

**ARTICLE 4**

**COLUMBIA RIVER ESTUARY AND SHORELAND REGIONAL STANDARDS**

4.010. INTRODUCTION.

Article 4 establishes use and activity standards for developments in Columbia River estuary aquatic areas and shorelands. Some apply only to the estuary's waters and tidal wetlands: These are indicated by the qualifying phrase "aquatic areas" or "aquatic designations." Standards applicable only to estuary shorelands, including associated non-tidal wetland areas, are so indicated by the phrase "shoreland areas" or "shoreland designations."

4.020. AGRICULTURE AND FORESTRY.

Standards in this subsection are applicable to agricultural and forestry activities on Columbia River Estuary shorelands. Activities outside of the coastal shorelands boundary are not covered by this subsection. Certain activities associated with agriculture and forestry, such as log storage, dike maintenance, and shipping facilities for agricultural and forestry products, are covered under different subsections.

1. Tillage and drainage practices should minimize sedimentation and control surface water runoff of animal wastes, fertilizers, and pesticides. Agricultural chemicals shall be applied in a manner that minimizes the amount lost to the aquatic environment.
2. Runoff from feed lots or other confinement lots for livestock shall be controlled with diversion structures, settling ponds or other land management practices.
3. Forest practices and forest road building will comply with rules established under the Oregon Forest Practices Act, administered by the Oregon Department of Forestry.

4.030. DEEP-WATER NAVIGATION, PORT AND INDUSTRIAL DEVELOPMENT.

The standards in this subsection apply to port and industrial development occurring in and over Columbia River Estuary waters, and on adjacent shorelands. This section also applies to navigation projects related to deep-draft maritime activities, such as channel, anchorage and turning basin development or expansion.

1. Port or industrial development in or over estuarine aquatic areas involving the following activities shall be subject to an impact assessment.

- a. Dredging
  - b. Aquatic area fill
  - c. In-water structures
  - d. Structural shoreline stabilization
  - e. New in-water log storage areas
  - f. Water intake pipes
  - g. In-water dredged material disposal
  - h. Beach nourishment
  - i. Other activity which could adversely affect estuarine physical or biological resources.
2. Shoreland and aquatic area facilities for the storage or transmission of petroleum products must have on-site equipment for the containment of oil spills.
  3. Deep-water navigation, port or industrial development requiring aquatic area dredging or filling may be allowed only if all of the following criteria are met:
    - a. The proposed use is required for navigation or other water-dependent use requiring an estuarine location, or if specifically allowed in the applicable aquatic designation; and
    - b. A substantial public benefit is demonstrated; and
    - c. The proposed use does not unreasonably interfere with public trust rights; and
    - d. Feasible alternative upland locations do not exist; and
    - e. Potential adverse impacts are minimized.
  4. Deep-water navigation, port or industrial development requiring new piling or dolphin installation, construction of pile-supported structures, or other uses or activities which could alter the estuary may be permitted only if all of the following criteria are met:
    - a. A substantial public benefit is demonstrated; and

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- b. The proposed use does not unreasonably interfere with public trust rights; and
  - c. Feasible alternative upland locations do not exist; and
  - d. Potential adverse impacts are minimized.
5. Off-street parking may only be located over an aquatic area if all of the following conditions are met:
- a. Parking will be on an existing pile-supported structure; and
  - b. Suitable shoreland areas are not available; and
  - c. The amount of aquatic area committed to parking is minimized; and
  - d. The aquatic area is in a Development designation.

4.040. DIKING.

The standards in this subsection apply to the construction, maintenance and repair of flood control dikes in Columbia River Estuary shoreland and aquatic areas. These do not apply to dredged material containment dikes.

- 1. Dikes which have been inadvertently breached may be repaired, subject to State and Federal permit requirements, if the repair is completed within 36 months of the breach.
- 2. Dike maintenance and repair shall be allowed for:
  - a. Existing serviceable dikes (including those that allow some seasonal inundation); or
  - b. Dikes that have been damaged by flooding, erosion or tidegate failure where the property has not reverted to estuarine habitat; or
  - c. Dikes that have been damaged by flooding, erosion or tidegate failure where the property has reverted to estuarine habitat (as determined by the U. S. Army Corps of Engineers and the Division of State Lands) provided that the property has been in agricultural use for 3 of the last 5 years and reversion to estuarine habitat has not occurred more than 5 years prior.
- 3. Dike maintenance and repair are distinguished from new dike construction. To qualify as maintenance and repair, changes in the location, size,

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configuration, orientation and alignment of the dike must be limited to the minimum amount necessary to retain or restore its operation or function or to meet current engineering standards. Filling aquatic areas for dike maintenance may be allowed only if it can be clearly demonstrated that there are no feasible engineering alternatives which would avoid the use of aquatic area fill.

4. The outside dike face shall be suitably protected from erosion during construction and maintenance operations. Shoreline stabilization standards shall be met.
5. New dikes in aquatic areas may be permitted either;
  - a. As part of an approved fill project; or
  - b. As a temporary flood protection measure needed to promote public safety and welfare, subject to applicable U. S. Army Corps of Engineers, and Oregon Division of State Lands rules; or
  - c. Subject to an exception to Statewide Planning Goal 16.
6. Dredging of subtidal estuarine aquatic areas as a source of fill material for dike maintenance may be allowed pursuant to the exception to Statewide Planning Goal 16 if all of the following conditions are met:
  - a. Alternative methods of accomplishing dike maintenance are infeasible (i.e., dikes proposed for receiving dredged material are remote from upland sources of fill material or land-based heavy equipment access to the dike area is not possible); and
  - b. Dredging in all cases is limited to that necessary to maintain the dikes. Dredging as a source of fill material for dike maintenance does not include enlarging or changing the bottom contour of natural aquatic areas for navigation or any other aquatic area use; and
  - c. Dredging will not disturb or excavate emergent vegetation, intertidal flats, or other adjacent intertidal estuarine resources; and
  - d. Dredging as a source of fill material for dike maintenance will, in all cases, take place in subtidal aquatic areas, and shall be limited to the deepest subtidal aquatic area accessible to float-mounted dredging equipment. In narrow tributary areas of the estuary, dredging shall be limited to the deepest subtidal areas nearest the center line of the waterway. In reaches of the estuary exceeding 200 feet in width, dredging shall be limited to subtidal areas more than 80 feet from the waterward toe of the dike. The intent of this standard is to protect the

dike structures from sloughing, maintain existing berms and shoal water immediately adjacent to dikes, and limit dredge excavations to subtidal areas below the level of effective light penetration; and

- e. Dredging will not be confined to localized areas of river bottom. All excavations as a source of fill material shall be linearly dispersed along the entire dike maintenance area. Dredging shall not alter the existing contour of the river bottom such that deep trenches and pockets capable of stranding or impeding estuarine life forms will be created; and
- f. Dredging operations shall be consistent with State and Federal permit conditions and the requirements of local governments to ensure that project timing and dredging conditions protect estuarine resources (e.g., fish runs, spawning activity, benthic productivity, wildlife habitat, etc.).

