sediment constantly running out the mouth and catching in the estuary. As a result, the estuary itself, where the river is still allowed to ebb and flow at will, constantly changes, building up sediment in one area over many years, only to have it vanish in a single storm. The geology here, like the mudflats and tidal marsh, is neither water nor land. No doubt science has something else to say on the matter, and our maps believe it with certainty, but the truth is the land cannot be trusted to stay solid, nor the water trusted to stay liquid. This in-between state that the estuary occupies used to stretch for many thousand more acres than it does today, back before the dikes went up. The rising of the seas and the silting of the river suggest nature wants to return to this state. Nature is all opposing forces; it never takes sides.

The Stillaguamish River runs through a fairly narrow channel it carved through the foothills of the Cascade Mountains. It begins to create a valley about twenty miles upriver at Oso; by the time it reaches Arlington, eleven miles upriver, the valley is a mile wide. Just before Stanwood and the estuary, the river valley reaches a mile-and-a-half wide. Today, this lowland valley where the river runs is primarily farms, with one small settlement, Silvana, a few miles upriver, and of course Stanwood itself. At the edge of the valley, cliffs rise abruptly, in some places less than one-hundred feet, in some, over two-hundred. The cliffs are thick with dark green plant life, and the change always feels dramatic; the uplands and lowlands seem like two different worlds.

The lowland area might be open and flat, suitable for farming, but the uplands remain heavily wooded, with only the occasional farm creating open land. The newest part of Stanwood, nearly two-thirds of the town, lies in these uplands, and offers the only break in the trees for miles. This is the area most newcomers move to, as the lowlands houses the old-town and the main street, but relatively few homes.

[3.3] Mudflats overlooking Port Susan

[3.4] Recently plowed farmland





200′
0′
200′
0′

UPLANDS
FARMING LAND
RAILROAD
IRVINE SLOUGH
FARMING LAND
HAT SLOUGH
UPLANDS

HORIZONTAL SCALE: 1″ = 1000′
VERTICAL SCALE: 1″ = 200′

SECTION: STILLAGUAMISH DELTA, NORTH TO SOUTH

[3.5] Section of Stillaguamish Delta. Top Images, left to right: Road by flats, Irvine Slough, Farmland, Recently plowed farmland, Hat Slough





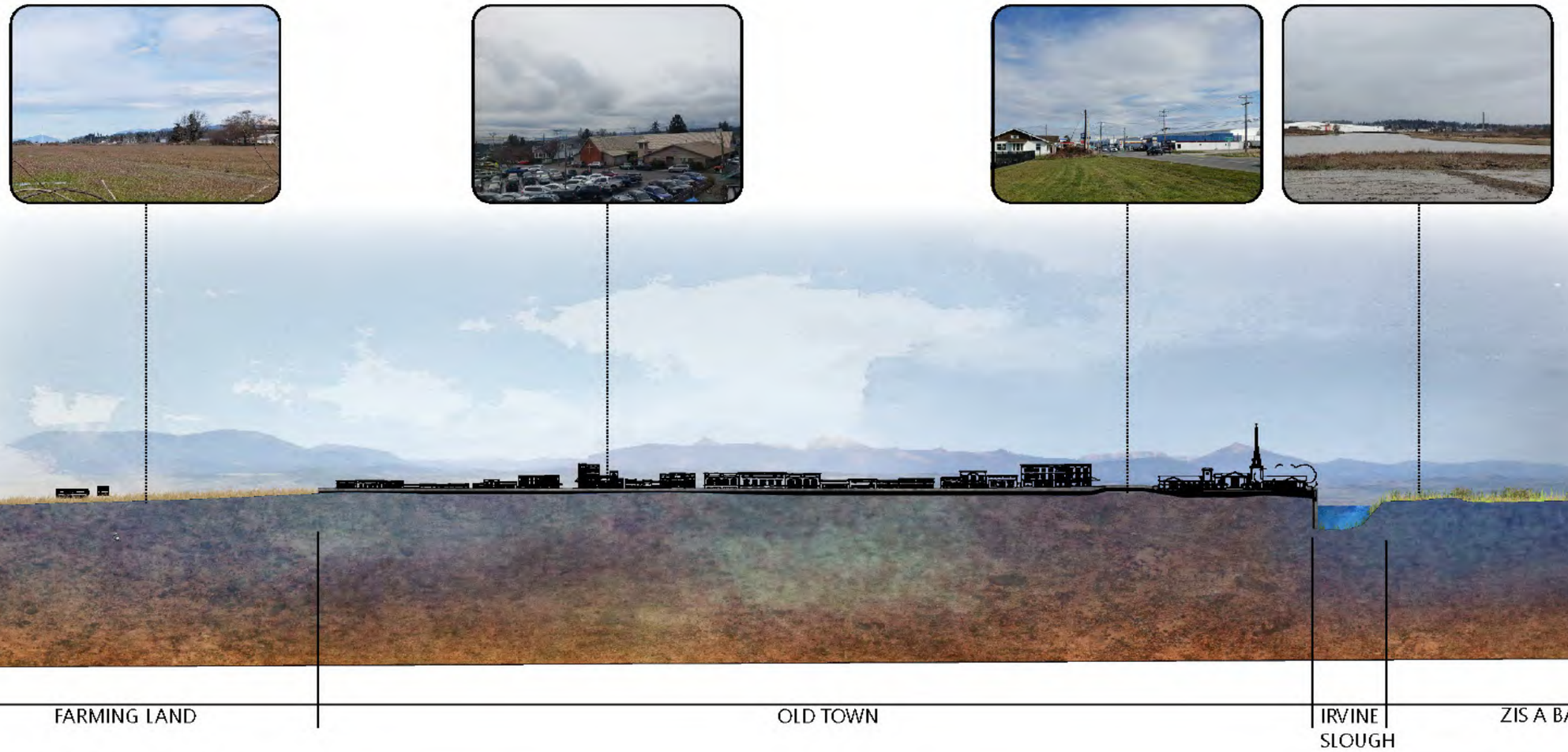
200′
0′
160′
0′

UPLANDS
RAILROAD
OLD TOWN
LEQUE ISLAND
CAMANO ISLAND

HORIZONTAL SCALE: 1″ = 1000′
VERTICAL SCALE: 1″ = 200′

SECTION: TOWN OF STANWOOD, EAST TO WEST

[3.6] Section of Stanwood on the flats. Top Images, left to right: Highway 532 overhead, Historic East Stanwood, Twin City Foods, Leque Island, Road to Camano Island



HORIZONTAL SCALE: 1" = 100'

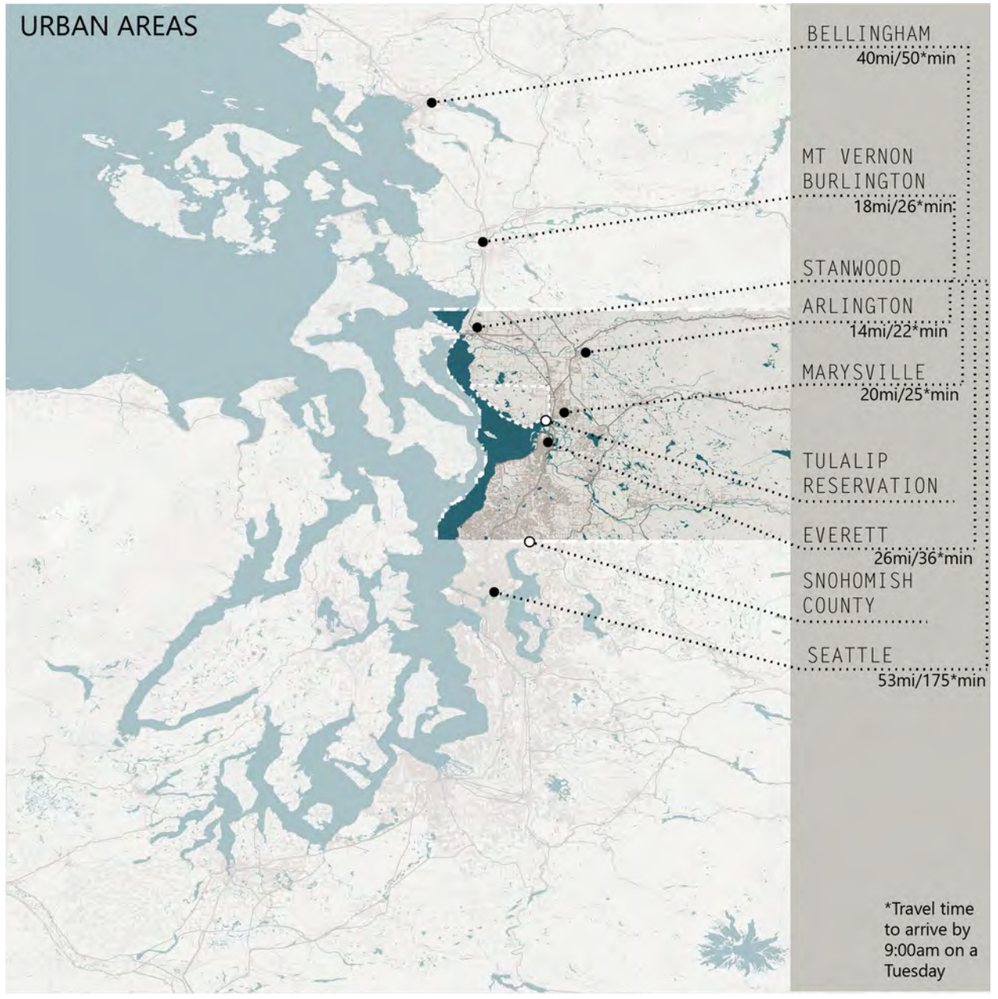
SECTION: TOWN OF STANWOOD, NORTH TO SOUTH

[3.7] Section of Stanwood on the flats, north to south. Top Images, left to right: Farmland, Buildings in Stanwood, Buildings and Highway, Irvine Slough from Leque Island

Stanwood finds itself optimally located to become a home for those who work in cities, but crave a more rural life. A short commute by car, less than half-an-hour, will get one to Mt. Vernon-Burlington, Arlington, and Marysville; a mere forty minutes will get one to Everett, forty-five to Bellingham. Seattle can be reached in less than hour if there is no traffic – during commute times it can take as long as three hours. Many people in the town work at the Boeing factory in Everett, and a Park-and-Ride exists in the town, offering bus services to the factory, as well as to Arlington, Marysville, Mt. Vernon-Burlington, and other parts of Everett. Busses from Marysville go direct to Seattle and Bellevue. The railroad runs directly through the town, and an Amtrak stop is even located there, although this is not often used for commuting, as the trains only stop if someone booked a ticket. The interstate, I-5, runs about six miles east of the town. Another highway, state highway 532, runs from I-5 through Stanwood, forming the only land route connecting the mainland with Camano Island.

This road has been both extremely important for Stanwood and a challenge the town has dealt with since the road opened. The highway brings much more access to the town, and makes it possible for many more people to live there and work elsewhere. However, the draw for most visitors is Camano Island, with its multiple state and local parks, most of which offer stunning views of the Sound and beach access. The boat ramps at the state parks are especially popular, offering direct access into one the region's most beautiful areas, and one of the best fishing spots. People come from all over to camp, hike, build sandcastles, or just enjoy the view on Camano Island. They do not come to Stanwood for any such things. Camano has very few services, so some people do stop in Stanwood for groceries, restaurants, coffee, and gasoline, but not many. The town seeks this lost revenue, both as a way to grow, and a way to safeguard its future.

As the seas rise on one side, and the rivers increasingly threaten to breach their walls, the urban centers are growing. This brings the boon of more potential tourists, and the threat of a sudden increase in population that the town cannot handle. The change in demographics threatens the identity of the town, which once considered itself rural, but can no longer do so. Nonetheless, it still serves the farmers who still make their livelihoods next door, and this farming lifestyle remains a part of town's identity. The rising tides threaten this identity, too, and the town, like many across the world, is at risk of losing its entire identity – if not its entire existence.



[3.8] Map of Puget Sound showing commute times from Stanwood to nearby urban areas

Only if the unique and important aspects of Stanwood's geography and history are preserved and utilized in a sensible way, can the town survive. These many preceding pages offered my own experience of the town – the identity it shows to me, and me alone. To everyone else, it is something different – not entirely, but subtly, different. These differences in perception cannot ever be fully documented. However, by revealing some of the indisputable facts about the area, as follows, the fundamental, underlying aspects of the town identity can be understood.

[3.9] Road to uplands

[3.10] View of Irvine Slough, towards town, from Leque Island

1.2 Landscape Character Assessment

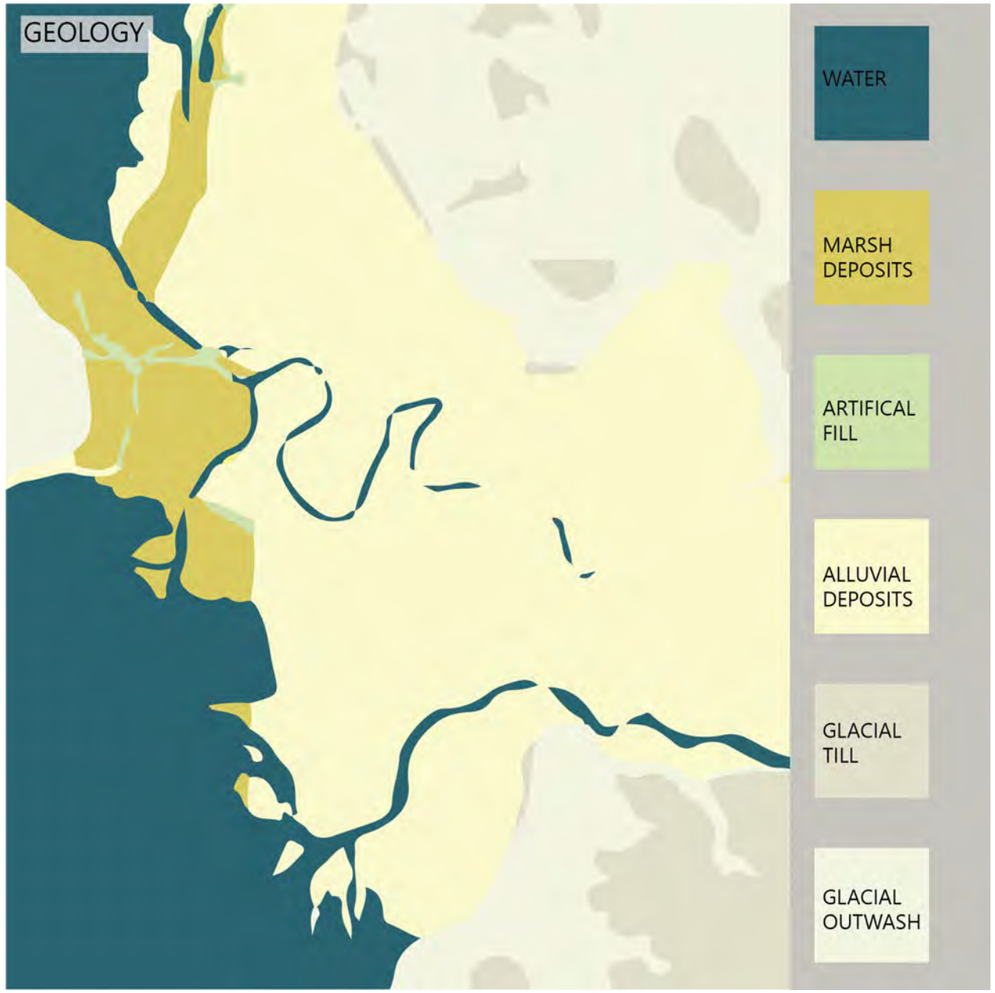
The Landscape Character Assessment is a method of deep site analysis undertaken in the United Kingdom, intended to document the character of a landscape for posterity, to be used and referred to during any future planning and design. What follows is an abridged version of such an assessment; a full assessment takes a team of multiple experts, and would constitute a thesis itself.

This assessment documents the physical aspects of a place, as well as the cultural aspects. It includes geology, hydrology, and habitat studies, as well as a brief history of the area. Only with all of this information can a full and successful design be considered and understood.

