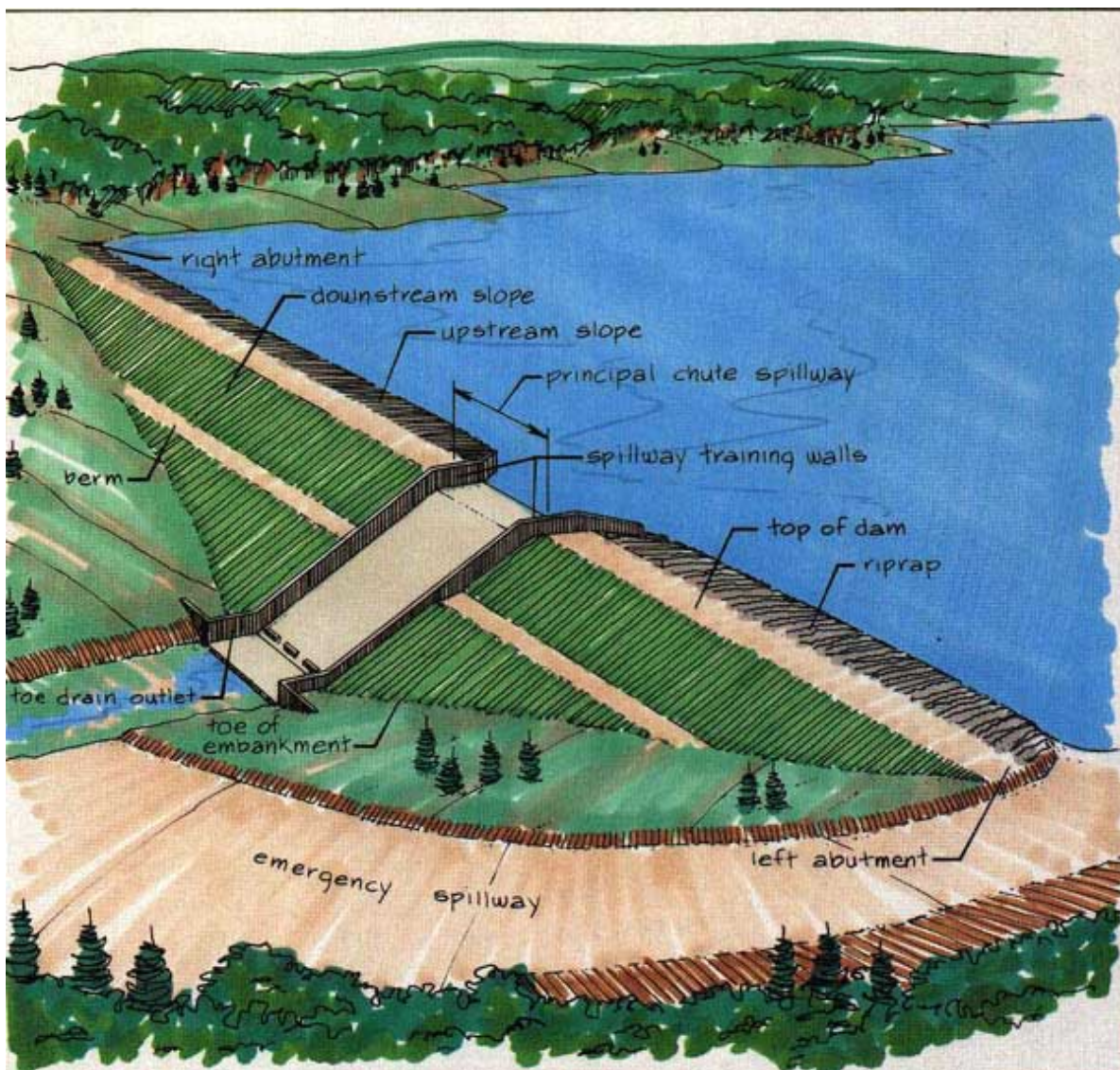
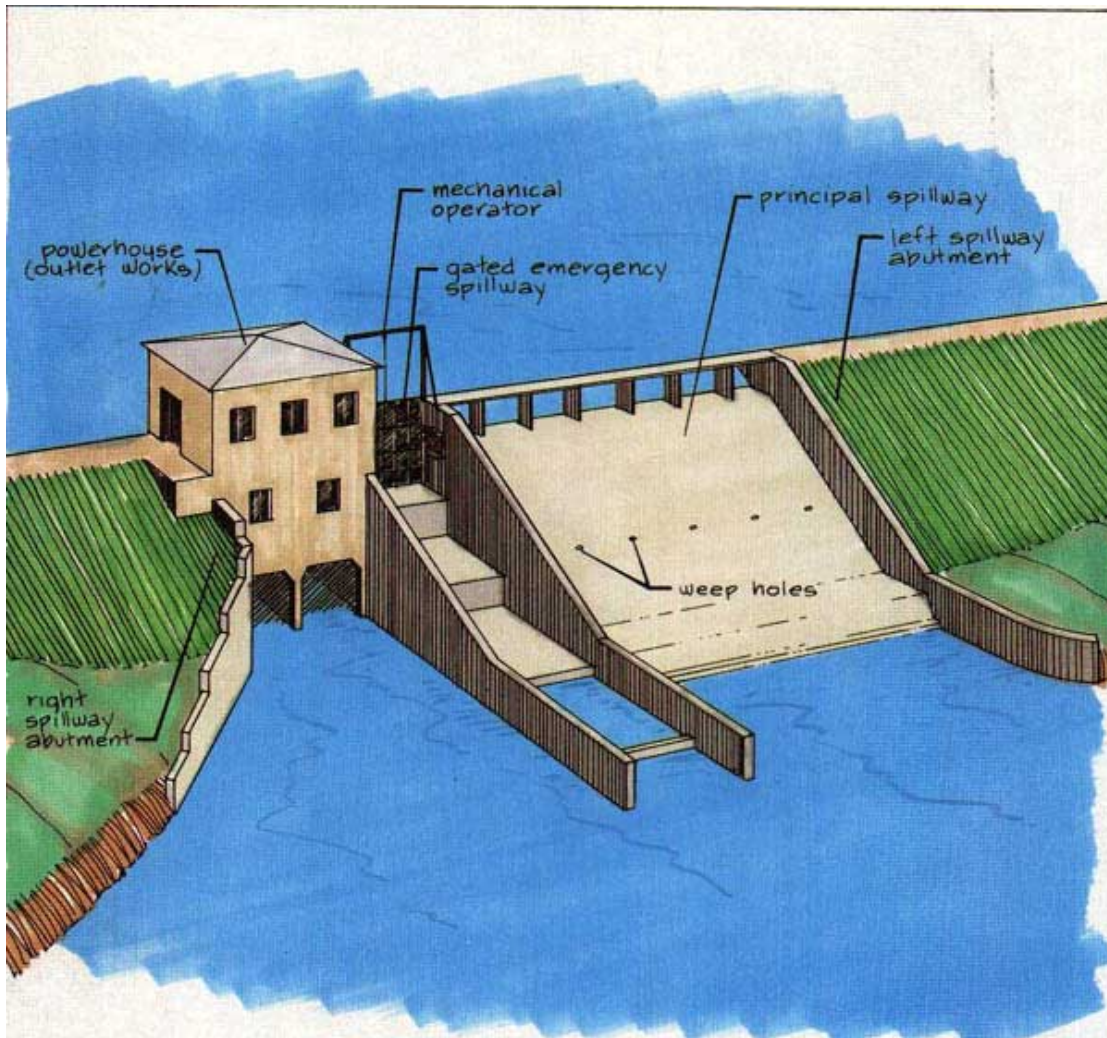


