

9.0 GLOSSARY

9.1 Acronyms

AB	Assembly Bill
ADT	Average daily traffic
AQMP	Air Quality Management Program
BACT	Best available control technology
BCAQMD	Butte County Air Quality Management District
bgs	Below ground surface (feet)
CAA	Clean Air Act
CAAQS	Clean Ambient Air Quality Standards
CARB	California Air Resources Board
CCAAA	California Clean Air Act
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	Carbon monoxide
CO₂	Carbon dioxide
COE	Corps of Engineers (US Army)
CUP	Conditional use permit
CWA	Clean Water Act
dB	Decibel
dB(A)	A-weighted decibel; decibel weighted to reflect sounds most sensitive to human ears
DBH	Diameter at breast height
D/T	Dilutions-to-threshold
EIR	Environmental Impact Report
ESA	Endangered Species Act
EPA	Environmental Protection Agency
F	Fahrenheit
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
H₂S	Hydrogen sulfide
HCP	Habitat conservation plan
L_{dn}	24-hour average weighted noise level
L_{eq}	Equivalent noise level
LOS	Level of service
MMCP	Mitigation Monitoring and Compliance Program
MPE	Maximum probable [earthquake] event
mph	Miles per hour
MSL	Mean sea level

NAAQS	National ambient air quality standards
NRCS	Natural Resources Conservation Service
NDDB	Natural Diversity Data Base (California Department of Fish and Game)
Neg	Negligible
NO₂	Nitrogen dioxide
NOP	Notice of Preparation
NO_x	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPPA	California Native Plant Protection Act of 1997
NSVAB	North Sacramento Valley Air Basin
O₃	Ozone
ONC	Office of Noise Control (State of California)
OSHA	Occupational Safety and Health Act
Pb	Lead
PCE	Passenger car equivalent-generally one truck being equal to approximately 1.5 to 2 cars
PM₁₀	10-micron particulate matter
ppm	Parts per million
ppm_v	Parts per million by volume
PRC	Public Resources Code
PTC	Permit to construct
PTO	Permit to operate
R-E-D	Rarity-Endangerment-Distribution
ROG	Reactive organic gases
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SCFM	Standard Cubic Feet per Minute
SEL	Sound exposure level
SMARA	Surface Mining and Reclamation Act
SO₂	Sulfur dioxide
SO₄	Sulfates
SR	State Route
SWPPP	Stormwater Pollution Prevention Program
SWRCB	State Water Resources Control Board
tph	Tons per hour
tpy	Tons per year
TAC	Toxic air contaminants
TI	Traffic Index
TIA	Traffic Impact Analysis
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WDR	Waste discharge requirements

9.2 Glossary

100-year flood A flood that has a one percent chance of occurring in any given year. The 100-year flood plain is an area that is inundated by the 100-year flood.

accuracy Degree of conformity of a measure to a standard or true value.

acre-feet The volume of liquid or solid required to cover one acre to a depth of one foot, or 43,560 cubic feet; measure for volumes of water, reservoir rock, etc.

active fault Fault with seismic activity recent enough to have displaced Holocene materials (up to 10,000 years old).

aestivate (estivation) *Botany* The arrangement of floral parts within a floral bud. *Zoology* A state of animal dormancy or inactivity induced by the heat of summer.

aggradation The geologic process by which stream beds, flood plains, and the bottoms of other water bodies are raised in elevation by the deposition of material eroded and transported from other areas. It is the opposite of degradation.

aggregate A hard, inert material composed of fragments which show a wide and gradational range in sizes, that can be bound together into a coherent mass by means of a cementing material such as portland cement, gypsum plaster, or asphalt.

alluvial reach A reach of a river with a sediment bed composed of the same type of sediment material as that moving in the stream.

alluvial fan An outspread, gently sloping mass of alluvium deposited by a stream flowing from a narrow canyon onto a plain or valley floor. Viewed from above, it has the shape of an open fan, the apex being at the valley mouth.

alluvial deposit Clay, silt, sand, gravel or other sediment deposited by the action of running or receding water.

alluvial Pertaining to material or processes associated with transportation or deposition of soil and rock by flowing water (e.g., streams and rivers).

alluvium A general term for geologic materials deposited by running water (e.g., streams and rivers). The term applies to deposits of recent time that have not been consolidated and cemented into rock.

ambient The environment as it exists at the point of measurement, and against which changes or impacts are measured.