[3.11] Hat Slough, the southern chanel of the Stillaguamish River

Geology

Stanwood lies in the Puget Lowland, a region of low-lying land between the Cascade Mountains to the west and Olympic Mountains to the east, and extending from the San Juan Islands in the north to the edge of Puget Sound in the south (Puget Lowland). Glaciers advanced and retreated multiple times across the region, forming Puget Sound and the Puget Lowland. In the past 2 million years, this possibly happened as many as five times, and as recently as 15,000 years ago (Puget Lowland). These glacial movements contribute to the dramatic terrain of the Puget Sound.



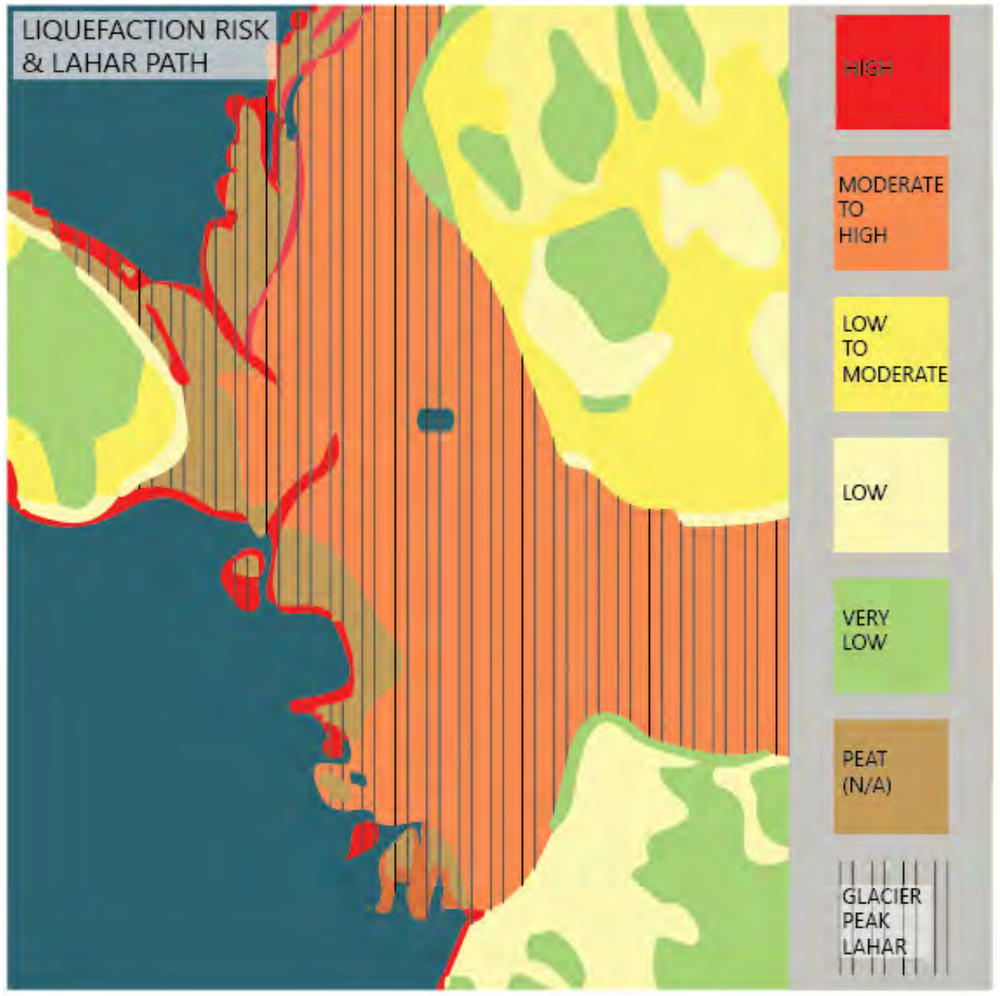
[3.12] Map of site geology

Alluvial deposits form the primary geology of the Stillaguamish valley and channel, while glacial outwash and glacial till form the upland area. Alluvial deposits, in particular, do not make stable building ground – this soil is exceptionally prone to liquefaction during an earthquake. In other areas prone to liquefaction, drilling and dropping pilings to the stable bedrock offers the support buildings need to survive an earthquake. Unfortunately, bedrock in Puget Sound estuaries is often especially deep. Measurements in the Snohomish River estuary show bedrock depths of as much as 200 meters (218 yards)(Map Showing Depth to Bedrock), and it stands to reason the Stillaguamish estuary is similar. This makes it financially difficult to use bedrock to stabilize the hundreds of buildings which already exist in the lowland.

Numerous faults lines lie near Stanwood, and the threat of a major earthquake remains ever present. In Stanwood and the surrounding areas, however, liquefaction presents the biggest threat. Structures may survive the shaking of an earthquake, but are unlikely to survive the ground turning liquid beneath them, and this is highly likely in the Stillaguamish Valley. The valley itself is at moderate-to-high risk of liquefaction, and even most of the uplands where Stanwood is located are at low-to-moderate risk. Damage from liquefaction is difficult to prevent, and moving out of high-risk areas is often the safest solution.

Puget Sound, thanks to numerous fault lines and geological activity, is a highly volcanic region, with many active volcanoes in the Cascade Range. Most memorable of these is Mt. St. Helens, but there are many in the region. One of these is Glacier Peak, where the Stillaguamish and Skagit Rivers have their headwaters. In an eruption, the lahar from the volcano will flow down the easiest path – the Stillaguamish and Skagit valleys – and Stanwood lies at the bottom of both.

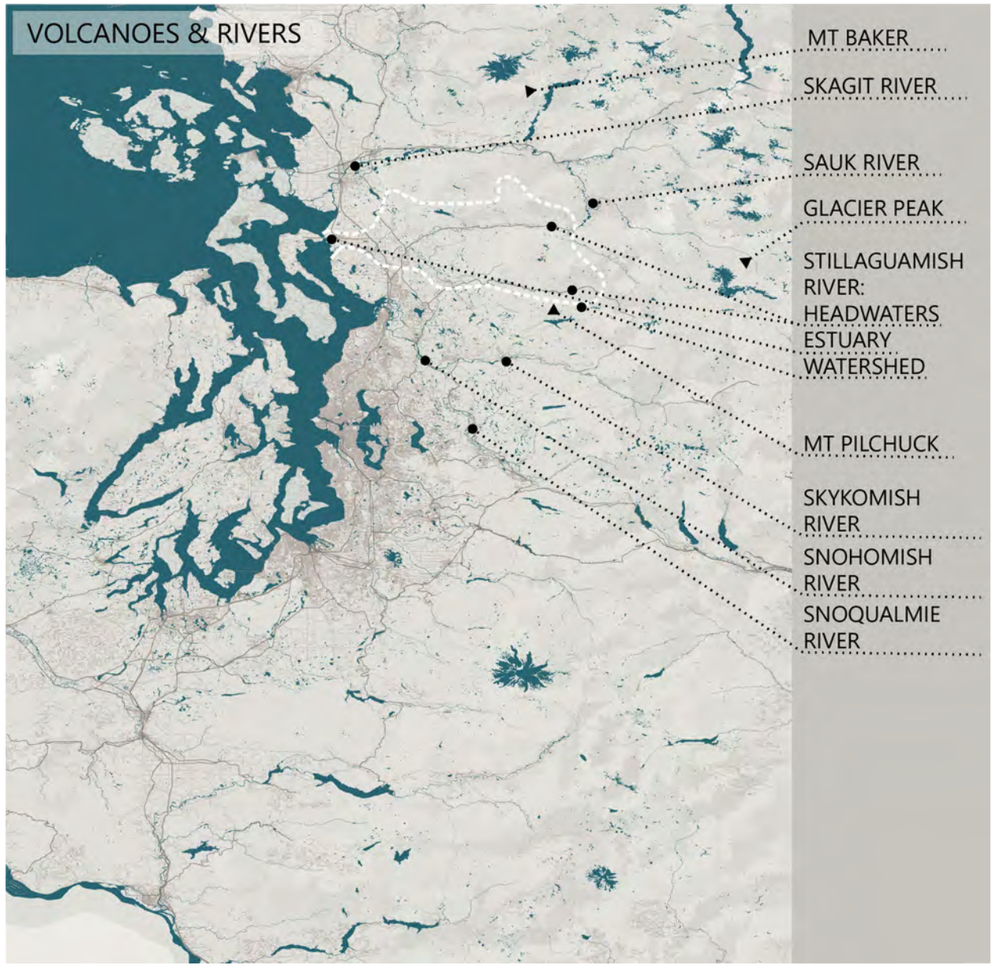
Stanwood is blessed with beautiful natural features. It lies between two river estuaries, and has great views of the Cascade Mountains. This beauty does not come without a price, and the town is forever faced with the possibility of sudden existential disaster, whether earthquake, liquefaction, or lahar. On top of all this, floodwaters from the Stillaguamish River are annually rising up to test the dikes.



[3.13] Map of liquefaction risk and Glacier Peak lahar path on site

Hydrology

The Stillaguamish River runs from its headwaters in the Cascade Mountains to Puget Sound, through Skagit and Snohomish counties, with a watershed covering seven-hundred square miles (Stillaguamish Watershed). For much of its length it is divided into the North Fork and the South Fork, which join in Arlington to form the Lower Mainstream, and finally meet the Sound at Stanwood. Land surrounding the river is predominantly forest, but as it reaches the Cascade foothills, rural residential development becomes the dominant land use, followed by farming in Silvana Valley, on the last eighteen miles of the river. The river has been important for many native



[3.14] Map highlighting volcanoes and rivers near Stanwood

communities throughout history, but is especially significant to the Stillaguamish Tribe, who continue to fish the river to this day.

The Stillaguamish is a relatively shallow river, partially thanks to human development of dikes and continued deforestation; this shallowness causes it to run warmer than other regional rivers in the summer months. This increased temperature makes for a less than ideal habitat for native fish, who prefer cooler waters. Unfortunately, deforestation along the river and its tributaries has reduced shade on the water, causing summer in-stream temperatures to soar, sometimes reaching into the 80 degree Fahrenheit range – higher than Chinook and Steelhead typically tolerate. This has led to efforts to reforest the riparian zone along the Stillaguamish River.

The Stillaguamish is a "silty" river prone to high quantities of sediment. The glaciers that created it left behind loose, sandy soil that is unstable, and the area around the North Fork in particular is prone to landslides (Winters). The most infamous of these is the 2014 Oso Landslide in which forty-three people were killed and an entire community destroyed. The slide covered about half a square mile and moved eighteen million tons of earth. The North Fork of the Stillaguamish was dammed up to twenty-five feet deep, forming a two-and-a-half mile long lake which flooded the area above the slide. It took about eight weeks for the river erode through the sand, till, and clay and return, almost, to its pre-slide elevation. (Revisiting the Oso Landslide)

Predisposition to landslides, high amounts of silt, and shallow, warm water are major factors affecting aquatic populations in the Stillaguamish River, but all of these problems are worsened by a changing climate. The temperature rises, with summer months breaking heat records, causing the streams and rivers to grow hotter as well, and the shallow Stillaguamish is especially affected by fluctuations in temperature. The United States Geological Survey determined that higher than usual rainfall was at least partially responsible for the Oso Landslide; precipitation in the area in the months preceding the slide was 150 to 200% of the long-term average. (Revisiting the Oso Landslide)

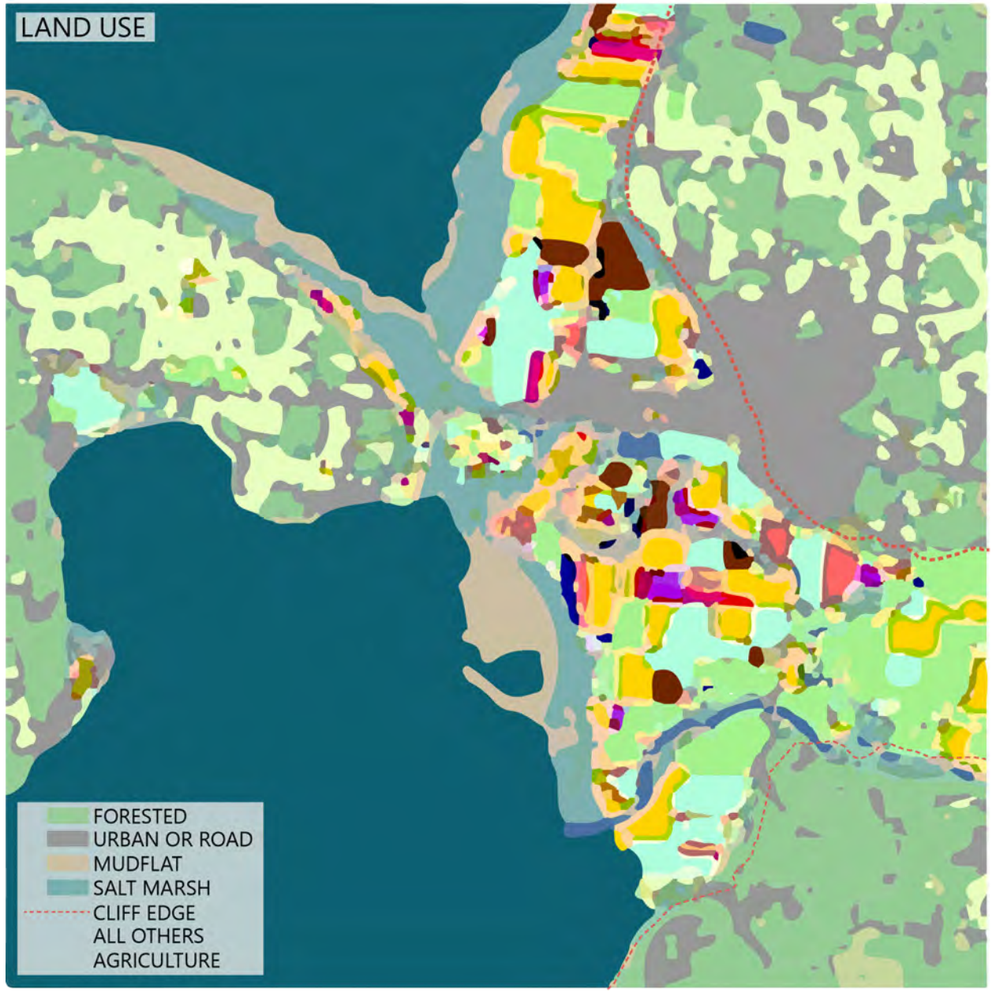
Historically the Stillaguamish has been a snow/rain based system (Monitoring the Stillaguamish Watershed), meaning that a significant proportion of its run comes from melted snow pack. This type of system is relatively predictable, especially in the summers when a steadily melting snowpack feeds the river. With increasing temperatures, the amount of snowpack will decrease, and the Stillaguamish will change to a primarily rain based system system (Monitoring the Stillaguamish Watershed). This will mean lower levels in the summer than previously recorded, because there will not be enough snow to consistently feed the river. A rain based system also means a less

predictable flood regime, as rains cause swift changes in the height of the river. With climate change, a general decrease in the amount of rainfall but increase in the number of extreme rainfall events is expected and likely to drastically change the flood regime of the river. Extreme rainfall will bring extreme flooding, possibly multiple times per year. Already it is not uncommon to see the Stillaguamish valley under a few inches of water, and the river breaches at least once per year.

For decades, farmers knew when to expect these floods and how high they may rise; this knowledge will not be useful for long. Floodwaters will reach higher, last longer, and occur more frequently than ever before. This poses a danger to farming prospects, as most crops cannot survive continued inundation.

On top of increased extreme rainfall events, sea level rise will add to the dangers of the floods. As the seas rise, the water will become brackish farther into the river and at higher elevations. If the river should breach at a king tide, when the sea water is at its absolute highest, the land could be inundated with unprecedented levels of high-salinity water, damaging not just crops, but all plants within the floodplain.

As the seas rise, the habitat zones along the estuary will shift. Increased flood events will move sediment around the estuary more rapidly, making it difficult for plants to adapt. All areas which are already brackish will see an increase in salinity levels, potentially to a level too high for plant survival, and areas which historically never flooded with saltwater may soon become brackish themselves. If the natural habitat is not allowed to extend with the expansion of saline-saturated areas, some habitat zones may disappear entirely, damaging the ecosystem and having repercussions on all other life (Monitoring the Stillaguamish Estuary). If the river breaches more often and with a higher salinity, the land in the valley may become inundated with brackish water and infeasible for farming, even before the sea levels rise over the dikes.



