

**CROSS-BASE HIGHWAY FINAL EIS
TERMS AND DEFINITIONS**

Appendix C

303(d) List

A list of all surface water bodies in the state for which beneficial uses of water (such as for drinking, recreation, aquatic habitat, and industrial use) are impaired by pollutants. These are water-quality limited estuaries, lakes, and streams that fall short of state surface water quality standards and are not expected to improve within the next 2 years. States are required to prepare these lists by Section 303(d) of the Clean Water Act of 1972.

Ablation Till

A loose, permeable till derived from melting glacial ice.

Adaptive Management

A systematic process for continually improving natural resource management policies and practices by learning from the outcomes of operational programs. Adaptive management involves documenting procedures and results, then changing assumptions and interventions to respond to the new information obtained through monitoring efforts.

Advance Outwash

Sediment consisting of stratified sand and gravel that is deposited by an advancing glacier; advance outwash is typically dense due to overriding of glacial ice.

Adverse Effects (also called Adverse Impacts)

Any undesirable or harmful effect to a person or to any natural or man-made resource.

Alluvium

Sediment deposited by water flowing in streams.

Anadromous Fish

Species that hatch in freshwater, mature in saltwater, and return to freshwater to spawn.

Aquifer

A water-bearing layer of rock or sediment capable of yielding usable quantities of water.

Arterial Street

A street with partial access control, some intersections at-grade, and intended to move high volumes of traffic over long distances at high speed.

At-Grade

A physical arrangement of two transportation routes that intersect at the same elevation, making physical interference between vehicles on each route possible.

A-weighted Decibel (dBA)

The decibel scale (dB) used to describe sound is a logarithmic rating system that accounts for the large differences in audible sound intensities. To approximate the way humans interpret sound, a filter circuit with frequency characteristics similar to the human hearing system is built into sound measurement equipment. Measurements with this filter enacted are referred to as A-weighted sound levels, expressed in dBA.

Best Management Practice

A practice used during project construction to protect water quality and other natural resources.

Braided Stream

A complex type of streambed consisting of converging and diverging stream channels separated by sand bars or islands.

Buffer

A designated upland area around a stream, lake, or wetland consisting of natural or planted vegetation so as to protect the waterbody from adverse effects of any adjacent land uses. Development is often restricted or prohibited in a buffer.

Build Alternative

Any alternative in which the Cross-Base Highway would be built. The Build Alternatives being evaluated include the South, South A, and South B alignments.

Capacity

The maximum sustainable flow rate at which persons or vehicles can be expected to traverse a point or a uniform segment of a lane or roadway during a specific time period under given roadway traffic and control conditions; usually expressed in vehicles per hour, passenger cars per hour, or persons per hour.

Carbon Monoxide (CO)

A byproduct of the burning of fuels in motor vehicle engines. Though this gas has no color or odor, it can be dangerous to human health. Motor vehicles are the main source of CO, which is generally a wintertime problem during still, cold conditions.

Colluvium

Rocks and soil deposited by gravity at the foot of a slope.

Conservation Easement

A legal agreement by which a landowner (a) limits, without relinquishing ownership, the development potential of property which has significant natural resource, open space, or habitat value; and (b) grants the right to conserve those values to a nonprofit organization or public agency. A conservation easement remains in force forever and runs with the land; that is, the original owner and all subsequent owners are bound by the restrictions of the easement.

Construction Impacts

Temporary changes that occur during, or as a direct result of, roadway or support facility construction and will disappear once construction is over. These may include noise, dust, erosion, sedimentation, removal of vegetation, and traffic disturbances.

Contaminant Loading Rate

The total amount of contaminants entering the system from one or multiple sources measured as a rate in weight per unit of time.

Corridor

The area between the endpoints of the proposed highway (the project termini).

Critical Areas

Areas that are subject to natural hazards or land features that support unique, fragile, or valuable resources. Critical areas are identified and regulated by the local jurisdiction. Title 18E10.050.W of the Pierce County Code states: "Critical areas means wetlands, flood hazard areas, fish and wildlife habitat areas, aquifer recharge areas, and geologically hazardous areas."

Cul-de-sac

A street or passage closed at one end.

Cumulative Impacts (also called Cumulative Effects)

The impacts on the environment resulting from the addition of the incremental impacts of past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions occurring over time.

Demand

The number of users desiring service on the highway system; usually expressed as vehicles per hour or passenger cars per hour.

Depression-fillings

Geologic materials deposited in ground-surface depressions created by melting glacial ice.

Depressional Wetland

A wetland located in a topographic depression.

