



Kitsap County Natural Resources Asset Management Program (KNRAMP) High-Level Overview

August 2024

Outline

- KNRAMP objectives
- KNRAMP Core Team
- KNRAMP Framework and process
- Why natural resources asset management?
- Elements of natural resource asset management
- KNRAMP scope and desired levels of service
- KNRAMP Pilot watersheds
- County-wide levels of service
- KNRAMP history
- What's next?
- Resources

KNRAMP Objectives

1. Proactively protect and improve natural assets in Kitsap County
2. Create a long-term investment decision-making and priority-setting framework of where to invest in natural assets
3. Support existing statutory environmental requirements
4. Invest in stream, shoreline, and forest services
5. Move from a "no net loss" to a "net ecological gain" approach

KNRAMP Team

Core Team:

- Kitsap County: DCD, Public Works, Parks, Stormwater
- Suquamish Tribe
- Port Gamble S'Klallam Tribe

Supported by:

- Washington Conservation Action Education Fund (WCAEF)
- Ross Strategic, subcontractor to WCAEF

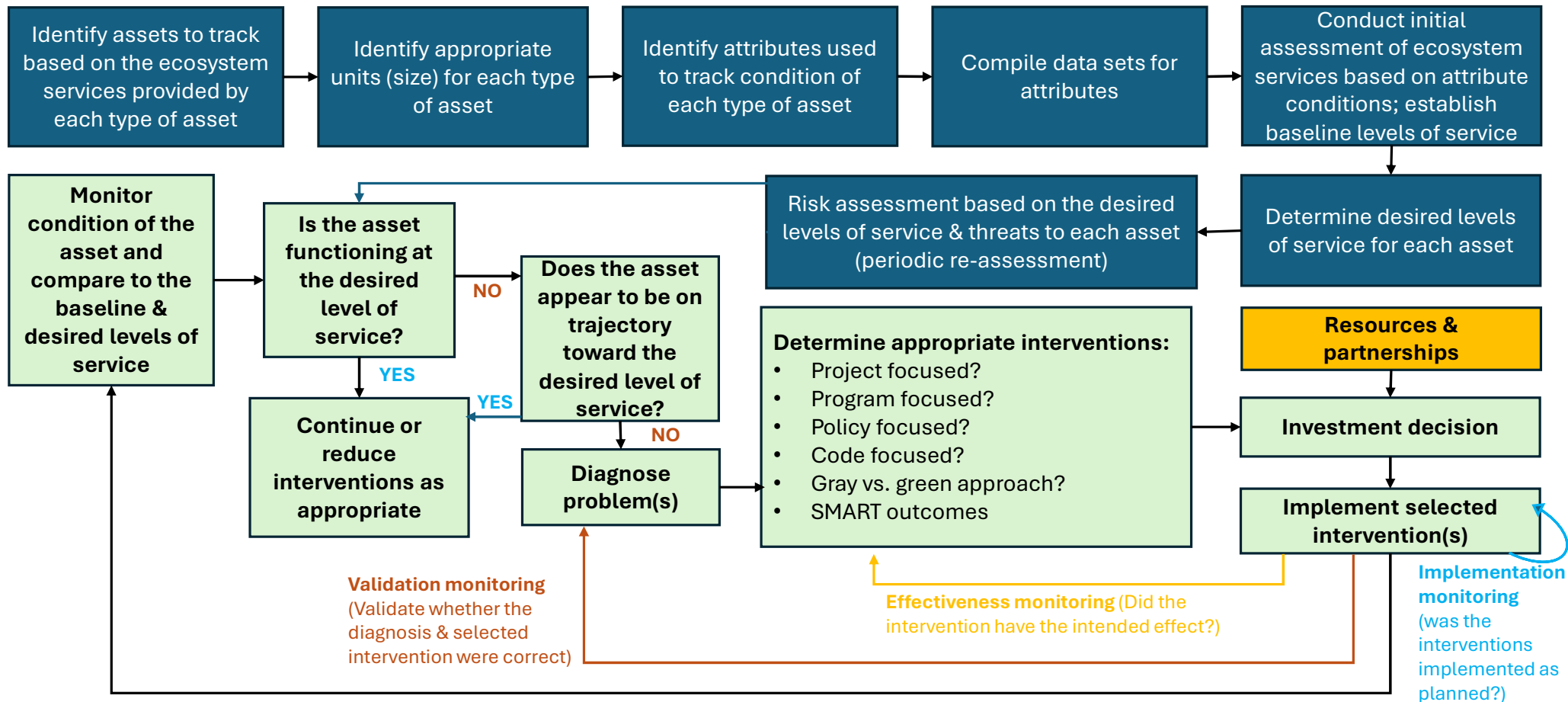
Stream inventory updates provided by Wild Fish Conservancy