[3.15] Map of land use on the site. Multi-colored areas are agricultural use, which occupies all of the lowland, along with half of the town

[3.16] Map of neighboring communities and natural features surrounding site. Most nearby settlements are only a few buildings.

Historic Habitat

Before European settlers arrived in 1864, the area surrounding the Stillaguamish delta was heavily forested. Settlers arrived by boat, typically steamships, and were met with a towering wall of virgin forest. The forests would have been dominated by old growth giants, especially Douglas fir and Western Red Cedar.

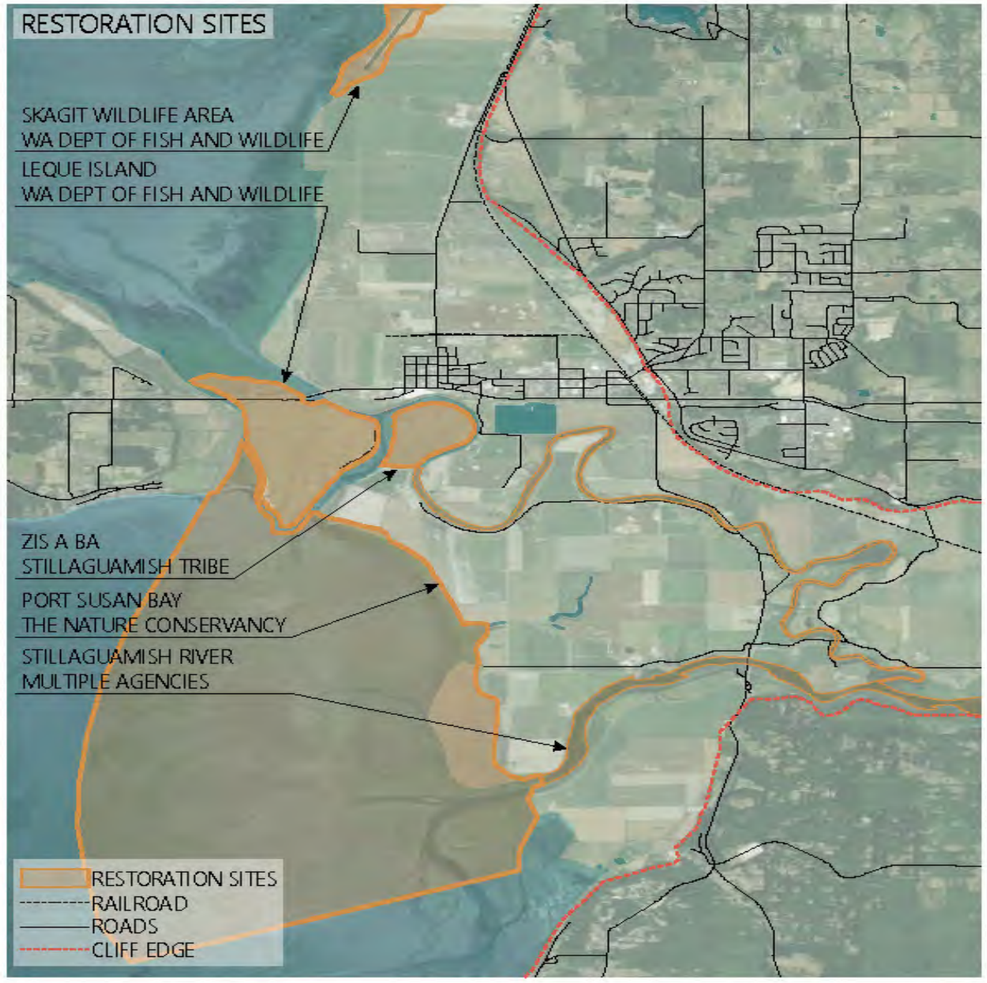
Unsurprisingly, the first successful ventures were mills and logging camps, which brought much needed money and men to the area. The native conifers have highly sought after wood, and were shipped all over the world as valuable building material. Logging was difficult, but the efforts were well rewarded, bringing money and trade to the area, and cleared hundreds of acres of land for farming.

Historically, the Stillaguamish delta covered 5,048 acres (Snohomish-Stillaguamish LIO), with the river frequently shifting, silting up, and flooding. When white settlers first arrived, and for millennia before, the only navigable "roads" were the river itself. The main channel at the time was Irvine Slough, were the town of Stanwood would eventually be settled. More settlers arrived, attracted by the fertile delta, and dike construction began in the 1870's, and within a few years 800 acres of tideland were claimed for farming (Essex 3). Over time the creation of dikes and levees has reduced the delta to 1300 acres (Snohomish-Stillaguamish LIO).

[3.17] Snow Geese in farmland in the Skagit Valley. Image Source: Cascade Loop; Andy Porter Photography.

Current Restoration Sites

[3.18] Map of natural features on site



[3.19] Map of restoration sites, with landowners

Stillaguamish River

Restoring habitat in a warm, shallow, silty river in an area prone to landslides is no simple task, but many agencies, from local to national levels, are working on conserving habitat in the Stillaguamish River watershed. The Stillaguamish Tribe's Natural Resources Department is one of the entities that shoulders much of the responsibility for maintaining healthy fisheries in the Stillaguamish River. The department exists as a result of the Boldt Deicision of 1974, which affirmed that tribes who signed treaties with Isaac Stevens in the latter decades of the 1800's retained the right to take up to half of all fish within their Usual and Accustomed areas (Welcome to Stillaguamish Tribe). It became the Bureau of Indian Affairs' job to oversee the natural resources tribes depend on, but they decided it would benefit all to have the tribes manage their own usual and accustomed areas. It is because of this that the Stillaguamish Tribe looks after its own natural resources, and the purpose of its natural resources department is, "...to manage, protect, and conserve those natural resources that are required to sustain healthy populations of fish, shellfish, and wildlife within the Stillaguamish Tribe's U&A (Stillaguamish Watershed)." (Welcome to Stillaguamish Tribe)

[3.20] Stillaguamish River, Hat Slough

In 2000, the Stillaguamish Technical Advisory Group released a report called "Technical Assessment and Recommendations for Chinook Salmon Recovery in the Stillaguamish Watershed", which was written to guide future salmon recovery efforts. The report was written with eleven participating organizations, including the Stillaguamish Tribe, Snohomish County Surface Water Management, the Washington Department of Fish and Wildlife and the U.S. Forest Service. The one-hundred-fifty page report makes recommendations related to hatchery management, harvest management, and habitat recovery. Among the recommendations were: decommissioning roads, especially in landslide areas, enhancing riparian features, and removing dikes to reconnect the river to floodplains and side channels. (Stillaguamish Technical Advisory Group)]

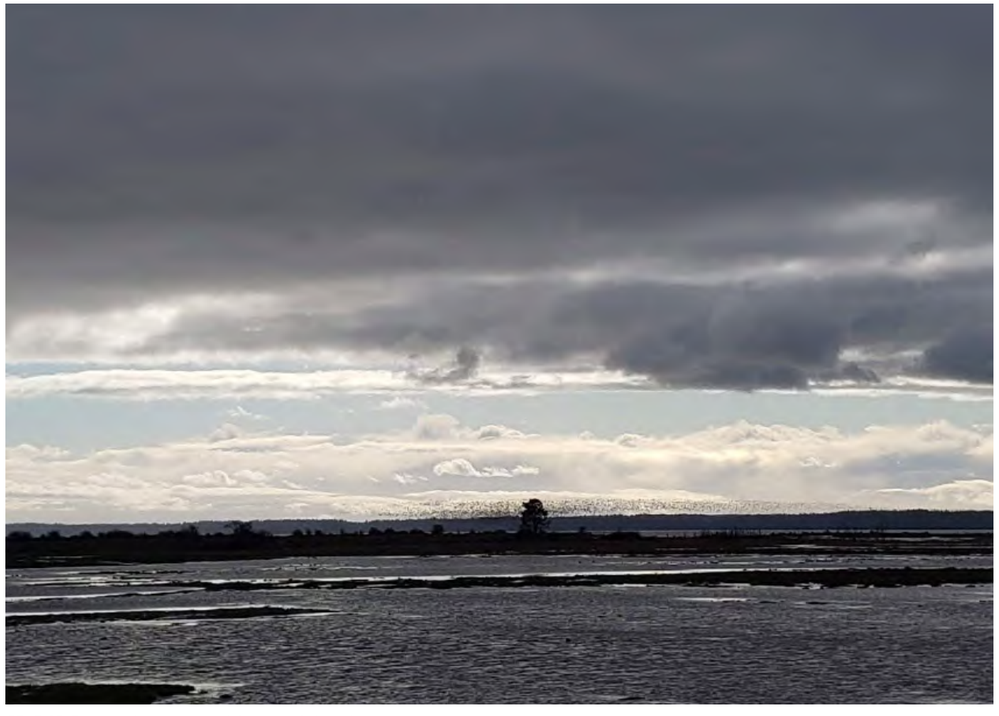
The Stillaguamish Tribe has been engaging in riparian restoration for over ten years now, with projects on tribal, private, and public land; the goal of these projects is, "...to expand and enhance streamside forests throughout the Stillaguamish River Basin to benefit fish and wildlife." (Riparian) Their website states that riparian forests are important in maintaining a healthy freshwater habitat for salmon and steelhead in various ways: riparian forests provide large woody debris for fish to rest, hide and feed in, they provided shade to keep waters cool and oxygen rich, and provide habitat for wildlife. This restoration program stewards the river and surrounding land by planting native plants, controlling invasive plants, removing garbage, and building fences to keep livestock away from water bodies (Riparian). The public can volunteer to help with these efforts, and streamside landowners can receive help from the Stillaguamish Tribe Natural Resources Department to evaluate possible actions for improving habitat on their land, and may even be eligible for grants to fund a restoration project (Are You a Streamside Landowner).

Improvements are also taking place in-stream. The Technical Assessment also made recommendations for modifications to improve in-stream salmon habitat. In order to increase large, deep holding pools for adult Chinook, the report recommended increasing the amount of large, woody debris in streams (Stillaguamish Technical Advisory Group). The Stillaguamish Tribe has been creating logjams in the river as habitat for fish since 1999. They also have not commercially fished Chinook since 1990, with hatchery operations instead focusing on restoring wild runs (Winters). The work is slow, and battles unexpected disasters, increasing temperatures, and worsening droughts, but despite all the challenges facing the Stillaguamish River, restoration and conservation continues.

Zis a ba

The Stillaguamish Tribe acquired a farm in the Stillaguamish Estuary, directly to the south of Stanwood township, in a horseshoe bend in the river and adjacent to the water on three sides. Restoration began in 2017. The tribe aims to restore the site for salmon habitat by removing the dikes, returning it to tidal influence, and increasing habitat and water quality. The site acts as a test for restoration strategies, allowing the tribe to see, in real time, the effects of returning an estuarine site to natural processes.

Although the site seems small, it will allow for four-and-a-half acres and three miles of new tidal channels by 2025 (Zis a ba Esuary). Breaches were made in the old dikes to allow water to flow through the site naturally, and a new dike created to protect the adjacent farmland from flooding. The project not only helps salmon populations recover and improves stream health, it also helps protect the town from flooding. Stanwood's flood defenses drain into this channel, which frequently requires dredging to keep clear and allow any water inundating the town to drain away. The restoration should help the water drain more easily away from the town, as well as increasing water storage. (Zis a ba Restoration)



[3.21] Recently restored Leque Island

Leque Island

Adjacent to Zis a ba, lying between Stanwood and Camano Island, is Leque Island. This area was once all salt marsh, impossible to walk across before European settlers arrived. It separates not only Stanwood from Camano Island, but also the waters of Port Susan Bay and Skagit Bay. There is no doubt it was once an extremely important habitat for many species, and it has been a favorite site for birders for many years. In the late 1800's, settlers began to build dikes around the marsh, turning it to farmland. The Washington Department of Fish and Wildlife (WDFW) has been acquiring properties since 1974, and by 2013 owned the entire island (Leque Island).

The dikes failed repeatedly over the next few years, forcing multiple temporary repairs until a solution could be decided. In the end, WDFW chose to fully restore the site, believing a partial restoration pointless, and no restoration potentially costly and dangerous. On October 14, 2019, the dikes were removed and tidal channels breached for the first time in decades. The work required two-and-a-half miles of dike to be removed, and new tidal channels to be carved with excavators. The project restored 250 acres of tidal marsh, which will slowly revert to a natural state over many years. (Leque Island)

In addition to the restoration, WDFW also built a 0.7 mile berm on the east side of the island to protect Stanwood from waves. This berm serves as a walking trail for the public, and has a boat launch for hand-carried boats (Leque Island). Between Leque Island and Zis a ba, over 330 acres of estuary and tidal marsh adjacent to Stanwood have been restored to natural processes, which should greatly help keep the town's flood defenses intact. The Leque Island restoration serves multiple purposes, and is also a part of the Skagit Wildlife Area.

Skagit Wildlife Area

The Skagit Wildlife Area is owned and managed by the Washington Department of Fish and Wildlife, and encompasses over 13,000 acres, primarily the tidal estuary of the Skagit River, native habitat, and managed agricultural land (Skagit Wildlife Area). The area lies to the north of Stanwood, excepting Leque Island. There are sixteen units within the Skagit Wildlife Area, primarily adjacent to shoreline, and encompassing areas in Snohomish, Skagit, Island, and San Juan Counties. The most intensely managed units within the wildlife area contain natural habitat and agricultural land. Along with the Leque Island Unit, the Skagit Bay Estuary Unit is closest to Stanwood. The areas offer public access to wild lands, and many of those near Stanwood include boat launches. These are largely unknown to outsiders, and are a gem for locals who want to access trails, wilderness, and water without going to the busy Camano Island parks.

[3.22] Leque Island, part of Skagit Wildlife Area

Port Susan Bay

The Stillaguamish River spills out into Port Susan Bay, where over 7,000 acres of tidal area are protected by stakeholders, including the Whidbey Camano Land Trust and The Nature Conservancy. Together with an array of stakeholders, they developed the Port Susan Bay Marine Stewardship Area Plan, to identify actions for creating and maintaining a healthier system. The support for conservation led to Port Susan Bay getting designated a site of importance for shorebirds by the Western Hemisphere Shorebird Reserve Network. (Port Susan Bay)

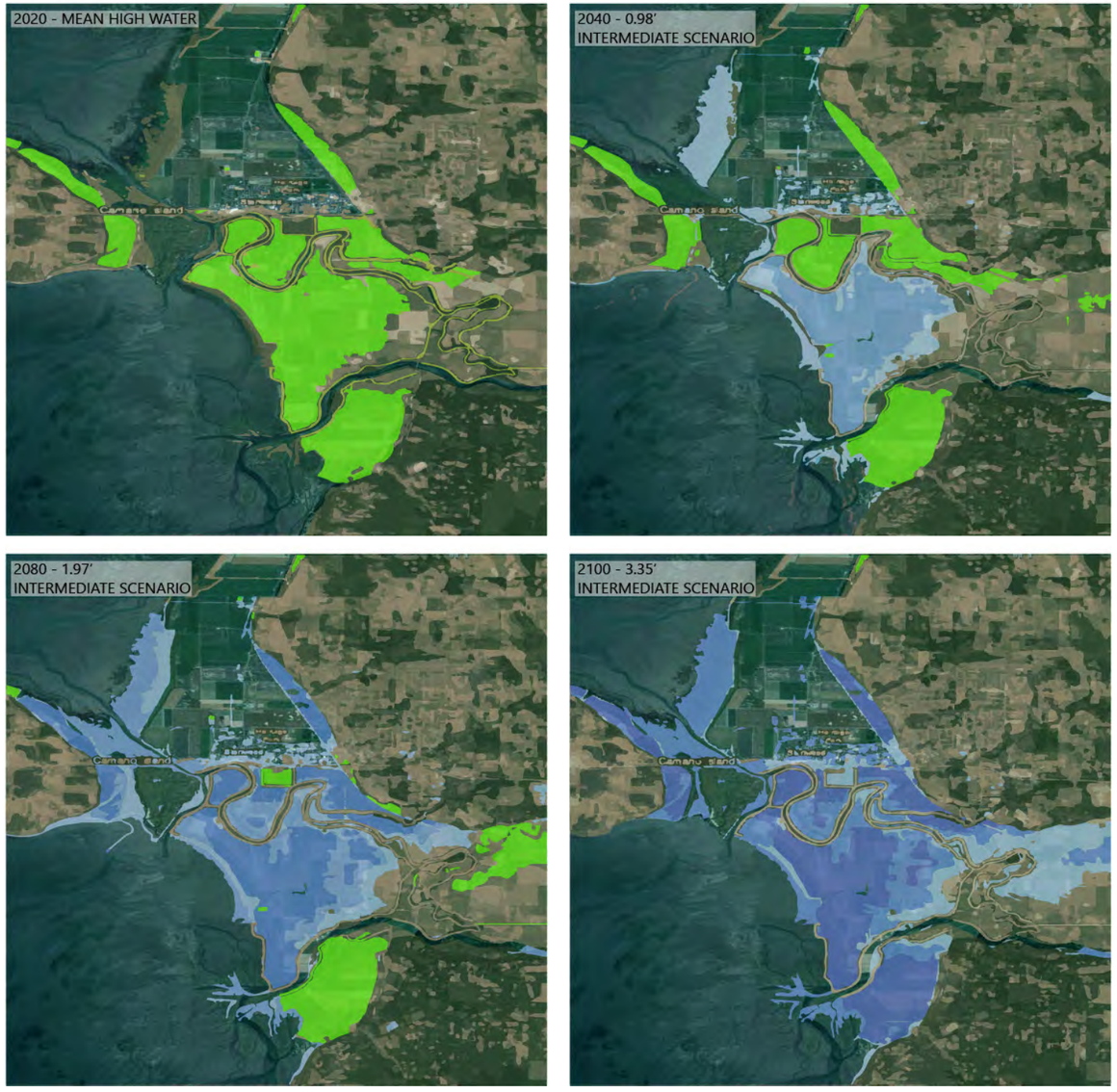
Adjacent to what is today the main channel of the Stillaguamish River is Port Susan Bay Preserve, a 4,122 acre site owned, restored, and protected by The Nature Conservancy. It is open to the public only by appointment, which helps it stay a healthy, robust habitat for shorebirds. They have restored 150 acres of formerly diked farmland, increasing estuary habitat. The Preserve serves as a "living laboratory", where scientists can study the effects of restoration and sea level rise on estuaries, all in one place. (Port Susan Bay)

The research happening today will be extremely important as the community decides how to face an uncertain future of rising seas, temperatures, and the unknown disasters they will bring.