ancillary facilities Support structures and equipment.

aquifer A body of rock that is sufficiently permeable to conduct groundwater and to yield economically significant quantities of water to wells and springs.

artifact Any object showing human workmanship or modification, especially from a prehistoric or historic culture.

authority to construct Written permit which must be obtained from the Butte County Air Quality Management District (BCAQMD) prior to construction, alteration, or replacement of any article, machine, or equipment which may emit air contaminants or affect any emission of those contaminants.

average annual quantity The average volume or mass of sediment which passes a specified point over a one year period.

bank erosion Erosion of streambanks is a source of sediment when banks are being supplied with sediment from upslope by creep or other mass wasting processes. Bank erosion also produces sediment when the eroded banks are terraces higher than the present floodplain. A stream flowing across a floodplain, without undergoing any systematic widening does not produce a net sediment influx to the channel when it erodes its banks, because the volume

of sediment eroded from the outside of a bend is roughly equal to the volume deposited on the inner bank.

base level The theoretical limit or lowest level toward which erosion of the earth's surface constantly progresses but seldom, if ever, reaches; especially the level below which a stream cannot erode its bed.

bed load Material moving on or near the stream bed by rolling, sliding, and sometimes making brief excursions into the flow a few diameters above the bed, i.e., jumping. The term "saltation" is sometimes used in place of "jumping." Bed load is bed material that moves in continuous contact with the bed and consists of the coarser fraction (sand, gravel, and cobbles); contrast with **suspended load**.

bed load discharge The quantity of bed load passing a cross section in a unit of time, i.e., the rate. Usually presented in units of tons per day. May be measured or computed. See **bed load**.

bed forms Irregularities found on the bottom (bed) of a stream that are related to flow characteristics. They are given names such as "dunes," "ripples," and "antidunes." They are related to the transport of sediment and interact with the flow because they change the roughness of the stream bed. An analog to stream bed forms are desert sand dunes (although the physical mechanisms for their creation and movement may be different).

bed material load The total rate (tons/day) at which bed material is transported by a given location on a stream. It consists of bed material moving both as bed load and suspended load. Contrast with **wash load**.

bed material Bed material is the material that composes the stream bed. This usually includes most of the bed load and fractions of the suspended load. In alluvial streams, bed material particles are likely to be moved at any moment or during some future flow condition. Contrast with **wash load**.

bedrock A general term for the rock, usually solid, that underlies soil or other unconsolidated, bed material.

bench interval The difference in vertical elevation between any two consecutive benches.

berm An elongate earthen structure which acts as a barrier; e.g., to make it difficult for a vehicle to cross, or to redirect the flow of water.

braided channel A stream that is characterized by random interconnected channels divided by islands or bars. Bars which divide the stream into separate channels at low flows are often submerged at high flow.

braided river A river containing two or more interconnecting channels separated by unvegetated gravel bars, sparsely vegetated islands, and occasionally, heavily vegetated islands.

California Endangered Species Act (CESA) Legislation enacted in 1984 to protect floral and faunal species by listing them as "rare," "threatened," "endangered," or "candidate," and providing a consultation process for the determination and resolution of potential adverse impact to the species.

California Environmental Quality Act (CEQA) Legislation enacted in 1970, as amended, to protect the quality of the environment for the people of California through requiring public agencies and decision makers to document and consider the environmental consequences of their actions.

channel stabilization A stable channel is neither progressively aggrading nor degrading, or changing its cross-sectional area through time. It could aggrade or degrade slightly, but over the period of a year, the channel would remain similar in shape and dimensions and position to previous times. Channels are typically considered unstable when they are depositing or eroding in response to natural or human induced conditions along the stream length. Stabilization techniques consist of bank protection and other measures that work to reduce erosion and deposition at the desired locations.

channel morphology The physical shape, size and characteristics of a stream channel which are related to the hydraulic factors of velocity, roughness, flow and flow frequency.

channel invert The lowest point in the channel.

channel A natural or artificial waterway of perceptible extent which periodically or continuously contains moving water. It has a definite bed and banks which serve to confine water.

chute A narrow channel through which water flows rapidly.

clay A natural argillaceous substance of soft rock which develops plastic properties with the addition of a small amount of water. See Table 9-1, Scale for Size Classification of Sediment Particles.

cobbles A rounded to sub-rounded rock fragment between 64 and 256 mm in diameter. See Table 9-1.

