

5. GLOSSARY

100-year flood. The flood having a one percent chance of being equaled or exceeded in magnitude in any given year. Contrary to popular belief, it is not a flood occurring once every 100 years.

100-year floodplain. The area adjacent to a stream or lake which is subjected to inundation by waters having a flood probability of exceedance of one percent in any given year, as determined by standard statistical and hydrologic methods.

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

Air contaminant. Any particulate matter, gas, or combination thereof, other than water vapor. (See 'air pollutant').

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 monitoring. (See 'monitoring').

Air pollutant. Any substance in air that could, in high enough concentration, harm man, other 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 thereof. 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 criteria. The levels of pollution and lengths of exposure above which adverse health and welfare effects may occur.

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

Air toxics. Any air pollutant for which a national ambient air quality standard (NAAQS) does not exist (i.e., excluding ozone, carbon monoxide, PM₁₀, sulfur dioxide, nitrogen oxide) that may reasonably be anticipated to cause cancer, developmental effects,

reproductive dysfunctions, neurological disorders, heritable gene mutations, or other serious or irreversible chronic or acute health effects in humans.

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 the burning of wood and coal, and motor vehicle or non-road engine exhausts.

Ambient air quality standards. (See 'Criteria Pollutants' and 'National Ambient Air Quality Standards').

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

Ambient monitoring. All forms of monitoring conducted beyond the immediate influence of a discharge pipe or injection well and may include sampling of sediments and living resources. Generally refers to sampling in the field, such as a stream or other water body, or the atmosphere.

Ambient temperature. Temperature of the surrounding air (or other medium). For example, temperature of the room where a gas chlorinator is installed.

Area source. Any small source of non-natural air pollution that is released over a relatively small area but which cannot be classified as a point source. Such sources may include vehicles and other small engines, small businesses, and household activities.

Arterial. 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 number of lanes, connections made, volume of traffic, nature of traffic, speeds, interruptions (access functions) and length.

Asbestos. A mineral fiber that can pollute air or water and cause cancer or asbestosis when inhaled. USEPA has banned or severely restricted the use of asbestos in manufacturing and construction.

Associated wetlands. Wetlands which are in proximity to and either influence or are influenced by tidal waters or a land or stream subject to the Shoreline Management Act.

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 sound level. See L_{eq} .

Average vehicle occupancy. The average number of persons in vehicles on given transportation facilities.

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

Background level. In air pollution control, the concentration of air pollutants in a definite area during a fixed period of time prior to the starting up or on the stoppage of a source of emission under control. In toxic substances monitoring, the average presence in the environment, originally referring to naturally occurring phenomena.

Base-year flood. A flood having a one percent chance of occurrence in any one year.

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 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 (CAA). The determination of BACT takes into account energy, environmental, economic effects, and other costs.

Best available technology economically achievable (BATEA). Originally described under Section 304(b)(2)(B) of the Clean Water Act, this level of control is generally described as the best technology currently in use and includes controls on toxic pollutants.

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.

Bus rapid transit. An express, or limited stop, rubber-tired transit system operating predominately in roadway managed lanes (e.g. HOV 3+, HOT lanes, etc.)

Calibration check. A check for variations between the measured level and a reference level - no adjustment is made to the system.

Calibration. Adjustment of the system so that the measured sound level agrees with a reference sound source.

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.

Capacity-related projects. Projects that increase the number of vehicles or people that can be served by a transportation facility.

Carbon dioxide. A colorless, odorless gas produced by burning fossil fuels, sometimes referred to as a green house gas because it contributes to earth warming.

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

Carboxyhemoglobin. Hemoglobin in which the iron is bound to carbon monoxide (CO) instead of oxygen.

Carcinogenic or carcinogen. Capable of causing cancer. A suspected carcinogen is a substance that may cause cancer in humans or animals but for which the evidence is not conclusive.

Catalytic converter. An air pollution abatement device that removes pollutants from motor vehicle exhaust, either by oxidizing them into carbon dioxide and water or reducing them to nitrogen and oxygen.

Centers. Compact, well-defined areas to which a mix of higher-density growth or intensive land uses will be directed, connected and served by an efficient, transit-oriented, multimodal transportation system.

