

# Memorandum



CITY OF DALLAS

DATE September 23, 2016

TO The Honorable Members of the Transportation and Trinity River Project Committee:  
Lee M. Kleinman (Chair), Deputy Mayor Pro Tem Erik Wilson (Vice-Chair), Sandy Greyson,  
Mayor Pro Tem Monica R. Alonzo, Adam Medrano, and Casey Thomas II

SUBJECT 2017 Bond Program Flood Protection and Storm Drainage Needs Inventory

On Monday, September 26, 2016, you will be briefed on the 2017 Bond Program Flood Protection and Storm Drainage Needs Inventory. The briefing materials are attached for your review.

Please let me know if you have any questions or concerns. Thank you.

A handwritten signature in black ink, appearing to read 'Mark McDaniel'.

Mark McDaniel  
Assistant City Manager

c: Christopher D. Bowers, Interim City Attorney  
Craig D. Kinton, City Auditor  
Rosa A. Rios, City Secretary  
Daniel F. Solis, Administrative Judge  
Ryan S. Evans, First Assistant City Manager  
Eric D. Campbell, Assistant City Manager

Jill A. Jordan, P.E., Assistant City Manager  
Mark McDaniel, Assistant City Manager  
Joey Zapata, Assistant City Manager  
M. Elizabeth Reich, Chief Financial Officer  
Sana Syed, Public Information Officer  
Elsa Cantu, Assistant to the City Manager – Mayor & Council



