

1. GLOSSARY

A. Acronyms, Abbreviations and Symbols

A	Area of cross section
A	Watershed area
a	Depth of depression
C	Runoff coefficient or coefficient
d	Depth of gutter flow at the curb line
D	Diameter of pipe
E _o	Ratio of frontal flow to total gutter flow, Q_w/Q
h	Height of curb opening inlet
H	Head loss
I	Rainfall intensity
K	Coefficient
L	Length of curb opening inlet
L	Pipe length
L	Pavement width
L	Length of runoff travel
n	Roughness coefficient in Manning formula
P	Perimeter of grate opening, neglecting bars and side against curb
P	Tire pressure
Q	Rate of discharge in gutter
Q _i	Intercepted flow
Q _s	Gutter capacity above the depressed section
Q _T	Total flow
R	Hydraulic radius
S or S _x	Cross slope
S	Crown slope of pavement
S or S _L	Longitudinal slope of pavement

S_w	Depression section slope
T	Top width of water surface (spread on pavement)
t_c	Time of concentration
T_s	Spread above depressed section
V	Vehicle speed
V	Velocity of flow
W	Width of depression for curb opening inlets
W_d	Rotational velocity on dry surface
WD	Water depth
W_w	Rotational velocity on flooded surface
y	Depth of flow in approach gutter
Z	T/d, reciprocal of the cross slope

B. Terms and Definitions

Asphaltic curb and flume	A permanent or temporary erosion control measure.
Baffle piers	See dragon teeth.
Bypass	Flow that bypasses an inlet on grade and is carried in the street or channel to the next inlet downgrade. Inlets can be designed to allow a certain amount of bypass. Also, inlets may be designed to allow a certain amount of bypass for one design storm and larger or smaller amounts for other design storms.
Cellular confinement system	Three-dimensional cells constructed of heavy-duty polyethylene filled with various materials.
Combination inlet	A drainage inlet usually composed of a curb-opening inlet and a grate inlet.
Concrete ditch lining	Ditch floors and banks paved with cast-in-place reinforced concrete.
Concrete slope protection	The placement of concrete slabs on bridge embankments for erosion control.

Covercrop seeding	The establishment of temporary vegetative cover on disturbed areas with appropriate rapidly growing annual plants.
Culvert protection	A temporary sediment filter located at culvert inlets to prevent sediment from entering, accumulating in and being transferred by the drainage system prior to permanent stabilization.
Curb-opening inlet	A drainage inlet consisting of an opening in a roadway curb.
Diffused surface waters	Waters which have been precipitated on the land from the sky or forced to the surface in springs, and which have then spread over the surface of the ground without being collected into a definite body or channel. They appear as puddles, sheet or overland flow and rills; and continue to be surface waters until they disappear from the surface by infiltration or evaporation, or until by overland or vagrant flow, they reach well-defined watercourses or standing bodies of water like lakes or seas.
Dragon teeth	Alternating rows of rectangular-shaped objects that are used to dissipate energy at the outlet of culverts.
Drop inlet	A drainage inlet with a horizontal or nearly horizontal opening.
Drop structures	Structures designed to transport stormwater runoff down a highway embankment.
Equivalent cross slope	An imaginary straight cross slope having conveyance capacity equal to that of the given compound cross slope.
Erosion	A natural process whereby soil particles are dislodged by rainfall and carried away by runoff.
Erosion checks	Hay or straw barriers placed in ditches at predetermined intervals to slow the velocity of water and cause silt deposition.
Erosion control	Techniques and measures utilized to provide direct protection to the soil surface and prevent erosion of soil particles.
Erosion control netting	Photodegradeable lightweight flexible netting used over slope protection.

Erosion control products	Erosion control blankets or mats used to control erosion on critical areas by providing a microclimate which protects young vegetation and promotes its establishment.
Flanking inlets	Inlets placed upstream and on either side of an inlet at the low point in a sag vertical curve. The purpose of these inlets is to intercept debris as the slope decreases and to act in relief of the inlet at the low point.
Flood waters	Former stream waters which have escaped from a watercourse (and its overflow channel) and flow or stand over adjoining land; they remain as such until they disappear from the surface by infiltration, evaporation or return to a natural watercourse. They do not become surface waters by mingling with such waters; nor do they become stream waters by eroding a temporary channel.
Foreign waters	Those waters imported by a user from one watershed into another.
Frontal flow	The portion of the flow that passes over the upstream side of a grate.
Gabions	Rectangular, rock-filled wire baskets suitable for use as lining of high steep channel banks; channel drop structures; and energy dissipation at the outlet of culverts.
Grate inlet	A drainage inlet composed of a grate in the roadway section or at the roadside in a low point, swale or channel.
Grate perimeter	The sum of the lengths of all sides of a grate, except that any side adjacent to a curb is not considered a part of the perimeter in weir flow computations.
Ground cover	Plants used on embankments to eliminate mowing; not considered adequate erosion protection.
Ground waters	Waters situated below the surface of the land, irrespective of their source and transient status.
Gutter	That portion of the roadway section adjacent to the curb, which is utilized to convey stormwater runoff. It may include a portion, or all, of a traveled lane, shoulder or parking lane, and a limited width, adjacent to the curb, may be of different materials and have a different cross slope.
Hydraulic grade line	The locus of elevations to which the water would rise in successive piezometer tubes if the tubes were installed along a pipe run (pressure head plus elevation head).