Climate change. This term is commonly used interchangeably with "global warming" and "the greenhouse effect," but is a more descriptive term. Climate change refers to the buildup of man-made gases in the atmosphere that trap the sun's heat, causing changes in weather patterns on a global scale. The effects include changes in rainfall patterns, sea level rise, potential droughts, habitat loss, and heat stress. The greenhouse gases of most concern are carbon dioxide, methane, and nitrous oxides.

Collector-distributor lanes. Freeway lanes serving single or multiple interchanges that are physically separated from general freeway lanes. The purpose of collector-distributor lanes is to separate the through traffic from the traffic entering and exiting the freeway.

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.

Concurrency points. Key milestones within the “Reinventing NEPA” process for which formal concurrence must be received from participating agencies.

Concurrency. A provision of the Washington State Growth Management Act (GMA) that requires local jurisdictions to adopt and enforce ordinances precluding approval of a proposed development if that development would cause the level-of-service of a transportation facility to fall below the jurisdiction's adopted standard, unless transportation improvements or strategies to accommodate the impacts of the development are made within six years (concurrent with) the development.

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.

Consensus points. Decision points within the "Reinventing NEPA" process where substantial agreement (not necessarily unanimity) must be reached with the participating agencies.

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

Criteria pollutants. The 1970 amendments to the Clean Air Act required USEPA to set National Ambient Air Quality Standards for certain pollutants known to be hazardous to human health. USEPA has identified and set standards to protect human health and welfare for six pollutants: ozone, carbon monoxide, total suspended particulates, sulfur dioxide, lead, and nitrogen oxide. The term, "criteria pollutants" derives from the requirement that USEPA must describe the characteristics and potential health and welfare effects of these pollutants. It is on the basis of these criteria that standards are set or revised.

Cultural significance. Specific landscape settings may be significant because of cultural values; the setting must be at least briefly examined in its regional and national contexts to determine if it is culturally significant. Three general criteria are: uniqueness, commemoration, and designation.

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.

C-weight. A standard frequency weighting that simulates the response of the human ear to high amplitude (loud) noise.

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

Designated pollutant. An air pollutant which is neither a criteria nor hazardous pollutant, as described in the Clean Air Act, but for which new source performance standards exist. The Clean Air Act does require states to control these pollutants, which include acid mist, total reduced sulfur (TRS), and fluorides.

Detector. The rms (root-mean-square) detector used to collect data.

Diffusion. The movement of suspended or dissolved particles from a more concentrated to a less concentrated area. The process tends to distribute the particles more uniformly.

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

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, and other environmental factors.

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

Distance zones. Three conventional terms in painting (foreground, middle ground, background) which can be helpful in describing distance relationships:

Foreground (0 to ¼-½ mile). That area which can be designated with clarity and simplicity not possible in middle and background because the observer is a direct participant. He can have the impressions of immediate details – bark pattern, boulder forms, or degraded parts. This is a zone of important linkage because it sets a tone of quality or its absence. Intensity of color and its value will be at a maximum level, lacking the effect of color diminution due to atmospheric scattering of light rays. At a greater distance, the intensification of aerial perspective becomes an important means of discrimination.

Middleground (¼-½ to 3-5 miles). A critical area for two reasons. This is where

the parts of the landscape can be seen to join together, where hills become a range or trees make a forest. This is also where manmade changes may be revealed as sitting comfortably upon the landscape, or where conflicts of form, color, shape, or scale show up. Colors will be unmistakable but they will be more blue, softer than those of the foreground. Some of the sharpness of value contrasts will be reduced.

Background (3-5 to infinite miles). That area where distance effects are primarily explained by aerial perspective. Surfaces of land forms will lose detail distinctions, emphasis will be on outline or edge, with background becoming an effective foil against which foreground or background is more clearly seen – a figure-ground relationship. Silhouettes and ridges of one land mass against another are the conspicuous visual part of the background with skyline the strongest line of all.

Districts. The medium-to-large sections of the city, conceived of as having two-dimensional extent, which the observer mentally enters “inside of”, and which are recognizable as having some common, identifying character. Always identifiable from the inside, they are also used for exterior reference if visible from the outside.

Dosage/dose. The actual quantity of a chemical administered to an organism or to which it is exposed. In terms of monitoring exposure levels, the amount of a toxic substance taken into the body over a given period of time. (See ‘Noise Dose’).

Emission factor. The relationship between the amount of pollution produced and the amount of raw material processed. For example, an emission factor for a blast furnace making iron would be the number of pounds of particulates per ton of raw materials.

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

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

EMME/2. Regional transportation model for the Puget Sound region.

