

Chapter 10 Glossary

Abatement. Reducing the degree or intensity of, or eliminating, pollution.

Adfluvial. A fish population that migrates into tributary streams to spawn. This term is sometimes applied in the literature to fluvial-adfluvial fish.

Air emissions. Gas emitted into the air from industrial and chemical processes, such as ozone, carbon monoxide, nitrogen oxide, nitrogen dioxide, sulfur dioxide and others.

Air pollutant. Any substance in air that could, in high enough concentration, harm man, animals, vegetation or material. Pollutants may include almost any natural or artificial composition of airborne matter capable of being airborne. They may be in the form of solid particles, liquid droplets, gases or in combination. Generally, they fall into two main groups: 1) those emitted directly from identifiable sources; and 2) those produced in the air by interaction between two or more primary pollutants, or by reaction with normal atmospheric constituents, with or without photoactivation. Exclusive of pollen, fog and dust, which are of natural origin, about 100 contaminants have been identified and fall into the following categories: solids, sulfur compounds, volatile organic chemicals, nitrogen compounds, oxygen compounds, halogen compounds, radioactive compounds, and odors.

Air quality standards. The level of pollutants prescribed by regulations that may not be exceeded during a given time in a defined area.

Airborne particulates. Total suspended particulate matter found in the atmosphere as solid particles or liquid droplets. Chemical composition of particulates varies widely, depending on location and

time of year. Airborne particulates include windblown dust, emissions from industrial processes, smoke from burning wood and coal, and motor vehicle or non-road engine exhausts.

Alluvium. Sedimentary material deposited by flowing water, as in a riverbed.

Ambient air. Any unconfined portion of the atmosphere: open air; surrounding air.

Anadromous. A fish population that migrates from the sea into freshwater streams to spawn.

Attainment area. An area considered to have air quality as good as or better than the national ambient air quality standards as defined in the Clean Air Act. An area may be an attainment area for one pollutant and a non-attainment area for others.

Attenuation. The process by which a compound is reduced in concentration over time, through absorption, adsorption, degradation, dilution and/or transformation.

Average Annual Daily Traffic (AADT). The total number of vehicles passing a point on the highway in both directions in a year divided by the number of days in that year.

A-weight. A standard frequency weighting to stimulate the response of the human ear.

Best available control technology (BACT). The application of the most advanced methods, systems and techniques for eliminating or minimizing discharges and emissions on a case-by-case basis as determined by the USEPA. BACT represents an emission limit based on the maximum degree of reduction of each pollutant as described in regulations under the Clean Air Act. The determination of BACT takes into account energy, environmental, economic effects, and other costs.

Best management practices (BMPs). Methods that have been determined to be the most effective, practical means of preventing or reducing pollution from non-point sources.

Capacity. The maximum sustained traffic flow of a transportation facility, expressed in passenger cars per hour per lane, under prevailing traffic and roadway conditions in a specified direction.

Carbon monoxide (CO). A colorless, odorless, poisonous gas produced by incomplete fossil fuel combustion.

Colluvium. A loose deposit of rock debris accumulated through the action of gravity at the base of a cliff or slope.

Concentration. The relative amount of a substance mixed with another substance. An example is five parts per million of carbon monoxide in air or 1 milligram/liter of iron in water.

Congestion. A condition characterized by unstable traffic flows that prohibit movement on a transportation facility at optimal legal speeds. Recurring congestion is caused by constant excess volume compared with capacity. Nonrecurring congestion is caused by unusual or unpredictable events such as traffic accidents.

Connectivity. See ecological connectivity.

Connectivity emphasis areas (CEAs). CEAs are locations in the project corridor where wildlife movement patterns, requirements for protecting aquatic habitats, and highway design requirements overlap to provide the best opportunities for meeting connectivity objectives.

Continuity. Continuity is the uninterrupted flow of pattern elements, maintenance of visual relationships between immediately connected or related landscape components or features.

Cumulative effect. The effects on the environment that result from the incremental consequences of an action when added to other past, present and reasonably foreseeable future actions.

Degradation. Chemical or biological breakdown of a complex compound into simpler compounds.

Design hour. The highest hourly volume of traffic that would be accommodated with acceptable traffic flow conditions.

Design speed. The maximum safe speed that can be maintained over a specified section of highway when conditions are so favorable that the design features of the highway govern.

Dewatering. The lowering of the water table in a stream channel caused by a channel shift or a flow reduction.

Direct impact. The impact on the environment that is caused by an action and occurs at the same time and place.

Dispersion. The process by which a substance or chemical spreads and dilutes in water or gas.

Dispersion model. A mathematical prediction of how pollutants from a discharge or emission source will be distributed in the surrounding environment under given conditions of wind, temperature, humidity or other environmental factors.

