

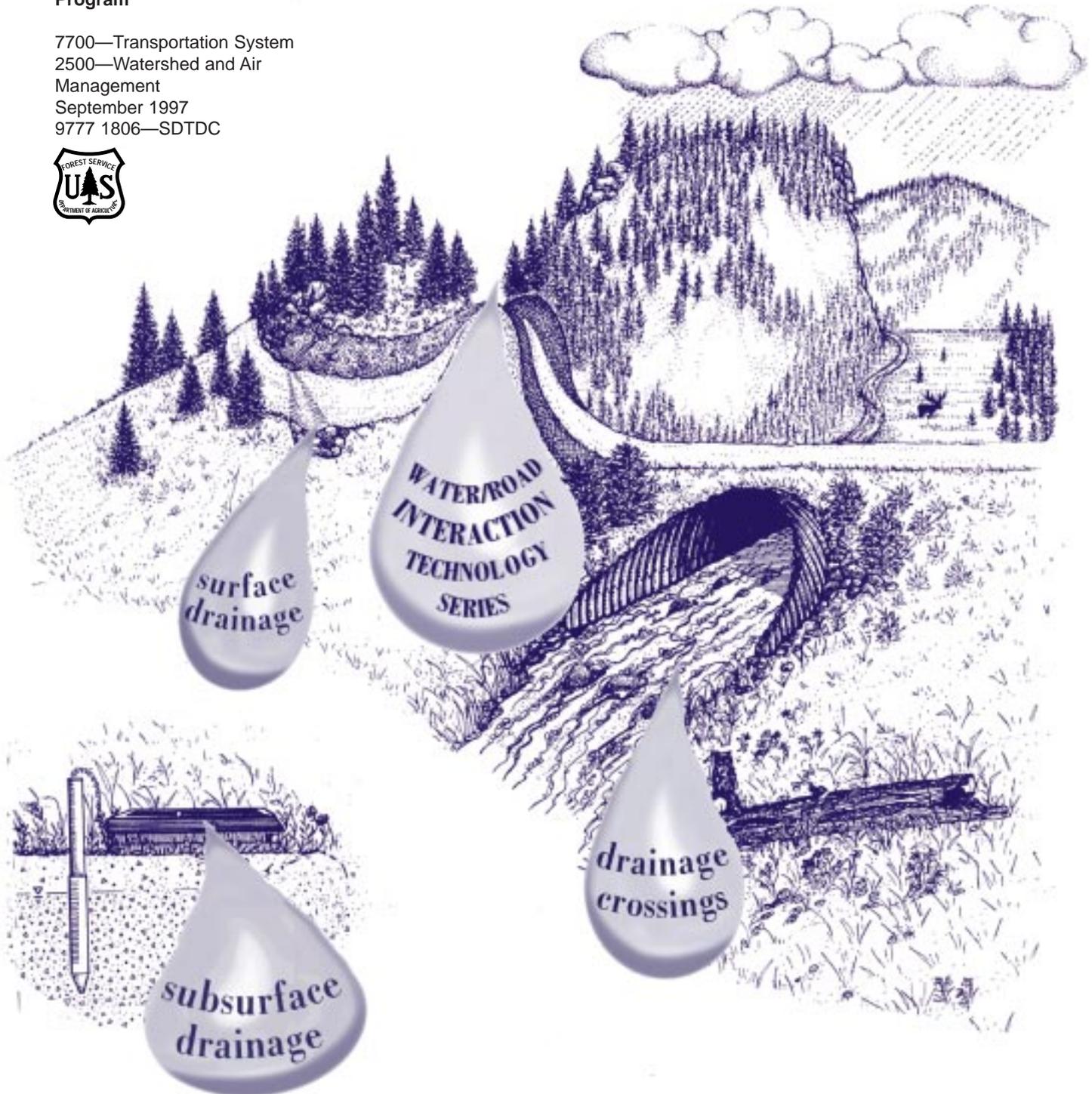
United States  
Department of  
Agriculture

# Glossary

## Forest Service

### Technology & Development Program

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# Glossary

Compiled for *The Water/Road Interaction  
Technology Series*

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## GLOSSARY

This glossary contains terms helpful in communication between resource specialists and engineers concerning Forest Service transportation system facilities and was compiled to support the Water/Road Interaction Technology Series. It contains terms used throughout the Forest Service defined by laws, regulations, manuals, handbooks, and specifications. Definitions directly related to transportation activities from other source materials are also included. Terms unique to the Forest Service and terms for which several definitions exist are listed.

Additional definitions may be submitted to the project leaders shown in "The Water/Road Interaction Technology Series: An Introduction" document. These definitions will be included in a portable document (readable electronic) format version accessible from the United States Department of Agriculture, Forest Service home page on the World Wide Web (<http://www.fs.fed.us/>) by early 1999.

*Abrade*—Wear or scour by water and by the material transported by waterflow.

*Access Management Objectives*—Objectives that describe the extent and form of access needed to accomplish management area direction, including how access to and within National Forest lands will be provided, whether by foot, horse, motorized vehicle, or aircraft; over water, roads, or trails; or through the air.

