



glossary



Glossary

Abbreviation	
ACWA	Agriculture's Clean Water Alliance
BMP	Best Management Practice
CAFO	Confined Animal Feeding Operation
CWA	Clean Water Act
DMWW	Des Moines Water Works
FEMA	Federal Emergency Management Agency
FIB	Fecal Indicator Bacteria
FIRM	Flood Rate Insurance Map
GIS	Geographic Information Systems
IDALS	Iowa Department of Agriculture and Land Stewardship
IDNR	Iowa Department of Natural Resources
ISA	Iowa Soybean Association
ISWMM	Iowa Stormwater Management Manual
LiDAR	Light Detection and Ranging
MCL	Maximum Contaminate Level
MPN	Most Probable Number of organisms
NOAA	National Oceanic and Atmospheric Administration
NOD	Notice of Discontinuation
NRCS	National Resources Conservation Service
POTW	Publicly Owned Treatment Works
QAPP	Quality Assurance Project Plan
RC&D	Resource Conservation and Development
RECPs	Rolled Erosion Control Products
SMP	Soil Management Plan
SQR	Soil Quality Restoration
SUDAS	Statewide Urban Design standards And Specifications
SWPPPs	Storm Water Pollution Prevention Plans
TMDL	Total Maximum Daily Load
TRMs	Turf Reinforcement Mats
USGS	United States Geological Survey
WRCC	Water Resources Coordinating Council

Term	Definition as related to the context of this plan
absentee landlord	<i>A property owner who rents land for farming, but gives little or no oversight to the methods of farming or conservation practices used within their property.</i>
agronomist	<i>A person who studies properties of soils and/or plants and uses them to improve agricultural production.</i>
algae	<i>There are many types of algae, but those most common to this watershed are microorganisms that grow on the surface of freshwater ponds and streams.</i>
algal blooms	<i>When nutrient levels are high, growth of algae can be accelerated leading to algal blooms. These are large groups of algae which collect in a common area.</i>
annual	<i>The total or average value of something over a calendar year.</i>
annual exceedance probability	<i>The chance a storm event or flood of a certain depth will be equaled or exceeded in any given year.</i>
bioreactors	<i>Refer to Chapter 15 for details on rural best management practices.</i>
bioretention	<i>Refer to Chapter 15 for details on urban best management practices.</i>
bioswales	<i>Refer to Chapter 15 for details on urban best management practices.</i>
buffers	<i>A separation between a stream and adjacent land uses (either urban or agricultural) which feature grasses, forbs, trees and shrubs which filter and clean runoff before it can enter a stream. These areas usually provide important habitat to a variety of species.</i>
canopy	<i>An area under the expanse of branches and leaves from a tree or tree group.</i>
channel protection volume	<i>One element of the Unified Sizing Criteria within the Iowa Stormwater Management Manual. Practices designed to address this element will capture runoff from a 1-year storm (2.67" in 24-hours) and slowly release it over a period of 24-48 hours. Peak flows from such an event are typically reduced by more than 95% by these practices.</i>
Clean Water Act	<i>A federal law originally passed in 1972 which was intended to reduce surface water pollution. Most current federal regulations related to surface water quality are based on this law.</i>
common plan of development	<i>A term used in Iowa's NPDES General Permit No. 2 which governs pollution prevention and water quality protection from construction sites. It is usually a parcel or adjacent parcels of land which are planned to be developed in phases over a period of time. Permit coverage is required for common plans of development which will disturb more than one acre of land. This term is used in the permit requirements to prevent land from being developed in many smaller phases to avoid the requirement of a permit.</i>
complementary benefits	<i>Not the primary intended benefit of an improvement or practice, but a secondary benefit of value.</i>
concentrated flow	<i>Where runoff is funneled to flow more rapidly in a narrow path.</i>
conservation tillage	<i>Practices that reduce that reduce disturbance of the soil or leave additional crop residue in fields to resist erosion.</i>
constructed wetlands	<i>Refer to Chapter 15 for details on best management practices. There are varieties of these to treat runoff from both urban and rural land uses.</i>
contour planting	<i>Planting crops so that rows are placed "on contour" or across the slope. Runoff is forced to run perpendicular to the rows, reducing flow velocities and reducing erosion.</i>
cover crops	<i>Refer to Chapter 15 for details on rural best management practices.</i>
Des Moines Lobe	<i>A section of the Wisconsin Glacier which pushed into what is Central Iowa today.</i>
designated uses	<i>An official category of public uses of a stream, as defined by the State. These may include items such as public recreation, fishing and water supply.</i>