Ecological connectivity. The ability of organisms to move freely within their natural range, as well as the physical processes important in the environment, such as the movement of water from wetlands on one side of the highway to the other, or the passage of gravel and large floating trees down a stream channel.

Emission. Pollution discharged into the atmosphere from smokestacks, other vents and surface areas of commercial or industrial facilities, and from residential and mobile sources.

Emission standard. The maximum amount of air pollution discharge legally allowed from a single source, mobile or stationary.

Environment. The sum of all external conditions affecting the life, development and survival of an organism.

Environmental impact statement (EIS). A document that identifies and analyzes, in detail, environmental impacts of a proposed action. As a tool for decision-making, the EIS describes positive and negative effects, and lists alternatives for an undertaking.

Environmental justice. The fair treatment of people of all races, cultures, incomes and educational levels, with respect to developing and enforcing environmental laws, regulations and policies. Fair treatment implies that no population should be forced to shoulder a disproportionate share of exposure to the negative effects of pollution due to lack of political or economic strength.

Fish window. Periods during which the fewest fish would be present in a particular aquatic system.

Floodplain. Lowland that is relatively flat, which is subject to flooding in any given year.

Flow regime. A river basin's flow magnitude and duration given a particular precipitation event (amount and intensity) and the frequency of the events.

Footprint. The area affected by or occupied by the roadway and those features supporting the roadway (shoulder, sloped fill, etc.).

Hydrologic connectivity zones (HCZs). Locations in the project area where moving water under the roadway is important. The HCZs are typically located adjacent to wetlands, seeps, springs, or other visible signs of water. These areas are not necessarily located at stream crossings.

Hyporheic flow. The flow of water through permeable soils under and beside the stream channel between the water table and surface water flow.

Impervious surface. Surface through which water cannot percolate.

Inactive fault. A fault which has had surface displacement within the last 11,000 years. A fault may also be presumed to be inactive based on geologic evidence.

Intactness. The integrity of visual order in the natural and man-built landscape, and the extent to which the landscape is free from visual encroachment.

Intermittent. Stream that only flows for part of the year.

Jurisdiction. A municipal government agency, such as a city or county. As appropriate, the term “jurisdiction” also includes federal and state agencies and federally recognized tribes.

Lacustrine. Living or growing in or along the edges of lakes.

Landscape permeability. The ability of organisms to move freely across the landscape for the purposes of accessing food resources, migrating to avoid severe weather, and dispersing young animals to unoccupied territories.

Landscape unit. An area or volume of distinct landscape character that forms a spatially enclosed unit at ground level; it may include more than one landscape type; outdoor room.

Leq. Equivalent sound level. The level of a constant sound which, in a given time period, has the same energy as does in a time-varying sound.

Level of service (LOS). A gauge for evaluating system performance for roadways, non-motorized and other transportation modes. For example, roadway measures of LOS often assign criteria based on volume-to-capacity ratios.

Mitigation measures. Actions taken to reduce adverse effects on the environment, usually implemented under the State and/or National Environmental Policy Acts.

Mobile source. Any non-stationary source of air pollution, such as cars, trucks, motorcycles, buses, airplanes, locomotives.

Modeling. Use of mathematical equation to simulate and predict real events and processes.

Monitoring. Periodic or continuous surveillance or testing to determine the level of compliance with statutory requirements and/or pollutant levels in various media or in humans, plants and animals.

National Ambient Air Quality Standards (NAAQS). Standards established by the USEPA that apply to outside air quality throughout the country.

National Environmental Policy Act (NEPA). Federal legislation passed in 1970 as the Environmental Quality Improvement Act, which establishes an environmental review process prior to any action for all development projects or major planning studies that are federally funded or that involve a federal agency.

Nitrogen oxide. A gas formed by combustion under high temperature and high pressure in an internal combustion engine. Changes in nitrogen dioxide in the ambient air contributes to photochemical smog.

Non-attainment area. Area that does not meet one or more of the NAAQS for the criteria pollutants designated in the Clean Air Act.

Opportunity cost. The value of resources that would otherwise be productively employed, including time.

Organic compounds. Animal or plant-produced substances containing mainly carbon, hydrogen, nitrogen and oxygen.

Ozone. A form of oxygen found in two layers of the atmosphere, the troposphere and the stratosphere. In the troposphere (the layer extending up 7-10 miles from the earth's surface), ozone is a chemical oxidant and major component of photochemical smog. In the stratosphere (the atmospheric layer 7-10 miles or more above the

earth's surface), ozone is a natural form of oxygen that provides a protective layer shielding the earth from ultraviolet radiation. It can seriously impair the respiratory system and is one of the most widespread of all the criteria pollutants for which the Clean Air Act required the USEPA to set standards. Ozone in the troposphere is produced through complex chemical reactions of nitrogen oxides (which are among the primary pollutants emitted by combustion sources), hydrocarbons released into the atmosphere through the combustion, handling and processing of petroleum products, and sunlight.

