

City of O'Fallon, Missouri

Stormwater Management Policy



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Stormwater Management Policy**

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City of O'Fallon

Stormwater Policy

Purpose

The purpose of this policy is to establish procedures for investigating storm water damage and other concerns reported to the City to determine responsibility, public or private, for corrective action.

The process that follows is to define and follow an orderly path of transition from an understanding that stormwater is essentially a private responsibility in which the City intervenes only in emergency situations to one where stormwater is considered a public infrastructure with both public and private responsibility.

History

June 2008 – Ordinance #5337 provides that no more than 3 cubic feet per second (cfs) shall flow in a man-made swale (excluding creeks) during a 15 year design storm event. Flows in excess of this amount need to be piped in a public or private storm sewer.

August 1987 – Prior to June 2008, the threshold of flow requiring a piped system was 4 cfs (Ordinance #1499)

Prior to 1987 – Drainage standards were less stringent and not consistently applied

Due to the different ordinances, each development within the City will have a different level of standards applied depending on when it was approved

Note – Events that exceed a design storm event will have flows that exceed the aforementioned amounts specified.

Missouri Law – Disposing of Surface Water

Modified Common Enemy Rule - The Missouri courts adopted this rule in 1884. Under this doctrine, an upper landowner was required to exercise reasonable care in diverting surface water onto a lower landowner's property. However, the lower landowner was free to take unrestricted action to divert surface water coming on to his property from upstream, provided the action did not obstruct a natural watercourse.

Rule of Reasonable Use - In 1993, the Missouri Supreme Court abandoned the Modified Common Enemy Rule and adopted the Rule of Reasonable Use to determine civil liability in cases involving the diversion or obstruction of surface water, whether by an upper or lower landowner (*Heins Implement Co. v. Mo. Hwy. & Trans. Commission*, 859 S.W.2d 681 [Mo. 1993]). The court ruling stated that

reasonableness of interference of flow of surface waters is a question of fact, to be determined in each case by weighing the gravity of harm to the plaintiff against the utility of the defendant's conduct.

In 1998, the Missouri legislature enacted a provision in Section 644.018 of the Missouri Revised Statutes specifying that in any case involving a flood prone area, if any defendant has obtained and fully complied with a permit from a local subdivision that has met the requirements of and is a participant in the NFIP, and the subdivision has jurisdiction over the area of dispute, then the proper permitting and compliance with all permit conditions shall be conclusive proof that the project meets any reasonable use test.

General Policies

If a property backs up to a storm sewer system, creek or stream, that creek/stream is located in an area owned and maintained by the Home Owners Association (HOA) for the subdivision (see or request Record Plat for clarification) or within private property. Therefore, creek bank stabilizations can be somewhat costly and while the adjacent homeowner or HOA should have had the understanding that creeks do meander and erode, the City has recently created a Stormwater Fund to help with certain projects.

To report a stormwater concern, someone must first contact the Stormwater Group by contacting stormwater@ofallon.mo.us or the street department at 636.379.3808. Based on the concern, a work order will be developed and will be supplied to either the Stormwater Foreman for minor concerns or the Stormwater Coordinator for more complex concerns. In both cases, they will contact the concerned party within one business day to touch base and describe our process and their schedule as to when we can review the concern.

For a minor concern, the foreman will evaluate the situation and if it is something the City is responsible for, the work order will be updated and the concern will be added to our maintenance schedule. If it is deemed a private matter, the foreman will contact the concerned party by phone and mail to discuss/describe the situation and provide assistance, as needed in accordance with the policy below, and the work order will then be closed out. If the concern turns out to be more complex than first anticipated, the foreman will turn the work order over to the coordinator. For more detail, please refer to the written procedures included in Appendix B.