*Adfluvial*—Produced by river action; occasionally used in reference to fish that mature in lakes and migrate upstream into tributaries to spawn.

*All Weather Facility*—A facility capable of supporting operation during any weather condition with only minor or short term restrictions.

*Alviens*—Newly hatched fish with the yoke sack still attached.

*Anadromous Fish*—Fish such as salmon and some trout that are born in fresh water rivers and tributaries, migrate downstream, mature in the ocean, and return to fresh water to spawn.

*Apron*—Erosion protection mat placed to protect against erosive energy of waterflow.

*Aquatic Ecosystem*—The total community of living species and its interrelated physical and chemical environment that is directly related to the functions of a particular water drainage.

*Arch*—An open bottomed road stream crossing structure usually formed of bolted structural plates.

*Armoring*—Protective covering, such as rock, vegetation, or engineered materials used to protect stream banks, fill or cut slopes, or drainage structure outflows from flowing water energy and erosion.

*Augmentation Funds*—The funds used to finance a timber purchaser constructed or reconstructed road without regard to whether funds are contributed or supplemental.

*Average Daily Traffic*—The total number of vehicles passing a given point during a given time period divided by the number of days in that time period.

*Baffle*—Obstruction made of wood, metal, concrete, or plastic placed inside a drainage structure to make fish passage possible or more probable.

*Bank Barb*—Structural devices keyed into stream banks to deflect water and erosive energy away from the bank, shaped like fish hook barbs and angled upstream.

*Bankfull Discharge*—Flow volume at which natural channel maintenance is most efficient, considering sediment transport, forming or removing bars, changing meanders, and performing work resulting in average channel morphology.

*Base Course*—The layer or layers of specified or selected material of designed thickness placed on a subbase or subgrade to support a surface course.

*Bed Load*—Soil and rock material transported along the bottom of a stream by traction, rolling, sliding, or saltation which, when combined with suspended load, comprise the total sediment discharge.

*Bed Load Trap*—Natural or constructed structures that store or restrict the free movement of bed load.

*Benefit/Cost Ratio*—A measure of economic efficiency computed by dividing total discounted primary benefits by total discounted economic costs.

*Berm*—Curb or dike constructed to control or direct surface drainage.

*Best Management Practices (BMP)* —Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices for preventing or reducing pollution of waters of the United States.

*Bridge*—A structure, including supports, erected over a depression or an obstruction, such as water, a channel, road, trail, or railway, and having a deck for carrying traffic or other moving loads.

*Bridge Load Rating*—The bridge capacity measured in tons of Gross Vehicular Weight (GVW). Bridge capacities are rated at two load levels.

*Operating Rating*—The capacity rating that is the absolute maximum permissible load level to which a structure may be subjected.

*Inventory Rating*—The capacity rating that will result in a load level which can safely use an existing structure for an indefinite period of time.

*Buffer Strip*—Area between a road and stream or sensitive site to filter runoff and cross drain

discharges for protection of water quality and fish and wildlife habitats.

*Burst Speed*—The highest speed a fish can swim for a short time.

*Clearing Limits*—The limits of clearing of vegetation for a road as designated on the ground or on the drawings.

*Closed Road*—An intermittent service road in maintenance level 1 that is closed to all vehicular traffic for more than one year.

*Cobble Imbeddedness*—The degree to which dominant stream substrates are buried by sediments or other materials such as sand or silt

*Cofferdam*—Temporary enclosure built in a water course and pumped dry to permit work on a structure by separating the work from the water.

*Commensurate Share*—The proportion of maintenance costs appropriate and assignable to a specific user of a road.

*Commercial Use*—Use of forest development roads for commercial purposes, including hauling of federal or nonfederal products from public or private lands; hauling of livestock where the hauling itself is the commercial purpose other than stock or feed for stock authorized to use National Forest System lands; or the transportation of goods, supplies, or patrons of commercial enterprises within the National Forest System that are authorized by contract, agreement, license, or special-use permit. Those providing public services under contract, i.e., contract postal services, school busing, etc., are not considered commercial uses.

*Condition Survey*—An inspection of the facility that identifies and documents the roadway conditions, deficiencies, and physical features using established maintenance standards as a reference.

*Consequence*—Natural result produced by actions on a set of conditions, as in erosion from road building or stream diversion from drainage structure and embankment installation.

*Constant Service*—A long-term facility (road) developed and operated for continuous or annual recurrent service.

*Construction*—The supervising, inspecting, actual building, and expense incidental to the construction or reconstruction of a forest development transportation facility, including locating, surveying, and mapping (including the establishment of temporary and permanent geodetic markers in accordance with the specifications of the Coast and Geodetic Survey in the Department of Commerce), costs of rights-of-way, and elimination of hazards.

*Construction Engineering*—All work and expense of setting out, controlling, inspecting, and measuring the construction or reconstruction of a forest development transportation facility including: (1) construction surveys to establish line and grade for the work, to control the work, and to measure quantities; (2) redesigning, adjusting, and changing the plans, specifications, and materials to meet conditions; (3) inspecting, directing, and controlling operations for compliance with plans and specifications; (4) inspecting, testing, and accepting materials and equipment to be installed in the work; and (5) inspecting, measuring, and accepting completed work.