Funding through Environmental Protection Agency, National Estuary Program

- **2018-2024:** Grant from Department of Ecology, through the Stormwater Strategic Initiative
- **2024-2026:** Grant from Department of Fish and Wildlife / Department of Natural Resources, through the Habitat Strategic Initiative

This project has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement PC-01J89501 through the Washington Department of Fish and Wildlife. The contents of this document do not necessarily reflect the views and policies of the Environmental Protection Agency or the Washington Department of Fish and Wildlife, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

KNRAMP Framework and Process



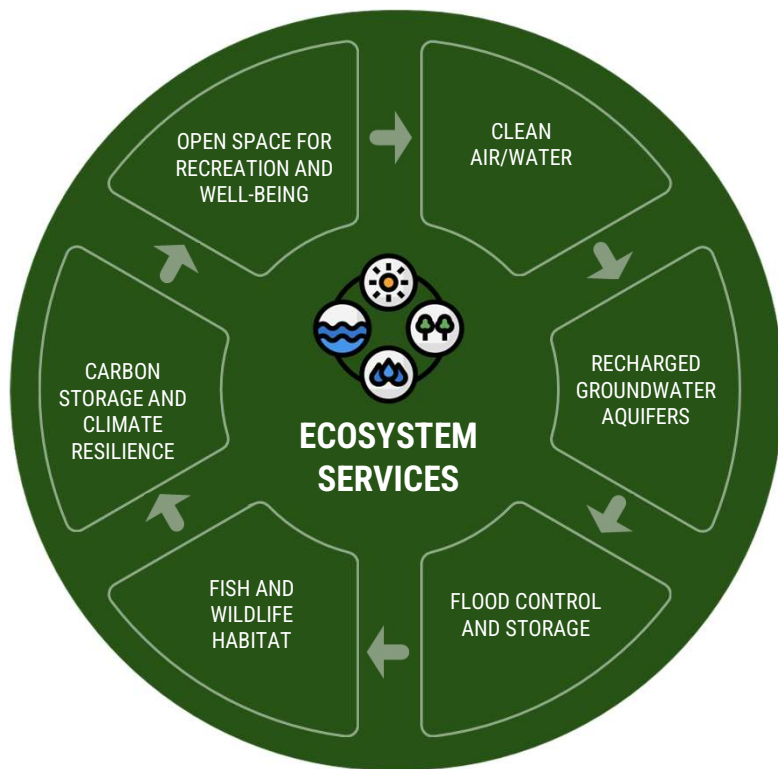
Kitsap County Comprehensive Plan



Kitsap County’s environmental vision outlined in the Comprehensive Plan:

“Formally treat natural environments, including forest lands, shorelines, freshwater systems, intact ecosystems, and other critical areas, as an essential asset that is planned for, managed, and invested in to meet the needs of current and future generations.”

Why natural resources asset management?



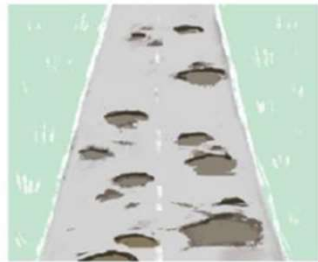
- **Asset management** refers to treating the components of the public infrastructure system as assets within the public trust to be stewarded by the local government.
- **Natural resources asset management** refers to treating natural resources as assets that should be managed with the same consideration to costs of services and investment priorities as built infrastructure.

Elements of natural resources asset management

Road with
A rating



Road with
F rating



River with
A rating



River with
F rating



- **Level of Service (LOS)** defines the condition of the asset and the types and amounts of service an asset is providing. The KNRAMP uses “level of service” terminology, similar to traditional asset management, to:
 - Describe asset current condition
 - Track changes in asset condition
 - Set minimum standards and goals for asset conditions
- **Desired Level of Service (DLOS)** describes the long-term goal for the condition and function of natural assets. KNRAMP defines DLOS for natural assets based on existing County/state/federal policies and long-term goals related to natural resources management and climate adaptation.