[3.23] Overlooking Port Susan Bay

Climate Change

The climate in the Puget Sound region is already getting warmer, with new records being set in all months of the year. Extreme rain events in the winter are likely to increase, while there will be fewer rain days in the summer. Heavier rain events could exceed the capacity of storm water systems, an especial fear in Stanwood, where the sediment in the river already compromises the system. Sea level in the area is predicted to rise by an average of 8 inches by 2050 (Climate Change Stillaguamish River), which could further compromise the town's drainage systems, as well as add severity to flooding. Flooding events will increase in frequency and severity, leading to increased damaged to property, and potentially making life in the flood plain infeasible for many. Little rain in the summer will extend the summer drought even longer, making it harder for farmers to maintain their crops. There will be an increase in growing degree days, theoretically making the region better for farming, but not if access to water is greatly reduced. Additionally, many homes in the area still rely on private wells for water, and these wells risk running dry if the summer drought drags on too long. The effects of climate change on the area seem contradictory in nature, but this is nothing new. The challenge will be immense, and the community must come together to face it.

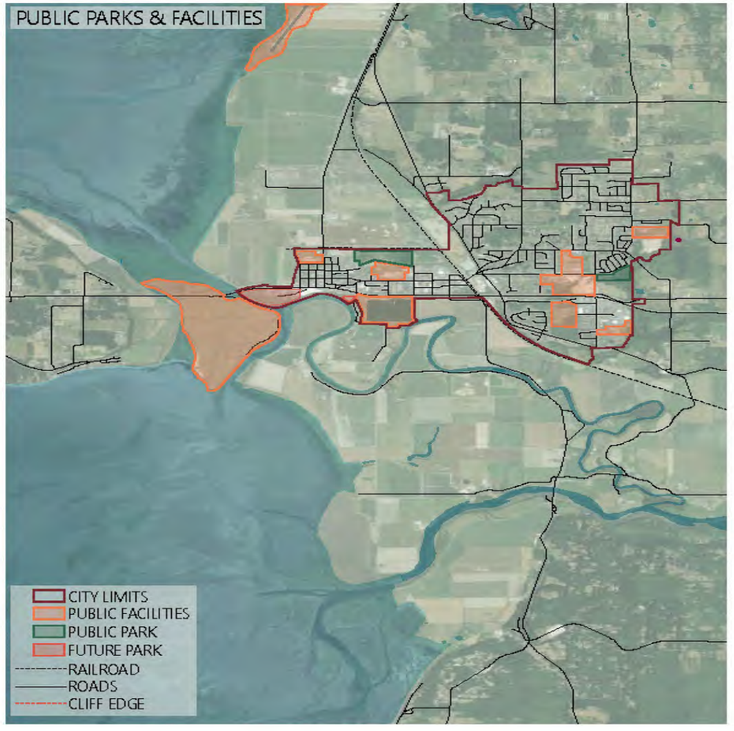


[3.24] Sea Level Rise maps of the Stillaguamish Delta. Image Source: NOAA

[3.25] Cultural features within the site, including: Two historic downtowns, a relic from when there were two seperate towns, the site of the old wharf, now Twin City Foods, Hamilton Stack, the fairgrounds, and the site of the formal Memorial Barn.

[3.26] Important infrastructure on the site includes: The railroad and railroad station, highway 532 to Camano Island, a water treatment facility (in the floodplain), and miles of levees, most over a century old.

[3.27] Public facilities in Stanwood. Most public facilities are schools, but there are two parks, one in the floodplain and one in the uplands. The town recently acquired a historic farm on the waterfront to build a new park. Leque Island is owned by the Washington State Department of Fish and Wildlife.



[3.28] Public access to nature near Stanwood. Despite high proportion of public-owned land, there is little access to nature, only a half-mile walkway on the breakwater at Leque Island, and access to levees north of the town. There are also a few public boatlaunches.

Cultural Evolution

Before European settlers arrived, the Stillaguamish delta was home to the Stillaguamish tribe. A tribal encampment was located near the future site of Stanwood, on what was then the primary channel of the Stillaguamish River. Other settlements and encampments were located along the shoreline of Port Susan. The river valley and surrounding areas were heavily wooded.

In 1853, the first European settlers arrived in the area, setting up on nearby Camano Island. Five years later, in 1858, the lumber mill at Utsalady was completed, and the first shipment of virgin timber sent to China (Solveig).

The place we now call Stanwood was not settled until 1866, and upon their arrival, the first white settlers called it Centerville (Essex 1). At this time there were no roads, and the only method of transportation was by boat. Utsalady was a stop for steamboats, and smaller boats could be taken from there. In 1870 a post office was established on the site, and it became officially designated Centerville. D.O. Pearson arrived in 1877 and opened the settlement's first general store (Essex 5). He built a wharf for steamboats, allowing access to the town by more people and larger ships, which brought more consistent supplies and trade with the region. This same year, the town was asked to re-designate to a less common name, as there were already many Centerville's. Pearson chose his wife's maiden name for the town: Stanwood (Essex 5).

By the 1880's, dikes had claimed over 800 acres of tideland for farming, which produced 35,000 bushels of oats and 100 tons of hay (Essex 3). Numerous logging camps surrounded the river valley, sending timber to the mills for profit and clearing the land for farmers. While farmers did grow oats and hay for cash, and some cattle ranching existed, the area was mostly subsistence farming.

The town of Stanwood was platted in 1888, and the coming decade would see many changes for the tiny town. The mill at Utsalady closed in 1891; in that same year the Seattle and Montana Railway ran its tracks one mile east of the town. The Friday Fish Cannery established on the waterfront in 1898, bringing a new industry to the town. That same year the Klondike Gold Rush began, and the town's economy got a boost from prospector's returning and looking for a place to settle. In 1903, the town of Stanwood incorporated, and the Stanwood Lumber Company was created along the waterfront. (Essex 20)

The fact that the railroad was a mile away caused a problem. By the early 1900's, it was already clear that the steamboats were no longer a viable way to support trade, and the railroad was rapidly overtaking them as the most efficient way to ship goods. The town of Stanwood created its own railroad, officially known as the H&H railroad, but

nicknamed Dinky, to run goods from the mills, cannery, and stores of Stanwood to the railroad station a mile away (Essex 26). A year later, a new town of East Stanwood was platted adjacent to the railway. The two towns would be rivals for the next sixty years. 1909 brought another major transportation development – the bridge to Camano Island was completed, finally allowing people to travel there by road (Essex 56). In the same year, the road between Stanwood and East Stanwood was paved; many of the original bricks remain in place today.

After 1910, the river at Stanwood began to silt up. The main channel shifted south, from Irvine Slough alongside Stanwood to Hatt Slough a mile south, were it is today. The wharf slowly grew useless, as the channel would require extensive dredging for continued steamboat use.

East Stanwood incorporated in 1922 (Essex 77). Both towns continued to grow. In 1927, the Hamilton stack was built to vent smoke above the town (Essex 77). This stack is still in place today and is an important landmark, visible from a great distance and adorned with a different light design for every holiday. By the 1930's the lumber mills began to close, and the agriculture sector grew an ever larger part of the local economy. The H&H Railroad ceased use after only 30 years.

[3.29] A steamship docked in Stanwood, 1907. Image Source: History Link

[3.30] Boats, including canoe, on Stanwood waterfront, 1910. Image Source: History Link

[3.31] H & H Railroad, or “Dinky”, no date. Image Source: History Link

[3.32] Condensory, now Twin City Foods, along Irvine Slough, 1913. Image Source: History Link

[3.33] Main street in East Stanwood, 1906. Image Source: History Link

In 1959, both towns flooded. This was the last time the town itself actually flooded, as the dikes have held since then. In 1960 the towns of Stanwood and East Stanwood consolidated. They had grown so close geographically that there was little discernible difference, and the existence of two towns in such close quarters made generating enough funding to run either infeasible. Two of every school was especially difficult to justify, and consolidation an obvious answer.

Evidence of the two towns remains. There are two clusters of historic buildings, one beside the railroad tracks, were the Amtrak still stops, and one about a mile away near the river, where the old wharf once stood. There are also multiple historic school buildings on both ends of town. Both Stanwood and East Stanwood were historically located on the lowlands, in the river delta. They have since grown up the ridge into the uplands, and today it seems like there are still two centers: one modern development in the uplands, and one historic downtown in the lowlands. All of the most historic and significant buildings are in the lowlands, constantly under threat by the rivers and the sea, both held back my manmade dikes. The 1959 flood remains in living memory for many in the town, and the fear of a flood looms large.

[3.34] Flooded streets in Stanwood, 1909. Image Source: History Link

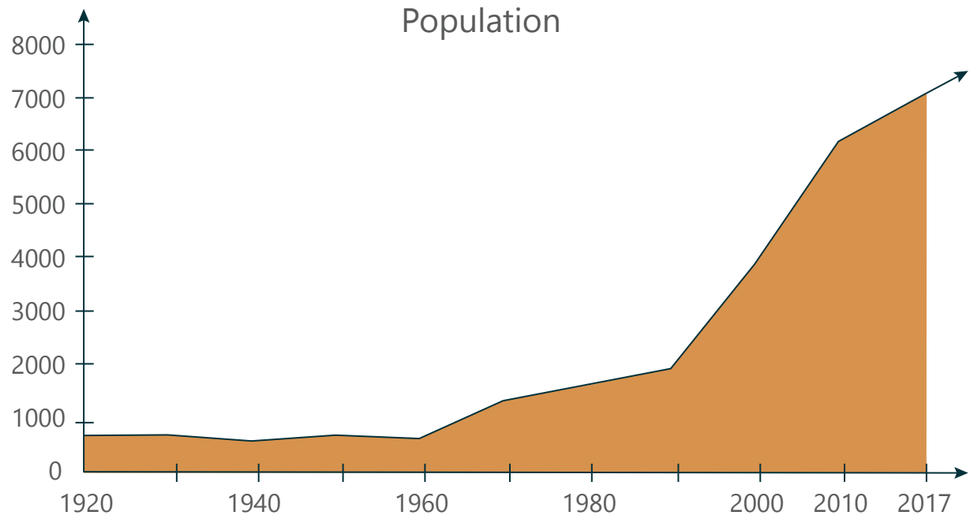
In 2014, every community along the Stillaguamish River got a brutal reminder of the unpredictability of nature in the form of the Oso Landslide. The suddenness and scale of the disaster shocked everyone, and the fear of natural disaster increased, at least for a while. The slide also brought physical problems to the area, with silt and debris still washing downriver six years later. The Stillaguamish has always been silty and prone to unpredictable blockages, but the amount of earth moved by the slide caused a substantial amount of sediment to wash out into the estuary. This, perhaps, helped cause the Irvine Slough, which runs alongside the town, the silt up to a dangerous level. The town's flood defenses were compromised by high levels of sediment in the river. In 2016, two years after Oso, the slough was dredged with a one-time permit. Two years later, Stanwood applied for a 10-year dredging permit to keep the slough clear (Wendell). Even ten years is a short term solution, and to town will need to rethink their flood defense strategy as climate change threatens them with increased flooding and higher seas.

[3.35] Aerial Image of 2014 Oso Landslide. Image Source: NBC News

Demographics

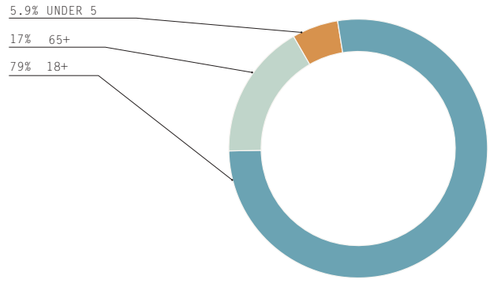
An analysis of statistics from the Census Buereau, based on the 2020 U.S. Census, shows some interesting trands happening in Stanwood. The town began to grow rapidly in the 1990's, and the growth is even more apparent today. The first half of the 20th century saw little population change; the population of Stanwood remained less than 1,000 people, until the 1960's when the town finally began to grow. By the 1980's Stanwood had a population of about 1,500 people; today the population is over 7000. This reflects the trend all over Puget Sound of rapid population growth.

It is interesting to compare the demographics of Stanwood with those of Snohomish County in its entirety. The county is similar in demographic makeup to the state, but a bit more illustrative, as it shows how, in some aspects, Stanwood remains very different to the rest of the county, much of which is now quite urban.
Stanwood has slightly fewer children under 5 and slightly more people over 65 that the county in general. This suggests that the area is more attractive to retirees than to families, and a place many choose to spend their years of retirement enjoying.

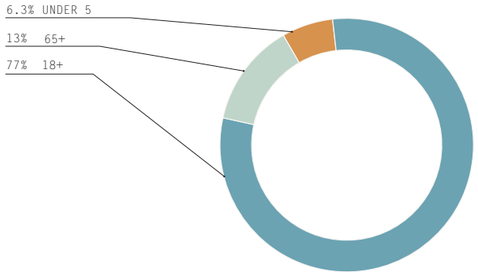


[3.36] Population growth in Stanwood

A larger difference can be found in the race of the two places. While Snohomish County residents are 76% white only, 91% of Stanwood residents are. Stanwood is far less diverse in terms of race then the county in general, something often considered typical of rural America, though this is slowly changing as the population increases. This also bears out in the statistics on the primary language spoken at home; 79% of homes in Snohomish County speak English at home, compared to 94% of homes in Stanwood. The comparison between highest educational attainments is also, perhaps, unsparing to many. In Stanwood, a third of the population's highest education is high school or an equivalent, while this is only a quarter of Snohomish County's population. Nearly a quarter of Snohomish County residents attained a bachelor's degree, compared to only 15% of Stanwood's population. This is likely indicative of jobs traditionally available in the area. While much of Snohomish County's population works at Boeing, or commute to white collar jobs in the Seattle area, most jobs in Stanwood do not require more than a high school diploma. These jobs include working on farms, in retail, or service industries. The proportion of people with bachelor's degrees is likely to grow in the coming years, as more jobs require it, and more of the population is commuting to urban centers.