cohesive sediments Sediments whose resistance to initial movement or erosion is affected mostly by cohesive bonds between particles.

colluvium A general term applied to loose and incoherent deposits on hill slopes.

cone of depression The depression produced in a water table or potentiometric surface by the withdrawal of water due to pumping.

consolidation The compaction of deposited sediments caused by grain reorientation and by the squeezing out of water trapped in the pores.

contrast The effect of a striking difference in the form, line, color, or texture of the landscape features within the area being viewed.

convergence The state of tending to a unique solution. A given scheme is convergent if an increasingly finer computational grid leads to a more accurate solution.

conveyance A measure of the carrying capacity of the channel section. Flow is directly proportional to conveyance for steady flow. From Manning's equation, the proportionality factor is the square root of the energy slope.

cover layer One of the two sublayers of the active layer. It lies above the sub-surface layer (the second sublayer in the active layer).

cross section Depicts the shape of the channel in which a stream flows. Measured by surveying the stream bed elevation across the stream on a line perpendicular to the flow. Necessary data for the computation of hydraulic and sediment transport information.

cumulative effects The combined environmental impacts that accrue over time and space from a series of similar or related individual actions, contaminants, or projects. Although each action may seem to have a negligible impact, the combined effect can be significant. Included are activities of the past, present, and reasonably foreseeable future; synonymous with cumulative impacts.

degradation The geologic process by which stream beds, floodplains, and the bottoms of other water bodies are lowered in elevation by the removal of material from the boundary. It is the opposite of aggradation.

deposition The mechanical or chemical processes through which sediments accumulate in a (temporary) resting place. The raising of the stream bed by settlement of moving sediment that may be due to local changes in the flow, or during a single flood event.

depth of flow The depth of flow is the vertical distance from the bed of a stream to the water surface.

direct impacts Impacts that are caused by the action and occur at the same time and place (40 Code of Federal Regulations 1508.7); synonymous with direct effects.

- discharge** The discharge (Q) is the volume of a fluid or solid passing a cross section of a stream per unit time.
- discretionary actions** For the purpose of CEQA, these are actions or approvals by governmental agencies or boards that require the exercise of judgment or deliberation when making a decision to approve, deny, or approve with conditions a proposed project.
- distributaries** Diverging streams which do not return to the main stream, but discharge into another stream or the ocean.
- dragline** A land-based crane which casts its bucket into the water above the area to be mined. The bucket is allowed to sink to the bottom and is then dragged back to the crane. As the bucket is dragged along the deposit, it becomes filled with material. The bucket is then raised out of the water, swung over the land, and dumped.
- drainage** Natural channel through which water flows at some time of the year. Natural and artificial means for effecting discharge of water as by a system of surface and subsurface passages.
- drawdown** The lowering of the water level in a well as a result of withdrawal; the reduction in head at a point caused by the withdrawal of water from an aquifer.
- dredge** Large floating contrivance utilized in underwater excavation for the purpose of removing overburden from submerged ore bodies prior to open pit mining, or to recover subaqueous deposits having commercial value.
- dust palliative** A compound used to reduce fugitive dust. Dust palliatives include water, water/surfactant mixtures, emulsion compounds, etc.
- effect** Effect and impact are synonymous as used in this report. Direct or primary impacts are those caused by the project and occur at the same time and place. Indirect, or secondary, effects are those which result from the project and occur later in time or farther removed in distance or time, but are still reasonably foreseeable.
- elastic** Pertaining to a rock or sediment composed principally of fragments derived from pre-existing rocks or minerals and transported some distance from their place of origin.
- endangered species** Any animal or plant species which is in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified by the Secretary of the Interior as endangered in accordance with the Federal 1973 Endangered Species Act (ESA) and ESA Amendments of 1982. Also as designated by the California Endangered Species Act (CESA) of 1984.
- Endangered Species Act (ESA)** Federal legislation enacted in 1973, as amended, that extends legal protection to plants and animals listed as "threatened" or "endangered" and includes consultation with FWS. Similarly, as enacted by the State of California in 1984 as the California Endangered Species Act.
- environment** The physical conditions which exist within the area which will be affected by a proposed project or alternative, including but not limited to land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance (CEQA §21060.5). The environment includes both natural and man-made conditions.
- Environmental Impact Report (EIR)** A detailed report prepared under CEQA describing and analyzing the significant environmental effects of a project and discussing ways to mitigate or avoid the effects. An EIR is prepared for use by the public, public agencies and agency decision makers to weigh the environmental consequences of a proposed action.
- ephemeral stream** A stream or portion of a stream that flows briefly in direct response to precipitation in the immediate vicinity and whose channel is at all times above the water table (Such flow is usually of short duration).
- erosion** The wearing away of soil and rock by weathering, mass wasting, and the action of streams, glaciers, waves, wind, and underground water.