Term Definitions

The following is a list of terms and their definitions that are frequently used when discussing the physical characteristics of a dam. This list is an abridged version of the glossary of terms from Appendix D of "The Inspection, Maintenance, and operation of Dams in Pennsylvania."

ABUTMENT - That part of the valley side against which the dam is constructed. An artificial abutment is sometimes constructed where there is no suitable natural abutment. Right and left abutments are those on respective sides of an observer when viewed looking downstream. The wall between a spillway or gate structure and the embankment can also be referred to as an abutment.





APPURTENANT STRUCTURES - Refers to ancillary features of a dam, such as the outlet, spillway, outlet conduit, tunnels, etc.

AXIS OF DAM - The plane or curved surface, arbitrarily chosen by a designer, appearing as a line, in plan or in a cross section, to which the horizontal dimensions of a dam can be referred.

BOIL - An upward disturbance in the surface layer of soil caused by water escaping under pressure from behind or under a water-retaining structure such as a dam or a levee. The boil may be accompanied by deposition of soil particles (usually silt) in the form of a ring (miniature volcano) around the area where the water escapes.

BREACH - An opening or a breakthrough of a dam sometimes caused by rapid erosion of a section of earth embankment by water. Dams can be breached intentionally to render them incapable of impounding water.



CONDUIT - A closed channel to convey the discharge of water through or under a dam.

CORE (IMPERVIOUS CORE/IMPERVIOUS ZONE) - A zone of material of low permeability in an embankment dam.

COREWALL - A wall built of impervious material, usually of concrete or asphaltic concrete in the body of an embankment dam to prevent leakage.

CREST LENGTH - The measured length of the top of the dam from abutment to abutment. This includes the length of spillway, powerhouse, navigation lock, fish ladder, etc, where these structures form part of the length of the dam. If detached from the dam, these structures should not be included.

