

## Repetitive Loss Area #52

# Tupelo Creek E. 11<sup>th</sup> St. & I-44 Area



August 17, 2017





#### **ENGINEERING SERVICES**



August 17, 2017

#### Dear Resident/Property Owner:

Once considered the most flood-prone city in America, Tulsa has worked hard to reduce or eliminate flooding of its homes and neighborhoods. The City joined the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP) in 1974 and through decades of effort is now recognized as a national leader in flood hazard mitigation. As a result, property owners in Tulsa receive as much as 40% discount on their flood insurance.

A key component of the NFIP has been its focus on Repetitive Loss Properties, which make up only 1 percent of insured properties, but account for over 30 percent of flood insurance claims payments. A Repetitive Loss Property is defined by FEMA as any property that has been paid two or more flood insurance claims of \$1,000 or more in a 10-year time period.

The NFIP recently expanded its flood hazard mitigation program to include the identification of "Repetitive Loss Areas" (RLA)—those properties near an existing Repetitive Loss Property that may be subject to the same general flooding conditions. In most instances, 95% of the properties in an RLA will never have experienced flooding—especially if the cause of damage is shallow, overland flow due to local drainage conditions. Once the City has identified an RLA, we are required to contact the owners and residents of the area and work together to develop a plan to reduce or eliminate flooding in the neighborhood.

Your property has been identified as being in a Repetitive Loss Area. We want to reemphasize that this does not mean your property has flooded or is even likely to flood only that it is in the same area, and in a similar geographical situation, as an existing Repetitive Loss Property.

You can protect your property from flooding. We would like to invite you to participate in our flood prevention and mitigation efforts for your neighborhood. We need your input. What can we do, working together, to eliminate potential flood losses in your area? We look forward to hearing from you.

To learn more about your risk of flooding visit <a href="www.floodsmart.gov">www.floodsmart.gov</a> or contact the City of Tulsa Customer Care Center at (918) 596-7777.

Sincerely,

CITY OF TULSA, ENGINEERING SERVICES

Bill Robison, P.E., CFM

Senior Special Projects Engineer Stormwater Project Coordination

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### Acknowledgements

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## Repetitive Loss Area #52

## Tupelo Creek E. 11<sup>th</sup> St. & I-44 Area

#### Overview

Repetitive Loss Area (RLA) #52 is a commercial/motel complex on one property lot in the Tupelo Creek drainage, on the southeast side of the intersection of E. 11<sup>th</sup> St. and I-44. The motel is situated on 4.8 acres about 1,000 feet northeast of the junction of Tupelo Creek Tributary 4 with Tupelo Creek mainstem. The cause of flooding has been backup along Tupelo Creek and Tributary 4 and overland flow. The property made claims in July 1997 (\$13,250), July 2003 (\$23,999), and October 2004 (\$19,277) for a total of \$56,526. The motel structure is slab-on-grade. The property is on generally level terrain that varies from 652 to 660 feet elevation, in a stretch of the creek where the 100-year floodplain on Tributary 4 is between 654-ft. and 661 feet and inundates the southwestern edge of the property, but does not touch the structure itself. There have been no damage claims in the RLA since 2004.



RLA #52 is a motel complex located at E. 11<sup>th</sup> St. and I-44, 1,000 ft. northeast of the junction of Tupelo Creek with Tupelo Creek Tributary 4.

#### I. Background

During the post-World War building boom of the 1950s and 1960s, Tulsa expanded rapidly east and south into the basins of Mingo, Joe and Fred creeks. Because of the city's climate and the broad floodplains along these streams, this growth brought with it an increased risk of flooding. And indeed, by the mid-1980s floods were occurring almost yearly and flooding had become Tulsa's most destructive natural hazard. One researcher at the time declared Tulsa "the most flood-prone community in the nation."

Tulsa was not unique in its rapid post-war development and attendant risks. Cities across America were experiencing similar problems as they spread out into prosperous subdivisions. In response, the U.S. Congress created the National Flood Insurance Program (NFIP) in 1968 to help property owners protect themselves from flood losses. The NFIP offered flood insurance to homeowners, renters, and business owners if their community participated in the NFIP and agreed to adopt and enforce ordinances that met or exceeded FEMA requirements for reducing the risk of flooding.