4.050. DREDGING AND DREDGED MATERIAL DISPOSAL.

Standards in this subsection are applicable to all estuarine dredging operations and to both estuarine shoreland and aquatic dredged material disposal in the Columbia River Estuary.

- 1. Dredging in estuarine aquatic areas, subject to dredging and dredged material disposal policies and standards, shall be allowed only:
  - a. If specifically allowed by the applicable management unit and required for one or more of following uses and activities:
    - 1) Navigation or navigational access;
    - 2) An approved water dependent use of aquatic areas or adjacent shorelands that require an estuarine location;
    - 3) An approved restoration project;
    - 4) Mining or mineral extraction;
    - 5) Excavation necessary for approved bridge crossing support structures, or pipeline, cable, or utility crossing;
    - 6) Obtaining fill material for dike maintenance where a Statewide Planning Goal 16 exception has been approved;

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- 7) Maintenance of existing tidegates and tidegate drainage channels where a Statewide Planning Goal 16 exception has been approved;
- 8) Aquaculture facilities; and
  - b. If a need (i.e., a substantial public benefit) is demonstrated and the use or alteration does not unreasonably interfere with public trust rights; and
  - c. If no feasible alternative upland locations exist; and
  - d. If adverse impacts are minimized.
2. When dredging is permitted, the dredging shall be the minimum necessary to accomplish the proposed use.
3. Erosion, sedimentation, increased flood hazard, and other undesirable changes in circulation shall be avoided in dredging and the disposal of dredged material.
4. The timing of dredging and dredged material disposal operations shall be coordinated with State and Federal resource agencies, local governments, and private interests to protect estuarine aquatic and shoreland resources, minimize interference with commercial and recreational fishing, and insure proper flushing of sediment and other materials introduced into the water by the project.
5. Bottom sediments in the dredging area shall be characterized by the applicant in accordance with U.S. Environmental Protection Agency, Washington Department of Ecology, and Oregon Department of Environmental Quality standards. Information that may be required includes, but is not limited to, sediment grain size distribution, organic content, oil and grease, selected heavy metals, pesticides, and benthic biological studies.
6. Adverse short-term effects of dredging and aquatic area disposal such as increased turbidity, release of organic and inorganic materials or toxic substances, depletion of dissolved oxygen, disruption of the food chain, loss of benthic productivity, and disturbance of fish runs and important localized biological communities shall be minimized.
7. Impacts on areas adjacent to the dredging site such as destabilization of fine-textured sediments, erosion, siltation, and other undesirable changes in circulation patterns shall be minimized.

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8. The effects of both initial and subsequent maintenance dredging, as well as dredging equipment marshalling and staging, shall be considered prior to approval of new projects or expansion of existing projects. Projects will not be approved unless disposal sites with adequate capacity to meet initial excavation dredging and at least five years of expected maintenance dredging requirements are available.
9. Minor dredging of existing tidegate drainage channels and drainage ways is limited to the amount necessary to maintain and restore flow capacity essential for the function (the drainage service provided by the tidegate) of tidegates and to allow drainage and protection of agricultural and developed areas. Tidegate maintenance dredging does not include enlarging or extending the dimensions of, or changing the bottom elevations of, the affected tidegate drainage channel or drainage way as it existed prior to the accumulation of sediments.
10. Dredging of subtidal estuarine areas as a source of fill material for dike maintenance, in all aquatic area designations, may be allowed upon the applicant's demonstration that:
  - a. Alternative methods of accomplishing dike maintenance are infeasible (i.e., dikes proposed for receiving dredged material are remote from upland sources of fill material and that land-based heavy equipment access to the dike area is not possible);
  - b. Dredging in all cases will be limited to that necessary to maintain the dikes. Dredging as a source of fill material for dike maintenance does not include enlarging or changing the bottom contour of natural aquatic areas for navigation of any other aquatic area use;
  - c. Dredging will not disturb or excavate emergent vegetation, intertidal flats, or other adjacent intertidal estuarine resources;
  - d. Dredging as a source of fill material for dike maintenance will, in all cases, take place in subtidal aquatic areas, and shall be limited to the deepest subtidal aquatic area accessible to float-mounted dredging equipment. In narrow tributary areas of the estuary, dredging shall be limited to the deepest subtidal areas nearest the centerline of the waterway. In reaches of the estuary exceeding 200 feet in width, dredging shall be limited to subtidal areas greater than 80 feet in distance from the waterward toe of the dikes. The intent of this standard is to protect the dike structures from sloughing, maintain existing berms and shoal water immediately adjacent to dikes, and limit dredge excavations to subtidal areas below the level of effective light penetration.

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- e. Dredging will not be confined to localized areas of river bottom. All excavations as a source of fill material shall be linearly dispersed along the entire dike maintenance area. Dredging shall not alter the existing contour of the river bottom such that deep trenches and pockets capable of stranding or impeding estuarine life forms will be created.
  - f. Dredging operations shall be consistent with State and Federal resource agency conditions, the requirements of local governments, and concerns of private interests, to ensure that project timing and dredging conditions protect estuarine resources (e.g., fish runs, spawning activity, benthic productivity, wildlife habitat, etc.).
11. Dredging for mining and mineral extraction, including sand extraction, shall only be allowed in areas deeper than 10 feet below MLLW where the project sponsor demonstrates that mining and mineral extraction in aquatic areas is necessary because no feasible upland sites exist and that the project will not significantly impact estuarine resources. The estuary bottom at the project site shall be sloped so that sediments from areas shallower than 10 feet below MLLW and other areas not included in the project's impact assessment do not slough into the dredged area. Dredging as part of an approved dredging project which also provides fill for an approved fill project shall not be subject to the mining and mineral extraction policies and standards.
12. When proposing dredging for sand extraction, the project sponsor shall first consider obtaining the material from a shoaled area within a Federally-authorized navigation channel that is currently shallower than its authorized depth. Said dredging shall be coordinated with the U.S. Army Corps of Engineers. The dredging depth shall not exceed the authorized channel depth plus any overdredging that the Corps would normally perform while maintaining the site.
13. Dredged material disposal shall occur only at designated sites or at new sites which meet the requirements of the Dredged Material Disposal Site Selection Policies.
14. Proposals for in-water disposal of dredged materials, including flowlane disposal, beach nourishment, estuarine open-water disposal, and ocean disposal, shall:
- a. Demonstrate the need for the proposed action and that there are no alternative disposal sites or methods that entail less damaging environmental impacts; and
  - b. Demonstrate that the dredged sediments meet State and Federal sediment testing requirements and water quality standards; and

