

## Glossary of Terms

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### 2050 Vision

The year 2050 provides a vision horizon for developing long-term transportation solutions for the I-70 Mountain Corridor project. The alternatives are developed and evaluated on a variety of performance measures that can be reliably established for 2035 and for their ability to meet travel demand in 2050.

### 7<sup>th</sup> Pot Program

A group of 28 statewide transportation projects that the Colorado Department of Transportation (CDOT) has identified and placed on an accelerated construction schedule because they have strategic and high priority significance to regional and local transportation planning.

### Acid mine drainage

Drainage from mines and mine wastes with a pH between 2.0 and 4.5. It results from the oxidation of sulfides exposed during mining, which produces sulfuric acid and sulfate salts. The acid dissolves minerals in the rocks, degrading the quality of the drainage water.

### Adit

An almost-horizontal entrance to a mine.

### Advanced Guideway System

One of the Fixed Guideway Transit Alternative Elements that are currently under review in the I-70 Mountain Corridor Revised Draft PEIS. A “fixed guideway” refers to any transit service that uses exclusive or controlled rights-of-way or rails, entirely, or in part. The term includes heavy rail, commuter rail, light rail, monorail, trolleybus, aerial tramway, inclined plane, cable car, automated guideway transit, ferryboats, that portion of motor bus service operated on exclusive or controlled rights-of-way, and high-occupancy-vehicle (HOV) lanes. Funds can be used to modernize or improve existing fixed guideway systems.

### Aesthetic Design Guidelines

Guidelines that professionals who plan, design, and construct transportation facilities use to improve the aesthetic appearance of transportation projects. The goal of aesthetics design in the highway environment is to create a pleasurable experience for the user and a positive contribution to the visual character of the community, while attending to safety and efficiency needs.

### A Landscape Level Inventory of Valued Ecosystem Components (ALIVE)

The Colorado Department of Transportation initiated the A Landscape Level Inventory of Valued Ecosystem Components (ALIVE) Committee to develop an ecosystem approach at a landscape level to identify wildlife habitat of high ecological integrity, wildlife habitat linkages, and barriers to wildlife crossings along I-70. The ALIVE committee was composed of wildlife professionals from agencies with jurisdictional concerns in the Corridor. The committee also evaluated goals for the development of conservation measures such as the design of structures suitable for wildlife crossings and protective land purchase to preserve habitat linkage for lynx and other wildlife species in the Corridor.

### Annual average daily traffic (AADT)

Daily traffic volumes averaged over all 365 days in the year.

### Area of Potential Effect (APE)

Geographic area likely to be affected by direct, indirect, and/or cumulative impacts of a proposed action.

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### **Attainment area**

An area considered to have air quality as good as or better than the National Ambient Air Quality Standards defined in the Clean Air Act.

### **Auxiliary lane**

A lane that extends between a freeway on-ramp and off-ramp. They are added on freeways to reduce impacts of heavy on-ramp traffic merging with a freeway through lane.

### **Avalanche**

A large mass of snow, ice, soil, rock, or mixtures of these materials, falling, sliding, or flowing very rapidly under the force of gravity. Velocities can sometimes exceed 500 kilometers per hour.

### **Avalanche blast**

A very destructive avalanche wind occurring when an avalanche is stopped abruptly, as when it falls vertically onto a valley floor or when it displaces a large volume of air by flowing horizontally for a long distance.

### **Barrier effect**

The results of adding natural or man-made diversion structures that prevent a plant or animal from moving across an otherwise permeable area. Barriers can be physical obstructions that physically prevent movement (such as walls or fences), or they can be behavioral obstructions that prevent movement due to a perception of danger or risk (for example, areas with substantial human activity or habitat transitions such as a forest edge).

### **Best management practices**

Structural and/or management practices employed before, during, and after construction to protect receiving-water quality. These practices provide techniques to either reduce soil erosion or remove sediment and pollutants from surface runoff.

### **British Thermal Unit (BTU)**

The amount of energy required to heat one pound of water one degree Fahrenheit. It is used to describe the efficiency of fuels; that is, the heat energy obtained when a certain quantity is burned.

### **Brownfield**

A tract of land that has been developed for industrial purposes, polluted, and then abandoned.

### **Bus in Guideway**

One of the Rubber Tire Transit Alternative Elements that are currently under review in the I-70 Mountain Corridor Revised Draft PEIS. The Bus in Guideway diesel or dual mode has been retained as an Action Alternative.

### **Cantilever**

To construct something in such a way that it is attached or supported at only one end.

### **Catenary**

Overhead wires that provide electricity for transit propulsion.

### Clean Water Act (CWA)

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. and regulating quality standards for surface waters. The Federal Water Pollution Control Act was enacted in 1972 by Public Law 92-500 and amended by the Water Quality Act of 1987. The CWA prohibits discharge of pollutants to waters of the U.S without a National Pollutant Discharge and Elimination System (NPDES) permit. Section 404 of the CWA addresses protection of wetlands and aquatic habitats from dredge and fill activities.

### Collaborative Effort

A process to establish trust and confidence in agency leadership and collaborative decision-making. The lead agencies who form the 27-member stakeholder group have built agreement (consensus) around a broad alternative that identifies travel modes and transportation improvement priorities for the I-70 Mountain Corridor project.

### Collapsible soil

Deposits that undergo a sudden change in structural configuration when inundated with water, with an accompanying decrease in volume. This process is also known as *hydrocompaction*, *hydroconsolidation*, *collapse*, *settlement*, *shallow subsidence*, and *near-surface subsidence*. The volume change occurs with no change in vertical load, caused solely by the effects of water. Additional subsidence can be caused by solution of disseminated gypsum crystals in the soil when saturation occurs.

### Community Development Block Grant (data)

Beginning in 1974, the U.S. Department of Housing and Urban Development (HUD) created a flexible program that provides communities with resources to address a wide range of unique community development needs. The annual CDBG appropriation is allocated between States and local jurisdictions called “non-entitlement” and “entitlement” communities respectively. Entitlement communities are comprised of central cities of Metropolitan Statistical Areas (MSAs); metropolitan cities with populations of at least 50,000; and qualified urban counties with a population of 200,000 or more (excluding the populations of entitlement cities). States distribute CDBG funds to non-entitlement localities not qualified as entitlement communities. 2000 U.S. Census data was created at the CDBG block group level for statistical review and analysis of MSAs, metropolitan cities, and counties.

### Consensus Recommendation

The Collaborative Effort, a 27-member group representing varied interests of the corridor, was charged with reaching consensus on a recommended transportation solution for the I-70 Mountain Corridor. *See Collaborative Effort*. The lead agencies were active participants in this group and committed to adopt the consensus recommendation in the I-70 Programmatic Environmental Impact Statement (PEIS). The recommendation for I-70 through Colorado’s mountain corridor is a multi-modal solution including non-infrastructure components, a commitment to evaluation and implementation of an Advanced Guideway System, and highway improvements. The Preferred Alternative has been characterized into two parts:

- The minimum program of improvements, represented by the alignment and footprint of the Advanced Guideway System Alternative and comparable highway improvements analyzed in the Revised Draft PEIS
- The maximum program of improvements, represented by the Combination Six-Lane Highway with Advanced Guideway System Alternative evaluated in the Revised Draft PEIS

### Construction energy

The energy that goes into developing the raw materials and equipment necessary to build and maintain the roadway; the energy expended in physically constructing a roadway.

