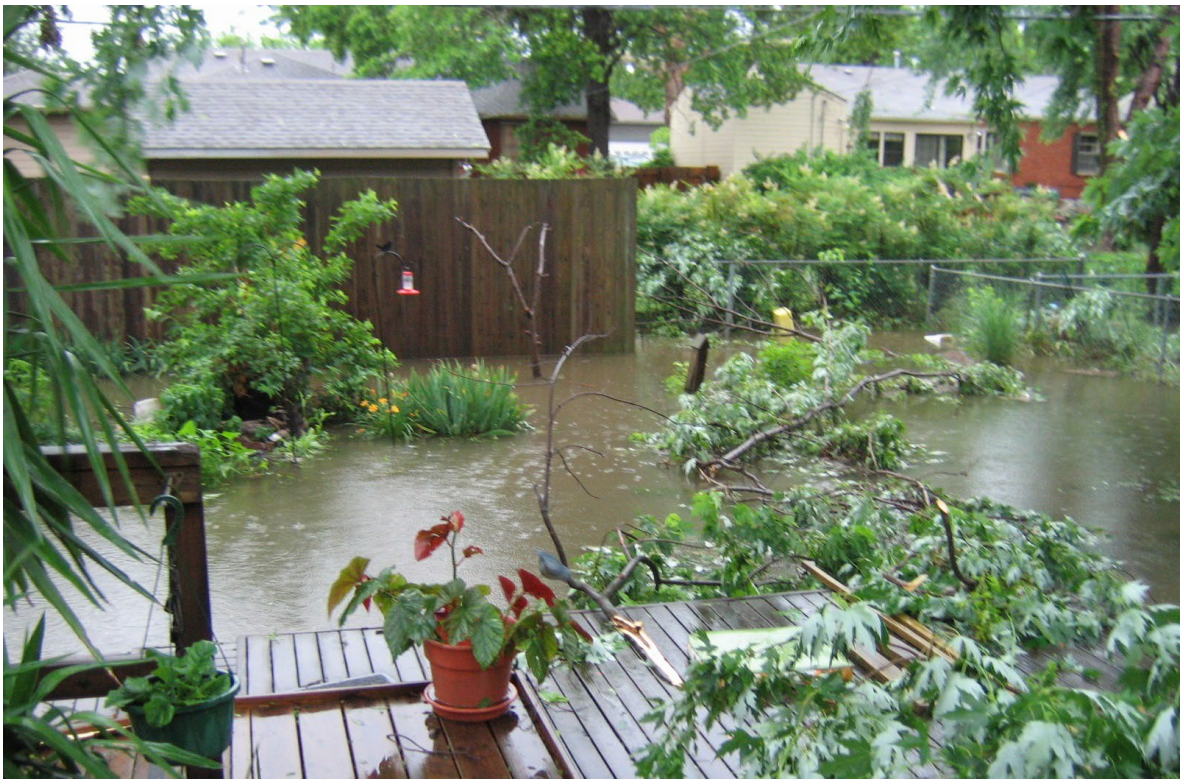
# Repetitive Loss Area # 66

## Parkview Trib. LB1
## N. Yukon Ave. & W. Haskell Pl. Area



Repetitive Loss Area # 66

June 30, 2022

## Overview

Repetitive Loss Area #66 is located on Parkview Tributary LB1 in the area between the intersection of North Yukon Avenue and West Haskell Street and the intersection of North Zenith Avenue and West Golden Street. There are 18 parcels in this area, all of which are single-family residences. The houses were all built in the 1970's, between 1973 and 1979. There is one repetitive loss property (2 claims) in the RLA.

Table 1

Historical Claims Information

| Name | Date(s) of Flooding | Corresponding Claims Amounts |
|---|---|---|
| RLA 66 | 5/28/2013<br>5/31/2019 | $1,120<br>$4,960 |

The primary cause of flooding in this RLA is overland flooding from Parkview Tributary LB1 which occurs when the existing storm sewer is overwhelmed as discussed in the analysis sections below. In addition, overland sheet flow contributed to by upstream neighborhood properties may also cause flooding into a low-lying, slab-on-grade back door.