Design Year

The future year used to estimate the probable traffic volume for which a highway is designed, usually 10 to 20 years from the beginning of construction. The design year for the Cross-Base Highway is 2025.

Diameter at Breast Height (dbh)

The diameter of a standing tree at a point 4 feet, 6 inches from ground level.

Diamond Interchange

An interchange that results in two or more closely spaced surface intersections, so that one connection is made to each freeway entry and exit, with one connection per quadrant.

Direct Effects (also called Direct Impacts)

Effects caused by the proposed action and occurring at the same time and place as the proposed action.

Displacement

A property encroachment that would require full acquisition of the parcel (and structure if any) in order to build the Cross-Base Highway.

Emergent

A rooted herbaceous plant species that has parts extending above a water surface. Can pertain to a particular type of plant, or a wetland plant community (i.e., emergent wetland habitat) where 30 percent or more of the area contains predominantly emergent vegetation in the uppermost vegetative strata.

Employment Center

An area designated by the Pierce County Comprehensive Plan for industrial, light industrial, assembly, office, and similar land uses with supporting services and infrastructure.

Endangered Species

According to the Federal Endangered Species Act of 1973, an endangered species is any species in danger of extinction throughout all or a significant portion of its range, other than an insect determined by the Secretary of the Interior to constitute a pest whose protection under the provisions of this act would present an overwhelming and overriding risk to man.

Environmental Impact Statement (EIS)

A detailed document prepared in accordance with Section 102(2)(C) of the National Environmental Policy Act (NEPA), addressing potential environmental impacts of a proposed action.

Equivalent Sound Level (L_{eq})

A measure of sound energy over a period of time. It is referred to as the equivalent sound level because it is equivalent to the level of a steady sound that, over a referenced duration and location, has the same A-weighted sound energy as the actual fluctuating sound being measured by an instrument.

Fee Acquisition

Purchase of land in complete title with all associated rights.

Flyover (directional)

A direct connector that is an elevated structure moving traffic from one roadway to another.

Forb

A non-woody plant; a broad-leaved herb other than a grass, especially used to refer to plants growing in a field, prairie, or meadow (generally small flowering plants).

Forested Wetland

A wetland plant community that contains at least 30 percent or more forested cover in the uppermost vegetative strata. Forested cover includes woody vegetation greater than 20 feet tall that is at least partially rooted within the wetland.

Grade Separated

A term used to describe a physical arrangement of two transportation routes that cross each other at different elevations without any physical interference. For example, a highway that crosses over or under a railroad is said to be grade separated.

Gravelly-Thorne Connector

The proposed one-way, southbound access roadway between Gravelly Lake Drive and Thorne Lane SW.

Groundwater

Subsurface water that occurs beneath the water table in soils and geologic formations that are fully saturated.

Habitat Fragmentation

The separation of habitats by penetrable barriers. Habitat fragmentation occurs when a barrier (e.g., road, building, fence) is placed into the environment where a species normally lives, but the species can move around, over, or through the barrier.

High-Occupancy Vehicle (HOV)

A vehicle with a defined minimum number of occupants (greater than one); HOVs often include buses, taxis, and carpools, when a lane is reserved for their use.

Holocene

The geologic period from 8,000 years ago to the present.

Hummock

A small natural hill.

Hydric Soil

Soils that form under conditions of saturation, flooding, or ponding that last through enough of the growing season for the soil to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation.

Hydrophytic Vegetation

Plants that have adapted mechanisms for survival in saturated or inundated soils with anaerobic conditions (lacking air).

Hydroseeding

A technique used to apply seed, fertilizer, mulch, and an anchoring material to areas being revegetated. Water is added to the seed mixture and evenly distributed over the area using a spray gun.

Impervious Surface

A hard surface area, such as roads, rooftops, or parking lots, that prevents or retards the entry of water into the soil as under natural conditions prior to development.

Indirect Effects (also called Indirect Impacts)

Effects caused by the proposed action but occurring 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.

Infiltration

The downward movement of water from the surface to the subsoil.

Invasive Species

Species that are not native to an area and are harmful or disruptive to native species or to the ecosystem.

Interchange

The system of interconnecting ramps between two or more intersecting roadways that are vertically or horizontally separated from each other and do not share a common intersection.

Isolation

The separation of habitats by impenetrable barriers. Habitat isolation occurs when a barrier (e.g., road, fence) is placed into the environment where a species normally lives, and the barrier prevents the species from accessing other portions of the habitat.

Level of Service (LOS)

A measure of the quality of flow and overall congestion on a particular section of road or at a specific intersection, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience.