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### Construction zone

An area designated for stationary, long-term duration, highway construction such as building a new bridge, adding travel lanes to the roadway, and extending an existing trafficway. A construction zone is typically marked by signs, channeling devices, barriers, pavement markings, and so on.

### Context Sensitive Solutions (CSS)

A collaborative, interdisciplinary approach that involves all stakeholders in developing a transportation project that fits into its physical setting and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility. Stakeholders are involved early, continuously, and meaningfully throughout the project development process.

### Criteria pollutant

A pollutant determined to be hazardous to human health and regulated under the Environmental Protection Agency's National Ambient Air Quality Standards. The 1970 amendments to the Clean Air Act require the Environmental Protection Agency to describe the health and welfare impacts of a pollutant as the "criteria" for inclusion in the regulatory regime.

### Cultural resource

The physical remains of past human activity having demonstrable association with prehistoric or historical events, individuals, or cultural systems. Cultural resources may include archaeological sites, districts, and objects; standing historical structures, objects, or groups of resources; locations of important historic events; or places, objects, and living or nonliving things that are important to the practice and continuity of traditional cultures.

### Cumulative impacts

Impacts that occur when the effects of an action are added to or interact with the effects of other human-initiated actions or natural events in a particular place and within a particular timeframe. Other known past, present, and future actions must be taken into account. Cumulative impacts combine to produce effects that are different than if each occurred in isolation. The Council on Environmental Quality (CEQ) requires that these impacts be addressed in National Environmental Policy Act documents. The study area is usually larger and the timeframe longer than for direct and indirect effect analyses.

### Cut and fill

The process of constructing a railway, road, or canal whereby the amount of material from cuts roughly matches the amount of fill needed to make nearby embankments, so minimizing the amount of construction labor.

### dB(A)

The abbreviation for the *A-weighted sound level* measured in decibels that describe a receiver's noise at a specific moment in time. The letter *A* indicates that the sound has been filtered to reduce the strength of very low and very high frequency sounds, much as the human ear filters sound.

### *de minimis* impact

For publicly-owned public parks, recreation areas, and wildlife and waterfowl refuges, a *de minimis* impact is one that will not adversely affect the activities, features, or attributes of the property. For historic sites, a *de minimis* impact means that the FHWA has determined (in accordance with 36 Code of Federal Regulations Part 800) that either no historic property is affected by the project or that the project will have "no adverse effect" on the historic property. A *de minimis* impact determination does not require analysis to determine if avoidance alternatives are feasible and prudent, but consideration of avoidance, minimization, mitigation or enhancement measures should occur.

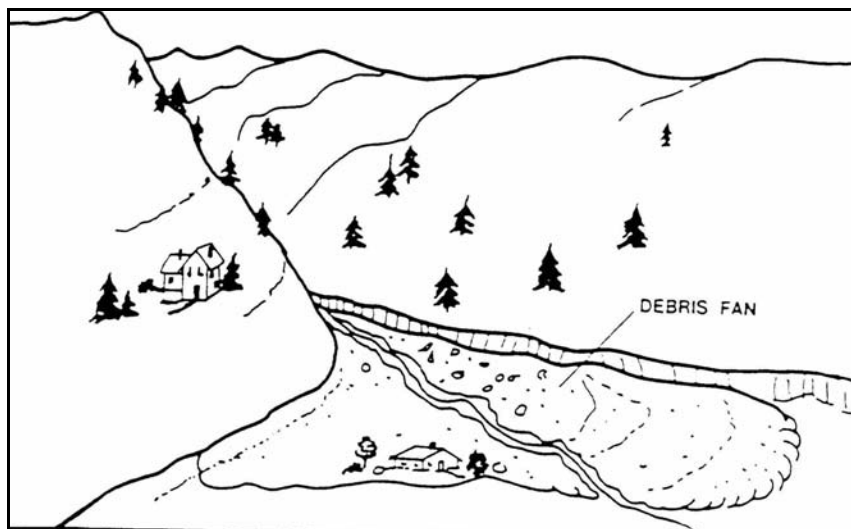
### Debris

The remains of geological activity from landslides, volcanic explosions, avalanches, mudflows, or glacial soil and rock. Geological debris sometimes moves in a stream. *See* **debris flow**.

### Debris fan

The area where debris flow material is deposited. Multiple periods of deposition typically produce a fan shape over time (see **Figure 1** below).

**Figure 1. Debris Fan Formed by Debris Flows (Jochim, et. al., 1988)**



### Debris flow

A moving mass of rock fragments, soil, and mud in which more than half of the particles are larger than sand size. *See* **debris fan** and **landslide**.

### Decibel

The unit used to measure the intensity of a sound.

### Decrease congestion

Steps taken by CDOT, FHWA and other local transportation authorities to reduce or mitigate traffic conditions in the I-70 Mountain Corridor characterized by slower speeds, longer traffic times, and a large number of vehicles on the road. Congestion is defined by a poor level of service (LOS) and is measured in the Corridor by the number of hours at LOS F.

### Denver metropolitan area

The greater Denver area consisting of Adams, Arapahoe, Boulder, Denver, Douglas, and Jefferson counties.

### Dewater

Remove or separate a portion of the water in a sludge or slurry to dry the sludge so that it can be handled and disposed of.

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### Direct impact

Effects that in some way alter the quality of life or fitness of a receptor. Direct impacts are experienced immediately when a project is implemented.

### Drainage tunnel

A drainage tunnel or adit is a horizontal opening designed to intersect mine workings and ore veins below the groundwater table to dewater the mines without pumping.

### Ecotone

The zone where two vegetation types or successive stages meet.

### Effluent

Wastewater (treated or untreated) that flows out of a treatment plant, sewer, or industrial outfall. Generally refers to wastes discharged into surface waters.

### Energy consumption

The use of energy to power engines, machines, or buildings. Vehicles consume petroleum-based fuels, one of the earth's main energy sources. Vehicle energy consumption is affected by the type of vehicle using the roadway, the travel speed, geometry, congestion, and condition of the road.

### Entrenched channel

An area that contains continuously or periodically flowing water that is confined by banks and a streambed. An entrenched channel usually has a relatively narrow width with little or no flood plain and often has meanders worn into the landscape.

### Environmental Justice

Refers to tools and techniques to ensure the full and fair participation by all potentially affected communities in the transportation decision-making process with an emphasis on involvement by minority and low-income populations. The goal of Environmental Justice is to ensure that adverse human health or environmental effects resulting from transportation activities do not fall disproportionately among minority and low-income populations.

### Expansive soil and rock

Soil and rock composed entirely or in part of clay or claystone. Expansive soil exhibits swell when wet.

