A

AASHTO	American Association of State Highway and Transportation Officials. This group is responsible for developing most of the bridge and highway standards used in America today.
Aggradation	The process by which sediment deposition builds up the channel bed so that it rises in elevation. Aggradation occurs when the supply of sediment to the stream exceeds the stream's ability to transport it.
Aggraded channel	A channel where sediment deposition has built the streambed up to a higher elevation.
Aquatic organisms	Species that live only or principally in the water.

B

Bankfull flow	The flow that just overtops the streambank as it begins to flow over the flood plain. It is the flow at which channel maintenance is most effective; that is, the discharge at which the stream is moving sediment, forming or removing bars, forming or changing bends and meanders, and generally doing work that results in the average morphologic characteristics of channels. In many streams, bankfull flow has an approximate recurrence interval of 1.5 years (Dunne & Leopold 1978).
Baseflow	That part of the stream flow not derived from direct runoff from precipitation or melting snow. It is sustained by ground water inflows. (Wilson and Moore 1998)
Bedload	That portion of the total stream sediment load that is in transport along the bed. Particles moving as bedload (e.g., rocks, gravel, sand) roll or saltate (bounce or skip) along the streambed.

C

Channel-forming flow	A single discharge rate taken to represent the range of flows that determine channel parameters such as cross sectional geometry and meander wavelength. Because this flow rate is relatively high and occurs relatively frequently, it transports the most sediment and is also called effective or dominant discharge. It is often equated with bankfull discharge.
Channel function	Channel functions include transport of water and energy downstream and over the flood plain, erosion, transport and deposition of sediment debris and other watershed products, and provision of aquatic habitats.

Channel incision	The process by which a channel bed erodes vertically downward below the surrounding ground. Figure 3-2 b shows an incised channel. (See also degradation.)
Confined channel	A channel that is limited in its ability to move laterally across the valley floor. Generally a channel is confined because its valley is narrow and valley side slopes constrain the channel's ability to meander. Figure 2-1b shows a confined channel.

D

D_{50}	The median particle size in a streambed, generally determined by a Wolman pebble count (Harrelson 1994) or a sieve analysis. Fifty percent of streambed material is smaller than D_{50}.
Degradation	The lowering of the channel bed due to scour or headcutting.
Degrading stream	A channel undergoing degradation (downcutting).
Distributary channel	A divergent stream flowing away from the main stream and not returning to it, as in a delta or alluvial fan. It may be produced by stream deposition choking the original channel (Wilson and Moore 1998). On fans where sediment deposition is actively occurring, distributaries can shift their location frequently.

E

Embedded culvert	A culvert with the invert sunk beneath the streambed surface, so that streambed material is present throughout.
Entrenchment	The vertical containment of a river. An entrenched stream cannot spread very much as water level rises, either because it is incised in the valley floor, or because steep, valley slopes constrain it. See figure 2.1.
Entrenchment ratio	The ratio of the width of the flood-prone area to the surface width of the bankfull channel. (Rosgen 1996) The flood-prone-area width is measured at the elevation that corresponds to twice the maximum depth of the bankfull channel.
Ephemeral stream	A stream that flows briefly in response to precipitation events or other direct short-term water inputs.
Expected high water level	The level that water in a stream or river is expected to reach during a major storm event, such as a 50- to 100-year storm.

F

FP-03 — Shorthand designation for the Federal Highway Administration's "Standard specifications for construction of roads and bridges on Federal highway projects" (Federal Highway Administration 2003). These specifications are currently used by the USDA Forest Service and FHWA. They are in customary U.S. units and in metric units.

Flood plain — A flat land area, adjacent to the stream that the river is building in the current climate. Planners and engineers also use the term to refer to any area inundated during a flood of a specific return interval. In this case, the 100-year flood plain is the area inundated by water during a 100-year flood (Dunne and Leopold 1978).

Floodprone area — The area submerged when flow depth is double the maximum depth of the bankfull channel. (Rosgen 1996)

Flow capacity — The volume of water that can pass through a structure, usually measured in cubic feet per second.

Freeboard — That part of the armored crossing structure that is above the water surface at the high design flow.

G

Gabions — Woven metal wire baskets, typically in multiple dimensions of a yard or meter, used to confine rock and form a footing, abutment, retaining wall, or offer streambank stabilization, or scour protection around structures. They are backfilled with 4- to 8-inch rock. They can be galvanized or provided with a plastic coating to minimize corrosion.

Geocells — A plastic (typically high density polyethelene) cellular confinement system used to confine sand or aggregate. They are used to armor roadways, fords, boat ramps, in retaining walls, and other structures. They come in variable heights, diameters, and are solid or perforated for drainage.

Grade control — Any natural or man-made structure that controls streambed elevation at a cross section (e.g., a dam, culvert, debris jam, rock, or concrete weir, etc.). Grade controls can prevent a headcut from migrating upstream.

H

HS 20-44	The designation for the structural load from a legally loaded, 80,000-pound semi-truck and trailer.
Headcut	A stream segment where the streambed is actively incising (downcutting). Depending on streambed materials, headcuts can be vertical or near vertical (resistant rock or clay), or the segment can simply be steeper than normal (sand and gravel). Headcuts move upstream with time as the steeper section erodes to the new streambed elevation and stabilizes.
High design flow	The high water level or flow volume that can be expected in relation to a structure being built into a stream channel. Generally, structures are designed large enough to pass the high design flow.