CREST OF DAM - The crown of an overflow section of the dam. In the United States, the term "crest of dam" is often used when "top of dam" is intended. To avoid confusion, the terms crest of spillway and top of dam should be used in referring to the overflow section and dam proper, respectively.

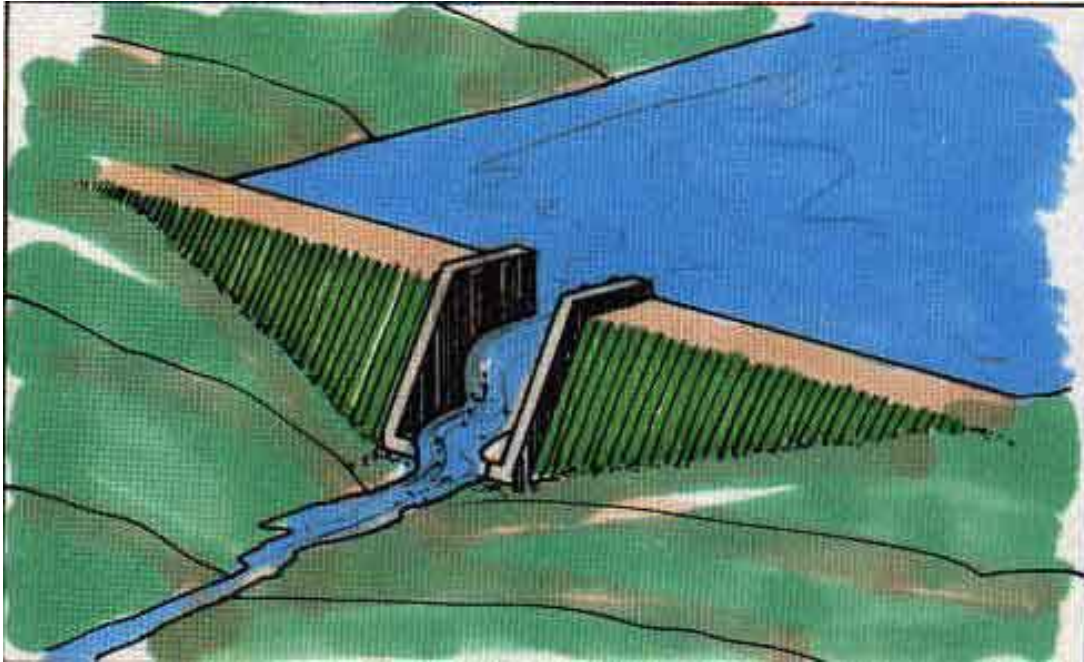
CUTOFF - An impervious barrier used to reduce or prevent seepage from passing through the foundation under the dam.

CUTOFF WALL - A wall of impervious material (e.g., concrete, asphaltic concrete, steel sheet piling) built into the foundation to reduce seepage under the dam.

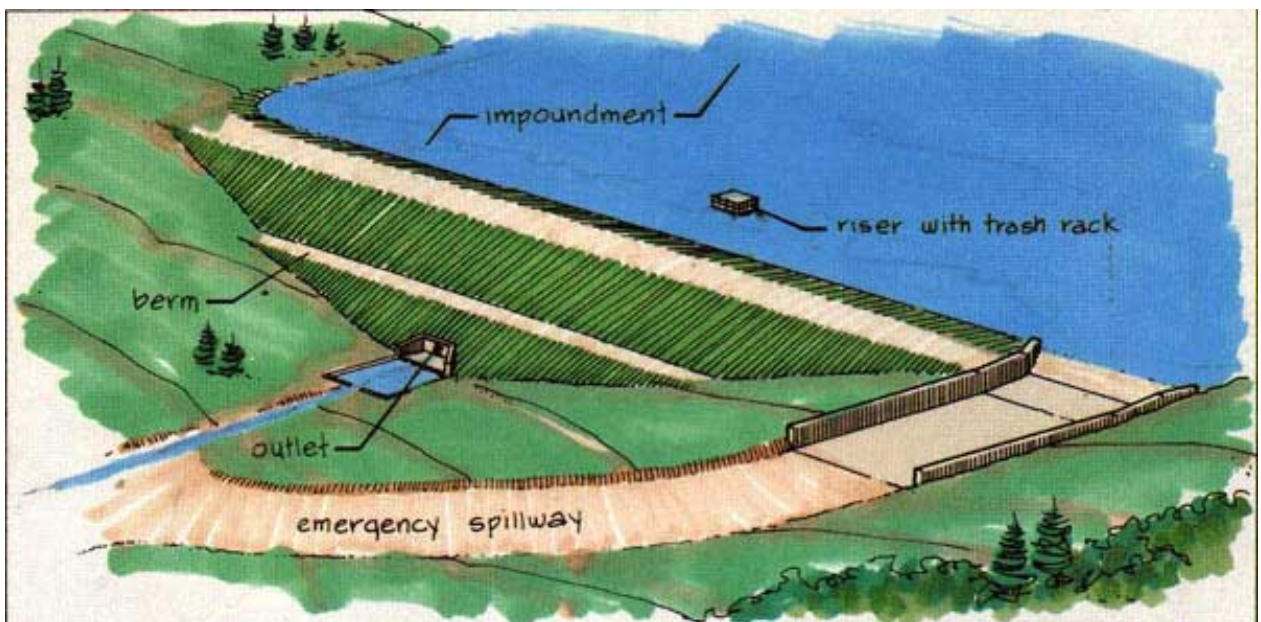
DAM - An artificial barrier, together with its appurtenant works, constructed in or across a waterway for the primary purpose of impounding or diverting water.