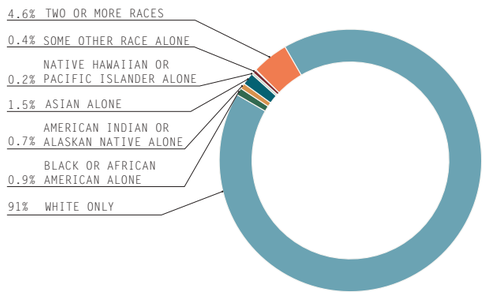


[3.37] Stanwood: Age

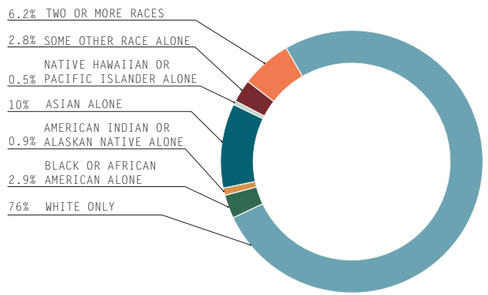


[3.38] Snohomish County: Age

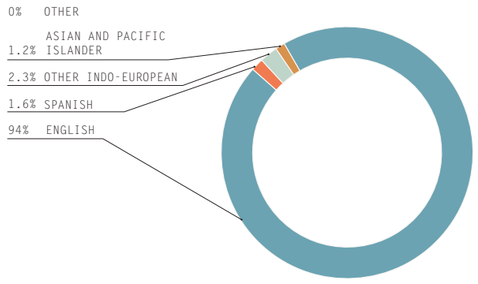
In a final, interesting comparison, 9% fewer people in Stanwood drive to work alone than in Snohomish County, and five times as many people take the bus. This may be because there are convenient bus routes from Stanwood to places of work, or because traffic in some places is truly terrible and Stanwood residents do not want to be driving in it for long. Whatever the reason, this trend should be encouraged to reduce the impact of people commuting to work.



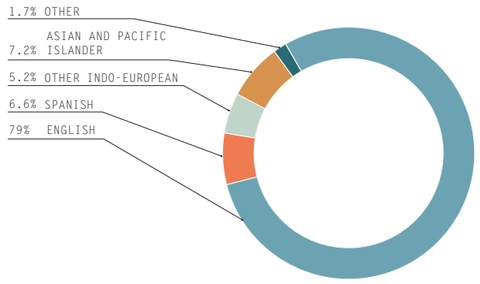
[3.39] Stanwood: Race



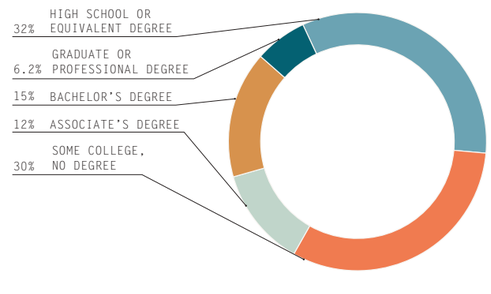
[3.40] Snohomish County: Race



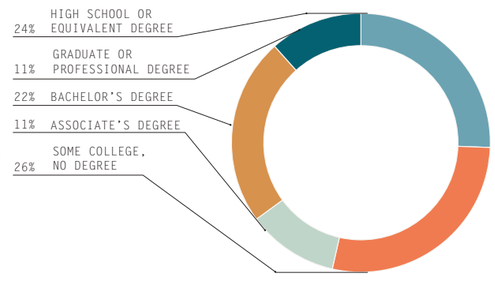
[3.41] Stanwood: Language spoken at home



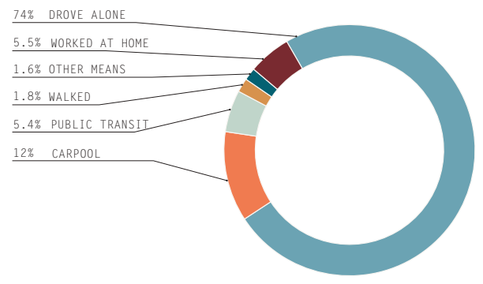
[3.42] Snohomish County: Language spoken at home



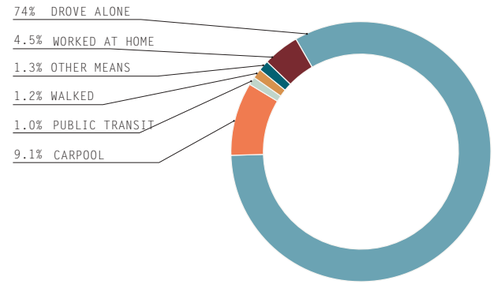
[3.43] Stanwood: Highest educational attainment



[3.44] Snohomish County: Highest educational attainment



[3.45] Stanwood: Transport to work

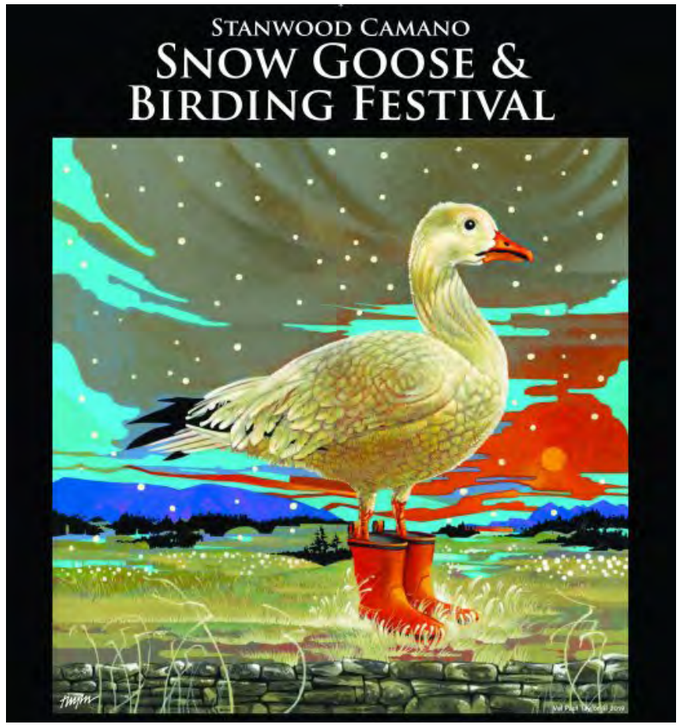


[3.46] Snohomish County: Transport to work

Events and Festivals

Stanwood hosts a wide range of community events, many of which bring people from miles away. Encouraging more events throughout the year, and supporting business that cater to the tourists, is an important aspect of boosting the town's visitor numbers. Events and festivals can be a good way to showcase and strengthen the community's identity, all while encouraging visitors and boosting the economy. The existing events all play an important role in community identity, and each embraces an aspect of life important to the town.

The Snow Goose Festival is a popular birding festival held every February, which offers many classes, informational booths, art sales, and guided tours of the local birding sites. Port Susan Bay, the Stillaguamish Estuary and Skagit Estuary are home to some of the best avian habitat in Puget Sound, and photographers and birders come from all over the region to catch a view of the abundant wildlife. The festival offers additional information and costs very little, making it an important event for any birder in the area. It also utilizes the historic Floyd Norgaard Cultural Center and the Masonic Lodge, allowing public access to the town's most historic buildings.



[3.47] Flyer for Stanwood Snow Goose & Birding Festival. Image Source: Sound Water Stewards

In the summers, events and community engagement increases. From June through October, a farmer's market takes place every Friday in the historic East Stanwood. The market offers a venue for local farmers to sell their produce direct to consumers, as well as a venue for local artists and businesses to sell their wares.
An art festival takes place downtown for one weekend every July, typically showcasing local artists. The town also teams up with the Camano Island community to offer art festivals in the spring and fall on the island, and periodically holds art shows and holiday craft fairs in Stanwood at the fairgrounds.

Music is another important art showcased in the town over the summer. Weekly concerts are held downtown, played by local and regional musicians playing rock, blues, and roots music – all family friendly. Interestingly, the venue alternates between the east and west downtowns.

[3.48] Stanwood Farmer's Market. Image Source: Farm Guide

Perhaps the most important event of the entire year is the Stanwood Camano Fair, titled “The Best Lil’ Fair in the West” and held the first weekend of August. It is the largest community fair in Washington, though it is admittedly unclear how that is defined. The organization’s website explains, “…we strive to showcase the Stanwood-Camano Community’s past, present, and future.”(Stanwood Camano Fair) The fair showcases arts and crafts by anyone who wishes to enter – children and adults. The adult showcase always has a raging competition for the best quilt, and numerous flowers, fruits, and vegetables are on show. On top of this, there is every form of art, from painting and photography to the occasional sculpture. These exhibitions take up two entire buildings, one a former dairy barn, and are an important showcase of local skill.

In addition to arts and crafts, the fair also holds competitions for local 4-H and FFA groups, where youths are able to compete showing their cows, sheep, pigs, chickens, and other livestock. There is also a 4-H youth dog training competition and equestrian events, which are youth only during the day, but often have showcases by adult riders in the evenings. For these local organizations, this is the most important event of the year, something that is trained for and practiced from the end of one year’s fair until the next.

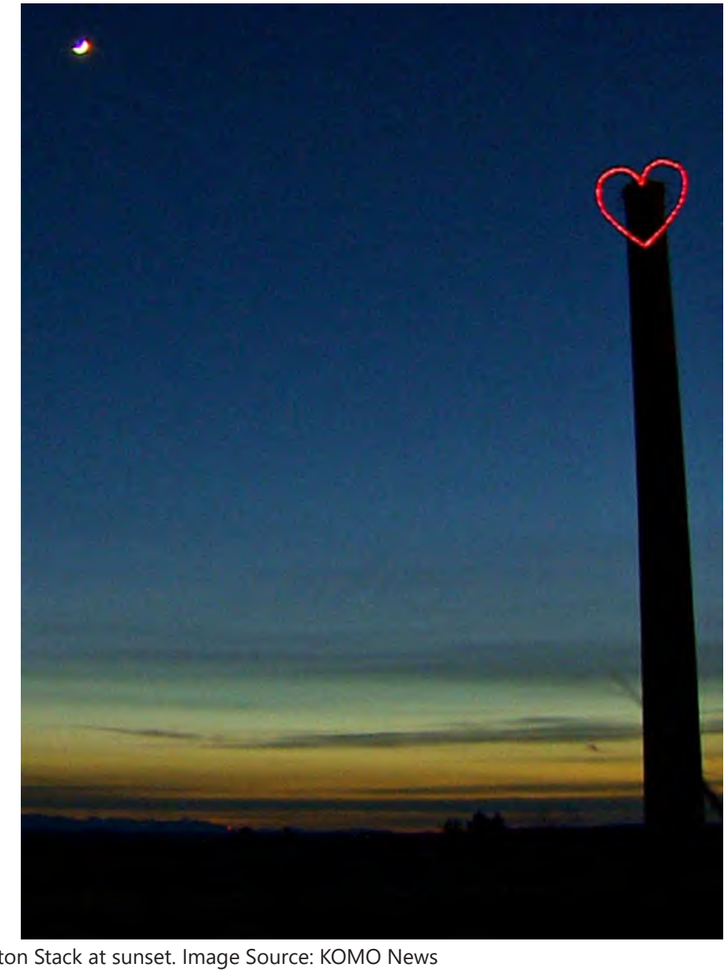
The fair, of course, also has rides and carnival booths, concerts and shows. The local historic society always has informational booths set up, and other societies offer information about gardening, beekeeping, birding, and other hobbies, holding educational talks about everything. It is a volunteer run organization and event, and aside from being the most important community event, it is also the largest tourism draw of the entire year. Fairs are always exciting events, and this one is no exception. It may be a small community fair, but it is important to the community in every possible way.

[3.49] A young girl with dairy cows at Stanwood Camano Fair. Image Source: GoSkagit

Cultural Landmarks

Hamilton Stack

Hamilton stack was constructed in the 1920’s as part of a lumber mill, to vent smoke above the town (Essex 77). In the 1980’s, community members got together and began a project of adding lighting designs atop the stack. These lights continue to change seasonally. They are an exciting addition to the townscape, adding interest at night, especially as people drive by. Because the area is so flat, and the stack the tallest construction in town, the light can be seen from a great distance. It serves as a kind of community message board - everyone typically knows what the lights will be, but we all look forward to them anyway.



[3.50] Hamilton Stack at sunset. Image Source: KOMO News

The Memorial Barn

The Memorial Barn stood on the edge of the road into Stanwood, slowly collapsing. Its condition had deteriorated so much by the early 1990's that it was used only to store a dead tractor and other forgotten equipment. This barn is proof that the reuse of building need not always be planned, nor is success ever predictable. It does not have to be a practical use, inhabitable or even hospitable for people or animals. Sometimes buildings just evolve and become something different and unexpected. This barn could not house livestock or farming equipment though it lay within miles of agricultural land. Due to its state of rapid decline, it was dangerous to enter. It was decaying and left to stand as a monument to the past until it eventually disappeared entirely. Somehow, though, this barn became more than a rotting outbuilding; it became a memorial, a monument to life and an important part of a community.

[3.51] The last mural on the Memorial Barn, 2013. Image Source: In Their Memory

When high school seniors began tagging the barn, signing their names and graduating year on its walls, the farmer was displeased. A little graffiti only drew more of the same until eventually the interior walls were covered in it. Some twenty or twenty-five years ago, however, the barn became more than just a place for kids to sign their name. People began painting the exterior of the barn as a memorial to a lost loved one. Over time the farmer became complacent and soon the barn was constantly utilized. Anytime a young person from the community died, their name went up on the barn. Friends and family gathered to create a memorial in their honor, knowing full well that in a few weeks or months, someone would paint over it with a new message.

Maybe someone who drove by it only once would think it the illegal graffiti of rebellious teenagers, or the product of a hippie farmer or eccentric artist making a statement. They may not like it; they may even consider it an abomination or blight on the landscape, but they do not know what it is or what it means. The landscape and context surrounding the Memorial Barn expanded over time. It not only included its traditional landscape but grew to include an entire town. The Memorial Barn became impossible to appreciate if you fail to realize its entire context. This barn, perhaps, has still lost some of its agricultural, working spirit, but in its place gained the spirit of an entire community, and became something far greater than what it once was. It contains the identity and the collective memory of an entire community, even as message after message is painted over and erased.

Unfortunately, in 2013, the Memorial Barn was torn down. It had fallen completely into disrepair, and the farmer who owned it began to worry that someone could get hurt, and that it had become a liability. A local real estate agent volunteered to broker a deal, and while the property it stood on was not sold, the barn was bought by a local in the hoped that it will one day be rebuilt. Painting the barn is a cathartic process for many people, and described by some as an important part of the grieving process. There are many people who want to give that opportunity to display grief and hope back to the community – especially to local youths who needed it most. While the pieces of the barn remain, no one has found the land to put it on. The future of the barn remains uncertain, but such a large message board will become increasingly important as the community struggles to deal with the existential crises facing them. There was once a message written on the barn, important then, which has become even more potent now: "What will your story be?" (Fiege)

4

DESIGN SOLUTION

[4.1] View from the future: overlooking today's farms

[4.2] Collage of monuments as they decay over time

4.1 Design Priorities

Humans learn through reading and through writing, but are rarely allowed to write our own stories. As the climate changes and seas rise, humans will begin to lose whatever adjacency we believe we have within our landscapes. The rising tides will bring grief, pain, and mourning. Allowing those affected some control over their narrative will help us all accept that.

The identity of Stanwood and the Stillaguamish Delta, as with all places, is its persona, created by hundreds of years of human habitation. The site has changed dramatically over the past two centuries, adding numerous and complex layers of identity and meaning to the landscape. Any design that embraces the identity of place must be adaptive, responsive, and created and re-created over time.

Designing for change means allowing users to involve themselves not just in reading the landscape, but in actively writing it. The designs put forward are dynamic and encourage a constant dialogue between writer and reader, actor and observer, where interpretations are endless and the roles constantly upended. The objects within the landscape are obviously human, and designed to allow people a place for expression. Through constant visual storytelling, the community can express and accept their grief, loss, and change, and move forward, together, as they see fit. What begins as a way for people to interact with the landscape will soon become habitat itself, a place for nature's processes to take over, uninhibited by human hands. Still, after decades pass and the farms and buildings and trails wash away, the presence of humans remains implied upon the landscape.

[4.3] Map of infrastructure that needs preserving

Basic Infrastructure

There are a number of existing elements within the site that must be preserved, whether for cultural, ecological, or simply practical reasons.

