

303(d) waterbody - A list of lakes, rivers, and streams that have been designated as impaired or threatened by a pollutant(s) for which one or more TMDL(s) are needed. Impaired means that the water is not meeting state water quality standards.

319 - The section of the Federal Clean Water Act that deals with nonpoint pollution.

404 permit program - This program regulates the non-point source discharges of dredged or fill material into waters of the United States, including wetlands. Information on the 404 permit can be found at: <http://pillar.saj.usace.army.mil/permit/regulations/section404.htm>

1) Individual permits are issued to a single entity (individuals or companies) to authorize specific activities. Once a complete permit application is received by the USACE, a public notice is issued, which describes the proposed project. The USACE evaluates all comments received and makes a final permit decision. . The USACE issues two types of 404 permits, individual and general:

2) A general permit authorizes specific activities that have minimal environmental impacts, such as bank stabilization activities, construction of farm buildings, and filling of relatively small areas, if the permitted activity is consistent with the Clean Water Act regulations. A general permit can be issued on a nationwide basis. Activities authorized by a general permit require less review than an individual permit would require.

Acre - Area term equal to 1/640th of a square mile or 43,560 square feet

Anatropous fish - Fish that ascend rivers from the sea for breeding.

Aquifer - A geologic stratum containing groundwater that can be withdrawn and used for human purposes.

Backwater - Water upstream from an obstruction which is deeper than it would normally be without the obstruction.

Baffle - A device to deflect, check or regulate flow.

Basin - Any area draining to a point of interest.

Basin plan - A plan and all implementing regulations and procedures including but not limited to capital projects, public education activities, land use management regulations adopted by ordinance for managing surface and storm water management facilities, and features within individual subbasins.

Beaver deceiver - A constructed flow control device that reduces beaver damming activities. It is a non-lethal beaver management technique. More....

Berm - A constructed barrier of compacted earth.

Biofiltration swale or **Bioswale** - A long, gently sloped, vegetated ditch designed to filter pollutants from stormwater. Grass is the most common vegetation, but wetland vegetation can be used if the soil is saturated.

Best Management Practice (BMP) - See Structural and Nonstructural BMPs.

Biochemical oxygen demand (BOD) - BOD is the amount of dissolved oxygen needed by aerobic biological organisms in a body of water to break down organic material present in a given water sample at certain temperature over a specific time period. The term also refers to a chemical procedure for determining this amount. This is not a precise quantitative test, although it is widely used as an indication of the organic quality of water.[1] The BOD value is most commonly expressed in milligrams of oxygen consumed per liter of sample during 5 days of incubation at 20 °C and is often used as a robust surrogate of the degree of organic pollution of water.

Buffer - A designated area adjacent to and a part of a steep slope or landslide hazard area which protects slope stability, attenuation of surface water flows, and landslide hazards reasonably necessary to minimize risk; or a designated area adjacent to or a part of a stream or wetland that is an integral part of the stream or wetland ecosystem.

CAFO - Concentrated Animal Feeding Operation

Catch Basin, Type I - An underground concrete water receiving inlet, rectangular in shape (approximately 3' x 2' x 4' deep) with a slotted iron grate on top to inlet water or a solid rectangular cover. Water may also enter/exit through culverts visible in the side walls of basin. Also referred to as Inlet.

Catch Basin, Type II - A round concrete underground basin (4'-8' diameter; 6' or greater deep); may contain Flow Restrictor/Oil Pollution control device. These basins are also required when larger diameter culverts are used. Also referred to as a Manhole or Control Manhole.

Catch basin insert - A device installed underneath a catch basin inlet to treat stormwater through filtration, settling, absorption, adsorption, or a combination of these mechanisms. There are a number of shapes, sizes, and configurations of inserts available.

Channel - A long, narrow excavation or surface feature that conveys surface water and is open to the air.

Channel, constructed - A channel or ditch constructed to convey surface water; also includes reconstructed natural channels.

Channel, natural - A channel which has occurred naturally due to the flow of surface waters; or a channel that, although originally constructed by human activity, has taken on the appearance of a natural channel including a stable route and biological community.

Channel Protection Storage Volume (Cpv) - Provide 24 hours of extended detention of the runoff from the 1-year 24-hr duration storm event to reduce bank-full flows and protect downstream channels from erosive velocities and unstable conditions.