eutrophication The process by which a body of water becomes enriched in dissolved nutrients (as phosphates) that stimulate the growth of aquatic plant life usually resulting in the depletion of dissolved oxygen.

evapotranspiration The process by which water is returned to the air through direct evaporation or by transpiration of vegetation, with no attempt being made to distinguish between the two.

extant (1) Occurring or existing in act or fact. (2) Having existence or life.

extirpated To remove or eradicate.

fault A surface or zone along which there has been displacement of the geologic materials on either side relative to one another as a result of seismic activity.

feasible As defined in CEQA §21061.1, capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

floodplain The portion of a river valley, adjacent to the channel, which is built of sediments deposited during the present regimen of the stream and is covered with water when the river overflows its banks at floodstages.

fluvial process The processes occurring in rivers and creeks.

fluvial Of or pertaining to rivers or produced by the action of a stream or river.

fold A bend in bedding, foliation, cleavage, or other planar features in rocks. A fold is usually a product of deformation.

fossorial mammals Adapted for burrowing or digging.

freeboard The height of containment above the surface of contained liquid; the vertical distance between normal water level and the top of a levee.

fugitive dust Dust particles suspended randomly in the air from road travel, excavation, and rock loading operations.

geomorphology The scientific study of the origin of landforms based on a cause-and-effect relationship.

gravel Fragments of rock larger and coarser than sand, worn by the action of air or water, two millimeters to three inches in size. See Table 9-1.

gravel bar skimming and pitting Removal of alluvial (generally sand and gravel) stream deposits during periods of low water flow.

groundwater All subsurface water that is below the water table.

groundwater recharge Replenishment of groundwater by precipitation, runoff or by artificial methods.

growth media Geologic and organic materials, including soils, that are suitable for use in growing plants.

habitat The place where an animal or plant normally lives, often characterized by a dominant plant and codominant form, such as creosote bush habitat.

haul road A road used by large (50- to 100-ton capacity) trucks to haul aggregate and overburden from the open pit to other locations.

hazardous material Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the

health and safety of persons or harmful to the environment if released into the workplace or the environment. (As defined in California Health and Safety Code, §2550.1)

headward erosion The upstream movement of the zone of maximum erosion that develops at a zone of steepened gradient called a "knickpoint." In areas of gravel mining, headward erosion normally begins where the stream flows into a pit and migrates upstream.

heavy metals A group of elements, including copper, lead, mercury, molybdenum, nickel, cobalt, chromium, iron, silver, etc., that may be acquired by organisms in trace amounts that are toxic in higher concentrations.

historic flows The collection of recorded flow data for a stream during the period of time in which stream gages were in operation.

Holocene The epoch of the Quaternary period of geologic time from 10,000 years ago up to the present.

hydrology The study of the properties, distribution, and circulation of water on the surface of the land, in the soil, and in the atmosphere.

impact A modification in the status of the environment brought about by the proposed action or an alternative.

insitu In (its original) place.

in-channel mining Excavation of sand and gravel from stream bed deposits above the mean low water level or stream bottom, whichever is higher, also referred to as stream bed skimming or gravel bar skimming.

incised Having a margin that is deeply and sharply notched.

infiltration Downward movement of water through the soil surface into the ground.

infrastructure The basic framework or underlying foundation of a community or project, including road networks, electric and gas distribution, water and sanitation services, and facilities.

initial study A preliminary analysis prepared by the lead agency to determine whether an EIR or a Negative Declaration must be prepared or to identify the significant environmental effects to be analyzed in an EIR.

intermittent stream A stream that flows only part of the time or during part of the year.

intrusive Of or pertaining to the process and rock formed by the emplacement of molten rock material in pre-existing rock.

irreversible Applies primarily to the use of nonrenewable resources, such as minerals, cultural resources, wetlands, or to those factors that are renewable only over long time spans, such as soil productivity. Irreversible also includes loss of future options.