Tulsa joined the NFIP in 1974, and through great effort and considerable expense has significantly reduced its exposure to flooding. As a result, Tulsa has been awarded a Class II rating in the NFIP's Community Rating System (CRS), which grants its residents a 40 percent discount on the cost of flood insurance for structures in the Special Flood Hazard Area (SFHA), also known as the 1% or 100-year floodplain. Since the Biggert-Waters Flood Insurance Reform Act of 2012, many properties have seen a substantial increase in their premiums, making this discount even more important.

For its part, the NFIP is continually faced with the job of paying claims while trying to keep the price of flood insurance at an affordable level. Properties that flood repeatedly—known as "repetitive loss properties," have been a particular problem for the program: Although they make up only 1 percent of insured properties, they account for one-third of all claims payments (about \$200 million per year, or \$4.5 billion to date). A repetitive loss property is defined by FEMA as any property that has been paid two or more flood insurance claims of \$1,000 or more in a 10-year time period.

Consequently, one of the requirements of the CRS is that communities identify all repetitive loss properties in their jurisdiction and work with the owners to find ways to reduce or eliminate future flood damage. This initiative has been very successful in reducing flood losses and claims.

FEMA recently extended its repetitive loss program to include "Repetitive Loss Areas" (RLA). To maintain a Class II rating in the CRS, Tulsa is now required to analyze the area surrounding each of its repetitive loss properties and identify any neighboring properties (including uninsured ones) that may be subject to the same general flooding conditions. This group of nearby properties is then designated an "RLA." The City is required to contact the owners of the properties in the RLA, inform them that they are located in an area subject to flooding, and develop a plan for mitigating or eliminating flooding in the area, much as has been done for the individual repetitive loss properties.

It is important to note that most of the structures in a Repetitive Loss Area—perhaps as many as 80% or 90%—may not have experienced flooding of any kind. What they have

in common is being subject to the same general geographical and flood conditions as the nearby repetitive loss property. In addition, the flooding events in question may have had little to do with overbank flooding from a creek, but perhaps may have been the result of storm sewer backup or overland flow. The location of RLA #52 is shown on the aerial photo/topography map on page 4, below. The map identifies properties, County Assessor parcels, floodplains and the existing storm drainage system.

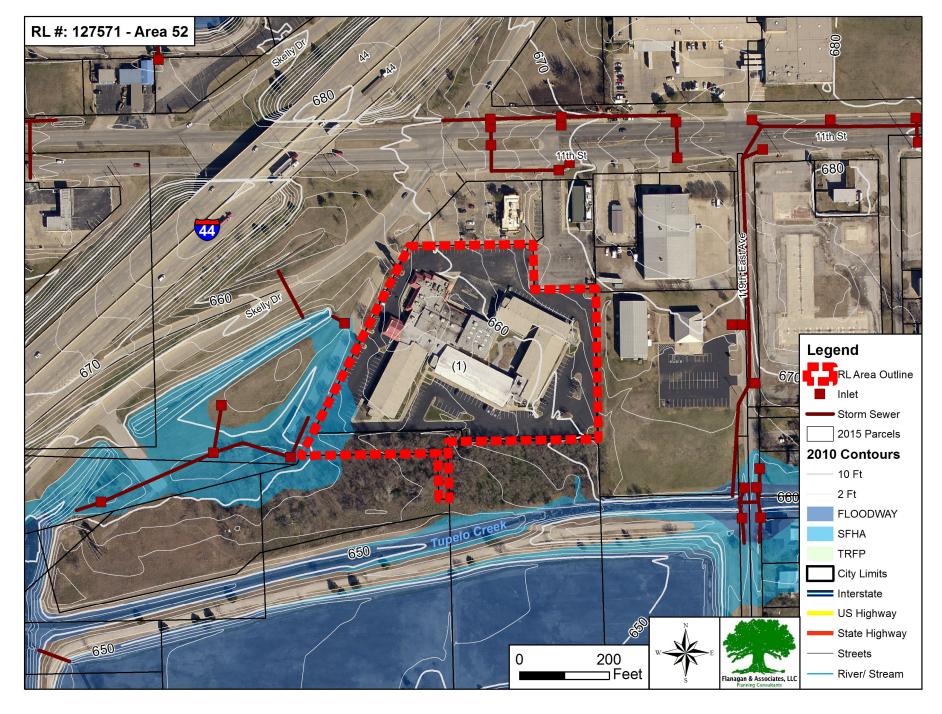
#### II. Location.

