

Appendix B. Definitions and Acronyms

Aggradation: Deposition of sediment and corresponding increase in streambed elevation, often due to inability of the stream to adequately convey its sediment load during flood.

Anticipated Scour Depth (ASD): Depth of expected scour used to determine structure bury depth based on observed maximum reference reach pool depth and a factor of safety.

Appurtenances: accessory components to a stream crossing structure, such as headwall, endwall, wingwalls, toe plates or bank protection features.

Aquatic Organism Passage (AOP): Unimpeded movement of aquatic organisms through the road/stream crossing.

Bankfull Elevation: In non-confined channels, the elevation point at which the stream typically accesses the floodplain. Channel dimensions at the bankfull elevation convey the channel-forming or dominant discharge.

Bankfull Width: A site-specific, field-derived measurement of channel width at the bankfull elevation.

Bank Margins: Large rock placed along the outside edges of the reconstructed bankfull channel within the stream crossing structure. Placement of the bank margins define bankfull channel width and bank margin (bankfull) elevation / height through the structure.

Bedform: Typical sequence of streambed features through the project reference reach (riffles/pools, step/plunge pool, etc.)

CDGRS: Penn State University Center for Dirt and Gravel Road Studies. Provides education, outreach, and technical assistance to all entities involved in the DGLVR Program.

Channel Continuity: Relative consistency and connectivity of a stream channel upstream, through, and downstream of a road/stream crossing, in regard to physical characteristics of the channel such as slope, planform, dimensions, profile, and bedforms.

Construction Documents: typically consists of the plan drawings, detail drawings, specifications and bid documents prepared for a project.

Continuity Slope: Slope of the reconstructed section of streambed necessary to re-establish a relatively-continuous slope, profile and bedforms (channel continuity) along the entire length of stream extending upstream, through, and downstream of the new crossing.

Crossing: Refers to the location of a road/stream crossing structure.

Cross Section Survey: A survey conducted across the channel (perpendicular to the thalweg) to produce a graphical representation of channel dimensions including shape, depth and width.

Degradation: Accelerated erosion and transport of sediment from the streambed and banks, and corresponding lowering of the streambed elevation. Often associated with increased scour potential due to channel constriction or abrupt increase in channel slope.

DEP: Pennsylvania Department of Environmental Protection

Effective Structure Width: the width of a replacement stream crossing structure, measured at the bankfull elevation of the stream channel to be reconstructed through the structure. The bankfull elevation inside the structure corresponds to the elevation of the constructed bank margins along the immediate edges of the bankfull channel.

Finished Opening Height: Vertical distance measured from the thalweg elevation at the crest of a constructed grade control feature inside the replacement structure, upward to the top of the culvert opening or bottom of bridge beam.

Flood Resiliency: Reducing the risk of flood damages to people and infrastructure by planning and implementing measures that improve floodwater conveyance and provide for long-term stability of a self-maintaining stream corridor.

Grade Control: Natural or human-made structures that control channel elevation, dictate channel slope and maintain bedforms. Common types include riffles, cascades, steps, rock clusters and large wood features.

Headcut: headward erosion lowering of channel elevation that moves upstream over time.

Invert: Interior bottom elevation of stream crossing structure.

Key Pieces: Largest rocks in the reconstructed streambed substrate. Often these can be clustered to provide areas of minor, frequent grade control along the length of the channel bed in-between more robust constructed grade control features.

Longitudinal Profile Survey (Long-Pro): Survey of the stream channel, typically measured from upstream to downstream along the channel thalweg, to capture prominent features such as channel elevations, depths, and slopes at bedform features such as riffles, pools, runs, glides, and step/pools.

Low Flow Channel: Portion of the channel commonly wetted during stream base flow.

Outlet Scour Pool: An overly-widened and deepened pool bedform feature often (but not always) located immediately downstream of an undersized crossing.

Pool: An area of the stream characterized by deeper depths and slower current. Pools are typically created by the vertical force of water flowing over logs, boulders, or other grade control structures. The movement of the water carves a deeper indentation in the stream bed. Pools typically occur between grade control features along the length of the channel.

Q100: The 100-year recurrence interval of stream flow. In any given year, there is a 1% probability that a flow of that magnitude or greater would occur.

Reconstructed Reach: Section of stream to be constructed upstream, through, and downstream of the new structure to re-establish channel continuity between the tie-in points.

Reference Reach: Section of stream channel that best reflects the “typical” natural, minimally-impacted physical characteristics (profile, dimension, planform and dominant bedform) of the channel. For stream crossing projects, the reference reach is located beyond the extent channel impacts associated with the existing structure. Site Assessment (survey) of the reference reach is used as a blueprint for design of the reconstructed reach.

Riffle: The shallower, faster moving sections of a stream. Look for areas with a fast current where rocks break the water surface. In channels dominated by riffle/pool bedforms, the upstream crest (high point) of the riffle represents the dominant grade control type.

Sediment Wedge: Deposited material upstream of an undersized crossing caused by water backing up and dropping material. Commonly mistakenly called a “gravel bar” and frequently removed by road owners.

SCC: State Conservation Commission. Entity housed at the PA Department of Agriculture that administers the Dirt, Gravel, and Low Volume Road Program statewide.

Site Assessment: Survey of longitudinal profile and cross-sections through, and adjoining to, the project site used to inform project design.

Stream Crossing: A structure that conveys streamflow through the roadway.

Structure: A road/stream crossing structure, such as a culvert or bridge, constructed across a stream to provide controlled access for vehicles.

Substrate: Mixture of rock that composes the streambed.

Thalweg: The line of lowest elevation along the flowpath of a stream channel. Dimensionally, this is reflected as the lowest point of elevation in the channel cross-section.

Tie-in Points: Locations of existing- or constructed grade control features where the upstream- and downstream limits of the reconstructed reach transition to the existing stream channel. Tie-in points define the limits of the reconstructed reach necessary to achieve channel continuity upstream, through, and downstream of the crossing.

Vertical Offset: An unnatural and abrupt change in streambed elevation sometimes caused by undersized culverts, often characterized by sediment wedges upstream and plunge pools downstream.

Watershed: A region or area contributing to the supply of a stream or lake; drainage area, drainage basin or catchment area.