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# How to Navigate the Regional Priorities Section

**Coming Soon**

# Area of Focus for the 2018 NTA Solicitation and 2018 Action Agenda Regional Priorities

| Vital Signs | Strategic Initiative Lead | Regional Priorities | approaches | Desired Outcomes |
| --- | --- | --- | --- | --- |
| **Marine Water Quality** | **Not Assigned** | 1. Development (or adaptation) of an Implementation Strategy for Marine Water Quality
 | Development (or adaptation) of an Implementation Strategy for Marine Water Quality | Development of a comprehensive regional strategy leads to improved water quality and reductions in human-related contributions of nitrogen. |
| **Summer Stream Flows** | **Not Assigned** | 1. Development (or adaptation) of an Implementation Strategy for Summer Stream Flows
 | Development (or adaptation) of an Implementation Strategy for Summer Stream Flows | Maintaining stable flows where they already occur, and restoring low flows where needed.  |
| **Chinook (& other salmon)** | **PSP (w/ Habitat)** | ***Coming Soon*** | ***Coming Soon*** | ***Coming Soon*** |
| **Floodplains** | **Habitat** | 1. Enable greater local planning capacity to address restoration and protection
 | Identify ecologically important areas | Reach-scale planning will prioritize protecting and restoring ecologically important areas in floodplains. |
| Overlay existing rules, regulations, land uses, ownership, and authorities across the landscape | Multi-benefit floodplain planning is grounded in local regulatory and land use context. |
| Identify and address barriers to existing regulation implementation and enforcement. | Existing mechanisms to reduce development in floodplains are used more effectively. |
| Assess where population and urban growth is projected to occur | Multi-benefit planning will be able to address and account for regional population growth. |
| Use climate change projections to predict changes to landscape-scale processes and to assess vulnerabilities | Planners and stakeholders have access to improved flood risk information |
| Increase staff capacity | Local communities have the technical expertise and time to facilitate multi-benefit reach-scale planning in floodplains. |
| Address political will. | Regulatory staff are supported and encouraged to develop and implement multi-benefit solutions and make protective decisions about floodplain development. |
| 1. Design and identify multiple-benefit solutions and strategies
 | Convene collaborative multi-benefit planning groups | Stakeholders within the floodplain are engaged in reach-sale planning |
| Analyze data to prioritize locations to restore or protect | Reach-scale planning will prioritize protecting and restoring ecologically important areas in floodplains. |
| Develop and write the local plan | Multi-benefit, reach-scale floodplain plans guide socially, environmentally, and economically optimal protection of intact floodplains and restoration of floodplain function. |
| Align implementation of or revise regulations. | Regulatory decisions on floodplains are transparent, effective, consistent, and clearly communicated. |
| Develop and implement outreach, education, and/or incentive programs. | The public and key decision makers have shared knowledge of the integrated floodplain plan- including costs, benefits, and risks of future floodplain development. |
| 1. Implement multiple-benefit projects developed through reach-scale planning processes
 | Implement plans and priorities: Protect | Intact areas of functioning floodplain are prioritized and protected. |
| Implement plans and priorities: Restore | Floodplain function is restored in priority locations. |
| Develop and implement outreach, education, and/or incentive programs | Land owners become stewards of their property and take actions that are protective of floodplains. |
| Direct growth away from priority areas | Growth, conversion, and development are reduced in floodplains. |
| Collect and analyze data to adaptively manage restoration practices. | Monitoring informs long-term stewardship of projects and adaptive management of multi-benefit plans. |
| **Estuaries (& pocket estuaries)** | **Habitat** | 1. Enable greater local planning capacity to develop and implement multi-benefit, delta-scale estuary restoration
 | Use climate change projections to predict changes to landscape-scale processes and to assess vulnerabilities. | Improved delta-scale understanding of sediment and climate change dynamics informs more resilient estuary recovery planning. |
| Improve guidance on management practices and the costs of alternative management approaches. | Multi-benefit plans in estuaries and adjacent lands are based on improved understanding of social, ecological, and economic tradeoffs. |
| Increase staff capacity. | Local estuary planning teams have the expertise, local and regional support structure, and regional vision to enable planning and solution development. |
| Address political will. | Local decision makers make policy, communication, staffing, and budgetary decisions that devote resources to developing multi-benefit solutions. |
| 1. Design delta-scale, multi-benefit solutions for estuary restoration
 | Convene collaborative multi-benefit planning groups.  | Multi-benefit estuary plans resulting from collaborative processes have broad support from all relevant stakeholders. |
| Analyze data to prioritize locations to restore or protect.  | Delta-scale analysis will prioritize areas suitable for estuary restoration and agricultural protection. |
| Develop and write the plan.  | Delta-scale plans guide socially, environmentally, and economically optimal prioritization of locations to restore tidal inundation or estuary function. |
| Align implementation of or revise regulations.  | Estuary restoration and agricultural land conservation programs have better alignment and integration. |
| Develop and implement outreach, education, and/or incentive programs | Local stakeholders participate in and/or trust the outcome of the multi-benefit estuary planning process.  |
| 1. Implement delta-scale estuary restoration plans to increase tidally inundated areas while meeting the needs of diverse stakeholders
 | Develop and implement outreach, education, and/or incentive programs. | The public and key decision makers understand the value of estuary protection and restoration, and land owners take actions that restore estuaries or protect existing functions. |
| Implement plans and priorities: Restore | Increase estuary area by increasing areas with tidal inundation. |
| Direct growth away from priority areas. | Existing land-use regulations are implemented to reduce land conversion and increase opportunities for estuary restoration in major river deltas. |
| Collect and analyze data to adaptively manage restoration practices. | Conduct ecological, economic and social monitoring and effectiveness evaluation to learn about project and planning successes and failures to of past projects.  |
| **Land Development & Cover** | **Habitat** | 1. Enable protection and planning by addressing information needs on the most ecologically important areas
 | Identify ecologically important areas. | Planners and decision-makers improve clarity and implementation of policies and programs that protect ecologically important lands. |
| Overlay existing rules, regulations, land uses, ownership, and authorities across the landscape | Regulations and programs for ecologically important lands are clarified, harmonized, and informed by land use, population growth, and land conversion information. . |
| Identify and address barriers to existing regulation implementation and enforcement. | Implementation of existing policy reduces conversion of ecologically important lands. |
| Assess where population and urban growth is projected to occur. | Identification of areas under pressure for conversion to development informs strategic multi-benefit planning and prioritization. |
| Increase staff capacity. | Dedicated local government staff are resourced and empowered to monitor and adaptively manage land use regulation effectiveness.  |
| Address political will. | Local decision makers are empowered to protect ecologically important areas. |
| 1. Design integrated strategies that protect and restore critical ecological functions
 | Convene collaborative multi-benefit planning groups. | Shared strategies for protection of ecologically important lands resulting from collaborative processes have broad support from all relevant stakeholders. |
| Analyze data to prioritize locations to restore or protect. | Protection policies and programs for ecological important lands are based on data-driven prioritization and decision support. |
| Develop and write the plan. | Landscape-scale strategies prioritize ecologically important lands for protection. |
| Align implementation of or revise regulations. | Alignment of regional and local applications of the regulations on growth management improves protection of ecologically important areas.  |
| 1. Implement integrated strategies and policies to protect and restore ecologically important lands
 | Develop and implement outreach, education, and/or incentive programs. | The public and key decision makers understand why it is important to protect ecologically important lands and the value of landscape-scale strategies and policies. |
| Implement plans and priorities: Protect | Existing regulations are implemented to protect ecologically important lands.  |
| Implement plans and priorities: Restore | Functional riparian habitat is improved based on implementation of integrated planning efforts. |
| Direct growth away from priority areas. | Tax and infrastructure incentives for infill and redevelopment decrease land development in ecologically important areas. |
| Collect and analyze data to adaptively manage restoration practices. | Local governments are able to assess effectiveness of land use regulations.  |
| **Shoreline Armoring** | **Habitat** | 1. Enable and support more effective implementation of existing regulations to protect and restore healthy shorelines
 | Identify and address barriers to existing regulation implementation and enforcement. | Illegal armor decreases and permits achieve most protective outcomes via compliance monitoring and enforcement. |
| Increase staff capacity. | Regulatory staff have training and access to technical resources and experts to efficiently implement and enforce existing regulations. |
| Align implementation of or revise regulations. | Regulatory decisions on shoreline permits are transparent, effective, consistent, and clearly communicated. |
| Address political will. | Regulatory staff are supported and encouraged to require most protective outcomes for nearshore ecosystems. |
| 1. Enable, design, and implement coastal processes-based design and technical training
 | Improve guidance on management practices and the costs of alternative management approaches. | Armor removal and soft shore protection projects are more feasible for implementation.  |
| Develop and implement outreach, education, and/or incentive programs. | Increased practitioner expertise in site assessment, armor removal, and soft shore design increases implementation of the most protective shoreline management options.  |
| Implement plans and priorities: Protect | Practitioners use alternative management practices that protect infrastructure without shoreline armor. |
| Implement plans and priorities: Restore | Practitioners implement removal projects and, if needed, replace with soft shore protection.  |
| Collect and analyze data to adaptively manage restoration practices. | Improved armor removal and soft shore designs produce better ecosystem and human outcomes. |
| 1. Enable stewardship of healthy shorelines through incentives and education for homeowners
 | Develop and implement outreach, education, and/or incentive programs. | Homeowners become stewards of their property and take actions to support healthy shorelines. |
| Implement plans and priorities: Protect | Agreements are implemented that protect unarmored shoreline from armoring. |
| Implement plans and priorities: Restore | Armor removal and soft shore replacement projects are implemented. |
| 1. Enable, design, and implement long-term regional strategic plans for shoreline protection and armor removal
 | Identify ecologically important areas. | Nearshore protection and restoration projects will prioritize protecting and restoring ecologically important areas. |
| Overlay existing rules, regulations, land uses, ownership, and authorities across the landscape. | Existing shoreline use and regulation is integrated with ecosystem information to support planning processes. |
| Use climate change projections to predict changes to landscape-scale processes and to assess vulnerabilities. | Decision makers can use the best available science to help plan for longer-term impacts along the shoreline. |
| Convene collaborative multi-benefit planning groups. | Regional and local partners are able to leverage planned nearshore restoration projects to remove more shoreline armor or replace with soft shore alternatives. |
| Analyze data to prioritize locations to restore or protect. | Complete and consistent mapping of Puget Sound shoreline attributes allows for regional prioritization of nearshore projects.  |
| Implement plans and priorities: Protect | Un-modified nearshore areas are protected and remain intact. |
| Implement plans and priorities: Restore | Armor removal or the use of habitat improvement techniques restores the processes and function of the nearshore ecosystem. |
| **Shellfish Beds** | **Shellfish** | 1. An upgrade in Samish Bay or Portage Bay shellfish growing areas.

