Repetitive Loss Area #11

Mingo Creek
E. 7th St. & S. Mingo Rd. Area

August 17, 2017

Flanagan & Associates, LLC
Planning Consultants

SWIFT WATER RESOURCES ENGINEERING, LLC
9 East 4th Street • Suite 301 • Tulsa, OK 74103 918-582-1380 • swre@sbcglobal.net

Bill Robison, P.E., CFM
Engineering Services

CITY OF Tulsa
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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 an Repetitive Loss Area. We want to re-emphasize 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 www.floodsmart.gov or contact the City of Tulsa Customer Care Center at (918) 596-7777

Sincerely,
CITY OF TULSA, ENGINEERING SERVICES

Bill Robison

Bill Robison, P.E., CFM
Senior Special Projects Engineer
Stormwater Project Coordination

Contents

Acknowledgements

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Bill Robison, P.E., CFM	Project Manager
Brad Jackson, P.E., CFM	Lead Engineer, Stormwater Design
Laura Hendrix, CFM	Floodplain Administrator
Tim Lovell	Disaster Resilience Network
Angela King	Records Custodian

Consultants

Flanagan & Associates, LLC
Planning Consultants
3015 E. Skelly Drive, Suite 430
Tulsa, Oklahoma 74105
(918) 749-2696 www.rdflanagan.com

Ronald D. Flanagan, CFM, Principal
John D. Flanagan, Research, Writing
Tyler Brooks, GIS Specialist
Nancy K. Edwards, Administration

Swift Water Resources Engineering, LLC
Hydrologic Engineering Consultants
9 East 4th Street, Suite 301
Tulsa, Oklahoma 74103
(918) 582-1380 swre@sbcglobal.net

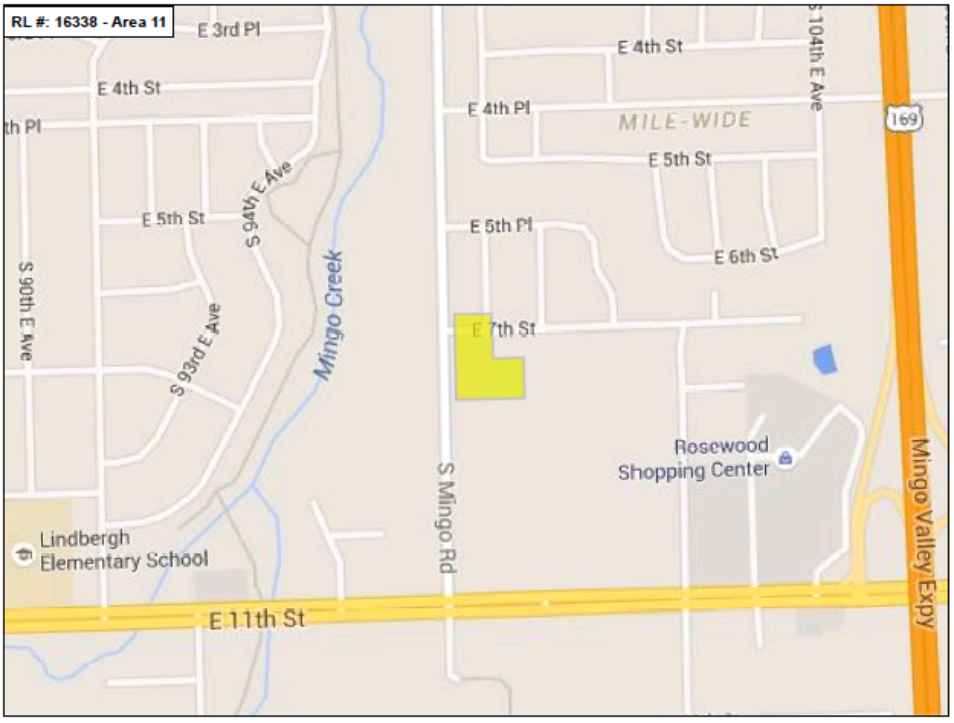
Mark Swift, P.E., CFM
Angela Swift, CPA, CEO