I • J • K • L

Improved ford	A stream crossing at or near streambed elevation that has been shaped and surfaced with any of a number of possible materials (rock, concrete, asphalt, etc.)
Incised channel	A channel that has downcut relative to the surrounding ground. Incised channels are generally entrenched.
Intermittent stream	A stream that flows for an extended period at certain times of year, such as during snowmelt or the rainy season. The term is commonly applied to streams that flow continuously longer than a month (Wilson and Moore 1998).
Jersey barrier	The common name for precast concrete beams used in highway medians or for temporary separation of lanes. They are typically about 3 feet high, 10 feet long, and taper from a foot-wide base to about a half-foot thickness on top. They are also called “K-rail.”
Key in	To construct a wingwall, apron, or other scour protection measure to extend some distance back into the soil area (e.g., streambed, streambank) that it is designed to protect. The purpose is to ensure the structure will continue to function even if some erosion does occur.
Low-water bridge	A structure without a solid floor (i.e., built on spread footings or other foundation) that is designed to be overtopped at some frequency. This definition is not the same as that used by USDA Forest Service and Federal Highways Administration for bridge inventories, where any structure with a span wider than 20 feet is considered a bridge.

M

Maintenance level — The designation given to National Forest System roads to identify the standard of road, what type of vehicle it supports, and how often it is likely to receive maintenance work. Levels 1 through 5 are used in the Forest Service, with Maintenance Level 1 being a road closed to motorized vehicles, while Maintenance Level 5 roads are typically paved highways that accommodate all vehicles.

Maximum expected high water level — See "expected high water level". This is the highest level to which water is expected to rise.

Mean annual flow — The total volume of water that passes through a stream location in a year divided by the number of seconds in the year. In the United States, the common unit of measure is cubic feet per second.

N • O • P • Q

Normal low-water level — (see baseflow)

Object marker — Plastic or carsonite markers that are placed at the entrance to bridges or fords to identify the corner of the structure. They typically have chevrons painted on them to help visually identify the traveled way.

Perennial stream — A stream or reach of stream that flows year round. The bed of a perennial stream is below the adjacent water table.

Q_{50} — The 50-year recurrence interval flow. The discharge that occurs on average once every 50 years. $Q_{½}$ is the flow expected to occur or be exceeded 2 times per year on average (i.e., the recurrence interval is ½ year). Q_2 is the 2-year recurrence interval flow, which is expected to be exceeded once every other year on average. In many streams Q_2 approximates bankfull flow.

R

Ramp up — Raising a roadfill up to a crossing structure that is higher than the ground surface because of the need to provide enough capacity for very large flood flows and debris. Ramping the roadfill up across a flood plain means the roadfill blocks some or all of the overbank flows on the flood plain.

Reno mattress — A large wire basket filled with cobble or gravel (gabion basket) placed on a streambed or banks to prevent scour. Baskets vary in width and length, but are typically only 1-foot thick.

Road-user costs — All costs that accrue to the road user while operating and maintaining his/her vehicle. These include vehicle operating and running costs, maintenance and depreciation, travel time, traffic delays, and accident costs.

S

Second-order stream — A stream with at least one tributary. A first-order stream has no tributaries. Where two first-order streams come together, they form a second-order stream. Where two second-order streams come together, they form a third-order stream. A second-order stream can have any number of first-order tributaries, and a third-order stream can have any number of first- and second-order tributaries. Where a third-order stream joins another third-order stream, they become a fourth-order stream.

Sediment load — The volume of sediment moving in the stream over a given time period, usually reported as weight per unit time.

Stormproofing — The process of making a road, structure, or watershed resistant to flood damage. Includes planning and design measures as well as physical onsite-mitigation measures. Examples are: providing adequate road drainage, designing crossings to avoid diverting flood flows down the road, strengthening revetments, adding riprap or other armor to erodible surfaces, etc.

Stream simulation — A method of designing road-stream crossing structures (usually culverts) in which the streambed is continuous through the structure. The goal is to create a self-sustaining streambed inside the structure that is as similar as possible to the natural channel. A stream simulation should present no more of an obstacle to aquatic organisms than the natural channel itself.

T • U

Terrace — Terraces are abandoned flood plains. As a stream downcuts, at some point it may abandon its flood plain; that is, at the new, lower elevation the stream is no longer able to overflow the flood plain on a frequent basis and is therefore no longer constructing it. The former flood plain is then termed a terrace.

Unimproved ford — Any stream crossing created by traffic only; that is, a crossing at streambed elevation that has not been graded, shaped, or hardened except by the action of traffic.

Unstable channel — A channel that is changing rapidly. It may be incising, aggrading, or shifting quickly enough to change its location, elevation, width, slope, or other major characteristic on an engineering time scale.

Unvented ford — A stream crossing structure without culverts or other provision for low flows to pass underneath. All stream flow must pass over the surface of an unvented ford.

V • W • X • Y • Z

Vent-area ratio — The ratio of the cross sectional area of the vent opening (e.g., culvert or box) in a vented ford to the cross sectional area of the bankfull channel.

Vented ford — A crossing structure where relatively frequent overtopping is expected, but where the driving surface is elevated some distance above the streambed. Culverts (vents) allow low flows to pass beneath the roadbed.

Wetted perimeter — That part of the cross section of a ford or stream that is submerged at any given flow. In ford design, it frequently means the portion of the structure submerged by the high design flow. Unit of measurement is feet.