- c. Not be permitted in the vicinity of a public water intake.
15. Flowlane disposal and estuarine open water disposal shall be monitored to assure that estuarine sedimentation is consistent with the resource capabilities and purpose of affected natural and conservation management units. The monitoring program shall be established prior to undertaking disposal. The program shall be designed to both characterize baseline conditions prior to disposal and monitor the effects of the disposal. For projects that involve disposal on three year or shorter intervals, this requirement may be waived by the affected jurisdiction(s) after adequate monitoring has been conducted to demonstrate that estuarine sedimentation is consistent with the resource capabilities and purpose of the affected natural and conservation management units. If more than three years has elapsed since the previous disposal action or if disposal amounts have increased substantially over the previous disposal volume this requirement shall not be waived.
16. Flowlane disposal sites shall be in areas identified as low in benthic productivity and use of these sites shall not have adverse hydraulic effects. Use of disposal sites in the estuary shall be allowed only when no feasible alternative land or ocean disposal sites can be identified and the biological and physical impacts of flowlane disposal are demonstrated to be insignificant. Long term use of a flowlane disposal site may only be allowed if monitoring confirms that the impacts are insignificant. Flowlane disposal is contingent upon demonstration that:
- a. Adverse effects due to changes in biological and physical estuarine properties will not result;
  - b. Flowlane disposal sites shall be shown able to transport sediment downstream without excessive shoaling, interference with recreational and commercial fishing operations, including the removal of snags from gillnet drifts, undesirable hydraulic effects, or adverse effects on estuarine resources (fish runs, spawning activity, benthic productivity, wildlife habitat, etc.).
17. Ocean disposal shall be conducted such that:
- a. The amount of material deposited at a site is compatible with benthic populations, other marine resources, and other uses of the area;
  - b. Interference with sport and commercial fishing is minimized;
  - c. Disposal is strictly confined to the sites designated by the U.S. Environmental Protection Agency; and

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- d. The disposal site does not shoal excessively and create dangerous wave and swell conditions.
18. Except for flowlane disposal and beach nourishment, disposal of dredged materials inside the estuary shall be substituted for ocean disposal only when the use of ocean disposal sites is not feasible.
  19. Beach nourishment shall only be conducted at sites identified in the dredged material disposal plan. New sites may be added to the Plan by ordinance amendment after a Statewide Planning Goal 16 exception for the site has been approved. Beach nourishment shall be conducted such that:
    - a. The beach is not widened beyond its historical profile. The historical profile shall be defined as the widest beach profile that existed prior to June 1986.
    - b. The material placed on the beach consists of sand of equal or greater grain size than the sand existing on the beach.
    - c. Placement and subsequent erosion of the materials does not adversely impact tidal marshes or productive intertidal and shallow subtidal areas.
    - d. Efforts shall be made to maintain a stable beach profile.
    - e. Dredged material is graded at a uniform slope and contoured to minimize juvenile fish stranding and hazards to beach users.
  20. Except as noted below, land disposal and site preparation shall be conducted such that:
    - a. Surface runoff from disposal sites is controlled to protect water quality and prevent sedimentation of adjacent water bodies, wetlands, and drainage ways. Disposal runoff water must enter the receiving waterway through a controlled outfall at a location with adequate circulation and flushing characteristics. Underground springs and aquifers must be identified and protected;
    - b. Dikes are constructed according to accepted engineering standards; are adequate to support and contain the maximum potential height and volume of dredged materials at the site; and form a sufficiently large containment area to encourage proper ponding and to prevent the return of dredged materials into the waterway or estuary. Containment ponds and outfall weirs shall be designed to maintain adequate standing water at all times to further encourage settling of dredged materials. The dikes shall be constructed within the boundaries of the

disposal site and shall be constructed of material obtained from within the site or other approved source.

Clean dredged material placed on land disposal sites located directly adjacent to designated beach nourishment sites may be allowed to flow directly into the waterway without conforming to Items 1 and 2, above, provided that all policies and standards for in-water disposal and beach nourishment are met and the dredged materials are not allowed to enter wetlands or the waterway in areas other than the designated beach nourishment site.

21. Land disposal sites which are not intended for dredged material disposal or development use within a two year period following disposal shall be revegetated as soon as site and weather conditions allow, unless habitat management plans agreed upon by resource management agencies specify that open sand areas should remain at the site. The project sponsor shall notify the local jurisdiction and State and Federal permitting and resource management agencies when disposal is completed and shall coordinate revegetation with these agencies. The notification shall be sent to at least the following agencies: the local jurisdiction, U.S. Army Corps of Engineers, Soil Conservation Service, Division of State Lands, and Oregon Department of Fish and Wildlife. Revegetation of a disposal site does not preclude future uses of the sites for dredged material disposal.
22. The final height and slope after each use of a land dredged material disposal site shall be such that:
  - a. The site does not enlarge itself by sloughing and erosion into adjacent areas;
  - b. Loss of materials from the site during storms and freshets is minimized;
  - c. Interference with the view from nearby residences, scenic points, and parks does not occur.

4.060. ESTUARINE CONSTRUCTION: PILING AND DOLPHIN INSTALLATION, SHORELINE STABILIZATION AND NAVIGATIONAL STRUCTURES.

The standards in this subsection apply to over-the-water and in-water structures such as docks, bulkheads, moorages, boat ramps, boat houses, jetties, pile dikes, breakwaters and other structures involving installation of piling or placement of riprap in Columbia River Estuary aquatic areas. Also covered under these standards are shoreline stabilization and aquatic area fills. This section does not apply to structures located entirely on shorelands or uplands, but does apply to structures, such as boat ramps, that are in both aquatic and shoreland designations.