From a practical perspective, there are a number of infrastructure elements that must be preserved if the town and surrounding communities can continue to exist. Perhaps the most important part of the landscape to protect is the uplands. While they are relatively safe from erosion today, decades of sea level rise is likely to bring the seas directly to the base of the cliffs. If this should happen, the cliffs are in danger of slowly eroding away, destabilizing the uplands and making them unsuitable for habitation. The railroad track that runs through the town must also be protected, as it is the main track from Canada and through Washington State. Helpfully, the railroad is already raised to protect it from flooding, and in most of the site runs along the base of the uplands. The railroad can be used as part of a breakwater, keeping the railroad in use and protecting the upland from erosion.

While it is important to protect the railroad, it is also important to protect some of the roads from destruction. Highway 532 offers the only land access to Camano Island, a large community of thousands of people. The highway currently acts as part of the levee for the town, and needs to be preserved, both to protect the town and maintain access to Camano Island.

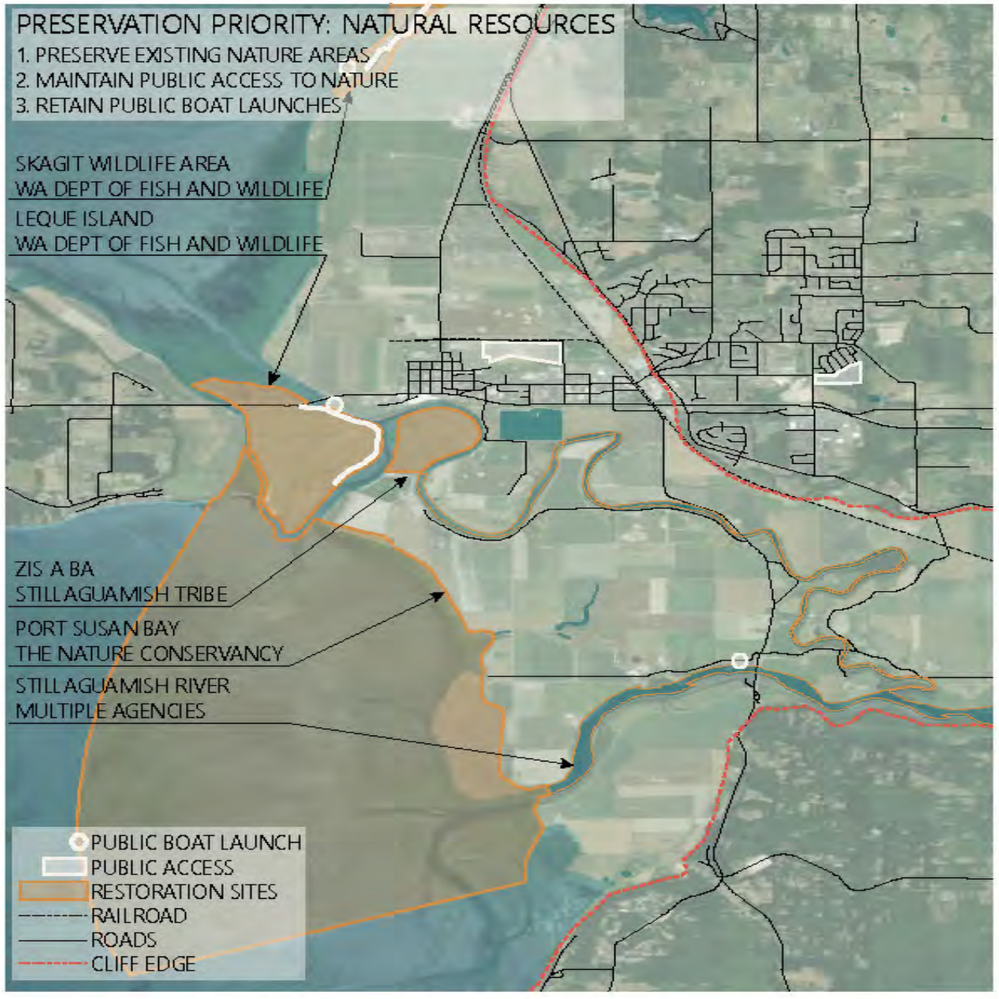
Finally, there is a large water treatment plant in the floodplain, directly south of the town. This plant treats the towns sewage and is an extremely important piece of infrastructure. While it would ideally be moved out of the floodplain, there is not currently a large enough parcel for a new treatment facility, and therefore it follows that the current facility should be maintained.

[4.4] Map of cultural sites that need preserving

Cultural Landmarks

Stanwood is a relatively new settlement, with fairly few historic buildings. However, it is because of this that the existing historic and cultural landmarks should be maintained as best as possible.

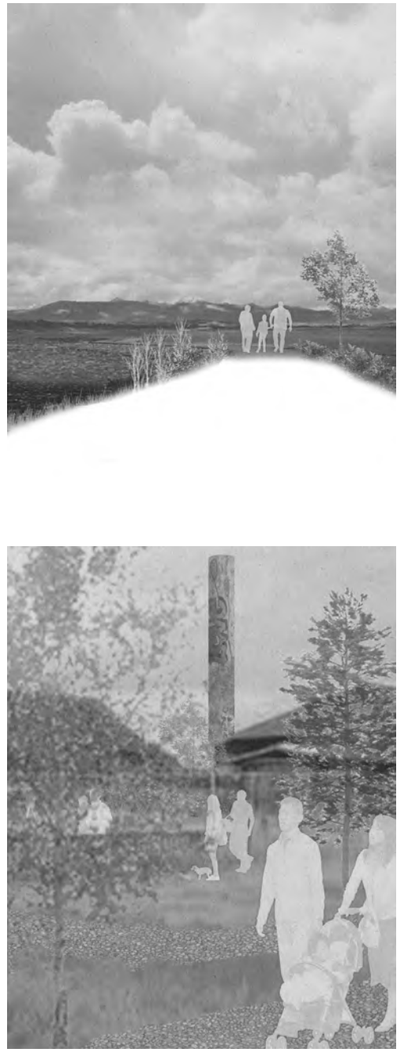
The old Hamilton Stack from the 1920's remains, and should be preserved for as long as possible. There are two historic downtowns, both in the floodplain. One is in the west, near the water and developed around the former location of the steamboat wharf - this is the original town of Stanwood. In the east of the floodplain is another, smaller, historic area, this time located beside the railroad station - this is former East Stanwood. In some areas between the two historic areas the original brick paving can be found. There are quite a few historic homes in the uplands, but no commercial buildings more than a few decades old. Ideally, the historic business and cultural centers that do exist would be maintained.



[4.5] Map of natural resources that need preserving

Natural Resources

There are numerous nature reserves around Stanwood and the Stillaguamish Delta, many of which have been ecologically restored in the past few decades. Those nature areas which already exist must be preserved, and further maintenance and restoration carried out. There is little public access to nature today, but what access there is should be maintained. Finally, there a re a few publicly accessible boat launches, which should also be maintained, and possible improved.



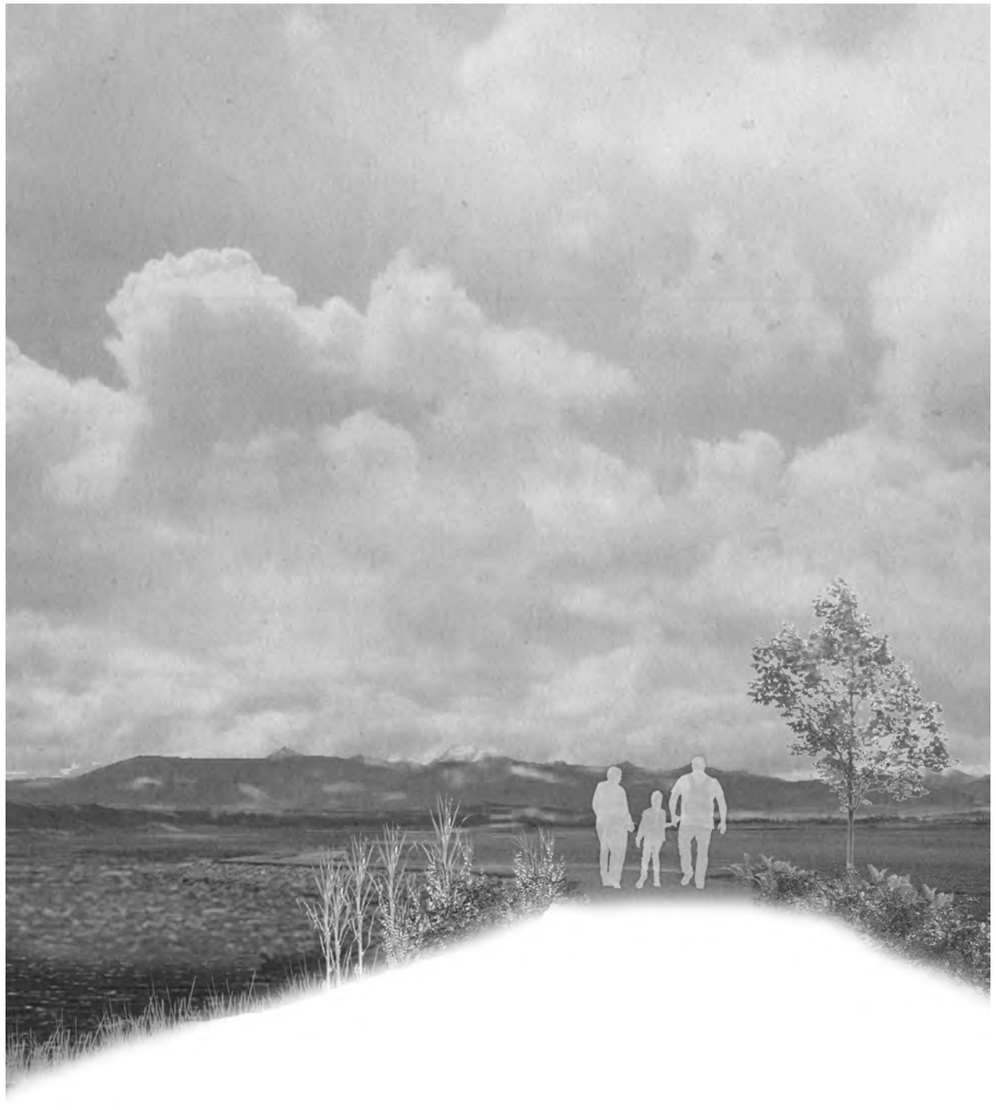
[4.6] Top: Section of a new pathway

[4.7] Middle: Vignette of a new gathering place

[4.8] Bottom: View of a monument, placed on a pathway

4.2 Pathway, Gathering, Monument

This design solution uses three basic strategies to create a wide reaching design. The first is to create a series of pathways to connect the town with surrounding natural resources and farming areas. The second strategy anchors these pathways with a series of new gathering places, which additionally create new gathering centers for the town and hopefully encourage people who would typically pass through the town to stop. Finally, these elements are punctuated with a series of monuments, created to act as a series of community message boards, allowing people to express themselves in the landscape.



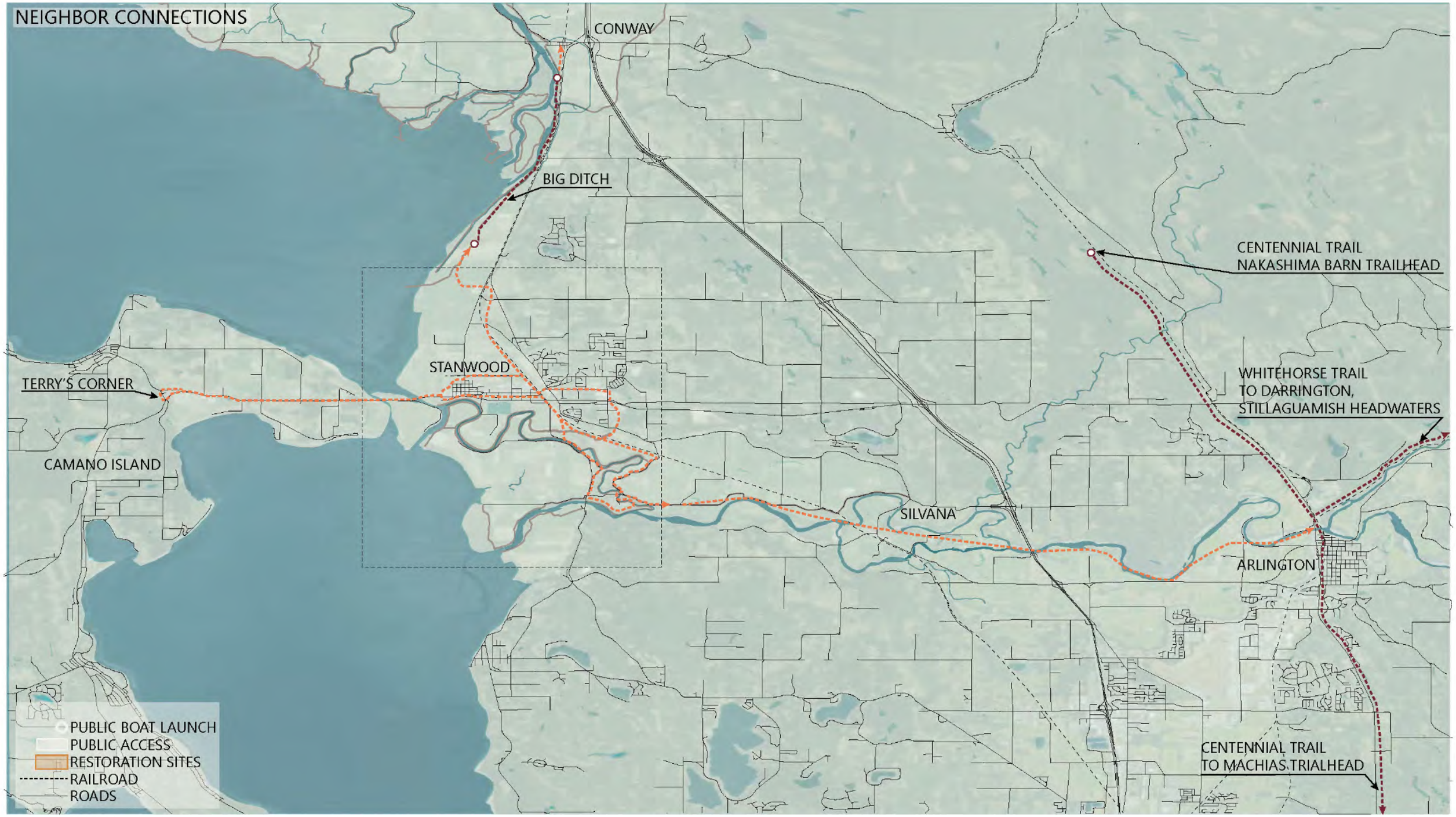
[4.9] Section of a new pathway

4.3 Pathway

The first element of the design is a series of pathways. These pathways are designed in a way that expands over time, until, in as long as a century, it connects all the way to neighboring communities in every direction. The primary goal of the paths is connecting the town to the surrounding open land.

The following page (Figure 4.10), shows the ultimate goal of the pathways: to connect Stanwood to its natural context and neighboring communities. To the north, the paths connect to existing pathways, and ultimately all the way to the small settlement of Conway. Paths also connect to Camano Island, all the way to the small commercial development of Terry's Corner, which includes restaurants and the Camano Island Library. Already, the combined community of Stanwood-Camano is considering creating this pathway.

Finally, the pathway connect Stanwood, to the south and east, along the Stillaguamish River to Arlington. Along the way it passes through thousands of acres of farmland and the small community of Silvana. Arlington is a much larger town than Stanwood, and already has a few trails through it. The Centennial Trail runs the entire length of Snohomish County, north to south, through Arlington, and Whitehorse Trail has one trailhead in Arlington, the other to the east in Darrington. If the pathways from Stanwood connected to these, it could reach most of the county via the Centennial Trail. More exciting, it would combine with Whitehorse trail, and together the two would runs the entire length of the Stillaguamish River.

