

Phase 3: Shoreline Cumulative Impacts Analysis

Conducting a Comprehensive SMP Update

CTP Training, Day 2

10:30 – 11:30am

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Presentation Objectives

- Provide guidance on defining cumulative impacts
- Explain the Guidelines requirements
- Present strategies for addressing cumulative impacts
- Describe analysis methods, process and timing
- Provide examples and “tips” about what to do/not do

Background

- ⦿ Our understanding cumulative impacts is still evolving
- ⦿ The CIA is a key step that supports development *and* implementation of the SMP:
 - Forecasting the future
 - Acting proactively to deal with anticipated impacts
- ⦿ Tailor the analysis to key issues in your jurisdiction
- ⦿ In sum, “planners need to plan (ahead)”

What are cumulative impacts?

- No precise definition in the Guidelines
- NEPA and SEPA provide some definitions and guidance:

Cumulative impacts result when the effects of an action are added to or interact with other effects in a particular place and within a particular time

Basic assumptions

- ◎ Future shoreline development will occur:
 - The SMA is designed to accommodate preferred shoreline uses
- ◎ Impacts to ecological functions will result from anticipated future development
 - New developments will alter the shoreline even as mitigation is implemented
 - Existing developments may contribute to new impacts over time

Guidelines requirements

- *“To comply with the general obligation to assure no net loss ... the process of developing the policies and regulations of shoreline master program requires assessment of how proposed policies and regulations cause and avoid such cumulative impacts.”*
- *“...master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden ...among development opportunities”*

Scope of analysis

- ◎ Current circumstances affecting the shorelines and relevant natural processes;
- ◎ *Reasonably foreseeable* future development and use of the shoreline; and
- ◎ Beneficial effects of established regulatory programs under other local, state, and federal laws
- ◎ Development exempt from permitting

Scope of analysis (cont.)

- ◎ Impacts of ‘commonly occurring and planned development’
 - single family residential, subdivisions, commercial...
- ◎ Impacts from “other shoreline functions fostered by the policy goals of the Act”
 - public access
 - impacts of docks/piers on navigation

What about *unforeseeable* impacts?

- ◎ Assess developments that have un-anticipatable or uncommon impacts at the *permit stage*
 - Examples: tidal energy facility, some mixed use developments
- ◎ Use the Conditional Use Permit process to ensure that impacts are addressed and there is no net loss of ecological function after mitigation

Effects of “exempt” development

- ◎ Assess incremental impacts of:
 - residential bulkheads
 - residential docks/piers
 - runoff from newly developed properties
 - platting or subdividing of property...that establish a pattern for future development

Bainbridge Island example:

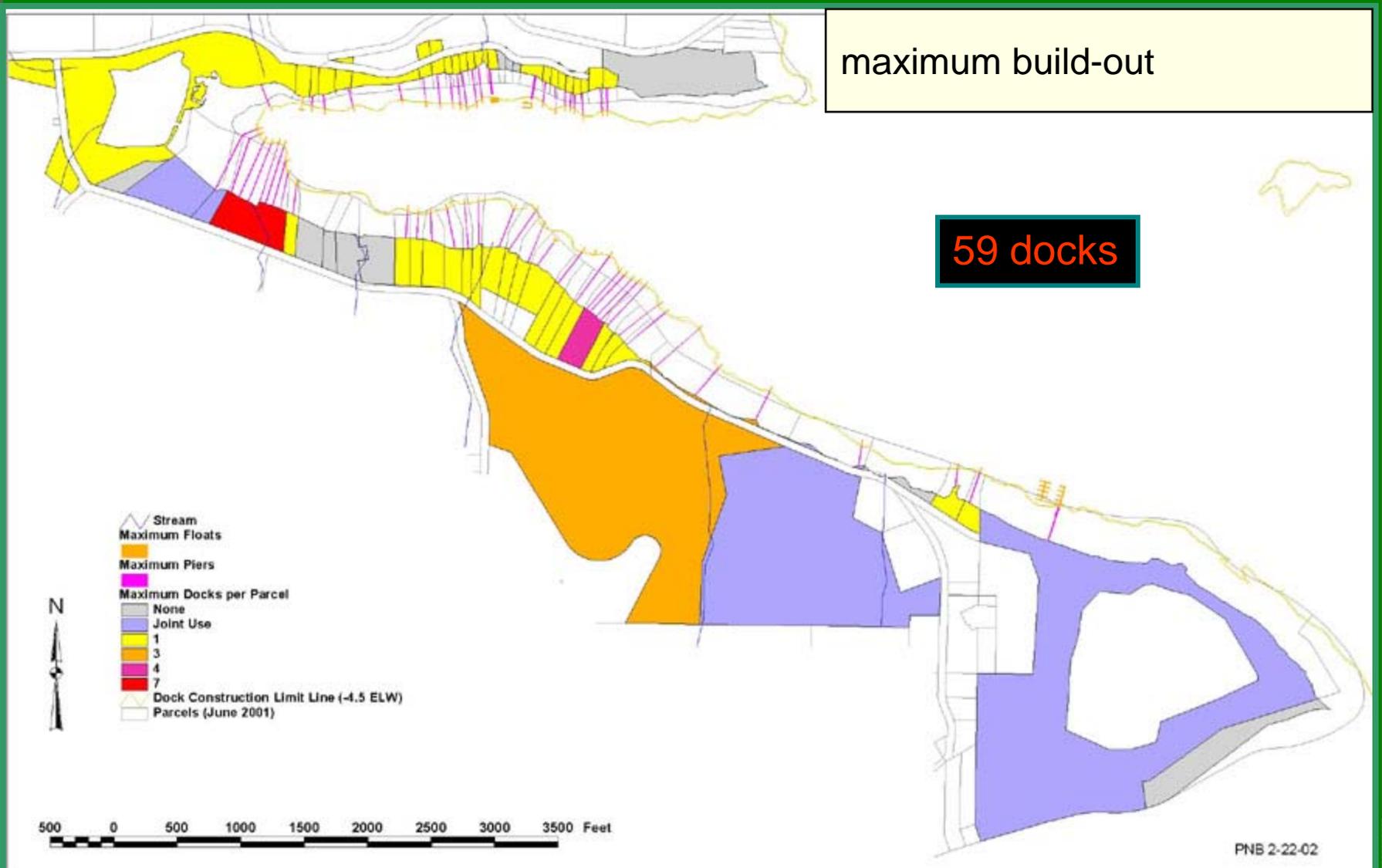
City of Bainbridge Island. Focused on cumulative impacts of residential docks

Led to SMP amendment prohibiting new individual docks allowing shared use docks (*approved 2/04*)

