

## Appendix A

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Glossary



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<b>A-weight</b>	A standard frequency weighting that simulates how humans perceive sound (dBA)
<b>access</b>	The ability to enter or approach a facility or to make use of a facility.
<b>adverse effects</b>	<p>The totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to:</p> <ul style="list-style-type: none"><li>▪ bodily impairment, infirmity, illness or death</li><li>▪ air, noise, and water pollution and soil contamination</li><li>▪ destruction or disruption of human-made natural resources</li><li>▪ destruction or diminution of aesthetic values</li><li>▪ destruction or disruption of community cohesion or a community's economic vitality</li><li>▪ destruction or disruption of the availability of public and private facilities and services</li><li>▪ vibration</li><li>▪ adverse employment effects</li><li>▪ displacement of persons, businesses, farms, or nonprofit organizations</li><li>▪ increased traffic congestion, isolation, exclusion or separation of minority or low-income individuals within a given community or from the broader community</li><li>▪ denial, of, reduction in, or significant delay in the receipt of benefits of DOT programs, policies, or activities</li></ul>
<b>air quality standards</b>	The level of pollutants prescribed by regulations that may not be exceeded during a given time in a defined area.
<b>ambient</b>	Surrounding atmosphere
<b>anadromous fish</b>	A fish species that spends a part of its life cycle in the sea and returns to freshwater streams to spawn.
<b>area of potential effect</b>	This is the area in which historic properties, if they are present, could be affected by the project either directly or indirectly.
<b>arterial</b>	A major street that primarily serves through traffic, but also provides access to abutting properties. Arterials are often divided into principal and minor classifications depending on the number of lanes, connections made, volume of traffic, nature of traffic, speeds, interruptions (access functions), and length.
<b>basin</b>	The area of land drained by a river and its tributaries, draining water, organic matter dissolved nutrients, and sediments into an ocean, lake, or stream.
<b>best management practices (BMPs)</b>	BMPs are generally accepted techniques that, when used alone or in combination, prevent or reduce adverse effects of a project. Examples include erosion control measures and construction management to minimize traffic disruption. Please see Appendix A for a complete list of BMPs.

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<b>buffer</b>	A designated area along and adjacent to a stream or wetland that may be regulated to control the negative effects of adjacent development on the aquatic resource.
<b>capacity</b>	The maximum sustained traffic flow of a transportation facility under prevailing traffic and roadway conditions in a specified direction.
<b>chemical oxygen demand</b>	Chemical Oxygen demand is the quantity of oxygen that would be consumed in oxidation of substances in water through chemical reactions. Where COD is high, surface waters may experience a depletion of dissolved oxygen, which is detrimental to aquatic life.
<b>Code of Federal Regulations</b>	The Code of Federal Regulations (CFR) is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government. It is divided into 50 titles that represent broad areas subject to federal regulation. Each volume of the CFR is updated once each calendar year and is issued on a quarterly basis.
<b>congestion</b>	A condition characterized by unstable traffic flows that prohibit movement on a transportation facility at optimal legal speeds. Recurring congestion is caused by regularly occurring excess volume compared with capacity. Nonrecurring congestion is caused by unusual or unpredictable events such as traffic accidents.
<b>coniferous trees</b>	Trees that are usually evergreen and bear cones.
<b>conservation</b>	Defined by the Endangered Species Act (ESA) as the use of all methods and procedures which are necessary to bring any endangered or threatened species to the point at which the measures provided pursuant to the ESA are no longer necessary.
<b>constructive use</b>	A type of indirect use in which a transportation project's proximity impacts (as opposed to direct impacts) are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. Examples include excessive noise level increases, diminished aesthetic features, ecological intrusions, and other indirect impacts to the resource's environment or utility.
<b>context sensitive solutions (CSS)</b>	A model for transportation project development that has recently received much discussion and broad acceptance. Its essence is that a proposed transportation project must be planned not only for its physical aspects as a road serving specific transportation objectives, but also for its effects on the aesthetic, social, economic, and environmental values, needs, constraints, and opportunities in a larger community setting.
<b>cover types</b>	Cover types describe all natural and modified land covers so that the total area of all cover types equals the area under consideration.
<b>cultural resources</b>	Any historic (or prehistoric) district, site, building, structure, or object that is either listed or eligible for listing on the National Register of Historic Places. Examples include such items as artifacts, records, structures, and remains.
<b>cumulative effect</b>	Effect on the environment which results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions. Cumulative effects can result from individually minor but collectively noticeable actions taking place over a period of time.
<b>deciduous trees</b>	Trees that are generally broad-leaved and lose their leaves in winter.