jurisdictional wetlands A wetland area identified and delineated by specific technical criteria, field indicators, and other information for purposes of public agency jurisdiction. The public agencies that administer jurisdictional wetlands are the U.S. Army Corps of Engineers (ACE), the U.S. Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (FWS), and the USDA Soil Conservation Service.

lateral migration Movement of a channel perpendicular to the direction of flow.

lead agency The public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment (as defined in CEQA §21067).

local agency Any public agency other than a state agency, board or commission (as defined in CEQA §21062).

maximum contaminant levels (MCLS) The drinking water standards defined by the State Drinking Water Act.

meandering stream An alluvial stream characterized by a series of pronounced alternating bends. The shape and existence of the bends in a meandering stream are a result of alluvial processes and not determined by the nature of the terrain (geology) through which the stream flows.

mine Mine includes all mineral bearing properties of whatever kind of character, whether underground, or in a quarry or pit, or any other source from which any mineral substance is obtained.

mineral materials Minerals such as common varieties of sand, stone, gravel, pumice, pumcote, and clay that can only be obtained under the Materials Act of 1947.

mining The process or business of taking mineral substances from a pit, quarry or excavation in conjunction with other permitted construction activities.

mitigate/mitigation Actions to avoid, minimize, rectify, reduce or eliminate, and compensate for impacts to environmental resources.

mitigation A method or procedures which may: (1) avoid an impact altogether by not taking a certain action or parts of an action; (2) minimize impacts by limiting the degree or magnitude of the action and its implementation; (3) rectify the impact by repairing, rehabilitating, or restoring the impacted environment; (4) reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action; and (5) compensate for the impact by replacing or providing substitute resources or environments.

monitor To systematically and repeatedly watch, observe, or measure environmental conditions in order to track changes.

monitoring The collection of environmental, scientific, or engineering data by either continuous or periodic sampling methods.

native species Plants that originated in the area in which they are found; i.e. they naturally occur in that area.

notice of preparation (NOP) A brief notice sent by the public agency with principal responsibility for carrying out or approving a project to notify other agencies that an EIR is being prepared under CEQA.

overbank In a river reach, the surface area between the bank on the main channel and the limits of the floodplain.

Overburden Rock, soil, or loose debris that is above the mineable aggregate resource and is of insufficient quality to process into construction grade aggregate.

ozone (O₃) An end product of complex reactions between ROG and (or non-methane hydrocarbons) and NO_x in the presence of ultraviolet radiation.

parameter Any set of physical properties whose values determine the characteristics or behavior of something.

particle size A linear dimension, usually designated as "diameter," used to characterize the size of a particle. The dimension may be determined by any of several different techniques, including sedimentation sieving, micrometric measurement, or direct measurement.

particulate(s) Minute, separate particles, such as dust or other air pollutants.

permeability A measure of the relative ease with which a porous medium can transmit a liquid under a potential gradient; the property of a soil that permits the passage of water under a gradient of force.

permeable The property or capacity of a porous rock, sediment, or soil to transmit a liquid.

pH The measure of acidity or basicity of a solution.

phreatophyte A deep rooted plant that obtains its water from the water table or the soil layer just above it.

potentiometric surface A surface that represents the total head in an aquifer; that is, it represents the height above a datum plane at which the water level stands in tightly cased wells that penetrate the aquifer.

prevention of significant deterioration (PSD) A term used to describe an air quality permitting process that is triggered by any project that has the potential to emit certain pollutants above levels prescribed by law.

process facilities The stationary equipment and facilities used to prepare the final product.

project An activity which may cause either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment, and which is any of the following: (a) An activity directly undertaken by any public agency, (b) an activity undertaken by a person which is supported, in whole or in part, through contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies, (c) an activity that involves the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies. (CEQA §21065)

public agency Any state agency, board, or commission; county, city, regional agency, public district, redevelopment agency, or other political subdivision. (CEQA §21063)

riparian vegetation Vegetation along rivers, streams, creeks, lakes or tidewaters characterized by the presence of certain morphological features such as broad fleshy leaves.

riparian Pertaining to or situated on the bank of a river, stream, or other body of water. Riparian is normally used to refer to plants of all types that grow along streams, rivers, or at spring and seep sites.

