

**MINUTES OF A SPECIAL WORKSHOP MEETING  
OF THE CITY COUNCIL  
OF THE CITY OF BUNKER HILL VILLAGE, TEXAS  
JUNE 1, 2016 AT 5:00 P.M.**

**I. CALL TO ORDER**

Mayor Williams called the meeting to order at 5:03 p.m. in the Council Chambers of City Hall, 11977 Memorial Drive, Houston, Texas.

*Those Council Members Present:*

Mayor Jay Williams  
Councilman Robert Lord  
Councilman John Glover  
Councilman Jay Janecek  
Councilwoman Laurie Rosenbaum  
Councilwoman Susan Schwartz

*Also in Attendance:*

Karen Glynn, City Administrator  
Britique Williams, City Secretary/Dir of Finance  
Steve Smith, Dir of Public Works/Bldg Official  
Loren Smith, City Attorney  
Valerie Cantu, Muni Court Admin/Asst. City Sec  
Marc Pichon, Intern  
Will Ottens, Intern

*Those Drainage Committee Members Present:*

John Glover, Committee Chair (*Also City Council Member listed above*)  
Robert Lord (*Also City Council Member listed above*)  
Jack Christiansen  
Melanie Ottens  
Mike Nuzzo  
Paul Reinbolt  
William Johnson  
Eric Schmidtke was absent

*Other Guests assisting with the presentation:*

William Conlan, RPS Klotz Associates  
Dr. Ali Keyvani, RPS Klotz Associates

**II. JOINT WORKSHOP WITH THE CITY COUNCIL AND CITY'S DRAINAGE COMMITTEE TO REVIEW RECOMMENDATIONS FOR THE UPDATE TO THE CITY'S DRAINAGE MASTER PLAN - *City's Drainage Committee, Staff, & Klotz Associates***

Karen Glynn, City Administrator; Steve Smith, Director of Public Works/Building Official; and William Conlan, RPS Klotz Associates presented the attached PowerPoint presentation. The City Council discussed the presentation and in particular the policy points including the criteria that the City should follow for the design of the City's Drainage System. The City Council provided direction to the Drainage Committee as summarized below. In summary, there are two areas for the Drainage Committee to further review and submit recommendations to address:

- Tactical -- address current needs by means of projects and the update to the Master Plan
- Strategic -- address and plan for the future by means of regulations and standards, for example, recommending amendments to the current Drainage Ordinance or minimum slab elevations.



**Outline of Presentation**

- **Background/Direction**
- **Bunker Hill's Existing Drainage**
  - Drainage Watersheds and System
  - Level of Service
- **Current Standards & Recent Floods**
  - Design Standards/Drainage Ordinance
  - What has happened during recent floods 2009, 2015, 2016
- **Proposed Priority Criteria**
- **Policy Discussion/City Council Direction**
- **Next Steps**

