



GOOSEBERRY POINT VILLAGE

Implementation Strategies

Lummi Nation Commercial Company | Lummi Indian Reservation, Washington
Spring 2023 | Urban Planning Studio | Western Washington University

A WWU Urban Transitions Studio
and
Sustainable Communities
Partnership Study

GOOSEBERRY POINT VILLAGE DESIGN CONCEPTS

LUMMI NATION
LUMMI COMMERCIAL COMPANY



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2023

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Tribal Land Statement

We acknowledge that we are on the ancestral homelands of the Coast Salish Peoples, who have lived in the Salish Sea basin, throughout the San Juan Is-lands and the North Cascades watershed, from time immemorial. We express our deepest respect and gratitude for our Indigenous neighbors, the Lummi Nation, for their enduring care and protection of our shared lands and waterways.

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Message to the Lummi Community

Summary

During the 2022-23 academic year, Western Washington University's Urban Transitions Studio (UTS) collaborated with Tim Ballew Jr., CEO of the Lummi Commercial Company (LCC) and former Lummi Indian Business Council (LIBC) chairman, to commence a study and masterplan for the Fisherman's Cove area at Gooseberry Point on the Lummi Nation's reservation in Whatcom County, Washington.

The objective of the study is to define an urban village at the Gooseberry Point area addressing long term housing needs of Lummi Nation, provide support services to residents, and, in particular, improve facilities supporting the tribal fishing industry.

The study is a three-quarter studio for senior undergraduate students in the Urban Planning and Sustainable Development (UPSD) major. In fall quarter 2022, Dr. James Miller taught Studio I. An analysis of the area consisted of site visits and data collection. A survey was also issued to residents of the Lummi Reservation to gain ideas and opinions regarding the future use of the Gooseberry Point area.

Dr. Nicholas Zaferatos taught the winter quarter Planning Studio II, focusing on conceptual land use concepts for the entire study area for long term development as a Lummi Reservation urban village, and presented preliminary concepts to the board members of Lummi Commercial Company. In the spring quarter 2023, Dr. Tammi Laninga, teaching Planning Studio III, will focus on refinements to the winter studio design concepts based on feedback from community workshops, and the preparation of a phasing strategy to guide long term development.

Study Content

The Fisherman's Cove and Marina Study includes the following major elements:

- Coastal adaptation management and disaster risk reduction
- Ferry terminal location
- Commercial development opportunities
- Community event space
- Future housing development
- Fishing fleet infrastructure
- Boat ramp improvements
- Improvements to circulation
- Future marina
- Stommish Grounds enhancements

Several community engagement meetings were held during the year:

- November: Community survey
- February: LCC board review of initial concepts
- March: LCC work session review of refined concepts
- April: Presentation to Lummi Planning Commission
- June: Final Presentation to LCC Board

1. Implementation Strategies Overview

The WWU Urban Transitions Studio was invited by the Lummi Commercial Corporation (LCC) to develop plans and strategies for Fisherman’s Cove, surrounding neighborhoods, and the Stomish Grounds. Senior urban planning students worked on the project over three quarters from fall 2022 through spring 2023. Figure 1.1 outlines the work completed each quarter, highlighting community engagement opportunities and presentations given to the LCC and the Lummi Nation Planning Commission.

The proposals outlined in this report are recommended to be phased in over several decades. Figure 1.2 shows the five phasing categories. The actions proposed for each phase area based on when they make most sense to implement in the overall development scheme. Easy to implement, or most necessary actions to take first, are proposed for years 1-15; more expensive or difficult projects are proposed in later development phases, going all the way out to over 75 years into the future.

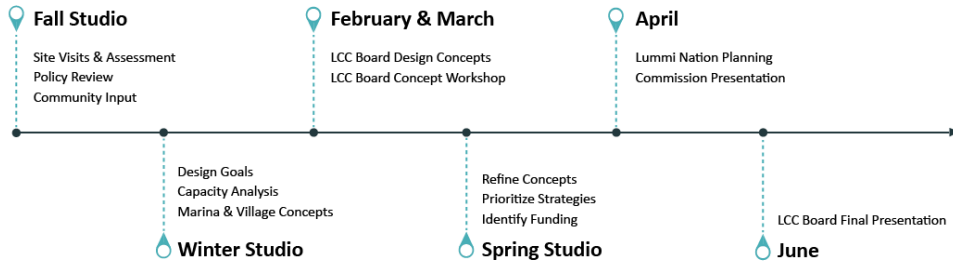


Figure 1.1 Gooseberry Point Study Timeline.

The spring studio examined implementation strategies for the design proposals developed in the winter planning studio. Implementation strategies centered around the following aspects:

- Revising design concepts based on LCC Board and Planning Commission input
- Devising development phases for the proposals on a 75-100 year timeframe
- Identifying funding strategies to help cover implementation costs

The Gooseberry Point Study proposed several districts and made recommendations in the following areas:

- Land Use: Emphasizes a working waterfront, small-scale commercial developments, neighborhood services, higher-density housing options and cultural districts and parks.
- Circulation: Reroutes main arterials out of flood zones and proposes new roads, walking and biking paths.

- Shoreline Management and Coastal Restoration: Examines managed retreat, habitat restoration and berm development to protect against rising sea levels and enhance environmental resources.
- Fisherman’s Cove (Marina District): Proposes commercial and recreation marinas, boat launch, boat storage, parking, revamped ferry terminal and queuing area, and increased commercial space.
- Stomish Grounds (Cultural District): Expands recreation amenities and canoe storage, and proposes year-round vendor’s market, viewing stands and community building.
- Urban Village Districts: Proposes higher density housing with community services (e.g., grocery store, day care) and parks.

The report includes recommendations for stormwater management that relies on natural approaches like bioswales. It concludes with a section on funding, looking at federal, state and nongovernmental sources.



Figure 1.2 Gooseberry Point Study Development Phases.

2. Land Use

Study Area

The Gooseberry Point study area extends as far north as the MacKenzie housing development, as far east as the Lummi Nation School, and as far south as the Stommish Grounds (Figure 2.1). The study area has profound cultural significance, has a diverse range of facilities, and is the hub of the Lummi Nation's commercial fisheries. Important cultural resources found in the study area include the Stommish Grounds, Lummi Nation School, Wex'liem Center, the Little Bear Creek Retirement Center and the fishing terminal at Fisherman's Cove. However, the area is susceptible to the effects of climate change, making it a compelling and crucial site for strengthening adaptability and resilience.

Site Adaptability and Development Suitability at Gooseberry Point

The first step in the study was to analyze the existing conditions at Gooseberry Point. This involved performing quantitative analysis of each parcel contained in the study area. Students used the Whatcom County Assessor's data on land value and improvement value to determine which sites were "soft", "medium", or "hard" (Figure 2.2). A soft site is preferred for development and has a relatively low improvement value compared to the land value, indicating that the parcel is relatively underutilized. A hard site is a developed site with the value of the improvement exceeding the value of the land. A medium site is characterized as having potential for adapting reuse to a higher economic use or conversion to a natural use when sites are vulnerable to



Figure 2.1: Gooseberry Point Study Area.

inundation. A medium site is characterized as having potential for adapting reuse to a higher economic use or conversion to a natural use when sites are vulnerable to inundation.

Students considered qualitative factors by conducting field work to further evaluate the conditions of each parcel in the study area and compare those observations to the data from the qualitative analysis. One example of how qualitative analysis considered a site as "medium" rather than "hard", and therefore, adaptable to other uses, is by recognizing how certain properties, such as those located north of Fisherman's Cove, are subject to severe coastal flooding.

In consideration of Lummi Nation policies that prohibit the construction of protective seawalls, the qualitative analysis considered the threat of sea level as a significant factor for recommending such sites for coastal restoration despite the qualitative analysis' findings that many waterfront properties would otherwise be considered "hard sites." Based on this analysis, the study identified potential locations that could be suitable for the location of future housing and commercial development away from future sea level rise impacts.

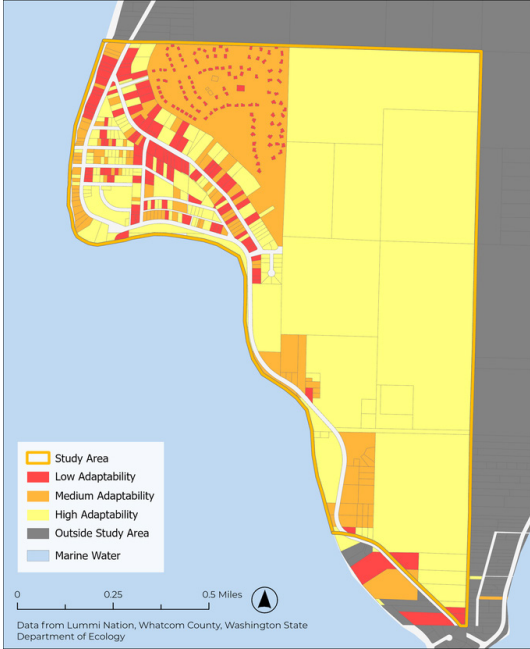


Figure 2.2: Site Adaptability at Gooseberry Point.

Conceptual Land Use Proposal

Figure 2.3 outlines the team’s overall concept for future development at Gooseberry Point. The area is split into different districts based on existing infrastructure, wetland locations, land ownership, and predicted future climate impacts. The overall vision for the site is to create community spaces with mixed use commercial and residential development and higher density housing options to allow for more community interaction, better walkability and bikeability, and more economic opportunities.

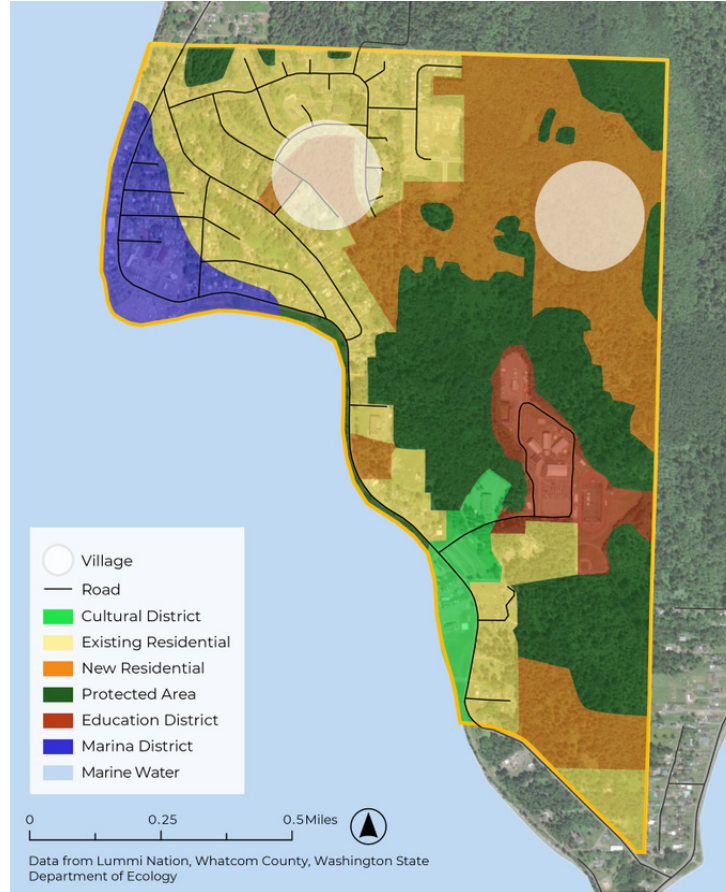


Figure 2.3: Conceptual Land Use at Gooseberry Point.

The two urban villages are essential parts of the vision, with the western village going in first and having higher density and the eastern village going in at a later stage. The villages concentrate neighborhood services and higher density housing in locations that serve current and future

residents. The conceptual land use map shows an urban growth boundary (UGB) that concentrates development within the Gooseberry Point study area and provides a clear separation from other areas of the reservation to preserve rural zones and natural resource areas.

Towards the southern portion of the study area, the map highlights two areas designated primarily for educational and cultural activities. Lummi Nation School is located within the educational district and provides additional space for expansion or to support other educational needs. The cultural district is centered around the Stommish Grounds and Wex’liem Community Building.

Natural Environment Constraints

The team examined a number of environmental conditions and constraints that informed development proposals including locations of wetlands, flooding risk, sea level rise inundation, and eel grass beds in Fisherman’s Cove.

Wetlands

Figure 2.4 is a digitization of the wetlands identified by the Lummi Nation in the Lummi Nation Atlas (Lummi Nation, 2016).

The wetland locations are not exact, but the approximation provides guidance for conceptual planning. The Lummi Nation Community Plan identifies that “The Lummi Nation’s laws require restoring, protecting, and sustaining the natural resources and habitat of the Lummi Reservation (e.g., wetlands, streams, and marine shorelines) for the current and future generations of the



Figure 2.4: Wetlands in Gooseberry Point.

Lummi people” (Lummi Nation, 2022, p. 30). The team’s planning concepts avoid construction within these zones.

100-year Flood Plain

The 100-year flood plain poses a significant threat of inundation to a substantial portion of Fisherman’s Cove and the Stommish Grounds (Figure 2.5). This vulnerability exposes the region to increasingly frequent and severe flooding events, potentially causing extensive damage to infrastructure, property, and the local community. Understanding the dynamics of the floodplain and its potential impacts helps develop effective mitigation strategies, resilient infrastructure, and proactive measures to safeguard the well-being and livelihoods of those residing in Gooseberry Point. With increased research, development, and investment the community can implement proactive measures to enhance the area’s resilience and minimize the potential devastating consequences associated with flooding.