Tupelo Creek is a 4-mile-long, right-bank tributary to Mingo Creek that drains about 3.5 square miles of east Tulsa. The creek has several tributary branches. The mainstem rises near E. 21<sup>st</sup> St. and S. 137<sup>th</sup> E. Ave. and flows west northwest to join Mingo Creek at about E. 5<sup>th</sup> Pl. and Mingo Rd. Tupelo Creek's Tributary 4 begins at about E. 13<sup>th</sup> St. and 133<sup>rd</sup> E. Ave. and flows west for 2.37 miles to join Tupelo mainstem just east of the intersection of I-44 and Garnett Rd. The combined streams flow another 1.5 miles to the junction with Mingo Creek, which flows north, generally between Mingo Rd. and US Hwy 169 (Mingo Valley Expressway), to join Bird Creek near E. 57<sup>th</sup> St. N.

Repetitive Loss Area #52 is southeast of the intersection of E. 11<sup>th</sup> St. and I-44, and 1,000 feet east-northeast from the junction of Tupelo Creek Tributary 4 with the Tupelo Creek mainstem. The motel complex includes an 85,915 sq. ft. building and parking lots on 4.8 acres of Tupelo Creek floodplain and includes low-lying ground that was once a stock pond. The terrain varies from 652 to 660 feet in elevation. The creek's 100-year floodplain in this reach is between 654-ft. and 661 feet and inundates the southwestern edge of the motel property, but does not encroach on the structure itself.



RLA 52 is located southeast of the intersection of E. 11<sup>th</sup> St. and I-44, 300 feet north of Tupelo Creek Tributary #4, and 1,000 ft. northeast of the junction of Tributary #4 with Tupelo mainstem. Tributary #4 is in the lower part of the photograph, and Tupelo mainstem in the lower left. During heavy rains, water backs up behind the conduit beneath I-44 into the pocket of low ground to the west of the motel complex.



#### III. History

#### **Development**

The commercial property in RLA #52, a motel, was developed in the SHO-ME addition in 1960 on land in the Tupelo Creek floodplain which at one time included a stock pond. The surrounding terrain is generally level, but rises slightly to the north and east, away from Tupelo Creek. The shape of the land was changed dramatically by the construction of I-44, the channelization of Tupelo Creek and Tributary 4 and by the creation of a detention facility on the south side of Tributary 4. One thousand feet east of RLA #52 is the East Central High School complex and additional detention facilities.

#### Flooding

Tupelo Creek experienced flooding in October 1959, May 1970, September 1974, May 1984, April 1999 and May 2000. The flood of May 1984 is the flood of record for the basin.

Flooding in RLA #52 resulted in claims on July 10, 1997 (\$13,250), July 5, 2003

(\$23,999) and October 7, 2004 (\$19,277), for a total of \$56,526. There have been no claims since 2004. Flood damage has been due to overland flow and backup flooding along Tupelo Creek mainstem and Tributary #4 into a low spot in the generally level terrain southeast of I-44.



Looking west along Tributary 4 from S. 119<sup>th</sup> E. Ave. The motel complex is in the upper right of the picture, the detention facility on the left.

#### **Improvements**

Massive flood-control improvements along Mingo Creek and Tupelo Creek in the 1980s and 1990s included the channelization of nine miles of Mingo Creek, the enlargement or removal of undersized stormwater conduits and bridges, and the installation of 23 detention facilities in the basin. Among these improvements were the replacement of the undersized conduit beneath I-44, the channelization of Tupelo Creek and Tributary 4, and the construction of several large containment facilities along Tupelo Creek mainstem and Tributary 4. These measures have reduced backup flooding on Mingo Creek and Tupelo Creek and their tributaries. Nevertheless, the commercial/motel complex property continues to be touched by FEMA's and the City's 100-year flood hazard zones, and the extreme southwest corner of the structure by FEMA's 500-year floodplain.