Re-opening or upgrading previously downgraded shellfish growing area.Reversal of declining water quality trends and protection of water quality in shellfish growing areas that are in “threatened” or “concerned” status.Maintaining the status of open shellfish beds classified as “approved” or “conditionally approved.”Preventing and controlling fecal pollution from humans (via onsite septic systems) and animals (livestock) are the priority targeted pollution sources | Protect intact marine ecosystems, particularly in sensitive areas and for sensitive species | Conservation of marine environments that provide sensitive, rare, or unique habitats; culturally and historically important sites; recreational and commercial fisheries; and recreational enjoyment of Puget Sound |
| Control wastewater and other sources of pollution, such as oil and toxics from boats and vessels | Establish No Discharge Zones, associated rule-making, provide sufficient and convenient pump-out capacity, and promote effective outreach and education programs that reduce pollution from vessels. |
| Increase compliance with and enforcement of environmental laws, regulations, and permits | Ensure compliance with environmental laws intended to prevent and control pollution from human and animal fecal pollution sources |
| Target voluntary and incentive-based programs that help working farms contribute to Puget Sound recovery | Programs, guidelines, and technical assistance opportunities that help farmers identify potential pollution impacts from farming activities and implement best management practices (BMPs) to reduce, control, or eliminate pollution. |
| Ensure compliance with regulatory programs designed to reduce, control or eliminate pollution from working farms. | Compliance with programs that control and prevent water pollution from farming activities in order to reduce and/or eliminate nutrient and bacteria discharges from pastures, manure storage facilities and land application of manure and processed waste water into surface water and/or to minimize these from leaching into groundwater. |
| Effectively manage and control pollution from small onsite sewage systems | Programs for onsite sewage systems and state requirements for local health jurisdictions to carry out comprehensive plans that ensure OSS are properly managed to protect public health and sensitive waters. This approach also addresses marine recovery areas (MRAs) with existing onsite sewage systems that are degrading shellfish growing areas or marine waters where low dissolved-oxygen levels or fecal coliform are a concern, or where nitrogen has been identified as a contaminant of concern |
| Improve and expand funding for small onsite sewage systems (OSS) and local OSS programs | Developing reliable sources of funding to support local OSS programs and homeowner assistance programs for repair or replacement of failing onsite sewage systems.  |
| Improve water quality to prevent downgrade and achieve upgrades of important current tribal, commercial and recreational shellfish harvesting areas | Regional and local programs that protect and improve water quality and control pollution, helping to prevent the degradation of healthy shellfish beds and to achieve upgrades of degraded shellfish beds |
| Complete Total Maximum Daily Load (TMDL) studies and other necessary water cleanup plans for Puget Sound to set pollution discharge limits and determine response strategies to address water quality impairments | Implementation of TMDLs |
| Develop and implement local and tribal pollution identification and correction (PIC) programs | Implement local pollution identification and correction programs that determine the causes and sources of water pollution in specific geographical areas, and ensures corrective actions are taken to address the pollution sources and protect Puget Sound marine and fresh water health. |
| Effectively manage and control pollution from large OSS. | Support the DOH’s permit regulations for large OSS systems with flows between 3,500 and 100,000 gallons per day (gpd), and requirements for protection of public health and the environment. |
| 1. *(See Strategy Justification and Shellfish priority table)*
 | Restore and Enhance Native Shellfish Populations | Support efforts to protect and restore native shellfish species focusing on two species: Native Olympia oysters and pinto abalone |
| Ensure environmentally sustainable shellfish aquaculture based on sound science | Support efforts to clarify potential impacts of shellfish aquaculture and help communities build consensus and collaboration on the role of shellfish aquaculture in Puget Sound. |
| Research and Implement monitoring to understand the specific environmental conditions that produce harmful algal blooms (HABs) and pathogen events | Minimize the risks to human health and reduce economic losses to Puget sound fisheries |
| Support and expand marine bio-toxin monitoring | Minimize the risks to human health and reduce economic losses to Puget Sound fisheries. |
| Embrace strategies to address ocean acidifications impact on shellfish. | Minimize the risks to human health and reduce economic losses to Puget Sound fisheries. |
| **Freshwater Quality (BIBI)** | **Stormwater** | 1. Increase local capacity to manage stormwater programs
 | Increase local capacity to manage stormwater programs | Create more support for funding local stormwater programs, or decrease the burden of managing programs. |
| 1. Education and incentives for legacy retrofits
 | Education and incentives for legacy retrofits | Implement strategies to incentivize stormwater retrofits to better match natural hydrologic and water chemistry |
| 1. Facilitate increase use of or performance of BMPs in working/rural lands
 | Facilitate increase use of or performance of BMPs in working/rural lands | Reduce the impact of runoff from working lands |
| 1. Identify strategies and approaches to reduce the impacts from forestry on freshwater quality
 | Identify strategies and approaches to reduce the impacts from forestry on freshwater quality | Reduce runoff and other hydrologic impacts from Forestry |
| 1. Watershed Scale Planning for water quality protection and restoration
 | Watershed Scale Planning for water quality protection and restoration | Develop local land use plans that better protect freshwater quality, and consider how and where to place restoration efforts |
| **Freshwater Quality (Toxics in Fish)** | **Stormwater** | 1. Enhance pollutant reduction programs, corrective measures specifically for pollution source contaminants, and stronger authorities and programs to prevent toxic chemicals from entering Puget Sound.
 | Enhance pollutant reduction programs, corrective measures and increase authorities and programs to prevent toxic chemicals from entering Puget Sound. | Reduce loading to Puget Sound of TIF target contaminants, and explore opportunities to develop chemical action plans for endocrine disrupting target contaminants |
| 1. Address stormwater treatment
 | Address stormwater treatment | Implement or research innovative treatment approaches |
| 1. Provide infrastructure and incentives to accommodate re-development within designated urban centers in urban growth areas.
 | Provide infrastructure and incentives to accommodate re-development within designated urban centers in urban growth areas; | Increase infill to protect water quality and increase the likelihood that developed areas meet new stricter stormwater management requirements  |
| 1. Use a source control approach to assess and regulate local sources of air pollution
 | Use a source control approach to assess and regulate | Reduce air deposition from stationary air pollution sources |
| 1. Continue Toxics in Fish implementation strategy
 | Continue Toxics in Fish implementation strategy | Identify priority strategies to achieve TIF targets |

#

# Vital Sign Regional Priority Approaches Crosswalk

| Regional Priority Approaches | Vital Signs |
| --- | --- |
| MWQ | SSF | CHIN | FP | EST | LDLC | SA | SHELL | BIBI | TIF |
| Development/adaptation of an Implementation Strategy for Marine Water Quality |  |  |  |  |  |  |  |  |  |  |
| Development/adaptation of an Implementation Strategy for Summer Stream Flows |  |  |  |  |  |  |  |  |  |  |
| PSP ADD CHINOOK APPROACHES |  |  |  |  |  |  |  |  |  |  |
| Identify ecologically important areas. |  |  |  | X |  | X | X |  |  |  |
| Overlay existing rules, regulations, land uses, ownership, and authorities across the landscape. |  |  |  | X |  | X | X |  |  |  |
| Identify and address barriers to existing regulation implementation and enforcement. |  |  |  | X |  | X | X |  |  |  |
| Assess where population and urban growth is projected to occur.  |  |  |  | X |  | X |  |  |  |  |
| Use climate change projections to predict changes to landscape-scale processes and to assess vulnerabilities. |  |  |  | X | X |  | X |  |  |  |
| Improve guidance on management practices and the costs of alternative management approaches. |  |  |  |  | X |  | X |  |  |  |
| Increase staff capacity. |  |  |  | X | X | X | X |  |  |  |
|  Address political will. |  |  |  | X | X | X | X |  |  |  |
| Convene collaborative multi-benefit planning groups. |  |  |  | X | X | X | X |  |  |  |
| Analyze data to prioritize locations to restore or protect. |  |  |  | X | X | X | X |  |  |  |
|  Develop and write the plan. |  |  |  | X | X | X | X |  |  |  |
|  Align implementation of or revise regulations. |  |  |  | X | X | X | X |  |  |  |
|  Develop and implement outreach, education, and/or incentive programs. |  |  |  | X | X | X | X |  |  |  |
|  Implement plans and priorities: Protect  |  |  |  | X |  | X | X |  |  |  |
|  Implement plans and priorities: Restore |  |  |  | X | X | X | X |  |  |  |
|  Direct growth away from priority areas. |  |  |  | X | X | X |  |  |  |  |
|  Collect and analyze data to adaptively manage restoration practices. |  |  |  | X | X | X | X |  |  |  |
| Protect intact marine ecosystems, particularly in sensitive areas and for sensitive species |  |  |  |  |  |  |  | X |  |  |
| Control wastewater and other sources of pollution, such as oil and toxics from boats and vessels |  |  |  |  |  |  |  | X |  |  |
| Increase compliance with and enforcement of environmental laws, regulations, and permits |  |  |  |  |  |  |  | X |  |  |
| Target voluntary and incentive-based programs that help working farms contribute to Puget Sound recovery |  |  |  |  |  |  |  | X |  |  |
| Ensure compliance with regulatory programs designed to reduce, control or eliminate pollution from working farms. |  |  |  |  |  |  |  | X |  |  |
| Effectively manage and control pollution from small onsite sewage systems |  |  |  |  |  |  |  | X |  |  |
| Improve and expand funding for small onsite sewage systems (OSS) and local OSS programs |  |  |  |  |  |  |  | X |  |  |
| Improve water quality to prevent downgrade and achieve upgrades of important tribal, commercial & recreational shellfish harvesting areas |  |  |  |  |  |  |  | X |  |  |
| Complete Total Maximum Daily Load (TMDL) studies and other necessary water cleanup plans for Puget Sound to set pollution discharge limits and determine response strategies to address water quality impairments |  |  |  |  |  |  |  | X |  |  |
| Develop and implement local and tribal pollution identification and correction (PIC) programs |  |  |  |  |  |  |  | X |  |  |
| Effectively manage and control pollution from large OSS. |  |  |  |  |  |  |  | X |  |  |
| Restore and Enhance Native Shellfish Populations |  |  |  |  |  |  |  | X |  |  |
| Ensure environmentally sustainable shellfish aquaculture based on sound science |  |  |  |  |  |  |  | X |  |  |
| Research and Implement monitoring to understand the specific environmental conditions that produce harmful algal blooms (HABs) and pathogen events |  |  |  |  |  |  |  | X |  |  |
| Support and expand marine bio-toxin monitoring |  |  |  |  |  |  |  | X |  |  |
| Embrace strategies to address ocean acidifications impact on shellfish. |  |  |  |  |  |  |  |  |  |  |
| Increase local capacity to manage stormwater programs |  |  |  |  |  |  |  |  | X |  |
| Education and incentives for legacy retrofits |  |  |  |  |  |  |  |  | X |  |
| Facilitate increase use of or performance of BMPs in working/rural lands |  |  |  |  |  |  |  |  | X |  |
| Identify strategies and approaches to reduce the impacts from forestry on freshwater quality |  |  |  |  |  |  |  |  | X |  |
| Watershed Scale Planning for water quality protection and restoration |  |  |  |  |  |  |  |  | X |  |
| Enhance pollutant reduction programs, corrective measures and increase authorities and programs to prevent toxic chemicals from entering Puget Sound |  |  |  |  |  |  |  |  |  | X |
| Address stormwater treatment |  |  |  |  |  |  |  |  |  | X |
| Provide infrastructure and incentives to accommodate re-development within designated urban centers in urban growth areas |  |  |  |  |  |  |  |  |  | X |
| Use a source control approach to assess and regulate local sources of air pollution |  |  |  |  |  |  |  |  |  | X |
| Continue Toxics in Fish implementation strategy |  |  |  |  |  |  |  |  |  | X |
| CROSS-CUTTING APPROACHES |
|  |  |  |  |  |  |  |  |  |  |  |
| X-CUTTING TOPICS |
| Ensure that oil spill planning and preparedness protect Puget Sound. |  |  |  |  |  |  |  |  |  |  |
| Ocean acidification |  |  |  |  |  |  |  |  |  |  |
| Climate Change |  |  |  | X | X |  | X |  |  |  |

# Marine Water Quality Regional Priorities

**Vital Sign Target:**

1. There is no 2020 target for the Marine Water Condition Index. However, since the index is designed to show changes in water quality, positive values indicate improved marine water quality, and negative values indicate worse marine water quality relative to the baseline.
2. Human-related contributions of nitrogen do not result in more than 0.2 mg/L reductions in dissolved oxygen levels anywhere in Puget Sound.