Sea Level Rise

Sea Level Rise threatens to inundate much of Fisherman’s Cove and the Stommish Grounds in the future. Developments in Gooseberry Point will need to accommodate for this unprecedented sea level rise (Figure 2.6). Models showing three foot and five foot sea level rise predictions pose a significant risk to important economic and cultural lands of the Lummi Nation. To prepare for these changes, proposed plans indicate moving the main arterial from Lummi View Drive to MacKenzie Road, creating a berm along the

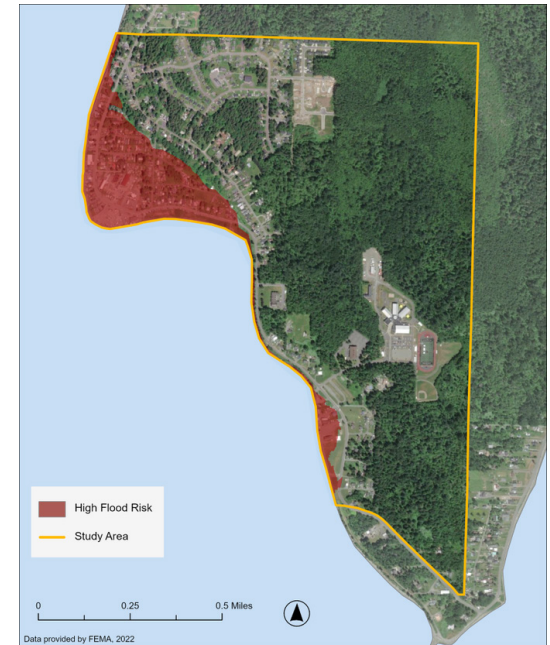


Figure 2.5: Gooseberry Point Flood Risk.

waterfront, and developing Stommish Grounds in a way that is both beneficial to Lummi Nation’s current needs and resilient to future changes.

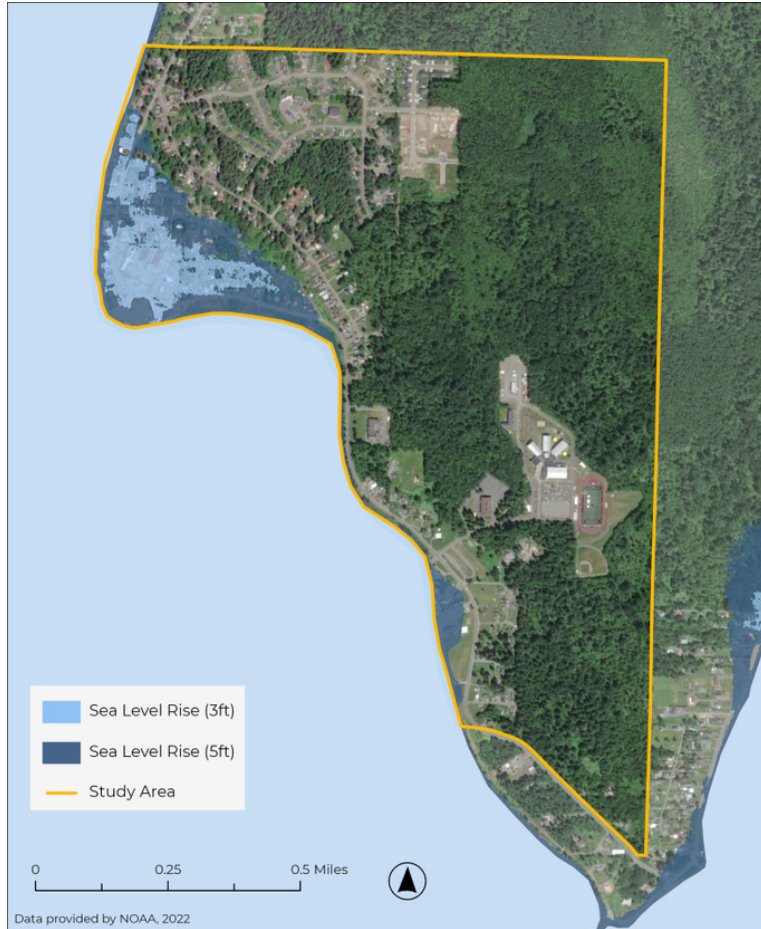


Figure 2.6: Sea Level Rise at Gooseberry Point .

Eelgrass Beds

Eelgrass beds were identified as one of the biggest constraints on marine development in Fisherman's Cove due to their ecological significance

and vital role in supporting marine life. These beds serve as crucial habitat for herring, shellfish, and other marine species, providing them with shelter, nursery areas, and feeding grounds. Preserving eelgrass beds is essential for maintaining the delicate balance of the marine ecosystem and ensuring the sustainability of fisheries and marine development in Fisherman's Cove.

The final proposals for the marina, urban village and cultural districts are made with the Lummi community's needs in mind and within the environmental constraints present at Gooseberry Point. The next section discusses proposed circulation recommendations.



Figure 2.7: Eelgrass Beds in Fisherman's Cove.

3. Circulation

Reimagining circulation at Gooseberry Point can result in a safer and more connected place for the Lummi Nation. Gooseberry Point would benefit from more reliable transportation, safer pedestrian and bicycle access, and new routes to accommodate denser, mixed-use development in the proposed urban villages. The circulation plan accounts for the current needs of most reservation residents to drive by improving road safety and connectivity for drivers as well as all other road users. With a long-term view focused on a 7-generation planning model, multimodal transportation would help to develop a more sustainable, equitable, and livable community at Gooseberry Point.

Circulation Proposal

A key aspect of circulation is moving the main thoroughfare in Gooseberry Point from Lummi View Drive to MacKenzie Road. Lummi View Drive between the north and south ends of MacKenzie Road is likely to be impacted by sea level rise within the next 50 years, meaning that future road improvements should focus on other roads. This change would enable the Fisherman’s Cove area to become a thriving economic and cultural center for the Lummi Nation’s fishing fleet, freeing up more space dedicated to fishing infrastructure. MacKenzie Road ranges from 31 to 77 feet in elevation, meaning it will not be impacted by even the most significant sea level rise predictions. Additionally, this would reduce the ferry’s impact on traffic flow in the area and create more space for ferry queuing. This change, and other active transportation elements, are shown in Figure 3.1.

MacKenzie Road has a right-of-way ranging from 51 to 61 feet and a current paved width ranging from 20 to 30 feet. This leaves many options for potential improvements. Figure 3.2 outlines current conditions, Figure 3.3 adds sidewalks to the existing road, and Figures 3.4 and 3.5 represent substantial redevelopment that could be completed over a longer timescale. Improvements that add sidewalks at a minimum will allow the area to be well connected to existing infrastructure and new developments. These street concepts can be applied to other roads within the urban growth area as well. Ten-foot traffic lanes aid in naturally slowing down cars in residential areas while still providing adequate space for vehicles of many sizes.

New roads added to the eastern section of the urban growth area allow for residential and commercial development that is well connected, provides alleys to create pedestrian-focused street fronts, a navigable grid, and room for growth. This road system is different from existing Lummi Nation housing developments as it uses a grid pattern. This can allow for residents to get where they need to be more

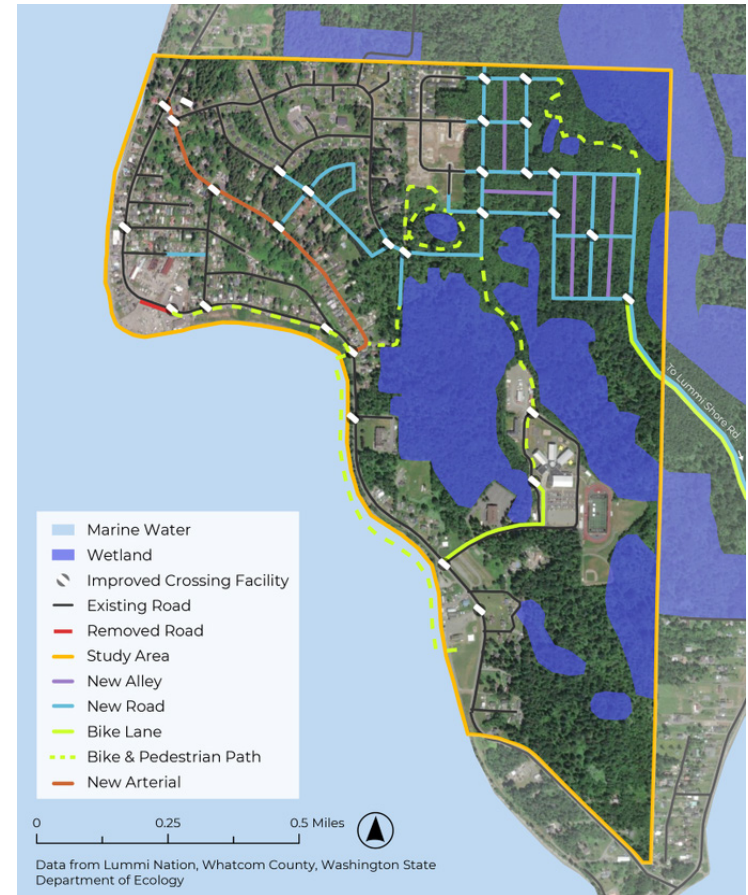


Figure 3.1: Circulation at Gooseberry Point.

efficiently, which may make sense in a denser area close to such important resources such as Fisherman’s Cove, the Wex’liem Community Building, Stommish Grounds, the Lummi Nation School. A new road is proposed that would connect the Village II development to Lummi Shore Road.

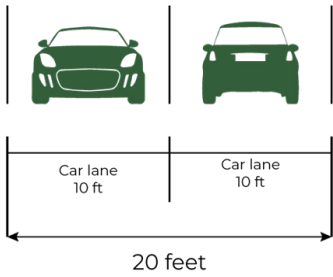
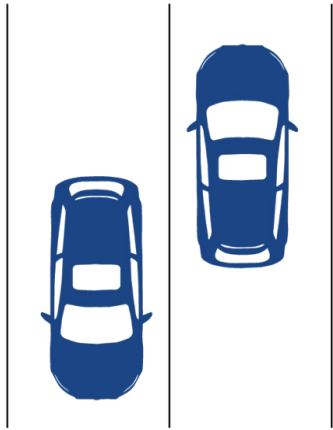


Figure 3.2: Current Road Section.

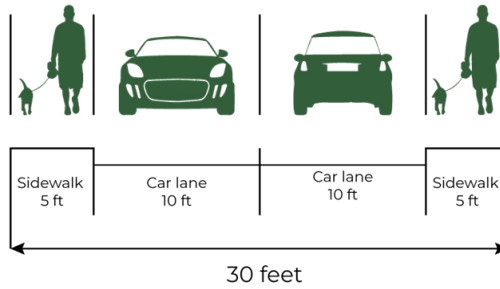
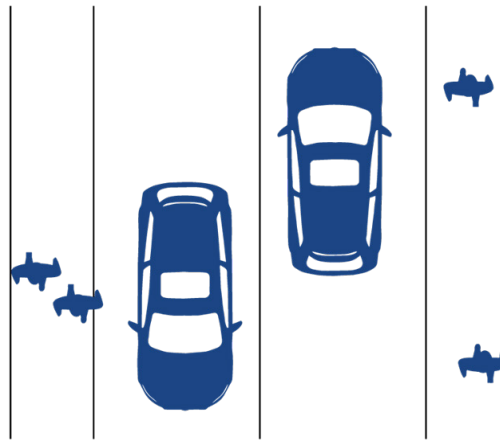


Figure 3.3: Conceptual Road Section with Sidewalk.

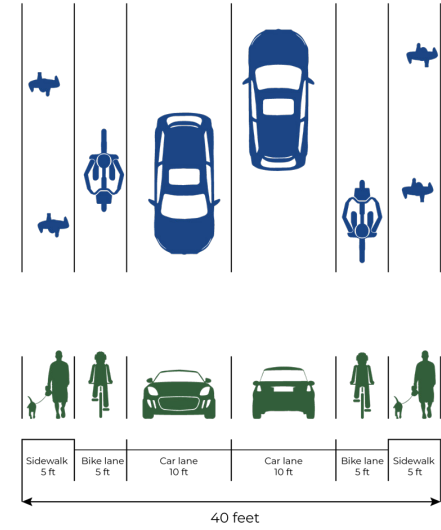


Figure 3.4: Conceptual Road Section with Sidewalks and Bike Lanes.

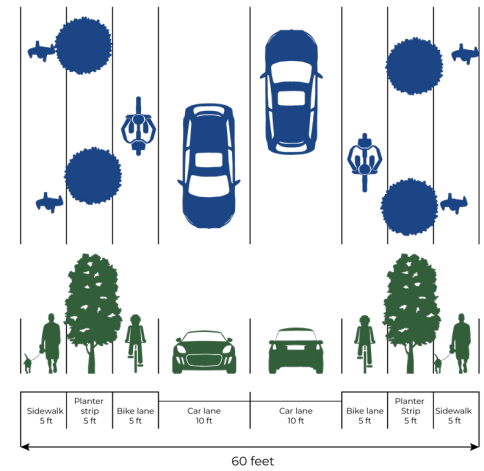


Figure 3.5: Conceptual Road Section with Sidewalks, Planting Strip, and Bike lanes.

Phasing Plan

Gooseberry Point would benefit from more reliable transportation, safer pedestrian/bicycle access, and new routes to accommodate denser, mixed-use development in an urban village setting. With a long-term view focused on a 7-generation planning model, multimodal transportation would help develop a more sustainable, equitable, and livable community in the Gooseberry Point area. The circulation plan also focuses on mitigating the impacts of climate change, providing safe routes to school, and establishing the Stommish Grounds as a cultural hub that all members of the community can safely and reliably access. Table 3.1 describes the proposed phasing for circulation changes.

Summary

The circulation plan reimagines Gooseberry Point by improving transportation safety and connectivity, making the area a welcoming place for all community members. Generally, the plan focuses on decreasing dependence on automobiles by providing more multimodal transportation access. Diverting MacKenzie Road to Lummi View Drive allows for resiliency to sea level rise, more space dedicated to fishing industry, and less conflict with ferry traffic. The addition of roads and alleyways in new developments creates people friendly spaces that encourage walking, biking, and fostering community. The circulation plan also includes new walking/biking paths, connecting residents to recreational facilities, education centers, and other essential services.