BLAKELY HARBOR CUMULATIVE IMPACT ASSESSMENT

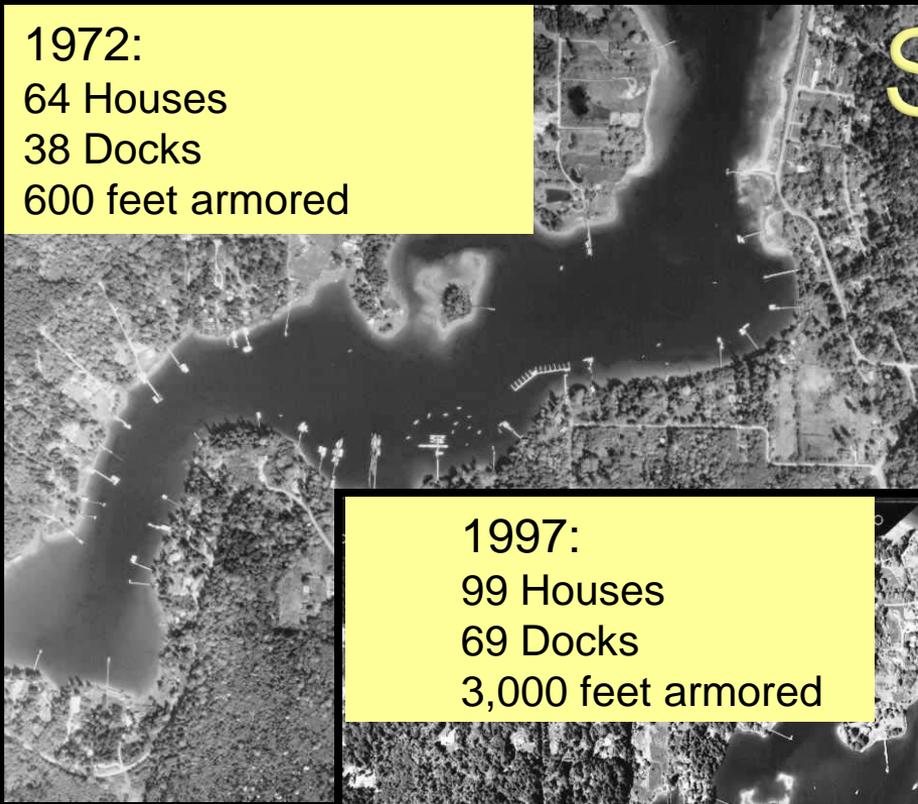


Blakely Harbor build-out

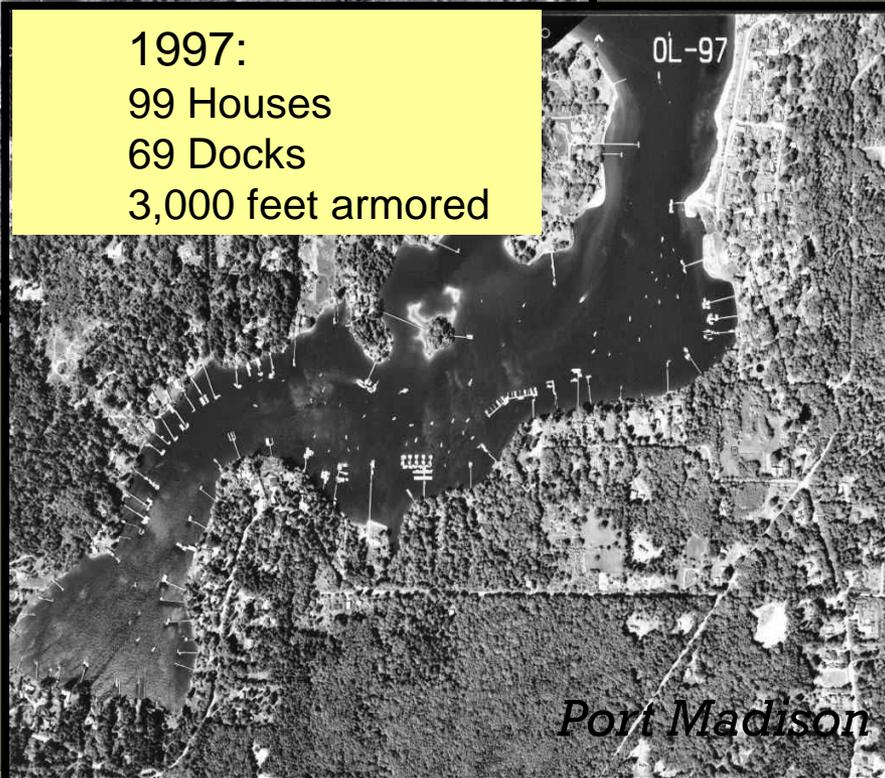


SFRs and docks

1972:
64 Houses
38 Docks
600 feet armored



1997:
99 Houses
69 Docks
3,000 feet armored



“The City’s experience on its other shorelines is that 60% of waterfront build docks or piers.

The City contends that it “does not have to wait until after a flood of applications has occurred to amend its SMP to protect the Harbor. The Board agrees.”

