

## Flood-Related Terminology

**Floodplain** - any land area susceptible to floodwaters.

**100-Year Flood** - a flood having a 1% chance of being equaled or exceeded in magnitude in any given year.

**100-Year Floodplain** - the area adjoining a river or watercourse covered by water during a 100-year flood.

**Floodway** - the channel of a river or watercourse & adjacent areas that discharge the 100-year flood without increasing the water surface elevation more than 1-foot.

**Flood Fringe** - that portion of the floodplain (outside the floodway) that may be inundated by flood waters.

**Encroachment** - a man-made obstruction in the floodplain which displaces the natural passage of flood waters.

**Surcharge** - an increase in flood elevation due to encroachment of the floodplain.

**FEMA** - Federal Emergency Management Agency

**NFIP** - National Flood Insurance Program

**FIRM** - Flood Insurance Rate Map

**SFHA** - Special Flood Hazard Area

## Drainage Maintenance

The Public Works Department, Stormwater Engineering Division, has initiated a program of drainage system maintenance. Major drainage channels, ditches, & structures are periodically checked & maintained so that stoppage is minimized & the systems are allowed to flow freely. A clear drainage system can convey stormwater more efficiently & can minimize flood damage to surrounding buildings & property.

Citizens can greatly assist in this effort by keeping catch basins in front of their property free of debris. By law, (Ordinance No. 7373) it is illegal to dump debris, grass clippings, & other waste materials into drainage ditches & catch basins. Please contact the Stormwater Engineering Division at 832.3143 to report illegal dumping into the City's drainage system or to obtain further information.

## Property Protection

Preventive measures can be taken to minimize or eliminate the potential for flood damage to your existing home or business.

### Temporary measures include:

- Use of sandbags, plywood, plastic sheeting, & lumber to divert flood waters away from a building; or
- Moving furniture or other possessions to upper floors, availability & time permitting.

### Permanent measures (retrofitting\*) include:

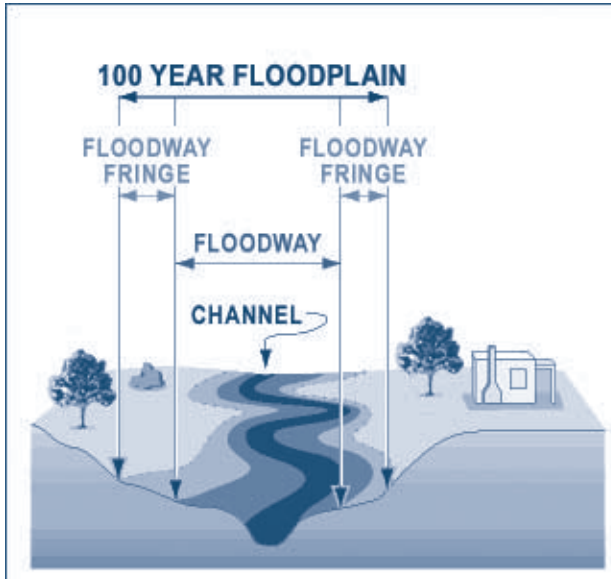
- Elevating the structure &/or utility devices;
- Building a floodwall or berm; or
- Installing sewer back flow prevention devices.

\*Information on retrofitting is available at the main branch of the Lawrence Public Library, 707 Vermont Street.

## Natural & Beneficial Functions

The City's Floodplains are a valuable resource for the community. Floodplains left in an undeveloped, natural state can provide storage for floodwaters, which in turn minimizes future flood damage. They also provide habitat for wildlife & recreational opportunities for community residents. The natural vegetation of floodplains also filters pollutants from stormwater, in turn improving local water quality.

Stormwater carries untreated water runoff directly into wetlands, creeks, & rivers & impacts our natural environment. Improper disposal of waste, such as oil, paint, fertilizer, & pesticides, will pollute stormwater runoff & destroy plants, endanger wildlife, & affect local drinking water sources. Please remember to properly store & dispose of oils, chemicals, antifreeze, & other toxic materials. Never dump waste materials into any storm drain or drainage canal.



**The City of Lawrence participates in the Community Rating System (CRS), which enables residents to receive a discount on their flood insurance.**

## Are you Ready for the Next Big Flood? (or even the next little one)



### A public service for the residents of the City of Lawrence

Douglas County is a StormReady community. StormReady, a program started in 1999 in Tulsa, Oklahoma, helps communities establish the communication & safety skills needed to save lives & property before & during storm events. StormReady helps community leaders & emergency managers strengthen local safety programs making StormReady communities better prepared to save lives from the onslaught of severe weather through better planning, education, & awareness. While no community is storm proof, StormReady can help communities save lives.

### Additional information is available from the following local departments & agencies:

- General information & Elevation Certificates: Planning Office at 832-7700
- Structure-related: Development Services, 832-7700
- Site drainage-related & site visit service: Stormwater Engineering 832-3143
- Emergency response-related: Douglas County Emergency Management at 832-5259

Information is also available at the main branch of the Lawrence Public Library, 707 Vermont.