KNRAMP Scope: Assets and Attributes

- Forest Cover
- Successional class

Forests



- Riparian Vegetation
- Biological condition (B-IBI score)
- Water quality
- Fish passage

Streams



- Shoreline armoring
- Riparian vegetation
- Water quality

Marine Shorelines



Attributes and Condition Rating

Assets	Attributes	Condition Rating				
		Very Low	Low	Medium	High	Very High
Forest	Forest Cover (%)	<40%	40%-55%	55%-70%	70%-85%	>85%
	Mature Forests (%)	<20%	20%-40%	40%-60%	60%-80%	>80%
Marine Shorelines	Shoreline Armoring (%)	>75%	50%-75%	25%-50%	1%-25%	<1%
	Shoreline Vegetation (%)	<40%	40%-55%	55%-70%	70%-85%	>85%
	Shellfish Growing Areas (SGA commercial classification)	Prohibited	Prohibited & Conditional/ Approved	Conditional	Conditional & Approved	Approved
Streams	Riparian Vegetation (%)	<40%	40%-55%	55%-70%	70%-85%	>85%
	B-IBI Score	0-20	20-40	40-60	60-80	80-100
	Water Quality (Water Quality tests)	Fails both	n/a	Passes 1 st , fails 2 nd	n/a	Passes both
	Fish Passage Barriers	5+ (presence of 0% passable barrier)	3-4 (presence of 0% passable barrier)	1-2 (no 0% passable barrier)	0 (with presence of 100% passable barrier)	0 (no 0% passable barrier)
Cartegraph Level Of Service Score		0-20	20-40	40-60	60-80	80-100

KNRAMP Desired Levels of Service

LOS Condition Rating	Very Low	Low	Medium	High	Very High
<i>Cartegraph Level Of Service Score</i>	0-20	20-40	40-60	60-80	80-100

- **All Forests, Streams, Shorelines have at least a High Level of Service**
 - For management units scoring **below 60**, actions needed to increase score to at least 60
 - For management units scoring **60 or above**, actions needed to maintain score to at least the current condition

KNRAMP Current and Desired Levels of Service

Actions needed example

Shoreline Calculation Example for MU_64

Attribute	Current Data	Current Attribute LOS Score	Action to Improve	Management Unit LOS	DLOS	DLOS Gap	Resulting LOS Score
M1. Shoreline Armoring	82%	14.2	Decrease shoreline armoring to 49%	53.16	60	-6.84	62.88
M2. Shoreline Vegetation	59%	45.29	No action				
M3. Shellfish Growing Areas	Approved	100	No action				

KNRAMP Desired Levels of Service

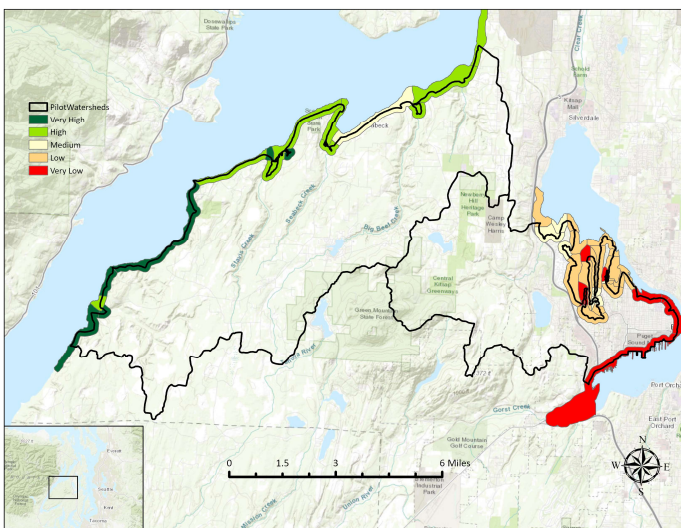
Example actions needed

LOS Condition Rating	Very Low	Low	Medium	High	Very High
<i>Cartegraph Level Of Service Score</i>	0-20	20-40	40-60	60-80	80-100

- **Forests: Average Cartegraph LOS for all attributes across a watershed ≥ 60 (High)**
 - ***Forests example action*** – improve forest cover percent to 90% across a watershed.
- **Streams and Shorelines: Every management unit has average Cartegraph LOS ≥ 60 (High)**
 - ***Streams example action*** – remove 4 full blockage fish passage barriers within a management unit.
 - ***Shorelines example action*** – reduce shoreline armoring to 49% in a management unit