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1. Where land use management practices and vegetative stabilization is shown not to be feasible (in terms of cost, effectiveness or other factors), structural means may be approved subject to applicable policies, standards and designation use restrictions.
2. Where structural shoreline stabilization is shown to be necessary and vegetative means are infeasible, the choice among various structural means shall be made on a case by case basis. Factors to be considered include, but are not limited to:
  - a. Hydraulic features;
  - b. Shoreland habitat;
  - c. Adjacent land and water uses;
  - d. Aquatic habitat;
  - e. Water quality;
  - f. Engineering feasibility;
  - g. Navigation;
  - h. Impacts on public shoreline access.
3. Jetties, groins and breakwaters shall be constructed of clean, erosion-resistant materials from upland sources. In-stream gravel shall not be used, unless part of an approved mining project. Material size shall be appropriate for predicted wave, tide and current conditions.
4. Where a jetty, groin, breakwater or other in-water structure is proposed for erosion or flood control, the applicant shall demonstrate that non-structural solutions, such as land use management practices, will not adequately address the problem.
5. Piling or dolphin installation, structural shoreline stabilization, and other structures not involving dredge or fill, but which could alter the estuary may be allowed only if all of the following criteria are met:
  - a. A substantial public benefit is demonstrated; and
  - b. The proposed use does not unreasonably interfere with public trust rights; and
  - c. Feasible alternative upland locations do not exist; and

- d. Potential adverse impacts, as identified in the impact assessment, are minimized.
6. Jetties, groins, breakwaters and piers requiring aquatic area fill may be allowed only if all of the following criteria are met:
    - a. The proposed use is required for navigation or other water-dependent use requiring an estuarine location, or if specifically allowed in the applicable aquatic designation; and
    - b. A substantial public benefit is demonstrated; and
    - c. The proposed use does not unreasonably interfere with public trust rights; and
    - d. Feasible alternative upland locations do not exist; and
    - e. Potential adverse impacts, as identified in the impact assessment, are minimized.
  7. Proposals for bulkheads may be approved only if it is demonstrated that sloped riprap will not adequately fulfill the project's objectives.
  8. Proposals for bulkheads or for riprap bankline slopes steeper than 1.5 to 1 (horizontal to vertical) must demonstrate that adequate shallow areas will be available for juvenile fish shelter, or that the area is not typically used for juvenile fish shelter.
  9. Plant species utilized for vegetative stabilization shall be selected on the basis of potential sediment containment and fish and wildlife habitat values. Trees, shrubs and grasses native to the region should be considered for vegetative stabilization; however, plant species and vegetation stabilization techniques approved by the Soil Conservation Service, the U.S. Army Corps of Engineers and other participating Federal and State resource agencies are also appropriate. Stabilization of dike slopes must not include vegetation (particularly trees) which jeopardize the dike.
  10. Riprap bank protection must be appropriately designed with respect to slope, rock size, placement, underlying material and expected hydraulic conditions. Project design by a licensed engineer shall meet this requirement. The local government may also find that riprap projects designed by other individuals, such as experienced contractors, soil conservation service personnel or others, meets this standard.

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11. Shoreline stabilization measures shall not restrict existing public access to public shorelines.
12. Shoreline stabilization shall not be used to increase land surface area. Where an avulsion has occurred, fill may be used to restore the previous bankline, so long as the corrective action is initiated within one year of the date of the avulsion. Any other extension of the bankline into aquatic areas shall be subject to the policies and standards for fill.
13. Construction of structural shoreline stabilization measures shall be coordinated with State and Federal agencies to minimize adverse effects on aquatic and shoreland resources and habitats.
14. As a shoreland stabilization and protective measure, bulkheads shall be designed and constructed to minimize adverse physical effects (i.e., erosion, shoaling, reflection of wave energy or interferences with sediment transport in adjacent shoreline areas) resulting from their placement.
15. Emergency maintenance, for the purpose of making repairs or for the purpose of preventing irreparable harm, injury or damage to persons, property or shoreline stabilization facilities is permitted, not with standing the other requirements in these standards and subject to those regulations imposed by the U.S. Army Corps of Engineers.
16. Revegetated shoreline areas shall be protected from excessive livestock grazing or other activities that would prevent development of effective stabilizing plant cover.
17. Docks and piers shall be built no larger than required for their proposed use.

4.070. FILLING OF AQUATIC AREAS AND WETLANDS.

This subsection applies to the placement of fill material in the tidal wetlands and waters of the Columbia River Estuary.

1. Fill in estuarine aquatic areas may be permitted only if all of the following criteria are met:
  - a. If required for navigation or for other water-dependent uses requiring an estuarine location, or if specifically allowed under the applicable aquatic designation; and
  - b. A substantial public benefit is demonstrated; and
  - c. The proposed fill does not unreasonably interfere with public trust rights; and

- d. Feasible upland alternative locations do not exist; and
  - e. Adverse impacts, as identified in the impact assessment, are minimized.
2. A fill shall cover no more than the minimum necessary to accomplish the proposed use.
  3. Aquatic area fills using either dredged material or other easily erodible material shall be surrounded by appropriately stabilized dikes.
  4. Aquatic areas shall not be used for disposal of solid waste.
  5. Projects involving fill may be approved only if the following alternatives are examined and found to be infeasible:
    - a. Construct some or all of the project on piling;
    - b. Conduct some or all of the proposed activity on existing upland;
    - c. Approve the project at a feasible alternative site where adverse impacts are less significant.
  6. Fill in Natural designations is limited to:
    - a. Riprap for protection of uses existing as of October 7, 1977, unique natural resources, historical and archeological values, and public facilities;
    - b. Communications facilities; and
    - c. Temporary alterations.
    - d. Improvements and facilities provided for by exception to Statewide Planning Goals.
  7. Fill in Conservation designations is limited to:
    - a. Riprap for protection of uses existing as of October 7, 1977, unique natural resources, historical and archeological values, and public facilities;
    - b. Communications facilities; and
    - c. Temporary alterations;

- d. High-intensity water-dependent recreation;
- e. Aquaculture;
- f. Minor navigational improvements;
- g. Active restoration;
- h. Bridge crossing support structures.
- i. Improvements and facilities provided for by exception to Statewide Planning Goals.

4.080. FISH AND WILDLIFE HABITAT.

This subsection applies to uses and activities with potential adverse impacts on fish or wildlife habitat, both in Columbia River estuarine aquatic areas and in estuarine shorelands.

1. Projects affecting endangered, threatened or sensitive species habitat, as identified by the USFWS or ODFW, shall be designed to minimize potential adverse impacts. This shall be accomplished by one or more of the following:
  - a. Soliciting and incorporating agency recommendations into local permit reviews;
  - b. Dedicating and setting aside undeveloped on-site areas for habitat;
  - c. Providing on or off-site compensation for lost or degraded habitat;
  - d. Retaining key habitat features (for example; roosting trees, riparian vegetation, feeding areas).
2. In-water construction activity in aquatic areas shall follow the recommendations of State and Federal fisheries agencies with respect to project timing to avoid unnecessary impacts on migratory fish.
3. Uses and activities with the potential for adversely affecting fish and wildlife habitat may be approved only upon a demonstration that the following impact mitigation actions are incorporated into the permit where feasible. These impact mitigation actions are listed from highest to lowest priority:
  - a. Avoiding the impact altogether by not taking a certain action or parts of an action;

- b. Minimizing impacts by limiting the degree or magnitude of an action and its implementation;
  - c. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment (this may include removing wetland fills, rehabilitation of a resource use and/or extraction site when its economic life is terminated, etc.);
  - d. Reducing or eliminating the impact over time by preservation and maintenance operations.
4. Projects involving subtidal or intertidal aquatic area fill or intertidal aquatic dredging with the potential for adversely affecting aquatic habitat must provide compensatory mitigation, consistent with the Mitigation and Restoration Plan for the Columbia River Estuary.