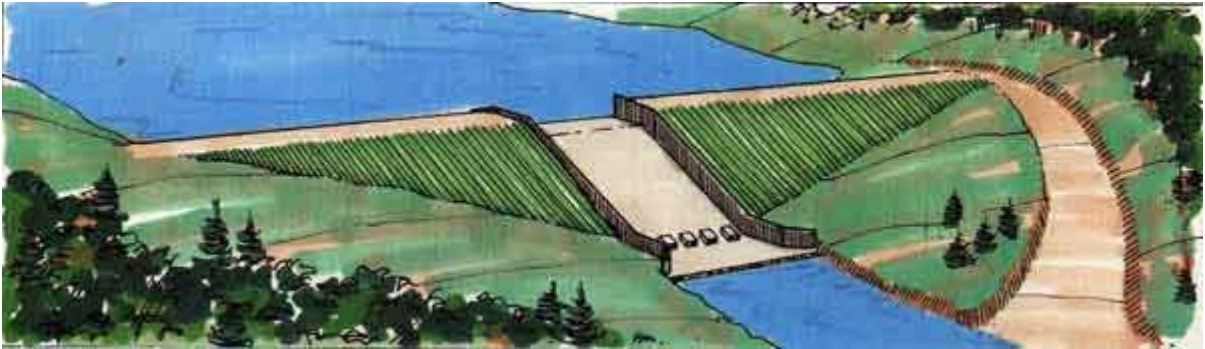
DRAINAGE AREA - The area that drains naturally to a particular point on a river or stream.

DRAWDOWN - The resultant lowering of water surface level due to the release of water from the reservoir.



EMBANKMENT DAM (EARTH DAM / EARTHFILL DAM) - Any dam constructed of excavated natural materials, usually earth or rock, placed with sloping sides.





EMERGENCY ACTION PLAN (EAP) - A predetermined plan of action to be taken to reduce the potential for loss of life and property damage.

EMERGENCY GATE - A stand by or reserve gate used only when the normal means of water control is not available or at capacity.



ENERGY DISSIPATOR - Any device constructed in a waterway to reduce or destroy the energy of fast-flowing water.

FAILURE - An incident resulting in the uncontrolled release of water from an operating dam.

FOUNDATION OF DAM - The natural material on which the dam structure is placed.

FREEBOARD - The vertical distance between a stated water level and the top of a dam.

GABION - A prefabricated basket of rock within a wire cage that is free draining and capable of being stacked.

GATE - In general, a device in which a leaf or member is moved across the waterway from an external position to control or stop the flow.



GRAVITY DAM - A dam constructed of concrete and/or masonry that relies on its weight for stability.



GROIN - That area along the contact (or intersection) of the face of a dam with the abutments.

HEIGHT OF DAM - The vertical measurement expressed in feet as measured from the downstream toe of the dam at its lowest point to the elevation of the top of the dam.

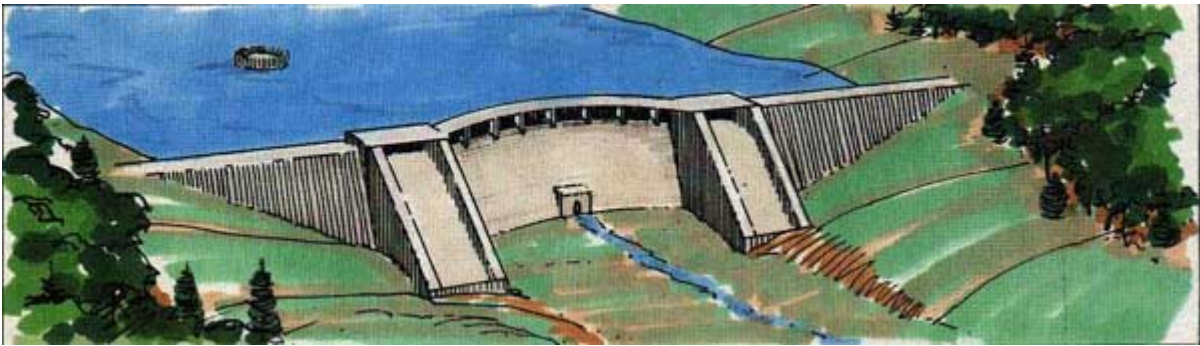
INTAKE - Any structure in a reservoir, dam, or river through which water can be drawn into an aqueduct.