#### IV. Research and Analysis

The analysis of Repetitive Loss Area #52 was conducted by the Project Team through interviews with City officials, research into Engineering Services and Stormwater Drainage files, including the several master drainage plans for Mingo Creek and Tupelo Creek and their tributaries, review of the City's extensive flood history documentation, assessment of insurance claims, field trips to the RLA, interviews with and questionnaires mailed to the property owner soliciting information about prior and existing flooding issues, if any.

#### Agencies and Organizations

The City of Tulsa's Storm Drainage & Hazard Mitigation Advisory Board (SDHMAB), which also serves as the City's Hazard Mitigation and CRS Committee, and the CRS Public Participation Involvement & Information Committee (PPI) met monthly during the two-year Repetitive Loss Area Planning process. Each committee was updated on the status of the planning process, discussed issues, and provided guidance. Research and analysis were done in accordance with guidelines from the Federal Emergency Management Agency (FEMA), the National Flood Insurance Program (NFIP) and the Community Rating System (CRS).

Local, State & Federal Agencies and non-profit organizations are represented on the PPI Committee. The RLA plans were discussed at the PPI Committee meetings, and other agencies such as TAEMA were contacted by phone or email. The RLA plans were presented to City Council for adoption; the agenda was made public and furnished to the media. The council meeting is a public meeting and the local media was present at the meeting. In addition the council meetings are aired on our local government network TV channel TGOV.

Participating agencies and organizations involved were: City of Tulsa (CoT) Storm Drainage & Hazard Mitigation Advisory Board, CRS PPI Committee, CoT Communications Department, CoT Development Services, Working in Neighborhoods, CoT Engineering Services, CoT Finance Department, CoT Legal Department, CoT Streets & Stormwater, CoT Water & Sewer Department, Child Care Resource Center, Indian Nations Council of Governments, Tulsa Area Emergency Management Agency (TAEMA), Disaster Resilience Network, Metropolitan Environmental Trust, Oklahoma Insurance Department, Tulsa Association of Realtors, U.S. Army Corps of Engineers.

#### Plans, Studies and Documents

The following City of Tulsa and FEMA documents were used in the analysis:

- Upper Tupelo & Upper Brookhollow Creeks Basin Drainage Plan, Final Report, HTB Inc., February 8, 1994
- Tupelo Creek Detention Sites, Mingo Creek, Tulsa, Operation and Maintenance Manual, U.S. Army Corps of Engineers, February 2003
- FEMA Regulatory Flood Map 40143C0263
- Regulatory Floodplain Map Atlas, Tulsa Engineering Services, October, 2016
- 2014 City of Tulsa Hazard Mitigation Plan Update, Flanagan & Assoc., 2014
- City of Tulsa Stormwater Management Plan

- Stormwater Design Criteria Manual: Critical Neighborhood Flood Control Projects
- Stormwater Capital Improvements List, City of Tulsa, Engineering Services
- Mars, Tim. "The Effects of Urbanization on the Mingo Creek Watershed," 1984
- Guidebook to Conducting Repetitive Loss Area Analyses, UNO and FEMA

#### Capital Improvements Plans

No City of Tulsa Capital Improvements are currently planned that could have a positive impact on the flooding problems in Repetitive Loss Area #52. There are storm sewer improvement and regional detention facilities on the existing CIPs for Tupelo Creek along with Master Drainage Plan recommendations that are not yet on the CIPs. None are presently funded.

#### Flood Insurance Data

The property in RLA #52 does not currently carry flood insurance.

#### Claims Data.

Backup and overland flow flooding along Tupelo Creek and Tributary 4 generated three claims between 1997 and 2004 totaling \$56,526. Claims were made for flood damage on July 10, 1997 (\$13, 250), July 5, 2003 (\$23,999) and October 7, 2004 (\$19,277).

#### Field Surveys and Site Visits

Site visits were conducted during the study, primarily to confirm foundation type and view local on-site overland flow drainage patterns.

#### Review Drainage Patterns.

The Project Team examined aerial topography maps, master drainage plans, storm sewer plans, City Customer Care Center complaints and comments, and conducted field checks to determine area drainage patterns and identify flooding problem areas. The results of the research and analysis are described in the following paragraphs and summarized in the table below.

#### Structures

The Project Team made visits to RLA #52 to determine the situation and condition of the structures. Visual analysis was verified by queries of Tulsa County Assessor data.

