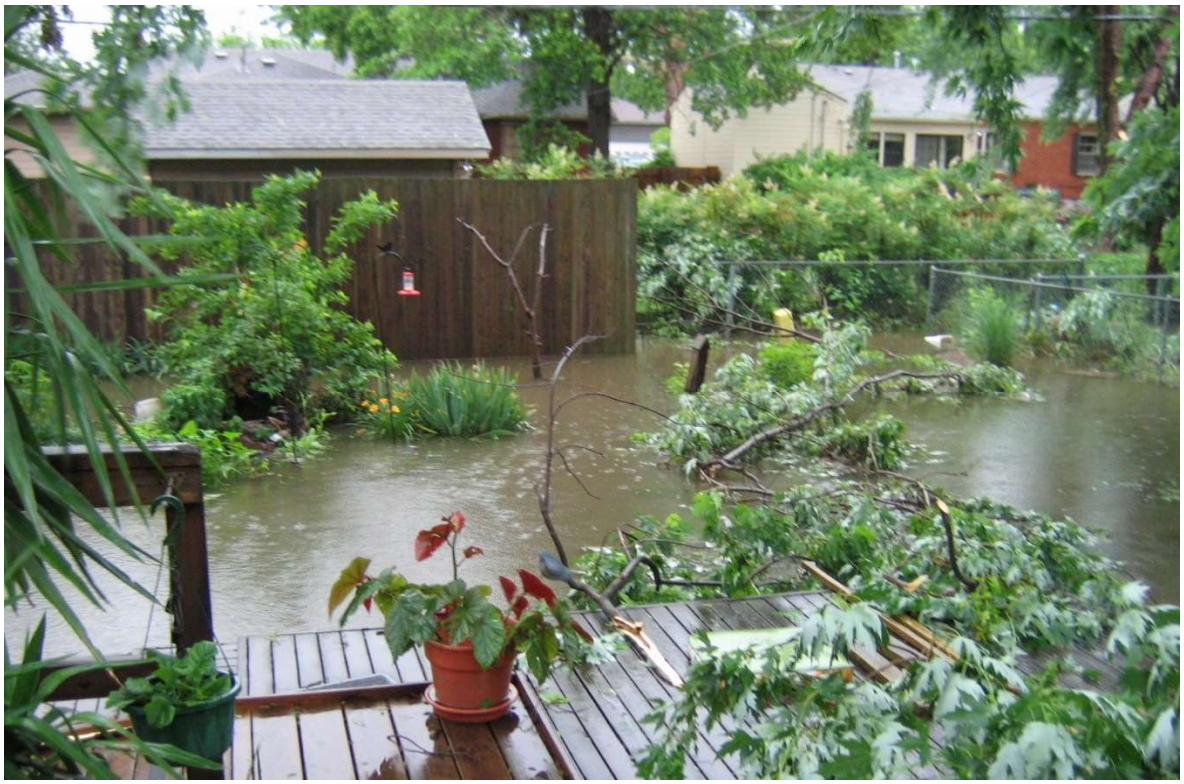
Repetitive Loss Area # 67

Lower Mingo Creek Main Stem
N. Mingo Rd. & E. Pine St. Area



Repetitive Loss Area # 67

May 18, 2023

Overview

Repetitive Loss Area #67 is located on the main stem of Mingo Creek in the area between the intersection of East Pine Street and North Mingo Road and the intersection of North Zenith Avenue and West Golden Street. There are 11 parcels in this area that are a mix of residential and commercial properties. Most of the buildings were built in the 1960s. There is one repetitive loss property (2 claims) in the RLA.

Five of the properties have made NFIP flood claims. For the May 26, 1984 flood there were five claims totaling $156,998. A claim was filed for a 6/21/1985 event but was closed without payment. And finally, a claim for an 8/19/1989 event.

This repetitive loss area is located in the Mingo Creek 1% floodplain. It is also listed in the Lower Mingo MDP as a problem flooding area. The primary causes of flooding in this RLA are overbank flooding from Mingo Creek and overland sheet flow that runs off Mingo Road and adjacent properties. This runoff may cause flooding into low-lying, slab-on-grade structures.