**Strategy Overview:**

While substantial reference material exists from which to identify priorities associated with Marine Water Quality (MWQ), no administrative structure (such as a Strategic Initiative Lead) currently exists or is funded that would enable an external group of partners to collaboratively identify these priorities from source material and vet them in time for inclusion in the 2018 Action Agenda Update. In addition, there are other partners may have an interest in or may be best suited to lead in the development of the MWQ Vital Sign, and there is a regional desire to ensure that the most appropriate people are convened to determine the right approach. In addition, there is a desire to make Implementation Strategies the standard pathway for generating Action Agenda regional priorities. Therefore, it has been determined that the regional priority for MWQ will to be develop (or adapt) an Implementation Strategy.  **In addition, NTA owners are encouraged to submit NTAs for priorities associated with the rest of the Area of Focus that would also have a positive impact on MWQ.**

It is assumed and expected that the development or adaptation of this Implementation Strategy will occur in close collaboration with our LIO and tribal partners, as well as with the SI Leads, the EPA, and many others.  In addition, it is assumed and expected that this work will incorporate and consider the robust planning efforts of LIOs and tribes, as well as SI Leads, the EPA, and others.

For more information on the considerations and rationale that supported this decision, please refer to the Partnership’s “Director’s Decision Regarding Regional Priorities for Marine Water Quality and Summer Stream Flow Vital Signs”.

**Marine Water Quality Regional Priorities**

1. Develop or adapt an Implementation Strategy for Summer Stream Flows

| Approach | Desired Outcome | Description/Clarifications | LOCAL CONTEXT |
| --- | --- | --- | --- |
| Policy Needs | Example Actions | Proposal Guidance |
| 1. Develop or adapt an Implementation Strategy for Marine Water Quality
 |
| 1. Development (or adaptation) of an Implementation Strategy for Marine Water Quality
 | Development of a comprehensive regional strategy leads to improved water quality and reductions in human-related contributions of nitrogen. | It is assumed and expected that the development or adaptation of an Implementation Strategy would occur in close collaboration with LIO and tribal partners, as well as with the SI Leads, the EPA, and many others.  In addition, it is assumed and expected that work would incorporate and consider the robust planning efforts of LIOs and tribes, as well as SI Leads, the EPA, and others.   |  |

# Summer Stream Flows Regional Priorities

**Vital Sign Target:** By 2020, meet the following river-specific targets:

1. Maintain stable or increasing flows in highly regulated rivers: Nisqually, Cedar, Skokomish, Skagit, Green.
2. Maintain stable flows in unregulated rivers that currently are stable: Puyallup, Dungeness, Nooksack.
3. Monitor low flow in the Elwha River after dam removal.
4. Restore low flows to bring the Snohomish River from a weakly decreasing trend to no trend.
5. Restore low flows to bring the Deschutes River, North Fork Stillaguamish River, and Issaquah Creek from a strongly decreasing trend to a weakly decreasing trend.

**Strategy Justification:**

While substantial reference material exists from which to identify priorities associated with Summer Stream Flows (SSF), no administrative structure (such as a Strategic Initiative Lead) currently exists or is funded that would enable an external group of partners to collaboratively identify these priorities from source material and vet them in time for inclusion in the 2018 Action Agenda Update. In addition, there are other partners may have an interest in or may be best suited to lead in the development of the SSF Vital Sign, and there is a regional desire to ensure that the most appropriate people are convened to determine the right approach. In addition, there is a desire to make Implementation Strategies the standard pathway for generating Action Agenda regional priorities. Therefore, it has been determined that the regional priority for SSF will to be develop (or adapt) an Implementation Strategy.  **In addition, NTA owners are encouraged to submit NTAs for priorities associated with the rest of the Area of Focus that would also have a positive impact on SSF.**

It is assumed and expected that the development or adaptation of this Implementation Strategy will occur in close collaboration with our LIO and tribal partners, as well as with the SI Leads, the EPA, and many others.  In addition, it is assumed and expected that this work will incorporate and consider the robust planning efforts of LIOs and tribes, as well as SI Leads, the EPA, and others.

For more information on the considerations and rationale that supported this decision, please refer to the Partnership’s “Director’s Decision Regarding Regional Priorities for Marine Water Quality and Summer Stream Flow Vital Signs”.

**Summer Stream Flow Regional Priorities**

1. Develop or adapt an Implementation Strategy for Summer Stream Flows

| Approach | Desired Outcome | Description/Clarifications | LOCAL CONTEXT |
| --- | --- | --- | --- |
| Policy Needs | Example Actions | Proposal Guidance |
| 1. Develop or adapt an Implementation Strategy for SUMMER STREAM FLOWS
 |
| 1. Development (or adaptation) of an Implementation Strategy for Summer Stream Flows
 | Maintaining stable flows where they already occur, and restoring low flows where needed.  | It is assumed and expected that the development or adaptation of an Implementation Strategy would occur in close collaboration with LIO and tribal partners, as well as with the SI Leads, the EPA, and many others.  In addition, it is assumed and expected that work would incorporate and consider the robust planning efforts of LIOs and tribes, as well as SI Leads, the EPA, and others.   |  |

# Chinook Regional Priorities

**Vital Sign Target:**

1. Stop the overall decline and start seeing improvements in wild Chinook abundance in two to four populations in each biogeographic region.

**Strategy Justification:**

*This includes a short paragraph providing the context and story for what we are trying to do for this VS over the next four years with our selected priorities. This may include barriers or gaps.*

**Coming soon.**

**Chinook Regional Priorities**

| Approach | Desired Outcome | Description/Clarifications | LOCAL CONTEXT |
| --- | --- | --- | --- |
| Policy Needs | Example Actions | Proposal Guidance |
|  |
|  |  |  |  |  |  |
|  |  |  |
|  |  |  |
| 1. Design and identify multiple-benefit solutions and strategies
 |  |
|  |  |  |  |  |  |

# Floodplains Regional Priorities

**Vital Sign Target:**

1. Restore, or have projects underway to restore, 15 percent of degraded Puget Sound floodplain area.
2. Have no net loss of floodplain function in any watershed relative to a 2011 baseline

**Strategy Justification:**

Floodplains are ecologically important areas in the Puget Sound region. It is the intent of this strategy to restore and protect floodplain functions whenever possible to maintain the standard of fishable, swimmable, drinkable waterways. The priority strategies listed below attempt to guide floodplains work at a regional level while providing flexibility for local implementation. In this stepwise structure, the strategy to decrease floodplain conversion to development is best achieved by creating the enabling conditions necessary for strategic work, then designing solutions and strategies on a project level, and finally implementing those solutions. This structure allows communities to discuss the balance between ecological and economic services provided in the area and develop strategic and collaborative solutions.

The Floodplains Implementation Strategy ***prioritizes 17 floodplains*** contributing to the Vital Sign target for protecting existing floodplain function and restoring lost function to maintain the standard of fishable, swimmable, drinkable waterways. These 17 largest river channels are the: Cedar, Deschutes, Dungeness, Elwha, Green-Duwamish, Hood Canal, Nisqually, Nooksack, Puyallup, Sammamish, Sauk, Skagit, Skokomish, Skykomish, Snohomish, Snoqualmie, and Stillaguamish. **Projects proposed within the 17 priority floodplains will be prioritized because they can contribute the most to the regional Vital Sign.**

**Floodplain Regional Priorities**

1. Enable greater local planning capacity to address restoration and protection
2. Design and identify multiple-benefit solutions and strategies
3. Implement multiple-benefit projects developed through reach-scale planning processes