INUNDATION MAP - A map delineating the area that would be inundated in the event of a dam failure.

MASONRY DAM - Any dam constructed mainly of stone, brick, or concrete blocks that may or may not be joined with mortar. A dam having only a masonry facing should not be referred to as a masonry dam.

ONE HUNDRED YEAR (100-YEAR) FLOOD -The flood magnitude expected to be equaled or exceeded on the average of once in 100 years. It may also be expressed as an exceedence frequency with a 1% chance of being exceeded in any given year.

OUTLET - An opening in which water can be freely discharged for a particular purpose from a reservoir.



PIPING - The progressive development of internal erosion by seepage appearing downstream as a hole or seam discharging water that contains soil particles.

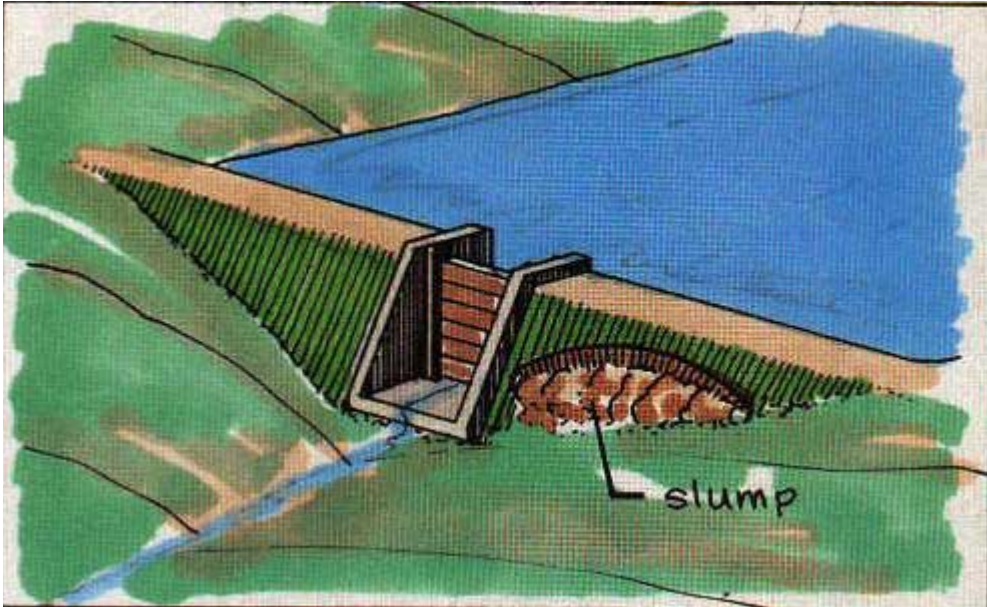
PLUNGE BASIN (PLUNGE POOL) - A natural or sometimes artificially created pool that dissipates energy of free falling water. The basin is located at a safe distance downstream of the structure from which the water is being released.

RIP RAP - A layer of large uncoursed stones, broken rock, or precast blocks placed in random fashion on the upstream slope of an embankment dam, on a reservoir shore, or on the sides of a channel as protection against wave and ice action.