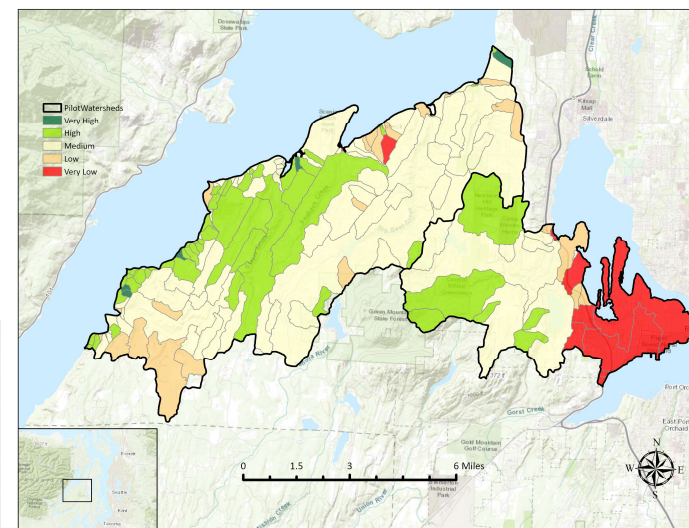
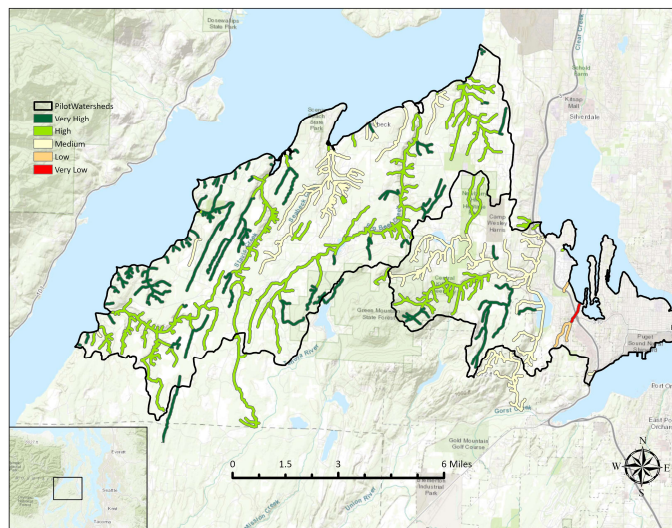
KNRAMP Pilot Watersheds – LOS

Chico Creek & Big Beef Creek



Marine Shoreline

Riparian



Upland Forest

KNRAMP Pilot Watersheds

– Scenario example

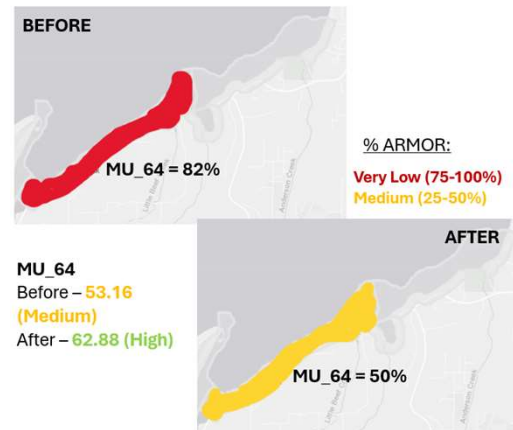
Chico Creek & Big Beef Creek

- Scenarios to reach DLOS in the Pilot Watersheds

- Discussed list of scenarios to reach DLOS for each asset.
- Focused on attributes such as:
 - % Forest cover
 - % Mature forest (land acquisition)
 - % Riparian and shoreline vegetation cover
 - Fish passage barriers
 - % Shoreline armoring
 - Shellfish growing area classification