| Approach | Desired Outcome | Description/Clarifications | LOCAL Context |
| --- | --- | --- | --- |
| Policy Needs | Example Actions | Proposal Guidance |
| 1. Enable greater local planning capacity to address restoration and protection
 |  |
| 1. Identify ecologically important areas
 | Reach-scale planning will prioritize protecting and restoring ecologically important areas in floodplains. | Develop a shared definition of “ecologically important areas” as it relates to floodplains. | * Identify important local hydrology and geomorphological processes and supporting areas.
* Create a vision for which reaches to prioritize further study and assess for high impact ecological value where work can occur.
 | Cite datasets and protocols that will be used.* Consider using 2015 NAIP or LIDAR data
* Work with PSP to delineate tiers of degradation within a shared dataset.
 |  |
| 1. Overlay existing rules, regulations, land uses, ownership, and authorities across the landscape
 | Multi-benefit floodplain planning is grounded in local regulatory and land use context. |  | * Verify and map existing land use designations.
 | * Reference and crosswalk local plans or regulations & how they deal differently with floodplains.
* If applicable, use Dept. of Commerce zoning data to delineate land use areas.
 |  |
| 1. Identify and address barriers to existing regulation implementation and enforcement (3)
 | Existing mechanisms to reduce development in floodplains are used more effectively. | Improve stringency, efficiency, and effectiveness of regional permitting processes in floodplains. | * Investigate the role of state and federal standards on the incentives and regulations in floodplain development.
* Investigate the long-term cost of disaster response and levee repairs.
* Integrate floodplain planning guidance on Nation Flood Insurance Program, Clean Water Act Section 404, levee standards, Shoreline Management Act, and Growth Management Act.
 | * Include citations of existing plans, permitting processes, or regulations that will be discussed and proposed opportunities for alignment or efficiencies.
 |  |
| 1. Assess where population and urban growth is projected to occur
 | Multi-benefit planning will be able to address and account for regional population growth. |  | * Develop population growth projections in floodplains
 | * Consider partnerships that bundle data analysis with an application or implementation effort.
* Coordinate as appropriate with the Department of Commerce to use appropriate base datasets.
* Consider environmental justice, transportation, and housing affordability implications of urban infill.
 |  |
| 1. Use climate change projections to predict changes to landscape-scale processes and to assess vulnerabilities
 | Planners and stakeholders have access to improved flood risk information | Update the definition of the flood risk to include future probabilities. | * Update climate change projections to strengthen identification of areas at high risk for flooding.
 | * Consider partnerships that bundle data analysis with an application or implementation effort.
* Ensure the information needs of target audience is defined
 |  |
| 1. Increase staff capacity
 | Local communities have the technical expertise and time to facilitate multi-benefit reach-scale planning in floodplains. | * Develop a centralized application process for all floodplains funding sources with regionally supported metrics, goals, and application requirements.
 | * Increase staffing or human capital with adequate training and access to data, research, etc.
* Identify, synchronize, and grow funding mechanisms to support local planning.
 |  |  |
| 1. Address political will.
 | Regulatory staff are supported and encouraged to develop and implement multi-benefit solutions and make protective decisions about floodplain development. | * Regional bodies develop strategies to engage local political actors in supporting regulatory enforcement and implementation.
 | * Educate local leaders on flood and flood risk tolerance projections.
* Develop cost subsidy analyses that show the true cost of developing in a floodplain.
 | * Include what local leaders will be targeted, why, and what strategy will be used to engage them.
* Reference the data sources of projections to be communicated.
* Incorporate climate change projections in flood risk analyses.
 |  |
| Design and identify multiple-benefit solutions and strategies |
| 1. Convene collaborative multi-benefit planning groups
 | Multi-benefit reach-sale plans resulting from collaborative processes have broad support from all relevant stakeholders.  |  | * Develop watershed farm, fish, and flood task forces.
 | * Ensure all relevant stakeholders and tribes are engaged.
* Use Floodplains by Design guidance to convene the group.
* Include facilitation plan and approach for conflict resolution.
* Discuss how enabling factors and barriers have been addressed to allow for successful planning.
 |  |
| 1. Analyze data to prioritize locations to restore or protect
 | Reach-scale planning will prioritize protecting and restoring ecologically important areas in floodplains. |  | * Create analysis of ecologically important lands in floodplains overlaid with lands at high risk for development.
* Identify vulnerable lands to flooding within a city and county to aid in protection and restoration of floodplains.
* Estimate effects of planned build-out on drainage and potential flooding.
 | * Incorporate climate change projections in planning effort
* Include citations of existing plans or data that will be used to help prioritize locations within the floodplain.
* Consider partnerships that bundle data analysis with a local implementation effort.
 |  |
| 1. Develop and write the local plan
 | Multi-benefit, reach-scale floodplain plans guide socially, environmentally, and economically optimal protection of intact floodplains and restoration of floodplain function. | Establish land use goals and needs for each watershed. | * Identify the most important areas to restore or reconnect floodplains or estuaries.
* Consider agriculture, protection, restoration, and flood protection, and other major stakeholder values within the plan.
 | * Incorporate climate change projections and identified vulnerabilities in planning effort.
* Include citations of existing plans or data that will be used to help prioritize locations within the floodplain.
* Discuss how enabling factors and barriers have been addressed to allow for successful planning.
* Discuss how lands suitable for restoration or protection will be identified.
 |  |
| 1. Align implementation of or revise regulations.
 | Regulatory decisions on floodplains are transparent, effective, consistent, and clearly communicated. | * Evaluate opportunities to coordinate permit applications and reviews across regulatory agencies
* Local, state, and federal governments facilitate and support inter- and intra-agency communication and collaboration
 | * Develop forums for regulatory agencies to share information.
 | * Include citations of existing plans, permitting processes, or regulations that will be discussed and proposed opportunities for alignment.
* Discuss how the proposed project will add efficiencies or reduce barriers to implementation in floodplains.
 |  |
| 1. Develop and implement outreach, education, and/or incentive programs. (12)
 | The public and key decision makers have shared knowledge of the integrated floodplain plan- including costs, benefits, and risks of future floodplain development. |  | * Develop training for planning, public works, and public officials on integrated planning guidelines, benefits, and support groups.
* Create and steward monitoring and effectiveness guidance.
* Create infrastructure for regional decision support tools to display and communicate a plan’s effectiveness.
 | * Include citations of existing plans that will be communicated and how you will measure success or effectiveness of work.
* Consider using risk tolerance analysis and cost subsidy analysis to target audiences and foster support.
* Include an effectiveness assessment strategy.
 |  |
| 1. Implement multiple-benefit projects developed through reach-scale planning processes
 |
| 1. Implement plans and priorities: Protect
 | Intact areas of functioning floodplain are prioritized and protected. | Explore opportunities for flexible funding that enables opportunistic acquisitions. | * Land acquisition and conservation easements.
* Communicate effectiveness data and success stories and learning from plan implementation.
 | * Cite reach-scale plan used to identify project.
* Focus on protection of agricultural floodplains that have not been converted.
* Link acquisitions to a cost subsidy analysis that prioritizes critical buy-outs in flood prone areas.
 |  |
| 1. Implement plans and priorities: Restore
 | Floodplain function is restored in priority locations. |  | * Remove hard shoreline infrastructure in floodplains.
* Monitor and evaluate effectiveness of solutions identified and implemented from plans.
* Communicate effectiveness data and success stories and learning from plan implementation.
* Identify opportunities to use soft shoreline techniques, including river deltas.
 | * Cite reach-scale plan used to identify project.
 |  |
| 1. Develop and implement outreach, education, and/or incentive programs. (12)
 | Land owners become stewards of their property and take actions that are protective of floodplains. |  | * Social marketing campaign/incentive program to influence land owners to move flood-vulnerable land out of production.
* Payments for ecosystem services programs targeting floodplain acreage or function.
 | * Cite reach-scale plan used to identify audience and target activities.
* Consider using a social marketing approach that includes target audience analysis, a clear behavior ask, and an effectiveness assessment strategy.
 |  |
| 1. Direct growth away from priority areas
 | Growth, conversion, and development are reduced in floodplains. | Create preferential tax incentives for open land vs. new development in floodplains. | * Improve the implementation of existing regulations and permitting processes regarding Critical Area Ordinances, frequently flooded areas, Shoreline Management Act, and Growth Management Act.
* Include the full cost of emergency measures in the development costs.
* Acquire and remove development rights in floodplain areas and support programs that do so.
* Direct growth away from intact floodplains through regulations and market forces.
 | * For acquisitions: Cite reach-scale plan used to identify project.
 |  |
| 1. Collect and analyze data to adaptively manage restoration practices. (17)
 | Monitoring informs long-term stewardship of projects and adaptive management of multi-benefit plans. |  | * Evaluate habitat response and restoration outcomes to specific design approaches to improve critical design decisions and cost assessments for levee removal.
 | * Use and refer to Floodplains by Design for regional metrics for monitoring.
* In the project budget, consider including funds for Watershed Councils or Conservation Districts to conduct long-term stewardship.
* Monitoring efforts should consider ecological, economic, and social outcomes of plans and projects.
 |  |

# Estuary Regional Priorities

**Vital Sign Indicator Targets:**

1. 7,380 quality acres of estuarine wetlands are restored basin-wide, which is 20% of total estimated restoration need.
2. By 2020, all Chinook natal river deltas meet 10-year salmon recovery goals (or 10% of restoration need as proxy for river deltas lacking quantitative acreage goals in salmon recovery plans).

**Strategy Justification:**

River delta estuaries form where river floodplains meet the sea, creating a unique and important environment where freshwater mixes with salt water and sediments collect. Estuaries are home to a diverse array of specially adapted plants and animals, which take advantage of the fertility there, moving in and out with the tides. Estuaries provide important feeding and resting habitat for young salmon, migratory birds, and many other species that cannot find these unique benefits in any other place in our landscape. Young salmon that spend time in delta estuaries grow faster and are more likely to survive their ocean migration.

The Estuaries Vital Sign Indicator Target is measured across the ***sixteen large river delta estuaries*** in Puget Sound. The majority of estuary habitat in Puget Sound was lost many decades ago with conversion to farmland by developing and maintaining drainage infrastructure. Historically, agricultural deltas were the largest estuaries and are now the greatest opportunity for large additions of estuary acreage of high habitat quality potential (Nooksack, Samish, Skagit, Snohomish, Stillaguamish). The Implementation Strategy for Estuaries Vital Sign Indicator Target ***prioritizes these large agricultural deltas*** and aims to enable and accelerate tidal inundation of land in major agricultural river deltas while minimizing impact and maximizing benefits to farming communities and other stakeholders. Nearshore habitats outside of river deltas (embayments, beaches, etc.) are not included in the Estuaries Vital Sign indicator. However, the Shoreline Armor Regional Priorities addresses nearshore habitats outside of the major river deltas. **Projects proposed within the 16 priority estuaries will be prioritized because they can contribute the most to the regional Vital Sign.**

**Estuary Regional Priorities**

1. Enable greater local planning capacity to develop and implement multi-benefit, delta-scale estuary restoration
2. Design delta-scale, multi-benefit solutions for estuary restoration
3. Implement delta-scale estuary restoration plans to increase tidally inundated areas while meeting the needs of diverse stakeholders

| Approach | Desired Outcome | Description/Clarifications | LOCAL Context |
| --- | --- | --- | --- |
| Policy Needs | Example Actions | Proposal Guidance |
| Estuaries Priority 1: Enable greater local planning capacity to develop and implement multi-benefit, delta-scale estuary restoration |  |
| Use climate change projections to predict changes to landscape-scale processes and to assess vulnerabilities. (5) | Improved delta-scale understanding of sediment and climate change dynamics informs more resilient estuary recovery planning. |  | * Map and model salt water intrusion in context of climate change
* Map and model sediment deposition in the context of climate change.
* Develop a delta-wide interactive geospatial platform for each large agricultural river delta.
 | * Conduct research and syntheses at the time and space scales that are relevant to informing delta-scale planning.
* Indicate who your intended user of the final product will be and include them as a project partner.
* Consider partnerships that bundle data analysis with a local planning effort.
 |  |
| Improve guidance on management practices and the costs of alternative management approaches.  | Multi-benefit plans in estuaries and adjacent lands are based on improved understanding of social, ecological, and economic tradeoffs. | * Develop a combination of quantity and quality targets for farmland that can be used to establish trade-offs between agriculture and conservation goals.
 | * Conduct social, economic, physical and ecological analyses of delta landscape management alternatives.
* Evaluate flood and drainage effects of delta landscape management alternatives.
* Conduct research to improve technical guidance and design decisions of estuary restoration.
 | * Consider partnerships that bundle guidance with a management decision or planning effort.
 |  |
| Increase staff capacity.  | Local estuary planning teams have the expertise, local and regional support structure, and regional vision to enable planning and solution development. | * Develop local, state and federal funding mechanisms to support multi-stakeholder forums.
 | * Develop local estuary teams for planning and solution support.
* Fund staff in rural counties to help interpret and educate potential partners on estuary restoration and protection opportunities.
 | * Address how staff working at the regional level can support and engage in local planning efforts.
 |  |
| Address political will.  | Local decision makers make policy, communication, staffing, and budgetary decisions that devote resources to developing multi-benefit solutions. | * Local, state, and federal agencies develop and communicate coordinated vision for delta landscape management
* Regional bodies develop strategies to engage local political actors in supporting regulatory enforcement and implementation.
 | * Educate local leaders on potential benefits of estuary restoration for agricultural communities.
 | * Include what local leaders will be targeted, why, and what strategy will be used to engage them.
* Reference the data sources of projections to be communicated.
 |  |
| Estuaries Priority 2: Design delta-scale, multi-benefit solutions for estuary restoration |  |
| Convene collaborative multi-benefit planning groups.  | Multi-benefit estuary plans resulting from collaborative processes have broad support from all relevant stakeholders. |  | * Develop multi-stakeholder forums (Note: Existing forums should be sustained and used as model for deltas without existing forums)
 | * Discuss how enabling factors and barriers have been addressed to allow for successful planning.
* Address how conflicts between different stakeholder objectives (e.g. farmland preservation and estuary restoration) can be reduced.
* Include facilitation plan and approach for conflict resolution
 |  |
| Analyze data to prioritize locations to restore or protect.  | Delta-scale analysis will prioritize areas suitable for estuary restoration and agricultural protection. |  | * Identify lands that are at risk for conversion to non-agricultural uses.
* Identify estuary restoration opportunities that have multi-benefit outcomes and develop a prioritized list suitable for long-term planning
 | * Plans should be developed at the delta-scale.
* Incorporate climate change projections in planning effort
* Include citations of existing plans or data that will be used to help prioritize restoration work.
* Consider partnerships that bundle data analysis with a local implementation effort.
 |  |
| Develop and write the plan.  | Delta-scale plans guide socially, environmentally, and economically optimal prioritization of locations to restore tidal inundation or estuary function. |  | * Working with local stakeholder groups and existing environmental plans, identify lands suitable for acquisition and restoration that have the capacity to serve as functional estuarine habitat.
 | * Plans should be developed at the delta-scale.
* Climate change dynamics should be explicitly incorporated into delta-scale plans including but not limited to sea level rise, river flow, and sediment delivery and deposition dynamics.
* Evaluate alternative projects and solutions based upon how restoration actions will affect local infrastructure and operations.
 |  |
| Align implementation of or revise regulations.  | Estuary restoration and agricultural land conservation programs have better alignment and integration. | * Develop new and revise existing funding streams to support multi-benefit projects rather than single benefit outcomes.
 | * Develop reciprocal consultation agreements between farmland protection programs and restoration programs to ensure funding and activities do not inhibit one another.
* Develop mechanisms to improve the efficiency of the project permitting process for restoration.
 | * Include citations of existing plans, permitting processes, or regulations that will be discussed and proposed opportunities for alignment or efficiencies.
 |  |
| Develop and implement outreach, education, and/or incentive programs. (12) | Local stakeholders participate in and/or trust the outcome of the multi-benefit estuary planning process.  | * Leverage existing state and federal programs (e.g. Conservation Districts) to engage the agricultural community
 | * Develop and deliver communications on the specifics of how restoration actions will affect local infrastructure and operations
 | * Ensure the information needs of target audience is defined
 |  |
| Estuaries Priority 3: Implement delta-scale estuary restoration plans to increase tidally inundated areas while meeting the needs of diverse stakeholders. |  |
| Develop and implement outreach, education, and/or incentive programs. (12) | The public and key decision makers understand the value of estuary protection and restoration, and land owners take actions that restore estuaries or protect existing functions. |  | * Develop and implement local education and outreach on restoration plans and prioritization.
* Develop and implement a social marketing campaign/incentive program to influence land owners to move climate and salinity-vulnerable land out of production.
 | * Include citations of existing plans that will be communicated and how you will measure success or effectiveness of the education/outreach effort.
* Explain rationale used to identify audience and target activities.
* Consider using a social marketing approach that includes target audience analysis, a clear behavior ask, and an effectiveness assessment strategy.
 |  |
| Implement plans and priorities: Restore (14) | Increase estuary area by increasing areas with tidal inundation. | * Develop conservation easements for restoration that makes restored estuary habitat a valuable asset for land owners.
* Define problems and develop solutions faced by practitioners trying to leverage diverse funding tools
 | * Implement or acquire land for restoration projects.
* Develop mechanisms to increase flexibility of acquisition approaches.
* Monitor and evaluate effectiveness of restoration projects at both the parcel scale and larger
 | * Include citation of plans being used to select project.
* Include climate change impacts in the restoration design.
* Project and delta-scale monitoring programs should apply standardized regional metrics to evaluate effectiveness if they exist.
 |  |
| Direct growth away from priority areas. (15) | Existing land-use regulations are implemented to reduce land conversion and increase opportunities for estuary restoration in major river deltas. | * Create a funding pool and mechanism to value conversion of private property to functional estuary habitat.
 | * Preserve farmland from development in the select locations without precluding restoration opportunities in the future.
* Develop payments for ecosystem services programs targeting estuary acreage and function.
 | * Include citation of plans being used to select project.
 |  |
| Collect and analyze data to adaptively manage restoration practices. (18) | Conduct ecological, economic and social monitoring and effectiveness evaluation to learn about project and planning successes and failures to of past projects.  |  | * Monitor eelgrass response to tidal wetland restoration projects to evaluate effects of estuary restoration on eelgrass recovery.
* Evaluate habitat response and restoration outcomes to specific design approaches to improve critical design decisions and cost assessments for levee removal.
 | * Project and delta-scale monitoring programs should apply standardized regional metrics to evaluate effectiveness if they exist.
* Monitoring efforts should consider ecological, economic, and social outcomes of plans and projects.
 |  |