Clean Water Act NPDES permit program - The EPA has assigned the IDNR the responsibility of administering the NPDES (National Pollutant Discharge Elimination System) program (402

permit program) for activities within the state of Iowa. The IDNR issues NPDES permits, conducts inspections, and provides enforcement. While the EPA has delegated program responsibilities to the IDNR, it retains the authority to conduct its own inspections and issue fines to the offender.

Closed depression - An area which is low-lying and either has no surface water outlet, or has such a limited outlet that during storm events the area acts as a retention basin, with more than 5000 square feet of water surface area at overflow elevation.

CSO - Combined Sewer Overflow

Constructed conveyance system facilities - Gutters, ditches, pipes, channels, and most flow control and water quality treatment facilities.

Control Manhole - See Catch Basin, Type II

Conveyance System - Drainage facilities and features that collect, contain, and provide for the flow of surface and storm water from the highest points on the land down to a receiving water. Conveyance systems are made up of natural elements and of constructed facilities.

Critical Drainage Area - An area with such severe flooding, drainage, and/or erosion/sedimentation conditions which have resulted or will result from the cumulative impacts of development and urbanization.

Cubic Feet per Second (CFS) – A standard measurement of flow.

Culvert - Pipe or concrete box structure which drains open channels, swales, or ditches under a roadway or embankment typically with no catch basins or manholes along its length.

Clean Water Act (CWA) - The federal environmental law that includes the management of stormwater.

Dead storage - The volume available in a depression in the ground below any conveyance system, or surface drainage pathway, or outlet invert elevation that could allow the discharge of surface and storm water runoff.

Debris Barrier - A metal trash rack

Department of Natural Resources (DNR) - State of Iowa Department that enforces and regulates the Clean Water Act in Iowa.

Depression storage - The amount of precipitation that is trapped in depressions on the surface of the ground.

Detention - Release of surface and storm water runoff from the site at a slower rate than it is collected by the drainage facility system, the difference being held in temporary storage.

Detention facility - A facility that collects water from developed areas and releases it at a slower rate than it enters the collection system. The excess of inflow over outflow is temporarily stored in a pond or a vault and is typically released over a few hours or a few days.

Detention Pond (Detention Basin) - A type of detention facility.

Detention Tank - A type of detention facility.

Detention Vault - A type of detention facility.

Determination of Non-Significance or DNS - The written decision by the responsible official of the lead agency that a proposal is not likely to have a significant adverse environmental impact per the SEPA process, and therefore an EIS is not required.

Direct discharge - Undetailed discharge from a proposed project to major receiving water.

Discharge - Runoff, excluding offsite flows, leaving the proposed development through overland flow, built conveyance systems, or infiltration facilities.

Dispersed discharge - Release of surface and storm water runoff from a drainage facility system such that the flow spreads over a wide area and is located so as not to allow flow to concentrate anywhere upstream of a drainage channel with erodible underlying granular soils or the potential to flood downstream properties.

Ditch - A constructed channel with its top width less than 10 feet at design flow.

Diversion - A change in the natural discharge location or runoff flows onto or away from an adjacent downstream property.

Drainage - The collection, conveyance, containment, and/or discharge of surface and storm water runoff.

Drainage area or Drainage basin - An area draining to a point of interest.

Drainage facility - A constructed or engineered feature that collects, conveys, stores or treats surface and storm water runoff. Drainage facilities shall include but not be limited to all constructed or engineered streams, pipelines, channels, ditches, gutters, lakes, wetlands, closed depressions, flow control or water quality treatment facilities, erosion and sedimentation control facilities, and other drainage structures and appurtenances that provide for drainage.

EIS - Environmental Impact Statement. A document that discusses the likely significant adverse impacts of a proposal, ways to lessen the impacts, and alternatives to the proposal. It is required by the national and state environmental policy acts when projects are determined to have the potential for significant environmental impact.

Elevation - The elevation of a [geographic location](#) is its height above or below a fixed reference point, most commonly a reference [geoid](#), a mathematical model of the [Earth's sea level](#) as an [equipotential gravitational surface](#).

Embankment - A structure of earth, gravel, or similar material raised to form a pond bank or foundation for a road.

EPA - Environmental Protection Agency

ESA - Endangered Species Act

Energy Dissipater - A rock pad constructed at inlets/outlets to prevent erosion, or a constructed percolation trench to disperse outletting flows over a large area, or a catch basin used to slow fast flowing runoff. Catch basins may be a part of the dispersion trench.