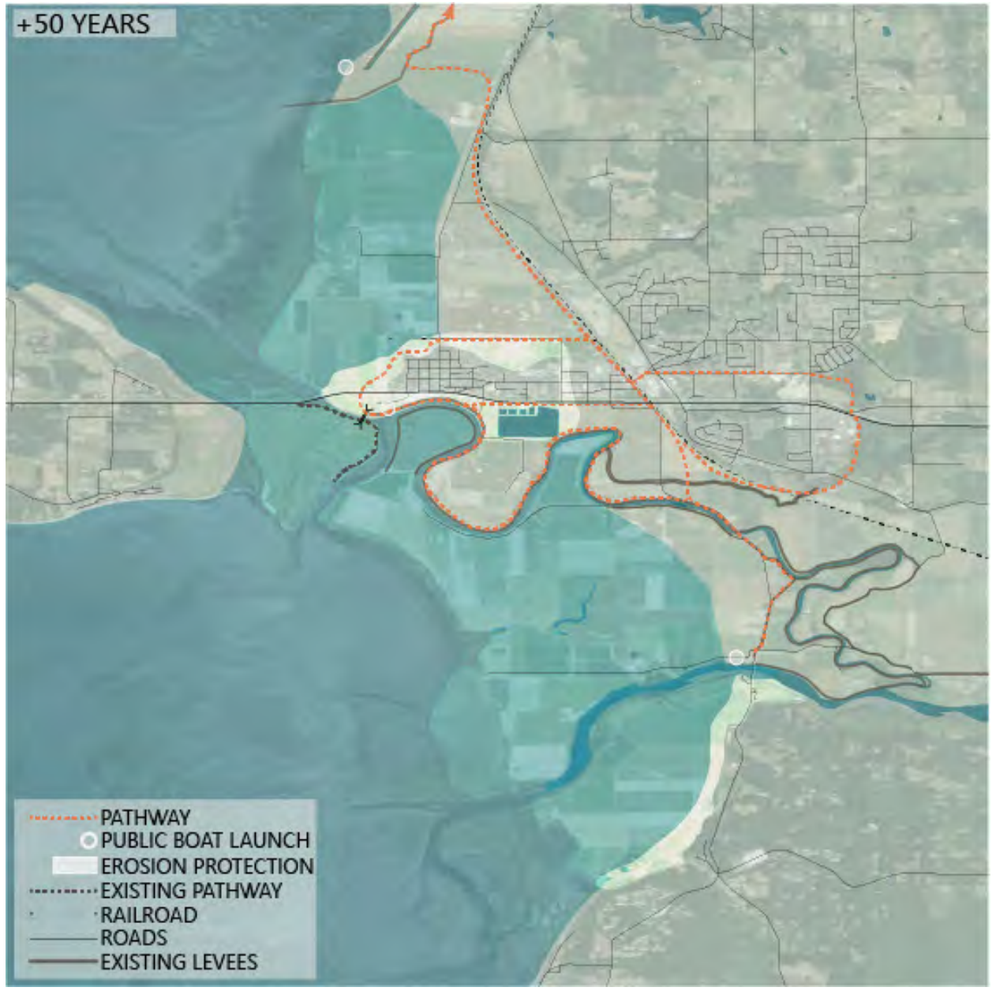


[4.10] Map showing pathway connections to neighboring communities

[4.11] Map showing pathway growth in 5 years
[4.12] Opposite: Section of new pathway along existing dikes

Within five years, the first series of pathways is created. These pathways primarily encircle the town in the lowland, and begin to connect to upland. They also connect the town to farmland via existing dikes and levees. South of the town, at Hat Slough, the southern reach of the Stillaguamish River, are additional pathways on the dikes, though they do not connect to the town. They do reach to the edge of Port Susan, looking over the reserve at Port Susan Bay.

The pathway to the north connects to the town, primarily in the west of the town. At this end of town a new park will be built, and pedestrian bridge can be created, connecting the town to the existing breakwater on Leque Island. These new pathways are only a few miles, but allow the public to experience the natural beauty of the lowlands, especially the farmland, in ways they have never been able to before.



[4.13] Map showing pathway growth in 50 years
[4.14] Opposite: Section of new pathway along existing dikes, including new restoration

Over the next five decades, the pathways on the southern channel will likely wash away, but the pathways connecting to the town will expand.

The pathway will expand to the north of the town, alongside the railroad tracks, connecting to existing pathways on the dikes to the north.

In the town, the pathway will fully encircle the upland settlement, fully connecting both areas of the town.

South of the town, sea level rise will render some of the historic dikes meaningless, and they can be removed to allow for ecological restoration of the delta. The pathway continues to expand south, crossing the lowland area.

The pathways now wind throughout the town more than before, increasing connection urban settlement with nature areas.

[4.15] Map showing pathway growth in 100 years
[4.16] Opposite: Section of new pathway alongside the edge of the upland, serving as part of a breakwater

After one-hundred years, when the seas have hopefully reached their peak, the pathways will fully integrate with both the town and the nature reserves, as well as become part of a series of breakwaters protecting both the town in the lowland, and the uplands from erosion.

The paths to the north and through the town remain largely the same. More of the historic dikes have been removed, and new flood defenses put in, protecting the Stillaguamish valley from further sea level rise. The pathways run throughout these breakwaters, allowing the public to explore the area, and connect not only to Stanwood, but to neighboring communities.

[4.17] Vignette of a new gathering place

4.4 Gathering

The second element of the design is the creation of new gathering centers. These anchor the pathways in three places throughout the town, serving as both a place to connect to new paths, and a way to center the town. The first center is in the west of the town along the water, where a new park is already planned. The second gathering center is located at the railroad station, where the lowland and uplands meet. The third and final gathering place is a new center in the uplands, where there is currently no real town center.

[4.18] Map showing locations of new gathering centers

[4.19] Enlarged map of gathering center at Ovenell Farm
[4.20] Opposite: Vignette of gathering center at Ovenell Farm.

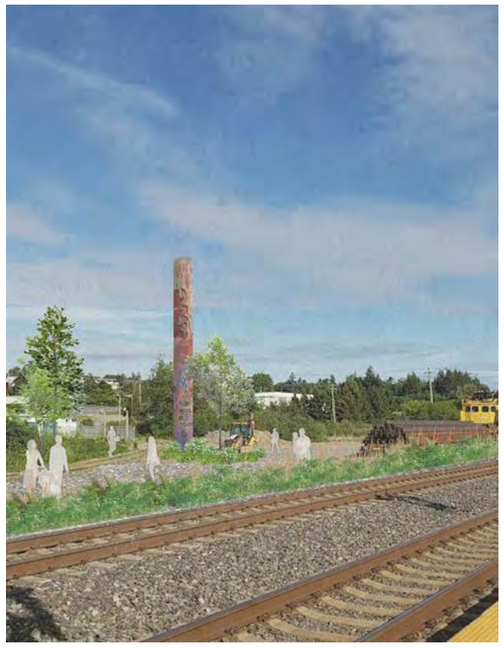
The first new gathering center is located in the far west of the town, along the waterfront. It is already owned by the town and intended as a new park. The location of this center is ideal for entreating passersby to stop, as it is directly alongside Highway 532.

This new gathering area connects to the new pathways, primarily where they connect directly to the town. It also includes a pedestrian bridge across the water to the breakwater on Leque Island, allowing quick access to nature. It also has an additional hand boat launch, offering access directly on to the water. The park can offer quite a bit of parking, so numerous people can stop and access the paths.

[4.21] Enlarged map of gathering center at railroad station
[4.22] Opposite: Vignette of gathering center at railroad station

The second gathering center is located beside the railroad station, where there is some open land. The station sits right where the lowlands transition to the uplands, and a new gathering center bridges between the two.

It sits in a area where multiple pathways intersect, connecting to the town in the lowlands and the uplands, as well as farming and nature reserves to the north and the south. It is also adjacent to one of the historic downtowns, creating an open place to stop right beside one of the towns most popular commercial areas.

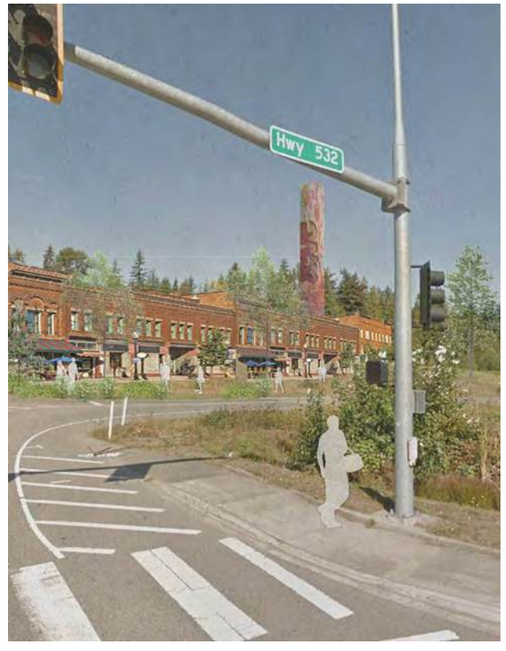


[4.23] Enlarged map of gathering center in uplands
[4.24] Opposite: Vignette of gathering center in uplands

The final new gathering center is located in an open plot of land in the uplands. It is directly adjacent to Highway 532, and is bordered by an existing park to the north. This creates a much needed center for the uplands, which is characterized by spread out commercial development.

This gathering center could be more commercial than the other two, creating a potential new location for the town's farmer's market, street fairs, and summer performances. It also connects to trails, which run through the town, as well as along a small creek down to the lowlands.

The center would be the first part of Stanwood tourists and passersby would see coming from the east, and is hopefully more welcoming than what is there now. It can easily include an open common area, tourist information, and new shops and restaurants, ideal for both residents of the town and tourists on the way to Camano Island.



[4.25] Vignette of a monument within the landscape

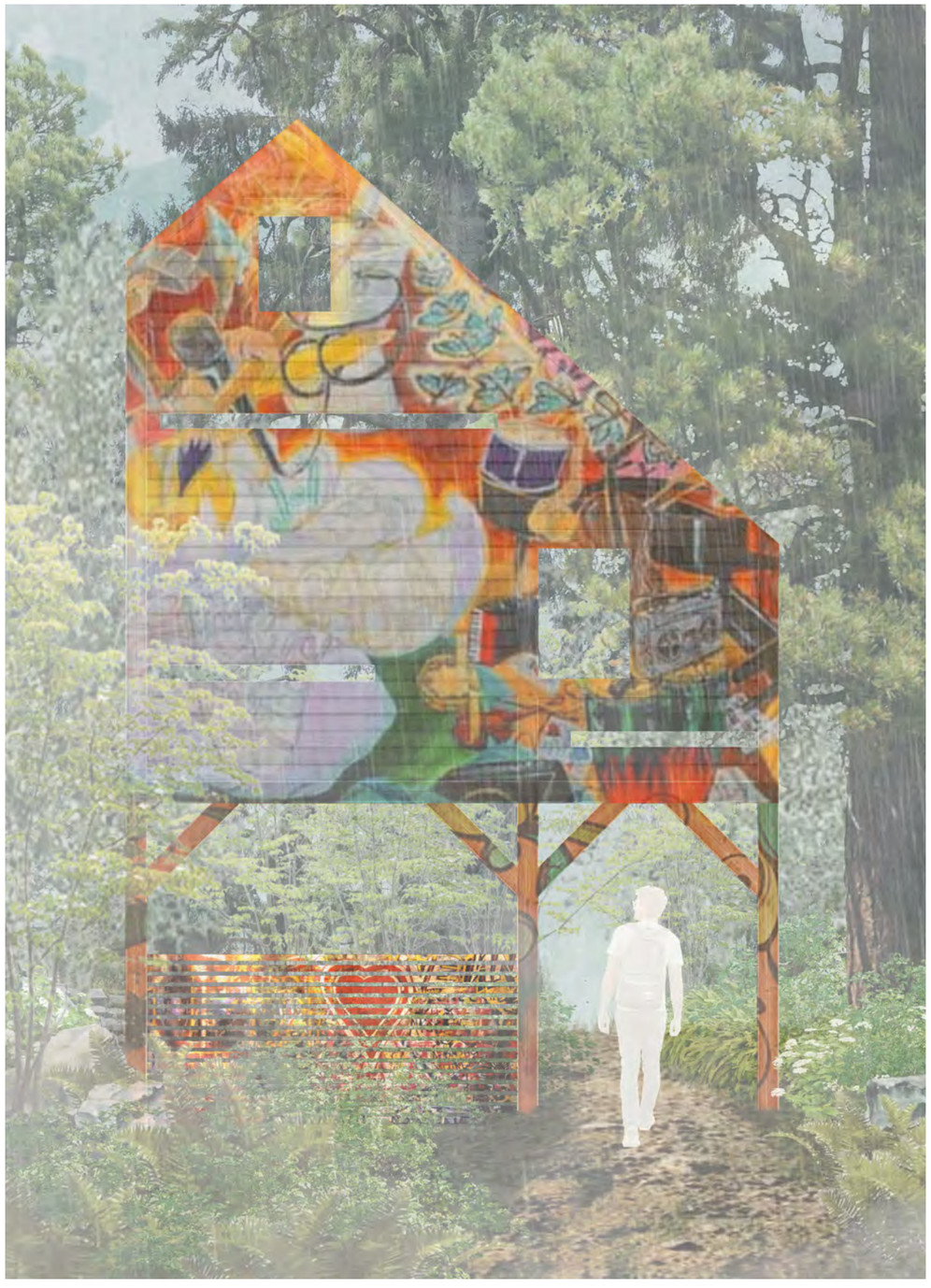
4.5 Monument

The third and final element of the design solution is to create a series of monuments in the landscape, to act as message boards for the community.

The monuments are markers of time and change, as well as vessels for memory and identity. They are designed to allow people some continued adjacency over their story, and landscape they identify with. If nothing else, the marking of the monuments serves as an outlet for anger and grief, helping the community move forward together.

The monuments a two primary forms. The first is the stack (Figure 4.26), a tall tower inspired by the historic Hamilton Stack. These stacks serve as markers within the landscape, and as well as, in some places, viewing platforms or habitat. The second form is the barn. This is a sculptural take on the Memorial Barn, which can still be interacted with. In both cases, the monuments are intended to be spontaneously painted over repeatedly by anyone in the community. The designs are up to the public, and can be memorials for loved ones, congratulations to local graduates, artistic designs, or anything in between. The monuments in many cases mark where people once lived, or where the edge of the sea was. They therefore both mark both the change of the landscape, and express the emotions of the community.

[4.26] The first type of monument: the stack. Inspired by the historic Hamilton Stack.



[4.27] The second form of monument: the barn. Inspired by the memorial barn.

[4.28] Map of monuments after 5 years

[4.29] Opposite: Vignette of a monument in the form of a stack, serving as a viewing tower.

For the first few years, the building of the monuments primarily follows the construction of pathways and gathering centers. A tall, stack monument is located at each gathering center, marking the location for passersby.

Additional monuments are primarily located along, and especially at the end, of the historic dikes. They are also located by the fairgrounds, and at the location where the Memorial Barn once stood.