Repetitive Loss Area #11

Mingo Creek
E. 7th St. & S. Mingo Rd. Area

Overview

Repetitive Loss Area #11 is comprised of four single-family residences and one commercial building on five property lots in the Mingo Creek drainage. The RLA is located at E. 7th and S. Mingo Rd., on the right bank of Mingo Creek mainstem, opposite the Carol Williams detention facility. The properties are situated on generally level ground, at between 620 and 630 ft. elevation in the Mingo Creek and Tupelo Creek floodplains. The residences are built on crawl spaces, about 1.5 feet above GSE, except for one home which has a SOG garage converted into a family room. The residential damage in1984 was reportedly due to backup flooding on Tupelo Creek, which reached south along S. 97th E. Pl. The repetitive loss property is a slab-on-grade church with a first-finished-flood elevation of 623.7 ft. that is situated about 800 ft. east of Mingo Creek and 200 feet south of Tupelo Creek's 500-yr floodplain. Three properties in the RLA have made four flood damage claims in 1984 and 1986 for a total of $44,303. The repetitive loss property made claims for structural and contents damage in May 1984 ($30,403) and September 1986 ($5,471), for a total of $35,874; two other properties made claims for $7,751 and $678, also in May 1984. There have been no damage claims in the RLA since 1986.



RLA #11 is in the traditional floodplain of Mingo Creek at E. 7th St. and S. Mingo Rd.

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 may have been the result of storm sewer backup or overland flow. The location of RLA #11 is shown on the aerial photo/topography map on page 4, below. The map identifies residential properties, County Assessor parcels, floodplains and the existing storm drainage system.