4.090. FISHERIES AND AQUACULTURE.

The standards in this subsection apply to all projects that could conceivably affect fisheries (either commercial or recreational) or aquaculture in the Columbia River Estuary. This subsection is also applicable to the development of aquaculture facilities and to fisheries enhancement projects.

1. Water diversion structures or man made spawning channels shall be designed and built to maintain minimum stream flows for aquatic life in affected streams.
2. Water discharge from an aquaculture facility shall meet all Federal and State water quality standards and any conditions attached to the waste discharge permit.
3. Aquaculture facilities shall be located far enough from sanitary sewer outfalls to avoid potential health hazards.
4. Aquaculture facilities shall be constructed to blend in with and not detract from the aesthetic qualities of the area. In developed areas, views from upland property shall be given consideration in facility design.
5. Operation of a private salmon hatchery requires a permit from the Oregon Department of Fish and Wildlife.
6. In-water construction activity in aquatic areas shall follow the recommendations of State and Federal fisheries agencies with respect to project timing to avoid unnecessary impacts on migratory fish.

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7. Commercial fish drifts shall be protected from conflicting in-water activity, including dredging, in-water dredge material disposal, and aquatic area mining and mineral extraction, during the fishing season.
8. Prior to undertaking in-water dredged material disposal or other in-water activity that could potentially disrupt commercial fishing, the project sponsor shall consult with the local drift captain, Columbia River Fisherman's Protective Union, the N.W. Gillnetters Association, and the State fishery agency to determine project timing that will minimize impacts to the gillnet fishery.

4.100. LAND TRANSPORTATION SYSTEMS.

Standards in this subsection are applicable to the maintenance and construction of railroads, roads and bridges in Columbia River estuary shoreland and aquatic areas. Public, as well as private facilities are covered under this subsection. Forest roads, however, are excluded.

1. New or relocated land transportation routes shall be designed and sited so as to:
  - a. Enhance development shoreland areas when possible; and
  - b. Direct urban expansion toward areas identified as being suitable for development; and
  - c. Take maximum advantage of the natural topography and cause minimum shoreline disruption; and
  - d. Preserve or improve public estuary access where existing or potential access sites are identified; and
  - e. Avoid cutting off high-intensity waterfront use areas from water access.
2. Maintenance and repair of roads and railroads and maintenance and replacement of bridges shall be permitted regardless of the plan designation through which the road or railroad passes, provided:
  - a. The same alignment is maintained; and
  - b. The same width is maintained, except that minor enlargements to meet current safety and engineering standards may be permitted.

3. Fill-supported causeways or bridge approach fills across aquatic areas or across significant nontidal wetlands in shoreland areas shall not be permitted; bridge abutments may, however, be approved.
4. Removal of riparian vegetation along transportation right-of-ways may be permitted in order to maintain clear vision.

4.110. LOG STORAGE.

This subsection establishes standards for the establishment of new, and the expansion of existing, log storage and sorting areas in Columbia River Estuary aquatic and shoreland areas.

1. New aquatic log storage areas shall be located such that logs will not go aground during tidal changes or during low flow periods.
2. Proposals for reestablishment of previously used aquatic log storage areas must meet standards applied to new log storage areas, unless such areas have been abandoned for fewer than 36 months.
3. New aquatic log storage areas shall not be located in areas which would conflict with active gillnet fish drifts or with other commercial or recreational fishing activities.
4. New aquatic log storage areas shall be located where water quality degradation will be minimal and where good flushing conditions prevail.
5. Unpaved shoreland log yards underlaid by permeable soils shall have at least four feet of separation between the yard surface and the winter water table.
6. Log storage and sorting facilities in water-dependent development shorelands shall not preclude or conflict with existing or possible future water-dependent uses at the site or in the vicinity, unless the log storage or sorting facility is itself an essential part of a water-dependent facility.

4.120. MINING AND MINERAL EXTRACTION.

Standards in this subsection are applicable to the extraction of sand, gravel, petroleum products and other minerals from both submerged lands under aquatic areas and from shoreland areas in the Columbia River Estuary.

1. Aquatic area mining and mineral extraction shall only occur in aquatic areas deeper than ten feet below MLLW, where estuarine resource values are low, and when no feasible upland sources exist.

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2. Proposed mining and mineral extraction activities with potential impacts on estuary shoreland and aquatic areas shall provide the local government with a copy of a proposed or approved surface mining plan.
3. Project sponsors proposing estuarine shoreland or aquatic area mining or mineral extraction shall demonstrate that the activity is sited, designed and operated to minimize adverse impacts on the following:
  - a. Significant fish and wildlife habitat; and
  - b. Hydraulic characteristics; and
  - c. Water quality.
4. Petroleum extraction and drilling operations shall not be allowed in aquatic areas. Petroleum may, however, be extracted from beneath aquatic areas using equipment located on shorelands or uplands. Petroleum exploration activities, with the exception of exploratory drilling, may be permitted in estuarine aquatic areas and in estuarine shoreland areas.
5. Unless part of an approved fill project, spoils and other material removed from aquatic areas shall be subject to dredged material disposal policies and standards.

4.130. MITIGATION AND RESTORATION.

Standards in this section are applicable to estuarine restoration and mitigation projects on Columbia River Estuary aquatic areas and shorelands.

1. Any fill activities that are permitted in estuarine aquatic areas or dredging activities in intertidal and shallow to medium depth estuarine subtidal areas shall be mitigated through project design and/or compensatory mitigation (creation, restoration or enhancement of another area) to ensure that the integrity of the estuary ecosystem is maintained. The Comprehensive Plan shall designate and protect specific sites for mitigation which generally correspond to the types and quantity of aquatic area proposed for dredging or filling.
2. Mitigation for fill in the aquatic areas or dredging in intertidal and shallow to medium depth subtidal areas shall be implemented, to the extent feasible, through the following mitigation actions:
  - a. Project Design Mitigation Actions.

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- 1) Avoiding the impact altogether by not taking a certain action or parts of an action;
  - 2) Minimizing impacts by limiting the degree or magnitude of action and its implementation;
  - 3) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment (this would include removing wetland fills, rehabilitation of a resource use and/or extraction site when its economic life is terminated, etc.);
  - 4) Reducing or eliminating the impact over time by preservation and maintenance operations;
- b. Compensatory Mitigation Actions.
- 1) Creation, restoration, or enhancement of an estuarine area to maintain the functional characteristics and processes of the estuary, such as its natural biological productivity, habitats, and species diversity, unique features and water quality.