**Background/Direction**

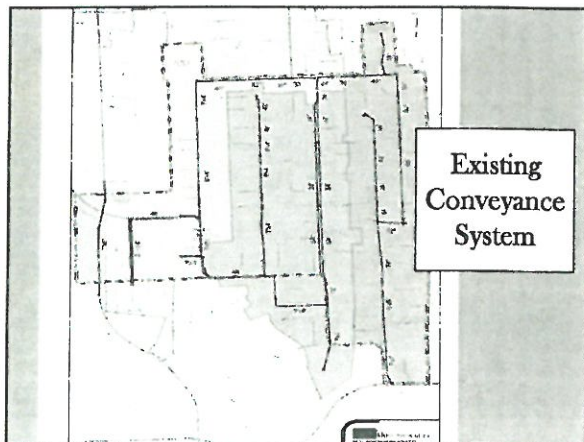
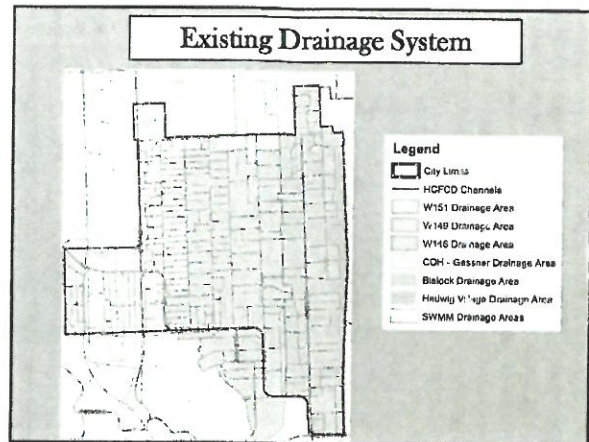
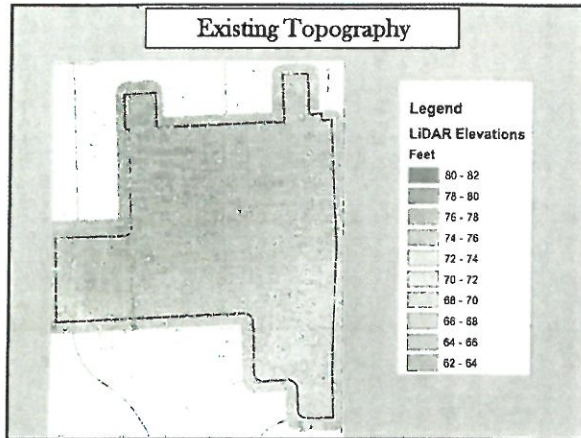
- In January 2016, the City's Drainage Committee recommended that the City Council consider a City-wide comprehensive review of our Drainage System to determine projects and priorities.
- The City's previous Master Plan was completed in 2005 and all projects had been completed. (The focus of the 2005 Update was the major trunk lines and conveyance)
- A contract was awarded to RPS Klotz Associates to conduct this update taking into account the various construction projects completed to date and the modeling analysis, and study completed following the May 2015 Memorial Day Storm.
- The April 18, 2016 Tax Day Storm was also included into the Update. This includes public comments received following the Tax Day Storm.

**Bunker Hill's Existing Drainage**

Pipes - Inlets - Ditches - Box Culverts  
 PODs - Streets - Trails - Yards - Detention  
 Topography

**Sec. 4-82 - Stormwater Drainage Management Program**  
*Purpose and application:* It is the purpose of this article to preserve and enhance the desirability of our city by requiring careful planning of our city's redevelopment. This includes the management of our drainage facilities and stormwater while ensuring the owner's rights to utilize and develop their property.  
 The city's stormwater drainage system consists of enclosed storm sewers, roadside ditches, swales, inlets, detention facilities, open channels and management of overland (sheet) flow as singular components and/or as part of a combined system. During extreme rainfall events, individual lots/yards provide for overflow and ponding. This chapter, the city's drainage criteria manual and the city's development code strives to take a proactive approach to prevent structural flooding as a result of rainfall events.





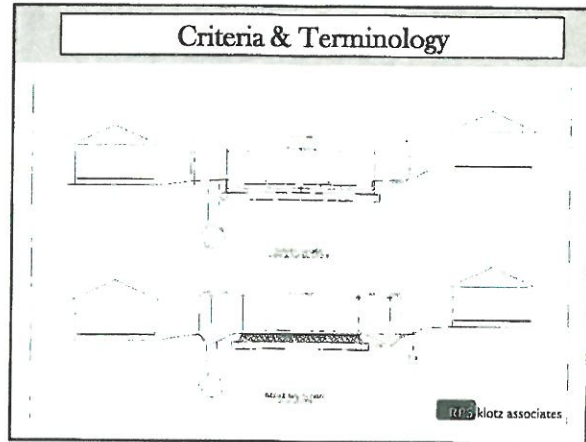
### Current Design Standards/Drainage Ordinance

*FEMA Definition: Base Flood* shall mean the flood having a one percent chance of being equaled or exceeded in any given year – the Base Flood is considered to be the 100 Year Event

- Drainage Ordinance – “No Net New” & Addressing Adjacent Properties ~Jan 2015
- Slab Elevation Requirements
- Street – Drainage System Design