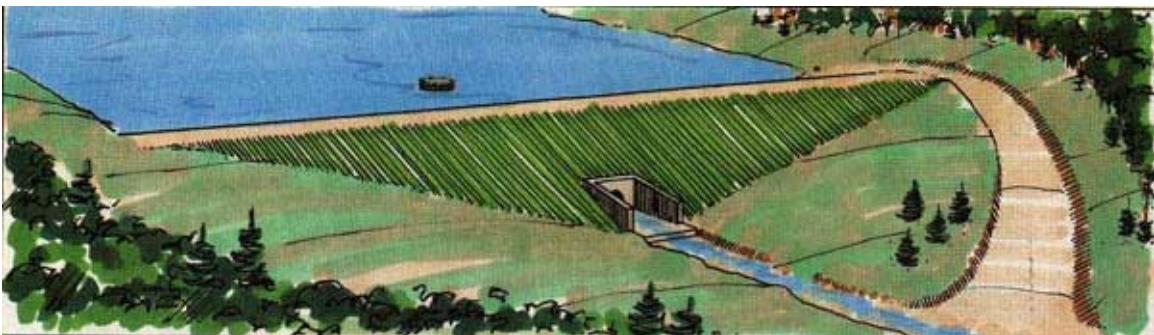
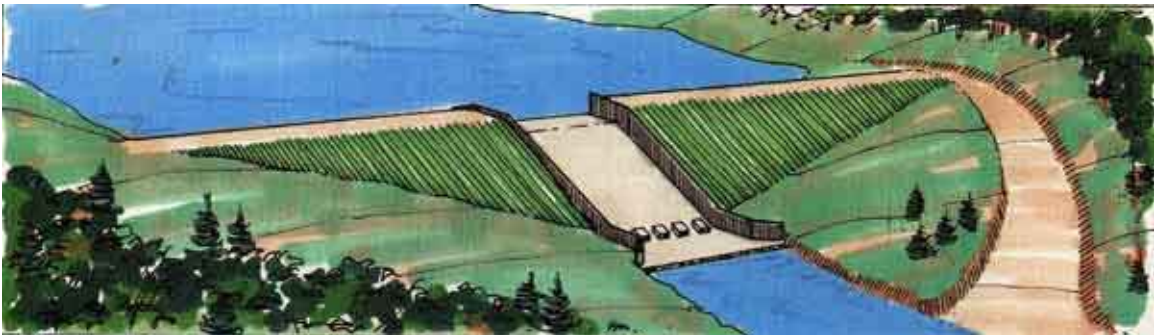
SCARP - The nearly vertical, exposed earth surface created at the upper edge of a slide or a breached area along the upstream slope of an earthen embankment.

SEEPAGE - The movement of water that may take place through the dam, its foundations, or its abutments.

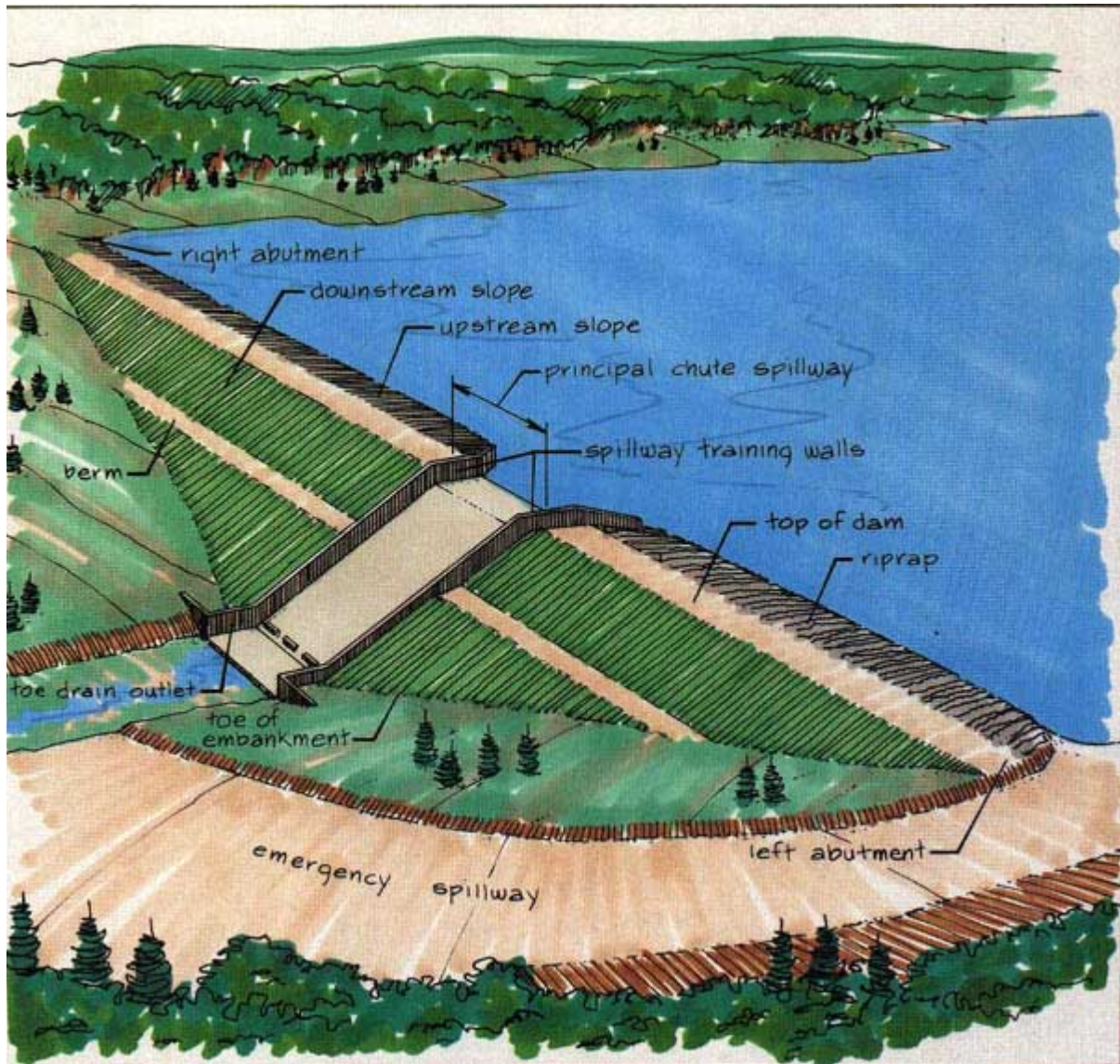
SLIDE - The movement of a mass of earth fill down a slope. In embankments and abutments, this involves the separation of a portion of the slope from the surrounding material.