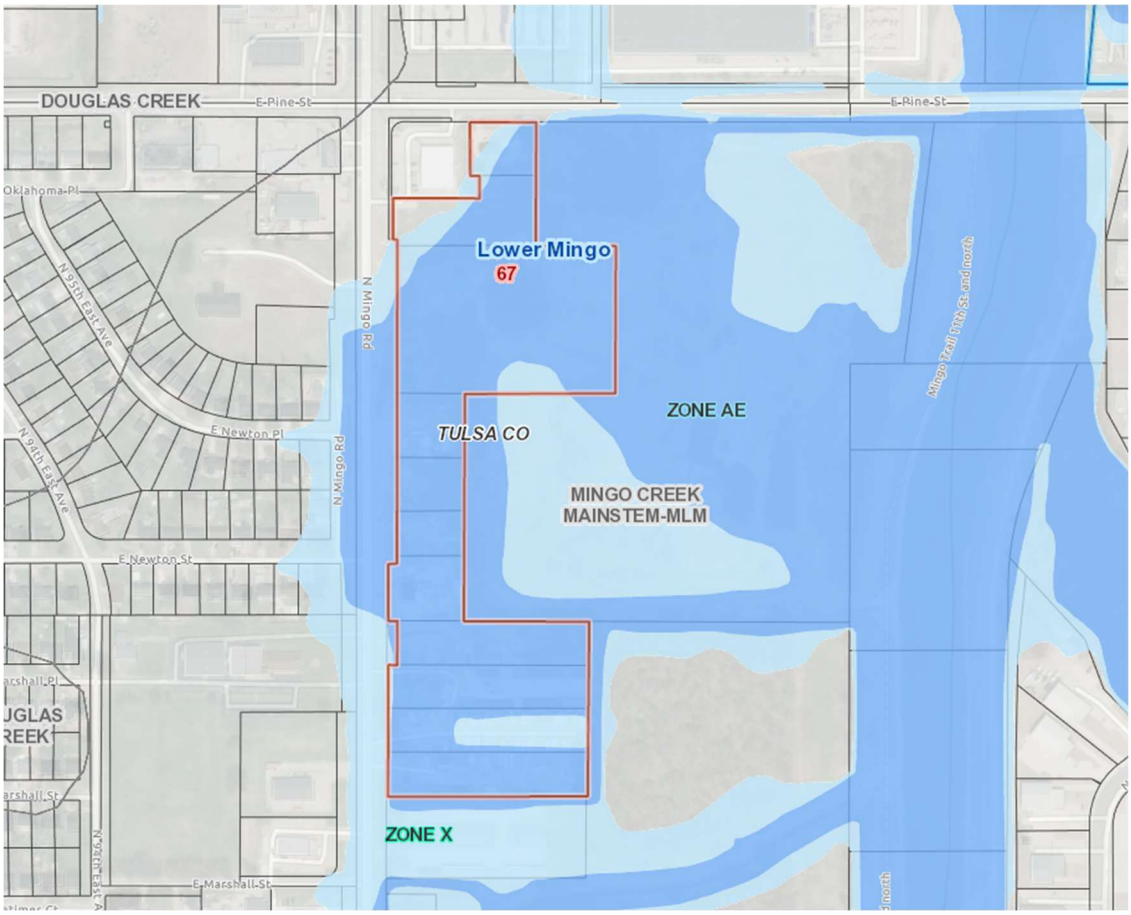
I. Background

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 topography this growth brought with it an increased risk of flooding. 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 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 1 rating in the NFIP's Community Rating System (CRS), which grants its residents a 45 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. In the decades since its inception, the NFIP has struggled to balance insurance premiums with flood claims. Key to rectifying this balance is addressing the outsized impact of repetitive loss properties. Repetitive loss properties constitute only 1% of premium holders but draw 33% of insurance claims (about $200 million a year).

In light of the amount of flood claims that repetitive loss properties cause, FEMA CRS calls for an analysis of "Repetitive Loss Areas" (RLAs). The City of Tulsa must conduct



an analysis of a designated area surrounding each of its repetitive loss properties and identify any nearby properties (including uninsured properties) that may be prone to flooding. This group of properties is then designated as an RLA.

As part of this analysis, the City contacts the owners of the properties in the RLA to inform them that they are located in an area subject to flooding. The City also conducts desktop research and other analyses to develop a plan for mitigating or eliminating flooding in these areas.