Phase 1: 1-15 years	Time Frame
Divert the main arterial from Lummi View Drive to MacKenzie Road	Year 6-10
Create safe routes to school connecting Fishermen's Cove and the MacKenzie development to Lummi Nation School	Year 4-10
Phase 2: 16-30 years	Time Frame
Create multimodal transportation options to/from the Stommish Grounds	Year 16-20
Redesign the local road network and establish traffic control measures like raised crosswalks and roundabouts	Year 16-20
Create pedestrian and bicycles paths that connect Stommish Grounds to Fisherman's Cove along berm/boardwalk	Year 16-20
Phase 3: 31-45 years	Time Frame
Create new roads connecting Urban Village I to the rest of Gooseberry Point	Year 31-40
Create multimodal transportation options for Urban Village I that allow for decreased car dependency in Gooseberry Point	Year 31-40
Phase 4: 46-60 years	Time Frame
Establish new roads connecting Fisherman's Cove and the Mackenzie Development to the east village development	46-55 years
Create multimodal transportation options for the Urban Village II that allow for decreased car dependency in Gooseberry Point	46-55 years
Create a new road connecting the east village with Lummi Shore Drive	46-55 years

Table 3.1: Circulation Phasing.

Sources Cited:

Lummi Indian Business Council. (2022). Lummi Nation Community Plan. Berk. https://www.lummi-nsn.gov/userfiles/1034_LummiCommunityPlanFinalDraft20221127-compressed.pdf

Spencer, P. (2019, August 17). How to build a climate-proof home that never floods. The Guardian. <https://www.theguardian.com/environment/2019/aug/17/how-to-build-a-climate-proof-home-that-never-floods>

4. Shoreline Management & Coastal Restoration

This chapter covers the design, phasing, and funding of proposed shoreline infrastructure and rehabilitation projects in Fisherman’s Cove and along Lummi View Drive. The proposed projects address the threat of sea level rise in Fisherman’s Cove and prioritize the safety of tribal members and their property through the implementation of managed shoreline retreat (MSR) planning, berm construction, and the restoration of the coastline that has been impacted by development. These projects are informed by the Lummi Nation Climate Change Mitigation and Adaptation Plan (2016) and the Quinault Indian Nation’s Taholah Village Relocation Master Plan (2017) developed in response to sea level rise.

Managed Retreat

Managed Shoreline Retreat (Siders, 2019) is a disaster/risk adaptation strategy that relocates community assets to protect them from sea level rise, flooding or storm surge. Managed Shoreline Retreat (MSR) has been used all over the world and there are many case studies in the US that demonstrate the feasibility of MSR within smaller communities. In many cases federal funding is necessary in executing MSR. In Washington State the Quinault Indian Nation has been planning the relocation of the village of Taholah due to its vulnerability to sea level rise with assistance from federal funds including the Federal Emergency Management Agency (FEMA).

The Lummi Nation has already established managed retreat as an Adaptation Strategy in the Coastal Resources section of the Climate Change Mitigation and Adaptation Plan.

Both Goal B-1: Reduce the risk of property damage from coastal flooding and shoreline erosion and Goal B-2: Maintain and enhance coastal wetland habitats, and their corresponding adaptation strategies, have been key in informing the recommendations for improved coastal infrastructure.

The areas affected by managed retreat are highlighted in Figure 4.1. All properties south of MacKenzie Road are likely to be affected by sea level rise. For those properties at risk of complete inundation, managed retreat should be greatly encouraged if not required. The marina redesign concepts outlined in this report make efforts to minimize the number of properties impacted. However, every property within the site area that is west of Haxton Way will experience inundation from sea level rise and will need to be relocated inland so that shoreline restoration can be implemented.

Sea level rise will also affect the Stommish Grounds, eastern areas of Portage Point, and areas along Lummi Shore Road between Adams Road and Hermosa Beach. These areas will be protected by a mix of hard and soft shoreline defense, but managed retreat should still be considered as a long-term adaptation strategy for properties in these areas as the effects of climate change worsen.



Figure 4.1: Properties affected by sea level rise on Gooseberry Point.

Shoreline Rehabilitation

Shorelines play a vital role in the Lummi Nation. Central to the Lummi Schelangen or “way of life”, the shoreline serves as an integral part of the community life, identity, spiritual heritage, and evolving body of indigenous knowledge, with uses ranging from fishing, cultural practices and celebrations, community infrastructure, recreation, and as space for quiet reflection. Shoreline restoration will play a vital role in the coming years due to rising ocean levels and increases in the occurrences of natural hazards linked to climate change. The Lummi Nation has a long shoreline that could be at risk. These recommendations draw on a review of current Lummi Nation Codes from, *The Lummi Nation Community Plan (2022)*, and the *Lummi*

Nation Climate Change Mitigation and Adaptation Plan (2016) regarding shoreline restoration.

Lummi Nation Community Plan (2022):

Along the Lummi Reservation's approximately 38 miles of shoreline, property is threatened with erosion and flooding from sea level rise. Difficult land use decisions will be forced upon developments in these areas under many climate change scenarios. Strategies such as managed retreat and fortification come with many community impacts which need to be carefully considered" (LN Community Plan, pg. 34, 2022).

- **Policy N-2.3:** Protect riverbanks against erosion with vegetation and green engineering techniques rather than hard structural shoreline armoring.
- **Policy N-2.4:** Continue to protect environmentally sensitive areas on the Reservation, in concert with Whatcom County, with a robust set of regulations including culturally appropriate and effective mitigation that is consistent across the Reservation both on trust lands and parcels owned by non-Indians.
- **Policy N-3.2:** Preserve and restore marine shorelines and marine waters used for shellfish production, forage fish, out migrating juvenile salmon, and other species.
- **Policy PR-3.6:** Provide continuous and visually pleasing trails, roadways, shorelines, and wildlife corridors.

- **Policy PR-7.2:** Improve tidelands access and harvesting opportunities by providing physical access to as many reservation tidelands as possible to maintain shoreline slope stability and tideland ecosystem integrity.
- **Policy PR-7.5:** Continue to support saltwater marine recreation for tribal members and the public recreational boating community in the region by making improvements to the onshore and shoreline facilities related to boating, fishing, and other water-based recreation.

Lummi Nation Climate Change Mitigation and Adaptation Plan (CCMAP) (2016-2026):

Concurrent with inundation and coastal flooding, sea level rise will also accelerate bluff and beach erosion. Although erosion is an important natural process that allows shorelines, which are not fixed physical features, to migrate over time, erosion management may be necessary where accelerated erosion threatens to destabilize important infrastructure. In 2007, the Lummi Nation contracted Coastal Geologic Services, Inc. (CGS) to assess the condition of Reservation shorelines (e.g., accretion shore forms, feeder bluffs, and modified shorelines) and provide recommendations for coastal protection considering existing conditions and future sea level rise" (LN CCMAP, pg. 45, 2016). Figure 4.2 illustrates the impact of sea level rise and storm surge from 2010 to 2100. Erosion is also becoming a more critical issue. According to the Lummi Nation CCMAP, Lummi Nation is currently experiencing two levels of erosion: High erosion

potential (eroding at a minimum of -0.6 ft/yr) and Moderate erosion potential (eroding -0.3 to -0.6 ft/yr) (LN CCMAP, 2016).

Goal B-1 in the Lummi Nation CCMAP calls for reducing the risk of property damage from coastal flooding and shoreline erosion.

Adaptation Strategies include:

- Protect coastal buildings and infrastructure through shoreline hardening and/or building elevation and floodproofing.
- Encourage soft bank protection, rather than traditional shoreline armoring.
-

Approaches for Shoreline Restoration

Nature-based shorelines (NBS) use or mimic natural features to stabilize the coast. These natural features can include vegetation, beaches, dunes and reefs. In addition to protecting the coast against erosion and flooding, nature-based shorelines can also benefit ecosystems, aesthetics and coastal processes. NBS approaches are softer or greener compared to conventional hard armoring of the coast. Hard armoring — also called gray infrastructure — includes large rock or concrete structures like rip-rap revetments, sea walls, and breakwaters. In many cases, nature-based shorelines use a hybrid of natural and hard features to achieve a desired level of protection from erosion or flooding (Shea, Bechle, Clark, 2021).

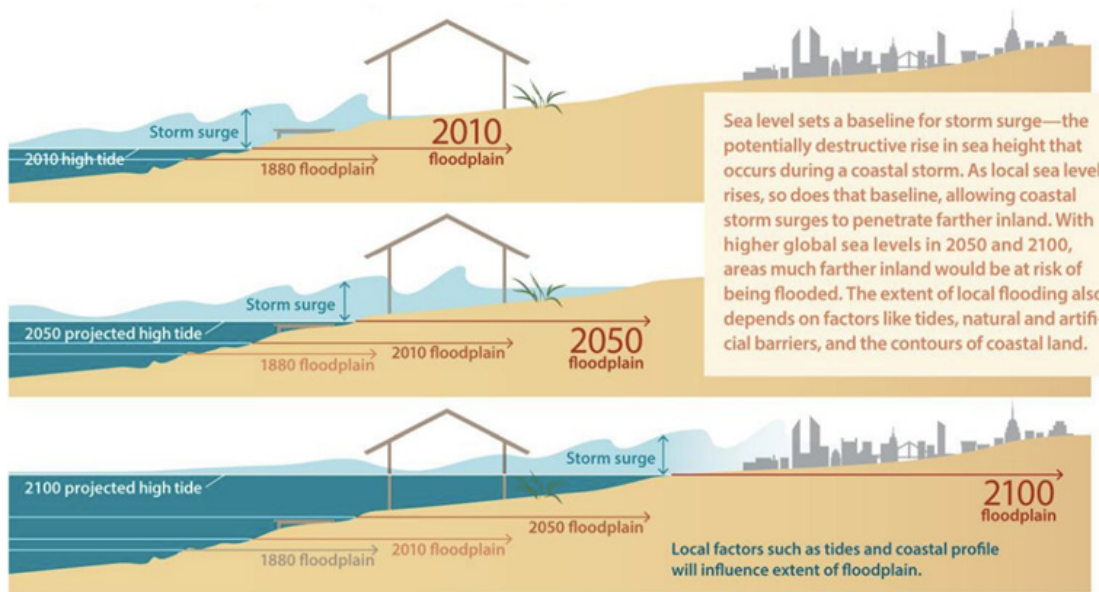


Figure 4.2 Sea Level Rise (LN CCMAP, pg.51, 2023).

Nature-based shorelines are similar to several approaches, including the following:

- Living shorelines
- Natural and nature-based features (NNBF)
- Coastal green infrastructure
- Engineering With Nature (U.S. Army Corps of Engineers initiative)

NBS Techniques

These techniques are established by Shea, Bechle, and Clark in the Nature-Based Shoreline (2021) report and reproduced here. Some of the tactics include vegetation, nourishment, slope stabilization, edging, sill, ecologically enhanced hard armoring vegetation, and adaptation. Each of these techniques has the potential to be utilized by the Tribe to enhance their shorelines and protect against adverse long-term impacts like shoreline degradation. Figure 4.3 is a graph comparing soft (NBS) approaches to hard techniques for shoreline restoration. It is clear for the Lummi Nation CCMAP that a soft approach is what will work the best for Lummi Nation shorelines.

Vegetation: Native vegetation planted on the shore to reinforce sediments with its roots, dissipate wave energy and slow erosive runoff and wind. See Examples in Figure 4.4.

Nourishment: The placement of clean sediment, often sand, on beaches, dunes or in nearshore waters to replace lost sand or build dunes.

Slope Stabilization: Regrading or reinforcing an eroding or failing bluff, bank or dune to a stable slope to allow vegetation to establish.

Edging: The placement of coir logs, wood or stones at the toe, or base, of the shoreline to prevent erosion and allow vegetation to establish.

Sill: A low-profile structure located in the water just off the shoreline to dissipate wave energy and create an area of protected natural marsh.

Ecologically Enhanced Hard Armoring

Vegetation: textured surfaces or other features added to conventional hard armoring structures to provide habitat and other benefits. This also includes breakwaters built offshore to reduce wave energy at the coast and allow natural features like a beach or vegetation to establish.

Adaptation: The Most Natural Approach Erosion, and flooding are natural processes on the Great Lakes. The most natural response is to adapt and stay out of nature’s way, as you can see in Figure 4.3. Adaptation options include:

- Move a threatened building back from the coast

- Locate new structures far enough from the shoreline or high enough above the lake that erosion and flooding will not reach them during their useful life
- Enact regulations like setback ordinances that keep new coastal development out of harm's way

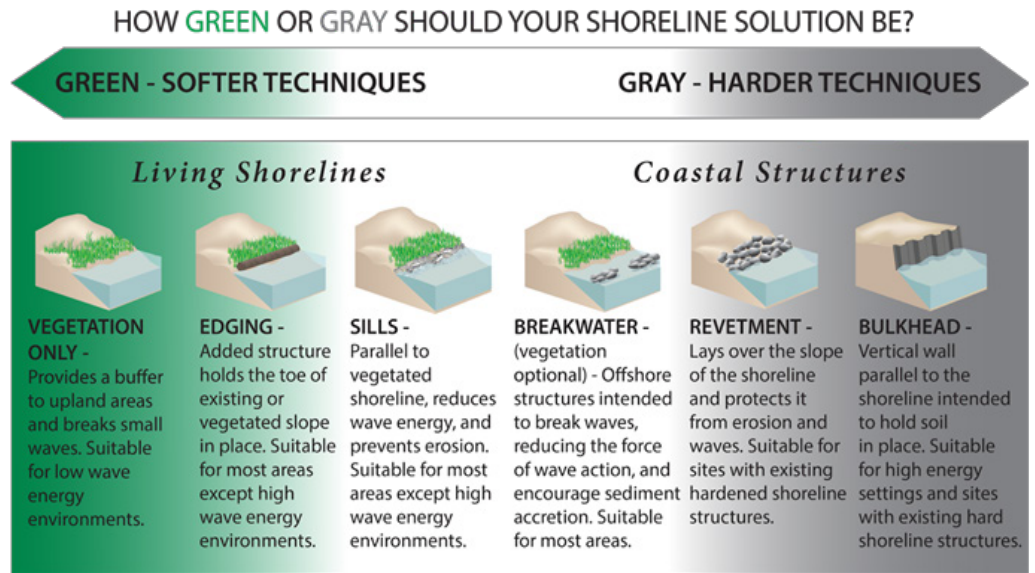


Figure. 4.3 Shoreline Management Approaches (Wildlife Climate Action Tool, N/A).