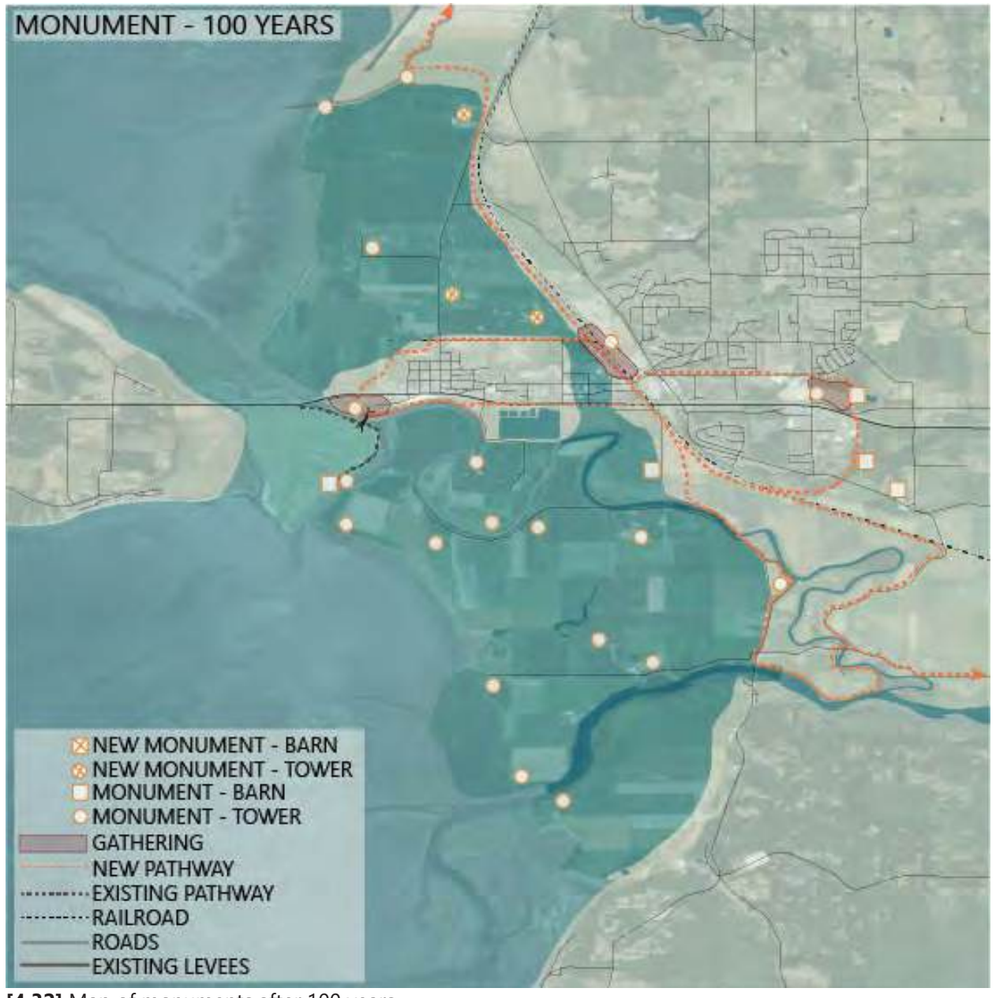
These monuments, at first, can be easily interacted with, placed as they are along pathways.

[4.30] Map of monuments after 50 years
[4.31] Opposite: Vignette of a monument that has begun to collapse

As the decades pass and the seas rise, many of the monuments will no longer be accessible by pathway. These may become part of a breakwater, and will slowly collapse into the landscape.

Additional monuments, especially stacks, will be built to mark the farms and houses where people used to lived, but will inevitably be forced out by the rising seas.

For many decades, these monuments will be easily visible across the landscape, marking the former edge of the sea, and the places humans lived.



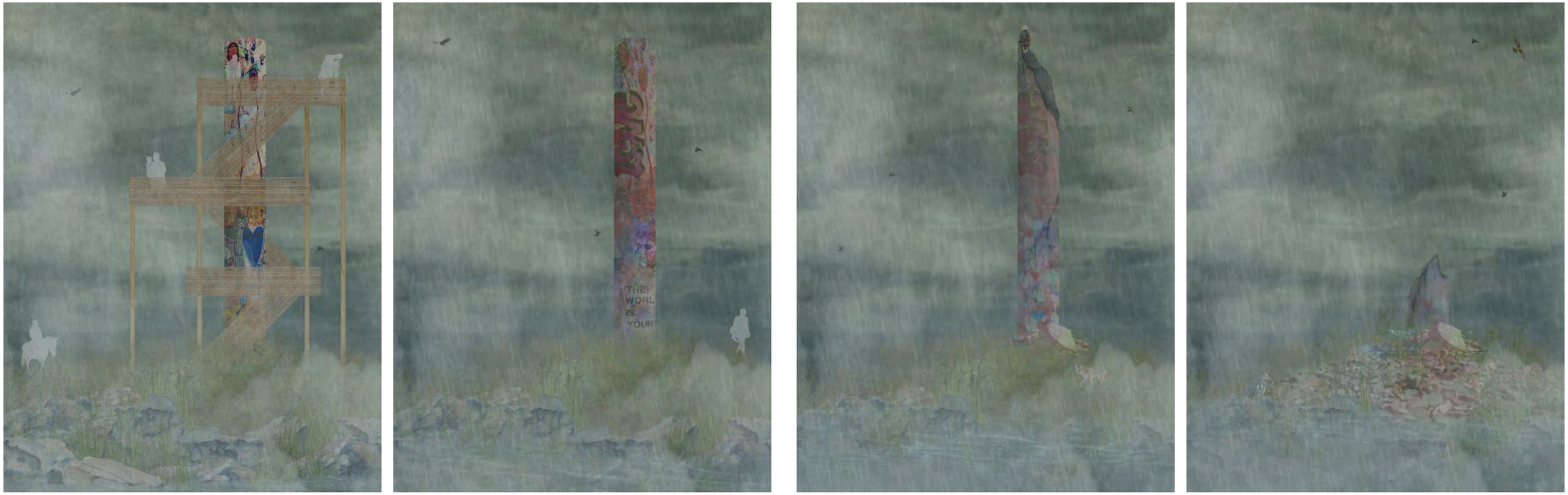
[4.32] Map of monuments after 100 years
[4.33] Opposite: Vignette of a monument that has become part of the habitat

A century from now, most of the monuments within the landscape will be inaccessible to people, but remain within the landscape. These unmistakably mark the place as touched by humans.

Many of the monuments may have fully collapsed by now, or will in the following decades. As they collapse, they become less useful to humans, but more useful to animals and plant life as they are taken over as habitat.

This design expects a dramatically different landscape one-hundred years from now, but slowly marks the land and makes way for the rising seas.

In most cases, the monuments mark a slower period of time, marking the rise of the seas and the reclaiming of land by water (Figure 4.34). The monuments can mark shorter periods of time as well. Standing on the edge of the sea (Figures 4.35 and 4.36), the monuments can mark the daily shift in the tide, and the lives of humans against the cycles of the sea.



[4.34] The monuments decay over time, changing from primarily human use until they become a part of the natural world

[4.35] A monument at the edge of the water, during low tide

[4.36] A monument at the edge of the water, during high tide

5

REFLECTIONS

[5.1] View of the Stillaguamish Delta 100 years from now

[5.2] Interior of the Memorial Barn. Image Source: GoSkagit

5.1 Facing the Future

The challenge of this thesis is finding a way to preserve a community identity that will inevitably change over the next century into something unrecognizable from today's perspective. Most important for the future of all communities similar to this one is creating a design that can change with the community, and with the unstoppable changed brought by sea level rise.

Among the most important things I realized while creating this thesis is how important community involvement is to design. All too often, designers either forget to engage with the community entirely, or do so only after they have completed their research phase and have a schematic design. Admittedly, the latter part of this is true for me. Thanks in part to the Covid-19 pandemic, I was unable to engage with anyone in the community as part of this thesis. However, I myself and part of the community, and it is important to note that the most essential part of the design solution, the monuments, would not have found their form without knowledge I already have. Information about Hamilton Stack, and especially the Memorial Barn, does not readily arise when researching Stanwood. Were an outsider to carry out the same research, they would likely never have discovered the Memorial Barn ever existed. Reflected on this, I realize that engaging with community members from the very beginning is extremely important to a successful design.

As a next step to this thesis, I would begin to engage with the community. Being inclusive with community engagement is additionally extremely important - I know the community includes people within the town as well as farmers, and the Stillaguamish Tribe, who mostly no longer live in the delta. It is important not to make our own assumptions about what any of these people want or need in a design. Engaging with everyone, with an open mind, is the only way to make a successful design.

The world is rapidly changing, and designers must learn that we are not capable of taking on everything, nor should we. Social infrastructure is exceptionally important for surviving disaster, and can only be created if the entire community works together. It is the job of a designer to make certain this happens, and to create a resilient and adaptive place in the process.

[5.3] The monument, over time, marks the presence of humans

Standing on the edge of the farmland, I recently looked out and reflected that I would prefer none of this ever happen. I would rather the farmland I knew from childhood remains as it is, with crops growing as high as the car, fallow fields, and dairy cows. But we cannot stop the tides.

This community, like every community around the world, is changing rapidly. Like many places, the seas are fast encroaching. The community needs a forum to express their voice as unstoppable changes approach. These changes bring pain and grief, but allowing people some agency over their story will allow communities to accept change and move forward together.

A century from now, we will all be gone. Still someone will be able to stand on the edge of the water, look out over the sea, and through a series of markers decaying in the distance, know without a doubt that humans were once here.

Works Cited

"Are You a Streamside Landowner?" Stillaguamish Tribe Natural Resources Department

Baker, J. A. *The Peregrine*. New York Review of Books, 2005.

"Climate Change in the Stillaguamish River: A Quick Reference Guide for Local Decision Makers." *Floodplains by Design, The Nature Conservancy, Climate Impacts Group*.

Cronon, William. "The Trouble with Wilderness: Or, Getting Back To the Wrong Nature." Environmental History., vol. 1, no. 1, 1996, pp. 7–28.

Culver, Lawrence. "Confluences of Nature and Culture." *The Oxford Handbook of Environmental History*, edited by Isenberg, Andrew C., Oxford University Press, 2014. The Oxford Handbook of Environmental

Essex, Alex. *The Stanwood Story*. 2nd Edition. Stanwood/Camano News. 1982.

Fiege, Gale. "Memorial Barn Comes down in Stanwood." *HeraldNet.com*, HeraldNet.com, 20 Nov. 2013, www.heraldnet.com/news/memorial-barn-comes-down-in-stanwood/.

Hunt, E.H. and Paim, S.J. "Essex Agriculture in the 'Golden Age', 1850-1873". *Agricultural History Review,* vol. 43.2, 1995: 160-177. Web. Retrieved 6 May 2015. P. 162.

Hurner, Mary, Crump, Donald "Kit", Liddell, Beth. "Snohomish-Stillaguamish Local Integrating Organization LIO 5-Year Ecosystem Recovery Plan – First Elements DRAFT". Snohomish County. snohomishcountywa.gov/DocumentCenter/View/31532/Sno-Stilly-LIO-First-Elements-Final-Draft-Jan-29-2016?bidId=

"Leque Island Restoration Project." *Washington Department of Fish & Wildlife*, wdfw.wa.gov/species-habitats/habitat-recovery/nearshore/conservation/projects/leque-restoration.

Macfarlane, Robert. *The WIld Places*. Penguin Books, 2008.

"Monitoring the Stillaguamish Estuary". ESRI. www.arcgis.com/apps/Cascade/index.html?appid=a2ad311bb64a4a3f9361d207034f5307.

"Port Susan Bay Factsheet." *The Nature Conservancy*. Factsheet.

"Puget Lowland". Washington State Department of Natural Resources. www.dnr.wa.gov/programs-and-services/geology/explore-popular-geology/geologic-provinces-washington/puget-lowland.

"Revisiting the Oso Landslide." United States Geological Survey. www.usgs.gov/news/revisiting-oso-landslide.

"Riparian." Stillaguamish Tribe of Indians, www.stillaguamish.com/riparianrestoration.asp. 2014.

"Skagit Wildlife Area." *Washington Department of Fish & Wildlife*, https://wdfw.wa.gov/places-to-go/wildlife-areas/skagit-wildlife-area

Solveig, Lee. "Camano Island." *The Norwegian American*, 18 Apr. 2017, www.norwegianamerican.com/camano-island/.

"Stanwood Camano Community Fair." *SCCF*, www.stanwoodcamanofair.org/.

Stillaguamish Technical Advisory Group. "Technical Assessment and Recommendations for Chinook Salmon Recovery in the Stillaguamish Watershed". September 2000.

Stillaguamish Technical Advisory Group. "Technical Assessment and Recommendations for Chinook Salmon Recovery in the Stillaguamish Watershed". September 2000.

"Stillaguamish Watershed." Encyclopedia of Puget Sound, www.eopugetsound.org/terms/121.

"Tawharanui Regional Park." 100% Pure New Zealand. www.newzealand.com/us/feature/tawharanui-regional-park/.

"Welcome to The Stillaguamish Tribe of Indians Natural Resources Department", Stillaguamish Tribe of Indians - Natural Resources Home, stillaguamish.nonprofitsites.com/naturalresources.asp.

Wendel, Peggy. "Stanwood Seeks Permit to Dredge Slough to Help City's Drainage." *GoSkagit*, 24 July 2018, www.goskagit.com/scnews/news/stanwood-seeks-

permit-to-dredge-slough-to-help-citys-drainage/article_88fe8aa2-8ec8-11e8-a181-5f3fa2c1645a.html.

"What's at Tawharanui?" TOSSI, www.tossi.org.nz/whats_at_tawharanui.php.

Winters, Chris. "Stillaguamish River, Threatened Fish Challenged by Silt, Slides and Drought." HeraldNet.com, 26 July 2015, www.heraldnet.com/news/stillaguamish-river-threatened-fish-challenged-by-silt-slides-and-drought/
www.stillaguamish.com/images/Natural_Resources//JasonFlyer.jpg

Yount, James C., Dembroff, Glenn R., Barats, Greg M. *Map Showing Depth to Bedrock in the Seattle 30′ by 60′ Quadrangle, Washington*. 1985. Department of the Interior, U.S. Geological Survey. pubs.usgs.gov/mf/1692/plate-1.pdf

"Zis a Ba Estuary Restoration." *Cardno*, www.cardno.com/projects/zis-a-ba-estuary-restoration/.

"Zis a Ba Restoration." *Zis a Ba Restoration - Salish Sea Wiki*, salishsearestoration.org/wiki/Zis_a_Ba_Restoration.

List of Figures

.18 Map of natural features on site. Author Drawing.

.19 Map of restoration sites. Author Drawing.

.20 Stillaguamish River, Hat Slough. Author Photo.

.21 Recently restored Leque Island. Author Photo.

.22 Leque Island, part of Skagit Wildlife Area. Author Photo.

.23 Overlooking Port Susan Bay. Author Photo.

.24 Sea Level Rise maps of the Stillaguamish Delta. Adapted from NOAA maps.

.25 Cultural features within the site. Author Drawing.

.26 Important infrastructure on the site. Author Drawing.

.27 Public facilities in Stanwood. Author Drawing.

.28 Public access to nature near Stanwood. Author Drawing.

.29 A steamship docked in Stanwood, 1907. Image Source: History Link, originally from Stanwood Area Historical Society. Retrieved from: www.historylink.org/File/8557

.30 Boats, including canoe, on Stanwood waterfront, 1910. Image Source: History Link, originally from Stanwood Area Historical Society. Retrieved from: www.historylink.org/File/8557

.31 H & H Railroad, or “Dinky”, no date. Image Source: History Link, originally from Stanwood Area Historical Society. Retrieved from: www.historylink.org/File/8557

.32 Condensory, now Twin City Foods, along Irvine Slough, 1913. Image Source: History Link, originally from Stanwood Area Historical Society. Retrieved from: www.historylink.org/File/8557

.33 Main Street in East Stanwood, 1906. Image Source: History Link, originally from Stanwood Area Historical Society. Retrieved from: www.historylink.org/File/8557

.34 Flooded Street in Stanwood, 1909. Image Source: History Link, originally from Stanwood Area Historical Society. Retrieved from: www.historylink.org/File/8557

.35 Aerial image of the 2014 Oso Landslide. Image Source: NBC News. Retrieved from: www.nbcnews.com/storyline/deadly-mudslide/washington-reaches-50-million-settlement-2014-oso-mudslide-killed-43-n663411

.36 Population growth in Stanwood. Author drawing.

.37 Stanwood: Age. Author Drawing.

.38 Snohomish County: Age. Author Drawing.

.39 Stanwood: Race. Author Drawing.

.40 Snohomish County: Race. Author Drawing.

.41 Stanwood: Language spoken at home. Author Drawing.

.42 Snohomish County: Language spoken at home. Author Drawing.

.43 Stanwood: Highest Educational Attainment. Author Drawing.

.44 Snohomish County: Highest Educational Attainment. Author Drawing.

.45 Stanwood: Transport to work. Author Drawing.

.46 Snohomish County: Transport to work. Author Drawing.

.47 Flyer for Stanwood Snow Goose & Birding Festival. Image Source: Sound Water Stewards. Retrieved from: soundwaterstewards.org/web/wp-content/uploads/2019/09/New-2020-Snow-Goose-Poster_Medium.jpg

.48 Stanwood Farmer’s Market. Image Source: Farm Guide. Retrieved from: farm-guide.org/farmers-markets/stanwood-farmers-market/

.49 A young girl with dairy cows at Stanwood Camano Fair. Image source: GoSkagit. Retrieved from: www.goskagit.com/scnews/gallery/photo-gallery-stanwood-camano-community-fair-8-3-19/collection_04dd01e6-b662-11e9-b661-178cd2fa7db0.html#39