Energy average (noise). The energy average of two or more quantities expressed on a common decibel scale differs from the arithmetic average of the quantities. Thus, the energy average of 60 dB and 70

dB is 67.4 dB, in contrast to the arithmetic average of 65 dBA.

Enhanced Inspection and Maintenance (I&M). An improved automobile inspection and maintenance program – aimed at reducing automobile emissions – that contains, at a minimum, more vehicle types and model years, tighter inspection, and better management practices. It may also include annual computerized or centralized inspections – under-the-hood inspection – for signs of tampering with pollution control equipment, and increased repair waiver cost.

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

Environmental Assessment (EA). A preliminary written environmental analysis required by NEPA to determine whether a federal activity such as building airports or highways would significantly affect the environment; may require preparation of a more detailed environmental impact statement.

Environmental exposure. Human exposure to pollutants originating from facility emissions. Threshold levels are not necessarily surpassed, but low-level chronic pollutant exposure is one of the most common forms of environmental exposure. (See ‘threshold level’).

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 the development and enforcement of 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.

Environmental mitigation measures. Measures taken to reduce adverse effects on the environment, which are usually implemented under the State Environmental Policy Act (SEPA) or the National Environmental Policy Act (NEPA).

Environmental monitoring. The process of measuring or collecting environmental data.

Evolutionarily significant unit (ESU). A designation used by the National Marine Fisheries Service for certain local salmon populations or ?runs?

which are treated as individual species under this act. This is equivalent to the USFWS “Distinct Population Segment” classification.

Exposure. The amount of radiation, noise, or other pollutant present in a given environment that represents a potential health threat to living organisms.

Express lane. Physically separated freeway lanes with limited interchanges, typically no more than one every 3-4 miles.

Farmland of Statewide or Local Importance. Farmland, other than prime or unique farmland, that is of statewide or local importance for the production of food, feed, fiber, forage, or oilseed crops, as determined by the state or local government agency or agencies, using USDA guidelines.

Federal Motor Vehicle Control Program. All federal actions aimed at controlling pollution from motor vehicles by such efforts as establishing and enforcing tailpipe and evaporative emission standards for new vehicles, testing methods development, and guidance to states operating inspection and maintenance programs.

FEMA floodway. The channel of a river or other watercourse and the adjacent land areas that must be unconfined or unobstructed either vertically or horizontally to provide for the discharge of the base year flood (usually 100-year).

Finding of No Significant Impact (FONSI). A document prepared by a federal agency showing why a proposed action would not have a significant impact on the environment and thus would not require preparation of an environmental impact statement. A FONSI is based on the results of an environmental assessment.

Flood fringe. In FEMA, it is that portion of the floodplain outside the floodway that is inundated by flood waters in which encroachment is permissible. In King County, it is the area outside the zero-rise floodway that is covered by standing flood waters during the 100-year flood. It is the area generally associated with standing water rather than rapidly flowing water.

Floodplains. Lowlands that are relatively flat which are subject to flooding in any given year.

Fossil fuel. Fuel derived from ancient organic remains, e.g., peat, coal, crude oil, and natural gas.

Freeboard. The vertical distance from the material surface to the top of the sides in a truck.

Fuel efficiency. The proportion of the energy released on combustion of a fuel that is converted into useful energy.

Fugitive emissions. Air pollutants released to the air other than those from stacks or vents; typically small releases from leaks in plant equipment such as valves, pump seals, flanges, sampling connections, etc.

General purpose (GP) lane. A freeway or arterial lane available for use by all traffic.

Geographic Information System (GIS). Digital computer mapping, overlays, and spatial data analysis.

Global warming. See definition for **Climate change**.

Greenhouse effect. The warming of the Earth's atmosphere attributed to a build-up of carbon dioxide or other gases; some scientists think that this build-up allows the sun's rays to heat the Earth, while infrared radiation makes the atmosphere opaque to a counterbalancing loss of heat.

Growth Management Act (GMA). Washington State legislation passed in 1990 and subsequently amended that requires long-range comprehensive plans prepared by cities and counties to be balanced with supporting transportation infrastructure (RCW 36.70A).

Hazardous air pollutants. Air pollutants that are not covered by ambient air quality standards but which, as defined in the Clean Air Act, may reasonably be expected to cause or contribute to irreversible illness or death. Such pollutants include asbestos, beryllium, mercury, benzene, coke oven emissions, radionuclides, and vinyl chloride.