Flooding in an RLA may result from overflow from water sources, the built environment, or a combination of sources. It is important to note that many, if not most, properties in an RLA will not flood. Instead, all properties share similar geographic and flood (hydraulic and hydrologic) characteristics as the repetitive loss properties. It should also be stressed that the flooding events in question may have had little or nothing to do with overflow from a creek, but perhaps been the result of storm sewer backup or overland flow from a neighbor's property into a low-lying, slab-on-grade home or garage.

II History

General: There are 11 parcels in this RLA, all of which were constructed between 1960 and 1995. These properties are primarily commercial, with many being used for storage.

Flood History: Floods affecting RLA 67 occurred in 1984 and 1989 according to the NFIP claim data. The 1984 claim appears to be the result of the 1984 floods on Mingo Creek. The Lower Mingo Creek Master Drainage Plan of 1988 states that historically Mingo Creek has flooded about every two or three years. Particularly severe floods occurred in October 1959, May and July 191, June 1974, May 1976 and May 1984, with the last-named event being the flood of record for the basin.

Improvements: Massive flood-control improvements were made to Mingo Creek and its tributaries in the 1980s and 1990s as part of the multifaceted Mingo Creek Project and other initiatives by the US Army Corps of Engineers and the City. These changes include the channelization of nine miles of Mingo Creek, the enlargement or removal of stormwater conduits and bridges, and the installation of 23 detention facilities on both Mingo Creek and its tributaries. In 1986 the City excavated the channel beneath the BNSF railroad bridge and in 1988 removed the severe downstream bottleneck at E. 36th St. N. In 1991 the City excavated accumulated sediment along the lower reach of the creek and widened the channel by 50% between I-244 and the BNSF bridge. All structures in RLA 67 are in the Mingo Creek 1% AC Floodplain.

II. Location and Drainage.

Mingo Creek Mainstem MLM LB4 has a drainage area of about __ acres upstream of this RLA. The entire drainage basin is mostly developed with residential ¼ acre lots and commercial properties, there are two large properties on the creek that are undeveloped.

The properties in RLA 67 are located in the 1% AC Floodplain. The water surface elevation through these properties is estimated to be 612 ft, the properties within this RLA are not elevated above this elevation. The topography at RLA 67 slopes generally downhill to the northeast where the west side of Mingo Road is drained by a ditch system that is connected to a culvert system under Mingo Road that drains to stream ML-04-AA and eventually outfalls into the mainstem of Mingo Creek. The east side of Mingo Road follows the same general slope direction. Mingo Road is at a higher elevation than the properties to its east and west. Runoff that drains east, naturally runs through the properties in this RLA until it reaches ML-04-AA or Mingo Creek.

The flow rates from the Flood Insurance Study Downstream of Mill Creek are shown in Table 1.

Table 1

Flow Rates on Mingo Creek Downstream of Mill Creek

	Flow 10% (10-year) (cfs)	Flow 2% (50-year) (cfs)	Flow 1% (100-year) (cfs)	Flow 0.2% (500-year) (cfs)
Total Computed Flow (cfs)	15,230	22,870	25,150	30,510

III. Research and Analysis

Staff at the City of Tulsa Engineering department directed the research and analysis effort on this project. These city staff and private consultants at Meshek and Associations formed part of the core group in this project, hereby titled "the project team." The project team conducted this analysis using verbal and written reports from property owners, by consulting city data sources, and using external data sources from public and private entities. In addition, members of the project team conducted site-specific analyses of the properties for the analysis.

City Department and External Stakeholders

During the course of the RLA analysis process, the project team solicited input from internal City departments including the engineering department, the emergency management department, and the City Council. The project team also contacted and gathered building data from the Tulsa County Assessors' Office. The project team also communicated with state and federal stakeholders, especially FEMA, during this process.

Public Meeting and Adoption

The project team will mail residents and property owners in the RLA a letter, requesting their feedback on a questionnaire and their attendance at a public meeting (see notification section for more information). This meeting will be made available to the public. The repetitive loss area analyses were adopted by the City Council following the completion of this analysis. The meeting minutes and the City meeting will be made available to the public.