SPILLWAY - A structure over or through which flood flows are discharged. If the flow is controlled by gates, it is considered a controlled spillway; if the elevation of the spillway crest is the only control, it is considered an uncontrolled spillway.

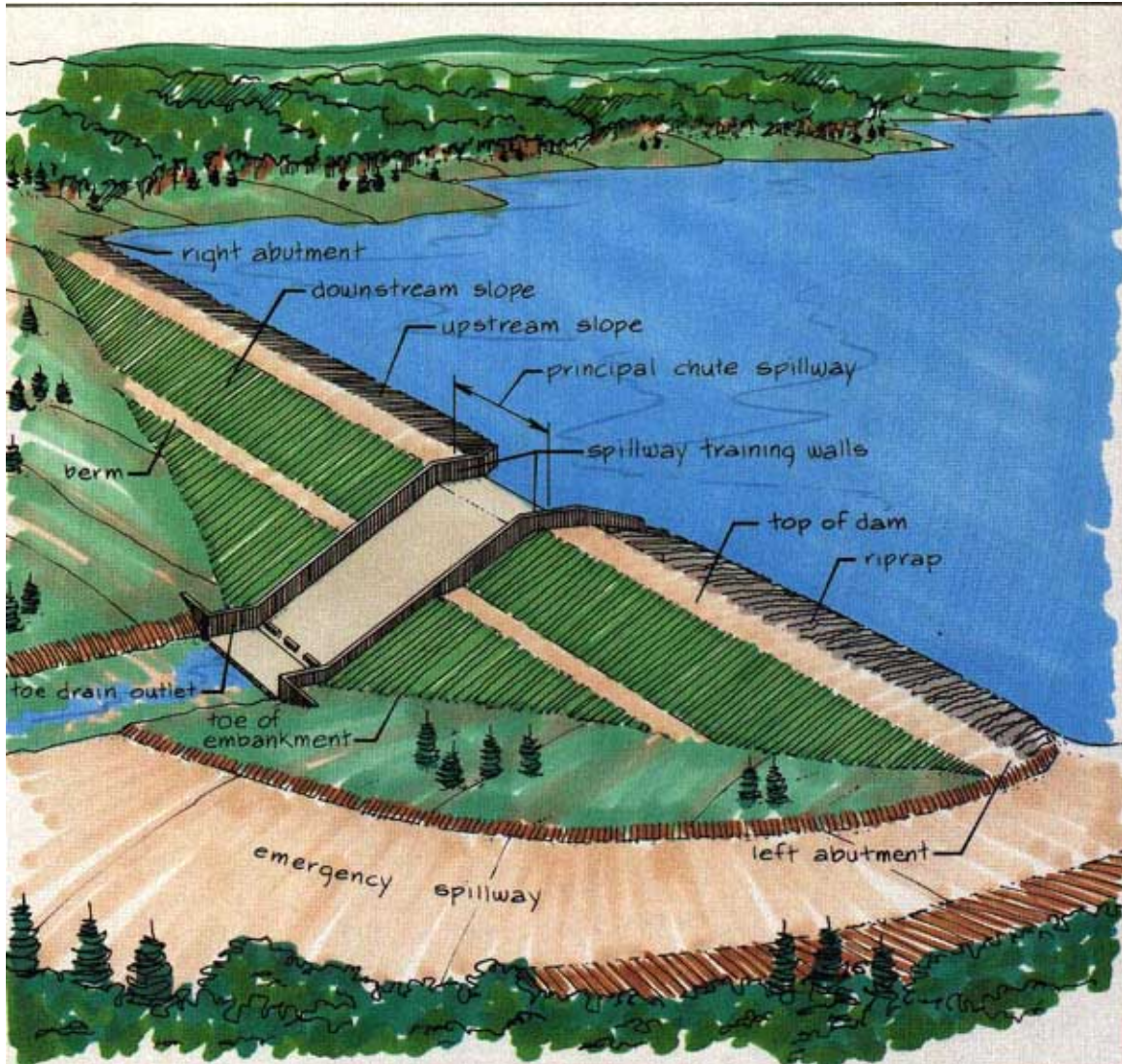


AUXILIARY SPILLWAY (EMERGENCY SPILL- WAY) - A secondary spillway designed to operate only during exceptionally large floods.