High-capacity transit (HCT). Transit systems operating, in whole or part, on a fixed-guideway dedicated right-of-way or freeway/express facility, designed to carry a large number of riders at higher speeds than conventional transit. Examples include express bus on HOV lanes, passenger ferry service, and light and heavy rail systems.

High-occupancy vehicle (HOV). A vehicle carrying two or more people. The minimum number of vehicle occupants required to qualify for HOV lane use may vary depending on the congestion levels and capacity of the HOV lane and the surrounding road system.

High-occupancy/toll lane (HOT lane). Signifies a lane (typically on a freeway) that is managed to restrict use by different modes through the use of time-of-day tolls.

Hydric soil. Soils that are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

Hydrocarbons (HC). Chemical compounds that consist entirely of carbon and hydrogen. Hydrocarbons contribute to air pollution problems like smog.

IMPACT. FEMA's project looking at transportation lifelines between the Port of Tacoma and Port of Seattle.

Impervious surface area. Surfaces through which water cannot percolate.

In-kind wetland mitigation. A type of wetland mitigation designed to replace the lost vegetation and hydrology with the same type of vegetation and hydrology.

Indoor air pollution. Chemical, physical, or biological contaminants in indoor air.

Induced travel. Increase in total VMT resulting from increased capacity excluding other effects such as population growth.

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.

Intermodal. Accommodation or interconnection of various transportation modes both for the movement of people and goods.

Intelligent transportation systems (ITS). The application of advanced technology to current transportation problems, including incident detection, signal coordination, real-time information, and other technology.

Inversion. An atmospheric condition caused by increasing temperature with elevation, resulting in a layer of warm air preventing the rise of cooler air trapped beneath. This condition prevents the rise of pollutants that might otherwise be dispersed. Trapping pollutants near the ground increases ozone to harmful levels.

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.

Lakes of state-wide significance. Those lakes, whether natural, artificial, or a combination thereof, with a surface acreage of one thousand acres or more measured at the ordinary high-water mark.

Landscape form. A landform or landcover mass composed of heterogeneous visual elements, but distinguished from surrounding areas by overall form, pattern, and edge. Landscape forms have physical dimensions and a specific location. They also often have names: Bunker Hill is a named landform mass; Boston is a named area of landcover.

Landscape type. An area of landform plus landcover forming a distinct, homogeneous component of a landscape, differentiated from other areas by its degree of slope plus a single pattern of landcover. A landscape type is a unique segment of the environment. This segment or portion of the environment can be separated from other segments on the basis of the landcover and the landform. Any landscape type can be subdivided into unique landscape sub-types, through definition of the desired homogeneity of the landscape type. For example, a forest is composed of different tree types, and each tree is itself made up of branches, a trunk, foliage, and so on.

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

Latent demand. Increase in total VMT resulting from increasing capacity to serve existing demand that is not otherwise served.

L_{dn}. The day/night sound level. This is a daily average noise level that ranks noise that occurs during the night more heavily, adding 10dBA to noise levels between 10 P.M. and 7 A.M.

L_{eq}. Equivalent sound level. The level of a constant sound which in a given time period has the same energy as does a time-varying sound.

L_{eq(h)}. L_{eq} measured over a one-hour period. See L_{eq}.

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

L_{max}. Maximum sound level, in decibels. It is the maximum value of the noise level which occurs during the single event.

L_{min}. Minimum sound level, in decibels. It is the minimum value of the noise level which occurs during the single event.

L_n. The A-weighted sound level, in decibels, that is exceeded n percent of the time in a given interval of time. For example, L₁₀ is the A-weighted sound level exceeded 10 percent of the time over the given

interval, usually 1 hour. The default L_n percentages are 10, 30, 50, 70, and 90. L_{00} is the same as the maximum sound level since it was the level exceeded 0 percent of the time.

Local values and goals. The landscape setting and its visual resources may be valued by local viewer groups for reasons not evident in an assessment based strictly on visual resources and not widely known outside the community.

Logarithm. The exponent that indicates the power to which a number must be raised to produce a given number. For example: if $B^2 = N$, the 2 is the logarithm of N (to the base B), or $10^2 = 100$ and $\log_{10} 100 = 2$. Also abbreviated to "log."