For a more complex or major concern, the coordinator will perform an initial evaluation of the concern and determine if the concern is a matter the City can assist with as described later or if it is a private matter. Similar to the minor concerns, if it is deemed private, the coordinator will contact the concerned party and provide assistance as addressed in the policy and close the work order out with a letter to them. If the concern is deemed something the City will resolve or assist, the coordinator will evaluate the concern in more detail and provide a Category and Priority Rating to the concern.

After a concern has been evaluated and provided a category and rating number, the City will perform a conceptual design of the solution and evaluate the affected residents and the concern will added to the Stormwater priority list. The City will then need signed letters of understanding from the affected property owners prior to performing additional work on this project. A letter of understanding is not

an easement or an agreement, it is merely an agreement between the City and the affected parties that they are willing to work together throughout the process and take a common sense approach on temporary and permanent easements. It is also important to understand that since the project will enhance the affected properties owners, it is not in the City's best interest to pay for necessary easements since the storm improvements are not within City property and the funds can be better utilized for design and construction of this project.

Once the City has received the aforementioned letters of understanding, the stormwater coordinator and plan review group will evaluate the situation further and put together a concept study of the problem as well as several solutions with associated cost estimates. After this is done, the project will be placed within in its particular Category and relevant order based on Priority Rating and will then be budgeted appropriately within the constraints of the yearly budget when funding becomes available.

Public vs. Private Responsibility

Resolution of Drainage Concerns

Pursuant to City Ordinance and state law, the City cannot undertake drainage improvements on private property except where an easement exists or the protection of life or property requires emergency efforts. The City reserves the right to determine when an easement is necessary to install or maintain drainage facilities. The City may require a property owner to sign a release to permit access onto private property to facilitate these projects.

General: Residents, business owners, and developers have drainage concerns regarding their property or adjoining property. Once these concerns are brought to the City's attention, the process by which these are addressed shall follow a specific set of criteria. This section is intended to define those specific criteria for addressing these issues.

Stormwater drainage that relates to the conveyance of surface water, including but not limited to City Owned creeks/streams and storm sewer infrastructure are maintained by the City. The maintenance of these channels may be done by City departments or their contractors as needed for emergency services or as part of a maintenance program.

Localized stormwater drainage relates to the conveyance and storage of stormwater from a subdivision or large group of properties, creek/stream, and storm sewer infrastructure. These facilities are typically owned by the City or are under easement to the City such as storm sewer structures, pipes, inlets, etc.

Site specific drainage relates to the conveyance of stormwater from a single or small group of properties, and storm sewers. These facilities are typically not owned or maintained by the City and are not under easement to the City such as swales, smaller diameter pipes, etc

City Assistance

Each stormwater concern will be reviewed and placed in a specific category and then have a specific rating attached to the concern. The four priority levels (PL) are as follows:

- PL-1 – Flooding or erosion with potential structural failure of home structures or City infrastructure including perennial streams with stream order number of 2 or higher (this will be explained later)
- PL-2 – Drainage areas that should have public sewers that do not
- PL-3 – Private concern desiring to participate in a 50/50 program
- PL-4 – Public Infrastructure concerns (routine maintenance)

If a project is deemed to be within PL 1 or 2, the project will not be approved for public funding until the applicants provide a signed statement from all adjoining property owners, including their street address, stating that they have approval of the project and agree that they will donate any easements necessary for the completion of the project. However, an exception can be made for properties not being improved by the project where payments can be made to acquire easements. If the project is deemed to be within PL 4, the repairs will take place when the work order can be addressed.

All proposed projects shall meet City of O’Fallon, Army Corp of Engineers and Missouri Department of Natural Resources guidelines.

Creek banks:

The City must be very careful when assisting individual reported lot concerns of creek bank erosion or stabilization. Therefore, the number of lots affected must typically include more than one; however, exceptions may be considered. All creek bank concerns will be evaluated on a case by case basis and must be adjacent to a City maintained creek.