# Land Cover and Development Regional Priorities

**Vital Sign Indicator Targets:**

1. ***Conversion of ecologically important lands***: Loss of vegetation cover on indicator land base over a 5-year period does not exceed 0.15% of the 2011 baseline land area.
2. ***Forest Loss***: The average annual loss of forested land cover to developed land cover in non-federal lands does not exceed 1,000 acres per year, as measured with Landsat-based change detection.
3. ***Riparian vegetation restoration***: Restore 268 miles of riparian vegetation or have an equivalent extent of restoration projects under way.
4. ***Growth in Urban Growth Areas (UGAs)***: The proportion of basin-wide growth occurring within urban growth areas is at least 86.5 percent (equivalent to all counties exceeding their population growth goals by 3 percent), with all counties showing an increase over their 2000−2010 percentage.

**Strategy Justification:**

The land surrounding Puget Sound is home to 4 million people who live, work, and play in our region. The need for homes, businesses, roads, and agriculture must be balanced with ecosystem protection. Forest and riparian areas provide important habitat for many species and reduce the rate of polluted runoff flowing into Puget Sound. Land development and cover indicators measure how well we are directing our region’s ongoing growth to protect our best remaining natural areas and working forests.

**Land Cover and Development Regional Priorities**

1. ENABLE PROTECTION AND PLANNING BY ADDRESSING INFORMATION NEEDS ON THE MOST ECOLOGICALLY IMPORTANT AREAS.
2. DESIGN INTEGRATED STRATEGIES THAT PROTECT AND RESTORE CRITICAL ECOLOGICAL FUNCTIONS
3. IMPLEMENT INTEGRATED STRATEGIES AND POLICIES TO PROTECT AND RESTORE ECOLOGICALLY IMPORTANT LANDS

| Approach | Desired Outcome | Description/Clarifications | LOCAL COntext |
| --- | --- | --- | --- |
| Policy Needs | Example Actions | Proposal Guidance |
| Land Development and Cover Priority 1: Enable protection and planning by addressing information needs on the most ecologically important areas. |
| Identify ecologically important areas. (1) | Planners and decision-makers improve clarity and implementation of policies and programs that protect ecologically important lands. | Develop a shared definition of “ecologically important areas”. | * Develop policy and planning approaches to reconcile and simplify efforts to effectively use and define critical areas, sensitive lands, and ecologically important lands.
 | * Identify interpretations or definitions of critical areas and ecologically important lands.
* Consider using a multidisciplinary approach to characterize ecologically important areas by incorporating existing definitions of “ecologically important”.
 |  |
| Overlay existing rules, regulations, land uses, ownership, and authorities across the landscape (2) | Regulations and programs for ecologically important lands are clarified, harmonized, and informed by land use, population growth, and land conversion information. . |  | * Determine the lands at risk of conversion by aligning the Urban Growth Areas with watershed characterization data and salmon recovery planning to identify solutions to various risks.
* Compile and contrast how different jurisdictions interpret, analyze, and apply critical areas.
 | * Consider mapping areas of land cover under high pressure for development (i.e. High Resolution Change Detection data available via WDFW) with watershed characterization and population growth projections.
* Consider applying existing tools jointly such as the Ecology PS Watershed Characterization and Commerce Permit Mapping.
 |  |
| Identify and address barriers to existing regulation implementation and enforcement. (3) | Implementation of existing policy reduces conversion of ecologically important lands. | Identify barriers to urban infill. | * Develop recommendations on how to improve the local implementation of the Growth Management Act (GMA), especially the requirement to identify open space corridors within and between Urban Growth Areas.
* Analyze and communicate the implementation of GMA to improve the local process.
 | * Consider supporting co-ownership of growth management between local and state entities.
 |  |
| Assess where population and urban growth is projected to occur. | Identification of areas under pressure for conversion to development informs strategic multi-benefit planning and prioritization. |  | * Develop population growth projections outside of Urban Growth Areas.
* Identify and map areas suitable for development within Urban Growth Areas.
 | * Consider partnerships that bundle data analysis with an application or implementation effort.
* Coordinate as appropriate with the Department of Commerce to use appropriate base datasets.
* Consider environmental justice, transportation, and housing affordability implications of urban infill.
 |  |
| Increase staff capacity. | Dedicated local government staff are resourced and empowered to monitor and adaptively manage land use regulation effectiveness.  | * Funding is made available to support dedicated staff time for monitoring and adaptive management.
* Governments implement Dept. of Commerce adaptive management chapter guidance.
 | * Develop and deliver trainings to local staff about tools to assess and monitor land use patterns.
 | * Refer to Dept. of Commerce adaptive management guidance.
 |  |
| Address political will. | Local decision makers are empowered to protect ecologically important areas. |  | * Educate decision makers about ecosystem services of ecologically important areas.
* Quantify the ecosystem services of ecologically important areas.
 | * Include what local leaders will be targeted, why, and what strategy will be used to engage them.
* Reference the data sources to be communicated.
 |  |
| Land Development and Cover Priority 2: Design integrated strategies that protect and restore critical ecological functions |
| Convene collaborative multi-benefit planning groups. (8) | Shared strategies for protection of ecologically important lands resulting from collaborative processes have broad support from all relevant stakeholders. |  | * Develop multi-stakeholder forums
 | * Discuss how enabling factors and barriers have been addressed to allow for successful planning.
* Existing forums should be sustained and used as model for areas without existing forums.
* All relevant stakeholders affected by the plan should be engaged in the planning process.
 |  |
| Analyze data to prioritize locations to restore or protect. (9) | Protection policies and programs for ecological important lands are based on data-driven prioritization and decision support. |  | * Develop decision support tools to understand drivers of past, present and future land use change.
* Consolidate and share data on ecologically important lands and water among local, state, and federal planning agencies and natural resource managers.
* Develop a natural resources asset management program
 | * Consider including current conditions data (i.e. Regional Open Space Strategy data), land use change data, land cover change (i.e. High Resolution Change Detection data available via WDFW), designated areas of growth, ecologically important lands, conservation models, climate change projections, and identification of local law protection needs in the analysis.
* Consider partnerships that bundle data analysis with a local implementation effort (for example, incorporating prioritized areas in the SMP update).
 |  |
| Develop and write the plan. (10) | Landscape-scale strategies prioritize ecologically important lands for protection. |  | * Develop ecosystem services metrics and values.
 | * Reference and describe the multi-stakeholder planning process used to generate the plan.
* Consider areas sensitive for retaining vegetation.
* Consider creating protections for ecological functions.
 |  |
| Align implementation of or revise regulations. (11) | Alignment of regional and local applications of the regulations on growth management improves protection of ecologically important areas.  | * Revise/update CAO based on plan or recommendations.
* Enact recommendations on improving Growth Management Act implementation such as restore funding to support county GMA planning.
 | * Use Transfer Development Rights (TDP) and Protect Development Rights (PDR) programs to target the objectives.
 | * Consider protecting the quality and extent of ecologically important lands using Critical Area Ordinances, Shoreline Master Programs, Growth Management Act, and current regulations.
 |  |
| Land Development and Cover Priority 3: Implement integrated strategies and policies to protect and restore ecologically important lands |
|  Develop and implement outreach, education, and/or incentive programs. (12) | The public and key decision makers understand why it is important to protect ecologically important lands and the value of landscape-scale strategies and policies. |  | * Create communication materials (such as a story map) of places where land cover change is monitored and permit compliance is improved.
* Support and protect working lands, including incentives for forest and farmland landowners.
* Social marketing campaign/incentive program to shape market forces and societal behavioral change.
 | * Include how you will measure success or effectiveness of work.
* Consider using a social marketing approach that includes target audience analysis, a clear behavior ask, and an effectiveness assessment strategy.
 |  |
| Implement plans and priorities: Protect (13) | Existing regulations are implemented to protect ecologically important lands.  | State and federal agencies develop mechanisms to provide regulatory assistance to local governments for compliance and enforcement of current regulations. | * Support the development and implementation of Voluntary Stewardship Programs (VSP) to protect and enhance critical areas while preserving the long-term viability of agricultural lands.
 | * Consider a no waiver policy
* Consider future growth and climate projections
* Cite plan/report that will be used
* Reference integrated planning process, partners engaged, and resulting strategic plan that prioritize the proposed activity in the proposed geography.
 |  |
| Implement plans and priorities: Restore (14) | Functional riparian habitat is improved based on implementation of integrated planning efforts. |  | * Tree or shrub plantings in riparian corridors
* Establish conservation easements or acquire priority riparian habitat.
 | * Address at the catchment or sub-basin scale.
* Reference integrated planning process, partners engaged, and resulting strategic plan that prioritize the proposed activity in the proposed geography.
 |  |
| Direct growth away from priority areas. (15) | Tax and infrastructure incentives for infill and redevelopment decrease land development in ecologically important areas. | Increase affordable housing availability working with land trusts and non-profit housing coalitions. | * Large-scale urban renewal projects to accommodate higher populations
 | * Coordinate with transit planning.
* Consider how to expand existing models of targeted growth centers Sound-wide.
* Discuss how social, racial, and environmental justice implications of housing availability and affordability will be addressed.
 |  |
| Collect and analyze data to adaptively manage restoration practices. (18) | Local governments are able to assess effectiveness of land use regulations.  | Develop a regional accountability framework for land use regulation effectiveness. | * Develop a data clearinghouse suitable for assessing land use patterns.
* Develop a decision-support tool to assess and communicate effectiveness of land use regulations based on land use change patterns.
* Evaluate existing watershed-scale plans for lessons learned.
 | * Use Dept. of Commerce’s adaptive management guidance to inform data collection and adaptive management.
* Use High Resolution Change Detection data available via WDFW.
 |  |