Parts per million (ppm). A measurement of concentration on a weight or volume basis. This term is equivalent to milligrams per liter (mg/L).

Particulate. A very small solid suspended in air or water which can vary widely in size, shape, density, and electrical charge.

Peak hour. The period of the day during which the maximum amount of travel occurs.

Perennial. A stream or river that flows all year round.

PM₁₀. A standard for measuring the amount of solid or liquid matter suspended in the atmosphere, that is, the amount of particulate matter less than 10 micrometers in diameter; smaller PM₁₀ particles penetrate to the deeper portions of the lung, affecting sensitive population groups, such as children and individuals with respiratory ailments.

Pollutant. Generally, any substance introduced into the environment that adversely affects the usefulness of a resource.

Pollution. Any substance in water, soil or air that degrades the natural quality of the environment, offends the senses of sight, taste or smell, or causes a health hazard. The usefulness of the natural resource is usually impaired by the presence of pollutants and contaminants.

Precursor. In photochemistry, a compound antecedent to a volatile organic compound. Precursors react in sunlight to form ozone or other photochemical oxidants.

Receptor. An organism that receives, may receive, or has received environmental exposure to a chemical, noise or other environmental impact.

Record of Decision (ROD). A document prepared by a federal agency presenting the basis for the decision reached after completion of the final EIS, summarizing any mitigation measures that will be incorporated into the project and documenting any required Section 4(f) approval.

Riparian reserve. A USFS land allocation classification, established in the Aquatic Conservation Strategy of the Northwest Forest Plan, that refers to the area located within an established buffer distance away from water bodies and wetlands.

Scenic character. The scenic character of a landscape is formed by the order of the patterns composing it. The elements of these patterns are the form, color, line and texture of the landscape's visual resources. Their interrelationships can be objectively described in terms of dominance, diversity, continuity and so on.

Secondary impact. The impact on the environment that is caused by an action and occurs later in time or is farther removed in distance, but is still reasonably foreseeable. Generally, these impacts are induced by the initial action.

Section 106. National Historic Preservation Act, Section 106.

Section 4(f). Department of Transportation Act (23 USC, Section 138 - formerly 49 USC 1653[f]).

Shorelines. All of the water areas of the state, including reservoirs, and their associated wetlands, together with the lands underlying them, except shorelines:

- Of state-wide significance
- On segments of streams upstream of a point where the mean annual flow is 20 cubic feet per second or less, and the wetlands associated with such upstream segments
- On lakes less than 20 acres in size, and wetlands associated with such small lakes

Slope. An area of landform surface differentiated from other areas by its degree of slope. It is a component of landforms but not limited in place or extent, for example, a cliff, gentle slope, flat plain.

State Environmental Policy Act (SEPA). Washington State legislation passed in 1974, which establishes an environmental review process for all development projects and major planning studies prior to taking any action on these projects. SEPA permits early coordination to identify and mitigate any significant issues or impacts that may result from a project or study.

Standards. Limits on the amount of pollutants or emissions produced. The USEPA establishes minimum standards, but states are allowed to be stricter.

Toxic air pollutants. Pollutants that generally have no established ambient standards, but are known or suspected to cause some level of acute or chronic health risk (cancer or non-cancer effects) to the general public.

Toxic chemical. Any chemical listed in USEPA rules as “Toxic Chemicals Subject to Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986.”

Unclassifiable area. An area where there is no relevant air monitoring data, in which case the area has the same regulatory status as “attainment.”

Unity. The degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity

refers to the compositional harmony or intercompatibility between landscape elements.

Viaduct. A bridge for carrying a road or railroad over a valley or the like, consisting of a number of short spans.

View. A scene observed from a given vantage point.

Viewshed. The area that would be visible from a viewpoint based on landform alone, without the screening effects of vegetation and structures.

Visual impairment. A reduction in the visual range and atmospheric discoloration.

Vividness. The memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern.

Volatile organic compounds (VOC). Any organic compound that evaporates readily to the atmosphere. VOCs contribute to photochemical smog production and certain health problems.

Wetland. 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.

Wetland buffer. The upland area surrounding wetlands that serves to moderate biological and physical alteration of the wetland. The buffer widths are determined by the local agency with jurisdiction.

Wetland rating. A ranking of wetlands, typically one through four, by the wetland functions and values. Ranking systems vary by jurisdiction. The highest ranking wetlands are Category I, while the lowest are Category IV.

Wetland function. The physical and biological support roles wetlands provide, such as stormwater peak flow attenuation, groundwater recharge.

Wetland mitigation. Creation, enhancement, or restoration of wetlands to compensate for wetland alterations.

Wetland value. Societal worth placed on wetland attributes and qualities, that is, the value of flood water storage relative to other means of controlling floods.