### Fault

A fracture in rock along which there has been observable displacement. Faults are rarely single planar units; normally, they occur as parallel to sub parallel sets of planes along which movement has taken place to a greater or lesser extent. Such sets are called fault or fracture-zones.

### Fen

Wetlands with a highly organic upper soil horizon (more than 12 percent organic matter).

### Fixed Guideway Transit

A mass transportation facility that uses and occupies a separate right-of-way or rail for the exclusive use of mass transportation vehicles or other high occupancy vehicles. The Fixed Guideway Transit is one of the Alternative Elements that is currently under review in the I-70 Mountain Corridor Revised Draft PEIS. Three variations of the Fixed Guideway Transit have been retained as Action Alternatives. They include Heavy Rail Transit – Double Track, Advanced Guideway System, and Intermountain Rail Connection. *See Advanced Guideway System.*

### **Fossil fuel**

Non-renewable fuels formed by the decomposition of organic matter, including coal, natural gas, and petroleum.

### **Fossils**

The remains, imprints, or traces of once-living organisms preserved in rocks and sediments. These include mineralized, partially mineralized, and un-mineralized bones and teeth, soft tissue, shells, wood, leaf impressions, footprints, burrows, and microscopic remains.

### **Fugitive dust**

A type of nonpoint source air pollution that does not originate from a specific point. Fugitive dust originates in small quantities over large areas. Significant sources include unpaved roads, agricultural cropland, and construction sites.

### **Generator(s)**

A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 Code of Federal Regulations 260.10). Generators are divided into three categories based upon the quantity of waste they produce:

1. Large Quantity Generators (LQGs) generate 1,000 kilograms per month or more of hazardous waste, more than 1 kilogram per month of acutely hazardous waste, or more than 100 kilograms per month of acute spill residue or soil.
2. Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms of hazardous waste per month.
3. Conditionally Exempt Small Quantity Generators (CESQGs) generate 100 kilograms or less per month of hazardous waste, or 1 kilogram or less per month of acutely hazardous waste, or less than 100 kilograms per month of acute spill residue or soil.

### **Geographic Information System (GIS)**

A computerized data management system designed to capture, store, retrieve, analyze, and display geographically referenced information. An environmental inventory is a collection of GIS data pertaining to a geographic area, and it can be used in environmental analysis and documentation for highway projects.

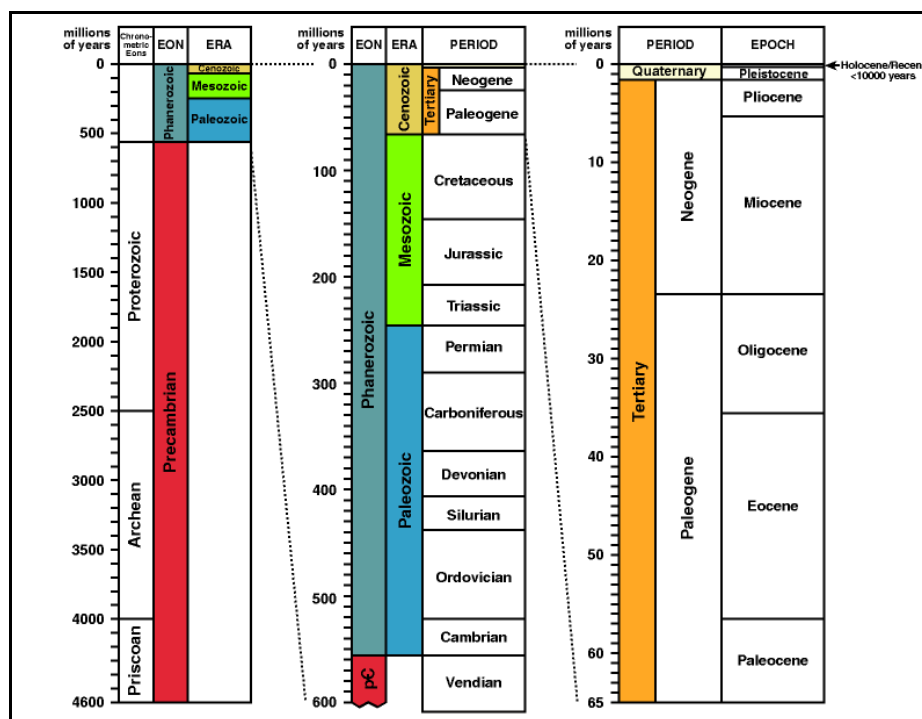
### **Geologic hazard**

A naturally occurring or man-made geologic condition or phenomenon that presents a risk or potential danger to life and property. Examples include landslides, flooding, earthquakes, ground subsidence, faulting, dam leakage and failure, mining disasters, pollution, and waste disposal.

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### Geologic time periods

Figure 2. Geologic time periods in millions of years



### Geologic units

A volume of a certain kind of rock of a given age range. Geologic units of different ages usually appear in different shades of color on a map. For example, sandstone of one age might be colored bright orange, while sandstone of a different age might be colored pale brown. Many geologic units are given names that relate to where their characteristics are best displayed, or where they were first studied. They are named and defined by the geologists who made the geologic map, based on their observations of the kinds of rocks and their investigations of the age of the rocks.

### Geology

The study of the planet Earth including the materials of which it is made; the processes that act on these materials; the products formed; and the history of the planet and its life forms since its origin. Geology considers the physical forces that act on the Earth, the chemistry of its constituent materials, and the biology of its past inhabitants as revealed by fossils.

### Geomorphology

The science that treats the general configuration of the Earth's surface; specifically, the study of the classification, description, nature, origin, and development of present landforms and their relationships to underlying structures, and the history of geologic changes as recorded by these surface features. The term applies especially to the genetic interpretation of landforms and is also used to describe features produced only by erosion or deposition.

### Gold Medal fishery

Designations made by the Colorado Division of Wildlife based on more formal studies of fish population and fish weight as well as "exceptional" recreational value.

### **Greenhouse gas emissions**

The physical and chemical reactions that release gases into the atmosphere through natural and human-made processes. Some sources of human-made greenhouse gas emissions include the combustion of fossil fuels, deforestation, livestock, and agricultural activities.

### **Greenhouse gases**

Many chemical compounds found in the Earth's atmosphere act as "greenhouse gases." These gases allow sunlight to enter the atmosphere freely. When sunlight strikes the Earth's surface, some of it is reflected back towards space as infrared radiation (heat). Greenhouse gases absorb this infrared radiation and trap the heat in the atmosphere. Many gases exhibit these "greenhouse" properties. Some of them occur in nature (water vapor, carbon dioxide, methane, and nitrous oxide), while others are exclusively human-made (like gases used for aerosols).

### **Gross Regional Product**

One of several measures used to estimate the size of a metropolitan area's economy. The market value of all final goods and services produced within a metropolitan area in a given period of time.

### **Habitat**

The environment suitable to meet the needs of an animal, a fish, or a plant. A habitat includes food, water, shelter, and space.

### **Historic property**

A legal term that refers specifically to any cultural resource listed on or eligible for inclusion in the National Register of Historic Places (National Register). A historic property can be an archaeological site, a historic site, or a traditional use area. Not all such sites meet the specific National Register criteria for historic property designation.