Listed Species

Federally listed species are those fish, wildlife, or plants that have been determined to be endangered or threatened under Section 4 of the Endangered Species Act (ESA). State-listed species are those fish and wildlife species that have been determined to be

endangered or threatened under Sections 2.4 and 2.5 of the Washington Administrative Code (WAC) 232-12-297.

Lodgement Till

A till deposited at the base of an advancing glacier that is very dense due to being overridden by the glacial ice.

Mainline

The through-lane roadways of the freeway.

Mitigation

Measures designed to counteract or reduce environmental impacts. These measures may include avoiding an impact by not taking a certain action or part of an action; minimizing an impact by limiting the degree or magnitude of an action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or compensating for the impact by replacing or providing substitute resources or environments.

Mulch

A protective covering, usually of organic matter such as leaves, wood chips, straw, or peat, placed around plants to prevent the evaporation of moisture, the freezing of roots, and the growth of weeds.

National Ambient Air Quality Standards (NAAQS)

Federal limits on levels of atmospheric contamination necessary to protect the public from adverse effects on health (primary standards) and welfare (secondary standards).

National Environmental Policy Act (NEPA)

Federal legislation establishing national policy that environmental impacts will be evaluated as an integral part of any major federal actions significantly affecting the quality of the human environment (42 USC §§ 4321-4327).

No Build Alternative

An alternative that would not include construction of the Cross-Base Highway, but would include implementation of other planned roadway improvements.

Non-attainment Area

An area designated by the EPA as presently violating the National Ambient Air Quality Standards, based on archival air quality data.

Non-motorized Facility

A facility, such as a road or trail, designed primarily for the use of pedestrians, bicyclists, or equestrians. It may be designed primarily for one of these uses or it may be designed as a joint-use facility.

Non-point Pollution

Pollution that originates from diffuse sources over a relatively large area. Non-point sources can be divided into source activities related to either land or water use, including failing septic tanks, improper animal-keeping practices, forest practices, and urban and rural runoff.

Off-Site Mitigation

Mitigation occurring outside of the project area to compensate for impacts potentially occurring in the project area.

Open-work Gravel

A layer of coarse gravel deposited in a high-energy stream, resulting in the removal and subsequent absence of fine-grained particles from the void spaces between the gravel particles.

Opening Year

The year a new facility is expected to open for public use.

Outwash

Earth material carried from a glacier by meltwater and laid down as layered deposits.

Palustrine

Of, pertaining to, or living in a marsh or swamp.

Palustrine Wetland

Nontidal wetlands located in upland areas dominated by trees, shrubs, persistent emergents, or emergent mosses or lichens.

Particulate Matter

Material suspended in the air in the form of minute solid particles or liquid droplets, especially when considered as an atmospheric pollutant.

Pleistocene

The geologic time period from 1.8 million to 8,000 years ago; also known as the Ice Age.

Point Pollution

Pollutant loads discharged at a specific location (i.e., from pipes, outfalls, and conveyance channels from either municipal wastewater treatment plants or industrial waste treatment facilities). Point sources can also include pollutant loads contributed by tributaries to the main receiving water stream or river.

Pollutant Load

The total amount of contaminants entering the system from one or multiple sources.

Preferred Alternative

The alternative selected by the lead agencies as best meeting the project need and purpose with the least impact on the environment. The preferred alternative is a preliminary recommendation until the Record of Decision is published.

Priority Habitats and Species (PHS)

A catalog published by WDFW listing habitats and species considered to be priorities for conservation and management in the state of Washington. A priority habitat is a habitat type with unique or significant value to many species. Priority species include State Endangered, Threatened, Sensitive, and Candidate species and those species of recreational, commercial, or tribal importance that are considered vulnerable.

Project Area

The new roadway and adjacent areas directly and immediately affected by development (construction and operation) of the project. Note that this area is not fixed and may be slightly different for each element of the environment.

Proposed Species

Species proposed for federal listing are those fish, wildlife, or plants that are proposed in the Federal Register to be listed under Section 4 of the Endangered Species Act (ESA). Species proposed for state listing are those fish and wildlife species that are proposed to be listed under Section 2.4 or 2.5 of the Washington Administrative Code (WAC) 232-12-297.

Queue

A waiting line especially of persons or vehicles.

Ramp Meter

A traffic device that directs vehicles on an on-ramp to stop and proceed in accordance with metering rates, thus controlling how many vehicles enter a highway in a given period of time.

Recessional Outwash

Outwash deposited by a retreating glacier; recessional outwash is typically less dense than advance outwash because it was not overridden by glacial ice.