# 2017 Bond Program

## Flood Protection and Storm Drainage Needs Inventory

Transportation and Trinity River Project Committee

September 26, 2016



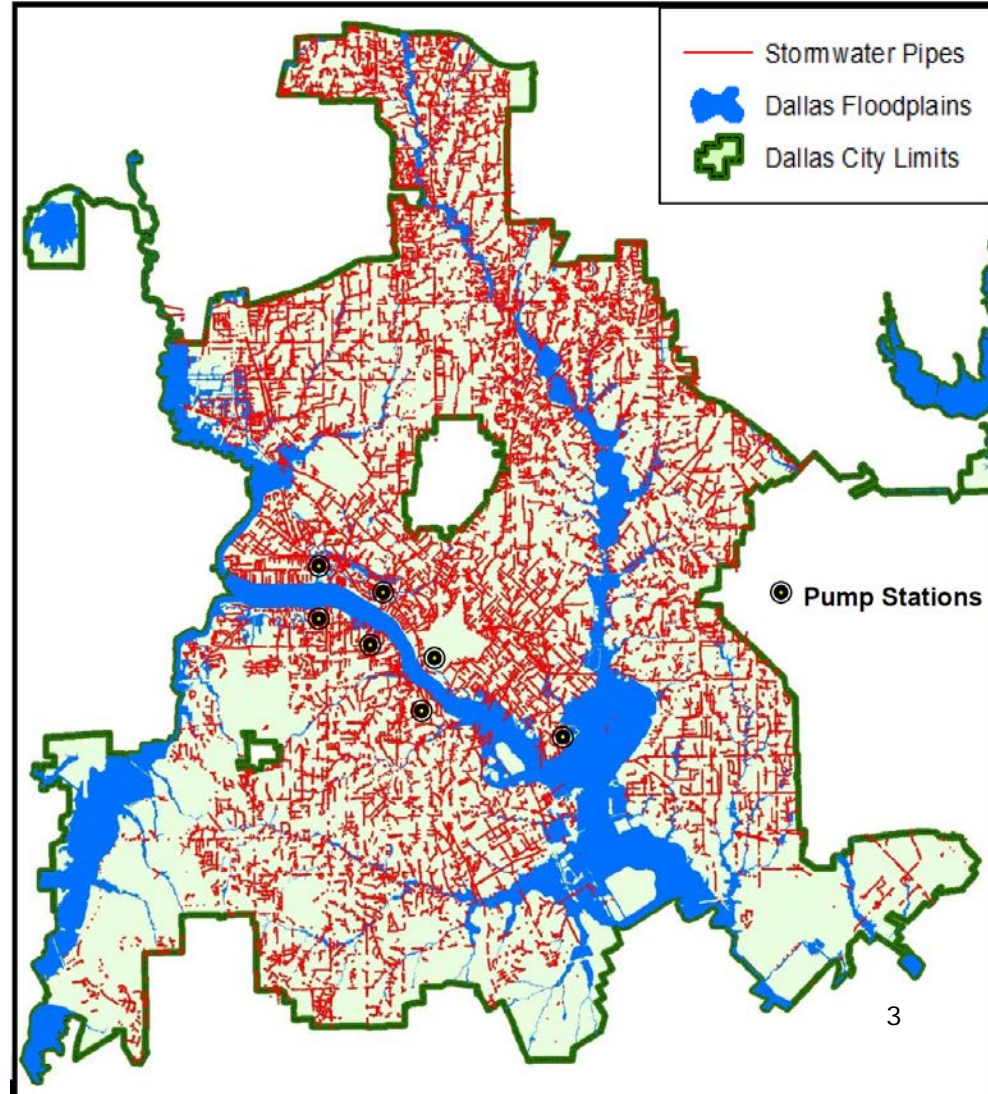
# Overview

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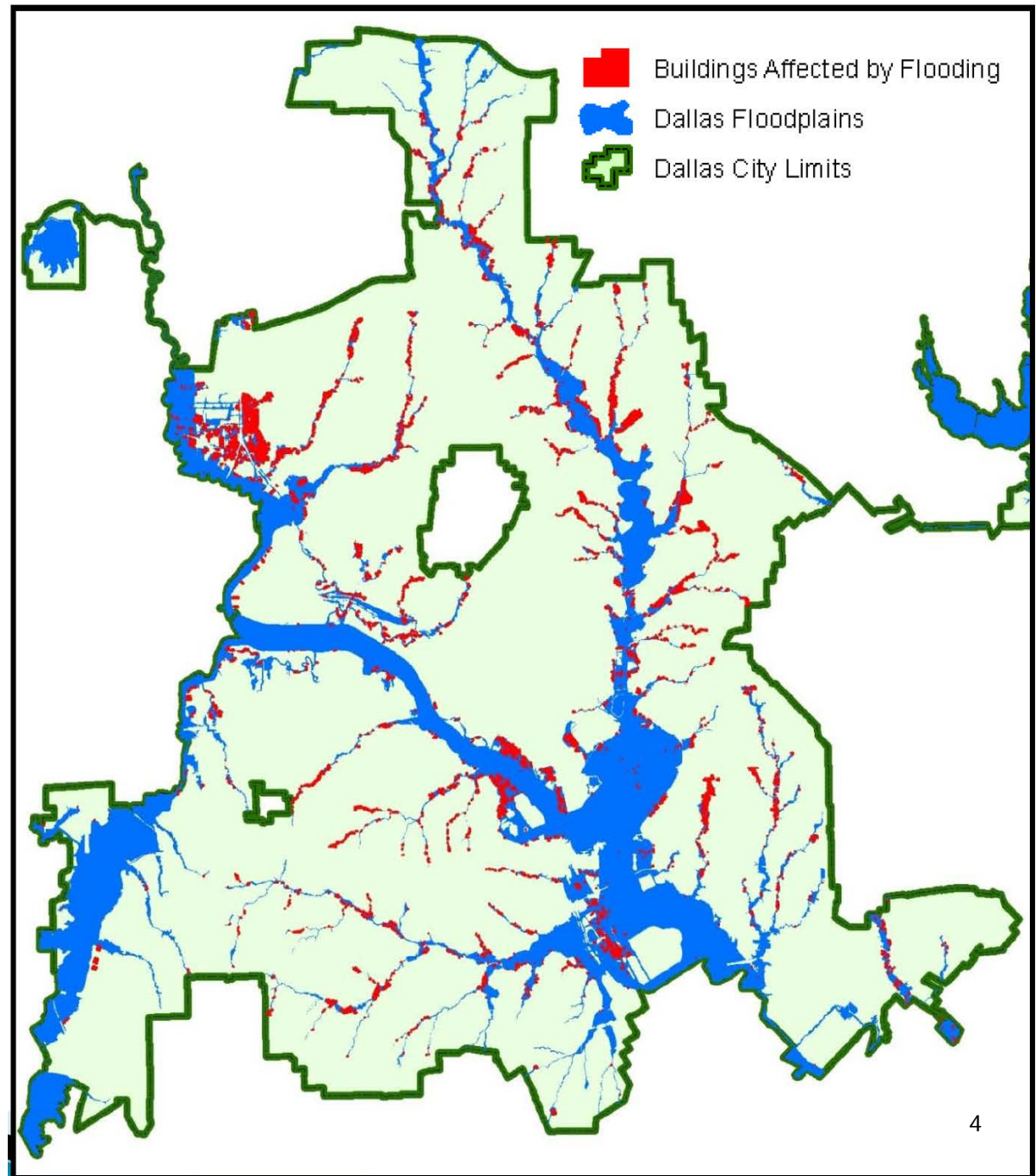
- Floodplain and Drainage System Overview
- Drainage Proposition Language (from prior bond programs)
- Drainage Needs Inventory Overview
- Appendices