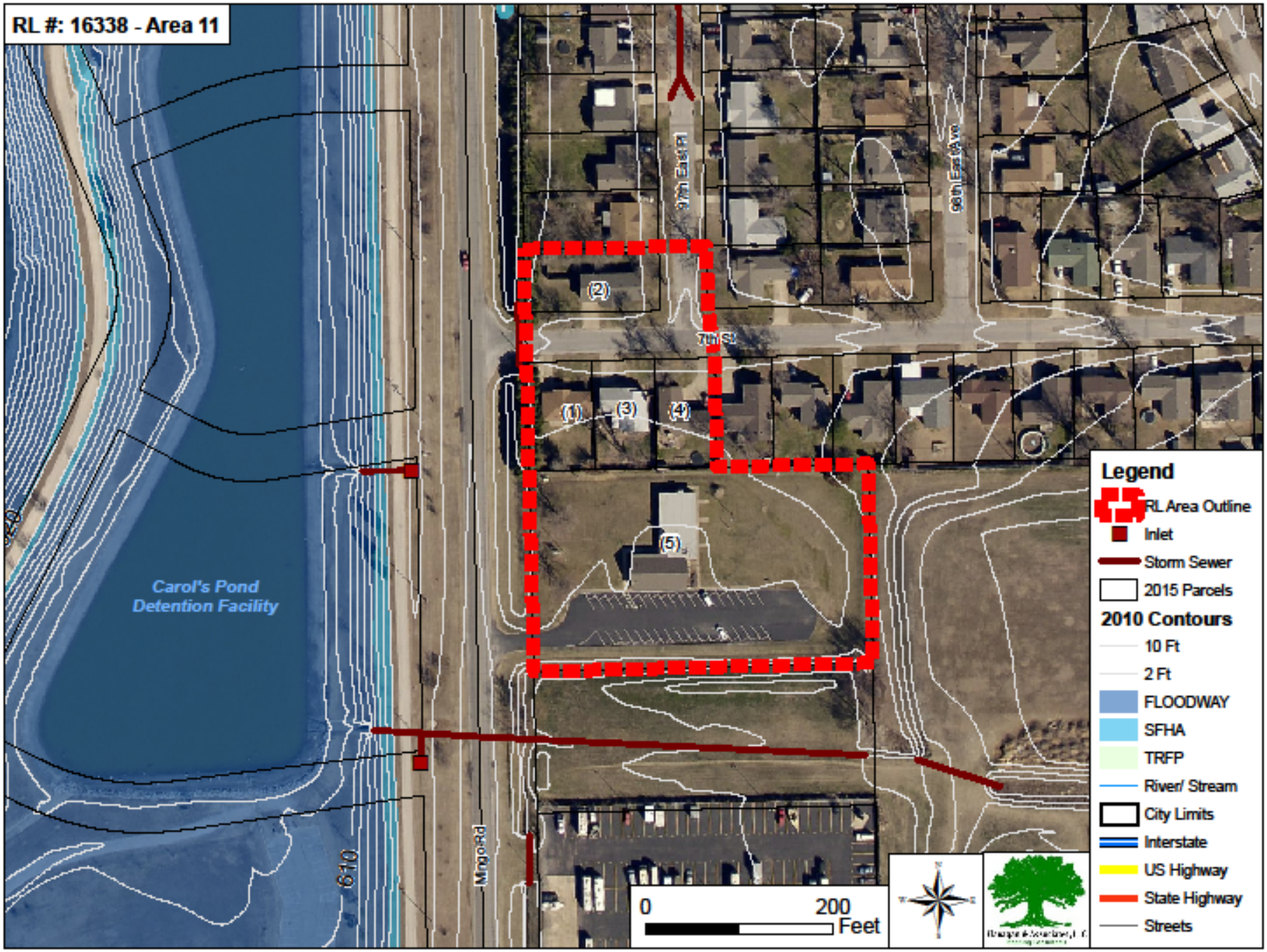
II. Location

Mingo Creek is a 16-mile-long, right-bank tributary to Bird Creek that drains about 61 square miles of southeast and northeast Tulsa. The creek's mainstem has its headwaters in Tulsa's Woodland Hills area and flows generally east from E. 65th St. and S. 78th E. Ave., across S. Memorial Blvd. and along the north side of Woodland Hills Mall to E. 58th St. and S. Mingo Rd., where it turns north through residential, commercial and industrial developments, generally between Mingo Rd. and US Hwy 169 (Mingo Valley Expressway), to its junction with Bird Creek at the Northside Wastewater Treatment Plant near E. 57th St. N.

Repetitive Loss Area #11 is located on the east bank of Mingo Creek's mainstem at E. 7th St. and S. Mingo Rd., about 800 feet east of Mingo Creek and 850 feet south of Tupelo Creek. The RLA is comprised of four single-family residences and one commercial building, a church, on five property lots.

The residences in RLA #11 are all built on crawl spaces, about 1.5 feet above the ground surface elevation, although one residence has a slab-on-grade garage that has been converted into a family room. The commercial building/church is slab-on-grade. All of the structures are within Mingo Creek's historic floodplain. The terrain is generally level, rising slightly to the east from 620 feet to 630 feet in elevation. Prior to improvements on Mingo Creek, the 100-year floodplain in the RLA was from 624 to 628 feet. Flood damage has primarily been due to overland flow and backup flooding on Tupelo Creek. Subsequent channel modifications, construction of detention facilities and conduit enlargements in this reach of the creek have largely eliminated overbank and backup flooding from Mingo Creek and Tupelo Creek in RLA #11.

Looking south on Mingo Rd. from E. 7th St. Carol's Pond detention facility is on the right, RLA 11 on the left.


RL #: 16338 - Area 11
Carol's Pond
Detention Facility
(1)
(2)
(3)
(4)
(5)
7th St
97th East Pl
98th East Ave
Mingo Rd
610
0
200
Feet
Legend
RL Area Outline
Inlet
Storm Sewer
2015 Parcels
2010 Contours
10 Ft
2 Ft
FLOODWAY
SFHA
TRFP
River/ Stream
City Limits
Interstate
US Highway
State Highway
Streets

III. History

Development

The properties in RLA #11 were developed in the Rosewood Addition between 1961 and 1970. The terrain on which the buildings are built is essentially level, but rising slightly to the east. The structures are situated along the right bank of Mingo Creek, on the east side of Mingo Rd., about 800 feet south of the creek's junction with Tupelo Creek. All properties are within Mingo Creek's traditional floodplain.

Flooding

The *Middle Mingo Creek Master Drainage Plan* of March 1988, mentions severe flooding along Mingo Creek in October 1959, May and July 1961, June 1974, May 1976 and May 1984, with the last-named event being the flood of record for the basin. The flood of May 1984 generated three of the four claims, all of which were paid. Flooding occurred again in September 1986, generating one additional claim.

There has been some subsequent ponding of water in the RLA from overland flow, but no flood damage claims since 1986.

The residences in the RLA are all on crawl spaces and at least 1.5 feet above GSE, except for one which has a SOG garage that has been remodeled into a family room. The owner of this property said the flooding in 1984 was from Tupelo Creek, which was backed up by high water on Mingo Creek. He has had some flooding in his back yard in recent years, overflow from the adjacent commercial (church) property immediately to the south. The church has a low spot on the east side of the property that ponds water during heavy rains and drains to a ditch that runs behind his back fence.

Although the church property has not flooded since 1984, there has been ponding in the low spot on the east side of the lot, as mentioned above. There has been water in the heat ducts (which are embedded in the floor of the building), but the owner believes this is due to ground water rather than flooding.

Improvements

Massive improvements were made to Mingo Creek and its tributaries in the 1980s and 1990s as part of the multifaceted Mingo Creek Project. These changes include the channelization of much of Mingo Creek, the enlargement or removal of stormwater conduits and bridges, and the installation of numerous detention facilities—such as Carol's Pond at 7th and Mingo next to the RLA—on both Mingo and Tupelo creeks. These measures appear to have largely eliminated overbank and backup flooding in RLA #11 for the 100-year flood. None of the properties are currently within either FEMA's or the City's regulatory floodplains. Nevertheless, as mentioned above, at least two properties are impacted to some degree by ponding and overland flow due to local drainage issues in the generally level terrain, especially during storms of greater than 100-year magnitude, like the 300-year event of 1984. All of the structures in the RLA are within FEMA's 500-year flood hazard zone.