#### Structure Type.

The 85,915 sq. ft. commercial/motel complex in RLA #52 is comprised of 1.5- and 2-story, flat-roof, brick and mortar structures.

#### Foundation Type.

The type of foundation was determined by field investigation and query of Tulsa County Assessor records. The 1.5- and 2-story buildings have slab-on-grade foundations.

#### Condition of Structures.

The condition of the structure in the RLA was determined by field investigation and a search of the County Assessor's records. The structure is in Fair condition. These findings are summarized in the following table.

#### Properties in the RLA

Address	Structure Type	Foundation Type	Year Built	Condition
Property 1	Commercial	Slab-on-Grade	1960	Fair

#### Notification

**Annual Floodplain Notification.** Each year, in March, the City of Tulsa notifies all property owners and occupants living in a 100-year floodplain that their properties are subject to flooding and informs them of what steps they can take to protect their buildings, contents and employees, including the purchase of flood insurance.

**Annual Repetitive Loss Area Notification.** The property owner in Repetitive Loss Area #52 is notified annually that the structures is located in a Repetitive Loss Area, and is potentially subject to damage from backup flooding and overland flow.

**Property Owners/Residents Notification.** The property owner was advised of the Repetitive Loss Area study and analysis by letter, was sent a questionnaire soliciting information and input, and asked to contact the City for more information or a copy of the completed RLA Plan.

**Public Participation and Involvement.** City Staff/Consultants interviewed homeowners to brief them on the Repetitive Loss Area Analysis Study/Plan, receive their input, and discuss possible mitigation measures.

**Property Owner Response to Notifications.** There have been no comments concerning flooding by the owner of the commercial property in RLA #52.

#### **Conclusions**

RLA #52 has experienced damage from overland flow and backup flooding along Tupelo Creek and Tupelo Tributary 4. The property occupies a pocket of low ground in the former floodplain of Tupelo Creek, which at one time included a stock pond. Although earth changes from I-44 construction, property development and the Mingo Creek project have significantly altered the contours of the surrounding land, the southwest edge of the commercial/motel property—but not the structure itself—remains within both FEMA's and the City's 100-year floodplain, and the extreme southwest corner of the structure is within FEMA's 500-year flood hazard zone. There is no record of the property being damaged by the flood of record in 1984, and the cause of flooding that resulted in the claim of July 5, 2003 remains unknown.

#### V. Mitigation Measures

#### **Overview**

The massive Mingo Creek Project undertaken by the City of Tulsa and the US Army Corps of Engineers in the wake of the devastating flood of May 27, 1984 has largely eliminated overbank and backup flooding along Mingo Creek and Tupelo Creek and their

tributaries. These measures included channelization of several miles of Tupelo mainstem and Tributary 4, the replacement of the undersized conduit beneath I-44, and the construction of detention facilities at the junction of Tupelo Creek and Tributary 4, and at two additional locations upstream on the tributary. Nevertheless, the southwestern edge of RLA #52 remains within both FEMA's and the City's 100-year and 500-year floodplains and the structure is subject to damage from overland flow and backup flooding behind the 1-44 conduit during greater than 100-year storms.

#### Individual Mitigation Measures: What You Can Do

Individual property protection actions are usually undertaken by property owners on a lot-by-lot, building-by-building basis, and include private floodproofing, moving mechanical equipment above flood levels, installing French drains and minor site grading to move local drainage to the street, sanitary sewer backup protection, and flood insurance.

The City of Tulsa is willing to have a stormwater engineer do a site visit to assist you in analyzing your specific drainage problems and discuss potential solutions. Contact the Customer Care Center at (918) 596-7777, or go online to www.cityoftulsa.org/connect/contact-the-city.

**Know and Understand Your Flood Risk.** As stated above, being located in a Repetitive Loss Area does *not* mean a property will flood. Nevertheless, it is important that residents

and property owners in flood hazard areas know and understand their flood risk and take what steps they can to protect their homes, families and possessions. City staff is available to explain the local flood risk, interpret floodplain maps, and determine if an area or property has drainage problems or a history of prior flooding. Staff can also discuss the ways a specific property can be protected from flooding. An Elevation Certificate can help define a property's flood risk under various rainfall scenarios (e.g., in a 10-year, 50-year, 100year, or 300-year storm). You can receive a free flood zone determination by contacting the City with the correct legal



This platform and wall protect the home and air conditioning equipment from shallow flooding.

description and street address, or the Tax Assessor/Parcel Number of the property.