Shoreline example

Scenario 2 – Decrease shoreline armoring to <50% for MU_64 with Medium LOS

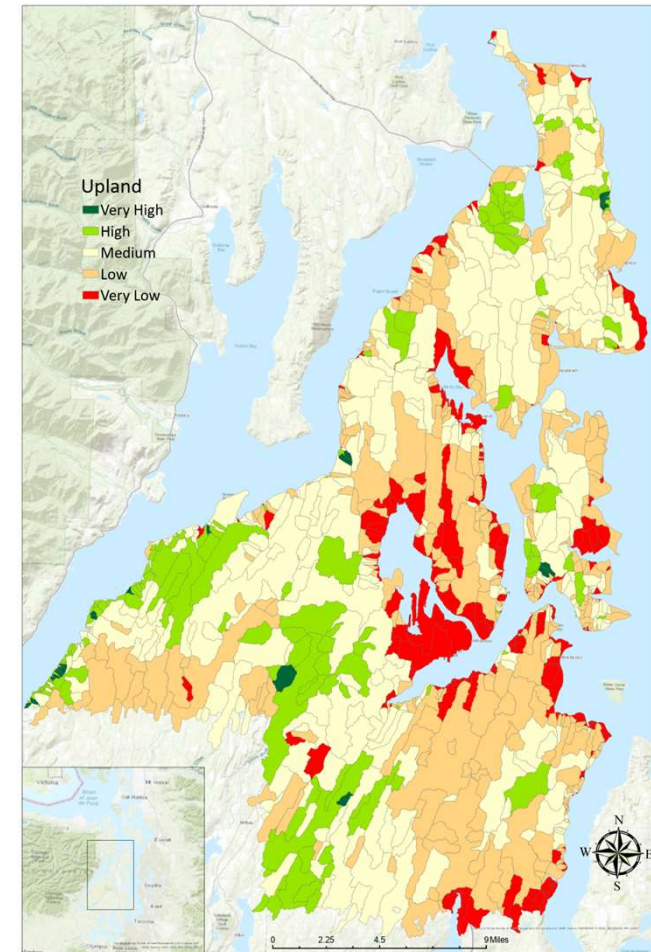
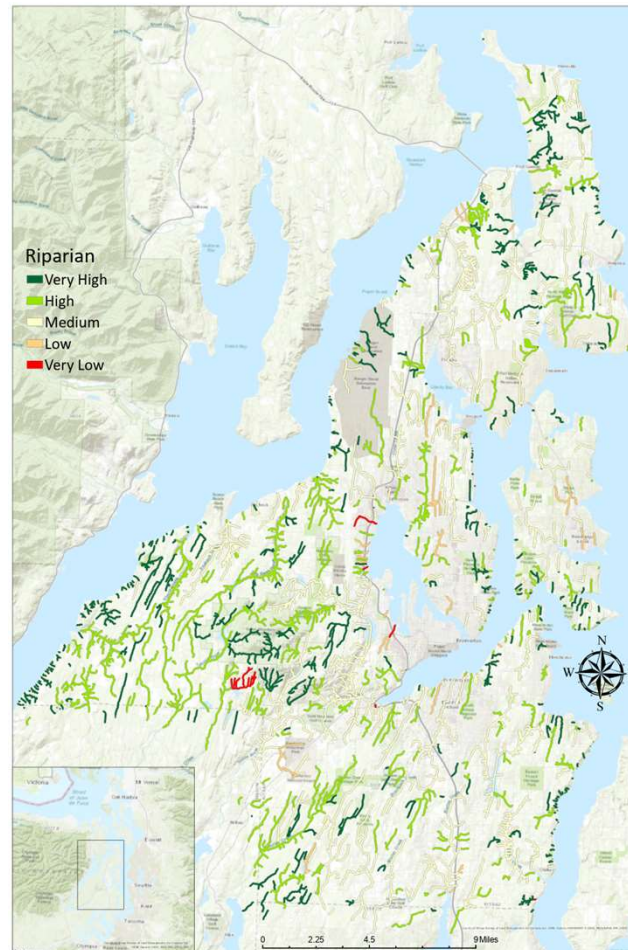
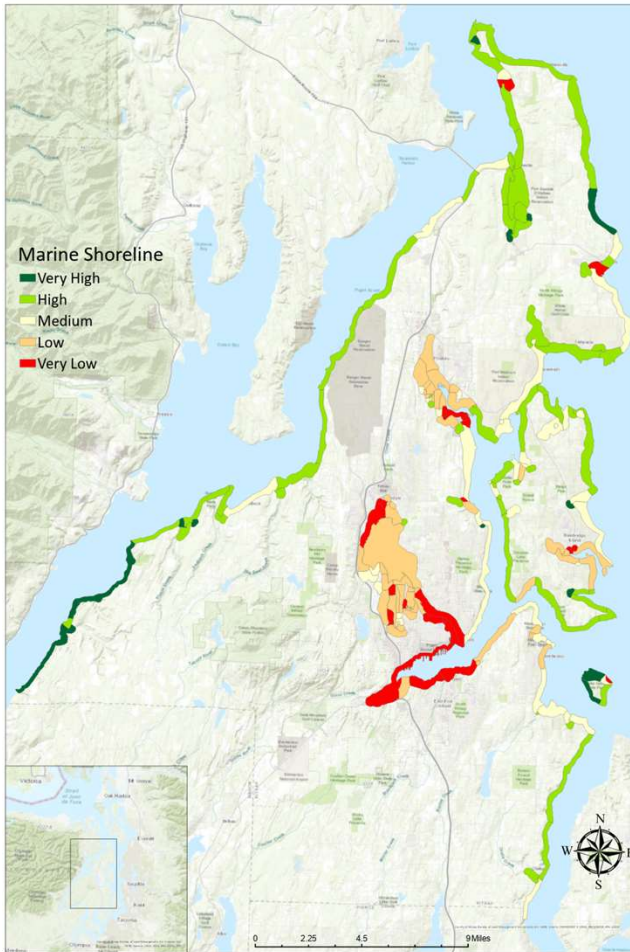