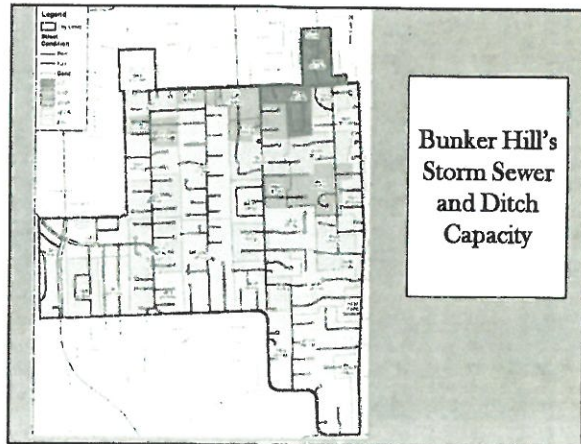
### Storm Criteria

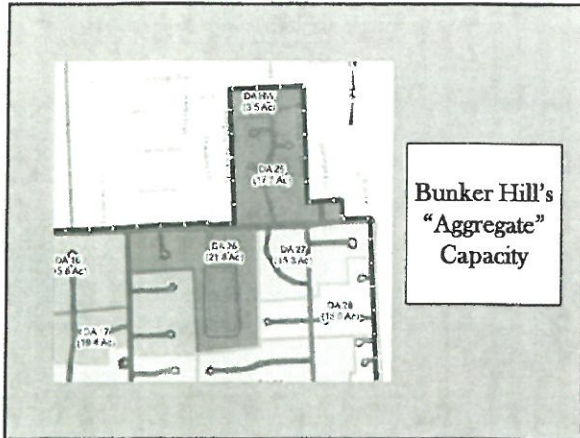
	30 min	1 hr	2 hr	3 hr	5 hr	12 hr
2-yr	1.4	1.9	2.2	2.5	2.9	3.4
5-yr	1.6	2.5	3.0	3.3	4.0	4.8
10-yr	2.1	2.8	3.5	3.9	4.9	5.9
25-yr	2.4	3.1	4.1	4.8	6.1	7.1
50-yr	2.7	3.8	4.9	5.6	7.2	8.7
100-yr	3.0	4.2	5.5	6.3	8.5	10.2
250-yr	3.5	4.9	6.6	7.8	10.4	12.6
500-yr	3.9	5.5	7.5	9.0	12.2	14.7



### Storm Criteria

	30 min	1 hr	2 hr	3 hr	5 hr	12 hr
2-yr	1.4	1.9	2.2	2.5	2.9	3.4
5-yr	1.6	2.5	3.0	3.3	4.0	4.8
10-yr	2.1	2.8	3.5	3.9	4.9	5.9
25-yr	2.4	3.1	4.1	4.8	6.1	7.1
50-yr	2.7	3.8	4.9	5.6	7.2	8.7
100-yr	3.0	4.2	5.5	6.3	8.5	10.2
250-yr	3.5	4.9	6.6	7.8	10.4	12.6
500-yr	3.9	5.5	7.5	9.0	12.2	14.7





### What Happened in Bunker Hill During the past 3 Floods?

**Storm Data to Date:**

- April 2009 (150 Year Event)
- Memorial Day 2015 (250 Year Event)
- Tax Day 2016 (200 Year Event)

### Tax Day Rain Data - April 18, 2016

	Max Rainfall					
	30 min	1 hr	2 hr	3 hr	6 hr	12 hr
2009	2.55	4.47	6.53	7.54	8.33	8.70
2-yr	2.4	3.8	5.27	5.75	5.9	5.4
5-yr	2.2	3.5	4.91	5.3	4.9	4.4
10-yr	2.1	3.3	4.5	4.9	4.5	3.9
25-yr	2.0	3.1	4.2	4.5	4.2	3.7
50-yr	1.9	2.9	4.0	4.3	4.0	3.5
100-yr	1.8	2.7	3.8	4.1	3.8	3.3
250-yr	1.6	2.4	3.5	3.8	3.5	3.0
500-yr	1.5	2.3	3.3	3.6	3.3	2.8

Rainfall Gauge near Bunker Hill - Buffalo Bayou @ Beltway 8  
All residents agreed it was not as bad as the Memorial Day Event.