### **HOV/HOT lanes**

An HOV lane is an exclusive traffic lane or facility limited to carrying high occupancy vehicles (HOVs) and certain other qualified vehicles. An HOV is a passenger vehicle carrying more than a specified minimum number of passengers (for example, an automobile carrying more than one or more than two people). HOVs include carpools and vanpool as well as buses. A High Occupancy Toll (HOT) lane is an HOV facility that allows lower occupancy vehicles (that is, solo drivers) to use these facilities in return for toll payments, which could vary by time-of-day or level of congestion.

### **Impervious surface**

Impervious surfaces are mainly artificial structures—such as pavements (roads, sidewalks, driveways and parking lots) that are covered by impenetrable materials such as asphalt, concrete, brick, and stone—and rooftops. Soils compacted by urban development are also highly impervious. Impervious surfaces are an environmental concern because, with their construction, that can modify urban air and water resources. For example, pavement materials seal the soil surface, eliminating rainwater infiltration and natural groundwater recharge, or pollutants can enter stormwater/sewer systems and ultimately streams, leading to negative effects on fish, animals, plants, and people.

### **Improve mobility and accessibility**

Steps taken by CDOT, FHWA and other local transportation authorities to enhance mobility (defined as the ability to travel along the I-70 Mountain Corridor safely, effectively, and efficiently in a reasonable amount of time) and accessibility (defined as the ability to access destinations served by the Corridor safely, effectively, and efficiently in a reasonable amount of time).

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### **Increase capacity**

Steps taken by CDOT, FHWA and other local transportation authorities to raise the maximum rate of traffic flow at which vehicles can traverse a point of highway in one hour. There is insufficient capacity to adequately accommodate the current and projected future demand for person trips in the I-70 Mountain Corridor.

### **Indirect impact**

Effect on a receptor, its habitat, or its environment that occurs after project implementation. An indirect impact is often not immediately obvious.

### **Induced growth**

Indirect land use impacts (or longer-run and wider-spread changes to development patterns and comprehensive plans) that are induced by a transportation improvement. Induced growth can reduce the effectiveness of transportation investment, may conflict with local growth desires, and trigger adverse environmental impacts.

The estimation of induced growth effects requires the identification of the transportation project contribution to changes in development patterns. Once the project effect on land use has been identified, this information can be used to estimate the environmental impacts attributable to land use changes caused by the transportation project, such as habitat fragmentation or stormwater runoff effects on water quality.

### **Intelligent Transportation Systems (ITS)**

The application of advanced technologies to improve the safety and efficiency of transportation systems.

### **Intensive survey**

A type of field survey characterized by the complete or near-complete coverage of the survey area using a high-resolution approach, most often by having teams of subject matter experts walk in a systematic way over parcels of the landscape in question to document findings. Intensive surveys are designed to provide a more comprehensive picture of the location of sites and the nature of off-site data (e.g. field systems, isolated finds, etc.). An intensive survey is more costly, timely, and ultimately informative than an extensive survey.

### **Jurisdictional wetland**

A wetland that falls under state or federal regulatory authority. Two federal agencies oversee wetland issues. The Natural Resources Conservation Service has jurisdiction over wetlands on “Agricultural Lands.” The U.S. Army Corps of Engineers (USACE) and Environmental Protection Agency have jurisdiction over “waters of the United States, including wetlands.” Section 404 is administered by USACE and governs dredge and fill operations in the nation’s waterways (“waters of the United States”), including wetlands. Examples of non-jurisdictional wetlands include irrigation ditches and roadside drainage ditches.

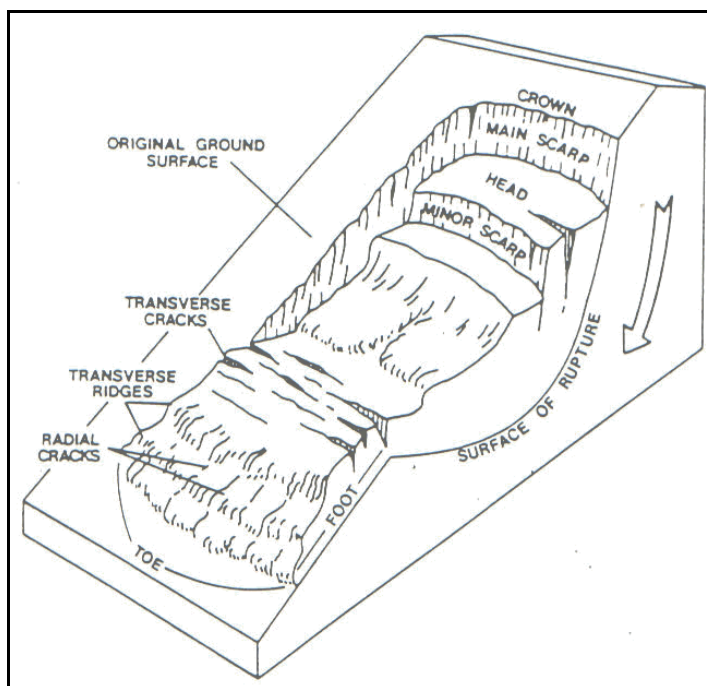
### **Kilowatts (or kilowatt-hours)**

A unit of energy equal to 1,000 watts. A kilowatt is used to quantify the energy output or energy consumption of engines or machines. One kilowatt is approximately equivalent to 1.34 horsepower.

## Landslide

A perceptible movement of earth material (rock, debris, or soil) down a slope. The specific name for a landslide is defined by the type of movement and the type of material: rockfall, debris flow, mudflow, rotational earth flow, etc. (Varnes et al. 1978). See **Figure 3** below.

**Figure 3. Block Diagram of Idealized Complex Landslide-Earth Flow (Varnes 1978)**



## Lateral channel

An area of continuously or periodically flowing water that is confined by banks and a streambed but undergoes structural changes that can be measured due to erosion.

## LEED

The LEED (Leadership in Energy & Environmental Design) Green Building Rating System™ is a voluntary, consensus-based standard to support and certify successful green building design, construction and operations. LEED is transforming the marketplace by providing a nationally recognized certification system to promote integrated, whole-building design practices in the building industry.

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### Level of Service (LOS)

A qualitative measure of the operational characteristics of a traffic stream, ranked from A (best) to F (worst). LOS is described in terms of speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.



**Level of Service A:** Free-flow operations; vehicles are able to move freely within the traffic stream. Average spacing between vehicles is 528 feet or 26 car lengths, giving motorists a high comfort level. Effects of minor traffic incidents are easily absorbed, with traffic quickly returning to free-flow operation.

**Level of Service B:** Reasonably free-flow; speeds are generally maintained. Lowest average spacing between vehicles is 330 feet or 18 car lengths. Ability to maneuver within the traffic stream is only slightly restricted; the motorist has a generally high comfort level. Incidents are still quickly absorbed.