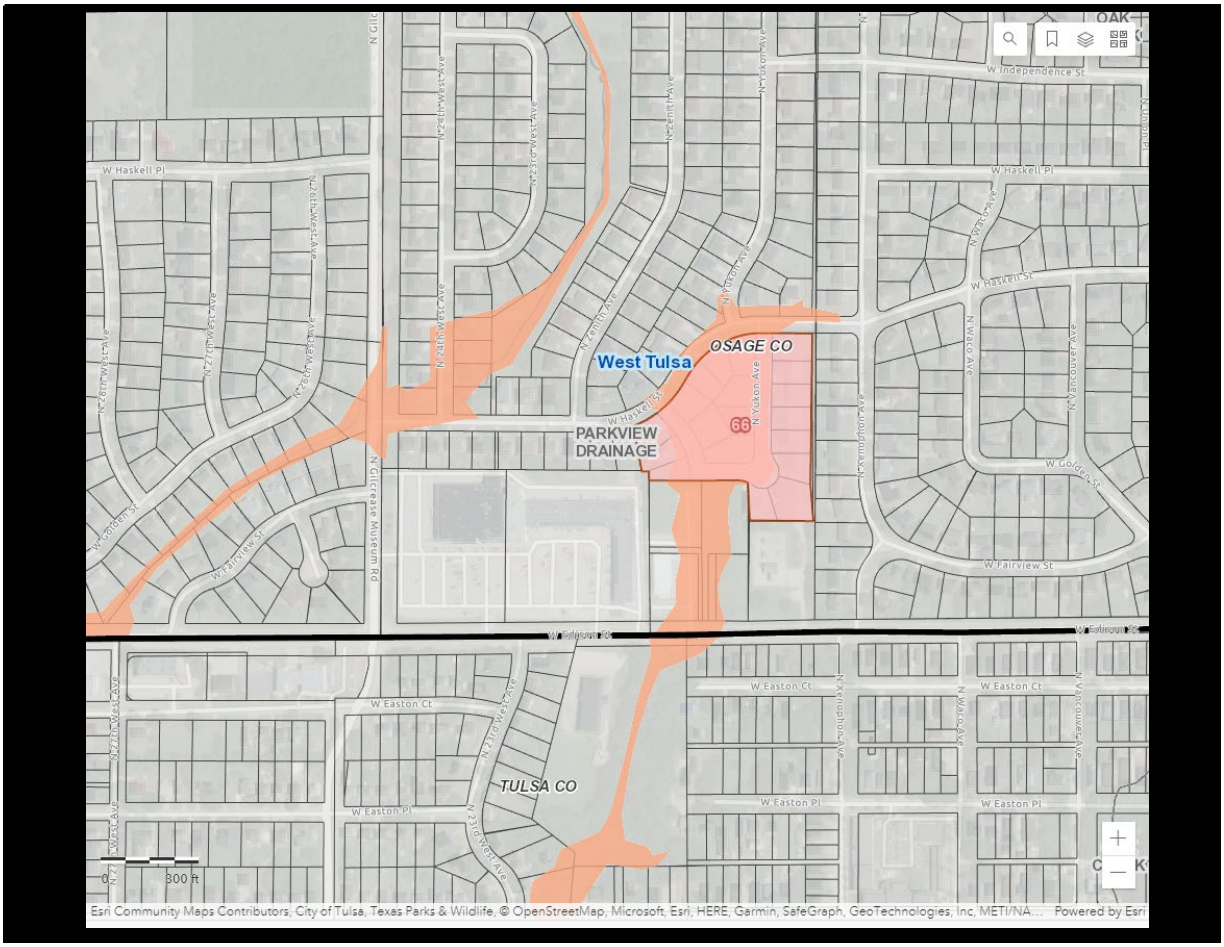
## I. Background

During the building boom of the 1970s, Tulsa expanded west into the Parkview drainage basin and RLA 66 was fully developed as part of the Gilcrease Hills Village I sub-division. 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




**RLA #66 is located in the general area of North Yukon Avenue and West Haskell Place.**

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 18 parcels in this RLA, all of which were constructed between 1973 and 1979.

**Flood History:** Floods affecting RLA 66 occurred in 2013 and 2019 according to the NFIP claim data. Both of the claims appear to be a result of overland flooding of Parkview Tributary LB1, or from local drainage trying to make its way to the street.

**Improvements:** There have been no recent upstream drainage improvements in the Parkview Tributary LB1 basin that would affect the frequency of flooding at this RLA. The existing 48" RCP storm sewer that runs along North Yukon Avenue and then along West Golden Street is inadequate to handle large storm events.

## II. Location and Drainage.

Parkview Tributary LB1 has a drainage area of about 53 acres upstream of this RLA. The drainage basin headwater is at a point near West Independence Street and North Union Avenue. The entire drainage basin is fully developed with residential ¼ acre lots.

The topography at RLA 66 slopes generally downhill to the southwest where it is drained by an existing storm sewer system. The storm sewer system consists of a 48" RCP main line that begins at the intersection of West Haskell Street and North Yukon Avenue. The main line is fed by two 24" RCP storm sewer lines that drain the area north along Yukon Avenue and east along Haskell Street up to the headwater. A review of the storm sewer plans in the subdivision reveal that the 38-acre drainage area upstream on the intersection of West Haskell Street and North Xenophon Avenue has no storm sewers and relies solely on street drainage. Overflow of the storm sewer system begins at this point and continues downstream through the RLA.

There have been calls to the Mayor's Action Hotline about standing water in the streets in RLA 66.