Major stationary sources. Term used to determine the applicability of Prevention of Significant Deterioration (PSD) and new source regulations. In a nonattainment area, any stationary pollutant source with potential to emit more than 100 tons per year is considered a major stationary source. In PSD areas the cutoff level may be either 100 or 250 tons, depending upon the source.

Metropolitan Transportation Plan (MTP). A detailed long-range plan for future investments in the central Puget Sound region's regional transportation system, including roads, transit, marine (state ferries), freight and goods, non-motorized transportation, and aviation. For state planning purposes, the MTP is the region's Regional Transportation Plan.

Microgram (mg). One-millionth of a gram.

Mitigation measures. Actions taken to reduce adverse effects on the environment, usually implemented under the State Environmental Policy Act (SEPA) and/or the National Environmental Policy Act (NEPA).

Mitigation banking. The act of creating net gain in wetlands to be drawn upon to offset several small wetland losses from several off-site sites or projects. A mitigation bank is a property that has been protected in perpetuity, and approved by appropriate county, state and federal agencies, expressly for the purpose of providing compensatory mitigation in advance of authorized impacts. The compensatory mitigation may be through restoration, creation, and/or enhancement of wetlands, and the preservation of adjacent wetland or stream buffers and other habitats.

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

Mode. A particular form of travel. Typically transportation modes include driving alone (single-occupancy vehicle), carpooling (high-occupancy vehicle), non-motorized (walking, jogging, biking), or riding transit or high-capacity transit (light rail or commuter rail).

Mode split. The percentage of persons using different travel modes typically described for autos, transit, and non-motorized modes.

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

Molecular diffusion. Process whereby molecules of various gases tend to intermingle and eventually become uniformly dispersed.

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.

Multimodal. Concerning or involving more than one transportation mode.

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

National Emissions Standards for Hazardous Air Pollutants (NESHAPs). Emission standards set by USEPA for air pollutants not covered by NAAQS that may cause an increase in deaths or serious, irreversible, or incapacitating illness. Primary standards are designed to protect human health, secondary standards to protect public welfare.

Nitric oxide (NO). A gas formed by combustion under high temperature and high pressure in an internal combustion engine; changes into nitrogen dioxide in the ambient air and contributes to photochemical smog.

Nitrogen dioxide (NO₂). The result of nitric oxide combining with oxygen in the atmosphere; major component of photochemical smog.

Nitrogen oxide (NO_x). Product of combustion from transportation and stationary sources and a major contributor to the formation of ozone in the troposphere and to acid deposition.

Noise dose. Noise dose is the percentage of time that a person is exposed to noise that is potentially damaging to hearing. Zero represents no exposure and 100 or more represents complete exposure. It is calculated by dividing the actual time of exposure by the allowed time of exposure. The allowed time of exposure is determined by the criterion duration and by the sound level (the higher the level, the shorter

the allowed time). The sound levels must be measured with A-weighting in frequency and slow-exponential weighting in time.

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

Non-motorized. Generally referring to bicycle, pedestrian, and other modes of transportation not involving a motor vehicle.

Nonconformance. A deficiency in a characteristic, documentation, or procedure that renders the quality of an item or activity unacceptable or indeterminate; nonfulfillment of a specified requirement.

National Wetlands Inventory (NWI). A series of maps developed by the U.S. Fish and Wildlife Service mapping wetlands nationwide.

Observer viewpoint. A point from which a select view is analyzed and/or evaluated. Analogous concept: Landscape control point.

Odor threshold. The lowest concentration of a substance in air that can be smelled. Odor thresholds are highly variable because of the differing ability of individuals to detect odors.

Opacity. The amount of light obscured by particulate pollution in the air; clear window glass has zero opacity, a brick wall is 100 percent opaque. Opacity is an indicator of changes in performance of particulate control systems.

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

Occupational Safety and Health Act of 1970 (OSHA). A law designed to protect the health and safety of industrial workers and also the operators of water supply systems and treatment plants. OSHA also refers to the federal and state agencies which administrate the OSHA regulations.

Ordinary High Water Mark (OHWM). The visible line on the banks where the presence and action of waters are so common as to leave a mark upon the soil or vegetation: Provided, that in any area where the ordinary high water line cannot be found the ordinary high water line adjoining saltwater shall be the line of mean higher high water and the ordinary high water line adjoining freshwater shall be the elevation of the mean annual flood.

Out-of-kind wetland mitigation. A type of wetland mitigation designed to replace the lost vegetation and

hydrology with a different type of wetland vegetation and/or hydrology.