There are three types of streams, Perennial, Intermittent and Ephemeral. They are defined as follows:

- Perennial – A watercourse that flows throughout a majority of the year in a well-defined channel
- Intermittent – Watercourse that flows in a well-defined channel only in direct response to precipitation; such a stream is dry for a large part of the year
- Ephemeral – A channel that carries water only during and immediately following rainstorms. Sometimes referred to as a dry wash. Ephemeral streams flow for less than 20% of the year during normal rainfall conditions

Appendix A is a stream order map of the streams throughout the City. While certain items on that map are being finalized, only Perennial stream order numbers 2 or higher will be addressed with PL 1 repairs. If a stream order number 1 or less is considered for PL 3, it will require a cost sharing between the City and the property owner(s).

PL-1 – City Assistance (Major Project)

(Two of the following must be met)

- A deficiency within a publically accepted storm sewer system or perennial stream
- Has clear potential for loss of life, damage to public infrastructure/property or damage to buildings
- Has had significant erosion on property (ies) within a stream order number of 2 or higher

PL-2 – City Assistance (Minor Project)

(Two of the following must be met)

- Have surface flows that exceed at least 3 cfs as calculated during a design storm event. Other factors will be considered after review of approved design requirements when area was developed
- Has clear potential for damage to public infrastructure/property or damage to certain private auxiliary structures (decks)
- Has had significant erosion on a single property due to a stream order number of 2 or higher

PL-3 – Partial City Assistance

If the creek with a stream order number of 1 or less affects multiple properties or a large stretch of common ground, the City will provide assistance splitting the costs 50/50 with use of the storm water tax fund and/or assistance by the use of a Neighborhood Improvement District (NID), Community Improvement District (CID) or other funding by developer, private group or citizen. The affected parties will enter into a NID or CID (or other similar arrangement) that allows the project to be funded initially by the City and then be paid back by members of the district through their tax assessments.

While the City will rate the concern and put it on the list, it would be in the homeowner(s) best interest to take a proactive approach on the matter since this category will farther down the list and years away from funding.

PL-4 – City Assistance (In-house Maintenance Repairs)

Public Assistance Examples:

1. Sinkhole or erosion around the outside of a storm sewer in either back yard or front next to curb
2. Storm sewer is clogged or blocked and will not drain
3. Box culvert under public roadway is blocked with debris (City will only clean 3-feet outside of the box culvert within the creek)
4. Lid missing from structure that needs to be replaced
5. Storm sewer top in disrepair or shifted

Repairs of this level are mostly taken care of with the City's stormwater crew. Residents with concerns for this level should contact the street department at 636.379.3808 to report their concern.

Other

If the creek or creek bank concern does not fit into one of the categories for creek bank assistance stated previously, then it is considered normal property maintenance and the responsibility lies with the property owner. Examples of such reasons could be as follows:

- The creek bank erosion lies completely within the HOA property and has not directly affected multiple properties (single lot)
- The creek bank erosion has directly affected one property; however, it is not within 25-feet of a structure attached to the house
- The HOA or affected property owner has done something to the creek or creek bank to alter the natural flow of the creek
- The creek or creek bank is not being maintained correctly (i.e., dumping of debris into the area, not cleaning debris from creek, altering the creek bank, etc.)

No City Assistance

If your concern does not fit into one of the previous categories for City assistance, it is defined as a private concern that becomes the normal responsibility of owning property; the problem could be due to one of the following:

- Topography has changed due to a patio, swing set, deck, landscaping, pools, etc.
- Privacy fence or other item has blocked the drainage swale which is not in violation of a current City ordinance for Fencing Standards-400.273(c)(1), Nuisance Ordinance 200.020(21), Stormwater Quality Management and Illicit Discharge Control Section 405.245
- Discharge from a sump pump is not directed correctly to a drainage area or creates a semi to constant saturated zone of soil
- Private drainage system or underground gutter runoff not installed correctly or does not direct discharge to the appropriate drainage area
- You have a newly constructed home and the builder has not graded your yard correctly
- Over time, subtle changes in the ground can occur naturally which could create a low spot