ROG Reactive organic gases, chemicals that are the precursors to the formation of ozone.

rotational slide A landslide in which shearing takes place on a well defined, curved surface, concave upward, producing a backward rotation in the displaced mass.

sand Inorganic particles between 0.05-2.0 millimeters in diameter. See Table 9-1.

saturated zone Zone in which all the connected interstices or voids in rock or soil are filled with water under pressure equal to, or greater than, atmospheric pressure. The water table is commonly considered to be at the top of the zone of saturation.

saturation The degree to which voids in soil are filled with water.

sediment (1) Particles derived from rocks or biological materials that have been transported by a fluid. (2) Solid material (sludges) suspended in or settled from water. A collective term meaning an accumulation of soil, rock and mineral particles transported or deposited by flowing water.

seismic Pertaining to an earthquake or earth vibration which may be natural or artificial.

seismicity Oscillation of the ground resulting from shifting of the earth's crust.

sensitive species Generic term for any plant or animal species which is recognized by the government as being depleted, rare, threatened, or endangered.

significant effect on the environment A substantial, or potentially substantial, adverse change in the environment. (CEQA §21068)

significant effect A substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

soil horizon In a vertical section of land, the reasonably distinct layer of upper layer of earth that may be dug or plowed and in which plants grow.

soil erosion Movement of soil through the action of natural physical processes, primarily associated with the action of wind and water, from their position on the earth's surface. Soil erosion includes detachment, transport and subsequent deposition of soil particles.

stream segment A stream segment is a specified portion of a river with an upstream inflow point and with a downstream termination at a control point. Primary Inflow points are designated by In where n is the segment number. Primary inflow points are always at the upstream-most end of a tributary or main stem segment.

stream bed skimming (gravel bay skimming) Excavation of sand and gravel from stream bed deposits above the mean summer water level or stream bottom, whichever is higher.

suspended load Includes both suspended bed material load and wash load. Sediment that moves in suspension is continuously supported in the water column by fluid turbulence. Contrast with **bed load**.

thalweg The line following the lowest part of a valley, whether under water or not. Usually the line or path following the deepest part or middle of the bed or channel of a river..

threatened species Species which, although not presently threatened with extinction, is likely to become endangered in the foreseeable future throughout all or a significant portion of its range.

tph Tons per hour.

traffic index Related to the design of a roadway structural section (i.e., pavement and aggregate base), the traffic index is a measure of the number of Equivalent Single Axle Loads (ESAL) expected in a design lane over the design period.

visual resource The composite of basic terrain, geologic features, water features, vegetation patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for viewers.

water table The level in the saturated zone at which the pressure is equal to the atmospheric pressure.

watershed The geographic region from which water drains into a particular stream, river, or body of water. A watershed includes hills, lowlands, and the body of water into which the land drains. Watershed boundaries are defined by the ridges or divides separating them. Also called a drainage area.

**TABLE 9-1
SCALE FOR SIZE CLASSIFICATION OF SEDIMENT PARTICLES**

Class Name	Millimeters	Feet	Phi Value
Boulders	>256 < -8	--	<-8
Cobbles	256 – 64	--	-8 to -6
Very Coarse Gravel	64 – 32	.148596	-6 to -5
Coarse Gravel	32 – 16	.074216	-5 to -4
Medium Gravel	16 – 8	.037120	-4 to -3
Fine Gravel	8 – 4	.018560	-3 to -2
Very Fine Gravel	4 – 2	.009279	-2 to -1
Very Coarse Sand	2.0 – 1.0	.004639	-1 to 0
Coarse Sand	1.0 - 0.50	.002319	0 to +1
Medium Sand	0.50 - 0.25	.001160	+1 to +2
Fine Sand	0.25 - 0.125	.000580	+2 to +3
Very Fine Sand	0.125 - 0.0625	.000288	+3 to +4
Course Silt	0.0625 – 0.031	.000144	+4 to +5
Medium Silt	0.031 - 0.016	.000072	+5 to +6
Fine Silt	0.016 - 0.008	.000036	+6 to +7
Very Fine Silt	0.008 - 0.004	.000018	+7 to +8
Coarse Clay	0.004 - 0.0020	.000009	+8 to +9
Medium Clay	0.0020 – 0.0010	--	+9 to +10
Fine Clay	0.0010 – 0.0005	--	+10 to +11
Very Fine Clay	0.0005 - 0.00024	--	+11 to +12
Colloids	<0.000024	--	>+12

Note: Portions of Table 9-1 are taken from EM II 10-2-4000, March 1988