detention basins	An urban BMP which reduces downstream runoff rates by having outlet controls which restrict flows to a certain level. The limited outflow rate forces water to build up within a depression or pond upstream, being stored or "detained" and released more slowly over an extended period of time.
dewatering	Removing water from a trench or other depression during construction, usually by pumping.
dioxins	A variety of highly toxic chemicals which is able to be absorbed by fatty tissue, able to remain present within the body of animals and humans for a long period of time.
direct surface runoff	Water that runs off the surface of the landscape without infiltrating into or percolating through soil or aggregate layers.
discharge	Stormwater that leaves a site and enters a pipe or surface water.
disturbed areas	An area of land where vegetation or other surface coverings are removed to accommodate grading or other construction related to urban land development.
E.coli	A species of bacteria that is commonly originates in the intestines of warm blooded animals. They may grow aggressively for a period of time in fecal matter, food or other media in the external environment. It is a fecal indicator bacteria currently used by the State to measure growth factors in the environment that would likely foster survival or growth of other pathogens (viruses and bacteria) which could pose risks to human health.
easements	A restriction placed on a piece of property which limits its use in favor of another purpose. For example, a drainage easement may restrict construction of structures, fences or other items which could prevent the safe flow of water through a drainage channel.
edge of field	A set of BMPs which are usually located along the boundaries between a field and a stream or other drainage outlet.
ephemeral flow	Channels or streams which only flow for hours or a few days after rainfall events or snowmelt.
erodibility	A soil property which indicates how likely a soil is to be eroded. Different soils have a coefficient assigned for this property that is used in the Revised Universal Soil Loss Equation to predict annual rates of soil erosion.
erosion controls	BMPs that are used to protect soil particles from being loosened from the surface of the ground by rainfall or concentrated flows.
extended crop rotations OR extended rotations	Adding alfalfa or other crops into a rotation of crops to rebuild organic matter in topsoil. Refer to Chapter 15 for rural best management practices.
fecal coliform	A species of bacteria that is commonly originates in the intestines of warm blooded animals. It is a fecal indicator bacteria which was formerly used by the State to measure growth factors in the environment that would likely foster survival or growth of other pathogens (viruses and bacteria) which could pose risks to human health.
flood event	A measure of stream flow related to a given level of rainfall, or a precipitation event which causes flow in a stream to exceed its banks and spread across into the adjacent low lying areas.
flood protection elevations	An established level where building structures must be placed above or have other protections in place to prevent damage from flooding.
flood storage	The volume available within a flood plain to temporarily store water.
flow	Water moving in a concentrated path.
fluvial geomorphology	The study of how stream conditions change over time.
full establishment of vegetation	A term used in Iowa's NPDES General Permit No. 2. When the desired permanent vegetation grows densely across all areas which were disturbed by construction, other than those areas covered by paving, structures or some other permanent stabilization technique.
gage height	The measured depth of flow above a set datum (base level) at a gaging station. At each station, the gage height at which flooding occurs is known.