Plans, Studies, and Documents

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

- *Flood Insurance Rate Map*, City of Tulsa, October 16, 2012
- *Regulatory Floodplain Map Atlas*, Tulsa Engineering Services, April 2013
- *2014 City of Tulsa Hazard Mitigation Plan Update*, Flanagan & Assoc., 2014
- *2019 City of Tulsa Hazard Mitigation Plan Update*, Meshek & Assoc., 2019
- *Lower Mingo Creek Master Drainage Plan, Final Report,* City of Tulsa, August 1991
- City of Tulsa *Stormwater Management Plan*
- Stormwater Design Criteria Manual: Critical Neighborhood Flood Control Projects
- Stormwater Capital Improvements List, City of Tulsa, Engineering Services

- *Guidebook to Conducting Repetitive Loss Area Analyses*, UNO and FEMA

Flood Insurance Data

Of the 11 properties in the RLA, 6 have carried flood insurance or made flood damage claims to the NFIP. Because the Privacy Act of 1974 (5 USC 522a) restricts the release of flood insurance policy and claims data to the public, neither the Repetitive Loss property nor specific claim data are detailed in this Plan.

Claims Data: Five properties have made NFIP flood claims. One property in RLA 67 has made 2 flood damage claims in 1984 and 1989 receiving total payments of $122,285. Four other properties have made NFIP flood claims as well. For the May 26, 1984 flood there were five claims totaling $156,998 in the RLA. A claim was filed for a 6/21/1985 event but was closed without payment. And finally, a claim for an 8/19/1989 event for $6,455.

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, 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 and Structure Type

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

Structure Type: 3 of the structures in RLA #67 are single-family residences and 8 are commercial properties, two of which are vacant or used for parking.

Foundation Type: The type of foundation was determined by field investigation and query of Tulsa County Assessor records. There were 5 properties with slab on grade and 2 properties crawl space foundation. Property 4 has 2 structures, 1 with a crawl space and 1 with slab on grade foundation. Property 2 and 10 are vacant.

Condition of Structures: The condition of the residences in the RLA was determined by field investigation and the County Assessor's records. The structures were all considered to be in the range of Unsound to Average/Fair condition. These findings are summarized in the following table.

Table 2 - Properties in the RLA

Address	Structure Type	Foundation Type	Condition
Property 1	Single Family Res.	Crawl Space	Fair
Property 2	Commercial	Vacant	
Property 3	Single Family Res.	Crawl Space	Poor
Property 4	Commercial	Slab on grade and Crawl Space	Unsound
Property 5	Commercial	Slab on grade	Fair
Property 6	Commercial	Vacant	

Address	Structure Type	Foundation Type	Condition
Property 7	Commercial	Slab on grade	Average
Property 8	Commercial	Slab on grade	Average
Property 9	Single Family Res.	Slab on grade	Fair
Property 10	Commercial	Vacant	
Property 11	Commercial	Slab on grade	Fair

Notification

Annual Floodplain Notification: Each year, in March, the City notifies all homeowners and residents 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 residences and families, including the purchase of flood insurance.

Annual Repetitive Loss Area Notification: Residents in Repetitive Loss Area #67 will be notified annually that their homes are located in a Repetitive Loss Area and are potentially subject to flood damage from overland flow and overflow from Mingo Creek.

Property Owners/Residents Notification: Property owners and residents/occupants will be: advised of the Repetitive Loss Area study and analysis by letter; 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 will interview homeowners and a public meeting will held with Repetitive Loss Area residents to brief them on the Study/Plan, receive their input, and discuss possible mitigation measures.

Property Owner Response to Notifications

This RLA is new and no property owner notification or response has been generated.

IV. Mitigation Measures

Solutions

The Master Drainage Plan for Lower Mingo Creek identifies the most cost-effective structural solutions (channel improvements, enlarged inlets and storm sewers, stormwater detention ponds, etc.) for the entire drainage basin. The Non-Structural Plan identifies buildings where a structural solution is not cost-effective, and floodproofing is the recommended solution. The recommended plan to alleviate flooding in RLA 67 is to floodproof seven structures and acquire one structure.

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, sewer backup protection, and flood insurance. Dry floodproofing is not recommended for residential structures.

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

Individual Flood Protection Measures

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 give recommendations. Contact the Customer Care Center at (918) 596-2100.

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, 100-year, or 500-year storm). To receive a free flood zone determination by mail, contact the Customer Care Center at (918) 596-2100 with the correct address or legal description of the property.

It is always a good idea for residents and property owners in flood hazard zones to prepare a disaster preparedness and response plan that thinks through 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.

Berms 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. Contact the Customer Care Center at (918) 596-2100.

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 is a voluntary program where owners who are in this situation have 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) 596-2100.

Elevation: 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 homes in RLA #67 with crawlspaces are candidates for elevation.