Oxidation-reduction (redox). A chemical reaction consisting of an oxidation reaction in which a substance loses or donates electrons, and a reduction reaction in which a substance gains or accepts electrons. Redox reactions are always coupled because free electrons cannot exist in solution and electrons must be conserved.

Oxidizing agent. Any substance, such as oxygen (O₂) or chlorine (Cl₂), that will readily add (take on) electrons. The opposite is a reducing agent.

Oxygenated fuels. Gasoline which has been blended with alcohols or ethers that contain oxygen in order to reduce carbon monoxide and other emissions.

Ozone (O₃). A form of oxygen found in two layers of the atmosphere, the stratosphere and the troposphere. In the stratosphere (the atmospheric layer 7 to 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. In the troposphere (the layer extending up 7 to 10 miles from the earth's surface), ozone is a chemical oxidant and major component of photochemical smog. 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 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.

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

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

Peak period. The period of the day during which the maximum amount of travel occurs. It may be specified as the morning (A.M.) or afternoon or evening (P.M.) peak, depending on the facility.

Peak weighting. The weighting of the peak sound detector. Possible selections are C (weighted) or U (unweighted). Peak weighting is independent of the RMS weighting on most noise meters.

Peak sound. Peak is the maximum sound level during a given time interval when the normal

frequency and time weighting is NOT used. The instrument has a peak detector that responds rapidly to changing sound levels, unlike the normal time weighting of the instrument.

Persistence. Refers to the length of time a compound stays in the environment, once introduced. Persistence can range from less than a second to indefinitely.

Photochemical oxidants. Air pollutants formed by the action of sunlight on oxides of nitrogen and hydrocarbons.

PHS. Priority Habitats and Species, a series of maps developed by the Washington Department of Fish and Wildlife mapping wildlife resources statewide.

PM_{2.5}. A new standard for measuring the amount of solid or liquid matter suspended in the atmosphere, i.e. the amount of particulate matter less than 2.5 micrometers in diameter. See also PM₁₀.

PM₁₀. A standard for measuring the amount of solid or liquid matter suspended in the atmosphere, i.e. 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 Standard Index (PSI). Measure of adverse health effects of air pollution levels in major cities.

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

Pollution. Any substances in water, soil, or air that degrade the natural quality of the environment, offend the senses of sight, taste, or smell, or cause 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 (VOC). Precursors react in sunlight to form ozone or other photochemical oxidants.

Prime farmland. Land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. Prime farmland may include land currently used as cropland, pastureland, rangeland, or forestland. It does not include land already in or committed to urban development or water storage.

Principal arterial. A street that serves primarily long trips, connecting to freeways and important activity centers. Free-flow speeds typically range between 35 and 45 mph.

Puget Sound Regional Council (PSRC). The Metropolitan Planning Organization (MPO) and Regional Transportation Planning Organization (RTPO) for the central Puget Sound region. The MPO/RTPO is the legally mandated forum for cooperative transportation decision-making in a metropolitan planning area.

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

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.

Reformulated gasoline. Gasoline with a different composition from conventional gasoline (e.g., lower aromatics content) that reduces air pollutants.

Refueling emissions. Emissions released during vehicle refueling.

Roadway prism. The cross-section of disturbed area in a roadway including the full extent of any cuts or fills.

RMS weighting. A sound detector converts a sound signal into a useful form by first squaring the signal, then taking the mean value, and then taking the square root (root-mean-square). During this process, certain frequencies can be selectively attenuated (weighted), such as A-weighting and C-weighting, so the resultant level better corresponds to human hearing.

Scale. Visual scale is the apparent size relationships between landscape components or features and their surroundings.

Screenline. An imaginary line crossing roadways and other transportation facilities, and used as a reference point for measuring or reporting travel volumes.

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)).

State Environmental Policy Act (SEPA) 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 which may result from a project or study.

Shorelands. Lands which extend landward two hundred feet as measured on a horizontal plane from the ordinary high water mark of a water body.

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;
- Shorelines 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; and
- Shorelines on lakes less than 20 acres in size and wetlands associated with such small lakes.