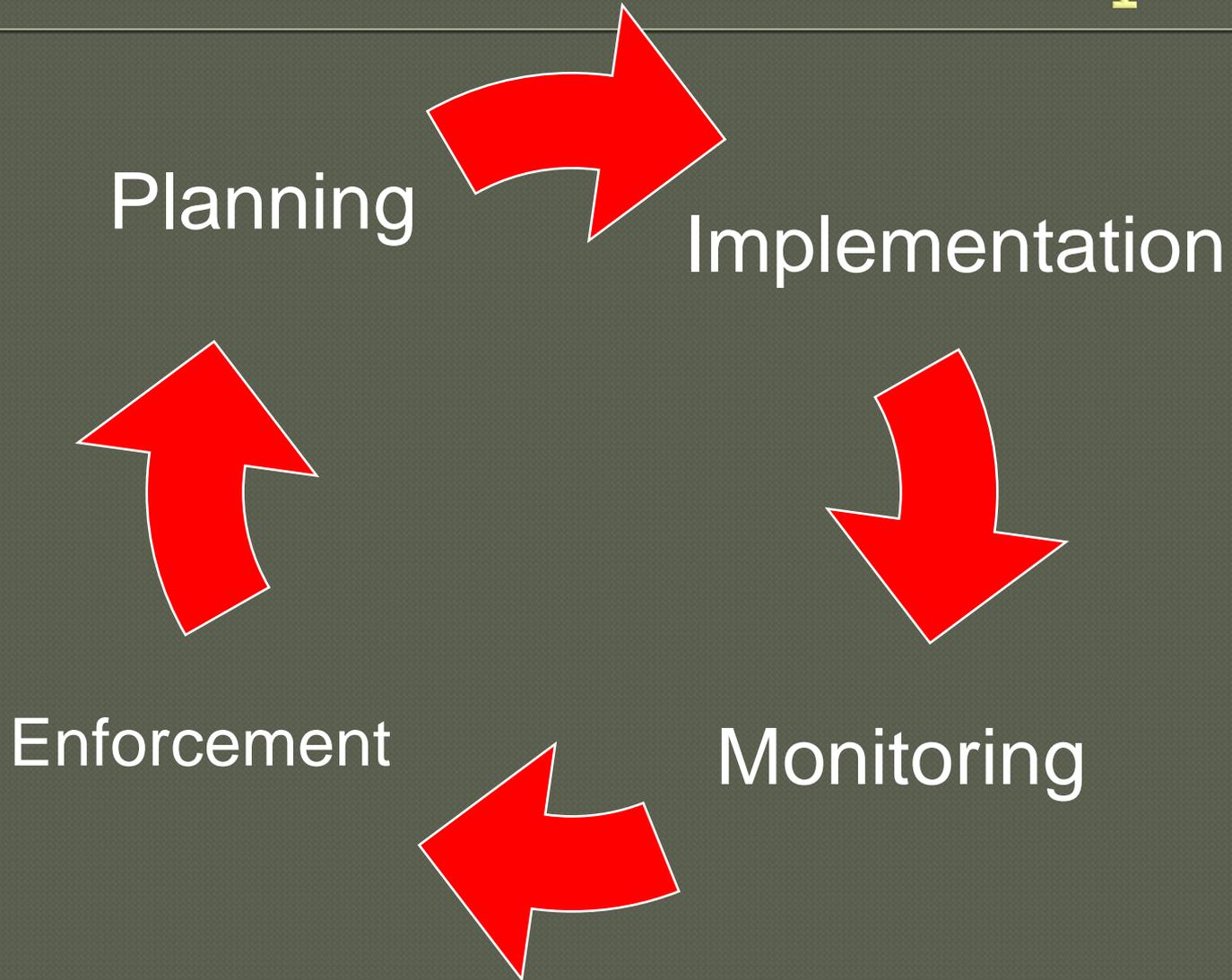
CPSGMHB upheld amendment (1/21/05)
(Case under appeal...)

Table 7. Common Effects of Residential Development on Shoreline Resources

Sample Table

Development Activity	Potential Impacts ²⁴
Vegetation clearing	<ul style="list-style-type: none"> • Simplification of habitat structure due to removal of large wood, overhanging branches, and boulders • Reduced bluff and beach stabilization, and increased erosion • Decreases in terrestrial food supply, shading, and protection from overhead predators due to clearing of marine riparian vegetation • Increased water temperatures due to loss of shoreline vegetation • Increased beach substrate temperatures during low tide in summer • Decreases in terrestrial food sources • Habitat fragmentation and disruption of wildlife travel corridors • Increased incidence of invasive species due to site disruption
Shoreline armoring	<ul style="list-style-type: none"> • Loss of backshore habitat • Changes in beach substrate character and downcutting • Loss of substrate appropriate for eelgrass and kelp attachment or growth • Substrate change from changes in wave energy and other physical processes • Changes in juvenile salmonid prey diversity and abundance due to alterations in beach/river substrate and structure • Altered shellfish settlement and growth due to changes in sediment loads and size
Dock/Pier construction	<ul style="list-style-type: none"> • Substrate modification due to piling placement and grounding of boats and/or structures • Changes to substrate structure/vegetation due to accumulation of shell fragments adjacent to pilings resulting in decreased habitat available for herring spawning • Loss of marine vegetation from shade impacts of boats and floats, and scouring from buoy anchors causing reductions in spawning, rearing, and refugia habitat available to forage fish • Decreased survival, due to desiccation, for herring eggs spawned on pilings at high tide elevations • Reduction or loss of eelgrass and kelp beds due to shading by over-water structures • Altered juvenile salmon migration behavior and increased predation due to shading from overwater structures • Disruption of salmon migration and feeding areas due to noise and turbidity associated with construction activity
Creation of lawns and impervious surfaces	<ul style="list-style-type: none"> • Increased pollutant load due to lakes, rivers and marine waters from non native landscaping requiring use of fertilizers and pesticides
In-water recreational activity	<ul style="list-style-type: none"> • Changes to substrate, increased forage fish egg mortality, and fish avoidance from propeller wash and grounding of boats during low tides

A complete strategy for addressing cumulative impacts



In other words...