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<b>delay</b>	Increased travel time experienced by a person or a vehicle because of circumstances that impede the desirable movement of traffic.
<b>direct effect</b>	Effect caused by the proposed action and occurring at the same time and place.
<b>disproportionately high and adverse effect</b>	An adverse effect that: (a) is predominately borne by a minority population and/or a low-income population, or (b) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.
<b>Ecology</b>	Washington State Department of Ecology
<b>ecosystem</b>	Community of organisms interacting with each other and the environment in which they live.
<b>effect</b>	Includes ecological effects (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health effects, whether direct, indirect, or cumulative. Effects may include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes the effect will be beneficial.
<b>eligible</b>	Refers to properties that meet the National Park Service criteria for listing on the National Register of Historic Places.
<b>emergent</b>	A plant that grows rooted in shallow water or saturated soil, where most of the plant emerges from the water or above the ground surface and stands vertically.
<b>emergent wetland</b>	In the USFWS classification system (Cowardin et al. 1979), a wetland characterized by erect, rooted, non-woody plants.
<b>Endangered Species Act (ESA)</b>	The Endangered Species Act provides a means whereby the ecosystems, upon which endangered and threatened species depend, may be conserved to provide a program for the conservation of such species and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in the act.
<b>environmental justice</b>	Executive Order 12898 provides that each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.
<b>equivalent sound level (L<sub>eq</sub>)</b>	The equivalent sound level is widely used to describe environmental noise. It is a measure of the average sound energy during a specified period of time.

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<b>feasible and prudent</b>	<p>A term that is integral to the Section 4(f) process, feasible and prudent refers to the viability of an alternative that avoids the use of a Section 4(f) resource. The term "feasible" refers to the constructability of a project—whether or not it can be built using current construction methods, technologies, and practices. The term "prudent" refers to how reasonable the alternative is—in essence, whether or not it makes sense. Given a range of options, a transportation agency must select an avoidance alternative rather than adversely impact Section 4(f) resources if it is feasible and prudent. By contrast, an alternative may be rejected if it is not feasible and prudent. An alternative may be considered not feasible and prudent for any of the following reasons:</p> <ul style="list-style-type: none"><li>▪ Does not meet project purpose and need</li><li>▪ Excessive cost of construction</li><li>▪ Severe operational or safety problems</li><li>▪ Unacceptable impacts (social, economic or environmental)</li><li>▪ Serious community disruption</li><li>▪ A combination of any of the above</li></ul>
<b>Federal Highway Administration (FHWA)</b>	<p>One of several agencies in the U.S. Department of Transportation, the FHWA provides federal financial assistance to the states through the Federal Aid Highway Program, the purpose of which is to construct and improve the National Highway System, urban and rural roads, and bridges.</p>
<b>fill</b>	<p>Soil placed by humans, such as for roads or building foundations.</p>
<b>flood hazard areas</b>	<p>Frequently flooded areas.</p>
<b>floodplain</b>	<p>The area that is subject to periodic flooding. The jurisdictional floodplain area for this project is that area that has a greater than 1% chance of flooding in a given year. We refer to this area as the 100-year floodplain.</p>
<b>forested wetland</b>	<p>In the USFWS classification system (Cowardin et al. 1979), a wetland characterized by woody vegetation that is greater than or equal to 20 feet high.</p>
<b>general-purpose lane</b>	<p>A freeway or arterial lane available for use by all traffic.</p>
<b>hazardous materials</b>	<p>Hazardous materials include any material that, because of its quantity, concentration, or physical or chemical characteristics, may pose a threat to human health or the environment.</p>
<b>herbaceous</b>	<p>Plants that have little or no woody tissue with stems that typically die back each year. Plants persist for one growing season (annuals) or more than one year (perennials).</p>
<b>high-occupancy vehicle (HOV)</b>	<p>Vehicle that carries two or more people, including buses, vanpools, and carpools.</p>
<b>home range</b>	<p>The primary area for an animal's normal activities.</p>
<b>hydrologic</b>	<p>Pertaining to the study of water and its interaction with the environment. Hydrologic effects may include changes in stream flow, flooding, or channel capacity, backwatering at culverts, or other characteristics.</p>