*Contributed Funds*—Funds used to pay for a portion of the work or materials needed to construct a road only to the standard needed for a timber sale, which could have properly been paid for by purchaser credits, if available.

*Cooperative Agreement*—An agreement between two or more parties to cooperate in accomplishing an objective in which the parties have a mutual interest. The primary purpose is to provide financial assistance and support as authorized by law.

*Cost Effective*—Achieving specified outputs or objectives under given conditions for the least cost.

*Cost Efficiency*—The usefulness of specified inputs (costs) to produce specified outputs (benefits). In measuring cost efficiency, some outputs including environmental, economic, or social impacts, are not assigned monetary values but are achieved at specified levels in the least cost manner. Cost efficiency is usually measured using present net value, although use of benefit cost ratios and rates of return may be appropriate.

*Cost Recovery*—A form of investment sharing in which cash is collected from users for their share of the road investment.

*Corridor*—A linear strip of land identified for the present or future location of transportation or utility rights of way within its boundaries.

*Critical Depth*—Depth of flow at which specific energy is a minimum; depth in a conduit at which maximum flow will occur if the conduit is at critical slope, the water is flowing at critical velocity, and an adequate supply of water exists.

*Critical Flow*—A condition existing at critical depth where the sum of the velocity head and static head is a minimum.

*Critical Slope*—The slope at which maximum flow will occur at minimum velocity; the slope equal to loss of head per foot resulting from flow at a depth giving uniform flow at critical depth.

*Critical Vehicle*—The vehicle, normally the largest (by weight, size, or unique configuration) whose limited use on the road is necessary to complete the planned activity.

*Critical Velocity*—Mean velocity of flow at critical depth.

*Cross Drain*—A ditch relief culvert or other structure or shaping of the traveled way designed to capture and remove surface water from the traveled way or other road surfaces.

*Crown*—Traveled way surface shaping with the high point in the middle causing surface runoff to flow both towards the uphill shoulder or ditch and the downhill shoulder.

*Cruising Speed*—The speed a fish can swim for an extended time.

*Culvert*—A conduit or passageway under a road or other obstruction for the passage of water, debris, sediment, and fish, backfilled with embankment material.

*Curve Widening*—Additional designed traveled way width on the inside of horizontal curves to allow for offtracking of rear wheels.

*Cut*—Excavation of material to provide traveled way width or to generate material for fills, landings, or other uses.

*Design Criteria*—The requirements derived from management area direction such as safety requirements and traffic characteristics that govern the selection of elements and standards for a road or section of a road.

*Design Discharge*—Flow quantity expected at a point in a channel resulting from the design storm.

*Design Frequency*—The recurrence interval for a hydrologic event used for structure design purposes.

*Design Life*—Length of time of service for a facility without major repair.

*Debris Plugging*—Reduction in flow capacity of a road stream crossing drainage structure or ditch relief pipe due to blockage by woody materials.

*Deferred Maintenance*—Maintenance activities that can be delayed without critical loss of facility serviceability until such time as the work can be economically or efficiently performed. See Other Than Routine Maintenance.

*Design Elements*—The physical characteristics of a road, (such as traveled way width,

shoulders, slopes, curve widening, and pavement structures) that, when combined, comprise the planned facility.

*Design Life*—The length of time a facility or structure is expected to be needed considering economic and environmental factors.

*Design Speed*—The speed determined for design and correlation of the physical features of a road or road segment that influence vehicle operation. It is the maximum safe speed that the design vehicle can maintain over a specified segment of a road when conditions are so favorable that the design features of the road, rather than operational limitation of the vehicle, govern. The design speed is the safe speed for the design situation only.

*Design Standards*—The definitive lengths, widths, depths, and geometry's of individual template elements, such as a 4-meter traveled way, 0.5-meter shoulders, ¾:1 cut slopes, 1-meter curve widening, and 150 mm of crushed aggregate surfacing, that define a road template.

*Design Vehicle*—The vehicle frequently using the road that determines the minimum standard for a particular design element.

*Disinvestment*—The consumption of a capital facility due to the conscious reduction or end of maintenance expenditures resulting in subsequent loss of serviceability in the transportation facility.

*Ditch*—A channel installed to control and direct the flow of road surface drainage. A ditch may be located at the toe of the cut slope past the uphill shoulder of the traveled way, past both shoulders if the road is in flat terrain, or located away from the road itself.

*Ditch Relief Culvert*—A conduit under the traveled way to remove ditch water from the road.

*Diversion Potential*—The possibility, caused by a road, for streamflow to leave its established channel.

*Drainage Crossing*—Structural provision for vehicle access over a stream or channel.

*Drawings*—The documents, including plan and profile sheets, cross sections, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials showing details for construction of a transportation facility.

*Easement*—A special use authorization for a right-of-way that conveys a conditioned interest in National Forest System land and is compensable according to its terms.