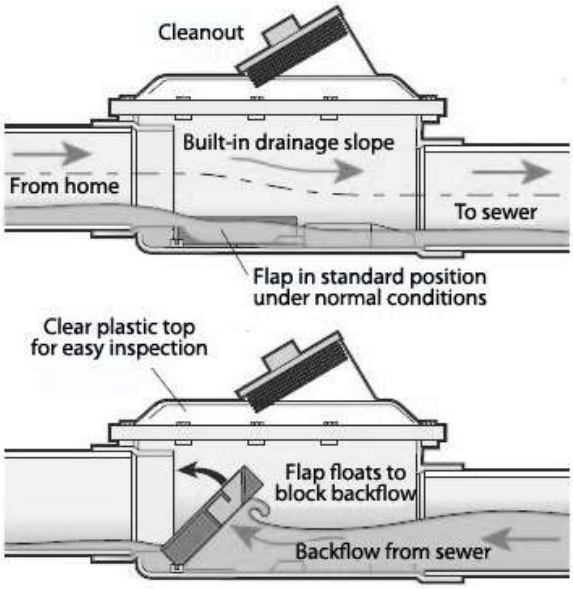
Dry Floodproofing includes actions that seal a structure and prevent floodwaters from entering. This method is best in areas where flood depths are no more than two or three feet. Buildings can be made watertight by sealing the walls with waterproof coatings, impermeable membranes, or additional layers 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 sewer lines and drains. Dry floodproofing is only allowed on non-residential structures, so is not appropriate for the homes in RLA #67 but is applicable to commercial properties.

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.

Maintain Nearby Streams, Ditches, and Storm Drains: Local flooding can often be caused by brush and other debris blocking drainage ways and culverts. Debris can block 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.

Correct Sewer Backup Problems: Sewer backup can be a problem in low-lying, flood-prone areas. The installation of backflow prevention valves on your sewer lines is recommended.

Purchase and Maintain Flood Insurance: Flood Insurance is available for all properties in Tulsa and is especially recommended for properties in flood-prone areas. Flood insurance for your structure and contents is recommended, whether or not you are in a floodway or SFHA. Thirty percent 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 45% 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.

V. Funding

The costs of most individual flooding prevention activities will be borne partially or exclusively by the property owner or resident. This is contingent on several factors including the type of structure flooded, recurrence and severity of damages, and the availability of funding from federal sources.

The City funds direct and indirect flood prevention and mitigation projects through a variety of sources, most specifically through the stormwater utility fee. In addition, some of the City's capital improvements projects may include flood or stormwater reduction benefits. Another potential funding source are federal grant programs, especially FEMA's grant program.

Based on an analysis of the City's Capital Improvements projects and annual budgets, the City has not allocated funding to mitigate this RLA, as of this writing. As funding becomes available for an RLA, the City will undertake a more detailed and localized drainage plan to identify alternative solutions to flooding problems. From this analysis, the City will produce project recommendations that are aligned with the recommendations listed in the individual RLAs.

VII. Conclusions

RLA 67 has experienced flood damage from overbank flooding on Mingo Creek and overland flow from adjacent properties at higher elevations, including runoff from Mingo