Any combination of the above actions may be required to implement mitigation requirements. The compensatory mitigation actions listed in Subsection 2(a) shall only be considered when, after consideration of impact avoidance, reduction or rectification, there are still unavoidable impacts.

3. If compensatory mitigation actions are required, the U. S. Fish and Wildlife Service shall be asked to make a Resource Category determination for the site proposed for development. The classification shall be listed on the permit application and review notice. If the area subject to impact is in a Resource Category 2 or lower (4 = lowest), the following sequence of mitigation options shall be considered:
  - a. In-Kind/On-Site;
  - b. In-Kind/Off-Site;
  - c. Out-of-Kind/On-Site;
  - d. Out-of-Kind/Off-Site;

Generally, the requirements for considering each option before moving on to the next shall be stricter for higher Resource Categories. The following list summarizes the mitigation goal for each resource category:

Resource Category 1: Habitat to be impacted is of high value for evaluation species and is unique and irreplaceable on a national basis or in the Columbia River Estuary area. Mitigation Goal: No loss of existing habitat value.

Resource Category 2: Habitat to be impacted is of high value for evaluation species and is relatively scarce or becoming scarce on a national basis or in the Columbia River Estuary area. Mitigation Goal: No net loss of in-kind habitat value.

Resource Category 3: Habitat to be impacted is of high to medium value for evaluation species and is relatively abundant on a national basis and in the Columbia River Estuary area. Mitigation Goal: No net loss of habitat value while minimizing loss of in-kind habitat value.

Resource Category 4: Habitat to be impacted is of medium to low value for evaluation species. Mitigation Goal: Minimize loss of habitat value.

4. Permit applicants shall submit a mitigation plan for each project proposal that requires mitigation. The mitigation plan shall define specific goals and objectives of the proposed mitigation action. The plan shall also address where applicable, performance specifications that include but are not necessarily limited to the following:
  - a. Starting date;
  - b. Completion date;
  - c. Grade specifications;
  - d. Area and elevation specifications;
  - e. Channel specifications;
  - f. Buffers;
  - g. Vegetation plantings;
  - h. Monitoring;
  - i. Contingency plan (outline of potential remedial work and specific remedial contingency actions);
  - j. Accountability requirements (e.g., bonding or any mechanism that serves as a bond).

Goals, objectives and performance specifications shall be defined for both project design and compensatory mitigation. These components of the plan shall be developed in cooperation with relevant State and Federal resource and regulatory agencies.

5. Each mitigation action shall be reviewed against its goals, objectives, and performance specifications.
6. All compensatory mitigation site plans shall include a contingency plan. The contingency plan shall include corrective measures to be taken in the event of suboptimal project performance (based on project goals and objectives). A list of remedial follow-up action strategies shall be specified in the contingency plan. These remedial strategies shall specifically address the goals, objectives and performance specifications of the mitigation site plan.
7. Post-mitigation monitoring for project design mitigation, when relevant, and compensatory mitigation shall be required over a 2 to 5 year time period, depending on the size and complexity of the mitigation project. Local governments, in coordination with State and Federal resource agencies, shall design and implement the monitoring. Monitoring requirements may be waived as follows:
  - a. A waiver of the 2 to 5 year monitoring requirement shall be granted if, at any time during the 2 to 5 year period, the project is judged successful; or
  - b. If a mitigation project fails to satisfy the original goals and objectives after the designated time period, and the developer has met all the site design and contingency plan requirements, then the developer is not responsible for remedial action. However monitoring may still be required up to a predetermined time period to help agencies determine workable strategies for future mitigation efforts.
8. All mitigation actions shall begin prior to or concurrent with the associated development action.
9. For estuarine wetlands, once a compensatory mitigation action is required, the habitat types displayed in OAR 141-85-254 shall provide the basis for comparing development activities and possible mitigation areas. The mitigation trade method described in OAR 141-85-256 shall be used to determine acreage and credit requirements for mitigation sites.
10. For non-tidal wetlands, once a compensatory mitigation action is required, habitat trade requirements shall be determined in coordination with

appropriate State and Federal agencies. Mitigation requirements shall be made on a case by case basis using determinations made by these agencies.

11. Removal and fill actions potentially exempt from estuarine mitigation requirements include:
  - a. Removal or fill of less than 50 cubic yards of material;
  - b. Filling for repair and maintenance of existing functional dikes where there is negligible physical or biological damage to tidal marsh or intertidal area;
  - c. Riprap to allow protection of existing bank line with clean, durable erosion resistant material provided that the need for riprap protection is demonstrated and that this need cannot be met with natural vegetation, and no appreciable increase in upland occurs;
  - d. Filling for repair and maintenance of existing roads where there is negligible physical or biological damage to tidal marsh or intertidal areas;
  - e. Dredging for authorized navigation channels, jetty or navigational aid installation, repair or maintenance contract with the Army Corps of Engineers;
  - f. Any proposed alteration that would have negligible adverse physical or biological impact on estuarine resources.
  - g. Dredging or filling required as part of an estuarine resource creation, restoration, or enhancement project agreed to by local, State, and Federal agencies; and
  - h. Beach nourishment, subject to Dredging and Dredged Material Disposal Standards, Section 5.250.

Any waiver of mitigation shall be coordinated with State and Federal agencies.

12. Activities that do not require mitigation even though they involve intertidal removal include:
  - a. Maintenance dredging - dredging a channel basin, or other facility which has been dredged before and is currently in use or operation or has been in use or operation sometime during the past five years, provided that the dredging does not deepen the facility beyond its previously authorized or approved depth plus customary over-dredging; and

- b. Aggregate mining - provided the site has historically been used for aggregate removal on a periodic basis.
13. Actions not considered as mitigation include:
- a. As a general rule, conversion of an existing wetland type to another wetland type as mitigation for impacts on another wetland shall not be allowed. However, diked non-tidal wetlands with low wildlife value can be discounted and restored to tidal influence as mitigation for impacts in diked non-tidal wetlands. Also, enhancement of an existing wetland can be considered mitigation for impacts in another wetland;
  - b. Transfer of ownership of existing wetlands to public ownership;
  - c. Dedication of existing wetlands for natural uses;
  - d. Provision of funds for research; or
  - e. Monetary compensation for lost wetlands except where monies are used to purchase mitigation credits at a mitigation bank.
14. The following criteria shall be considered when selecting and including potential mitigation sites in the Mitigation and Restoration Plan for the Columbia River Estuary (not in order of priority):
- a. Proximity to potential development sites;
  - b. Opportunity to create or restore habitat conditions and other values similar to those at the impacted sites or historically and presently scarce habitat types;
  - c. Character of potential sites (e.g., low habitat value and no conflicting uses);
  - d. Potential for protection through zoning; and
  - e. Amount of new dike requirements, if any.
15. A plan amendment shall be required to remove any mitigation site from the mitigation plan. For a Priority 1 mitigation site the plan amendment shall require a demonstration that there is no longer a need for the site or that a suitable alternative mitigation site has been designated and protected. A Priority 2, Level 3 site shall be partially or totally removed from the mitigation plan if the landowner proposes a development that would preclude all or part of its use for mitigation and, 30 days after the permit application has been

circulated, a negotiated agreement to sell the land, or certain landownership rights, for mitigation use has not been made. The negotiation shall be between the landowner and any interested buyer. The site shall not be removed from the plan until the development is completed. A Priority 2, Level 4 or a Priority 3 site shall be partially or totally removed from the mitigation plan if the landowner chooses to develop part or all of the site to a degree that would preclude its availability for mitigation use.