The following is list of solutions to prevent or help private stormwater concerns:

- If you plan to change your swale for any reason or make significant yard changes, please contact the City for guidance or permits depending on the amount of changes to be done
- DO NOT block your swale
- Inspect and maintain all private stormwater systems and swales on your property and report any sinkholes above pipes or surrounding the structures to the City
- Install rain gardens or bio-swales to promote subsurface drainage and water cleansing
- Install rain barrel or underground storage systems to hold stormwater for your landscaping
- Reduce the amount of sprinkler use on your lawn

- Maintain private culverts located in front of a residential property that is incorporated with the driveway or in right of way adjacent to a road to prevent siltation and debris from allowing it to operate as intended

Residents can contact the City for review of a private system, but we will not fix matters that are deemed private. The City will provide guidance and potential recommendations; however, we will not direct how to resolve the problem/concern. There may be several causes of the reported site conditions and there may also be multiple remedies; therefore, the City will provide guidance and potential recommendations for addressing a residents concern. This may also include the recommendation for use of other professionals outside of City staff as well. Multiple remedies lead to multiple levels of designs/concepts and thus multiple costs and since the City will not oversee the actual work done, the City cannot take the liability of recommending one process over another.

Private-No City Assistance Examples:

1. Standing water or saturation in yard due to a Lot grading issue
2. Down spouts or sump drainage to swale or drainage area in back yard
3. French or other under drain installation (contact City if connecting to City infrastructure)
4. Culvert pipe and roadside ditch that is located on your property that is blocked or clogged
5. Erosion on a slope located on private property
6. Neighbors choice of landscaping that is causing drainage issue (not located in drainage swale per the plans)

Project Order and Rating for Major Projects

Each project that the City determines to be a public system or private system that the City will help fund will be analyzed and given a priority rating. However, each project will lumped into a category and the higher category will take precedence over the rating number and the categories again are as follows:

PL-1 – Flooding or erosion with potential structural failure of home structures or City infrastructure including perennial streams with stream order number of 2 or higher

PL-2 – Drainage areas that should have public sewers that do not

PL-3 – Private concern desiring to participate in a 50/50 program *1

PL-4 – Public infrastructure concerns *2

*1 – While this can be partially funded by the City, it is in the affected property owner(s) best interest to try and resolve this since it could be years before these projects are funded. Category 3 concerns for that particular year.

*2 – This category is budgeted on a yearly basis as a routine repair and maintenance items while levels 1, 2 and 3 will need to be budgeted on a yearly basis when the funding is available.

Maintenance

Publically Accepted Storm Infrastructure

Currently the City is in a reactive position with respect to stormwater concerns and we are working daily on making repairs. It is the City's goal to be able to obtain a more proactive approach and review storm systems on a continual and orderly basis which will help prevent smaller problems becoming larger. If you have a stormwater concern, please contact us at stormwater@ofallon.mo.us or 636.379.3808

Creeks (Order 2 and higher)

Since most of these stream lie completely within a property, it is typically the responsibility of the property owner(s) to clean their portion of the stream. However, due to the amount of water and debris possibly coming from upstream, the City has a volunteer program that assists the property owners that have a stream within their property. Two to three times a year, the City participates in a clean stream program, for more information or to have your area considered, please contact us at stormwater@ofallon.mo.us. If a log or debris jam has dammed up a portion of the creek within common ground or private property, it is the adjacent property owner's responsibility to resolve the blockage. However, since the debris may have come from upstream, the City can assist to an extent; if needed, please contact us to see how we can help with the concern.

Creeks (Order 1 and lower)

Since these types of creeks do not have water running through them continuously throughout the year, the maintenance of these systems will be up to the individual property owner(s)

Completed Projects

Whether it is completely financed by the City or partially, it is in the adjacent property owner(s) best interest to keep the new project maintained. If the City installs new infrastructure, it will be similar to above and it will maintained as needed by the City for the infrastructure only. The surrounding ground and landscaping are private property and to be maintained by the property owner.