IV. Research and Analysis

The analysis of Repetitive Loss Area #11 was conducted by the Project Team through interviews with City officials, research into Engineering Services and Stormwater Drainage files, including the several of the master drainage plans for Mingo Creek and its tributaries, review of the City's extensive flood history documentation, assessment of insurance claims, field trips to the RLA, interviews with home owners and questionnaires mailed to the property owners and occupants 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:

- *Mainstream Channel and Detention Sites, Mingo Creek, Tulsa, Oklahoma*, January 2003, US Army Corps of Engineers
- FEMA Regulatory Flood Map 40143C0378L
- *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
- *Master Drainage Plan, Mingo Creek Tributaries LB6 - RB6 - RB7*, August 1980
- *Upper Mingo Creek Master Drainage Plan, Interim Report*, March 1987
- *Upper Mingo Creek Master Drainage Plan, Final Report*, March 1988
- *Project Management Plan Mingo Creek Local Flood Protection Project*, July 1990, US Army Corps of Engineers
- *Mingo Creek Master Drainage Plan for Tributaries between I-44 and the Broken Arrow Expressway*, June 1981
- 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 # 11.

Flood Insurance Data

None of the properties in RLA #11 currently carries flood insurance.

Claims Data.

One property in RLA #11, the repetitive loss property, has submitted two claims for structural and contents damage—one for $30,403 on May 26, 1984 and another for $5,471 on September 30, 1986, for a total of $35,874. Two other properties in the RLA submitted claims on May 27, 1984, one for $7,751 and the other for $678. There have been no flood damage claims in the RLA since 1986.

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.

Tupelo Creek, looking downstream from the Mingo Rd. bridge between E. 5th and E. 5th Pl. to the junction with Mingo Creek.

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 a number of visits to RLA #11 to determine the situation and condition of the structures. Visual analysis was verified by queries of Tulsa County Assessor data.

Structure Type.

The structures in RLA #11 are comprised of four single-family residences and one commercial (church) building.

Foundation Type.

The type of foundation was determined by field investigation and query of Tulsa County Assessor records. The single-family residential structures have foundations with crawl spaces, while the commercial building is slab-on-grade. One of the residences that made a flood damage claim has a slab-on-grade garage that has been converted into a family room.

Condition of Structures.

The condition of the structures in the RLA was determined by field investigation and a search of the County Assessor's records. The structures were considered to be in Average to Good condition. These findings are summarized in the following table.

Properties in the RLA

Address	Structure Type	Year Built	Foundation Type	Building Condition	Flood plain
Property 1	SF Residence	1961	Crawl Space	Good	Mingo Creek
Property 2	SF Residence	1962	Crawl Space	Good	Mingo Creek
Property 3	SF Residence	1961	Crawl Space	Good	Mingo Creek
Property 4	SF Residence	1961	Crawl Space	Good	Mingo Creek
Property 5	Commercial	1970	Slab	Average	Mingo Creek

Notification

Annual Floodplain Notification. Each year, in March, the City of Tulsa notifies all property owners and occupants within 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. Property owners and occupants in Repetitive Loss Area #11 are notified annually that their structures are located in a Repetitive Loss Area, and are potentially subject to flood damage from overland flow.

Property Owners/Residents Notification. Property owners and occupants were advised of the Repetitive Loss Area study and analysis by letter, were 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 has been one comment concerning flooding from the owner of the commercial/curch structure, stating that the property flooded twice in the 1980s from Mingo Creek and overland flow. The flooding problem has since been mitigated by the Mingo Creek project. Another property owner, whose house has a slab-on-grade garage converted into a family room, stated that his property backs onto the commercial/church lot, and that water ponding on the east side of the church during heavy rains overflows from a drainage ditch that runs behind his back fence and into his back yard.

Conclusions

RLA #11 has experienced flood damage from backup flooding from Mingo Creek and Tupelo Creek and from overland flow. Flooding was particularly severe during the flood of record on May 27, 1984. Significant changes have been made in this reach of Mingo Creek by the City of Tulsa and the US Army Corps of Engineers as part of the Mingo Creek Project in the 1980s and 1990s. Detention facilities were put in place upstream of the RLA on both Mingo and Tupelo creeks. These measures have significantly reduced, if not eliminated, overbank flooding along this reach of Mingo Creek and backup flooding on Tupelo Creek. The structures in the RLA are no longer within the City's or FEMA's 100-year flood hazard areas, but all remain within FEMA's 500-year flood zone. The remaining flooding problems have to do with local site drainage and overland flow.