*Embankment*—A fill of soil, rock, or aggregate material placed on a prepared surface or the ground and constructed to subgrade with the express purpose of providing traveled way width. May be side cast, through fill, turnpike, channel crossing, or channel encroaching.

*ERFO Funds*—Funds authorized by the Federal Highway Administration under the Emergency Relief for Federally Owned Roads (ERFO) program. These funds are available for repair of federally owned roads and trails damaged or destroyed by natural disasters or by catastrophic failures.

*Erosion*—The detachment and subsequent transport of soil particles by water, wind, or ice.

*Equivalent Single Axle Loads (ESAL's)*—The summation of equivalent 18,000-pound single axle loads used to combine mixed traffic to design traffic for pavement structures for the design period.

*Exceedance of Design Water Discharge*—A stormflow of greater discharge than the design flow for a drainage structure.

*Facility*—Something that is built, installed, or established to serve a particular transportation related purpose.

*Federal Aid System*—Any one of the four Federal Aid highway systems: the State Primary

system, the State Secondary system, the Urban system, or the Interstate system.

*Federal Lands Highway Divisions* (Previously called the Direct Federal Divisions.)—The divisions of the Federal Highway Administration that are responsible for the administration of the Federal Lands Highway Program.

*Federal Lands Highway Program*—A coordinated Federal Lands Highway Program consisting of forest highways, public lands highways, park roads, parkways, and Indian reservation roads.

*Fish Habitat*—Conditions essential for fish life including sufficient water quality and quantity, spawning, nursery, and rearing areas, and food supply.

*Flood Event*—Exceedance of bankfull flow, described by discharge and recurrence interval.

*Flood Frequency Analysis*—A procedure for identifying the magnitude of flow, i.e., the N year precipitation event, that will be equaled on an average of every N years. In the case of a 20-year event, there is a 5% chance that it will be equaled during any given year.

*Forest Arterial Road*—A forest road that provides service to large land areas and usually connects with other arterial roads or public highways.

*Forest Collector Road*—A forest road that serves smaller land areas than an arterial road. Usually connects forest arterial roads to local forest roads or terminal facilities.

*Forest Development Road*—A forest road under the jurisdiction of the Forest Service. These roads are not public roads.

*Forest Development Transportation Facility*—An access road, trail, waterway, or airfield wholly or partly within, or adjacent to, and serving a National Forest System and other lands administered by the Forest Service that has been included in the forest development transportation plan.

*Forest Development Transportation Plan*—The plan for the system of access roads, trails, and airfields needed for the protection, administration, and utilization of the National Forests and other lands administered by the Forest Service, or the development and use of resources upon which communities within or adjacent to the National Forests are dependent.

*Forest Development Transportation System*—Those facilities, forest development roads, trails, and airfields, in the transportation network and under Forest Service jurisdiction.

*Forest Highway*—A forest road under the jurisdiction of and maintained by a public authority and open to public travel.

*Forest Highway 5-Year Construction Program*—An annually prepared statewide listing in order of priority of improvement projects that involve partial or full funding through the forest highway allocation.

*Forest Local Road*—A forest road that connects terminal facilities with forest collector, forest arterial or public highways. Usually forest local roads are single purpose transportation facilities.

*Forest Road*—A road wholly or partly within or adjacent to and serving the National Forest System and which is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources.

*Forest Road Program (FRP)*—This appropriation program finances planning, management, project engineering, and construction/reconstruction of multipurpose road systems on, or adjacent to, the National Forest System. FRP also finances the planning, management, and project engineering costs for the Purchaser Credit Program and Purchaser Elect Program.

*Four Wheel Drive Way*—A forest development road included in the Forest Development Transportation Plan and commonly used by four-wheel drive high clearance vehicles with a width greater than 50 inches.

*Functional Classification*—The way in which a road services land and resource management needs and the character of service it provides. Functional classifications for roads are forest arterial, forest collector, and forest local.

*Gabion*—A woven galvanized wire basket sometimes lined with geotextile and filled with rock, stacked or placed to form erosion resistant structures.

*Genetic Segregation*—The separation of a genetically distinct population from its original gene pool, or the separation of a portion of a population that may not possess the genetic range of the original population.

*Geotextile*—Synthetic fibers forming a woven, nonwoven, or spunbonded fabric used to separate soil from engineered materials and add strength to a facility.

*Grade Dip*—Roll or indulation in the road's vertical alignment to facilitate surface drainage.

*Gully*—Intermittently flowing, relatively recent drainage fixture on the landscape formed by concentrated surface flow, often traced to removal of vegetative cover and soil compaction through some resource utilization.

*Head*—Height of water above a datum either in distance or equivalent units representing pressure or velocity.

*Headcutting*—Erosional process moving upstream from the location of initial downcutting.

*Horizontal Alignment*—The straightaways and curves a vehicle operator negotiates while driving a road.

*Hydraulic Exceedance*—A stormflow discharge greater than the structure design flow at a given headwater depth to pipe diameter ratio.

*Hydraulic Gradient*—Pressure gradient, or a line representing pressure or piezometric head in a pipe flowing full, or the water surface in open channel flow.