Definitions

Best Management Practices (BMP'S): Schedule of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to storm water, receiving waters, or storm water conveyance systems. BMP's also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

cfs (Cubic Feet per Second): Stormwater flow rate measured in cubic feet per second

Clean Water Act: The federal Water Pollution Control Act (33 U.S.C. §1251 et seq.), and any subsequent amendments thereto.

Designed Storm Event: All developments shall provide storm water detention calculations for the two (2) year (3.1 inches), fifteen (15) year (4.60 inches), twenty-five (25) year (5.40 inches) and one hundred (100) year (6.20 inches), 20 minute storm. These are considered the design storm events. Storm water systems and swales are design for 15-year 20-minute storm.

Excavating: Any man-made cavity or depression in the earth's surface, including its sides, walls or faces; formed by earth removal and producing unsupported earth conditions by reasons of the excavation.

Fill/Filling: The depositing or dumping of earthen material on or into the ground resulting in the raising of the grade at that location.

Flooding: A temporary rise of the water level, as in a creek/stream or lake, resulting in its spilling over and out of its natural or man-made system onto land that is normally dry. Floods are usually caused by excessive runoff from precipitation or snowmelt, or storm surges.

Flood Plain: That area of land adjoining the channel of a river, stream, watercourse, lake or similar body of water which has a 1% chance to be inundated by a flood in any given year as determined by FEMA.

Grading Plan: The development plan that must be reviewed and approved by the City Engineer prior to the grading of fifty (50) or more cubic yards of any site within the City.

Private Storm System: System put into place/installed by resident/builder or more than one resident on private property to convey or collect stormwater and convey to the public stormwater system. Examples of such are extensions of commercial or private property systems that conveys to a public system such as gutters, sump pumps, installation of under drain pipe system, certain roadside ditches, basins and commercial infrastructure.

Public Storm System: Owned by a state, city, town, village, or other public entity that discharges to waters of the U.S.; Designed or used to collect or convey stormwater (including storm drains, pipes, ditches, etc.); Not a combined sewer; and Not part of a Publicly Owned Treatment Works (sewage treatment plant).

Rain Garden: A landscaping feature that is planted with native perennial plants and is used to manage stormwater runoff from impervious surfaces such as roofs, sidewalks, and parking lots.

Swale: A low, flat depression to drain storm water runoff.

Watercourse: A natural or artificial channel through which water flows.

Links or Helpful Information

Low Impact Development:

Municipal Guide:

http://www.lowimpactdevelopment.org/lid%20articles/Municipal_LID.pdf

Builder Guide:

http://www.lowimpactdevelopment.org/lid%20articles/Builder_LID.pdf

Landscaping for water quality:

Water Efficient Landscape Guide:

<http://www.epa.gov/npdes/pubs/waterefficiency.pdf>

Non-Point Source Pollution Landscaping Video:

http://www.epa.gov/owow_keep/NPS/lid/video.html

Native Landscaping Guide:

<http://www.shawnature.org/nativeland/NativeLandscapingManual/>

Rain Garden Brochures and Information:

Brochure:

http://raingardens.org/docs/rain_garden_brochure_greatlakes.pdf

Informational website:

<http://www.raingardennetwork.com/>

<http://showmeraingardens.com/>

Rain Barrel Information

Rain barrel Guide:

<http://www.rainbarrelguide.com/>

Government Links:

Missouri Department of Natural Resources:

<http://www.dnr.mo.gov/env/wpp/wp-index.html>

EPA NPDES Program:

http://cfpub.epa.gov/npdes/home.cfm?program_id=6

Brochure for Non Point Source Pollutants:

http://www.epa.gov/npdes/pubs/solution_to_pollution.pdf

Appendix A

Stream Order Map Example