The flow rates from the Flood Insurance Study at South Union Avenue are shown in Table 1.

Table 1

Flow rates on Parkview Tributary LB1 at North Yukon Avenue

| | Flow 50% (2-year) (cfs) | Flow 20% (5-year) (cfs) | 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) | 183 | 235 | 304 | 394 | 436 | 516 |
| Storm Sewer Capacity (cfs) | 100 | 100 | 100 | 100 | 100 | 100 |
| Overland Flow (cfs) | 83 | 135 | 204 | 294 | 336 | 416 |

## 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. The repetitive loss area analyses were adopted by the City Council following the completion of this analysis. The City Council meeting minutes 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
- 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
- *Northwest Basins Master Drainage Plan,* August 2022

### Flood Insurance Data

Only one of the 18 properties in the RLA has 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:** One property in RLA #66 has made a total of 2 flood damage claims—in 2013 and 2019 and received total payments of $6,080.

### 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:** All 18 of the structures in RLA #66 are single-family residences.

**Foundation Type:** The type of foundation was determined by field investigation and query of Tulsa County Assessor records. All of the 18 structures are slab on grade.

**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 Average to Good condition. These findings are summarized in the following table.

**Properties in the RLA**

| Address | Structure Type | Foundation Type | Condition |
|---|---|---|---|
| Property 1 | Single Family Res. | Slab on grade | Average |
| Property 2 | Single Family Res. | Slab on grade | Average |
| Property 3 | Single Family Res. | Slab on grade | Average |
| Property 4 | Single Family Res. | Slab on grade | Average |
| Property 5 | Single Family Res. | Slab on grade | Average |
| Property 6 | Single Family Res. | Slab on grade | Average |
| Property 7 | Single Family Res. | Slab on grade | Average |
| Property 8 | Single Family Res. | Slab on grade | Average |
| Property 9 | Single Family Res. | Slab on grade | Fair |
| Property 10 | Single Family Res. | Slab on grade | Average |
| Property 11 | Single Family Res. | Slab on grade | Average |
| Property 12 | Single Family Res. | Slab on grade | Average |
| Property 13 | Single Family Res. | Slab on grade | Average |
| Property 14 | Single Family Res. | Slab on grade | Average |
| Property 15 | Single Family Res. | Slab on grade | Average |
| Property 16 | Single Family Res. | Slab on grade | Average |
| Property 17 | Single Family Res. | Slab on grade | Average |
| Property 18 | Single Family Res. | Slab on grade | Average |

**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 #66 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 sewer back-up.

**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 meet with Repetitive Loss Area residents if requested 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 Parkview Tributary LB1 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 66 is to increase the mainline storm sewer capacity throughout the reach, beginning at the intersection of West Haskell Street and North Xenophon Avenue and continuing all the way down stream to West Edison Street.

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. None of the homes in RLA #66 are a candidate for elevation.

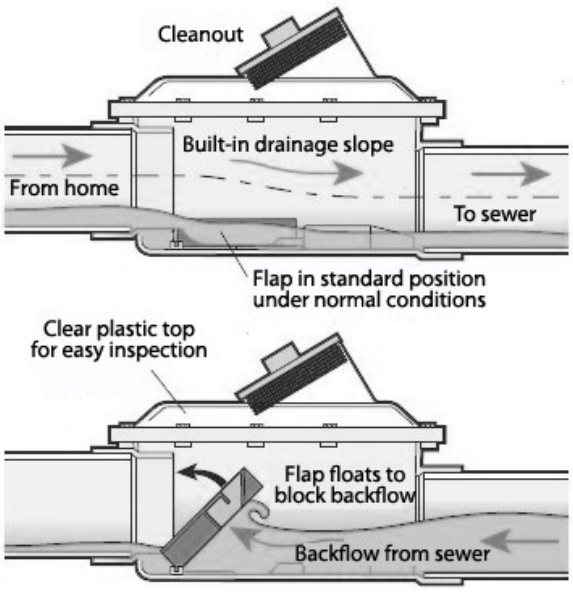
**Dry Floodproofing** includes actions that seal a structure and prevent floodwaters from entering. This method is best in areas where flood depths are no more than two or three feet. Buildings can be made watertight by sealing the walls with waterproof coatings, impermeable membranes, or additional 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 #66.

**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. Although this is not a major problem for Parkview Tributary LB1 itself, 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.




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

**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.

## 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

The flooding in RLA 66 is caused by overflow of the existing Parkview Tributary storm sewer system. As laid out in the Master Drainage Plan, the recommended plan to alleviate flooding in RLA 66 is to increase the mainline storm sewer capacity throughout the reach, beginning at the intersection of West Haskell Street and North Xenophon Avenue and continuing all the way down stream to West Edison Street. Capital Improvement funding is not currently budgeted for this RLA.

Homeowners should be encouraged to maintain flood insurance. Because RLA #66 is not 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.