Erosion - The detachment and transport of soil or rock fragments by water, wind, ice, etc.

ESC - Erosion and Sediment Control

Eutrophic - A condition of a water body in which excess nutrients, particularly phosphorous, stimulates the growth of aquatic plant life usually resulting in the depletion of dissolved oxygen. Thus, less dissolved oxygen is available to other aquatic life.

Extreme flood protection - Extreme flood protection is provided by controlling and/or safely conveying the 100-year, 24-hour storm event (denoted Q_f).

FEMA - Federal Emergency Management Agency.

Flow control facility - A drainage facility designed to mitigate the impacts of increased surface and storm water runoff generated by site development pursuant to the drainage requirements. Flow control facilities are designed either to hold water for a considerable length of time and then release it by evaporation, plant transpiration, and/or infiltration into the ground, or to hold runoff a short period of time and then release it to the conveyance system.

Flow Restrictor - A control device or a T section with a specifically sized orifice(s) to control release rates.

Freeboard - The vertical distance between the design water surface elevation and the elevation of the structure or facility which contains the water.

FROP - Flow Restrictor/Oil Pollution control device.

General Permit No. 1 – For "stormwater discharge associated with industrial activity" (excludes construction). Industrial activities that have the potential for contamination of stormwater runoff are required to obtain and comply with an NPDES permit. These activities include storage of chemicals or fuel in areas that are exposed to precipitation or runoff. The intent of this permit is to reduce chemical pollutants in runoff.

General Obligation Bonds (GOB) – Bond by a city, county or state that goes against the backed by the "full faith and credit" of the issuer, with no specific project identified as the source of funds.

General Permit No. 2 – For "stormwater associated with industrial activity for construction activities" (land disturbing 1 acre or more). Construction activities that result in the disturbance of more than one acre of ground cover are required to obtain an NPDES general permit normally associated with earthwork, grading, or any other non-agricultural land-disturbing activity. Construction of animal feeding operations and confinement buildings are covered under this permit. The goal of the permit is to reduce the amount of sediment being transported from construction site by stormwater runoff.

General Permit No. 3 – For "stormwater discharge associated with industrial activity from asphalt plants, concrete batch plants, rock crushing plants, and construction sand and gravel facilities".

Groundwater - Underground water usually found in aquifers. Groundwater usually originates from infiltration. Wells tap the groundwater for water supply uses.

Habitat - The specific area or environment in which a particular type of plant or animal lives and grows.

Hardpan - A cemented or compacted and often clay-like layer of soil that is impenetrable by roots.

Harmful pollutant - A substance that has adverse effects to an organism including death, chronic poisoning, impaired reproduction, cancer, or other effects.

HRT - Hydraulic residence time

Hydrologic cycle - The circuit of water movement from the atmosphere to the earth and return to the atmosphere through various stages or processes such as precipitation, interception, runoff, infiltration, percolation, storage, evaporation, and transpiration.

Hydrologic unit code (HUC) - System of even numbers from 2 to 12 that define a watershed's area

Illicit discharges - Discharges of non-stormwater to the storm drainage system. Examples are discharges from internal floor drains, appliances, industrial processes, sinks, and toilets that are connected to the nearby storm drainage system. These discharges should be going to the sanitary sewer system, a holding tank, an on-site process water treatment system, or a septic system.

Impervious surface - A hard surface area which either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development; and/or a hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development.

Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam, or other surfaces which similarly impede the natural infiltration of surface and storm water runoff. Open, uncovered flow control or water quality treatment facilities shall not be considered impervious surfaces for determinations of thresholds.

For the purpose of modeling though, onsite flow control and water quality ponds are modeled as impervious surface.

Impoundment - A natural or man-made containment for surface water.

Infiltration/Inflow (I/I) - Clean storm and/or groundwater that enters the sewer system through cracked pipes, leaky manholes, or improperly connected storm drains, down spouts and sump pumps. Most inflow comes from stormwater and most infiltration comes from groundwater. I/I affects the size of conveyance and treatment systems and, ultimately, the rate businesses and residents pay to operate and maintain them.

Infiltration Basin - A type of infiltration facility

Infiltration facility - A drainage facility designed to use the hydrologic process of water soaking into the ground (commonly referred to as percolation) to dispose of surface and storm water runoff.