*Hydraulic Jump*—An abrupt rise in the surface of flowing water occurring due to critical flow turning into subcritical flow with a resulting loss of energy released into turbulence.

*Hydraulic Radius*—The ratio of area of flow to wetted perimeter.

*Hydrograph*—Plot depicting discharge of water versus time for a stream, including surface, subsurface, and base flows.

*Hydrology*—The water of the earth and air; its flow, distribution, characteristics, and actions.

*Impoundment*—A dam or body of water upstream of a dam or weir.

*Improved, Light Duty Road*—Map legend term that refers to arterial, collector, and some local roads with chip seal, gravel, or native material surfaces.

*Inlet Control*—Culvert flow in which the cross sectional area of the barrel, inlet configuration, and amount of headwater or ponding are of controlling importance to hydraulics of flow.

*Inslope*—Traveled way surface shaping with the high point on the downhill shoulder causing surface runoff to flow towards the ditch or uphill shoulder.

*Integrated Resource Analysis*—A process for evaluating cumulative effects of projects on all resources in a contiguous area(s) for implementation of the Forest Plan. It covers most of the steps in the planning process. The area in the same analysis may vary for different effects from each resource.

*Interagency Agreements*—A written instrument between the Forest Service and one or more other federal agencies to document a mutual agreement between the parties. Interagency agreements may have the characteristics of grants, cooperative agreements, memoranda of understanding, or procurement transactions.

*Intraagency Agreement*—A written instrument between two or more administrative units of the Forest Service to document a mutual agreement between or among parties.

*Intermittent Service*—A road developed and operated for periodic service and closed for more than 1 year between periods of use.

*Invert*—The lowest point on any internal cross section of a culvert or pipe arch.

*Investment Sharing*—The process of sharing the cost of developing a transportation facility with permittees; commercial users; other federal, state, or local agencies; and private landowners.

*Jurisdiction*—The legal right to control or regulate use of a transportation facility. Jurisdiction requires authority, but not necessarily ownership. The authority to construct or maintain a road may be derived from fee title, an easement, or some other similar method.

*Juvenile*—A young fish.

*Low Water Structure*—A structure designed to survive periodic flows overtopping the traveled way.

*Low Water Bridge*—A low clearance bridge that provides for passage of the normal low flow and some mild flood flows, designed to survive periodic overtopping flows.

*Maintenance*—The upkeep of the entire forest development transportation facility including surface and shoulders, slopes, parking and side areas, related structures, and such traffic-control devices as necessary for safe and efficient utilization.

*Maintenance Activity*—A category of road maintenance work. An activity may be either detailed and site specific or broad and general. Activities are identified to the detail required for specific management situations. Examples of activities are: drainage, roadway, roadside, and structures.

*Maintenance Criteria*—The requirements that describe how a transportation facility (road) is to be maintained to provide the level of service for the volume and type of traffic, and to protect the adjacent resources or improvements such as streams, lakes, vegetation, and facilities, consistent with management area direction, resource program needs, (road) management objectives, and available resources.

*Maintenance Level*—Defines the level of service provided by, and maintenance required for, a specific road, consistent with road management objectives and maintenance criteria.

*Maintenance Level 1*—Assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period is one year or longer. Basic custodial maintenance is performed.

*Maintenance Level 2*—Assigned to roads open for use by high clearance vehicles. Passenger car traffic is not a consideration.

*Maintenance Level 3*—Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities.

*Maintenance Level 4*—Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds.

*Maintenance Level 5*—Assigned to roads that provide a high degree of user comfort and convenience. Normally double lane and paved, or aggregate surfaced with dust abatement.

*Maintenance Plan*—An annual proposal for road maintenance work that is based on the work described and estimated in the maintenance prescription.

*Maintenance Prescription*—A statement that identifies the type and extent of work, location, frequency, and constraints in sufficient detail to contract work, schedule crews and equipment, and purchase materials.

*Maintenance Standard*—A statement that describes the labor, equipment, and material needed to accomplish a specific maintenance activity and an average daily production rate.

*Major Culvert*—A culvert that provides an opening of more than 35 square feet in a single installation or in a multiple installation in which the smallest opening is more than 19 square feet. It may consist of a single installation of round pipe, pipe arch, open or closed-bottom box or arch, or multiple installation of these structures placed adjacent or contiguous as a unit.

*Management Area*—An area with similar management objectives and a common management prescription.

*Management Area Direction*—Direction from the Forest Plan that specifies activities for implementation, environmental quality requirements, natural and depletable resource requirements, and mitigating measures to achieve the management emphasis or goals of a specific management area.

*Management Direction*—A statement of multiple use and other goals and objectives, the associated management prescriptions, and standards and guidelines for attaining them.

*Management Prescription*—Management practices and intensity selected and scheduled for application on a specific area to attain multiple use and other goals and objectives.

*Manning's Formula*—An equation for determining flow quantity given hydraulic radius, cross sectional area of flow, slope (for uniform flow), and a coefficient of roughness.

*Maturation*—Growth of a fish from juvenile to adult.