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<b>impervious surface area</b>	Area that is not permeable to infiltration of precipitation or runoff to groundwater (water will run off this type of surface but not soak in). A high proportion of precipitation that falls onto impervious surfaces drains from the area as stormwater runoff. In contrast, vegetated areas are permeable, and a large proportion of precipitation that falls on vegetated areas is either intercepted by vegetation or infiltrates into the soil.
<b>indirect effect</b>	Effect caused by the proposed action that is later in time or farther removed in distance, but still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.
<b>jurisdiction</b>	A municipal government agency, such as a city or county. As appropriate, the term "jurisdiction" also includes federal and state agencies.
<b>low-income</b>	A person whose median household income is at or below the Department of Health and Human Services poverty guidelines.
<b>mitigation</b>	An effort to replace land or facilities either with resources that are comparable in value and function, or with monetary compensation that can be used to enhance the remaining land. Specifically for Section 4(f) resources, the cost of mitigation should be a reasonable public expenditure in light of the severity of the impact.
<b>modeling</b>	Use of statistics and mathematical equations to simulate and predict real events and processes.
<b>National Ambient Air Quality Standards</b>	Standards established by the EPA for pollutant concentrations in outside air throughout the country. (See "criteria pollutants" and "state implementation plans.")
<b>National Environmental Policy Act (NEPA)</b>	The National Environmental Policy Act of 1969 (NEPA) is considered to be the basic "National Charter" for protection of the environment. NEPA requires that, to the extent possible, the policies, regulations, and laws of the federal government be interpreted and administered in accordance with the protection goals of the law. It also requires federal agencies to use an interdisciplinary approach in planning and decision making for actions that impact the environment. Finally, NEPA requires the preparation of an environmental impact statement (EIS) on all major federal actions significantly affecting the human environment.
<b>National Register of Historic Places (NRHP)</b>	The Nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966, the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archaeological resources. Properties listed in the register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. The National Park Service administers the National Register, which is part of the U.S. Department of the Interior.
<b>nickel package</b>	A statewide transportation-funding plan that the Washington State legislature approved in 2003.
<b>noise abatement criteria (NAC)</b>	Noise regulations and guidelines are the basis for evaluating potential noise effects. For state and federally funded highway projects, traffic noise effects occur when predicted noise levels approach or exceed the NAC established by the FHWA.