Record of Decision (ROD)

A document describing the lead agencies' selected alternative for the project, explaining the reasons for the decision, and summarizing any mitigation measures and monitoring that will be incorporated in the project.

Riparian

Of, relating to, or located on the banks of a river or stream.

Runoff

Water (from rain and other precipitation or irrigation) that directly leaves an area in surface drainage, as opposed to the amount that infiltrates into the groundwater.

Scoping

Formal scoping for an EIS includes identifying the range of proposed actions, alternatives, environmental elements and impacts (effects), and mitigation measures to be analyzed in an environmental document. Public and agency scoping meetings are generally associated with this activity for NEPA scoping activities.

Scrub-shrub Wetland

A wetland plant community that contains greater than or equal to 30 percent shrub cover in the uppermost vegetative strata. Shrubs are defined as woody plants, which at maturity are usually less than 20 feet tall and generally exhibit several erect, spreading, or prostrate stems and have a bushy appearance.

Secondary Effects (also called Secondary Impacts)

Secondary effects are the same as indirect effects under NEPA. Secondary effects are caused by the proposed action but occur later in time or farther removed in distance, but are still reasonably foreseeable. Secondary 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.

Section 4(f)

Section 4(f) of the Department of Transportation Act restricts the use of U.S. DOT funds for projects affecting the following properties: publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge, or any land from a significant historic site.

Sensitive Receptor

A local area or site that supports activities easily disrupted by audio or visual intrusions or distractions, such as a park, school, historic landmark, or residential neighborhood.

Single Point Urban Interchange (SPUI)

A diamond interchange that combines all the ramp movements into a single signalized intersection.

Sole-Source Aquifer

Any aquifer (1) that is so designated by EPA, (2) that supplies 50 percent or more of the drinking water to the population living over the aquifer, (3) that has distinct hydrogeological boundaries, and (4) for which there is no economically feasible alternative source of drinking water if it should be contaminated.

State Implementation Plan (SIP)

A plan required of each state by the Clean Air Act that describes how the state will attain and maintain the National Ambient Air Quality Standards.

Swale

A low-lying or depressed and often wet stretch of land.

Temporary Effects (also called Temporary Impacts)

Temporary changes that occur during, or as a direct result of, roadway or support facility construction. Temporary effects disappear once construction is over and may include noise, dust, erosion, sedimentation, removal of vegetation, and traffic disturbances.

Threatened Species

A federally listed threatened species is one that, according to the Federal Endangered Species Act of 1973, is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. A state-listed threatened species is one that is native to the state of Washington and is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range within the state without cooperative management or removal of threats.

Till

Unstratified and unsorted sediment deposited by glacial ice.

Total Suspended Solids (TSS)

A measurement of organic or inorganic particles that are suspended in and carried by the water. TSS includes sand, mud, and clay particles (and associated pollutants), as well as solids in stormwater.

Transportation Demand Management (TDM)

A general term for strategies that result in more efficient use of transportation resources. Strategies could include trip reduction ordinances, parking management and other market-based transportation strategies, ridesharing, transit, alternative work schedules, compressed work weeks, pricing, traveler information, electronic substitutes for travel, and land use/site planning.

Transportation System Management (TSM)

Relatively low-cost approaches to improving mobility without constructing major new transportation facilities. Transportation System Management generally emphasizes smaller physical improvements and operational changes such as intersection improvements, minor widenings, traffic engineering actions, operational changes such as queue jumps or queue bypass lanes for buses, expanded bus service, transit centers, and improved transit access.

Urban Growth Area (UGA) and Urban Growth Boundary (UGB)

The area where urban growth will be encouraged. Counties and cities cooperatively establish the boundaries of UGAs, and cities must be located inside UGAs. Once the boundary has been established, cities cannot annex land outside the UGB. Growth outside the UGB must be rural in character.

Viability

The capacity of an individual to successfully live and reproduce, and/or the capacity of a population to be sustained over the long term.

Volume/Capacity (V/C) Ratio

The ratio of flow rate to capacity for a transportation facility. Volume to capacity ratios compare expected demand, or volume, with designed capacity.

Western Terminus

The area, primarily west of I-5, encompassing the Gravelly-Thorne Connector, the Thorne Lane interchange, and the four I-5 interchanges at which ramp meters would be added.

Wetlands

Areas that are inundated or saturated by surface water 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, marches, bogs, and similar areas. Wetlands do not usually 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. Wetlands may, however, include those artificial wetlands intentionally created from non-wetland areas to mitigate conversion of wetlands, if permitted by the appropriate authority.

Wetland Hydrology

The presence of water at or above the soil surface for a sufficient period of the year to significantly influence the plant types and soils that occur in the area.