GIS databases	Sets of information which include the location and properties of a variety of features which can be mapped using a given coordination system.
GIS layers	Groups of features of a similar type which can be mapped over each other on a similar coordinate system. Layers can be used to set how features such as parcels, land uses, utilities, roads, streams, etc. are displayed on maps.
growing season	The length of time where plants can grow, measured by consecutive frost-free days.
headwaters	The places where streams originate, or the furthest points from the mouth of the stream.
high quality resource	Waterbodies which have substantial recreational or ecological significance, requiring special protection.
historic channel locations	Places where streams used to flow, but have moved over time to flow along a parallel path.
hydraulic	Studies of the direction and velocity of moving water.
hydric	A soil that was historically saturated by water (either permanently or seasonally). These soils are used to determine where wetlands were most likely located in the past.
hydrologic	The study of the properties and movement of water across the surface of the earth.
hydrologic soil group	Soils are often grouped into four categories which measure the soils ability to infiltrate and percolate. Group A soils allow more free movement of water, while Group D soils offer more resistance to water movement.
hypoxia	A state of low dissolved oxygen levels in water, which can lead to the death of fish and other aquatic species.
impaired waterway	A waterbody which has poor water quality or other conditions which limits its ability to support its designated uses.
impermeable	A layer or feature that does not allow water to easily pass through it.
impervious surface	Buildings, pavement or other surface conditions which virtually eliminate water's ability to infiltrate into subsoil layers.
individual development scale	A stormwater BMP which is employed at a individual site or land development, usually having a smaller watershed area.
in-field	Rural BMPs which are applied within agricultural fields.
infiltration	Water entering the surface of the soil.
inlet protection devices	A BMP which is placed at the entrance to a culvert or storm sewer system to reduce the amount of sediment that is able to enter the pipe network.
intermittent flow	Streams which often have little or no flow for weeks or months at a time.
inundation map	A map that shows the area of land which will be covered by floodwaters for a given flood event.
invasive species	An animal or plant species with limited predators or other conditions that limit its reproduction. The species has the ability to grow rapidly to levels which negatively impact biodiversity by reducing habitat for other desirable species. Usually, invasive species are not native to the local environment.
j-hooks	Where sediment controls such as silt fences and wattles are turned upslope at the ends to increase the volume for water storage upstream of the control.
key sources	The primary land uses or areas where a type of pollution is expected to originate from.
land subdivisions	Areas of urban growth where larger parcels are subdivided into smaller parcels, usually involving the installation of streets and utilities to support construction of new buildings on the new parcels.
living mulches	Refer to Chapter 15 for details on rural best management practices.

local design standards	Requirements set by cities and counties to govern design of new developments.
long term maintenance	Maintenance requirements which are expected to occur at regular intervals for an indefinite period of time.
low to medium density residential	Single family homes or townhomes developments, usually less than 6 units per acre.
manure management	Plans required by the state to be developed for CAFOs for the storage, disposal or use of the manure wastes collected.
maximum contaminate levels	The highest concentration allowed of a certain pollutant to allow for a waterbody to support its designated uses.
mean	The average or the calculated middle value of a series of numbers.
micro-watersheds	The smallest divisions of drainage areas used by this plan, ranging from a few acres to about 250 acres in size.
mitigate	To offset the impact or effect of something. For example, wetland mitigation is done by creating additional new wetlands when others are lost.
monitor OR monitoring	Testing for water quality conditions by using test kits or by collecting samples for laboratory testing.
monitoring program	An detailed program to collect water quality data through monitoring and analyze the results. The program usually follows a QAPP to insure that data is collected accurately using consistent methods.
neurological	Related to the nervous system, including the brain, spine and the connecting nerves.
nitrification inhibitors	Chemicals that slow the conversion of fertilizer into nitrate.
NOAA Atlas 14	Updated tables of rainfall data that has been developed for most of the United States which was issued in 2013. Atlas 14, Volume 8 Version 2.0 includes data relevant to the State of Iowa.
non-point source	Pollutant sources that are distributed throughout the landscape, such as construction sites, most agricultural operations and urban developed areas.
normal	An average value over a more recent, defined period of time. For example, normal high temperatures are based on the average value for a given date or month over the most recent 30 years on record. Unless noted otherwise, the term normal used in this report refers to average values over the most recent 30-year period, ending in either 2014 or 2015.
nutrient management plans	A plan that defines how nutrient fertilizers are applied for agricultural operations. They include the location, schedule, application rate, chemical form and method of application.
off-site tracking	When sediments or other debris are carried by vehicle or equipment out of construction sites and are deposited on adjacent roadways or properties.
outlot	An open parcel of land that is not currently buildable, either reserved for future development or set aside as open space. Outlots are commonly used when a water feature or open space is held by either a public or private group to be used for the benefit of multiple land owners.
pathogen indicator bacteria	See FIB (fecal indicator bacteria).
pathogens	Items which can produce disease or infections such as various forms of viruses, bacteria, parasites and fungi.
peer-reviewed	Articles or studies which have been evaluated by experts in related fields for accuracy in the methods and procedures used to complete the work.
percolation	Water moving through void spaces in soils or other media.
perennial flow	Streams or rivers which will have continuous flow year round during periods of normal rainfall.