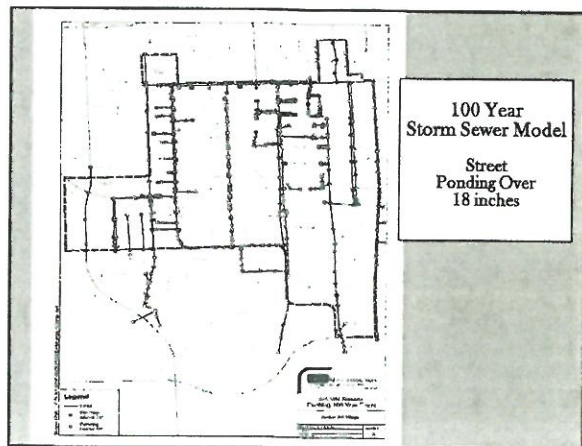
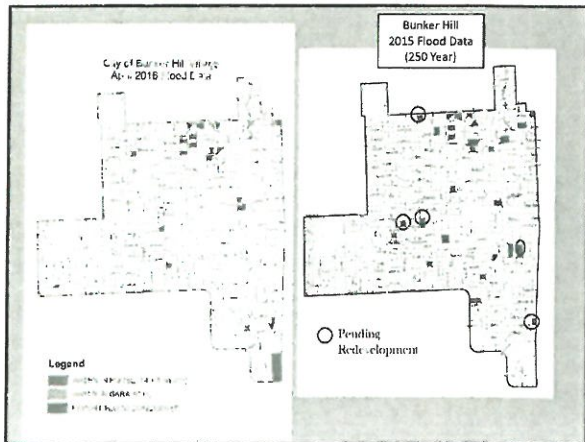
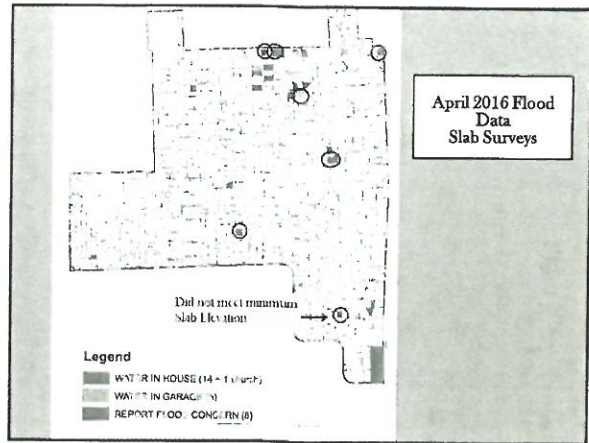
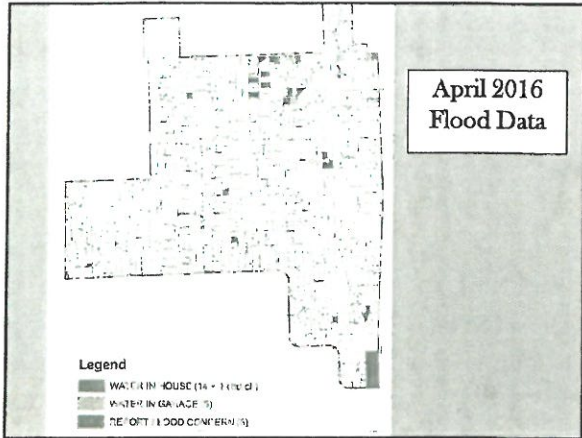
Date	Magnitude	Homes/Churches with Water Reported in City
April 2009	~ 150 Year Event	60 - 80*
May 2015	~ 250 Year Event	32
April 2016	~ 200 Year Event	14

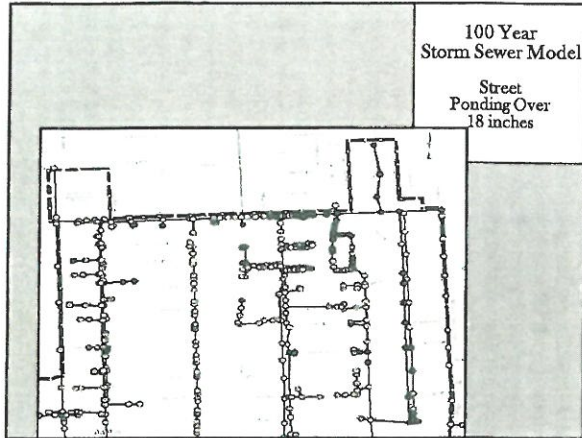
\* Low to Medium Rain for 100 Year Event in 2009

### Tax Day Rain Data - April 18, 2016

Reported Concern	Number of Reports
Homes/Churches Flooding	14 Homes 1 Church
Garage Flooding	6 Houses
Street Flooding	3 Concerns







### Criteria

Developed by Drainage Committee

1. **Public Safety** - "Take over Property" impassible streets for emergency vehicles  
*All Major Street Have Been Passable; Minor Streets "18 in" will do what they need to*
2. **Flooded Structures (goal is zero) Breach in the minimum slab elevation criteria (for the livable space versus garage)**  
- At what storm event?  
- Do flooded homes meet the requirements for slab elevation?