- ◉ Plan for appropriate uses
- ◉ Carefully assign environment designations
- ◉ Require CUPs for developments with high potential for impacts
- ◉ Use the mitigation sequence
- ◉ Apply effective permit conditions
- ◉ Monitor & enforce standards over time
- ◉ Update your SMP based on what you find

Methods

1. Use inventory information to understand baseline conditions for each reach
2. Identify “reasonably foreseeable future development”
 - Consider Comprehensive Plan, zoning code, past development patterns, economic development needs, community values, etc..
 - Concentrate on areas not already built out or areas where redevelopment is likely
 - Single family residential development/redevelopment likely to be a major use
 - Include other SMA preferred “water-oriented” uses

Methods

3. Project impacts of foreseeable development
 - e.g., planned resort with new moorage - effects on water quality, habitat (eelgrass), etc.
4. Demonstrate how adverse impacts will be mitigated
 - e.g., Identify mooring buoy requirements, require a moorage plan as condition of development
5. Address anticipated beneficial effects
 - e.g., Use of mooring buoys instead of docks will lessen effects on shallow water habitat (salmon migration)

Methods

6. Revise/adjust draft SMP provisions accordingly to address identified cumulative impacts
7. Demonstrate how the SMP will address unanticipated impacts

Link to the Inventory & Use Analysis

- ◎ The inventory and characterization provides a “baseline” of current shoreline conditions
- ◎ The use analysis indicates what types of new development to plan for
- ◎ In combination, these can tell you:
 - what developments and uses to expect and where
 - how the baseline conditions might change (e.g., changes to NNL Indicators)

Link to Restoration Plan

- ◎ The restoration plan identifies the benefits of restoring degraded shorelines
- ◎ The benefits can help offset anticipated impacts of development, if:
 - Restoration timelines and benchmarks are clearly defined
 - You provide assurance that the plan will be carried out
 - The restoration actions have a high likelihood of success

CIA process and timing

- ⦿ Addressing cumulative impacts is an iterative process:
 - First full analysis typically occurs after first draft SMP has been prepared;
 - Further analysis may be needed after the Planning Commission and/or elected officials have made substantial changes
- ⦿ If assumptions upon which the CIA is based change during the update, the CIA should be revised and/or the SMP adjusted accordingly
 - If you craft your SMP to truly achieve no net loss, you should be able to show cumulative impacts avoided will be avoided (converse is also true)

Know your shorelines

- Different shorelines = different impacts = different strategies, for example:
 - High bank shoreline, mostly forested with planned residential development: future impacts will include clearing to allow views. CIA should demonstrate how the SMP will preserve shoreline vegetation functions.
 - Urban shoreline, fully built out. Future impacts will be redevelopment within buffer zones.
 - Rural area where you have commercial forest lands subject to extensive logging: In this case, your SMP can't do much to control these impacts – must rely on Forest Practices Act.

Work with decision makers

- Encourage decision makers to read and understand the CIA so they understand the implications of contemplated changes

Avoid common pitfalls

- ⦿ Comparing the existing SMP to the proposed SMP
- ⦿ Overly generic analysis:
 - No link between proposed policies and regulations and ecological functions at risk.
 - Focus on a select set of issues that SMP policies and regulations can actually influence.
- ⦿ Using the Comprehensive Plan to justify shoreline environment designations - this is only one consideration

Avoid pitfalls (cont.)

- ◉ Understating or missing analysis of anticipated re-development of mostly built out areas.
- ◉ Ignoring future subdivision of land and residential platting
- ◉ Addressing only one function, such as impervious surface, ignoring habitat
- ◉ Not factoring in restoration opportunities...and their benefits

Your SMP should have:

- ⦿ Standards and procedures for evaluating the effects of specific development actions on a case-by-case basis at the time individual shoreline projects are reviewed
- ⦿ A statement that any use/development that would cause “harmful impacts to high value habitat, loss of community uses, impacts to views or the loss of extraordinary aesthetic values” is prohibited

Final thoughts

- ◎ There are no specific requirements to monitor cumulative impacts of development, but...
 - Still required to plan for impacts and avoid them
 - Rules could be updated to require monitoring and adaptive management
 - SMPs must be updated every 7 years...

will you have achieved no net loss?