perennial vegetation	For the purposes of stormwater permitting, this refers to a desired mix of plant species which will grow back year after year. Temporary vegetation are grasses or other plants used for surface cover which typically only last one growing season.
perimeter site controls	Erosion or sediment controls placed near the boundaries of a construction site to prevent sediment from being washed or tracked onto adjacent properties or roadways.
photosynthesis	The process that plants use light to convert carbon dioxide and water into carbohydrates which they use to fuel their growth.
point source	A specific, individually regulated potential source of pollution, such as a wastewater treatment plant or confined animal feeding operation.
pollutant concentration	A measure of the amount of any pollutant present at any given time. Most chemical pollutants are measured by the weight present within a certain volume, such as milligrams per liter (mg/L). Biological concentrations may be in the most probable number of organisms (MPN) present in a certain volume, such as 100 milliliters (MPN / 100 mL).
pollutant loading	A total amount of a pollutant present in a stream over a set period of time, usually measured in units of weight (pounds, tons, etc.) Pollutant loading in streams is generally equal to pollutant concentration multiplied by the flow volume.
pollutants of concern	Chemicals, biological organisms, sediments or other factors that are known to be present at concentrations or volumes where they have a significant impact on stream functions, habitat, human health or the safety of people, private property or public infrastructure. Elements of this plan are specifically designed to address the pollutants of concern.
pothole	Shallow depressions located in flat areas below what was once covered by glaciers. These areas were most likely wetlands before they were drained by systems of tiles and ditches to improve agricultural production.
precipitation	Water falling from the sky in forms such as rain, snow, sleet or hail.
pre-settlement	Conditions that would have been expected prior to pioneer settlement which occurred in Iowa in the mid-1800s.
priority impairments	Impairments related to the largest sources of the key pollutants of concern identified within this study.
publicly owned treatment works	A facility owned by a city or other municipality for the treatment of wastewater (i.e. Dallas Center's Wastewater Treatment Plant).
quality	Managing for water quality means putting in place practices that reduce the presence of pollutants in any water discharged from a given site or area.
quantity	Managing for water quantity means using practices to reduce the volume or rate of flow being discharged from a given site or area.
rate of runoff	A measure of flow leaving a certain area, by volume over a certain period of time (such as cubic feet per second, or cfs).
regional stormwater management	Using larger scale practices to manage stormwater runoff for multiple properties or developments.
regulatory 100-year flood plain	Areas expected to be covered by floodwater during a 100-year flood (or a flood with 1% annual exceedance probability) as defined by flood rate insurance maps that are issued by FEMA.
respiratory	The system of organs in animals related to breathing.
routed	The method of passing larger flows through practices that have storage volume, such as ponds or detention basins. In analysis, comparison graphs are computed showing the inflow rate, outflow rate and the volume or depth of ponded (stored) water.
row crop	Agricultural products such as corn and soybean which are grown in rows.
runoff volume	The amount of runoff leaving a certain area measured in units of volume, such as cubic feet or acre-feet.
sampling	The process of testing for water quality by use of kits or collecting small volumes of water for laboratory testing.

savanna	An area where trees are present, but are spaced sufficiently so that light passes through the canopy to support grassland vegetation below.
sediment basins	In urban areas sediment basins are created by temporary excavations or dams which collect runoff from construction sites, allowing heavier suspended sediments to settle out of solution before the water is discharged. For rural settings, refer to Chapter 15 for details on rural best management practices.
sediment controls	BMPs that are used to capture soil particles which are suspended in stormwater runoff.
setback	A specified distance where structures or private property must be separated from a certain feature, such as a stream, utility, roadway or property line.
short term maintenance	Maintenance requirements which are expected to occur at regular or irregular intervals in the first few years after construction or establishment.
silt fences	A sediment control BMP which is an impermeable, synthetic fence stretched between metal posts used to capture runoff from construction sites so that sediment can settle out of solution upstream of the fence, preventing most of it from being washed off-site.
single-family land development	A subdivision of property into multiple parcels, each having only one dwelling unit which are not directly connected to any other dwelling unit.
snapshot	Water quality sampling events which are conducted only once or twice a year.
soil logs	A sediment control BMP which is a tube created by a netting or other synthetic material typically filled with compost, aggregate and seed. They are often installed along slopes to reduce the potential for erosion or with "J-hooks" to capture runoff and allow sediment to settle out on the upstream side. They can also be used along shoreline or edges of streams to establish vegetation and prevent erosion.
source	The area or land use where a key pollutant is expected to originate from.
stabilized construction entrances	A perimeter control where rock or gravel materials are used to remove sediment from the wheels of vehicles or equipment before they leave a construction site.
stage-storage	A graph, table or other relationship that shows the relationship between the water elevation in a practice and the volume of water that is being stored. These relationships are used in "routing" calculations.
stop work orders	A notice issued by a city or other enforcement agency used to stop any work on a construction site until proper pollution prevention best management practices are in place and in good working order.
Strahler method	A method of stream classification used to classify streams where headwater perennial stream are classified as first order. The confluence of two first order streams yields a second order stream. Where two second order streams meet, a third order stream is formed. Refer to Chapter 2 for more information.
stream migration	Patterns of stream movement over time.
stream order	A classification of streams into orders such as first, second, third, etc. based on the Strahler method. For this plan, significant paths of flow that were noted that have not been classified by the IDNR as first order or larger streams are referred to as "zero order" streams.
subsurface tile drainage	A system of perforated drains used to more rapidly drain groundwater from landscapes. Tile drainage systems have been used extensively in agricultural areas within the Walnut Creek Watershed as early as the late 1800s.
subsurface water control	Installing control structures that allow tile drainage flows to be stopped, released or diverted to another pipe.
subwatersheds	Larger divisions of drainage areas used by this plan. These areas vary greatly in size, but their average size is approximately 2.5 square miles (1600 acres).
temporary sanitary facilities	Portable restroom facilities used at construction sites or where more permanent restroom facilities are not available.