# Shoreline Armoring Regional Priorities

**Vital Sign Target:**

1. From 2011 to 2020, the total amount of armoring removed should be greater than the total amount of new armoring in Puget Sound (total miles removed is greater than the total miles added).
2. Feeder bluffs receive strategic attention for removal of existing armoring and avoidance of new armoring.
3. Soft shore techniques are used for all new and replacement armoring, unless it is demonstrably infeasible.

**Strategy Justification:**

Puget Sound’s 2,500 miles of shoreline are among the most valuable and fragile of our natural resources. A dynamic area where land and marine ecosystems meet, the shoreline is constantly changing with the action of wind, waves, tides, and erosion. These same shaping forces are also the reason why people often build bulkheads or other structures to harden the shoreline. Indeed, more than 25% of the shoreline has been armored to protect public and private property, ports and marinas, roads and railways, and other uses. Shoreline armoring, the practice of constructing bulkheads (also known as seawalls) and rock revetments, disrupts the natural process of erosion, which supplies much of the sand and gravel that forms and maintains our beaches. Erosion also creates habitat for herring, surf smelt, salmon, and many other species in Puget Sound. Over time, shoreline armoring may cause once sandy beaches to become rocky and sediment starved, making them inhospitable to many of our native species. The shoreline armoring Vital Sign indicator tracks changes in the total amount of shoreline armor in the nearshore, marine environment.

**Shoreline Armoring Regional Priorities**

1. ENABLE AND SUPPORT MORE EFFECTIVE IMPLEMENTATION OF EXISTING REGULATIONS TO PROTECT AND RESTORE HEALTHY SHORELINES
2. ENABLE, DESIGN, AND IMPLEMENT COASTAL PROCESSES-BASED DESIGN AND TECHNICAL TRAINING
3. SHORELINE ARMORING PRIORITY 3: ENABLE STEWARDSHIP OF HEALTHY SHORELINES THROUGH INCENTIVES AND EDUCATION FOR HOMEOWNERS
4. SHORELINE ARMORING PRIORITY 4: ENABLE, DESIGN, AND IMPLEMENT LONG-TERM REGIONAL STRATEGIC PLANS FOR SHORELINE PROTECTION AND ARMOR REMOVAL

| Approach | Desired Outcome | Description/Clarifications | Local Context |
| --- | --- | --- | --- |
| Policy Needs | Example Actions | Proposal Guidance |
| Shoreline Armoring Priority 1: Enable and support more effective implementation of existing regulations to protect and restore healthy shorelines |
| Identify and address barriers to existing regulation implementation and enforcement. (3) | Illegal armor decreases and permits achieve most protective outcomes via compliance monitoring and enforcement. |  | * Implement compliance monitoring and enforcement programs.
* Develop multi-agency partnerships to improve field review of projects before, during and after construction.
* Establish mobile, regional, technical teams able to assist in local permitting decisions.
* Design and implement monitoring protocols able to broadly assess the efficacy of recently updated SMPs at achieving no net loss
* Conduct shoreline armor baseline inventories
 | * Use and implement existing recommendations (e.g. TACT report).
* Use successful pilot projects as a model (e.g. TACT report checklists for permit review; e.g. King County WRIA 9 compliance monitoring project)
* Compliance monitoring should consider what questions are most relevant to improving implementation and enforcement (e.g. quantifying type of permit violation and impact of permit violation)
 |  |
| Increase staff capacity. (7) | Regulatory staff have training and access to technical resources and experts to efficiently implement and enforce existing regulations. | * Local governments are adequately staffed and able to encourage and support protective permitting decisions.
 | * Increase training and technical support for local regulatory staff.
* Develop peer-to-peer forums to share information and lessons.
* Establish mobile, regional, technical teams able to assist in local permitting decisions.
 | * Consider opportunities to collaborate across jurisdictions and regulatory agencies.
* Use existing programs as a model (e.g. Coastal Training Program)
* Use best available guidance (e.g. Soft Shore Stabilization; Ecology guidance for SMP planning; Marine Shoreline Design Guidelines)
 |  |
| Align implementation of or revise regulations. (11) | Regulatory decisions on shoreline permits are transparent, effective, consistent, and clearly communicated. | * Update the Hydraulic Code to be consistent with the Shoreline Management Act language regarding Single Family Residences.
 | * Develop forums for regulatory agencies to share information.
* Local, state, and federal governments facilitate and support inter- and intra-agency communication and collaboration
* Develop a restoration permitting process.
* Evaluate opportunities to coordinate permit applications and reviews across regulatory agencies
 | * Consider engaging existing policy advisory bodies to develop policy solutions.
 |  |
| Address political will. (17) | Regulatory staff are supported and encouraged to require most protective outcomes for nearshore ecosystems. | * Regional bodies develop strategies to engage local political actors in supporting regulatory enforcement and implementation.
 |  |  |  |
| Shoreline Armoring Priority 2: Enable, design, and implement coastal processes-based design and technical training |
| Improve guidance on management practices and the costs of alternative management approaches. (6) | Armor removal and soft shore protection projects are more feasible for implementation.  |  | * Develop complementary and supporting guidance to the Marine Shoreline Design Guidelines such as guidance to support geotechnical assessments, protocols for adaptive management, a framework to evaluate economic costs of alternative shoreline design options, or risk criteria to assess alternative designs.
 | * Ensure both the audience/intended users are engaged to develop the guidance.
* Develop technical and practical guidance.
* If proposing an economic study: Consider both the immediate construction and lifetime maintenance costs.
 |  |
| Develop and implement outreach, education, and/or incentive programs. (12) | Increased practitioner expertise in site assessment, armor removal, and soft shore design increases implementation of the most protective shoreline management options.  | * Develop certification and liability standards for training programs
 | * Develop programmatic framework for technical trainings.
* Deliver technical trainings to target audiences.
 | * If developing training materials, consider a partnership to pilot use of the materials.
* Consider incentives for target audience to participate such as developing a certification program.
* Consider liability concerns and ongoing technical support needs.
* Include a plan to measure effectiveness and adaptively update training program based on results.
 |  |
| Implement plans and priorities: Protect (13) | Practitioners use alternative management practices that protect infrastructure without shoreline armor. |  | * Develop and implement management plans for public and private lands that protect natural shoreline while addressing existing infrastructure and safety concerns
 | * Use best management practices and guidance as developed (e.g. Marine Shoreline Design Guidelines)
* Under this priority, projects should be field tests of improved designs or practitioner fieldwork to practice/verify skills learned during trainings (e.g. for certification or to graduate the course).
* Conduct pre- and post- monitoring on ecosystem effects, design, and property owner satisfaction.
 |  |
| Implement plans and priorities: Restore (14) | Practitioners implement removal projects and, if needed, replace with soft shore protection.  |  | * Implement removal projects on public and private lands
 | * Use and reference best management practices and guidance as developed (e.g. Marine Shoreline Design Guidelines)
* Conduct pre- and post- monitoring on ecosystem effects, design, and property owner satisfaction.
* Under this priority, projects should be field tests of improved designs or practitioner fieldwork to practice/verify skills learned during trainings (e.g. for certification or to graduate the course).
* Conduct pre- and post- monitoring on ecosystem effects, design, and property owner satisfaction.
 |  |
| Collect and analyze data to adaptively manage restoration practices. (18) | Improved armor removal and soft shore designs produce better ecosystem and human outcomes. |  | * Evaluate implemented armor removal and soft shore projects in order to improve designs and design guidance.
* Develop data repository for monitoring data.
* Develop protocols for synthesizing data and updating design and guidance materials.
 | * Use and reference Shoreline Monitoring Toolbox (Washington Sea Grant) protocols for measuring ecosystem responses
* Account for site attributes and design type in data repository and evaluation approach.
* Focus on developing protocols suitable for assessing outcomes from a design or engineering perspective.
* Discuss how data will be used to modify management decisions, update contractor trainings, or improve permitting process. Consider partnerships towards this end.
 |  |
| Shoreline Armoring Priority 3: Enable stewardship of healthy shorelines through incentives and education for homeowners |
| Develop and implement outreach, education, and/or incentive programs. (12) | Homeowners become stewards of their property and take actions to support healthy shorelines. | * Develop long-term sustained funding for existing education and incentive programs.
* Develop and implement financial incentives to support homeowners taking conservation or restoration actions
 | * Continue and expand programs focusing on homeowner site visits and technical assistance.
* Continue and expand design and permit assistance for homeowners
* Develop a series of case studies to showcase armoring removal success stories that is suitable for the homeowner audience.
* Conduct demonstration tours
* Promote existing green shoreline certification and recognition programs.
 | * Use trusted organizations and individuals in the community to implement the programs.
* Consider modeling new efforts after existing education and incentive programs.
* Propose new programs only in areas without an existing education and incentive strategy; otherwise, build on existing efforts.
* Consider implementation in neighborhood-scale, multi-parcel clusters.
 |  |
| Implement plans and priorities: Protect (13) | Agreements are implemented that protect unarmored shoreline from armoring. |  | * Establish conservation easements or acquire unarmored shoreline.
 | * Demonstrate site prioritization based on ecosystem processes at both regional and local scale.
* Consider implementation in neighborhood-scale, multi-parcel clusters.
* Conduct pre- and post- monitoring on ecosystem effects, design, and property owner satisfaction.
* Use best management practices and guidance as developed (e.g. Marine Shoreline Design Guidelines)
 |  |
| Implement plans and priorities: Restore (14) | Armor removal and soft shore replacement projects are implemented. | * Develop long-term sustained funding for existing education and incentive programs.
 | * Provided design, permit, and financial assistance incentives for homeowners to implement removal or soft shore replacement projects.
 | * Demonstrate site prioritization based on ecosystem processes at both regional and local scale.
* Consider implementation in neighborhood-scale, multi-parcel clusters.
* Conduct pre- and post- monitoring on ecosystem effects, design, and property owner satisfaction.
* Use best management practices and guidance as developed (e.g. Marine Shoreline Design Guidelines)
 |  |
| Shoreline Armoring Priority 4: Enable, design, and implement long-term regional strategic plans for shoreline protection and armor removal |
| Identify ecologically important areas. (1) | Nearshore protection and restoration projects will prioritize protecting and restoring ecologically important areas. | * Develop a shared definition for “ecologically important areas” as it relates to the nearshore.
 | * Collect relevant data and overlay current and historic biological uses of the nearshore environment.
* Map shoreline geomorphology and associated geologic features (i.e. feeder bluffs).
* Conduct process-based monitoring at the drift cell scale related to functions of the nearshore and "thresholds" of percent armored
 | * Cite proposed datasets and/or protocols to be used
* Priority given to proposals that use protocols/techniques that have already been used in the region or proposals that are easily scalable.
* Priority given to projects that are able to map large areas or can justify importance of a smaller area.
 |  |
| Overlay existing rules, regulations, land uses, ownership, and authorities across the landscape. (2) | Existing shoreline use and regulation is integrated with ecosystem information to support planning processes. |  | * Develop up-to-date, geospatial shoreline armor inventory including armor attributes (e.g. elevation, type)
* Overlay biological and physical attributes and shoreline armoring with SMP zoning and similar regulations.
 | * Use protocols and criteria established through the Partnership Indicator Improvement process
* Cite proposed datasets and/or protocols to be used.
* Use existing SMP data layers when feasible
* Priority given to projects that are able to incorporate sea level rise projections.
 |  |
| Use climate change projections to predict changes to landscape-scale processes and to assess vulnerabilities. (5) | Decision makers can use the best available science to help plan for longer-term impacts along the shoreline. | * Work with the legislature to develop a budget to remove or relocate derelict infrastructure or structures as shorelines begin to change.
 | * Improve the resolution and accuracy of sea level rise or storm surge forecasts in Puget Sound.
* Identify vulnerable and aging infrastructure that may be susceptible to sea level rise or damaged by storm surge.
* Assess the vulnerability of unarmored shorelines to becoming armored as sea level rises.
* Create a forum to discuss and develop an emergency preparedness plan or toolkit as it relates to abrupt sea level change due to a major earthquake or large and intense storms.
 | * Cite proposed datasets and/or protocols to be used
* Clearly identify proposed partners and how final products will be used as a communication tool.
 |  |
| Convene collaborative multi-benefit planning groups. (8) | Regional and local partners are able to leverage planned nearshore restoration projects to remove more shoreline armor or replace with soft shore alternatives. | * Allocate staff time and resources for participation in inter-agency and intra-agency coordination efforts.
* Scale-up successful pilot projects into regional programs
 | * Develop or improve workshops, forums, newsletters, or websites able to promote nearshore project networking, coordination and showcase success stories throughout the region.
* Develop a library of successful projects that were able to leverage resources or projects to improve the ecosystem outcomes.
* Develop a communication strategy to engage large, industrial shoreline users in nearshore restoration.
 | * Consider convening public works departments; state and federal transportation departments; private landowners, local, state, federal, and non-profit restoration organizations
 |  |
| Analyze data to prioritize locations to restore or protect. (9) | Complete and consistent mapping of Puget Sound shoreline attributes allows for regional prioritization of nearshore projects.  | * Develop a regional agreement on how to prioritize nearshore habitat protection and restoration.
 | * Quantify the impact shoreline armoring has on nearshore habitat that is, or was historically used, by protected and important species.
 | * Cite proposed datasets and/or protocols to be used
* Consider partnerships that bundle data analysis with local implementation efforts (e.g. a social marketing strategy).
* Demonstrate that the necessary partners are involved for regional support of the prioritization
 |  |
| Implement plans and priorities: Protect (13) | Un-modified nearshore areas are protected and remain intact. |  | * Establish conservation easements or acquire unarmored shoreline.
 | * Described site contribution to drift cell function and key species habitats
* Reference local or regional prioritization for the site
 |  |
| Implement plans and priorities: Restore (14) | Armor removal or the use of habitat improvement techniques restores the processes and function of the nearshore ecosystem. |  | * Implement projects to remove armor or restore nearshore ecosystem function through soft shore protection
 | * Use best available guidance site assessment, project design and implementation (e.g. Marine Shoreline Design Guidelines)
* Described site contribution to drift cell function and key species habitats
* Reference local or regional prioritization for the site
 |  |