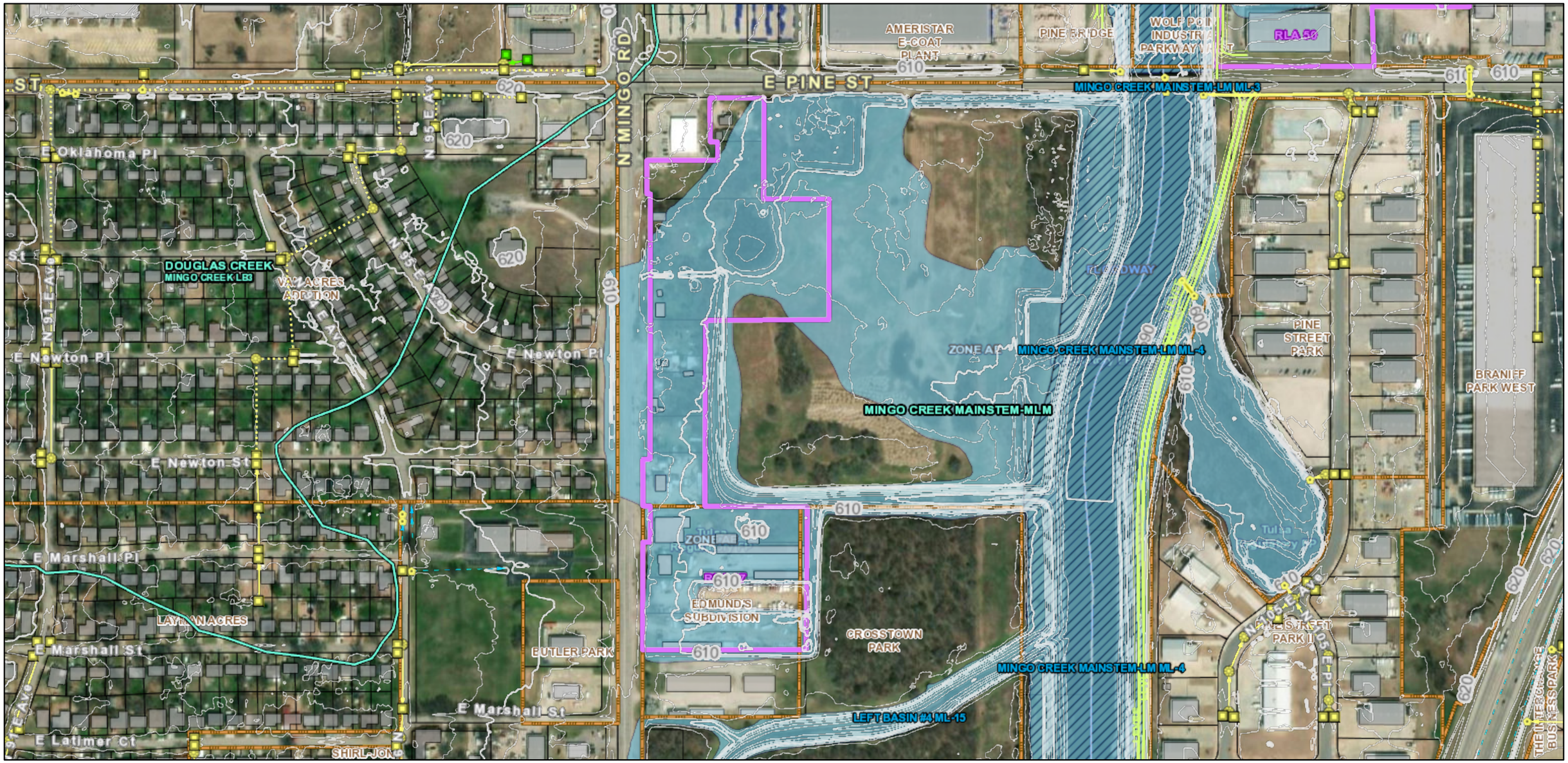
Rd. The 1991 Master Drainage Plan for Lower Mingo Creek recommended a combination of floodproofing and acquisition.

Homeowners should be encouraged to maintain flood insurance. Because RLA #67 is within the NFIP Special Flood Hazard Area (SFHA), the cost in flood insurance is low. And, since the City of Tulsa is a CRS Class I Community, homeowners will receive an additional 45% discount on their insurance premiums.

VIII. Recommendations

- You are encouraged to obtain and keep a flood insurance policy on your home and contents. The City of Tulsa Engineering Services Department staff is available to advise you about yard drainage improvements that can protect homes from overland flow flooding, storm sewer backup and other local drainage problems.

RLA 67



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Maxar

SW Pump Stations
SW Inlets
SW Manholes
SW Endsections
SW Junctions

SW Closed System
Round - Circular
Arch - Ellip - Semi-Circ
Box - Rectangular
Unknown; Other
SW Drainage Ditches
SW Open Drainage
Levee
Retaining Wall
Private Inlets
Private Manholes
Private Closed System
2ft Contours - Index
2ft Contours - Intermediate

DFIRM Streams
Floodway Boundary

DFIRM Floodplain
AE; AO
A
Tulsa Regulatory Floodplain POI

Tulsa Regulatory Floodplain - Oct 2021
Shallow Flooding (100yr)
Regulatory Floodplain (100yr)
Creek County 2018
Osage County 2019
Rogers County 2018
Tulsa County 2021

Wagoner County 2019
Drainage Basin Boundaries
Repetitive Loss Areas
Subdivision Boundaries
Building Footprints (Microsoft)
Buildings touched by Floodplain

Web AppBuilder for ArcGIS
Maxar |