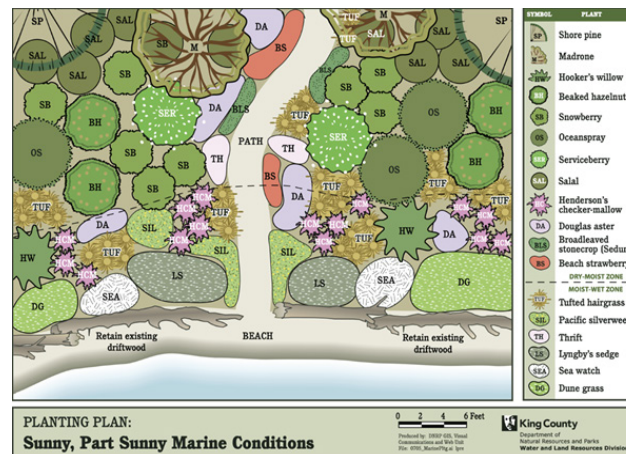


Figure. 4.4 Example of Vegetation Reclamation on Beaches (King County, 2013).

Design Concepts

A berm and boardwalk hybrid structure proposed for the southeast shore of Gooseberry Point would provide multiple functions for this area (Figure 4.5). The berm will offer protection against future impacts of sea level rise and protect the homes of current residents. The top of the berm will include an eight-foot-wide paved walkway creating a safe and walkable path along Fisherman's Cove to the proposed boardwalk leading to the Stommish Grounds. In addition, the berm contains several entry and exit points through the incorporation of ADA accessible ramps (Figure 4.6) and stairways (Figure 4.7). The structural framework of the berm will consist of industrial grade cylindrical blocks and fill dirt (Figure 4.8); these materials provide greater protection in preparation for future flooding events. To add, the construction of the berm will not require digging within the proposed area.



Figure 4.5. Aerial view of berm structure.

The boardwalk provides greater pedestrian access to the Lummi Nation's Stommish Grounds. The boardwalk consists of a 12-foot-wide, 20-foot-tall walkway, several pullouts for bench seating and covered areas. The boardwalk is supported by structural beams and reinforced with concrete footings and cross bracing. Figures 4.9 – 4.11 illustrate different views of the boardwalk.

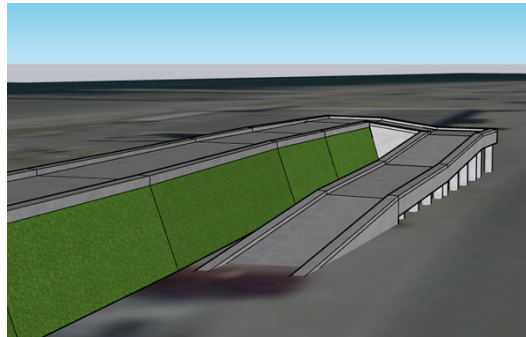


Figure 4.6 Berm wheelchair accessible entrance next to Fisherman's Cove.

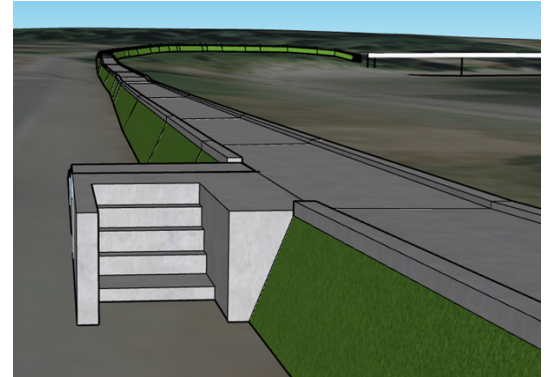


Figure 4.7. Secondary entrance/exit staircase with wheelchair accessible ramp behind it and pedestrian walkway.



Figure 4.8. Structural framework of berm during construction process (FloodDefenseGroup).



Figure 4.9 The boardwalk begins at Berm connection and ends at Stommish Grounds.

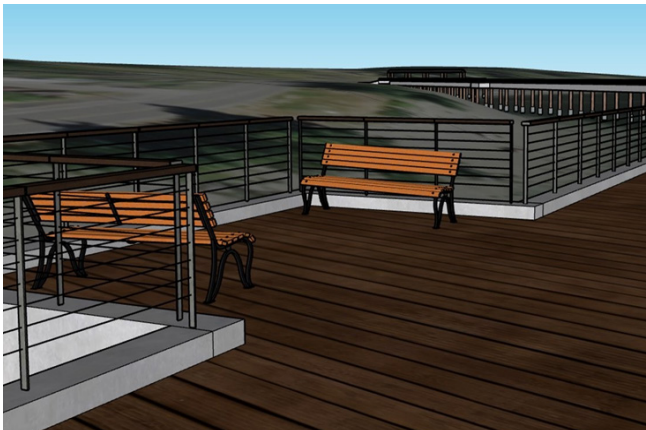


Figure 4.10 Boardwalk pullover/rest area with bench seating.

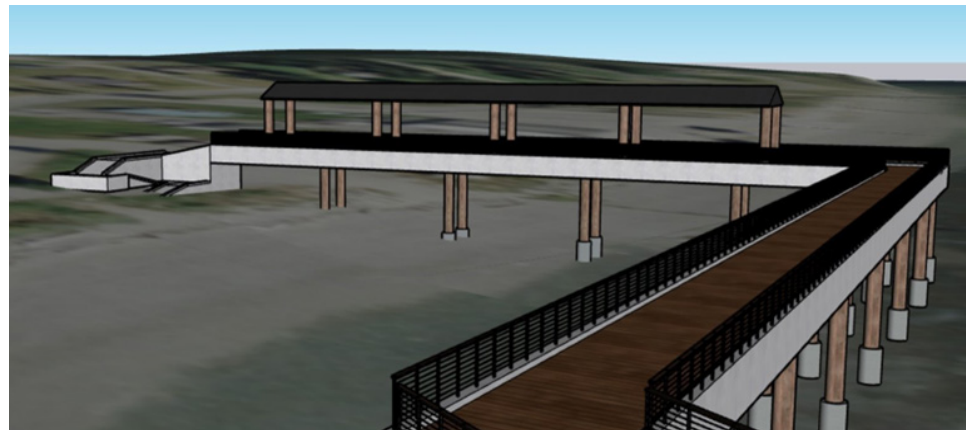


Figure 4.11 Stommish Grounds entrance/exit with roof covering.

Phasing Plan

Table 4.1 describes the 1 to 75+ year phasing plan of development for the three major projects proposed in this chapter for Gooseberry Point. Before the implementation of the berm/boardwalk project, an archeological assessment will occur within the selected area during phase 1 (1-15 years). Following the archeological assessment, the gravel parking lots located in the area where the berm is proposed will undergo shoreline rehabilitation in phase 1 (1-15 years). This process will include removing and restoring developed areas, planting native vegetation, and allowing for vegetation, coastal, and marine habitats to restore the shoreline of Gooseberry Point. During phase 2 (16- 30 years), the managed shoreline retreat process will relocate critical facilities and infrastructure (e.g., required for industry and function of tribal life) out of the coastal inundation zone and begin the process of relocation of non-critical infrastructure (e.g., homes on fee-simple lands). During this time shoreline rehabilitation will monitor for pollutant levels and the health of marine life, continuing planting pioneer species, and beginning planting of intermediate species.

In phases 2 and 3, the berm/boardwalk structure will be constructed along Lummi View Drive. The berm will provide coastal protection from king tides and sea level rise that will occur in this area. The berm/boardwalk will be constructed as a pedestrian walkway. The path for pedestrians will promote walkability and connectivity from Fisherman’s Cove to the Stommish Grounds.

Phase 1: 1-15 years		Time Frame
Archeological Assessment	Archeological survey of selected area for berm implementation	Year 1-3
	Removal and relocation of archeological artifacts	Year 1-5
Shoreline Rehabilitation	Deconstruction of existing developed structures on shoreline	Year 1-5
	Planting native vegetation within deconstructed areas of shoreline	Year 1
	Allowing for vegetation/coastal/marine habitats to restore shoreline	Year 1-5
Other	Environmental management and protection (Eelgrass/fisheries monitoring)	Year 1-15
Phase 2: 16-30 years		Time Frame
Managed Shoreline Retreat	Relocation of critical facilities/infrastructure, begin relocation of non-critical infrastructure	Year 16-25
Shoreline Rehabilitation	Monitor for pollutant levels and the health of marine life	Year 16-25
	Continue planting pioneer species, begin planting intermediate species	Year 16-20
Berm	Construct berm on Eastern coastline of Fisherman’s Cove	Year 16-20
	Construct paved walkway on top of berm (handrails and exit/entrance staircases and ADA accessible ramps)	Year 18-22
Boardwalk	Construct boardwalk off Gooseberry Point that connects with berm structures	Year 16-26
Other	Environmental management and protection (Eelgrass studies, coastal habitat studies, fisheries monitoring)	Year 16-30

Phase 3: 31-45 years		Time Frame
Managed Shoreline Retreat	Relocation of non-critical infrastructure	Year 31-43
Shoreline Rehabilitation	Allow for limited intertidal harvesting (if monitoring indicates it is safe)	Year 31-45
	Continued monitoring of shoreline environment	Year 31-45
Berm/Boardwalk	Connect to Stommish Grounds	Year 31-45
Other	Environmental management and protection	Year 31-45
Phase 4: 46-60 years		Time Frame
Shoreline Rehabilitation	Allow for increased harvesting	Year 46-51
	Continued monitoring	Year 46-51
Other	Environmental management and protection	Year 46-60
Phase 5: 61-75+ years		Time Frame
Shoreline Rehabilitation	Continued monitoring	Year 61-75+
Other	Environmental management and protection	Year 61-75+

Table 4.1 Shoreline management and coastal restoration phasing.

During phase 3 (31-45 years) managed shoreline retreat will focus on relocating non-critical infrastructure and shoreline restoration will continue monitoring the shoreline environment while allowing for limited intertidal harvesting (if monitoring indicates it is safe). During phase 4 (46 - 60 years) shoreline rehabilitation will allow for increased harvesting. Monitoring should continue from phase 4 into phase 5, that is, 75 years and beyond. Environmental management and protection (eelgrass studies, coastal habitat studies, fisheries monitoring) will continue through all phases of the project.

Summary

This chapter describes recommendations for managed retreat and shoreline restoration for the Gooseberry Point area due to the potential threat of sea level rise and future inundation. Our team also worked on developing a berm and an over-water boardwalk concept with the goal of increasing connectivity between Fisherman's Cove and the Stommish Grounds. We laid out a potential phasing plan for implementing these proposals. Our goal throughout this project was to provide the best possible resources and information to the Lummi Nation so they can determine the best course of action for adapting these recommendations into their future plans for Gooseberry Point.

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5. Fisherman’s Cove Commercial District

Renewed development of Fisherman’s Cove was identified as an opportunity in the 2021 Comprehensive Economic Development Strategy report. Redevelopment of the Cove would aim to support and expand the commercial fishing industry, create new means of ecotourism, and support the tribe’s aquaculture market (Taylor, 2021). In the Lummi Nation cultural heritage tourism assessment & business plan, a majority of the tribe think tourism could revitalize Lummi culture, favoring Gooseberry Point as a focal point for tourism (Heather & Wolters, 2022). Worth noting, the report identified that some respondents have concerns about the commercialization of Lummi culture that may occur with increased tourism and many responders of the survey stated they would prefer to not work in tourism (Heather & Wolters, 2022). Redevelopment of Fisherman’s Cove can alleviate these concerns by focusing land use on tribal use and commercial space for tribal members. Tourism should be heritage-focused to amplify tribal culture, the historic significance of Fisherman’s Cove, and highlight the ecological significance of the area. The proposed plans for Fisherman’s Cove look to past wisdom while aiming to provide for the needs of future generations.

This chapter highlights the final design concepts and models for the renewed Fisherman’s Cove Commercial District, a phasing plan for the proposed development, and a synopsis of proposed funding opportunities.

Final Design Concepts – Maps & Sketchup

The concepts presented here represent a prioritization of Lummi Nation economic, cultural, and environmental needs and wants, oriented around the redevelopment of tribal fishing space. Figure 5.1 shows an aerial view of the Fisherman’s Cove planning concepts developed throughout this project. The plan prioritizes the expansion of the boat launch and boat storage, including an in-water marina and upland storage and work yards. Opportunities for tribal commercial development include increased space next to the existing Lummi Bay Market and over-water stilted structures. A protective berm borders the upland development to accommodate sea level rise while still allowing for future use of Fisherman’s Cove.

A stilted commercial district, Figure 5.2, accommodates the potential for sea level rise in the coming decades while providing space for tribal businesses such as water-based tourism activities, restaurants, or other desired uses. Given sea level rise projections, significant portions of Fisherman’s Cove will be flooded if no action is taken. This plan allows for a portion of Fisherman’s Cove to be flooded and enhanced to serve as future tidal habitat, while maintaining most land for continued use.

Pedestrian safety is a critical component of planning around Fisherman’s Cove. While this plan prioritizes use for tribal fishers, it includes space for the community such as a linear park along Finkbonner Rd (Figure 5.1) along the east side of the Fisherman’s Cove concept area, and pathways, as seen in Figure 5.3.



Figure 5.1 Aerial view of entire Fisherman’s Cove plan.



Figure 5.2 Stilted commercial district.