# Shellfish Regional Priorities

**Vital Sign Indicator:**

1. The indicator for the Shellfish Beds Vital Sign is the acres of harvestable shellfish beds.

**Vital Sign Target:**

1. A net increase of 10,800 acres of harvestable shellfish acres between 2007 and 2020, including 7,000 acres where harvest had been prohibited.

**Strategy Justification:**

There are approximately 225,000 acres of classified commercial and recreational shellfish beds around Puget Sound. However, an estimated 16% are closed due to pollution, most of which comes from fecal bacterial from humans, livestock and pets. The 10,800 acre target underscores the need to restore and upgrade areas affected by fecal pollution while also protecting those areas that current open for harvest. Fecal bacteria pollution is a major barrier to achieving the Shellfish Bed Vital Sign target.

The following regional priorities and approaches describe both strategies intended to reduce or prevent fecal coliform bacterial pollution of shellfish beds and strategies that are more broadly important to shellfish recovery but either indirectly or not related to fecal coliform pollution and the acreage target. In keeping with that distinction, approaches 1.1- 1.11 correspond with what was previously identified as tier one sub-strategies. The remaining priorities and approaches were previously identified as tier two sub-strategies and recommended by the Shellfish Strategic Initiative Advisory Team as such – do not directly correspond to the priority approaches described in the Shellfish Bed Implementation Strategy but are rather are recognized as important strategies for shellfish recovery more broadly (SHELL2.1-2.5).

**Overarching Shellfish Regional Priorities (SHELL1)**

1. An upgrade in Samish Bay or Portage Bay shellfish growing areas.

Re-opening or upgrading previously downgraded shellfish growing areas (including commercial, tribal and recreational growing areas).

Reversal of declining water quality trends and protection of water quality in shellfish growing areas that are in “threatened” or “concerned” status.

Maintaining the status of open shellfish beds classified as “approved” or “conditionally approved.”

Preventing and controlling fecal pollution from humans (via onsite septic systems) and animals (livestock) are the priority targeted pollution sources.

| Approach | Desired Outcome | Description/Clarifications |  |
| --- | --- | --- | --- |
| Policy Needs | Example Actions | Proposal Guidance | LOCAL CONTEXT |
| SHELL1. An upgrade in Samish Bay or Portage Bay shellfish growing areas.  Re-opening or upgrading previously downgraded shellfish growing areas (including commercial, tribal and recreational growing areas).  Reversal of declining water quality trends and protection of water quality in shellfish growing areas that are in “threatened” or “concerned” status.  Maintaining the status of open shellfish beds classified as “approved” or “conditionally approved.” Preventing and controlling fecal pollution from humans (via onsite septic systems) and animals (livestock) are the priority targeted pollution sources. |
| 1. Protect intact marine ecosystems, particularly in sensitive areas and for sensitive species
 | Conservation of marine environments that provide sensitive, rare, or unique habitats; culturally and historically important sites; recreational and commercial fisheries; and recreational enjoyment of Puget Sound |  |  |
| 1. Control wastewater and other sources of pollution, such as oil and toxics from boats and vessels
 | Establish No Discharge Zones, associated rule-making, provide sufficient and convenient pump-out capacity, and promote effective outreach and education programs that reduce pollution from vessels. | Actions should focus on fecal pollution from vessels. |  |
| 1. Increase compliance with and enforcement of environmental laws, regulations, and permits
 | Ensure compliance with environmental laws intended to prevent and control pollution from human and animal fecal pollution sources |  |  |
| 1. Target voluntary and incentive-based programs that help working farms contribute to Puget Sound recovery
 | Programs, guidelines, and technical assistance opportunities that help farmers identify potential pollution impacts from farming activities and implement best management practices (BMPs) to reduce, control, or eliminate pollution. | Working farms are places, both large and small, where agricultural activities occur. |  |
| 1. Ensure compliance with regulatory programs designed to reduce, control or eliminate pollution from working farms.
 | Compliance with programs that control and prevent water pollution from farming activities in order to reduce and/or eliminate nutrient and bacteria discharges from pastures, manure storage facilities and land application of manure and processed waste water into surface water and/or to minimize these from leaching into groundwater. | Actions should focus on bacterial discharge. Working farms are places where agricultural activities occur and are not based on the size or number of animals. Strategies to improve compliance with water quality protection by permitted CAFOs and dairies (DNMP) should be considered but non-point sources (pasture based, hobby and small livestock operations) should not be overlooked and need to be held accountable for their contributions. |  |
| 1. Effectively manage and control pollution from small onsite sewage systems
 | Programs for onsite sewage systems and state requirements for local health jurisdictions to carry out comprehensive plans that ensure OSS are properly managed to protect public health and sensitive waters. This approach also addresses marine recovery areas (MRAs) with existing onsite sewage systems that are degrading shellfish growing areas or marine waters where low dissolved-oxygen levels or fecal coliform are a concern, or where nitrogen has been identified as a contaminant of concern. | Actions should focus on fecal coliform concerns. |  |
| 1. Improve and expand funding for small onsite sewage systems (OSS) and local OSS programs
 | Developing reliable sources of funding to support local OSS programs and homeowner assistance programs for repair or replacement of failing onsite sewage systems.  | The intent of this approach is to encourage development of NTAs that will result in sustainable funding for the following: * Local management of OSS programs, including advancement of the OSS target (e.g.: document the OSS, achieve compliance with inspections, and identify and repair or replace failures in areas with shellfish growing areas)
* OSS financial assistance programs in areas with shellfish growing areas.
* Identify and designate areas where enhanced OSS management is needed.
 |  |
| 1. Improve water quality to prevent downgrade and achieve upgrades of important current tribal, commercial and recreational shellfish harvesting areas
 | Regional and local programs that protect and improve water quality and control pollution, helping to prevent the degradation of healthy shellfish beds and to achieve upgrades of degraded shellfish beds | This approach can be used to address wastewater treatment plant (WWTP) upgrades, outfall changes, and other wastewater or stormwater infrastructure improvements or planning. Actions should focus on fecal coliform. |  |
| 1. Complete Total Maximum Daily Load (TMDL) studies and other necessary water cleanup plans for Puget Sound to set pollution discharge limits and determine response strategies to address water quality impairments
 | Implementation of TMDLs. | This approach helps support marine and fresh water quality through development and implementation of TMDL studies or local pollution control plans that identify pollution sources and corrective actions to address identified problems. The TMDL process complements other strategies to control sources and pathways of excess nutrients and toxic chemicals from entering Puget Sound. **The priority focus is on implementation of TMDLs, not development of TMDLs.** |  |
| 1. Develop and implement local and tribal pollution identification and correction (PIC) programs
 | Implement local pollution identification and correction programs that determine the causes and sources of water pollution in specific geographical areas, and ensures corrective actions are taken to address the pollution sources and protect Puget Sound marine and fresh water health. | PIC programs with a high probability of success include the following essential elements:* Consistent, long-term, ambient water quality monitoring to prioritize projects and evaluate action effectiveness.
* Coordinated outreach about proposed PIC projects and results to increase community awareness, participation, and support.
* Source identification sampling.
* Provision of information, site inspection, technical assistance, and financial support to correct identified sources of pollution.
* Effective enforcement capability. Enforcement is used when compliance efforts fail.
* Sustainable funding to maintain long-term stability of the program
 |  |
| 1. Effectively manage and control pollution from large OSS.
 | Support the DOH’s permit regulations for large OSS systems with flows between 3,500 and 100,000 gallons per day (gpd), and requirements for protection of public health and the environment. |  |  |
| Note the following approaches are not priority approaches in the Shellfish Bed Implementation Strategy but are important to shellfish recovery broadly (previously Tier 2 Sub-strategies) |
| Shell2.1? Restore and Enhance Native Shellfish Populations | Support efforts to protect and restore native shellfish species focusing on two species: Native Olympia oysters and pinto abalone |  |  |
| Shell2.2? Ensure environmentally sustainable shellfish aquaculture based on sound science | Support efforts to clarify potential impacts of shellfish aquaculture and help communities build consensus and collaboration on the role of shellfish aquaculture in Puget Sound.  |  |  |
| Shell2.3? Research and Implement monitoring to understand the specific environmental conditions that produce harmful algal blooms (HABs) and pathogen events | Minimize the risks to human health and reduce economic losses to Puget Sound fisheries. |  |  |
| Shell2.4? Support and expand marine biotoxin monitoring | Minimize the risks to human health and reduce economic losses to Puget Sound fisheries. |  |  |
| Shell2.5? Embrace strategies to address ocean acidifications impact on shellfish. |  | In coordination with the Marine Resources Advisory Committee and Blue Ribbon Panel recommendations. |  |