16. Astoria shall make the determination of whether a development will preclude all or some of the potential use of the site for mitigation purposes.
17. After a mitigation action takes place, Astoria shall amend its plan and change the designation to reflect its aquatic character.
18. The developer implementing a mitigation action shall be responsible for all costs associated with the mitigation project unless an alternative agreement for cost responsibility is negotiated between the landowner and the developer.
19. Shorelands in the Marine Industrial Shorelands Zone can only be used for mitigation subject to a finding that the use of the site for mitigation will not preclude or conflict with water-dependent uses.
20. Significant Statewide Planning Goal 17 resource areas (major marshes, significant wildlife habitat, and exceptional aesthetic resources) can only be used for mitigation subject to a finding that the use of the site for mitigation will be consistent with protection of natural values.
21. Shorelands in the Marine Industrial Shorelands Zone can only be used for restoration subject to a finding that the use of the site for restoration will not preclude or conflict with water-dependent uses.
22. Priority 2, Level 3 and 4 mitigation sites shall be designated as mitigation sites until they are proposed for restoration outside of the context of mitigation. At this time restoration shall be considered an allowed use subject to the 30 day freeze restrictions presented in mitigation standard 15. Restoration shall only be allowed at Priority 2 sites subject to a finding that the site is no longer required for mitigation.
23. Priority 3, Level 4 mitigation sites shall be designated as mitigation sites until they are specified for restoration outside of the context of mitigation. At this time, restoration shall be considered an allowed use. Restoration shall only be allowed at Priority 3 sites subject to a finding that the site is no longer required for mitigation.

24. Significant Statewide Planning Goal 17 resource areas (major marshes, significant wildlife habitat, and exceptional aesthetic resources) can only be used for restoration subject to a finding that the use of the site for restoration will be consistent with protection of its natural values.

4.140. PUBLIC ACCESS TO THE ESTUARY AND ITS SHORELINE.

Standards in this subsection apply to all uses and activities in Columbia River Estuary shoreland and aquatic areas which directly or indirectly affect public access. "Public access" is used broadly here to include direct physical access to estuary aquatic areas (boat ramps, for example), aesthetic access (viewing opportunities, for example), and other facilities that provide some degree of public access to Columbia River Estuary shorelands and aquatic areas.

1. Projects to improve public access shall be designed to assure that adjacent privately owned shoreland is protected from public encroachment.
2. The City shall review, under ORS 271.080 through 271.230, proposals for the vacation of public easements or right-of-ways which provide access to or along estuarine waters. The City shall review under the provisions of ORS 271.300 through 271.360 proposals for the sale, exchange or transfer of public ownership which provides access to estuarine waters. Existing public ownerships, right-of-ways, and similar public easements which provide access to or along estuary waters shall be retained or replaced if sold, exchanged or transferred.
3. Right-of-ways may be vacated to permit redevelopment of existing developed shoreland areas provided public access across the affected site is retained.

4.150. RECREATION AND TOURISM.

Standards in this subsection are applicable to recreational and tourist-oriented facilities in Columbia River estuary shoreland and aquatic areas.

1. Off-street parking may only be located over an aquatic area if all of the following conditions are met:
  - a. Parking will be on an existing pile-supported structure; and
  - b. Suitable shoreland areas are not available; and
  - c. The amount of aquatic area committed to parking is minimized; and
  - d. The aquatic area is in a Development designation.

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2. New or expanded recreation developments shall be designed to minimize adverse effects on surface and ground water quality. Adverse effects of storm run-off from parking lots shall be minimized.
3. New or expanded recreational developments shall be designed and located so as not to unduly interfere with adjacent land uses.

4.160. RESIDENTIAL, COMMERCIAL AND INDUSTRIAL DEVELOPMENT.

The standards in this subsection are applicable to construction or expansion of residential, commercial or industrial facilities in Columbia River Estuary shoreland and aquatic areas. Within the context of this subsection, residential uses include single and multi-family structures, mobile homes, and floating residences (subject to an exception). Duck shacks, recreational vehicles, hotels, motels and bed-and-breakfast facilities are not considered residential structures for purposes of this subsection. Commercial structures and uses include all retail or wholesale storage, service or sales facilities and uses, whether water-dependent, water-related, or non-dependent, non-related. Industrial uses and activities include facilities for fabrication, assembly, and processing, whether water-dependent, water-related or non-dependent non-related.

1. Sign placement shall not impair views of water areas. Signs shall be constructed against existing buildings whenever feasible. Off-premise outdoor advertising shall not be allowed in aquatic areas.
2. Off-street parking may only be located over an aquatic area if all of the following conditions are met:
  - a. Parking will be on an existing pile-supported structure; and
  - b. Suitable shoreland areas are not available; and
  - c. The amount of aquatic area committed to parking is minimized; and
  - d. The aquatic area is in a Development designation.
3. Joint use of parking, moorage and other commercial support facility is encouraged where feasible and where consistent with local Code requirements.
4. Uses on floating structures shall be located in areas protected from currents and wave action, and shall not rest on the bottom during low tidal cycles or low flow periods.
5. Aquatic areas or significant non-tidal wetlands in shoreland areas may not be used to compute the lot area or density for residential development in shoreland areas.

6. Where groundwater is or may be used as a water supply, the ground-water table shall not be significantly lowered by drainage facilities, or be affected by salt water intrusion due to groundwater mining.
7. Fill in estuarine aquatic areas or in significant non-tidal wetlands in shoreland areas shall not be permitted for residential uses.
8. Piling or dolphin installation, structural shoreline stabilization, and other structures not involving dredge or fill, but which could alter the estuary may be allowed only if all of the following criteria are met:
  - a. A substantial public benefit is demonstrated; and
  - b. The proposed use does not unreasonably interfere with public trust rights; and
  - c. Feasible alternative upland locations do not exist; and
  - d. Potential adverse impacts, as identified in the impact assessment, are minimized.