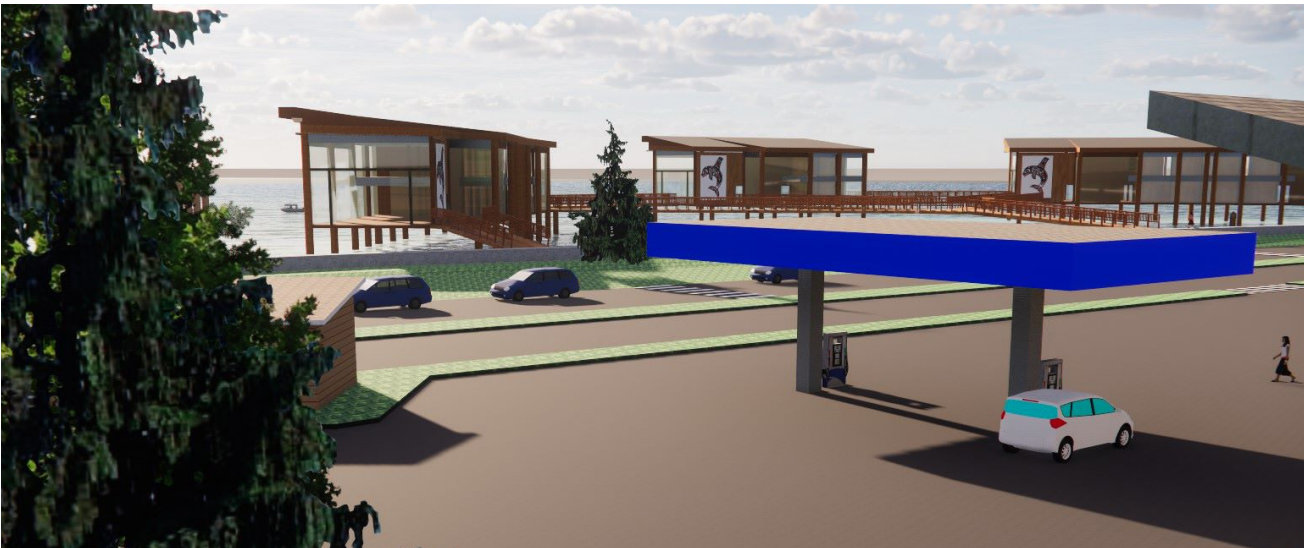


Figure 5.3 Pathways in parking lot.



Figure 5.4 The marina and ferry dock.

The park space can be used as a resting spot for pedestrians, employees, recreationalists, and other users. Parking lot space includes pathways with safe crossings for pedestrians using the shoreline berm pathway, making their way to commercial spaces within Fisherman's Cove, or accessing the linear park.

The redevelopment of the Gooseberry Point marina, as shown in Figure 5.4, allows for the expansion of facilities and storage available to Lummi Tribal members; providing many opportunities for vehicle and trailer parking, as well as the dry storage of boats. The plan includes an improved ferry dock with queuing space separated from traffic, along with a larger boat launch for tribal access.

Development Phasing Plan

Phasing for the Fisherman’s Cove redevelopment involves constructing a berm, improving marina services, implementing transportation route changes, adding commercial facilities, and redeveloping soft sites (e.g., non-tribal and flood prone land). The second phase contains the initial steps towards commercial development and shoreline rehabilitation, which carries into the following phases, given the necessity of a long-term timeline for purchasing key properties which are currently under non-tribal ownership. Phase three involves completing the protective berm, started in the first phase, to accommodate the costs of berm construction and timeline for purchasing properties. Constructing additional commercial facilities continues into phase three as well, followed by continual assessments and restorative actions into the fifth phase.

Phase 1: 1-15 years		Time Frame
Transportation	Reroute primary arterial roadway from Haxton Way to Mackenzie Road	Year 1-3
	Reconfigure Lummi View Dr for ferry terminal queuing	Year 1-3
Commercial Development	Expand Lummi Bay Market commercial opportunities	Year 1-5
Soft Site Development	Put in dry storage building in empty lot along Grove Road extension	Year 1-3
	Convert areas surrounding Lummi Market into flexible use parking space	Year 1-5
	Construct a greenspace park along Finkbonner Rd	Year 5-10
	Establish permeable surfaces where applicable	Year 1-15
Ferry Terminal & Marina Services	Construct berm portion under ferry and boat launch	Year 1-3
	Renovate ferry terminal	Year 1-5
	High-capacity boat launch	Year 1-5
Phase 2: 16-30 years		Time Frame
Transportation	Berm eastern approach of Lummi View Drive	Year 16-30
Commercial Development	Increase commercial capacity of Fisherman’s Cove with first pylon building	Year 16-20
Soft Site Development	Transition shoreline boat parking into shoreline habitat	Year 25-30
	Property buyouts along eastern side of site arena	Year 25-30
Ferry Terminal & Marina Services	Incremental development on the in-water marina based on demand	Year 16-30
	Move Catch NW - Fish processing plant north of Lummi View Drive	Year 25-30

Phase 3: 31-45 years		Time Frame
Commercial Development	Increase commercial capacity of Fisherman’s Cove with second and third pilon buildings	Year 31-45
Soft Site Development	Housing buyouts along western shore	Year 31-40
	Berm along western shore - convert properties into shoreline habitat	Year 40-45
Phase 4: 46-60 years		Time Frame
Ferry Terminal & Marina Services	Longevity assessment	Year 46-60
Phase 5: 61-75+ years		Time Frame
Ferry Terminal & Marina Services	Continued adaptation and restoration	Year 61-75+

Table 5.1 Fisherman’s cover commercial district phasing plan.

Port Authority

The tribe may consider creating a port authority and designating Fisherman’s Cove and other relevant properties on the Lummi Peninsula as port property. The Swinomish Indian Tribal Community created a port authority in 2020 and recently received a large grant from the federal Port Infrastructure Development Program to construct a boat ramp, upgrade an existing commercial pier, replace moorage floats, and write a Port Master Plan among other actions (Reynolds, 2022). There are significant funding opportunities available for developing port infrastructure, including the Port Infrastructure Development Program (PIDP) Grant and the U.S. Department of Transportation (DOT) Maritime Administration (MARAD) Grant. Figure 5 shows an overlay of Lummi Nation owned property which could be dedicated to port infrastructure development at Gooseberry Point.

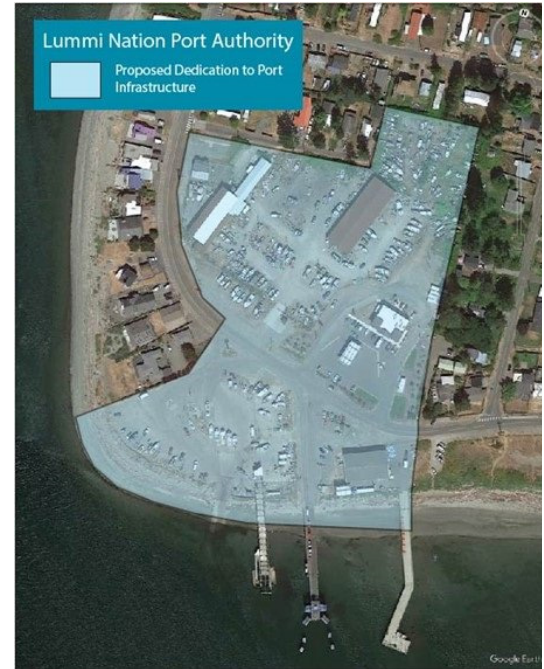


Figure 5.5 Port authority designation.

Summary

The importance of Fisherman's Cove to the Lummi culture and economy was the most salient factor in developing these plans. Community feedback and desires motivated the inclusion of space for fishers, commercial development, pedestrians, and tourists, while attempting to accommodate future sea level rise in ways that align with tribal goals. Funding and phasing plans outline the feasibility of this project, providing information to the tribe to assist with implementation.

As Lummi Nation continues to develop and grow, it becomes essential to capitalize on opportunities for economic development while considering the needs of tribes' members, from the youngest members to tribal elders. Lummi Nation has been fishing the waters of the Salish Sea since time immemorial, through redevelopment of Fisherman's Cove the tribe can enhance its commercial fishing industry and provide new avenues for commercial and economic expansion in the surrounding area.

These plans seek to highlight the potential of Fisherman's Cove in relation to Gooseberry Point and the Reservation as a whole. By capitalizing on the location of the Lummi Island Ferry, the tribe can incorporate heritage-based tourism opportunities for those travelers passing through Gooseberry Point. In doing this, Lummi Nation can maximize existing economic opportunities and stimulate further tribal development of Gooseberry Point in the future.



Murals painted onto storage buildings located in Lummi Nation Port Authority (Emtman, 2014).

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6. Stommish Grounds

The Stommish Grounds, located on the southern end of Gooseberry Point, is used for recreation, festivals, and community-gathering. The area contains a canoe shed, recreational facilities, and is used to host the annual Stommish Water Festival. The Stommish Grounds is one of Lummi Nation's most culturally significant spaces. The team used a 7-generation planning model and gathered community feedback and relied on Indigenous knowledges systems to guide the site proposal. Conversations with community members and information from the Lummi Nation Community Plan provided valuable insights into how the Stommish Grounds can expand while preserving its cultural significance and heritage. This study also considers the importance of resiliency and adaptation to climate change since the area is threatened by sea level rise and increasingly frequent and destructive floods. Proposals explore how the Stommish Grounds can adapt to these risks, while maintaining its cultural heritage and significance as a community-oriented space that will continue to serve generations for years to come.

The study proposes the following at the Stommish Grounds:

- Environmental restoration
- New waterproof canoe storage
- Viewing stands for festivals

- Upgraded recreational facilities
- Public restroom facilities
- Market for local goods and produce
- Community center
- Boardwalk connecting the Stommish Grounds to Fisherman's Cove
- Increased parking and multimodal transportation access

Based on feedback from community stakeholders, including Lummi Commercial Company and Lummi Planning Commission members, this study takes into consideration the Stommish Grounds' role as a point of connection between other community assets. By virtue of its location, Stommish Grounds can become a year-round destination that connects the greater Gooseberry Point area with the school and Wex'liem Community Building. Adding a market and improved recreational facilities could attract the community to the site on a year-round basis. While upgrades to the canoe storage and bathrooms could support large annual festivals. This study envisions a lively and welcoming Stommish Grounds that includes future investment into permanent viewing stands, market infrastructure and a community center which honors the cultural significance of

the area. Further into the future, the Stommish Grounds could be connected via a public waterfront walkway from Fisherman's Cove.

Final Design Concepts

The Stommish Grounds is a community gathering place shown in Figure 6.1.



Figure 6.1: Aerial View of Stommish Grounds Area.

The planned amenities at the site are a community center (outside of predicted inundation areas), outdoor seating for events and festivals, a market area for craft and food vendors, an updated canoe storage building, relocated playground area, repaved basketball court, and public restrooms. The Lummi Nation Community Plan noted Stommish Grounds as a location that should be protected and thus shoreline restoration projects are a part of the recommended phasing for the site (Lummi Indian Business Council, 2022 p. 22). Shoreline restoration could enhance the ecological habitats in the area and the build environment, contributing to Goal CD-3 outlined in the Lummi Nation Community Plan, that “environmental stewardship is integrated with future development” (Lummi Indian Business Council, 2022, p. 88).

To foster year-round use and success of Stommish Grounds, a designated market area is proposed near where the boardwalk from Fisherman’s Cove would end (Figure 6.2). The market area includes two buildings to support permanent businesses and space for rotating pop-up shops and food vendors (Figure 6.3). There is space for indoor and outdoor seating, and public restrooms. The proposed designs recommend all permanent structures are waterproofed and raised to prevent flooding damage due to sea level rise. Current or existing structures are recommended to be moved behind (to the east) of the market area to avoid inundation from sea level rise.



Figure 6.2: Concept of boardwalk connection to market area.



Figure 6.3: Streetview of market and shoreline restoration areas.



In our community input sessions, we heard from several people that there is a need for a new, updated canoe storage facility at the Stommish Grounds. Figure 6.4 shows an upgraded canoe storage building in a new location between the parking lot and the water to increase the ease with which canoes can be moved from boat trailers to storage to the water. The concept assumes sea level rise and thus has elevated the building at least two feet off the paved area and recommends that any new infrastructure for canoe storage be waterproofed (Figure 6.5 shows an interior view).

Figure 6.4: Raised canoe storage facility from west view.



Figure 6.5: Inside of canoe storage building concept.

A playground (Figure 6.6) and basketball court (Figure 6.7) are currently located at the Stommish Grounds. These recreational amenities have been retained but relocated in the proposal. The playground is relocated closer to the viewing stands and community center to enhance social interaction and improve safety as Lummi View Drive borders the Stommish Grounds. The proposal recommends planting native vegetation between the recreational facilities and Lummi View Drive to reduce noise pollution, improve environmental air quality, and to create a visual barrier between Stommish Grounds and the road. The proposal retains recreational areas because it is important for the Stommish Grounds to be accessed and enjoyed by community members of all ages.



Figure 6.6: Concept of expanded playground area behind viewing stands.

Stommish Grounds is a well-known location among those in the community and would benefit from infrastructure that enhances community interactions. Based on community feedback, our proposal includes viewing stands and a community center (Figure 6.8). The community center can enhance community interactions by providing permanent indoor space for cultural and commercial activities. Increased commercial presence in the Stommish community center could continue to foster social interactions and local businesses in one space for generations to come. Investment into a community space at Stommish can provide a “flexible venue used for community events” like the Wex’liem Community Building (Lummi Indian Business Council, 2022, p. 72).



Figure 6.7: Street view of recreational/park area.



Figure 6.8: Isometric View of Community Center, Viewing Stands, & Canoe Storage.

Stommish Grounds hosts a variety of “culturally significant places, such as the Stommish Hall, Vets Building, Pavilion, Canoe Shed, and Bone Game Shed” (Lummi Indian Business Council, 2022) and it also hosts recreation events like the Water Festival. Moreover, we received feedback that the area needs improvements to its seating infrastructure for use during these festivals. Thus, the proposal includes newly built covered viewing stands (Figure 6.10) for community members to enjoy the events comfortably and with increased capacity.