# BIBI Regional Priorities

**Vital Sign Indicator Targets:**

Two freshwater targets for BIBI address both protection and restoration goals:

* Protect: 100 percent of Puget Sound lowland stream drainage areas monitored with baseline BIBI scores of 42-46 or better retain these “excellent” scores.
* Restore: Mean BIBI scores of 30 Puget Sound lowland drainage areas improve from “fair” to “good”.Two freshwater targets for B

**Strategy Justification:**

As an indicator of freshwater quality the Benthic Index of Biotic Integrity uses invertebrates to measure stream health related to hydrologic conditions, water quality, and the associated impacts to habitat quality. This strategy is based on the work of the BIBI interdisciplinary team who identified priority strategies to address the impacts to stream health from the built environment and impacts from working lands runoff, and strategies to protect heathy streams from the impacts of new development.

**BIBI Regional Priorities**

1. Increase local capacity to manage stormwater programs
2. Education and incentives for legacy retrofits
3. Facilitate increase use of or performance of BMPs in working/rural lands
4. Reduce runoff and other hydrologic impacts from Forestry
5. Watershed Scale Planning for water quality protection and restoration

| Approach | Desired Outcome | Description/Clarifications | LOCAL ConTEXT |
| --- | --- | --- | --- |
| Policy Needs | Example Actions | Proposal Guidance |
| 1. Increase local capacity to manage stormwater programs
 |  |
| Increase local capacity to manage stormwater programs | Create more support for funding local stormwater programs, or decrease the burden of managing programs. |  | * Project(s) to increase the likelihood that the public would support stormwater management capacity (social marketing). And create additional political will to increase capacity. Start with barriers—explore solutions for overcoming them.
* Increase capacity for and effectiveness of training maintenance and enforcement
 | Considerations* May be most important in yet to be developed areas (incl. non-permitted areas).
* Stormwater fee structures don’t capture single family land base. Single family/residential are underpaying for SW programs.
* Could also serve to increase support for protection

Project Ideas* Peer-to-peer training networks
* SW utility increase incentive
 |  |
| * Education and incentives for legacy retrofits
 |  |
| Education and incentives for legacy retrofits | Implement strategies to incentivize stormwater retrofits to better match natural hydrologic and water chemistry | Change the requirements for retrofitting—not need to adhere to SWMMWW in voluntary retrofits. State (funding) and local policy (permitting) changes. | * Stormwater control transfer programs
* Other programs to incentivize voluntary retrofits
 |  |  |
| 1. Facilitate increase use of or performance of BMPs in working/rural lands
 |  |
| Facilitate increase use of or performance of BMPs in working/rural lands | Reduce the impact of runoff from working lands |  | * Establish enabling conditions (build vision and trust)
* Identify Sites, and BMPs best suited
* Provide Tech Assistance
* Develop economic incentives/remove barriers
* Social marketing—rural landowners don’t feel as burdened/recognize the benefits that accrue to them. Barrier reduction/increase motivators:
	+ Permitting
	+ Incentives
	+ Percent participation, reach-scale incentive payments
* Alternative Ag approaches, that are less environmentally problematic (e.g. working buffers)
 | * Community is important
* Share burden of achieving environmental benefits
* Working lands can include forestry
* Identify multi-benefit approaches

  |  |
| * Develop Forestry Component for BIBI Implementaiton strategy
 |  |
| Identify strategies and approaches to reduce the impacts from forestry on freshwater quality | Reduce runoff and other hydrologic impacts from Forestry | Develop BIBI Forestry component of Implementation Strategy |  | * The Stormwater SIAT identified runoff and hydro-modification resulting from forest practices as significant challenges for achieving freshwater quality and BIBI targets. SIAT recommended that BIBI IS needed to address runoff from forestry in more depth. The Stormwater SIL will work to build out this component of the IS.
* SIAT recommended looking for opportunities with small forest landowners, and federal road decommissioning.
 |  |
| 1. Watershed Scale Planning for water quality protection and restoration
 |  |
| Watershed Scale Planning for water quality protection and restoration | Develop local landuse plans that better protect freshwater quality, and consider how and where to place restoration efforts  | Watershed Scale BIBI planning processes* Inter-local agreements for cross jurisdictional planning
* Ecology finalizes and shares Watershed planning/stormwater control transfer guidance
 | * Watershed Scale BIBI planning processes
* Enabling conditions (build trust, recognize value, pre-planning assessments, etc.)
* Build plan/planning structure (King Co. BIBI planning approach)
* Region-wide toolkit based on ECY guidance and incorporate opportunities for cross-jurisdictional learning
* Reconciling/refine current plans
* Buy-in to process/get folks to the table
* Develop plans
* Implementation
 | * Incorporate source control for load reduction where it limits BIBI
* Build off existing efforts, needs to incorporate flexibility
* Protection vs. restoration (Watershed Characterization can function as a tool to indicate what’s relevant where)
* BIBI (Excellent, Fair-good), TIF (work still needed important ‘poor’ basins—opportunities to use watershed approach for addressing toxics. See Toxics in Fish regional priorities)
* Look at the Watershed LO retrofit planning as a model for planning for recovery/retrofits
 |  |

# Toxics in Fish Regional Priorities

**Vital Sign Indicator Targets:**

By 2020, contaminant levels in fish will be below health effects thresholds (i.e. levels considered harmful to fish health, or harmful to the health of people who consume them).

The four types of contaminants in this target are:

* Polychlorinated biphenyls (PCBs)
* Flame retardants (polybrominated diphenyl ethers, or PBDEs)
* Hydrocarbons (products of petroleum or combustion; polycyclic aromatic hydrocarbons, or PAHs)
* Endocrine disrupting compounds (typically from pharmaceuticals, personal care products, but also from a wide range of other chemicals, or EDCs). -
* IBI address both protection and restoration goals:

**Strategy Justification:**

The Toxics in Fish strategies are based on Implementation strategy pre-work, and on approaches taken from LIO plans. The Stormwater Strategic Initiative Advisory Team identified priority approaches to reduce loading of toxic chemicals, and to better treat water that is already burdened with toxic chemicals. These rely heavily on work done to develop chemical action plans developed to address the indicator target chemicals, and to explore options to ensure complete indicator target coverage through the chemical action plan process. Additionally these strategies look to address air quality that may be creating problems for water quality.

**TIF Regional Priorities**

1. REDUCE POLLUTANTS, AND INCREASE AUTHORITES TO ADDRESS THEM Education and incentives for legacy retrofits
2. Address stormwater treatment

TIF3. PROVIDE INFRASTRUCTURE AND INCENTIVES TO ACCOMMODATE RE-DEVELOPMENT WITHIN DESIGNATED URBAN CENTERS IN URBAN GROWTH AREAS

1. REDUCE THE IMPACT OF LOCAL AIR POLLUTION ON STORMWATER TOXICITY
2. Develop Toxics in Fish Implementation Strategy

| Approach | Desired Outcome | Description/Clarifications | LOCAL ConTEXT |
| --- | --- | --- | --- |
| Policy Needs | Example Actions | Proposal Guidance |
| 1. Reduce pollutants, and increase authorites to address them
 |  |
| Enhance pollutant reduction programs, corrective measures and increase authorities and programs to prevent toxic chemicals from entering Puget Sound. | Reduce loading to Puget Sound of TIF target contaminants, and explore opportunities to develop chemical action plans for endocrine disrupting target contaminants | •Explore local Business license requirements (for training)• PCBs—changes to federal regulations federal regulations (question: do these federal regulations preempt state level regulation?)• Remove legal barriers to developing chemical action plans for endocrine disruptors. | * Target chemical families are: Top chemicals of concerns in Puget Sound, Vital sign chemicals and existing CAP chemicals:
* Chemical action plan implementation
* Behavior change: social marketing approach (identify a polluting audience/sector)
* Source control/Pollution Prevention
* Create Chemical Action Plan for EDCs
 | Considerations and Proposal Guidance•May have enough data on toxic, need to incorporate that into the planning process. May be questions in less well studied areas—Snohomish basin as an example.•Prioritizing audiences by watershed needs•Focus on the people who don’t have the resources/non-permittees•Green purchasing•Tied to watershed planning—reducing impact of legacy development •Use watershed scale approaches when appropriate |  |
| 1. Address stormwater treatment
 |  |
| Address stormwater treatment | Implement or research innovative treatment approaches |  | * Pilot innovative treatment approaches
* Research and effectiveness studies on treatment approaches/BMPs
 |  |  |
| 1. Provide infrastructure and incentives to accommodate re-development within designated urban centers in urban growth areas
 |  |
| Provide infrastructure and incentives to accommodate re-development within designated urban centers in urban growth areas | Increase infill to protect water quality and increase the likelihood that developed areas meet new stricter stormwater management requirements  | *Note: Recent ECB discussions indicated that there may be an opportunity to reduce barriers to brownfield re development by increasing the capacity in ECY brownfields program*  | * Explore brownfield re-development as a way to both remove contaminants, and to better accommodate growth in already impacted areas
 | Considerations and Proposal Guidance•Cover in the land development and cover/BIBI Watershed Planning •Density is a “BMP”—Projects can be proposed under the BIBI Watershed planning regional priority  |  |
| 1. Reduce the impact of local air pollution on stormwater toxicity
 |  |
| Use a source control approach to assess and regulate local sources of air pollution  | Reduce air deposition from stationary air pollution sources | State air quality policy change to recognize and regulate emissions that contribute to toxic loading in stormwater. Change state air quality regulatory guidance on monitoring thresholds, and consider cumulative impacts | * Community based air quality monitoring
* Research
* Assess impacts from changing monitoring thresholds and cumulative impacts
 | * The SIAT wanted to note significant environmental justice implications of stationary sources regarding underrepresented or disadvantaged communities disproportionately bearing the burdens of industrial air pollution.
 |  |
| 1. Develop Toxics in Fish Implementation Strategy
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| Continue Toxics in Fish implementation strategy | Identify priority strategies to achieve TIF targets  | * Finish Toxics in Fish Implementation Strategy process
 |  | This may be an opportunity to consider approaches to address spills, and possibly spills specifically on bridges |  |

# Cross-cutting Approaches that Address Multiple Regional Priorities

**Coming soonI**