Infiltration Pond - A type of infiltration facility

Infiltration Tank - A type of infiltration facility

Inlet - See Catch Basin

Infiltration facility - An area permanently inundated by water in excess of two meters (7 ft) deep and greater than twenty acres in size as measured at the ordinary high water mark.

Iowa Stormwater Manual - The manual (and supporting documents as appropriate) describing surface and storm water design and analysis requirements, procedures, and guidance which has been formally in the State of Iowa.

Low impact development (LID) - All site designs are encouraged to implement a set of practices collectively known as “stormwater better site design” and/or “low impact development” (LID) to the fullest extent possible. Through the use of these practices and techniques, the impacts of urbanization on the natural hydrology of the site and water quality can be significantly reduced. The goal is to reduce the amount of stormwater runoff and pollutants that are generated, provide for natural on-site control and treatment of runoff, and optimize the location of stormwater management facilities. Better site design concepts can be viewed as both water quantity and water quality management tools and can reduce the size and cost of required structural stormwater controls.

Manhole - See Catch Basin, Type II

MEP - Maximum extent practicable

Municipal Separate Storm Sewer Systems (MS4s). The NPDES program requires certain designated operators of MS4s to develop a stormwater management plan, with the purpose of reducing pollutant levels in the runoff discharged by publicly-owned storm sewer systems. Additional discussion on the Phase II Stormwater NPDES regulations and requirements are provided below. The MS4 program generally covers municipalities between 10,000 and 100,000

population. The affected entities must develop a stormwater management program that provides best management practices and addresses six minimum control measures under the MS4 program.

Natural conveyance system elements - Swales and small drainage courses, streams, rivers, lakes, and wetlands.

NOI - Notice of intent

Nonpoint source (NPS) pollution - NPS pollution occurs when rainfall, snowmelt, or irrigation runs over land or through the ground, picks up pollutants, and deposits them into rivers, lakes, and coastal waters or introduces them into ground water. (See USEPA Factsheet)

Nonstructural BMP - A preventative action to protect receiving water quality that does not require construction. Nonstructural BMPs rely predominantly on behavioral changes in order to be effective. Major categories of non-structural BMPs include education, recycling, maintenance practices and source controls.

NPDES - National Pollutant Discharge Elimination System. The part of the Clean Water Act which requires point source discharges to obtain permits. These permits, referred to as NPDES permits, are administered by the Washington State Department of Ecology.

Natural onsite drainage feature - A natural swale, channel, stream, closed depression, wetland, or lake.

Oil/water separator - A vault, usually underground designed to provide a quiescent environment to separate oil from water. Floatables (e.g., styrofoam) are also removed.

Outfall - A point where collected and concentrated surface and storm water runoff is discharged from a pipe system or culvert.

Overbank flood protection - Overbank flood protection for downstream channels, and/or flooding from surcharging of downstream piped conveyances, is provided by controlling the post-development 5-year, 24-hour storm peak discharge rate (denoted Qp5) from exceeding the predevelopment (or natural conditions) discharge rate using structural stormwater controls.

Phase 1 Stormwater Permit Program - The Phase I program addressed sources of storm water runoff that had the greatest potential to negatively impact water quality. Under Phase I, EPA required NPDES permit coverage for storm water discharges from "medium" and "large" municipal separate storm sewer systems (MS4s) located in incorporated places or counties with populations of 100,000 or more; and eleven categories of industrial activity, one of which is construction activity that disturbs five or more acres of land. (See USEPA Information).

Phase 2 Stormwater Permit Program - The Phase II Program requires NPDES permit coverage for storm water discharges from certain regulated small municipal separate storm sewer systems (MS4s); and construction activity disturbing between 1 and 5 acres of land. (See USEPA Phase 2 Information).

Point discharge - The release of collected and/or concentrated surface and storm water runoff from a pipe, culvert, or channel.

Point source pollutant - Storm water discharges are generated by runoff from land and impervious areas such as paved streets, parking lots, and building rooftops during rainfall and snow events that often contain pollutants in quantities that could adversely affect water quality. Most storm water discharges are considered point sources and require coverage by an NPDES permit. The primary method to control storm water discharges is through the use of best management practices.

Pollution-generating impervious surface - An impervious surface considered to be a significant source of pollutants in surface and storm water runoff.. Such surfaces include those subject to vehicular use or storage of erodible or leachable materials, wastes, or chemicals, and which receive direct rainfall or the run-on or blow-in of rainfall. Thus, a covered parking area would be included if runoff from uphill could regularly run through it or if rainfall could regularly blow in and wet the pavement surface. Metal roofs are also considered pollution-generating impervious surface unless they are treated to prevent leaching.