*Maximum Economy Forest Development Roads*—The Chief may acquire, construct, reconstruct, improve, and maintain forest development roads within and near the National Forests and other lands administered by the

Forest Service in locations and according to specifications that will permit maximum economy in harvesting timber from such lands tributary to such roads and at the same time meet the requirements for protection, development, and management and for utilization of the other resources.

*Memorandum of Understanding*—A written plan between the Forest Service and other non-federal parties for carrying out separate activities in a coordinated and mutually beneficial manner. Each party directs its own activities and uses its own resources. A memorandum of understanding is not a fund obligating document.

*Monitoring*—The collection of information to determine effects of resource management or specific treatments, used to identify changing conditions or needs.

*Motor Vehicle*—Any vehicle that is self-propelled or any vehicle that is propelled by electric power obtained from batteries, but not operated on rails.

*Network Analysis*—A systematic study of different traffic patterns in a road network, which evaluates alternative transportation investments or traffic management strategies. The analysis focuses on economic, physical, environmental, and social consequences of road system changes during land management planning and project planning.

*Nursery*—A rearing area for juvenile fish.

*Objective*—A concise, time specific statement of measurable planned results that respond to preestablished goals.

*Objective Maintenance Level*—The maintenance level to be assigned at a future date considering future road management objectives, traffic needs, budget constraints, and environmental concerns. The objective maintenance level may be the same or may be either higher or lower than the operational maintenance level.

*Obliteration*—The reclamation and or restoration of land to resource production from that of a transportation facility.

*Off Highway Haul (OHH)*—The use of vehicles for hauling products or commodities that exceed the maximum load, weight, length, height, or width limitations permitted on state or county road systems, but that may operate on a regular basis over forest development roads. Off highway haul does not include occasional oversize or overweight loads used for hauling specialized equipment.

*Off Highway Vehicle*—A general term describing vehicle types such as motorcycles, minibikes, trailbikes, snowmobiles, dunebuggies, all-terrain vehicles, and four-wheel drive, high clearance vehicles.

*Off-Road Vehicle*—Synonymous with off-highway vehicle.

*Open To Public Travel*—Except during scheduled periods, extreme weather conditions, or emergencies, a facility open to the general public for use with a standard passenger auto, without restrictive gates or prohibitive signs or regulations, other than general traffic control or restrictions based on size, weight, or class of registration.

*Operation Criteria*—The influences and requirements that determine how a road will be operated and maintained, consistent with management area direction, resource program needs, road management objectives, and available resources.

*Operational Maintenance Level*—The maintenance level currently assigned to a facility (road) considering today's needs, road conditions, budget constraints, and environmental concerns. It is the level to which the road is currently being maintained.

*Other Than Routine Maintenance*—Work that can be deferred without loss of road serviceability until such time that the work can be economically or efficiently performed. The

frequency of such work is generally longer than a year.

*Outfall*—The outlet end of a culvert.

*Outlet Control*—Culvert flow in which the cross sectional area of the barrel, inlet configuration, amount of headwater or ponding, tailwater in the outlet channel, and slope, roughness, and length of barrel are of controlling importance to hydraulics of flow.

*Outslope*—Traveled way surface shaping with the high point on the uphill shoulder causing surface runoff to flow towards and over the downhill shoulder.

*Passing Sight Distance*—The length of road visible ahead to enable the driver of one vehicle to pass another vehicle safely and comfortably without interfering with the speed of an oncoming vehicle traveling at the design speed should it come into view after the overtaking maneuver is started.

*Pavement Structure*—The subbase, base, or surface course, or combination thereof, placed on a subgrade to support the traffic load, distribute it to the roadbed, and resist deterioration because of the elements.

*Peak Flow*—The greatest discharge in a given channel from a given precipitation event.

*Perching*—The development of falls or a cascade at a culvert outfall because of downstream erosion.

*Pioneer Road*—Temporary construction access built within the clearing limits of the project.

*Pipe*—A culvert that is circular in cross section.

*Pipe Arch*—A pipe deformed such that its width is greater than its height.

*Preconstruction Engineering*—All work and expense of preparing for construction or reconstruction of a forest development transportation facility, including: (1) engineering

and economic investigations, studies, and reports; (2) reconnaissance surveys; (3) preliminary surveys; (4) preliminary location surveys; (5) soils, foundations, and materials investigations, surveys, and tests; (6) preliminary and final designs; (7) preliminary and final plans, drawings, specifications, and estimates of quantities and cost; (8) final location surveys staked on the ground; and (9) rights-of-way surveys, plans, and descriptions.

*Prehaul Maintenance*—Maintenance required prior to use, limited to removal (opening) of closure devices, brushing, removal and or repair of minor slides or slumps, cleaning of roadside ditches and drainage devices, minor improvement such as spot aggregate placement, and blading of the traveled way.

*Present Net Value or Present Net Worth*—The difference between the discounted value (benefits) of all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area.

*Public Authority*—A federal, state, county, town, or township, Indian tribe, municipal or other local government or instrumentality thereof, with authority to finance, build, operate or maintain toll or toll free highway facilities.

*Public Lands Highway*—A highway through unappropriated or unreserved public lands, nontaxable Indian lands, or other federal reservations, which is on the federal aid system.