temporary seeding and mulches	An erosion control BMP where a fast growing temporary cover crop (such as rye or oats) or a mulch is used to reduce the potential for surface erosion.
terracing	Refer to Chapter 15 for details on rural best management practices.
time of concentration	The longest time it takes for runoff from a given area to travel from all the most distant points to the outlet (or another point of interest).
topography	The shape of the surface of the earth.
TR-55	A software program developed by the NRCS (originally as the Soil Conservation Service) that calculates the runoff volumes and rates of flow from small urban and rural watersheds.
traditional stormwater management	For the purpose of comparisons within this report, this term means management systems designed to capture runoff from a 100-year storm event and release it at peak rates that would be similar to those expected from a 5-year event under agricultural conditions. This assumes that such systems would be designed using techniques such as TR-55 and stage-storage routing.
transpiration	The process where water is moved from the roots, up through plants and evaporated into the air.
travel times	The time it takes surface runoff to pass from one point of interest to another.
tributary	A smaller stream which ultimately drains into a larger stream.
typical flow curve	For the purpose of this report, this term is defined as a graph of the normal stream flow expected for a given date, which has been calculated by finding the average flow for a 30-day period centered on a given date. For example, the average flow for January 15 is calculated by averaging flow observations that have been measured between January 1 and January 30. These values were calculated from flow observations at a USGS gaging station from October 1971 to August 2015.
understory	Smaller trees or shrubs which sometimes grow below the canopy of taller trees.
water quality event	A storm event of certain depth, where 90% of all events observed have been equal to or smaller. In Iowa, a water quality event has been established to be 1.25" in depth.
water quality impairment	When a pollutant is found to be in sufficient concentration through monitoring or other observations to have a significant negative effect on the designated uses of a waterbody.
water quality modeling	Computer calculations completed using software programs to predict pollutant loads and their sources.
water quality standards	Levels established by state or federal agencies that are allowed to be present in surface waters before the designated uses of waterbodies are negatively impacted.
water quality volume	One element of the Unified Sizing Criteria within the Iowa Stormwater Management Manual. Practices designed to address this element will capture runoff from a water quality event and use BMPs to treat this volume.
watershed	An area of land that drains to a common point of interest.
watershed scale	Practices that are applied across a broad area, or that are to be applied more broadly across all areas draining to Walnut Creek.
wattles	A sediment control BMP which is a tube created by a netting or other synthetic material filled with straw or mulch. They are typically installed along slopes to reduce the potential for erosion.
wet detention ponds	A pond which holds a permanent pool of water, which has space above to temporarily detain runoff after rainfall events.
wetlands	An area with hydric soils, which is permanently or seasonably saturated with water allowing the establishment of certain aquatic plants. Existing wetlands are protected by various environmental laws. Refer also to the definition of constructed wetlands.
Wisconsin Glacier	One of the most recent glaciers which extended across large parts of the upper Midwestern United States.