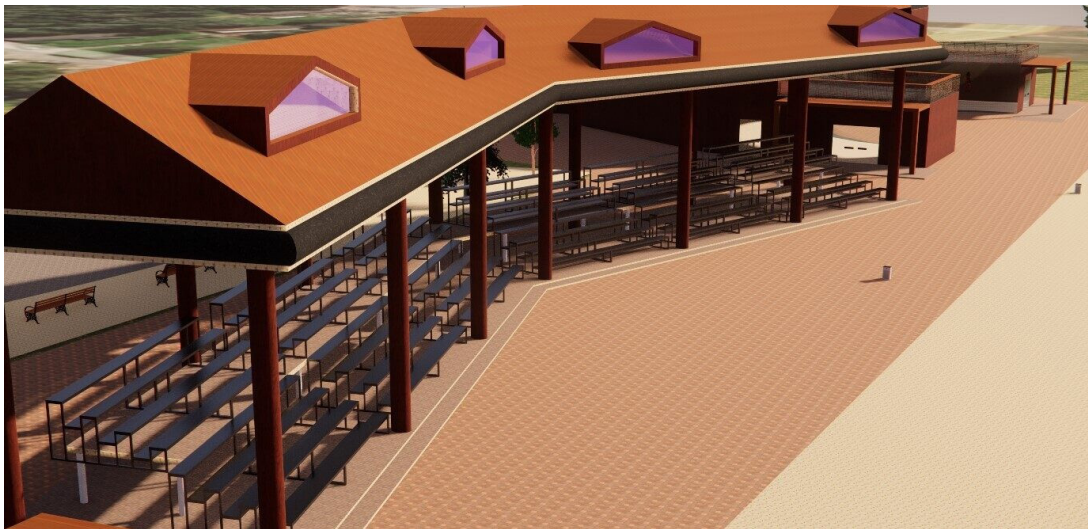


Figure 6.10: Weather-proof Stommish viewing stands facing west.



Figure 6.9: Flood-resistant homes in the Netherlands (Spencer, 2019).

Phasing Plan

The Stommish Grounds are one of Lummi Nation's most culturally significant areas. The area is also threatened by imminent sea level rise and flooding from climate change. As such, there should be significant investment into the area to ensure it continues to be a thriving social, cultural, and economic hub for the Lummi Nation. Recommended modifications for the Stommish Grounds include enhancing economic development with permanent market infrastructure, prioritizing community use and engagement, upgrading canoe storage and preserving ecological functions. The following phasing plan outlines recommendations based on community feedback and analysis to improve the Stommish Grounds' resilience and works in conjunction with shoreline restoration on the site.

Phase 1: 1-15 years		Time Frame
Market Infrastructure	Move infrastructure from marketplace site out of inundation zone and develop infrastructure for temporary and permanent flood proof shops and food vendors	Year 1-5
	Create permeable surface pathway through market area from parking lot and to proposed community center, canoe storage facility, viewing stands and recreation area	Year 1-8
	Construct public bathrooms between the market area and parking lot	Year 1-8
	Begin infrastructure for waterproof marketplace (with different vendors and services)	Year 10-15
Community Center	Develop a community center	Year 10-15
Expand Recreational Amenities	Expand the children's playground area and repave the basketball court	Year 1-3
Canoe Boat Storage	Construct new boat storage facility with waterproof material	Year 5-10
	Take apart existing boat storage facility and make a display with it in new building	Year 5-10
Phase 2: 16-30 years		Time Frame
Market Infrastructure	Connect berm boardwalk to the North area of Stommish grounds and into planned market area	Year 20-25
Community Center	Provide outdoor seating, public cooking/dining facilities	Year 16-20
	Add viewing stands to provide seating for concerts, events, and the Stommish Water Festival	Year 16-20
Expand Recreational Amenities	Expand and relocate recreational area closer to community center (playground and basketball court)	Year 16-30
	Preserve and restore ecologically sensitive shoreline area.	Year 16-30

Phase 3: 31-45 years		Time Frame
Expand Recreational Amenities	Add additional services for those of all ages (park, benches, soccer/baseball fields) that maintain and enhance ecological preservation	Year 31-35
Phase 4: 46-60 years		Time Frame
Community Center	Create an amphitheater or seating infrastructure at the Stommish Grounds to support events, live music, and community enrichment	Year 46-55
Phase 5: 61-75+ years		Time Frame
Berm & Coastal Protection	Continue the protection of coastal and wetland habitats in the area	Year 61-75+
	Maintain the berm and implement other coastal/flood mitigation measures	Year 61-75+

Table 6.1: Stommish Grounds Phasing.

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Summary

The proposed concept of Stommish Grounds seeks to embolden the space into a year-round destination which could serve as a point of contact between Gooseberry Point and the community assets further down the coast, effectively linking the two areas. The proposed redevelopment also emphasizes and celebrates the cultural significance of the area by building up its capacity to host meaningful events such as the Water Festival and the Gathering of the Eagles. The improved amenities would grant the community a sense of even more pride and attract everyday users, as well as provide a space for local businesses to thrive. Overall, the concept is for Stommish Grounds to become a community hub that is well-balanced and promotes cultural wellbeing as Lummi sees fit.

7. Urban Villages

In 1855, the Treaty of Point Elliot dismantled connections between Washington State’s indigenous peoples and their homelands with many tribes restricted to bounded reservations. Since this treaty, the Lummi tribe has been residing on the peninsula between Portage Bay and Lummi Bay. The ensuing development and urbanization of the peninsula has occurred in a fragmented and inequitable pattern; much of the desirable residential land along the coast has gone to non-tribal members. Residential tribal trust land, reserved for Lummi Nation members is less developed. The administrative, educational, and economic hubs of the tribe are separated from a large portion of the cultural and residential tribal areas. The Lummi Nation has developed important community assets like the Northwest Indian College, the Silver Reef Casino, vast fishing fleets, the beautiful administration building, and the soon to be completed tribal wellness center, but poorer areas on the reservation still suffer from connectivity issues and a lack of opportunity.

Lummi Nation identifies increasing housing stock and diversity as essential pieces of community development (Lummi Nation, 2022). Projected population growth and current housing needs demonstrate the importance of providing transitional housing, single-family units, and multi-family units in any new developments. Presently, tribal members living northeast of Gooseberry Point have poor access to basic amenities, experience connectivity issues, and lack adequate gathering spaces. The Setting Sun Village attempts to address these community needs by providing a variety of housing,



Figure 7.1 Site plan of the Setting Sun Village. The village incorporates one section dedicated to commercial space, services, and dense housing types, and another section dedicated to less dense housing.

commercial space, services, and community spaces (Figure 7.1).

Tribal economic leaders are in the process of reimagining Gooseberry Point for the future. To rectify existing problems and address missing residential features, a walkable, dense, and mixed-use commercial and residential urban village concept is proposed to be developed. Figure 2 shows the conceptual land use map of the Setting Sun urban village, including recommended development phases and development capacity

within each phase.

Phase 1

The first development in the proposed Setting Sun village is a mixed-use building along McKenzie Road (Figure 3). With a bus stop in front, the commercial space facing the street is designed with three separate interiors allowing expansion to occur as demand increases. At first, one of the commercial spaces could be a small produce store (like Rising Sun Produce in

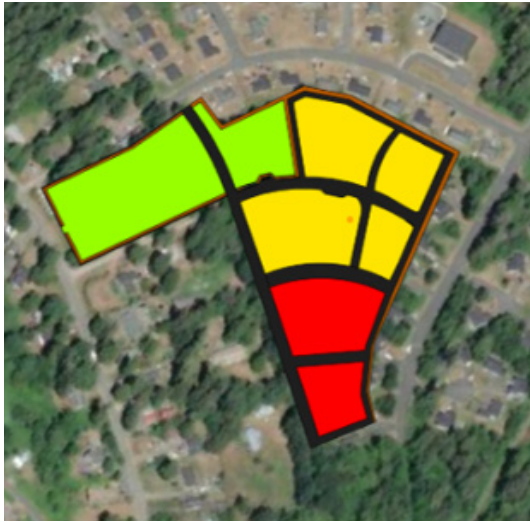


Figure 7.2 Urban Village concept. Phase 1 (1-15 years) in green, which includes mixed-use development. Phase 2 (16-30 years) in yellow, and phase 3(31 + years) in red include mainly residential development.

Northeast Seattle or Hillyard Farmer’s Market in Spokane). Over time, as the development expands and more people live nearby, the market could expand into the rest of the commercial space to reach the size of the Bellingham Trader Joe’s on James Street. A loading dock at the back of the building can be accessed from one of the new streets running through the village. Eleven second-floor apartments consist of 2 one-bedroom units, 8 two-bedroom units, and 1 three-bedroom unit above the grocery store. These units are divided into two blocks with entrances on each side of the building. Units facing the inside of the building have a private terrace.

Phase 1	
Commercial	105,000 Sq ft
Residential	41 units
Phase 2	
Commerical	2000 sq ft
Residential	48 units
Phase 3	
Residential	24 units

Table 7.1 Capacity table by phasing: Commercial & Residential.

Northwest of the commercial space is a 46-car parking lot with 35 spots reserved for the store. The parking lot has an entrance on McKenzie Road and leads to a service alley emptying onto a village street. This service alley provides access for 5 two-bedroom units and 10 garage stalls for residential parking (see Figure 7.3).

North of the mixed-use building is an alley with dumpsters servicing the entire Phase 1 development. Bordering the alley are 3 two-bedroom units, 1 one-bedroom unit, and 7 garage stalls for residential parking. Nine two-bedroom houses for rehabilitative and/or transitional housing sit behind the first housing development. he transitional housing is designed based on Salt Lake City’s The Other Side Village, which recommends one program resident per bedroom for 18 residents (<https://theothersidevillage.com/>).



Figure 7.3: Phase 1 Setting Sun Village, McKenzie Arterial, and aerial view.

The transitional houses front a main street on their north side. Spacious patios and a central courtyard offer social opportunities for the program's residents (Figure 7.4).

At the intersection of the main roads in the village is an apartment complex with several two-bedroom units and the proposed daycare. Under WAC 110-300-0354 and WAC 110-300-0145, the daycare can accommodate 51 children (Washington State Legislature, n.d.a.; Washington State Legislature, n.d.b.). Bellingham 20.12.010 and childcare.org Washington state childcare licensing regulations require 9 parking spaces (5-9 staff needed) (City of Bellingham, n.d.). Each household and program resident have one parking space in either a garage stall or a paved spot.

The park next to the daycare center creates gathering spaces where vendors can sell crafts, food, and drink. The park is easily accessed using a marked crosswalk and pathway. The .52-acre park is divided into three areas: a plaza with picnic tables and public art, a playground and benches, and an open field (Figure 5). The field and the day care are adjacent to a bus stop. Spaces for murals and other public art are available in the mixed-use building, apartment building, and park.

In Phase 1, there are a total of 42 residential units for 51 households. These units have the potential to house 118 people in the 2.4-acre space. This gives a density of 22 households per acre, or 49 people per acre.



Figure 7.4 Phase 1 courtyard. Pathways and open space between transitional housing in phase one of the urban village concept.

Phase 2

Due to the high demand for single-family residential homes in the area, the focus of Phase 2 caters to this need while still designing for higher densities. The proposed array of housing options includes elder housing and five different designs of single-family housing, all arranged in cottage style living with shared courtyards and shared parking. Elder housing units contain a garage for their own parking to provide easily accessible parking options (Figure 7.6).

The design of Phase 2 focuses on improved multi-modal movement by integrating sidewalks, protected bike lanes, and bus shelters. The aim is to promote a sustainable and healthy lifestyle

for community members and reduce car traffic, easing potential congestion on the road network. By prioritizing alternative transportation options, the development provides residents with convenient access to amenities and services within and outside the village. The clustered, higher-density development will likely provide enough demand to support new commercial and service businesses like grocery stores, daycare, and healthcare facilities in the urban village.

Phase 3

With a solid foundation of housing options and community services in place, the final phase of development at the Setting Sun Village would serve to complement and support what is already



there. Clustered along the perimeter, more housing units, community space and a small commercial/retail development will allow the tribe to efficiently use their land with future generations in mind.

Figure 7.5 Phase 1 park. A portion of the public park in phase 1 of the Setting Sun urban village.



Figure 7.6 Phase 2 and 3 of the Setting Sun Village.

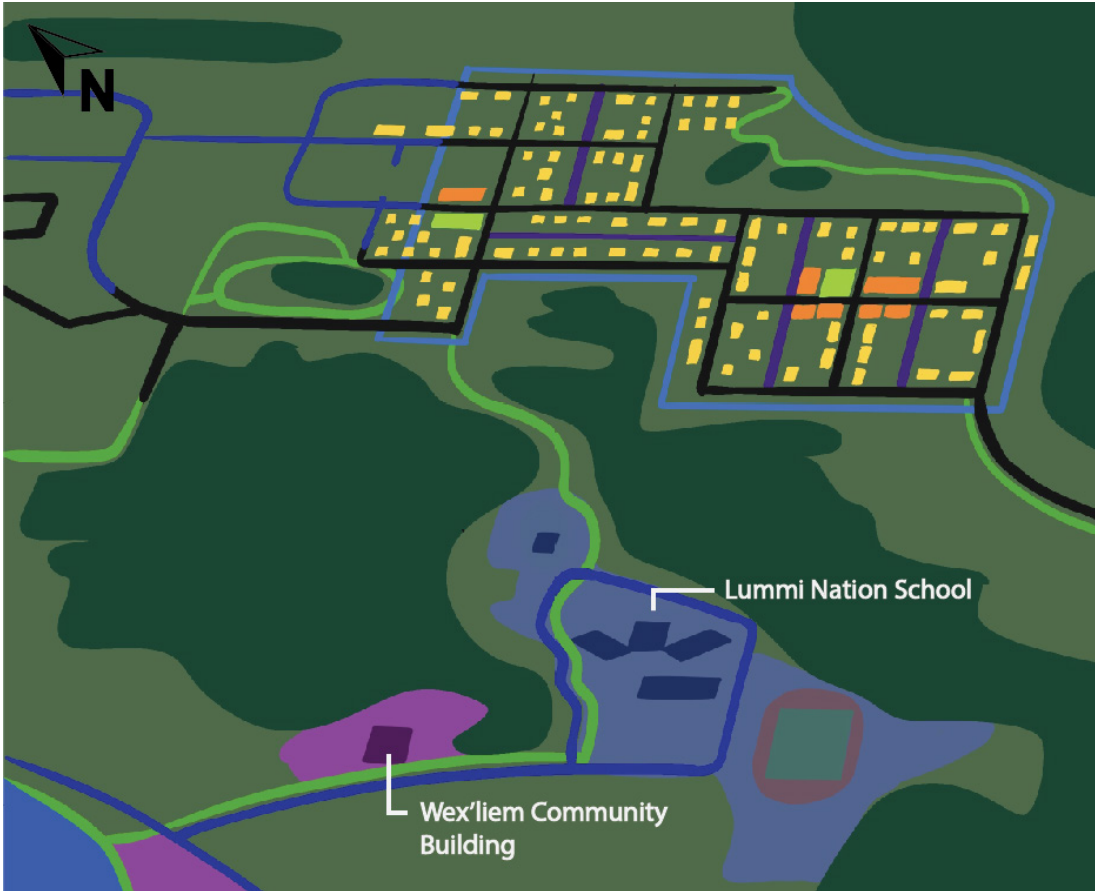


Figure 7.7 Conceptual layout for Rising Sun Village.