*Public Roads*—Any road under the jurisdiction of and maintained by a public authority that is open to public travel.

*Purchaser Credit*—Credit established in the Timber Sale Account for Purchaser's construction or reconstruction of Specified roads included in the Schedule of Items, or as otherwise provided in Division C of the timber sale contract.

*Purchaser Credit Limit*—The maximum amount of purchaser credit that shall be recognized under the terms of the timber sale contract.

*Quality Assurance (QA)*—The various functions, including inspection, sampling, and testing, performed by the government, prior to acceptance, to determine whether a contractor has fulfilled the contract obligations pertaining to quality and quantity.

*Quality Control (QC)*—The ongoing inspection, sampling, and testing of materials and work processes to control or monitor work to determine whether the material or work process conforms to the contract requirements. This inspection, sampling, and testing is usually performed by the contractor and usually includes duplicate sampling for testing by the government or its representatives. The contract may require the contractor to maintain substantiating evidence that work and materials conform to contract quality requirements.

*Reasonably Close Conformity*—Compliance with reasonable and customary manufacturing and construction tolerances. Unless working tolerances are specified, all work performed and materials furnished shall be in reasonably close conformity with lines, grades, cross sections, dimensions, and material requirements shown on the drawings, indicated in the specifications, or designated on the ground.

*Resident Fish*—Fish that spend their entire life in a limited range of habitats, such as fresh water.

*Right of Way*—Land authorized to be used or occupied for the construction, operation, maintenance and termination of a project or passing over, upon, under or through such land.

*Rights of Way*—The privilege or right that one particular person(s) may have of passing over or using the land of another for a facility generally, but not necessarily, in some particular line.

*Riparian Area*—The area containing moist soils and hydric vegetation along and interacting with a stream comprised of two ecosystems, riparian

and aquatic, sometimes depicted by a measured width.

*Riparian Ecosystem*—Terrestrial ecosystems characterized by hydric soils and plant species dependent on the water table and/or its capillary fringe.

*Risk*—The chance of failure.

*Riverine Pond*—A pond or side channel area located off the main river channel, commonly used by fish for rearing or protection during adverse conditions.

*Road*—A general term denoting a way for purposes of travel by vehicles greater than 50 inches in width.

*Roadbed*—The graded portion of a road between the intersection of subgrade and side slopes excluding that portion of the ditch below subgrade.

*Road Maintenance*—Expenditures in the restoration and upkeep of a road necessary to retain the roads approved traffic service level.

*Road Management Objectives*—Defines the intended purpose of an individual road based on management area direction and access management objectives. Road management objectives contain design criteria, operation criteria, and maintenance criteria.

*Road Reconstruction*—The investment in construction activities that result in betterment, restoration, or in the realignment of a road as defined below.

- a. *Realignment*—Investment in construction activity that results in the new location of an existing road or portions thereof.
- b. *Betterment*—Investment in construction activity that raises the traffic service level of a road or improves its safety or operating efficiency.

c. *Restoration*—Investment in construction activity required to rebuild a road to its approved traffic service level.

*Road Template*—The shape and cross sectional dimensions of the road as defined by construction staking notes and characteristics of typical sections.

*Roadway*—The portion of the road within the limits of excavation and embankment, including slope rounding.

*Route*—A traveled way such as a highway, road, or trail.

*Routine Maintenance*—Work that is planned to be accomplished on a continuing basis, annually or more frequently.

*Salmonid*—Any fish belonging of the family Salmonidae including whitefish, grayling, salmon, and trout.

*Scour*—Underwater erosion of a stream bottom or bank or at a drainage structure outflow.

*Seasonal Facility*—A facility that can be operated only as climatic conditions and structural and administrative limitations allow. The facility may be closed at times during the normal operating year to all or certain classes of use for reasons of weather, fire hazard, resource protection, or public safety.

*Sediment*—Deposition of materials eroded and transported from locations higher in the watershed.

*Sediment Plugging*—Reduction in flow capacity of a road stream crossing drainage structure or ditch relief pipe because of blockage by soil and rock eroded from a location higher in the watershed.

*Service Life*—The length of time a facility is expected to provide a specified service.

*Short Term Facility*—A facility developed and operated for a limited period of time that will

cease to exist as a transportation facility after the purpose for which it was constructed is completed, and the occupied land is reclaimed and managed for natural resource purposes.

*Shoulder*—The portion of the roadway contiguous to the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of pavement structure.

*Spawning Bed*—A habitat used by fish for producing or depositing eggs.

*Special Project Specifications*—The specifications that detail the conditions and requirements particular to the individual project, including additions and revisions to Standard Specifications.

*Specified Road*—Those forest development roads planned for future recurrent land management uses and for which the timber sale contract specifies the location, standards, and specifications.

*Standard Passenger Car*—A motor vehicle, generally with four wheels, and represented by small, compact, intermediate, and large automobiles, pickup trucks, and similar vehicles with a gross vehicle weight of 6000 pounds or less.