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<b>non-native plant</b>	A plant that does not normally grow in the local area. Non-native plants are typically introduced to area by humans.
<b>official with jurisdiction</b>	The legal representative at the agency owning or administering the resource, unless the agency has delegated or relinquished this authority via formal agreement.
<b>off-peak direction</b>	Travel direction of the freeway with the lower demand.
<b>ordinary high water mark (OHWM)</b>	The elevation marking the highest water level that is maintained for a sufficient time to leave evidence upon the landscape, such as a clear, natural line impressed on the bank, changes in soil character, or the presence of litter and debris. Generally, it is the point where the natural vegetation changes from predominately aquatic to upland species.
<b>palustrine</b>	In the USFWS classification system (Cowardin et al. 1979), freshwater areas (having less than 0.5 part per thousand ocean-derived salts) dominated by trees, shrubs, persistent emergents, mosses, or lichens. These areas can be tidal (waters which alternate by rising and falling) or non-tidal. Palustrine also includes wetlands that lack this vegetation but have the following characteristics: (1) area less than 20 acres; (2) no active wave-formed or bedrock shoreline; and, (3) deepest water depth is less than 6.6 feet at low water.
<b>park-and-ride facility</b>	A facility where individuals can park their vehicle for the day and access public transportation or rideshare for the major portion of their trip.
<b>peak</b>	The maximum sound level during a given time interval when the normal frequency and time weighting is not used. The noise measurement instrument has a peak detector that responds rapidly to changing sound levels, unlike the normal time weighting of the instrument.
<b>peak hour</b>	The hour in the morning and in the afternoon when the maximum demand occurs on a given transportation facility or corridor.
<b>peak period</b>	The period of the day during which the maximum amount of travel occurs. It may be specified as the morning (AM), or the afternoon or evening (PM) peak.
<b>pollutant loading</b>	The quantity of a pollutant that discharges to a given point in a drainage area (e.g., to a stream) over a set period of time (e.g., pounds of phosphorus discharged to Mercer Slough per year).
<b>proximity effects</b>	See "Constructive Use."
<b>prudent</b>	See "Feasible and Prudent."
<b>public services</b>	Public services include fire and police protection, schools, parks and recreational facilities, places of worship, and cemeteries.
<b>publicly owned</b>	Property that is owned and/or operated by a public entity. If a governmental body has a proprietary interest in the land (such as fee ownership, drainage easements or wetland easements), it can be considered publicly owned. Land subject to a public easement in perpetuity can also be considered to be publicly owned land for the purpose for which the easement exists.

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<b>Puget Sound Regional Council (PSRC)</b>	The Metropolitan Planning Organization (MPO) and Regional Transportation Planning Organization (RTPO) for the Central Puget Sound region, which is comprised of Snohomish, King, Pierce, and Kitsap Counties. The MPO and RTPO is the legally mandated forum for cooperative transportation decision-making in a metropolitan planning area.
<b>right of way</b>	Land legally established for public use by pedestrians, vehicles, or utilities.
<b>riparian</b>	Land that occurs along or interacts with flowing water. Pertaining to anything connected with or immediately adjacent to the banks of a stream, river, or other waterbody.
<b>runoff</b>	Rainwater or snowmelt that directly leaves an area as surface drainage.
<b>salmonid</b>	A fish of the family Salmonidae; for example, salmon, trout, and char.
<b>scrub-shrub wetland</b>	In the USFWS classification system (Cowardin et al., 1979), areas dominated by woody vegetation less than 20 feet high, such as trees, shrubs, or young trees that are stunted due to environmental conditions.
<b>Section 106</b>	Under Section 106 of the National Historic Preservation Act of 1966, as amended, federal agencies must identify and evaluate cultural resources and consider how undertakings they fund, license, permit, or assist affect historic properties eligible for inclusion in the National Register of Historic Places. The federal agencies must afford the State Historic Preservation Officer and the Advisory Council on Historic Preservation the opportunity to comment on these undertakings.
<b>Significance (for 4(f) resources)</b>	Significance means that in comparing the availability and function of a Section 4(f) resource with the recreational, park, and refuge objectives of that community, the resource in question plays an important role in meeting those objectives. Barring a determination from the official with jurisdiction to the contrary, the Section 4(f) land will be presumed to be significant. All determinations (whether stated or presumed) are subject to review by FHWA for reasonableness.
<b>snag</b>	The remains of a dead but still standing tree; provides nesting and perching habitat for many wildlife species.
<b>spill prevention control and countermeasures (SPCC) plan</b>	An SPCC Plan is implemented to minimize effects to soil, surface water, and groundwater. The SPCC plan addresses procedures, equipment, and materials used in the event of a spill of contaminated soil, petroleum products, contaminated water or other hazardous substances.
<b>stormwater</b>	Stormwater is that portion of precipitation that does not naturally percolate into the ground or evaporate, but flows overland into a defined surface waterbody or a constructed infiltration facility.
<b>stormwater detention ponds</b>	Ponds constructed to hold stormwater runoff.
<b>study area</b>	The area specifically identified for analysis. Study areas vary among individual resources as scientific convention and practice dictate.