Phase 4

After Setting Sun Village is built out, more residential and small-scale commercial development could be created in a second urban village. The Rising Sun Village is designed as a complimentary expansion to the central Setting Sun Village to the west (Figure 7.7). Although this concept is meant to be modular and flexible and therefore kept vague to an extent, some specific design choices are implemented. First, the two housing types proposed for this development are duplexes and small single house clusters. Both of these housing types allow families greater flexibility in terms of proximity and living arrangements, including multi-generational living. The urban village also includes space for community services and amenities such as a family health clinic and a pool, bowling alley, or library. These buildings should be at least two stories with apartments on the additional floors for single adults, transitional housing, or to host artist residency programs. New proposed roads allow for increased connectivity, and pedestrian and bicycle paths support multi-modal travel options.









	Commercial Spaces		Stomish Grounds Cultural District
	Housing		Pedestrian/Bike Paths
	Green Space		Border of Proposed Village Concept
	Wetland Areas		Proposed Roadways

Table 7.2 Map key of Rising Sun Village concept.



Figure 7.8 Small commercial space to serve residents in phase 2 and 3 of the setting sun village.

of grocery stores, public spaces, and connective pathways. While the immediate need may not be easily met, community success is not measured quickly. Recreating social constellations comes with shifting scales; while the Lummi nation may be expanding regionally, there is space for reservation communities to expand internally. The Rising Sun village proposal outlines future opportunities for housing and economic development on tribal lands near existing residential, cultural and educational districts.

Sources Cited:

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Washington State Legislature. (n.d.b.). Outdoor early learning program space. <https://app.leg.wa.gov/wac/default.aspx?cite=110-300-0145>

Summary

The proposed urban village projects fulfill the community’s needs by developing affordable housing and accessible essential services and resources for Lummi tribal members. The four development phases are designed with distinct characteristics and features that provide services and support for nearby residents.

Phase 1 shows a mixed-use structure with residential units on the upper floor and commercial space on the first floor; parking spaces are reserved for the shop and tenants. A daycare center, a park, a building with one-bedroom apartments, transitional housing units, and two-bedroom residences are also included. Phase 2 addresses the demand for single-family residential homes while emphasizing pedestrian-friendly features like sidewalks and bike lanes. The integration of elder housing into the village is intended to promote easy access to social events and services for elderly residents,

encouraging a sense of belonging and improving their quality of life. Phase 3 supplements the village atmosphere by providing 24 additional housing units. These units can be adapted to accommodate elder housing or provide options for one or two-bedroom structures. Phase 4 proposes a second urban village to the east that could be developed after the first urban village is built out. The Lummi Nation should consider future housing developments that blend into surrounding neighborhoods while providing access to services and enhances the opportunities for tribal entrepreneurship. The Setting Sun and Rising Sun village proposals are an attempt at meeting both goals.

As the Lummi Tribe moves forward with developing Gooseberry Point for future generations, the Setting Sun village concept signifies the importance of residential renewal. Without holistic social and economic considerations for the urban framework, residents will continue to suffer from the absence

8. Stormwater Management

An often overlooked aspect of planning is the management of stormwater. As the Gooseberry Point area changes and sea levels rise, stormwater management will have to adapt to meet new challenges. A bioswale and pump are being proposed to address future changes. The geography of the peninsula results in small watersheds, which keeps the volume of water and in turn the infrastructure needs low.

Final Design Concepts

Bioswale

A bioswale is required in the Gooseberry Point area. Due to the low laying and flat nature of the area, it will be prone to flooding once the proposed berm is constructed. The bioswale will entail digging a depression that will capture water in a smaller area for the purpose of draining. This will also create habitat and capture waterborne pollutants. See Figure 1 for an illustration of a bioswale.

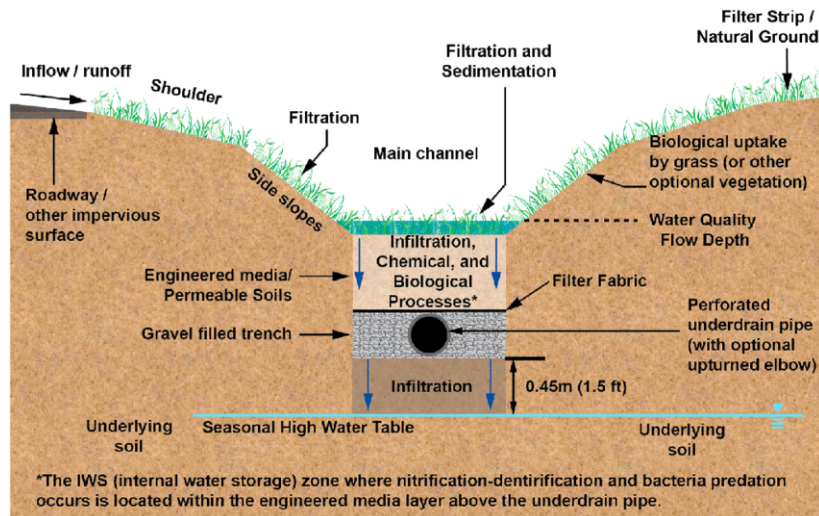


Figure 8.1 Bioswale illustration (source: Ekka and Hunt, 2020).

Pump

A pump is required to take water from the bioswale, lift it over the berm, and deposit it into Fisherman's Cove. Due to the likelihood of cultural resources in the area, pipes cannot be laid underground for drainage. The pump's purpose is to regulate water levels in the bioswale and prevent flooding on the land side of the berm.

Urban Village Stormwater

The urban village teams were given information on methods and design opportunities to manage stormwater in dense blocks as well as naturally filter pollutants and move stormwater into wetlands. Figure 2 shows an example of a bioswale in an urban area.



Figure 8.2 Bioswale as part of urban development (source: The Klausing Group).

Phasing Plan

Phasing is important to the planning process and stormwater. The bioswale is proposed to mitigate the side effects of the berm. A phasing plan ensures that the bioswale is put in place when it is needed, rather than after the area begins to trap stormwater. See Table 1 for more details.

To ensure that stormwater is properly handled with increased development being proposed at Gooseberry Point, key properties have been identified as locations for future bioswale development, which could be purchased or set aside. The most promising locations for the bioswale and pump should be as far as possible from the coast to avoid disturbing archeological artifacts. Figure 3 highlights several possibilities including the following vacant lots: 3359 Lena Road, (Parcels 380134479029-380134465033) and 2358 Lummi View Drive (Parcel 380134451022), or even several plots without addresses would be suitable (Parcels 380134425061, 380134437040).

The bioswale will be implemented in conjunction with the berm and both will be seeded with native plants to protect against erosion, create habitat, and filter pollutants. The bioswale is being constructed alongside the berm as there are concerns that the berm may trap stormwater behind it and flood Gooseberry Point in extreme storm situations. The bioswale also functions as a location to pump from when human inter-vention is needed to manipulate water levels in Gooseberry Point to avoid flooding.



Figure 8.3 Possible locations for constructing bioswale infrastructure.

Funding Sources

Relatively speaking, stormwater management is inexpensive and affordable. The existing infrastructure and maintenance are already in the tribe’s budget, so funding for the bioswale and

Phase 1: 1-15 years		Time Frame
Stormwater Management	Plot acquisition for stormwater bioswale basin	Year 1-5
Phase 2: 16-30 years		Time Frame
Stormwater Management	Stormwater bioswale basin construction	Year 16-18
	Seed local flora for bioswale and berm	Year 19-21
Phase 3: 31-45 years		Time Frame
Stormwater Management	Yet to be determined other stormwater drainage system overhauls	Year 31-45

Table 8.1 Stormwater Management Phasing.

pump is the only component needing additional outside help.

The BIA Tribal Resilience Program offers several grants, the two most relevant funding categories are 10 and 11. Category 10 is for the implementation of climate adaptation strategies with a maximum request of \$2 million and category 11 is for the implementation of community relocation, managed retreat, or protect in place actions with a maximum request of \$3 million.

In addition, there are several more minor grants. The National Endowment for the Humanities has a Cultural and Costal Resilience grant with a maximum request of \$150,000 to safeguard cultural resources, such as Gooseberry Point archeology as well as mitigate climate change. The NOAA Sea Grant Costal Community Climate Adaption Initiative with a maximum request of \$100,000, which exists to prepare for future impacts of climate change. The Coastal Resilience Networks (CRest) grant from the Department of Commerce (DOC) with a maximum request of

\$100,000 also offers grants for the blanket goal of coastal resilience.

The Ayrshire Foundation grant for climate change with a maximum request of \$100,000 has very little in terms of rules or requirements with recipients chosen at Ayrshires discretion. The grant favors climate change focused endeavors like those being proposed. Lastly, the Best Climate Practices- Local Resilience to Climate Disaster grant is also intended for the blanket need of resilience to climate change, although it has no listed max request.

The cost of the bioswale and pump can vary greatly, but estimates put each in the thousands of dollars respectively, well below the size of any one of the two main potential grants and within reach of any subsequent grants.



Aerial photos of Lummi Nation taken in November 2021 after heavy rainfall resulted in major flooding (Brennan, 2021)

Summary

Stormwater management to accommodate future development is straightforward, already adequately addressed in most of the region, and fairly inexpensive to implement. The stormwater management proposal outlined here takes into consideration sensitive archeology, habitat creation, and low-cost solutions to account for the most appropriate and considerate stormwater infrastructure.

Sources Cited:

Ekka, S., Rujner, H., Leonhardt, G., Blecken, G., Viklander, M., Hunt, W. (2021). Next generation swale design for stormwater runoff treatment: A comprehensive approach. *Journal of Environmental Management*. 279(1–15):111756. https://www.researchgate.net/figure/Typical-bioswale-cross-section-and-pollutant-removal-mechanisms-source-Ekka-and-Hunt_fig3_347712846

Brennan, N. (2021, November 24). Recent flooding isolated Lummi Nation. Here's how the Tribe continued to provide services. *Tacoma News Tribune*. <https://www.thenewstribune.com/news/state/washington/article255970362.html>

9. Funding Resources

Grant Type:	Federal Grants:	State Grants:	NGO Grants:
Waterfront	2	0	1
Energy	5	2	0
Wetland/Coastal Conservation	6	1	5
Transportation	4	0	0
Tribal Business	3	0	0
Urban Development	8	1	1
Other	0	2	1

Table 9.1 Breakdown of the amount of funding types within Federal, State, and NGO grants.

Waterfront

MA-PID-23-001 2023 Port Infrastructure Development Program Grants Department of Transportation Maritime Administration (\$165,550,878 maximum) - The Port Infrastructure Development Program (PIDP) is a discretionary grant program administered by the Maritime Administration. Funds for the PIDP are awarded on a competitive basis to projects that improve the safety, efficiency, or reliability of the movement of goods into, out of, around, or within a port.

Paul G Allen Family Foundation (\$50,000,000 maximum) - Multiple different grants are available through the Paul G Allen Family Foundation providing up to \$50,000,000 of funding.

US DOT Better Utilizing Investments to Leverage Development (BUILD) Grant Program (\$17,000,000 average) - To fund port project

development and the expanded growth of the maritime industry.

Energy

DE-FOA-0002970 Bipartisan Infrastructure Law: Energy Improvement in Rural or Remote Areas Funding Opportunity Announcement Department of Energy Headquarters (\$100,000,000 maximum) - 1) Deliver measurable benefits to energy customers in rural or remote areas by funding replicable energy projects that lower energy costs, improve energy access and resilience, and/or reduce environmental harm. 2) Demonstrate new rural or remote energy system models using climate-resilient technologies, business structures that promote economic resilience, new financing mechanisms, and/or new community engagement best practices. 3) Build clean energy knowledge, capacity, and self-reliance in rural America.

DE-FOA-0002975 Clean Energy Technology Deployment on Tribal Lands - 2023 Department of Energy Golden Field Office (\$5,000,000 maximum) - Under this Funding Opportunity Announcement (FOA), the DOE Office of Indian Energy is soliciting applications from Indian Tribes, which include Alaska Native Regional Corporations and Village Corporations, Inter-tribal Organizations, and Tribal Energy Development Organizations to:

1. Install clean energy generating system(s) and energy efficiency measure(s) for Tribal Building(s) (Topic Area 1); or,
2. Deploy community-scale clean energy generating system(s) or energy storage on Tribal Lands (Topic Area 2); or,
3. Install integrated energy system(s) for autonomous operation (independent of the traditional centralized electric power grid) to power a single or multiple Essential Tribal Buildings during emergency situations or for tribal community resilience (Topic Area 3); or,
4. Provide electric power to unelectrified tribal buildings (Topic Area 4).