**Level of Service C:** Speeds are still at or near free-flow speeds, but freedom to maneuver is noticeably restricted; lane changes require vigilance. Minimum average spacing between vehicles is in the range of 220 feet or 11 car lengths. Queues may form behind any significant lane blockage. Drivers experience an increase in tension because of additional vigilance required for safe operation.

**Level of Service D:** Speeds begin to decline slightly with increasing flows. Vehicles are spaced at about 165 feet or 9 car lengths. In this range, density begins to increase more quickly with increasing flow. Freedom to maneuver is more limited; drivers experience reduced physical and psychological comfort levels. Even minor disturbances create queuing.





**Level of Service E:** Operations are volatile, because there are virtually no usable gaps in the traffic stream. Vehicles are spaced at approximately 6 car lengths, with little room to maneuver at more than 50 mph. Any disruption (vehicles entering from an entrance ramp or changing lanes) causes a disruption wave to move throughout the traffic flow. The lower boundary of LOS E (between LOS E and LOS F) is considered to be operating at capacity, at which point the traffic stream has no ability to dissipate any disruptions. Maneuverability is extremely limited, and driver comfort level is extremely poor.

**Level of Service F:** This LOS signifies a breakdown in vehicular flow. Queues form behind breakdown points that occur because of traffic incidents and recurring points of congestion (merging or weaving where the number of vehicles arriving is greater than the number of vehicles discharged). Breakdown occurs when the ratio of arrival flow rate to actual capacity or the forecast flow rate to estimated capacity exceeds 1.00. Whenever LOS F conditions exist, there is a potential for breakdown in traffic flow to extend upstream for significant distances.



### Life zones

A geographic region or area defined by its characteristic life forms that are usually delineated by latitudes. In Colorado, the Alpine life zone has different plant and animal communities than the Foothills life zone.

### Linkage interference zone

A term for habitat connectivity that refers to the connection of or the interference with habitats across a barrier. Linkage zones are not necessarily associated with predictable daily or seasonal movements.

### Loudest hour

Noise impacts are defined by loudest hour equivalent noise levels (Leq) that approach or exceed FHWA Noise Abatement Criteria (NAC) values for the appropriate Activity Category. For example, the Noise Abatement Criterion for residential areas (Category B) is 67 dB(A) Leq. The FHWA Noise Abatement Criteria are used in determining traffic noise impacts on human activities.

### Low-income population

Individuals living at or below 50 percent of an area's median income as defined by the Community Development Block Grant (CDBG) level for the county.

### Macroinvertebrates

Invertebrates visible to the naked eye, such as insect larvae and crayfish.

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### Magnetic levitation (maglev)

A system of transportation that suspends, guides, and propels vehicles (predominantly trains) using magnetic levitation from a very large number of magnets for lift and propulsion. This method has the potential to be faster, quieter, and smoother than wheeled mass transit systems. The power needed for levitation is usually not a particularly large percentage of the overall consumption; most of the power used is needed to overcome air drag, as with any other high speed train.

### Maintenance area

An area in compliance with the National Ambient Air Quality Standards for the criteria pollutants designated in the Clean Air Act.

### Management indicator species

A list of wildlife species developed by the United States Forest Service and used to track ecological conditions in key habitats associated with each species.

### Management prescription area

Specific geographical areas defined by a forest plan. Each management area has a set of objectives and a management prescription unique to it.

### Mill tailings

Remnant rock that was crushed and ground to 40 mesh size and processed through amalgamation or other procedures to extract precious metals.

### Mine

(1) An underground excavation for the extraction of mineral deposits, in contrast to surface excavations such as quarries. The term is also applied to various types of open pit workings. (2) The area or property with a mineral deposit that is being excavated; a mining claim. (3) To excavate for and extract from mineral deposits or building stone.

### Minority population

The smaller part of a population group. A population group within a country or state that differs in race, religion, or national origin from the dominant population group.

### Mitigation measure

Action developed in response to an impact identified in the analysis that could be taken to avoid, reduce, or compensate for the projected impact. Usually includes appropriate monitoring and enforcement activities to comply with NEPA's intent.

### Mobile source air toxics (MSATs)

Compounds emitted from highway vehicles and nonroad equipment which are known or suspected to cause cancer or other serious health and environmental effects. Identified by the Environmental Protection Agency, MSATs are the 21 hazardous air pollutants generated in large part by transportation sources.

### MOBILE6

An emission factor model that the Environmental Protection Agency uses for predicting gram per mile emissions of hydrocarbons (HC), carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), carbon dioxide (CO<sub>2</sub>), particulate matter (PM), and toxics from cars, trucks, and motorcycles under various conditions.

### Mountain pine beetle

The mountain pine beetle, *Dendroctonus ponderosae*, is a species of bark beetle native to the forests of western North America. Mountain pine beetles inhabit pines, particularly the Ponderosa pine, lodgepole pine, whitebark pine, Scots pine, and limber pine. During early stages of an outbreak, attacks are limited largely to trees under stress from injury, poor site conditions, fire damage, overcrowding, root disease, or old age. As beetle populations increase, the beetles attack the largest trees in the outbreak area. After an outbreak, entire groves of trees will appear red when viewed from above.

### Mudflow

Similar to a debris flow, with mud being the predominant material. *See* **landslide**.

### National Ambient Air Quality Standards

The Clean Air Act requires the Environmental Protection Agency to set National Ambient Air Quality Standards (40 Code of Federal Regulations Part 50) for pollutants considered harmful to public health and the environment. The Environmental Protection Agency's Office of Air Quality Planning and Standards has set National Ambient Air Quality Standards for six principal pollutants, which are called "criteria" pollutants. They include carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), ozone (O<sub>3</sub>), and sulfur dioxide (SO<sub>2</sub>).

### National Environmental Policy Act (NEPA)

The National Environmental Policy Act of 1969 establishes policy, sets goals, and provides means for the protection of the environment in federal decision-making. Under NEPA, all federal agencies must consider the environmental impacts of any proposed action that includes federal money or affects federal land and public input in relevant decisions. The Council on Environmental Quality regulations for implementing NEPA are found in 43 Code of Federal Regulations 1500–1508.

### National Register of Historic Places

The official list of the Nation's historic places worthy of preservation. Authorized by the National Historic Preservation Act of 1966, the National Park Service's National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archeological resources.

### Noise abatement criteria

Federal Highway Administration regulations for mitigation of highway traffic noise in the planning and design of federally aided highways are contained in 23 Code of Federal Regulations Part 772. The regulations require the following during the planning and design of a highway project:

1. Identification of traffic noise impacts; examination of potential mitigation measures;
2. Incorporation of reasonable and feasible noise mitigation measures into the highway project; and
3. Coordination with local officials to provide helpful information on compatible land use planning and control.

The regulations contain noise abatement criteria that represent the upper limit of acceptable highway traffic noise for different types of land uses and human activities. The regulations do not require meeting the abatement criteria in every instance. Rather, they require highway agencies make every reasonable and feasible effort to provide noise mitigation when the criteria are approached or exceeded. Compliance with the noise regulations is a prerequisite for the granting of Federal-aid highway funds for construction or reconstruction of a highway.