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<b>temporary occupancy</b>	A temporary occupancy of land is so minimal that it does not constitute a use within the meaning of Section 4(f) when the duration is temporary, the scope of work is minor, there are no anticipated permanent adverse physical impacts, and when the land will be fully restored. There must be documented agreement of the appropriate Federal, State, or local officials having jurisdiction over the resource regarding the above conditions.
<b>throughput</b>	The number of vehicles being carried on a facility. This is usually measured at a specific point on the roadway facility for a predetermined period.
<b>undertaking</b>	A project that is funded or permitted by a federal agency or on federal land that has the potential to affect historic properties.
<b>upland vegetation</b>	Vegetation associated with dry areas away from water or wetlands; vegetation that is not located within the area influenced by a body of water.
<b>use</b>	Generally, "use" occurs with a DOT-approved project or program (1) when land from a Section 4(f) site is acquired for a transportation project, (2) when there is an occupancy of land that is adverse in terms of the statute's preservationist purposes, or (3) when the proximity impact of the transportation project on the Section 4(f) site, without acquisition of land, are so great that the purposes for which the Section 4(f) site exists are substantially impaired.
<b>utilities</b>	Utilities include electricity, natural gas, water, wastewater and stormwater collection, and telecommunications.
<b>utility franchise/permit</b>	The process by which WSDOT authorizes and tracks public and private utility companies to use a utility corridor within the WSDOT right of way.
<b>vehicle</b>	Any car, truck, van, motorcycle, or bus designed to carry passengers or goods.
<b>vibration</b>	An oscillatory motion, which can be described in terms of displacement, velocity, or acceleration.
<b>view</b>	Aspects of the environment that a viewer can see from the study area and what the viewer can see of the project from nearby surroundings.
<b>viewer</b>	Person who has views of or from the project. We usually discuss viewers in terms of general categories of activities, such as resident, motorist, or pedestrian, and we often refer to them as "viewer groups."
<b>viewshed</b>	The area that a viewer can see from the project and surrounding area.
<b>visual character</b>	Impartially describes what exists within the landscape. Both natural and built landscape features and their relationships make up the character of an area or view. The perception of visual character can vary significantly between seasons and can even vary between hours as weather, light, shadow, and the elements that compose the viewshed change. The basic components used to describe visual character for most visual assessments are the elements of form, line, color, and texture of the landscape features. To further define visual character, the appearance of the landscape is described in terms of its dominant features, scale, diversity, and continuity.

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<b>visual quality</b>	An assessment of the visual character, which identifies the character-defining features for selected views.
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<b>watershed</b>	The region of land that drains into a specific body of water, such as a river, lake, sea, or ocean. Rain that falls anywhere within a given body of water's watershed will eventually drain into that body of water.
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<b>wetland</b>	<p>Wetlands are formally defined by the U.S. Army Corps of Engineers (Federal Register, 1982), the US Environmental Protection Agency (Federal Register 1988), the Washington Shoreline Management Act of 1971 (SMA) (Ecology 1991), and the Growth Management Act (GMA) (Ecology 1992) as:</p> <p>... those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (Federal Register 1982, 1986).</p> <p>The SMA and the GMA definitions add:</p> <p>Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990 that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificially created wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands.</p>
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<b>WSDOT standard specifications</b>	Guidelines and procedures established by WSDOT for roadway design and construction in a variety of design, engineering, and environmental manuals.
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