Clean Energy Technology Deployment on Tribal Lands - 2023 - Topic Area 1: Clean Energy Generating System(s) and/or Energy Efficiency Measure(s) for Tribal Building(s) - Energy Efficiency Measure(s) (Subtopic Area 1.b.) (\$2,500,000 maximum) - Install clean energy generating system(s) and/or energy efficiency measure(s) for Tribal Building(s) (Topic Area 1).

Clean Energy Technology Deployment on Tribal Lands - 2023 - Topic Area 2: Community-Scale Clean Energy Generating System(s) or Community Energy Storage Deployment - Community-Scale Clean Energy Generating System(s) (Subtopic Area 2.a.) (5,000,000 maximum) - Deploy community-scale clean energy generating system(s) or community energy storage on Tribal Lands (Topic Area 2).

Clean Energy Technology Deployment on Tribal Lands - 2023 - Topic Area 3: Integrated Energy System(s) for Autonomous Operation - Powering Essential Tribal Building(s) (Subtopic Area 3.a.) (2,000,000 maximum) - Install integrated energy system(s) for autonomous operation (independent of the traditional centralized electric power grid) to power a single or multiple Essential Tribal Building(s) during emergency situations or for tribal community resilience (Topic Area 3).

Clean Energy Technology Deployment on Tribal Lands - 2023 - Topic Area 4: Powering Unelectrified Tribal Buildings - Energy Infrastructure for Electrification (Subtopic Area 4.b.) (5,000,000 maximum) - Provide electric power to Tribal Building(s), which otherwise

would be unelectrified (Topic Area 4).

Clean Energy Fund (CEF) - Electrification of Transportation Systems Program (ETS) (\$500,000 maximum) - CEF 5 ETS Round 2 grants provide funding for local governments and federally recognized Tribal governments for the procurement, installation, and integration of electric vehicle supply infrastructure and/or hydrogen refueling station infrastructure in rural communities. Funding covers innovative projects that:

1. Fills EVSE/hydrogen deployment gaps in rural communities with new infrastructure.
2. Upgrades existing infrastructure to better serve end-users and uses in rural communities and facilitate long distance travel, or;
3. Constructs additional EVSE or hydrogen fueling stations where needed in Rural Communities to increase system resiliency and better support end-users.

Wetland/Coastal Conservation

F24AS00008 - NAWCA 2024-2 US Standard Grants Department of the Interior Fish and Wildlife Service (\$3,000,000 maximum) - The program promotes partnerships projects that must involve a) only long-term protection, restoration, enhancement and/or establishment of wetland and associated upland habitats to benefit diversity of wetland ecosystems and b) maintaining an abundance of waterfowl (ducks, geese, and swans) and other populations of wetlands-associated migratory birds consistent with the objectives of the North American

Waterfowl Management Plan, U.S. Shorebird Conservation Plan, Waterbird Conservation Plan for the Americas, and Partners in Flight Bird Conservation Plan.

National Coastal Resilience Fund (\$100,000 to \$1 million for community capacity building and planning, \$100,000 to \$1 million for project preliminary design and site assessment, \$100,000 to \$1 million for project final design and permitting, \$1 million to \$10 million for project restoration and monitoring, and cost share: Minimum 50% federal / 50% local.

Larger cost share ratios with funds from a diversity of partners are encouraged and will be more competitive during application review.) -Waterfowl Management Plan, U.S. Shorebird Conservation Plan, Waterbird Conservation Plan for the Americas, and Partners in Flight Bird Conservation Plan.

Coastal Protection Fund – Terry Husseman Account (THA) Grants (\$10,000 to \$25,000; \$50,000 grant maximum) - Provides support in locally sponsored projects that restore enhance the environment. These focuses include fish and wildlife protection in or adjacent to waterbodies such as streams, lakes, wetlands, or ocean. It is a requirement that projects provide the primary benefits to public resources, land or water stewardship and associated infrastructure. Federally recognized tribal governments within Washington state are eligible to apply for this grant.

Flood Mitigation Assistance Grant Program (FEMA) (No specific funding amount provided.

More than \$3 Billion in funding is available within Building Resilient Infrastructure and Communities and Flood Mitigation Assistance grant programs.) - Aid funding for local governments in providing projects that will reduce or eliminate the risk of repetitive flood damage to critical infrastructure that are insured by the National Flood Insurance Program.

Coastal Zone Management Program Grants (\$34,000 - \$102,000) - This program provides grants to coastal states and tribes to support the conservation and sustainable management of coastal resources. Tribes located in coastal areas may be eligible for funding to develop and implement marine infrastructure projects aligned with coastal zone management goals.

Flood Control Assistance Account Program (FCAAP) (\$500,000 for Flood Control Maintenance projects and \$150,000 for Emergency Flood Response projects; 25% of matching funds are required for planning projects and 20% are required for emergency flood response projects.) - Assist local governments with comprehensive floodplain management planning and implement flood mitigation strategies. Projects that are eligible for this grant include: comprehensive flood hazard management plans, feasibility studies, flood control maintenance projects, and emergency flooding projects and protocols. Federally recognized tribes are eligible for competitive planning projects and flood control districts (Whatcom County) are eligible for emergency projects.

National Oceanic and Atmospheric Administration (\$100,000 maximum) - Sea Grant Coastal Community Climate Adaption Initiative.

EPA-I-R10-PS-2023-002 (upwards of \$7,000,000) - Advancing Environmental Justice in the restoration and recovery of Puget Sound. The successful applicant will work closely with communities, key partners, Strategic Initiative Leads, Tribes, and others involved in the Puget Sound Management Conference. The funding from this RFA is intended to go towards the implementation of the goals stated in the 2022-2026 Puget Sound Action Agenda.

Environmental Protection Agency (EPA) (\$50,000,000 maximum) - The Environmental Justice Thriving Communities Grantmaking Program (<https://www.epa.gov/environmental-justice/environmental-justice-thriving-communities-grantmaking-program>)

Department of Commerce (DOC) (\$100,000 maximum) - Coastal Resilience Networks (CRest) (<https://tribalclimateguide.uoregon.edu/funding/coastal-resilience-networks-crest>)

Ayrshire Foundation (\$100,000 maximum) - Grants for climate change (<https://tribalclimateguide.uoregon.edu/funding/ayrshire-foundation-grants-climate-change>)

*Non-Government Organization (No specific funding amount provided.) - Best Climate Practices Local Resilience to Climate Disaster ([*disaster-risk\)*](https://tribalclimateguide.uoregon.edu/funding/best-climate-practices-local-resilience-climate-</i></p></div><div data-bbox=)*

National Endowment for the Humanities (\$150,000 maximum) - Cultural and Community Resilience (<https://tribalclimateguide.uoregon.edu/funding/cultural-and-community-resilience>)

Bureau of Indian Affairs (\$2,000,000 - \$3,000,000) - Category 10 & 11 (<https://www.adaptationclearinghouse.org/resources/bia-tribal-climate-resilience-program.html>)

Transportation

FY 2023 Competitive Funding Opportunity: Tribal Transit Program Department of Transportation DOT/Federal Transit Administration (Planning projects do not have a minimum grant award amount but will not receive an award of more than \$25,000.) - Investments that (1) enhance safety, (2) renew our transit systems; (3) reduce greenhouse gas emissions in the public transportation sector, (4) improve equity, and (5) connect communities.

2024TTPSF 2024 Tribal Transportation Program Safety Fund Department of Transportation DOT Federal Highway Administration (\$23,138,400, 2022 maximum, increases each year) - (<https://highways.dot.gov/federal-lands/programs-tribal/safety/funds>)

693JJ323NF00013 Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Program Department of Transportation DOT Federal Highway Administration (\$1,400,000 maximum)

Department of Transportation (DOT)
(\$25,000,000 maximum) - Safe Streets and Roads for All Funding Opportunity (<https://tribalclimateguide.uoregon.edu/funding/safe-streets-and-roads-all-funding-opportunity>)

Tribal Business

Native American Business Development Institute (NABDI) Grant (\$75,000,000 maximum) - The NABDI grant funds feasibility studies for the tribe. Enabling the tribe to conduct comprehensive cost-benefit analysis before implementation. Products of these preliminary studies have a significant effect in persuading investors and financial lenders. (<https://www.bia.gov/service/grants/nabdi>)

Tribal Tourism Grant Program (TTGP)
(\$150,000 maximum) - (<https://www.bia.gov/service/grants/ttgp>)

United States Department of Agriculture (USDA)
(No specific funding amount provided.) - (<https://www.rd.usda.gov/programs-services/business-programs/strategic-economic-and-community-development>)

Urban Development

FY 2023 Green and Resilient Retrofit Program (GRRP) (average fund amount of \$4,900,000)- “The program seeks to amplify recent technological advancements in utility efficiency and energy generation, bring a new focus on preparing for climate hazards by reducing residents’ and properties’ exposure to hazards,

and protecting life, livability, and property when disaster strikes.” (https://www.hud.gov/program_offices/spm/gmomgmt/grantsinfo/fundingopps/fy2023_grrp_elements)

FY 2023 Choice Neighborhoods Planning Grant (\$500,000 maximum) - (https://www.hud.gov/program_offices/spm/gmomgmt/grantsinfo/fundingopps/fy23_choice)

Office of Public and Indian Housing expected funding opportunities for FY 2023 (\$500,000 maximum) - Choice Neighborhoods Planning Grants support the development of comprehensive neighborhood revitalization plans which focus on directing resources to address three core goals: Housing, People and Neighborhood. To achieve these core goals, communities must develop and implement a comprehensive neighborhood revitalization strategy, or Transformation Plan.

Indian Community Development Block Grant (\$500,000 minimum to \$5,000,000 maximum, with average award of \$600,000) - The ICDBG program can provide funding for recipients in the following categories:

- Housing - Housing rehabilitation, land acquisition to support new housing construction, and under limited circumstances, new housing construction.
- Community Facilities - Infrastructure construction, e.g., roads, water and sewer facilities; and, single or multipurpose community buildings.
- Economic Development - Wide variety of commercial, industrial, agricultural projects

which may be recipient owned and operated or which may be owned and/or operated by a third party. (https://www.hud.gov/program_offices/public_indian_housing/ih/grants/icdbg)

US Department of Commerce - Economic Development Administration Grants (\$3,000,000 maximum) - To help communities design and create strategies to improve their economy in response to structural damage.

US Department of Commerce - Economic Development Administration (EDA) Public Works and Economic Adjustment Assistance Programs (No specific funding amount provided)- To fund infrastructure improvements to assist in economic development, job stimulation, and the revitalization of communities.

Rural Community Development Initiative (\$50,000 - \$500,000) - Qualified private, nonprofit and public (including tribal) intermediary organizations proposing to carry out financial and technical assistance programs will be eligible to receive the funding. The RCDI structure requires the intermediary (grantee) to provide a program of financial and technical assistance to recipients to develop their capacity and ability to undertake projects related to housing, community facilities, or community and economic development. The recipients will, in turn, provide programs that will support their communities (beneficiaries). The Intermediary will be required to provide matching funds in an amount at least equal to the RCDI grant.

The Valerie Sivinski Fund (Washington Trust

for Historic Preservation) (\$2,000 maximum) - Annual grant program that provides communities opportunities for historic preservation in Washington state. The grant is centered on specific historic and cultural places related to histories of marginalized and underrepresented communities.

FWS, DOI (\$16,000,000 maximum) - Cooperative Landscape Conservation and Adaptation Science Funding Opportunity (<https://www.grants.gov/web/grants/view-opportunity.html?oppId=173973>)

USDOA: Community Facilities Direct Loan & Grant Program in Washington (No specific funding amount provided) - The United States Department of Agriculture provides affordable funding to develop essential community facilities in rural areas. An essential community facility is defined as a facility that provides an essential service to the local community for the orderly development of the community in a primarily rural area, and does not include private, commercial or business undertakings.

Other

Washington State Tribal Consultation Grant (\$4,000,000 maximum) - Consultation with agencies that allocate funding or administer grant with CCA funds on funding decisions and funding programs that may impact tribal resources. Engaging in pre-application process with project applicants. Submitting to an agency (or agencies) a summary of issues, questions, concerns, or other statements regarding a

proposed project. Requesting and engaging in meetings with state agencies or the Governor's Office to review and resolve consultation issues or disputes. (<https://ecology.wa.gov/About-us/Payments-contracts-grants/Grants-loans/Find-a-grant-or-loan/Tribal-Capacity-Grants>)

The Russel Family Foundation (\$7,500 - \$600,000) - Provides outdoor environmental education opportunities to students, ranging from middle to high school. Focused on schools in Jefferson, King, Kitsap, Pierce and Thurston Counties.

WSDOC Building for the Arts (33% state match of eligible project costs for capital facilities) - The Washington State Department of Commerce awards grants to performing arts, art museums, and cultural organizations. This could be used for a variety of buildings at the Stommish Grounds.

10. Conclusion

Within a 50-75 year timeline, the spring studio report provides a thorough examination of the implementation strategies that could be developed at Gooseberry Point. These strategies outline development proposals for land use, circulation, housing, flood mitigation, stormwater management, and more. Through the refining of design concepts, devising phases of development, and identifying funding strategies to supplement implementation costs, these aspects were significant to the project's formulation in the spring quarter of the Urban Transitions Studio.

We would like to thank the Lummi Commercial Corporation (LCC), Lummi Nation Planning Commission, and the Lummi Nation community for working alongside the Urban Planning Studio students and faculty and providing valuable insights and experiences.

Sources Cited:

Fisherman's Cove Marina in Bellingham, WA, United States - marinas.com. (n.d.). Marinas.com. https://marinas.com/view/marina/lwc2lx_Fishermans_Cove_Marina_Bellingham_WA_United_States



Aerial photo of Lummi Nation's waterfront area known as Fisherman's Cove (Fisherman's Cove Marina in Bellingham, WA).

A WWU Urban Transitions Studio
and
Sustainable Communities Partnership
Study

Gooseberry Point Village Implementation Strategies

Lummi Indian Nation

Lummi Commercial Company
Lummi Indian Reservation, Washington

Western Washington University
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