## Glossary of Terms

### Nonattainment area

A geographic area in which the level of air pollution is higher than the level allowed by nationally accepted standards for one or more pollutants.

### Nonjurisdictional wetland

The U.S. Army Corps of Engineers regulates jurisdictional wetlands and other waters of the U.S. under Section 404 of the CWA. The agency does not regulate wetlands delineated as non-jurisdictional on federal aid projects. For example, Federal Highway Administration is responsible for overseeing jurisdictional and non-jurisdictional wetlands on the I-70 Mountain Corridor Revised Draft PEIS.

### Nonpoint source pollution

Pollution that originates from diffuse areas and unidentifiable sources. Common non-point sources are agriculture, forestry, the atmosphere, ground water, city streets, mining, construction, dams, channels, landfills, and saltwater intrusion.

### Noxious weeds

An alien plant or parts of an alien plant that have been designated by rule as being noxious or has been declared a noxious weed by a local advisory board, and meets one or more of the following criteria:

1. Aggressively invades or is detrimental to economic crops or native plant communities;
2. Is poisonous to livestock;
3. Is a carrier of detrimental insects, diseases, or parasites; and
4. Is detrimental to the environmentally sound management of natural or agricultural ecosystems due to the direct or indirect effect of the presence of this plant.

### Operational energy

The energy consumed by vehicles once a highway is constructed that is dependent on the fleet make-up and projected traffic volumes.

### Paleontology

A multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth.

### Pier

In engineering, a term applied to a mass of reinforced concrete or masonry supporting a large structure, such as a bridge.

### Placer mine

The extraction and concentration of heavy metals or minerals from placer deposits by various methods, generally using running water. Also *hydraulic mining*, *drift mining*.

### Point source pollution

Any single identifiable source of pollution from which pollutants are discharged, such as a pipe, ditch, ship, or factory smokestack.

### Power grid

The network of electric transmission that includes power plants, substations, and transmission lines.

### Preferred Alternative

The alternative identified by means of the Environmental Impact Statement process as the action recommended to best meet the purpose and need of a project. The Preferred Alternative has been identified in the Revised Draft PEIS process as one of the action alternatives for the I-70 Mountain Corridor project. **Chapter 2, Section 2.7** of the I-70 Mountain Corridor Revised Draft PEIS describes the development of the Preferred Alternative.

### Preservation options

Strategies used by state and local governments to protect existing transportation or planned corridors from inconsistent development. These techniques may include, but are not limited, to the following:

- Local zoning and subdivision controls
- Growth management controls
- Right-of-way acquisition

### Programmatic Agreement

A document that spells out the terms of a formal, legally binding agreement between a state Department of Transportation (DOT) and other state and/or federal agencies. A Programmatic Agreement establishes a process for consultation, review, and compliance with one or more federal laws, most often with those federal laws concerning historic preservation. There are two basic kinds of programmatic agreements:

- A Programmatic Agreement that describes the actions that will be taken by the parties to meet their environmental compliance responsibilities for a specific transportation project, called here a *project-specific Programmatic Agreement*
- A Programmatic Agreement that establishes a process through which the parties will meet their compliance responsibilities for an agency program, a category of projects, or a particular type of resource, called here a *procedural Programmatic Agreement*

### Programmatic Environmental Impact Statement (PEIS)

A report developed as part of the NEPA requirements that details any adverse economic, social, and environmental effects of a proposed transportation project for which Federal funding is being sought under the extent of broad agency actions. Adverse effects could include air, water, or noise pollution; destruction or disruption of natural resources; adverse employment effects; injurious displacement of people or businesses; or disruption of desirable community or regional growth.

### Propulsion energy

The energy required to move a vehicle; today, vehicles generally use internal combustion engines or electrical motors. Recent trends in technology aim to reduce energy consumption through development of energy-efficient propulsion systems.

### Prospect hole

General term for any shaft, pit, adit, drift, tunnel, or drill hole made for prospecting mineral-bearing ground. More specific terms such as *prospect shaft* and *prospect pit* are generally used.

### Rapanos

*Rapanos v. United States*, 547 U.S. 715 (2006), was a U.S. Supreme Court case challenging the Clean Water Act. The CWA governs discharges to “navigable waters.” Although the law contains language defining navigable waters as “waters of the United States,” the Supreme Court rejected the position of the U.S. Army Corps of Engineers that its authority over water was essentially limitless under the CWA. In *Rapanos v. United States*, the Supreme Court clarified that the term “waters of the United States” “includes only those relatively permanent, standing or continuously flowing bodies of water ‘forming geographic features’ that are described in ordinary parlance as ‘streams[,] ... oceans, rivers, [and] lakes.’”

## Glossary of Terms

All waters with a “significant nexus” to “navigable waters” are covered under the CWA; however, the words “significant nexus” remains open to judicial interpretation and considerable controversy. Some regulations included water features such as intermittent streams, playa lakes, prairie potholes, sloughs and wetlands as “waters of the United States.”

In *Rapanos v. United States*, the Army Corps of Engineers applied that broad definition, seeking millions of dollars in fines and penalties from John A. Rapanos in Michigan who drained and filled 22 acres of wetland with sand despite warnings from the Michigan Department of Natural Resources (MDNR), the advice of his own private consultant, a cease-and-desist letter from the MDNR, and finally an administrative compliance order from the Environmental Protection Agency. The U.S. Army Corps of Engineers claimed that by filling the wetland he had discharged a pollutant into the “waters of the United States.” The U.S. Supreme Court rejected that position in a 4-1-4 plurality, holding that isolated wetlands could not be considered “waters of the United States” for purposes of the CWA.

### Rapid subsidence

The accelerated downward settling or sinking of the Earth’s surface with little or no horizontal motion.

### Reconnaissance survey

A preliminary survey, usually executed rapidly and at relatively low cost, prior to mapping in detail and with greater precision.

### Record of Decision

The final approval of an Environmental Impact Statement issued by FHWA.

### Receptor

Another term for an affected resource, either human or natural. NEPA provides a complete list of receptors that must be analyzed in EIS documents.

### Re-entrained dust

Material re-suspended in the air by vehicles traveling on unpaved and paved roads. Re-entrained dust on road and pavement surfaces arises from winter sanding, vehicle tires tracking soil from unpaved roads, the erosion of the road surface itself, and the degradation of parts of the vehicle, especially the tires.

### Regulated materials

The generation, storage, disposal, and release of any hazardous substance or petroleum product that falls within the scope of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA). Regulated materials are transported on I-70 (in the Corridor) under regulatory authority of the U.S. Department of Transportation (DOT) and the Colorado Department of Public Safety (CDPS) State Patrol Hazardous Materials Section. Properties contaminated by hazardous waste or petroleum products, highway accidents that potentially release environmental contaminants into adjacent land and streams; and potential contamination from mine tailings and wastes from historic mines in the Corridor are examples of regulated materials.