*Stopping Sight Distance*—The length of roadway required to enable the driver of a vehicle to stop when sighting an obstruction in the roadway. Stopping sight distance needed for a single-lane, two way road is approximately twice that required for a double-lane road.

*Subgrade*—The layers of roadbed that bring it up to the top surface, upon which subbase, base, or surface course is constructed. For roads without base course or surface course, that portion of roadbed prepared as the finished wearing surface.

*Substantially Completed*—Completion of grading and installation of drainage structures so they will function effectively, and laying the specified depth of the base course, if any, unless physical

conditions make it impractical or ground conditions permit hauling without undue damage.

*Subsurface Drainage*—Below ground flow of water related to or influenced by roads.

*Superelevation*—Inslope or outslope of the traveled way surface on a horizontal curve, depending on curve direction. Traveled way surfaces are superelevated to allow increased vehicle speed without increasing potential sideslip.

*Supplemental Funds*—Funds or materials used to finance the additional cost of a road to a higher standard than is needed for the timber sale, and which cannot be legally paid for by purchaser credits.

*Surface Course*—The top layer of pavement structure, sometimes called the wearing course, usually designed to resist skidding, traffic abrasion, and the disintegrating effects of climate.

*Surface Drainage*—The concentration and flow of surface water on roads and related surfaces and in ditches.

*Suspended Load*—Fine materials eroded from locations higher in the watershed and transported buoyantly in a water flow, which along with bed load, comprises the total sediment discharge.

*Supercritical Flow*—Relatively low depth, high velocity flow, characterized by rapid, shooting, or torrential motion.

*Sustaining Speed*—The swimming speed a fish can maintain for several minutes.

*Tailwater*—The area just downstream of a drainage structure.

*Temporary Road*—Any short-lived road not intended to be a part of the forest development transportation system and not necessary for future resource management.

*Terminal Facility*—A transfer point between the transportation network and resources served or between different transportation modes. Typical terminal facilities are vehicle parking areas, boat ramps and docks, trailheads, log transfer facilities, airfields, and heliports.

*Traffic Class*—Includes, but is not limited to, distinguishable vehicle groupings such as passenger cars, buses, trucks, motorcycles, automobiles, four-wheel drive vehicles, and trailers.

*Thalweg*—A profile or line defining the lowest points along a channel.

*Traffic Control Devices*—All signs, signals, markings, and devices placed on, over, or adjacent to a street or highway by authority of a public body or official having jurisdiction to regulate, warn, or guide traffic.

*Traffic Management Strategies*—Described methods employed on forest development roads to control traffic. The five applied strategies are to encourage, accept, discourage, eliminate, and prohibit traffic.

*Traffic Service Levels*—Description of the significant traffic characteristics and operating conditions for a road.

*Traffic Unit*—The average weight of a light, noncommercial vehicle having four or more wheels, passing a given point on a road, moving in either direction. Vehicles are assigned equivalent traffic units based on the ratio of their weight to that of the light, noncommercial vehicle. The average weight of the light, noncommercial vehicle is based on sample traffic counts or other reliable data.

*Transfer In Purchaser Credit*—Effective purchaser credit established on other sales and subsequently transferred to a particular timber sale contract.

*Transportation Network*—All existing and proposed roads, trails, airfields, and other transportation facilities wholly or partly within or

adjacent to and serving the National Forests and other areas administered by the Forest Service or intermingled private lands.

*Transportation Planning*—Identification of the transportation network through interdisciplinary analysis needed to effectively and efficiently meet land and resource management direction on a defined area for a specified planning period.

*Traveled Way*—The portion of the roadway used for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

*Travelway*—A way for passage of vehicles, conveyances, persons, or domestic livestock (stock driveways), developed by construction or use.

*Turnout*—A short auxiliary lane on a one-lane road provided for the passage of meeting vehicles.

*Unimproved, Light Duty Road*—A map legend term referring to some forest local, primitive, and four-wheel drive roads with native soil surfaces.

*Vertical Alignment*—The grades and transitions between different grades on a road, as defined by the road profile.

*Value Analysis*—An organized effort directed at analyzing the functions of an item or system for the purpose of achieving the required function at minimum total cost of ownership, consistent with requirements for performance, reliability, quality, and maintainability.

*Value Engineering*—A formal technique included in construction contracts through which contractors may propose methods for obtaining the identified end product more economically without impairing its essential functions or characteristics, and share in any resulting savings with the government.

*Vented Ford*—A crossing where the road grade is above the stream channel bottom and all of the water passes through the structure during periods of low flow. During floods, most of the flow overtops the structure. The openings through the structure may be corrugated metal pipe, concrete pipe, concrete box culverts, or treated timber.

*Waterbar*—Combination of ditch and berm installed perpendicular or skew to road centerline to facilitate drainage of surface water, sometimes nondriveable and used to close the road.

*Watershed*—An area or region bounded peripherally by ridges or divides such that all precipitation falling in the area contributes to its watercourse or water body.

*Weir*—Small dam for impounding water sometimes with a notch to control flow.

*Wet Meadow*—Topographic flat exhibiting low velocity surface and subsurface flow with poorly defined or nonexistent channels and riparian dependent vegetation.