Inlet efficiency	The ratio of flow intercepted by an inlet to total flow in the gutter.
Intercepting dike	A temporary or permanent ridge of soil constructed at the top or base of a sloping disturbed area used to divert storm runoff from upstream drainage areas away from unprotected disturbed areas.
Intercepting ditch	A channel constructed either across, at the top, at the midpoint, or at the toe of a slope to intercept and convey water at non-erosive velocities to an adequate and stable outlet.
Lakes and ponds	Relatively permanent bodies of water substantially at rest in depressions of natural origin.
Marshes	Lands saturated by waters flowing over the surface in excess of infiltration capacity, as in sloughs of rivers and tidal channels.
Mulching	Application of plant residues or other suitable materials to the soil surface to protect the surface from raindrop impact and to reduce the velocity of overland flow.
Percolating waters	Waters which have infiltrated the surface of the land and moved slowly downward through devious channels (aquifers) unrelated to stream waters, until they reach an underground lake or regain and spring from the land surface at a lower point. Percolating waters confined below impermeable formations with sufficient pressure to spring or well up to the surface are termed artesian waters; those detained or retained above an impermeable formation, so as to stand above and detached from the main body of ground water, are called perched waters.
Permanent slope protection	Spreading and crimping of hay on bare soil in conjunction with seeding.
Plunge basin	A type of energy dissipator that may be used where flows issue from a freely discharging pipe where the water jet subsequently discharges into the air and then plunges downward into the basin.
Pressure head	The height of a column of water that would exert a unit pressure equal to the pressure of the water.
Revet mattress	A special type of gabion with a large surface area-to-thickness ratio.
Riprap	A layer, facing or protective lining of stones over filter fabric placed to prevent erosion, scour or sloughing.

Scour hole	An energy dissipator consisting of a preformed excavated hole or depression that is lined with riprap of a stable size to prevent scouring.
Scupper	A vertical hole through a bridge deck for the purpose of deck drainage. Sometimes, a horizontal opening in the curb or barrier is called a scupper.
Sediment	Eroded soil deposited by gravity in streams, lakes and reservoirs.
Sediment basin	A temporary barrier or dam with a controlled stormwater release structure formed by constructing an embankment of compacted soil across a drainage way.
Sediment control	Techniques and measures utilized to remove sediment from waters by filtering or slowing the velocity of the water.
Sedimentation	The natural process of deposition of eroded soil.
Seeding	Permanent placement of seed on unsurfaced foreslopes, ditches, backslopes, shoulders, medians, and other areas, as specified, once the finish grade is established.
Side-flow interception	Flow that is intercepted along the side of a grate inlet, as opposed to frontal interception.
Silt fence	A temporary or permanent sedimentation barrier consisting of synthetic or natural fabric.
Silt trap	A temporary ponding area formed by excavating a ditch along the path of water.
Slope drain	A pipe installed above grade, extending from the top to the bottom of a cut or fill slope to temporarily transport concentrated stormwater runoff safely down the face of a cut or fill slope.
Slotted drain inlet	A drainage inlet composed of a continuous slot built into the top of a pipe which serves to intercept, collect, and transport the flow.
Sodding	Transplanting of ready to grow grasses, done mostly in urban areas limited to occupied residential property and business sites.
Splashover	Portion of the frontal flow at a grate, which skips or splashes over the grate and is not intercepted.
Spread	The width of flow in the gutter measured laterally from the roadway curb.

Springs	Percolating waters issued by natural forces from the earth.
Storage or excess supply	Mainly project storage, where waters are retained from investigation, residential, municipal or industrial use.
Storm drain	That portion of the storm drainage facility that receives runoff from the inlets and conveys the runoff to an adequate outfall. Culverts discharging to the storm drainage system are considered part of the system.
Stream waters	Former diffused surface waters that have entered and now flow in a well-defined natural watercourse, together with other waters reaching the stream by direct precipitation or rising from springs in the bed or banks of the watercourse. They continue as stream waters as long as they flow in the watercourse, and include overflow and multiple channels as well as the ordinary or low-water channel.
Surface waters	Waters commonly held to be those above the rock or soil surface of the earth.
Swamps	Lands saturated by ground water standing at or near the surface.
Temporary seeding	The establishment of permanent vegetation using perennial grasses for a short duration, usually two years or less; generally used in staged construction. May also consist of covercrop seed with hydraulically applied heavy mulch for temporary roads.
Temporary slope protection	Spreading and anchoring of hay, straw or rushes without seeding. Typically used on temporary roads in or near sandhills, but may be used other places.
Underground streams	Flows of ground waters parallel to and adjoining stream waters and usually determined to be integral parts of the visible streams.
Velocity head	A quantity proportional to the kinetic energy of flowing water expressed as a height or head of water.
Waste and artificial waters	Waters due to escape or seepage from constructed works.
Watercourse	A definite channel with bed and banks within which water flows, either continuously or in season. A watercourse is continuous in the direction of flow and may extend laterally beyond the definite banks to include artificial channels such as canals and drains, except when these are natural channels lawfully trained or restrained by the works of man. It does not include all depressions or swales through which surface or errant waters pass.