Shorelines of state-wide significance. The following shorelines of the state:

- a) The area between the ordinary high-water mark and the western boundary of the state from Cape Disappointment on the south to Cape Flattery on the north, including harbors, bays, estuaries, and inlets;
- b) Those areas of Puget Sound and adjacent saltwaters and the Strait of Juan de Fuca between the ordinary high-water mark and the line of extreme low tide as follows:
 - *Nisqually Delta* - from DeWolf Bight to Tatsolo Point;
 - *Birch Bay* - from Point Whitehorn to Birch Point;
 - *Hood Canal* - from Tala Point to Foulweather Bluff;
 - *Skagit Bay and adjacent area* - from Brown Point to Yokeko Point; and
 - *Padilla Bay* - from March Point to William Point.
- c) Those areas of Puget Sound and the Strait of Juan de Fuca and adjacent saltwaters north to the Canadian line and lying seaward from the line of extreme low tide;
- d) Those lakes, whether natural, artificial or a combination thereof, with a surface acreage of

1,000 acres, or more, measured at the ordinary high-water mark;

- e) Those natural rivers or segments thereof, as follows:
 - Any east of the crest of the Cascade Range downstream of a point where the annual flow is measured at 200 cubic feet per second, or more, or those portions of rivers east of the crest of the Cascade Range downstream from the first 300 square miles of drainage area, whichever is longer;
 - Any west of the crest of the Cascade Range downstream of a point where the mean annual flow is measured at 1,000 cubic feet per second, or more;
- f) Those wetlands associated with (a), (b), (d), and (e).

Shorelines of the state. Means the total of all "shorelines" and "shorelines of state-wide significance" within the state as defined above.

Sightline. The unobstructed line of sight between an observer and a viewed object.

Single-occupant vehicle (SOV). A vehicle with only one occupant (i.e., the driver).

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. Examples: cliff, gentle slope, flat plain.

Smog. Dust, smoke, or chemical fumes that pollute the air and make hazy, unhealthy conditions (literally, the word is a blend of smoke and fog). Automobile, truck, bus, and other vehicle exhausts and particulates are usually trapped close to the ground, obscuring visibility and contributing to a number of respiratory problems.

Sound exposure (SE). Sound exposure is the total sound energy of the actual sound during a given time interval. Unlike sound exposure level, however, it is not expressed in dB, but in Pascal squared - seconds.

Sound exposure level (SEL). The level of a steady sound, one second long, that contains the same energy as the actual (unsteady) sound over the total measurement duration (elapsed time). It is expressed in decibels. It is related to L_{eq} , but with all the energy squeezed into a one-second period as opposed to being spread over the stated period.

Sound Move. Sound Transit's ten-year (1996 to 2006) regional transit system plan for implementing commuter rail, light rail, and regional express bus

services and HOV facility development in parts of Snohomish, King and Pierce counties.

Sound pressure level or noise level (SPL). Sound pressure level, in decibels, is an A-weighted sound pressure level as measured using the slow dynamic characteristic for sound level meters specified in ASA S1.4-1971, American Standard Specification for General Purpose Sound Level Meter, or latest revision thereof. The A-weighting characteristic modifies the frequency response of the measuring instrument to account approximately for the frequency characteristics of the human ear.

Stable air. A motionless mass of air that holds instead of dispersing pollutants.

Stage II controls. Systems placed on service station gasoline pumps to control and capture gasoline vapors during refueling.

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

State Implementation Plan (SIP). USEPA approved state plan for the establishment, regulation, and enforcement of air pollution standards.

Stratosphere. The portion of the atmosphere 10 to 25 miles above the earth's surface.

Streams which constitute shorelines. (Western Washington) Streams from the point at which the stream reaches a mean annual flow of 20 cubic feet per second down to the mouth of said stream or river (provided that the stream falls at said point within the jurisdiction of chapter 90.58 RCW).

Superfund. The program operated under the legislative authority of CERCLA and SARA that funds and carries out USEPA solid waste emergency and long-term removal and remedial activities. These activities include establishing the National Priorities List, investigating sites for inclusion on the list, determining their priority, and conducting and/or supervising the cleanup and other remedial actions.

Tailpipe standards. Emissions limitations applicable to engine exhausts from mobile sources.

Threshold level (noise). ANSI S1.25 defines threshold as a sound level below which the dosimeter produces little or no dose accumulation as specified in this standard. The threshold should be selected to be within the dynamic range of the instrument. The current OSHA threshold is 80 dB.

Time-weighted average (TWA). This is the level of a constant sound over a stated period using a stated exchange rate that is equivalent to the actual

(unsteady) sound over the sample period. If the stated exchange rate is 3dB, then the time weighted average is the same as the average sound level (L_{eq}).