- Who:
 - Kitsap County Transportation armor removal as part of upcoming bridge replacement?
 - Shore Friendly project management
- 4021 ft of shoreline armor removed
- Additional considerations such as: cost (~ \$4,020,000), feasibility, timeline of benefits (see below)

Shoreline armor removal – Estimated timeline



KNRAMP County-wide level of service maps



KNRAMP History - Highlights

2018

- KNRAMP and Core Team convenes*
- Interviews with local organizations to identify challenges / opportunities

2020:

- Developing science-based asset management units
- Public engagement plan
- Stakeholder workshop
- County Commissioner briefing

2022

- Implementation of public engagement plan (online survey and stakeholder awareness)
- Sharing KNRAMP lessons learned with other local governments

2024

- Cross-jurisdictional discussions
- Integration into Comprehensive Plan Update
- DLOS mapping across Kitsap County
- Defining priority actions for pilot watersheds
- County-wide decision-making framework
- County-wide Implementation Plan update

2019:

- Researching natural asset management programs
- Selecting three natural assets and associated attributes for the program
- Building a database of assets and attributes in Cartegraph and GIS

2021

- Public and Stakeholder Engagement Plan updates
- Cartegraph natural resource management refinement

2023

- Meeting with internal Kitsap County divisions to understand asset management approaches
- Creating a story map to share with the public
- Selecting two pilot watersheds for initial implementation- Big Beef & Chico Creek
- DLOS science-based options for pilot watersheds
- Draft County-wide Implementation Plan

- Cartegraph is a geospatial asset management software/database traditionally used for built assets.
- GIS is a geospatial mapping software/database.

****Core Team convening regularly throughout the years***

What's next?

2024

- Implement actions in pilot watersheds
- Develop County-wide maps with current levels of service
- Develop County-wide decision-making framework
- Identify and work with County divisions and other organizations on County-wide opportunities for preservation and restoration
- Refine the adaptive management approach for future implementation
- Core Team will continue to meet and act as an Advisory Group beyond 2024

2025 and beyond

- Continue to work with County divisions and other organizations on shared priorities
- Evaluate the program after the first year, identify, and integrate lessons learned
- Conduct public engagement to continuously integrate the community's priorities
- Engaging with other local jurisdictions that may have similar natural resources asset management efforts and sharing best practices

Contacts

- **Kitsap County:**
 - Kirvie Mesebeluu-Yobech, Environmental Programs Supervisor, DCD: Supervisor
 - Brittany Gordon, Natural Resource Coordinator, DCD Planning & Environmental Programs: Project Manager
- **Suquamish Tribe:** Alison O'Sullivan, Steve Todd
- **Port Gamble S'Klallam Tribe:** Roma Call, Marla Powers



Resources

- Story Map - Kitsap Natural Resources Asset Management Program
[Kitsap Natural Resources Asset Management Program](#)
[\(arcgis.com\)](#)
- KNRAMP on the Kitsap County website (includes resources from Core Team workshops): [Kitsap Natural Resource Asset Management Project](#)