Pollution-generating pervious surface - A non-impervious surface with vegetative ground cover subject to use of pesticides and fertilizers. Such surfaces include, but are not limited to, the lawn and landscaped areas of residential or commercial sites, golf courses, parks, and sports fields.

POTW - Publicly owned treatment works

Reach - A length of channel with uniform characteristics.

Receiving waters - Bodies of water or surface water systems receiving water from upstream man-made or natural systems.

Recharge - The flow to groundwater from the infiltration of surface and stormwater runoff.

Recharge Volume (Rev) (acre-feet) - Fraction of WQv, depending on pre development soil hydrologic group. $Rev = [(S) (Rv) (A)]/12$, S = soil specific recharge factor in inches

Resource stream -A stream section mapped and rated by the City as being a regionally significant stream reach that harbors significant concentrations of fish for some period in their life cycle.

Retention - The process of collecting and holding surface and storm water runoff with no surface outflow.

Retention Basin (Wet Pond) - Drainage facilities for water quality treatment that contain a permanent pool of water. They are designed to optimize water quality by providing long retention times (on the order of a week or more) to settle out particles of fine sediment to which pollutants such as heavy metals adsorb, and to allow biologic activity to occur that metabolizes nutrients and organic pollutants. For wetvaults, the permanent pool of water is covered by a lid which blocks sunlight from entering the facility, limiting light-dependent biologic activity.

R/D Facility - Retention and detention facility. A type of drainage facility designed either to hold water for a considerable length of time and then release it by evaporation, plant transpiration, and/or infiltration into the ground, or to hold surface and storm water runoff for a short period of time and then release it to the surface and storm water conveyance system. Also called flow control facilities.

Revenue Bond – A bond that is sold and paid for by a specific purpose and source. Examples are water, and wastewater projects where the fees for those service make the payments for the funds.

Riparian - Pertaining to the banks of rivers and streams, and sometimes also wetlands, lakes, or tidewater.

Riprap - A facing layer or protective mound of stones placed to prevent erosion or sloughing of a structure or embankment due to the flow of surface and storm water runoff.

Runoff - Water originating from rainfall and other precipitation that ultimately flows into drainage facilities, rivers, streams, springs, seeps, ponds, lakes, and wetlands as well as shallow groundwater.

Septic system - An onsite wastewater collection system

Sewer system - The system of pipes and pump stations that collect and transport wastewater from homes and businesses to a wastewater treatment plant.

Shoreline development - The proposed projects regulated by the Shoreline Management Act. Usually this includes the construction over water or within a shoreline zone (generally 200 feet landward of the water) of structures such as buildings, piers, bulkheads, and breakwaters, including environmental alterations such as dredging and filling, or any project which interferes with public navigational rights on the surface waters. Cedar Rapids does not have any areas where this applies.

Sphagnum bog wetlands - Unique wetlands having a predominance of sphagnum moss creating a substrate upon which a distinctive community of plants is established. Some of these include *ledum groenlandicum* (Labrador tea), *Kalmia occidentalis* (bog laurel), *Drosera rotundifolia* (sundew), and *Vaccinium oxycoccos* (cranberry). Stunted evergreen trees are also sometimes present. In addition to a distinctive plant community, the water chemistry of sphagnum wetlands is also unique. It is characterized by acidic waters (pH 3 to 5.5), low nutrient content, low alkalinity, and a buffering system composed predominantly of organic acids. In the Puget Sound area, mature sphagnum bog wetlands are typically very old, often dating back thousands of years.

Stream channel/bank erosion velocity - Velocity that without control, energy dissipation, streambank stabilization, or erosion prevention practices/structures will result in downstream erosion and streambank damage.

Stormwater - Stormwater is the water that runs off surfaces such as rooftops, paved streets, highways, and parking lots. It can also come from hard grassy surfaces like lawns, play fields, and from graveled roads and parking lots.

Stormwater Facility - Facilities that control the discharge of stormwater and that remove pollutants make up the bulk of the structural solutions applied to surface water problems. Stormwater facilities included storage facilities (ponds, vaults, underground tanks, and infiltration systems); water quality facilities (wet ponds, biofiltration swales, constructed wetlands, sand filters, and oil/water separators); and conveyance systems (ditches, pipes, and catchbasins).