### REMI (TranSight) model

TranSight is the leading tool for evaluating the total economic effects of changes to transportation systems. With TranSight, users test alternative transportation changes and are able to observe the short- and long-term impact on jobs, income, population, and other economic variables. This sophisticated modeling tool integrates travel demand models with the REMI model, and is constructed with extensive data on emissions, safety valuation factors, and other data.

### **Residual impact**

Any direct, indirect, or cumulative impact of an action that remains after application of all mitigation measures. When describing residual impacts, consideration must be given to future generations, long-term productivity of resources, and irreversible and irretrievable commitments of resources.

### **Resource tipping point**

The critical point in an evolving situation that leads to a new and irreversible development for a resource.

### **Revised Draft Programmatic Environmental Impact Statement (Revised Draft PEIS)**

A revised draft report developed as part of the NEPA requirements that details any adverse economic, social, and environmental effects of a proposed transportation project for which Federal funding is being sought. Adverse effects could include air, water, or noise pollution; destruction or disruption of natural resources; adverse employment effects; injurious displacement of people or businesses; or disruption of desirable community or regional growth.

### **Riffle**

A stretch of choppy water caused by a shoal or sandbar; a rapid.

### **Right-of-way**

The land (usually a strip) acquired for or devoted to highway transportation purposes.

### **Riparian**

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

### **Roadless area**

United States Forest Service-managed lands that are larger than 5,000 acres, or lie adjacent to Wilderness or Primitive Areas, contain no roads, and have been inventoried by the former for potential inclusion in the Wilderness Protection System.

### **Rockfall**

Can occur on any slope where loose rock exists; common in areas where bedrock is highly jointed and exposed in outcrops. Areas where joints dip downslope are especially prone to rockfall. Physical weathering effects such as freezing/thawing, significant temperature changes, increased pore pressure from water in the joints, and root wedging can loosen rock. *See* **landslides**.

### **Sacred site**

A place important to the practice of traditional religions. The relationship between sacred sites and religions makes it possible for the former to become historic properties; however, sacred sites are also considered under statutes that protect First Amendment guarantees to the free practice of religions.

### **Scarp**

A line of cliffs produced by faulting or erosion.

### **Screening (alternatives analysis)**

A systematic process in which a broad range of alternatives is narrowed down to those that best meet the goals of a project based on the project's purpose and need, as well as focus on key issues and concerns related to the study area. Alternatives that pass through the screening process are retained for full evaluation in the Environmental Impact Statement to identify a preferred alternative.

## Glossary of Terms

### Scoping

An early step in the NEPA process that includes seeking agency and public views and information, receiving comments and suggestions, and determining issues to evaluate during the environmental analysis. Scoping can involve public meetings, telephone conversations, or written correspondence.

### Secondary effect

Another term for indirect effect.

### Section 106 of the National Historic Preservation Act

Section 106 of the National Historic Preservation Act requires federal agencies to define and document the Area of Potential Effects (APE) in consultation with the State Historic Preservation Office (SHPO). This requirement applies to any federal undertaking and should take place early in the environmental review process. In the Section 106 process, the federal agency, or a representative of the federal agency, must identify historic properties and determine the effect of the proposed project on them. This applies to all federally-funded and permitted projects that will impact sites listed on, or eligible for listing on, the National Register of Historic Places. The reason for defining an APE is to determine the area in which historic properties must be identified so that effects to any identified properties can, in turn, be assessed.

### Section 404

Regulates the discharge of dredged or fill material into the aquatic ecosystem, including wetlands. Impacted ecosystems must be mitigated and monitored according to the Clean Water Act.

### Section 4(f)

Properties that are defined under Section 4(f) of the Department of Transportation Act of 1966 (49 USC 303). Department of Transportation (DOT) regulations explicitly state that the Secretary of Transportation cannot approve the acquisition of publicly-owned land from a park, recreation area, or wildlife refuge, or land from a national, state, or local historic site unless no feasible and prudent alternative exists. These properties are commonly referred to as 4(f) properties.

### Section 6(f)

Properties that are defined under Section 6(f)(3) of the Land and Water Conservation Fund Act signed into law on September 3, 1964. These properties consist of publicly-owned land, including parks and recreation areas purchased or improved with monies from the Land and Water Conservation Fund, and are intended to remain in use for public recreation in perpetuity.

### Sediment Control Action Plan

The management practice that protects surface and ground water resources. Transportation projects are designed, constructed, and operated according to standards that will minimize erosion and sediment damage to the highway and adjacent properties. Erosion control includes developing erosion control plans and selecting, installing, and inspecting erosion and sediment control measures.

### Sedimentation

The deposition of soil or mineral particles, usually into a water body or drainage.

### Seeps

A place where groundwater flows slowly to the surface and often forms a pool; a small spring. Seeps are usually not flowing, with the liquid sourced only from underground. Seeps are often used in environmental sciences to define an exfiltration zone (seepage zone) where contaminated water from waste dumps or other sources leaves a waste system.

### **Sensitivity analysis**

The study of how the variation (uncertainty) in the output of a mathematical model can be apportioned, qualitatively or quantitatively, to different sources of variation in the input of the model. Put another way, it is a technique for systematically changing parameters in a model to determine the effects of such changes.

### **Settling basin**

(1) An artificial basin or trap designed to collect the suspended sediment of a stream before it flows into a reservoir and prevent rapid siltation of the reservoir; for example, a desilting basin. The settling basin is usually provided with means to draw off the clear water. (2) A sedimentation structure designed to remove pollutant materials from mill effluents; a tailings pond.

### **Short take off and landing (STOL) facility**

Aircraft with very short runway requirements.

### **Solid waste**

Nonliquid, nonsoluble materials ranging from municipal garbage to industrial wastes that contain complex and sometimes hazardous substances. Solid wastes also include sewage sludge, agricultural refuse, demolition wastes, and mining residues. Technically, solid waste also refers to liquids and gases in containers.

### **Special management area**

Public lands with federal management prescriptions that favor wildlife and their habitats because of limits they impose in some way on human activities.

### **State Transportation Improvement Plan**

A plan that establishes state transportation spending for a period of six years.

### **Superfund site**

A Superfund site is any land in the United States that has been contaminated by hazardous waste and identified by the Environmental Protection Agency as a candidate for cleanup because it poses a risk to human health and/or the environment. All sites where releases or potential releases have been reported are listed in the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS).”

### **Suppressed growth**

Indirect land use impacts (or longer-run and wider-spread changes to development patterns and comprehensive plans) that are suppressed by a transportation improvement. Suppressed growth can alter the effectiveness of transportation investment, may conflict with local growth desires, and trigger environmental impacts.

The estimation of suppressed growth effects requires the identification of the transportation project contribution to changes in development patterns. Once the project effect on land use has been identified, this information can be used to estimate the environmental impacts attributable to land use changes caused by the transportation project.

### **Sustainability**

The concept of sustainability is accommodating the needs of the present population without compromising the ability of future generations to meet their own needs. Sustainability applies to environmental, economic, and social principles. Sustainable transportation planning, design, construction,

## Glossary of Terms

and maintenance can incorporate a variety of strategies to avoid ecosystem impacts, conserve natural resources (including use of clean fuels), encourage modes other than single occupant vehicles, and promote travel reduction strategies.