**"Best Bang for the Buck"**

3. **Synergy** - Take advantage of street under construction for misc. purposes, i.e. Road on Unby Rehab. Pines Point Project
4. **Increased Drainage Capacity Benefiting the City as a Whole**

**"Homes Streets not meeting criteria and flooding"**

5. **Impaired Personal Access on a Routine Basis**
6. **Residential Impact by Street/Neighborhood/Area** - Street Ponding Stagnant Water Lack of Drainage
7. **Maintenance of Improvements** - Impact to City Impact to Homeowner

### Policy Discussion

**Should Bunker Hill**

- Protect at a higher level?  
250 Year or 200 Year
- Address Flooded Homes (Homes versus Garages)  
Those that meet the 1 foot requirement - 100 year
- Change-Increase House Slab Elevation Requirements in particular areas
- Address Water in Streets - Up to 18 inches

**Flood Events:**  
 100 Year - There is a 1% chance that a storm of this magnitude will happen every year  
 200 Year - There is a .50% chance that a storm of this magnitude will happen every year  
 500 Year - There is a .20% chance that a storm of this magnitude will happen every year

### Policy Discussion

**Confirm Highest Criteria Levels**

- Public Safety - 18 inches
- Flooded Structures (at Bunker Hill Design Std)

**Confirm Areas for Further Study**

- Taylorcrest Williamsburg, Cobblestone - Upper Area of City

**Obtain Additional Survey Information**

**City Council Direction**

**Next Steps (based on policy points):**

- Possible Change in Design Standards
- Detailed Study for Areas and Priorities based on Bunker Hill Policy Criteria  
(Do we gain more public input)
- "Maintain" the Master Plan

**Non-Infrastructure Options**

- Ordinance for Slab Elevation

**Questions/Comments**



This should be evaluated based on the recommended "Design Criteria" for Bunker Hill. The Council provided the following direction for this criteria which includes streets and house slab elevations:

**Streets: Address Water Ponding on Neighborhood Streets** – The City's Drainage System is designed for water to pond in streets and yards during extreme events. The consensus was to allow up to 18 inches of ponding in the streets to ensure access by Public Safety Vehicles. *All Major Thoroughfares met this criteria were accessible in the 250 year event that occurred in May 2015.*

**Slabs: Address Water Breaching the Slab Elevation of Homes** -- The goal for our Drainage System, (in aggregate) is to accommodate the recent Memorial Day 250-year flood event with no structures having water breach the slab elevation. This does not include garages or garage conversions that were built at a lower slab elevation than the primary house. It was noted that some homes were surveyed and experienced water even though the house met the minimum slab elevation.

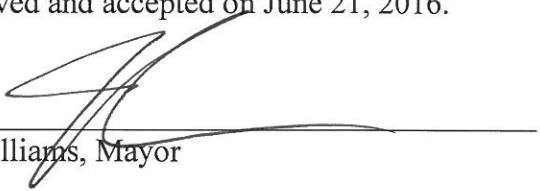
The immediate focus should be on the houses that experienced water in the homes yet met the City's current design standard (A minimum 12 inches above the street, inlet, and/or wastewater manhole elevation - the most conservative of the three). Additional surveying will be needed to evaluate the slab elevations and set priorities. In addition, neighborhood street ponding above the 18 inches is also a priority.

The Drainage Committee will continue their work with this direction.

### III. ADJOURN

A motion was made by Councilman Glover and seconded by Councilman Lord to adjourn the meeting at 7:03 p.m. The motion carried 5-0.

Approved and accepted on June 21, 2016.

  
Jay Williams, Mayor

ATTEST:

  
Britique Williams, City Secretary/Dir. of Finance