These systems are most often built in conjunction with new development, but include regional facilities designed and constructed by the Department of Natural Resources.

Once constructed, stormwater facilities require on-going maintenance to ensure they continue to perform as intended. Maintenance of storage facilities typically includes the removal of accumulated sediment and debris, routine mowing, and minor repairs to mechanical appurtenances. Management of water quality facilities is more complex, requiring intensive vegetation management, inspection and maintenance of flow control features, and restoration or replacement of filter media. The City of Cedar Rapids plays an active role in the management of three categories of stormwater facilities: residential, commercial, and regional. These three terms are defined in the following paragraphs.

Stormwater Facility, Regional - Regional stormwater facilities are constructed and/or managed the City of Cedar Rapids. They typically serve large areas with a variety of land uses, and are intended to address problems resulting from large storm events. Examples of regional facilities include pump stations, regional storage facilities, sedimentation ponds, and enclosed drainage systems. These facilities are inspected annually and maintained by Public Works Department.

Stormwater Facility, Residential - A residential stormwater facilities typically serve all or part of a single development and are built on a tract dedicated to this purpose. While the design and construction of these facilities is the responsibility of the developer, the City of Cedar Rapids approves the development and ultimately assumes responsibility for their long-term operation and maintenance.

Stormwater Facility, Commercial - Commercial developments (which include businesses, apartments, and condominiums) are subject to stormwater management regulations that are similar to those applied to residential developments. However, unlike stormwater facilities in single family residential neighborhoods, commercial facilities remain the property and responsibility of the commercial landowner or manager.

Sewer Maintenance staff conduct inspections on a 10 year of commercial facilities to identify maintenance needs for the property managers. In return for completion of the necessary maintenance, property owners receive a discount on their annual Surface Water Management (SWM) fees. Without this inspection service, commercial facilities often do not receive adequate maintenance.

Stormwater Management - The application of site design principles and construction techniques to prevent sediments and other pollutants from entering surface or ground water; source controls; and treatment of runoff to reduce pollution.

SMP (or SWMP) - Stormwater Management Program

State Revolving Fund (SRF) – An Iowa state program to provide bond funds to pay for water, and wastewater projects.

Storm drain system - The system of gutters, pipes, streams, or ditches used to carry surface and storm water from surrounding lands to streams, lakes, or Puget Sound. Also see Conveyance System.

Stormwater runoff quality - The post-construction stormwater runoff from the development site is managed to improve the water quality. A common water quality goal is to remove at least 80% of the calculated average annual post-development loading of total suspended solids (TSS) from the site. However, based on local water quality conditions, jurisdictions might use other parameters, i.e., nutrients.

Structural BMP - Constructed facilities or measures to help protect receiving water quality and control stormwater quantity. Examples include storage, vegetation, infiltration, and filtration.

Swale - A shallow drainage conveyance with relatively gentle side slopes, generally with flow depths less than one foot.

SWMP (or SMP) - Stormwater Management Program

Tightline - Typically a continuous length of pipe used to convey flows down a steep or sensitive slope with appropriate energy dissipation at the discharge end.

TMDL - A TMDL or Total Maximum Daily Load is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. Water quality standards identify the uses for each waterbody, for example, drinking water supply, contact recreation (swimming), and aquatic life support (fishing), and the scientific criteria to support that use. The Clean Water Act, section 303, establishes the water quality standards and TMDL programs.

Toxic - Poisonous, carcinogenic, or otherwise directly harmful to life.

Total suspended solids (TSS) – A measure of solids in a given volume. The higher the number, the lower the clarity or ability to see through the fluid.

US Army Corps of Engineers (USACE) - The USACE has authority over public waterways. This jurisdiction includes:

- All waters susceptible to use in interstate or foreign commerce
- All interstate waters, including interstate wetlands
- All other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce
- All impoundments of waters

- Tributaries of waters identified above
- Wetlands adjacent to waters (other than waters that are themselves wetlands)

Water Quality Ordinance - The City of Cedar Rapids Code 72 that provides City staff the authority to regulate stormwater quality in Cedar Rapids. The code makes it unlawful for any person to discharge any contaminant into surface and storm water or ground water. Discharge is broadly defined to include indirect discharges associated with storm water runoff, and direct discharges through spills, dumping or other releases of contaminants. Any illicit connection to the storm sewer system or a water body is also prohibited. This section of the code, however, also lists ten actions or substances as being allowable discharges, such as runoff from lawn watering, potable water line flushing, and residential car washing.