OGEE SPILLWAY (OGEE SECTION) - An overflow weir in which in cross section the crest, downstream slope, and bucket have an "S" or ogee form of curve. The shape is intended to match the underside of the nappe at its upper extremities.

PRIMARY SPILLWAY (PRINCIPAL SPILLWAY) - The principal or first used spillway during flood flows.



SERVICE SPILLWAY - A principal spillway used to regulate reservoir releases additional to or in lieu of the outlet.

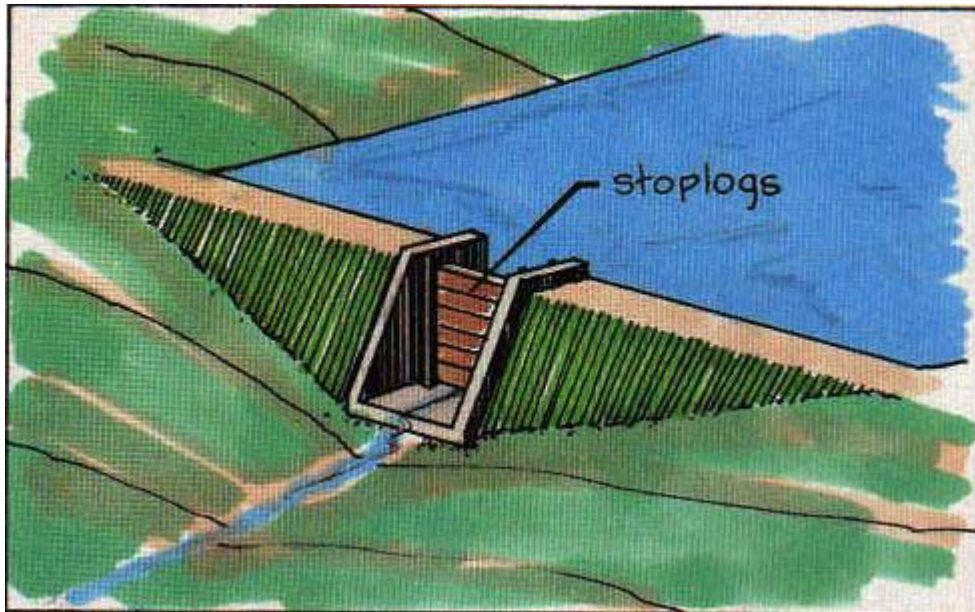
SPILLWAY CHANNEL - A channel conveying water from the spillway crest to the river downstream.

SPILLWAY DESIGN FLOOD (SDF) - The largest flood that a given project is designed to pass safely. The reservoir inflow discharge hydrograph used to estimate the spillway discharge capacity requirements and corresponding maximum storage elevation in the reservoir.

STILLING BASIN - A basin constructed so as to dissipate the energy of fast-flowing water, e.g., from a spillway or bottom outlet, and to protect the riverbed from erosion.

STOPLOGS - Large logs, timbers, or steel beams placed on top of each other with their ends held in guides on each side of a channel or conduit so as to provide a cheaper or

more easily handled means of temporary closure than a bulkhead gate. They can also be used as a permanent gate but are difficult to operate under high water conditions.



STORAGE - The retention of water or delay in runoff either by planned operation, as in a reservoir, or by temporarily filling the overflow areas, as in the progression of a flood crest through a natural stream channel.

TAILWATER LEVEL - The level of water in the discharge channel immediately downstream of the dam.

TOE OF DAM - The junction of the downstream face of a dam with the ground surface. Also referred to as the downstream toe. For an embankment dam, the junction of the upstream face with the ground surface is called the upstream toe.

TOP OF DAM - The elevation of the uppermost surface of a dam, usually a road or walkway, excluding parapet wall, railings, etc.

TOP WIDTH (TOP THICKNESS) - The thickness or width of a dam at the level of the top of the dam. In general, the term thickness is used for gravity and arch dams and width is used for other dams.

TRASH RACK - A screen comprising metal or reinforced concrete bars located in the waterway at an intake so as to prevent the ingress of floating or submerged debris.

VALVE - In general, a device fitted to a pipeline or orifice in which the closure member is either rotated or moved transversely or longitudinally in the waterway so as to control or stop the flow.

WEIR - A low dam or wall built across a stream to raise the upstream water level. Termed fixed-crest weir when uncontrolled. A structure built across a stream or channel for the purpose of measuring flow. Sometimes described as a measuring weir or gauging weir. Types of weirs include broadcrested weirs, sharpcrested weirs, ogee weirs, and V-notched weirs.

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