4.170. SHALLOW-DRAFT PORTS AND MARINAS.

The standards in this subsection apply to development of new marinas and improvement of existing marinas in aquatic areas of the Columbia River Estuary. Also covered are adjacent shoreland support facilities that are in conjunction with or incidental to the marina. Included under this subsection's coverage are both public and private marinas for either recreational, charter or commercial shallow draft vessels.

1. New marinas may be approved only when existing marinas are inadequate with respect to location, support services or size; or cannot expand to meet area moorage needs.
2. New marinas shall be located in or adjacent to areas of extensive boat usage, and in areas capable of providing necessary support services (including street access, upland parking, water, electricity and waste disposal).
3. The feasibility of upland boat storage shall be evaluated concurrent with proposals for new or expanded marina facilities.
4. Marina development and expansion may require some filling and dredging of presently undeveloped areas. Significant aquatic and shorelands resources shall be protected from preventable adverse impacts in the design, construction, and maintenance of marina facilities.

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5. Marina development requiring filling or dredging in estuarine aquatic areas may be permitted only if all of the following criteria are met:
  - a. If required for navigation or for other water-dependent uses requiring an estuarine location, or if specifically allowed under the applicable aquatic designation; and
  - b. A substantial public benefit is demonstrated; and
  - c. The proposed dredging or filling does not unreasonably interfere with public trust rights; and
  - d. Feasible upland alternative sites do not exist; and
  - e. Adverse impacts are minimized.
6. New, expanded or renovated marinas shall be designed to assure adequate water circulation and flushing.
7. New marinas shall provide facilities for emptying holding tanks so that these wastes are not placed in the river.
8. Covered moorages may be permitted in marinas subject to the following requirements:
  - a. Information on existing water quality and habitat conditions in the aquatic area proposed for the covered moorage; and
  - b. Data on existing aquatic vegetation, and an analysis of the proposed covered moorages' impact on aquatic vegetation; and
  - c. Information on light penetration, both with and without the proposed covered moorage; and
  - d. No more than 20% of the marina's aquatic surface is occupied by the covered moorages.
9. New or expanded marina fuel docks shall maintain on-site equipment for the containment of spilled fuel.
10. Floating docks in marinas shall be located such that they do not rest on the bottom during low tides.
11. New individual docks outside of marinas may only be built when it is shown that existing marinas cannot accommodate the proposed use.

4.180. SHORELAND HAZARD AREAS.

The standards in this subsection apply to development in Columbia River Estuary shoreland areas with identified hazards to development. These hazards are identified in subarea plans, and include areas susceptible to erosion, soil movement, and flooding.

1. Proposed shoreland area development shall be evaluated prior to construction to assure that new hazards are not created or existing hazards are not worsened on adjacent property.

4.190. SIGNIFICANT AREAS.

The standards in this subsection are intended to protect certain shoreland and aquatic resources with estuary-wide significance. Significant shoreland resources are identified as such in subarea plans. Significant aquatic resources are found in Natural Aquatic areas. This subsection applies only to activities and uses that potentially affect significant shoreland or aquatic resources. Other resources without estuary-wide significance are not covered by this subsection.

1. Temporary removal of riparian vegetation may be permitted in conjunction with a water-dependent use where direct access to the water is required for construction or for a temporary use. Riparian vegetation removed for these reasons must be replaced upon project completion.
2. Permanent removal of riparian vegetation may be permitted along transportation right-of-ways for purposes of maintaining clear vision.
3. Public access to significant scenic areas shall be provided in a manner consistent with the preservation of the scenic area and other significant resources.
4. Tidedgated sloughs and drainage ditches identified as having significant aquatic habitat value, significant riparian vegetation, or other significant shoreland resource value may be maintained with respect to depth, but their bankline location and configuration may not be altered, unless part of an approved fill or shoreline stabilization project.
5. A setback of 50 feet from significant riparian vegetation shall be required for all new structures.

4.200. WATER QUALITY MAINTENANCE.

The standards in this subsection are intended to help protect and enhance the quality of water in the Columbia River Estuary. Impacts on water quality in aquatic areas and in tidedgated sloughs in shoreland areas are covered by these standards.

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1. New marinas shall provide facilities for emptying holding tanks so that these wastes are not placed in the river.
2. Thermal effluent shall be cooled before they are returned to the estuary.
3. The potential adverse impacts on water quality of dredging, fill, in-water dredged material disposal, in-water log storage, water intake or withdrawal, and slip or marina development will be assessed during permit review. Parameters to be addressed include:
  - a. Turbidity;
  - b. Dissolved oxygen;
  - c. Biochemical oxygen demand;
  - d. Contaminated sediments;
  - e. Salinity;
  - f. Water temperature;
  - g. Flushing;
4. New or expanded marine fuel docks must provide on-site equipment for the containment of fuel spills.
5. New point-source waste water discharges into the Columbia River will be controlled through the National Pollution Discharge Elimination System (NPDES) permit program.
6. Estuarine Aquatic or Shoreland area pesticide application will be controlled by the State Department of Agriculture and the Department of Environmental Quality.

4.210. WATER-DEPENDENT DEVELOPMENT AREAS.

Standards in this subsection are applicable only to those Columbia River Estuary Shorelands designated as Especially Suited for Water-Dependent Development. The purpose of these standards is to assure that adequate sites are available for water-dependent uses.

1. The only new uses allowed in Marine Industrial Shorelands are:
  - a. Water-dependent recreational uses;

- b. Water-dependent commercial uses;
- c. Water-dependent industrial uses;
- d. Temporary uses involving minimal capital investment and no permanent structures; and
- e. A use in conjunction with and incidental to a water-dependent use.

4.220. WATER-DEPENDENT AND WATER-RELATED USE CRITERIA.

The following criteria are applicable when determining whether a use is water-dependent, water-related, or non-dependent, non-related.

A. Water-Dependent Use.

A use is water-dependent when it can only be accomplished on, in, or adjacent to water. The location or access is required for one of the following:

- 1. Water-borne transportation (such as navigation; moorage, fueling and servicing of ships or boats; terminal and transfer facilities; fish or other material receiving and shipping); or
- 2. Recreation (active recreation such as swimming, boating and fishing, or passive recreation such as viewing and walking); or
- 3. A source of water (such as energy production, cooling or industrial equipment or wastewater, other industrial processes, aquaculture operations); or
- 4. Marine research or education (such as observation, sampling, recording information, conducting field experiments and teaching).

B. Water-Related Use.

- 1. Provides goods and/or services that are directly associated with water-dependent uses, supplying materials to, or using products of, water-dependent commercial and industrial uses; or offering services directly tied to the functions of water-dependent uses; and
- 2. If not located adjacent to water, would experience a public loss of quality in the goods and services offered (evaluation of public loss of quality will involve subjective consideration of economic, social and environmental values).