Water quality treatment facility - A drainage facility designed to reduce pollutants once they are already contained in surface and storm water runoff. Water quality treatment facilities are the structural component of best management practices (BMPs); when used singly or in combination, WQ facilities reduce the potential for contamination of surface and/or ground waters.

Water Quality Volume (WQv) (acre-feet) - Treat the runoff from 90% of the storms that occur in an average year. For Iowa, this equates to providing water quality treatment for the runoff resulting from a rainfall depth of 1.25 inches or less. Goal is to reduce average annual post-development total suspended solids loadings by 80%. $WQv = (Rv)(A)(P)/12$, Rv = site runoff volume coefficient, A = site drainage area (acres), P = design rainfall depth (90% cumulative frequency depth) (~ 1.25 inches)

Wetland - An area inundated or saturated by ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (U.S. Army Corps of Engineers Regulation 33 CFR 328.3 (1988)).

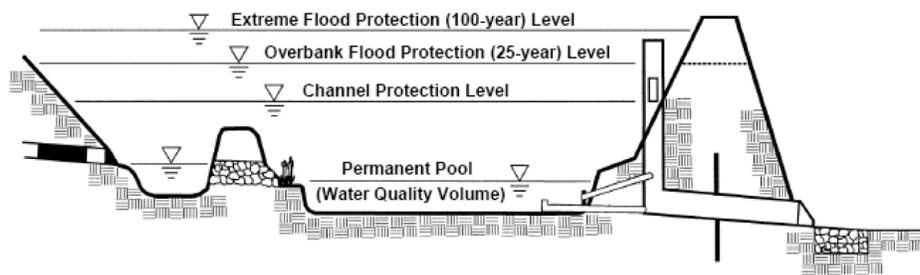
Wetland delineation - Identification of Section 404-regulated wetlands requires wetland delineation by the USACE, the EPA, or by submission of a wetland delineation report to the USACE by a qualified wetland specialist. Wetland delineation is often requested or contracted by a property owner who needs to know restrictions on the development or use of the land. In particular, a property owner may need wetland delineation when seeking an individual or general permit.

Wetland mitigation - Every effort should be made at the beginning of a project to avoid or minimize impacts. Any project that does not meet the conditions of any one of the Nationwide Permits must be sent to the USACE and probably will require satisfactory mitigation for the loss of wetlands. Mitigation is defined as wetland restoration, creation, enhancement, or preservation for the purpose of compensating for unavoidable wetland losses in advance of development actions, when such compensation cannot be achieved at the development site or would not be as environmentally beneficial. Compensation of impacted resources is only accepted if mitigation occurs in the following sequence:

- 1) Avoid direct or indirect impact by not taking a certain action
- 2) Minimize impacts by limiting the degree of action

- 3) Rectify the impact by repairing, rehabilitating, or restoring the affected environment
- 4) Reducing or eliminating the impact over time by preservation and maintenance operations
- 5) Discharge of stormwater into jurisdictional wetlands is to be avoided
- 6) Compensating for unavoidable impact by replacing or providing substitute resources:
 - Replace or provide substitute resources on-site
 - Replace or provide substitute resources off-site at an approved location, owned by either the project sponsor or a federal, state, or local conservation entity
 - Purchase compensatory credits at an approved wetland bank

Unified stormwater sizing criteria - An integrated set of engineering criteria developed to size and design structural controls intended to be used collectively to address the overall stormwater impacts from a development site. When used as a set, the unified criteria control the entire range of hydrologic events, from the smallest runoff producing rainfalls (≥ 0.1 -inches) to the 100-year storm.



Watershed - The area of land where all of the water that is under it or drains off of it goes into.

Wet pond – Retention Basin

Wet vault - Drainage facilities for water quality treatment that contain a permanent pool of water. They are designed to optimize water quality by providing long retention times (on the order of a week or more) to settle out particles of fine sediment to which pollutants such as heavy metals adsorb, and to allow biologic activity to occur that metabolizes nutrients and organic pollutants. For wet vaults, the permanent pool of water is covered by a lid which blocks sunlight from entering the facility, limiting light-dependent biologic activity.

(Source – Iowa Stormwater Manual, and King County, WA Storm Services)