**Make a Disaster Preparedness Plan.** It is always a good idea for residents and property owners in flood hazard zones to prepare a disaster preparedness and response plan that addresses all the steps and details that will demand attention once a flood watch or warning is issued. A Building Permit is required to install a safe room in a flood-prone area.

Create Berms, Swales or Redirected Drainage. Flood waters can be diverted away from your residence using berms, brick planter boxes and swales, but these may not be done in ways that cause damage to other properties. Owners and residents can request a

meeting with a City Engineer to discuss the best ways to solve existing drainage problems, and whether a Building Permit will be required. This may be the most feasible solution for areas with flooding due to overland flow, as in RLA #52.

**Install Local, Property-Specific Paving, Plantings and Catchment Basins.** City Engineering staff can explain the natural functions of floodplains and how they act to slow and purify urban runoff and reduce flooding. Staff can also suggest low-impact development projects which imitate natural floodplain functions by slowing runoff and filtering out impurities. These include such things as rain gardens, catchment basins and pervious paving materials.

**Acquisition.** The City of Tulsa has a repetitive loss acquisition program to purchase repeatedly flooded properties. This voluntary program offers owners who are in this situation a way out. The City applies to FEMA for funds using the Hazard Mitigation Grant Program. Once the grant is awarded, the property is appraised as if it were not a flooded property and the offer for the property is based on this appraisal. In addition to getting the best possible price, the owner receives moving expenses, a \$1,000 stipend for purchasing a home outside the floodplain, and a 30-day rent free period after closing in which to move. All closing costs and other fees are paid by the City. Once the owner has moved out, the home is demolished and restored as open space to protect the natural and beneficial function of the floodplain. If you would like more information about this program contact the Customer Care Center at (918) 596-7777.

Acquisition is usually not feasible or cost effective for areas of shallow flooding.

**Elevate Your Structure.** Elevating the structure is only suitable for areas of shallow flooding, and is usually not feasible or cost-effective for masonry homes built on concrete slabs. It can sometimes be cost-effective for wood frame buildings on crawlspaces. The commercial property in RLA #52 is not a candidate for elevation.

**Dry Floodproof Your Structure.** This can include actions that seal a structure and prevent floodwaters from entering. This method is best in areas where flood depths are no more than two or three feet. Buildings can be made watertight by sealing the walls with waterproof coatings, impermeable membranes, or additional layers of masonry or concrete. Doors, windows, and other openings below the base flood elevation must also be equipped with permanent or removable shields, and backflow valves must be installed in sanitary sewer lines and drains. Dry flood-proofing needs to be designed by an engineer to ensure the structure can resist the force of the water.

Wet Floodproof Your Building. Wet floodproofing allows water to enter a structure, while removing, protecting or elevating items that can be damaged, such as air conditioning equipment. This is often used on structures with crawl spaces and shallow flood depths. The City does not allow basements in flood-prone areas, or the wet floodproofing of basements.

**Wet Floodproof Your Garage.** The garage, with its slab-on-grade construction, is one of the most vulnerable areas of your home to overland flow flooding. Remove, relocate, elevate, or otherwise protect items that can be damaged from flooding.

**Elevate Damage-Prone Components.** Critical items such as furnace or air conditioning units, should be elevated to avoid flood damage. This should be done for components that are in the wet-floodproofed area of the building as well as for units that are outside of the structure but subject to shallow flooding.

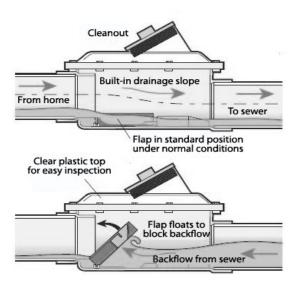
Maintain Nearby Streams, Ditches, and Storm Drains. Local flooding can often be caused by brush and other debris blocking drainage ways and culverts. Floodway blocking along Tupelo Creek and the drainage along Skelly Dr. will increase overbank flooding. Bar ditches and storm sewer inlets must be kept clear of debris. Property owners should do their part in maintaining the channel. Do not attempt to clear debris from the creek during a flood event.