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 in this reach of Mingo Creek. What flooding remains is due to overland flow in the generally level terrain of the floodplain. None of the properties are within either FEMA's or the City's regulatory floodplains, but all five are within FEMA's 500-year floodplain. While enormous progress has been made in reducing or eliminating flooding on Mingo Creek, the properties remain at

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

some risk of shallow flooding during storms of greater than100-year magnitude, like the 300-year storm of May 1984.

Individual Flood Protection 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, 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 property owners in flood hazard areas know and understand their flood risk and take what steps they can to protect their buildings, furnishings and equipment. 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, 100-year, or 300-year storm). You can receive a free flood zone determination by contacting the City with the correct legal 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 people in flood hazard zones to have 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 structures using berms, brick planter boxes and swales, but these may not be done in ways that cause damage to other properties. Owners and occupants 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 is the case with several properties in RLA #11.

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 with 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. To get more information about this program, contact the Customer Care Center at (918) 596-2100.

Acquisition is usually not feasible or cost effective for areas of shallow flooding, as in RLA #11.

Elevate Your Structure. Elevating the structure is only suitable for areas of shallow flooding, and is usually not feasible or cost-effective for masonry structures built on concrete slabs. It can sometimes be cost-effective for wood frame buildings on crawlspaces. The structures in RLA #11 are not candidates for elevation.

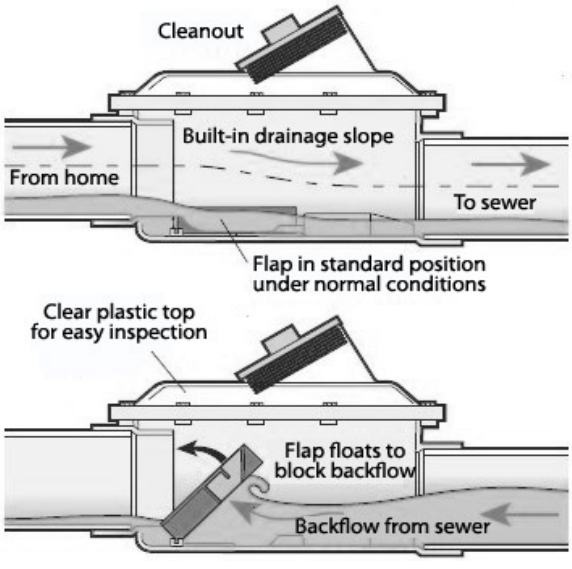
Dry Floodproof Your Structure. This can include actions that seal a structure and prevent floodwaters from entering. This method is best in areas where flood depths are no more than two or three feet. Buildings can be made watertight by sealing the walls with waterproof coatings, impermeable membranes, 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 floodproofing 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



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

often be caused by brush and other debris blocking drainage ways and culverts, bar ditches and storm sewer inlets and must be kept free of debris. Residents and property owners should do their part in keeping inlets and drainage ways clear of brush and debris. Do not attempt to clear debris during a flood event.

Correct Sanitary Sewer Backup Problems. Sanitary sewer backup can be a cause of home damage in low-lying, flood-prone areas like RLA #16. 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.

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 #11.

- Extend and/or improve the storm sewer system to better collect storm water runoff.
- Create overland flow path to allow better drainage of ponded water to the Creek.

VI. Funding

Due to the nature of the flooding problems and the localized damages involved in RLA #11, the funding of needed improvements will have to be borne by the individual property owner.

VII. Conclusions and Recommendations

Repetitive Loss Area #11 is comprised of four single-family residences and one commercial (church) building on five property lots along the east bank of Mingo Creek, just south of its junction with Tupelo Creek. There is one repetitive loss property in the

RLA, a slab-on-grade church. The four residences are all built on crawl spaces, although one has a slab-on-grade garage that has been converted into a family room. Prior to the Mingo Creek flood control project of the 1980s and 1990s, three of the RLA's structures suffered damage from backup flooding from Tupelo Creek and overland flow. The subsequent construction of detention facilities upstream on Tupelo Creek and Mingo Creek have largely eliminated overbank and backup flooding in the area and removed the RLA from both FEMA's and the City's 100-year regulatory floodplains. Two structures, however, continue to be impacted to some degree by ponding in low spots and local drainage issues. All of the structures in the RLA remain within FEMA's 500-year flood zone.