Title VI. The Civil Rights Act of 1964 that prohibits discrimination based on race, color, national origin and sex in the provision of benefits and services.

Total suspended particles (TSP). A method of monitoring particulate matter by total weight.

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."

Toxic pollutants. Materials that cause death, disease, or birth defects in organisms that ingest or absorb them. The quantities and exposures necessary to cause these effects can vary widely.

Transit-oriented development (TOD). A land use pattern that emphasizes clustered transit-intensive land uses with higher densities of development. It typically is focused along high-capacity transit routes, and is designed to encourage modes of travel other than the private automobile by locating residential, commercial, and employment development in close proximity to each other.

Transportation demand management (TDM). Institutional and operational methods to reduce travel demand on the transportation system. TDM strategies are usually implemented to support the use of HOVs, and typically include carpool, vanpool, and public transit programs.

Transportation system management (TSM). The application of construction, operational, and regulatory or legislative actions to provide the most cost-effective use of existing transportation facilities.

Troposphere. The layer of the atmosphere closest to the earth's surface.

Unconstrained person volumes. The potential demand for persons traveling along a corridor without considering traffic congestion constraints.

Unique farmland. Land other than prime farmland that is used for the production of specific high-value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply to economically produce sustained high quality or high yields of specific crops when treated and managed according to acceptable farming methods. Examples of such crops include lentils, nuts, annual cropped white wheat, cranberries, fruits, and vegetables.

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.

Vehicle miles traveled (VMT). A measure of the extent of motor vehicle operation; the total number of vehicle miles traveled within a specific geographic area over a given period of time.

View. A scene observed from a given vantage point.

Viewer awareness. A viewer's receptivity to the visual character of the landscape can be affected by elements and relationships in the landscape setting itself or by expectations about the setting. Visual experience contrary to expectation may be suppressed or heightened, depending on the degree of disagreement.

Viewer exposure. The degree to which viewers are exposed to a view by their physical location, numbers viewing, and duration of view.

Viewer groups. Classes of viewers differentiated by their visual response to the highway and its setting; response is affected by viewer activity, awareness, and values.

Viewer response. Measures of viewer response to change in visual resources include viewer exposure, viewer sensitivity, cultural significance, and local values.

Viewer sensitivity. The viewer's variable receptivity to the elements within the environment that he is viewing, affected by viewer activity and awareness. A person cannot readily notice every object and all the attributes of the objects that compose the total visual environment.

Viewshed.

- 1) All the surface areas visible from an observer's viewpoint.
- 2) Surface areas from which a critical object of viewpoint is seen.

Existing and Topographic Viewsheds:

- a) Existing viewshed: The area normally visible from an observer's viewpoint, including the screening effects of intermediate vegetation and structures.
- b) Topographic viewshed: The area which would be visible from a viewpoint based on landform alone, without the screening effects of vegetation and structures.

Composite Viewsheds:

- a) Definition: Composite of overlapping areas visible from:
 - A continuous sequence of viewpoints along a road.
 - A network of viewpoints surrounding a road (or object).
- b) The visual corridor: Each visually and spatially distinct experience.

Visual assessment units. A portion of the area visible or potentially visible from a highway project or from which the highway project may be seen; to be useful in visual assessment, it should be identified on the basis of visual distinctions, such as landscape unit boundaries.

Visual character. The visual 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.

Visual corridor. A continuous succession of visually and spatially distinct experiences.

Visual impact. The degree of change in visual resources and viewer response to those resources caused by highway development and operations.

Visual quality. While many factors contribute to a landscape's visual quality, they can ultimately be grouped under three headings: vividness, intactness and unity.

Visual resources. The appearance of the features that make up the visible landscape. Includes the land, water, vegetative, animal, and other features.

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 which evaporates readily to the atmosphere. VOCs contribute significantly to photochemical smog production and certain health problems.

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

Wetland category. 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 one, while the lowest are category four.

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

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

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

Wetland. Those areas that are inundated or saturated by surface or ground water 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.

Zero-rise floodway. The channel of a river or other watercourse and that portion of the adjoining floodplain necessary to discharge the 100-year flood flow without increasing the 100-year flood elevation by more than 0.01 foot. The boundaries of the floodplains as shown on the flood insurance rate maps are considered the boundaries of the zero-rise floodway unless otherwise delineated by a special study.

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