#### **Correct Sanitary Sewer Backup**

**Problems.** Sanitary sewer backup can be a cause of damage in low-lying, flood-prone areas like RLA #52. The installation of backflow prevention valves on your sanitary sewer lines is highly recommended.

#### Purchase and Maintain Flood Insurance.

Flood Insurance is available and recommended for the structure and contents for all properties in Tulsa. A large percentage of all flood insurance claims are for properties that are outside the FEMA floodplain. Because of the City of Tulsa's sustained efforts to reduce flooding, you are entitled to a discount on your flood insurance. A property does not have to be in a floodplain to qualify for flood insurance.



Sewer backflow prevention valves are essential components for homes in low-lying, flood-prone areas.

## Repetitive Loss Area Mitigation Measures: What the City Can Do

The City of Tulsa is actively committed to the following floodplain management activities:

- Preventative activities to keep flood problems from getting worse.
- Natural resource protection activities to preserve or restore natural areas or the natural functions of floodplain and watershed areas.
- Emergency services measures taken during an emergency to minimize its impact.
- Structural projects to keep flood waters away from properties.
- Public information activities to advise property owners, potential property owners, and visitors about flood hazards, ways to protect people and property from the hazards, and the natural and beneficial functions of local floodplains.

As funding becomes available for this Repetitive Loss Area, the City will undertake a more detailed Mini-Master Drainage Plan to identify alternative solutions to the flooding problems and recommend a public works project. The actual construction of any public

works project may require the acquisition of properties and/or drainage easements. The City will continue to fulfill its maintenance responsibility for channels, drainageways, and storm sewer inlets and pipes. At this time, the City has identified the following actions which may be appropriate for RLA #52.

- Extend and/or improve storm sewer system to better collect storm water runoff.
- Improve downstream hydraulic structures (bridges, culverts, etc.) to reduce backwater in the RLA.

#### VI. Funding

Due to the nature of the flooding problems and the limited and localized damages involved in RLA #52, the funding of improvements to individual properties—such as berms and floodproofing—will have to be borne by the homeowner. The City will investigate the availability of funding for the public works actions listed above. Funding for ongoing City maintenance responsibilities is provided by the Stormwater Utility Fee. Funding for a public works project in this RLA is dependent of several factors, including the prioritized ranking of the project with other Capital Improvement projects, inclusion in future street maintenance projects, being part of a Bond Issue project, etc. The City will investigate the possibility of increasing the storm sewer capacity with any future street projects in the area. Another potential funding source is FEMA's Hazard Mitigation Grant Program (HMGP), which can be implemented after a Presidential Major Disaster Declaration in the State.

#### VII. Conclusions and Recommendations

Repetitive Loss Area #52 is comprised of an 85,000 sq. ft. commercial/motel complex on 8.4 acres in the SHO-ME addition. The RLA is located southeast of the intersection of I-44 and E. 11<sup>th</sup> St., and 1,000 feet northeast of the junction of Tupelo Creek and Tupelo Tributary 4. The property was developed in 1960 on low-lying floodplain land which had once contained a stock pond. Commercial development, the building of I-44 and the construction of the massive Mingo Creek flood control project significantly changed the nearby terrain, and included the channelization of Tupelo Creek and Tributary 4 and the creation of several detention facilities south and east of the RLA. It was believed that the Mingo Creek improvements had removed the area immediately north of Tributary 4 from the flood hazard zone, but subsequent events proved otherwise. Despite the changes, the property continues to be within both FEMA's and Tulsa's 100-year floodplains. Runoff from heavy rainstorms continues to flow through pre-existing swales and collect in the low ground southwest of the property and resulted in damage in July 1997, July 2003 and October 2004. There have been no damage claims since 2004.

Property owners are encouraged to maintain flood insurance. The City of Tulsa is a Community Rating System (CRS) Class II Community, so all homeowners qualify for up to a 40% discount on their flood insurance premiums. Property owners are also encouraged to undertake individual mitigation measures to reduce their risk of overland flow and overbank flooding. The City of Tulsa is ready to assist in this effort with professional advice.