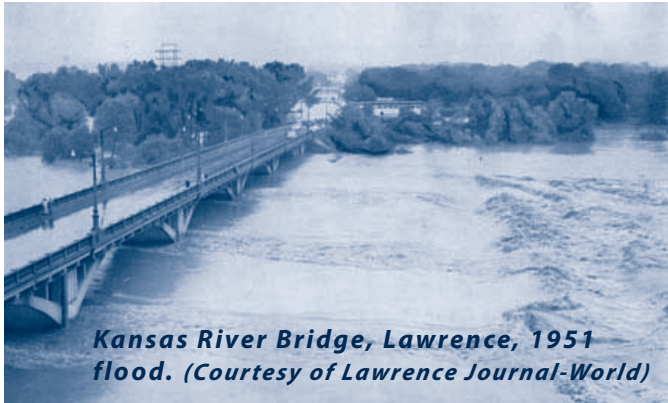


**City of Lawrence**  
**Douglas County**  
PLANNING & DEVELOPMENT SERVICES

## Local Flood Hazards

The City of Lawrence will experience flooding sometime in the future. History has shown that the community has a number of local flood hazard areas. These areas can experience frequent or infrequent inundations of water from rain/storm events. The worst flood in Lawrence's history was the flood of 1951, causing damage to the City in excess of \$3 million. In 1993, Lawrence was faced with another major flood. The local system of levees & reservoir did their job & the City only experienced \$1.2 million in damage. However, damage for the area topped \$5.8 million as the majority of flooding in 1993 occurred in unprotected areas.

There are also numerous creeks & tributaries subject to frequent flooding with little warning after substantial rain events due to their small drainage areas & steep slopes. These include the Brook Creek, Belle Haven, Hidden Valley, & KLWN Tributaries. The Maple Grove Drainageway is also subject to quick flood rises with little warning. To find out about other specific localized areas subject to flooding or to have a member of the City staff visit your site, please contact the Stormwater Engineering Division at 832-3143.



*Kansas River Bridge, Lawrence, 1951 flood. (Courtesy of Lawrence Journal-World)*

## Property Protection

The Federal Emergency Management Agency (FEMA) publishes maps indicating flood hazard areas in the community & the degree of risk in those areas. These maps are referred to as Flood Insurance Rate Maps, or FIRMs. Copies of these maps are available for viewing at the Lawrence Public Library & at the Lawrence/Douglas County Planning Office at City Hall. Floodplain maps are also available online at the Planning Office web page: [www.lawrenceks.org/pds](http://www.lawrenceks.org/pds) & the FEMA web page: [www.fema.gov](http://www.fema.gov). The Planning Office maintains a GIS mapping system with digital FIRMs. If you have questions about basic FIRM information, floodway, or problems not shown on FIRMs, please contact the Planning Office at 832-7700.

## Flood Insurance

All community property owners & renters are eligible for flood insurance, not just those that live in flood prone areas. Flood insurance is available to all residents because the City of Lawrence participates in the NFIP which is administered by FEMA. Don't assume your homeowner's policy will protect you from property damage as a result of flooding or rising waters. The majority of homeowner insurance policies do not cover losses from flood related events.

If a property is located within a SFHA, insurance is required by law to obtain federally secured financing to buy, build, or improve a structure on that property. An insurance agent can assist in determining the amount of coverage required and can sell a separate flood insurance policy under rules set by the Federal government. All agents must charge the same rate. Rates for flood insurance will not change just because you file a claim since they are set on a national basis. A flood insurance policy can take 30 days to become effective. The City maintains copies of elevation certificates. Call 832-7700 for more information.

## Permit Requirements

Any development in the SFHA requires a floodplain development permit per requirements of City Ordinance No. 7597. This ordinance establishes flood protection standards (located in Article 20-12 of the City's Land Development Code). These regulations mean you must obtain a floodplain development permit before you build, alter, regrade, or fill if your property is located in the SFHA as identified on the City's Flood Hazard Map.

## Substantial Improvements

Buildings that are substantially improved or repaired due to substantial damage must meet the requirements of new construction specified in the City's Flood Protection Standards (Ordinance No. 7597), Article 20-12 of the City's Land Development Code.

A substantial improvement is defined as "any reconstruction, rehabilitation, addition or other improvement to a building, the cost of which equals or exceeds 50% of the market value of the building before the start of the improvement."

Substantial damage refers to damage to a building by any origin (not just flood), whereby the cost of restoring the building to its pre-damage condition would equal or exceed 50% of the value of the building before the damage occurred.

## Flood Safety

### Before & During a Flood:

- **Stay alert** to weather conditions & forecasts for flood or flash flooding in you area.
- If you need to evacuate your home or business, **stay calm & don't panic**.
- **Time permitting**, turn off all utilities at the main switch & **don't touch anything electrical**.
- **Report downed power lines** immediately. REMEMBER: Any source of electricity should be considered dangerous during & after a flood event.
- **Don't walk or drive through moving water!!** Drowning is the number one cause of flood deaths.
- If you **smell gas or suspect a leak**, contact the Utility company immediately. Use flashlights for light & avoid open flames (candles, matches, etc.).

### After a Flood

Clean everything that got wet!! Floodwaters pick up contaminants from roads, farms, & buildings turning everyday household items into health hazards. When in doubt, throw them out!

## Flood Warning System

### You should become familiar with these terms:

Flood watches, warnings, & forecast services are issued by the National Weather Service. Listen to local radio stations for up-to-date information & instructions in floodlike conditions.

Flood Watch	Flooding is possible
Flash Flood Watch	Flooding is possible with little or no warning
Flood Warning	Flooding is imminent (it may take several hours/days to occur)
Flash Flood Warning	Flash flooding is imminent and precautions should be taken

Use a battery powered radio in the event of a power outage. In the event of a flood, the Douglas County Emergency Management Department will utilize additional methods of providing information to the community, such as the Emergency Alert System & local public safety agencies (police, fire, medical personnel).

**For more information:**  
[www.lawrenceks.org/pds](http://www.lawrenceks.org/pds)

[www.douglas-county.org/depts/em/em\\_home.aspx](http://www.douglas-county.org/depts/em/em_home.aspx)