### **Stream and Wetland Ecological Enhancement Program (SWEEP)**

The Colorado Department of Transportation initiated Stream and Wetland Ecological Enhancement Program (SWEEP) to identify and address environmental issues related to the improvement of wetlands, streams, and fisheries in the I-70 Corridor. The streamlining process provides early consideration of water-related needs in future design and construction decisions. The SWEEP process also facilitates the 404 (b)1 process and the application of identifying the least damaging practical alternative.

The SWEEP team included representatives from federal and state agencies, watershed associations, and special interest groups. The team evaluated water-resources-related impacts and methods that could be used to improve the aquatic environment in Clear Creek from the Eisenhower Tunnel downstream to Floyd Hill. Results of the study were used to develop mitigation and design needs to address the water resource issues.

### **Threatened, Endangered, and Special Status (TES) species**

A classification of plant and animal species listed in the Endangered Species Act. Endangered species are in danger of becoming extinct; threatened species are in danger of being listed as endangered.

#### **Tier 1**

Overall, Tier 1 work on the I-70 Mountain Corridor consists of the preparation of a Revised Draft PEIS and Record of Decision. These documents present information on transportation need in the area, key environmental resources, the development and evaluation of feasible alternatives, a preliminary assessment of expected impacts, and the identification of a recommended transportation plan (set of feasible alternatives) to be carried through into more detailed study during Tier 2 processes. The goal of Tier 1 work is not an either/or determination among modes or alternatives within a mode, but rather an effort to identify how the various modal investments may be best implemented in consideration of engineering, environmental, financial, public input, land use, and community development factors.

#### **Tier 2**

Tier 2 processes will be conducted after the completion of the Tier 1 Revised Draft PEIS and Record of Decision. Tier 2 processes will involve more detailed engineering and environmental analyses and final NEPA documentation for the feasible alternatives identified in Tier 1. Tier 2 NEPA documents will refer to the purpose and need and other background information presented in the Tier 1 EIS, but will incorporate more detailed alignment development, environmental field assessment, impact evaluation, preferred alternative selection, and mitigation plan development on a project-by-project basis in order to complete the NEPA process.

### **Total Maximum Daily Load (TMDL)**

A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards. Water quality standards identify the uses for each water body, for example, drinking water supply, contact recreation (swimming), and aquatic life support (fishing), and the scientific criteria to support that use. Section 303 of the Clean Water Act establishes the water quality standards and TMDL programs.

### **Transportation/Travel Demand Management (TDM)**

Programs designed to reduce or shift demand for transportation through various means, such as the use of public transportation, carpooling, telecommuting, and alternative work hours. TDM strategies can be used to manage congestion during peak periods and mitigate environmental impacts.

### **Traffic Noise Model (TNM)**

A traffic noise prediction model designed, developed, tested and documented by the Federal Highway Administration. The FHWA TNM® contains the following components:

- Modeling of five standard vehicle types, including automobiles, medium trucks, heavy trucks, buses, and motorcycles, as well as user-defined vehicles.
- Modeling of both constant-flow and interrupted-flow traffic using a 1994/1995 field-measured data base.
- Modeling of the effects of different pavement types, as well as the effects of graded roadways.
- Sound level computations based on a one-third octave-band data base and algorithms.
- Graphically-interactive noise barrier design and optimization.
- Attenuation over/through rows of buildings and dense vegetation.
- Multiple diffraction analysis.
- Parallel barrier analysis.
- Contour analysis, including sound level contours, barrier insertion loss contours, and sound-level difference contours.

### **Transportation System Management (TSM)**

Actions that improve the operation and coordination of transportation services and facilities.

### **Total suspended solids (TSS)**

Particles, both mineral (clay and sand) and organic (algae and small pieces of decomposed plant and animal material), that are suspended in water.

### **Unmet demand**

A situation that occurs when travelers choose to not make a trip or avoid a desired trip because of severe congestion conditions, long travel times, or other unsatisfactory conditions of the I-70 Mountain Corridor.

### **Vehicle mile of travel**

A unit to measure vehicle travel made by a private vehicle, such as an automobile, van, pickup truck, or motorcycle. Each mile traveled is counted as one vehicle mile regardless of the number of persons in the vehicle.

### **Vehicles per day (vpd)**

This is a measure of traffic volume and is used as the unit for Average Annual Daily Traffic.

### **Vehicles per hour (vph)**

A ratio used in defining the hourly volume.

### **Viewshed**

An area of land, water, or other environmental element that is visible to the human eye from a fixed vantage point. The term is used widely in such areas as urban planning, archaeology, and military science. In urban planning, viewsheds tend to be areas of particular scenic or historic value that are deemed worthy of preservation against development or other change. Viewsheds are often spaces that are readily visible from public areas such as from public roadways or public parks. The preservation of viewsheds is frequently a goal in the designation of open space areas, green belts, and community separators.

### **Visibility**

The distance at which a given standard object can be seen and identified with the unaided eye.

## Glossary of Terms

### Volume/capacity (V/C) ratio

The ratio of flow rate to capacity. The V/C may be the actual or projected rate of flow on a designated lane group during a peak 15-minute interval divided by the capacity of the lane group. The V/C ratio is a measure of capacity sufficiency, that is, whether or not the physical geometry provides sufficient capacity for the subject movement. Low V/C ratios depict relatively free flow conditions. High V/C ratios depict more congested conditions. Actual V/C ratios are calculated from vehicle count data (defining volume) and the geometrics of a roadway (determining capacity). V/C ratios are used to broadly define problem areas on a freeway and to make preliminary operational decisions concerning the freeway (for example, ramp metering rates). In some cases, the V/C ratio is used to define Level of Service.

### Waste rock

Material excavated from mine workings and disposed of without further processing.

### Watershed

The areas that drain to surface water bodies, including lakes, rivers, estuaries, wetlands, streams, and the surrounding landscape.

### Waters of the U.S.

The term waters of the U.S. means:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
4. All impoundments of waters otherwise defined as waters of the U.S. under this definition;
5. Tributaries of waters;
6. The territorial sea;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands)

### Weighted Hazard Index (WHI)

Compares the weighted accident rate, measured as weighted accidents (higher weight given to a higher severity accident) per million vehicle miles of travel, at a location to the statewide average weighted accident rate for similar roadways and determines if the observed rate is higher than the statewide average. If a WHI is greater than zero, it signifies that the location in question has a higher weighted accident rate than the statewide average and is, hence, a potentially problematic area in terms of either number of accidents observed or their severity.

### Wetland

Wetlands consist of areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (Environmental Protection Agency, 40 Code of Federal Regulations 230.2 and USACE, 33 Code of Federal Regulations 328.3).

**Wilderness area**

An area of at least 5,000 acres that contains most of its natural characteristics, is little influenced by human activities, and provides opportunities for solitude. Wilderness areas are protected and managed to preserve these natural conditions.

**Wildlife movement corridor**

A segment of land that maintains connectivity between areas of critical wildlife habitat, allowing members of a species to travel across and between landscapes.

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