# Floodplain and Drainage Systems

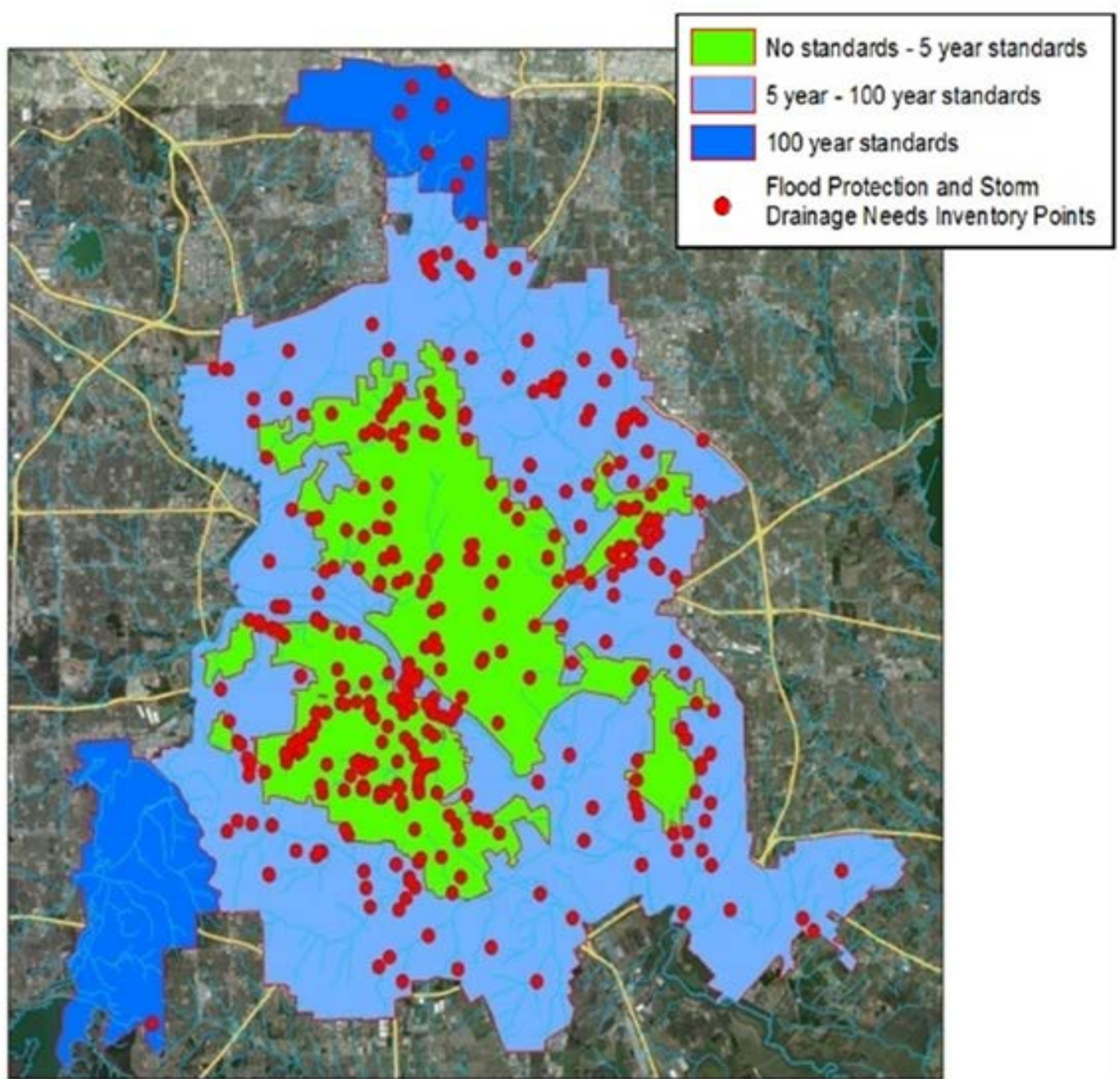
- 1,800 miles of storm sewers
- 30 miles of levee
- 13 pump stations at 8 locations
- 6 pressure sewers
- 8 street pump stations
- ~170 miles channel
- ~39,000 acres floodplain



- ~ 600 structures affected by flooding



The majority of drainage needs in the City are associated with areas developed prior to current Drainage Standards



History of Urbanization in Dallas

# Drainage Proposition Language

- **FLOOD MANAGEMENT:** Implements recommendations from Floodplain Management Plans and Studies: bridges, channels, levees, pump stations and sump improvements, voluntary purchase of flood prone properties and major maintenance
- **STORM DRAINAGE RELIEF:** Provides additional drainage systems for areas served by undersized drainage systems: upgrades and/or extensions of storm drain systems, also can include repetitive loss
- **EROSION CONTROL:** Provides armoring and erosion control for public and private property along natural creeks: includes protection for streets, bridges, alleys and homes



# Drainage Needs Inventory

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• Citywide Needs:	\$915 M
• Flood Management:	\$452 M
• Storm Drainage Relief Systems:	\$299 M
• Erosion Control:	\$ 35 M
 TOTAL:	 \$1.70 B

*As of September 22, 2016*

*(See Appendix A for Technical Criteria/  
Appendix B for Needs Inventory by Council District)*



# Drainage Needs Inventory

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- Needs Inventory is a living document that reflects projects that have been evaluated on technical criteria only
- Upcoming community meetings will provide additional opportunities for citizens to alert staff to projects that require evaluation and/or updates to current list
- Projects will be coordinated with other propositions when applicable

# Examples - City Wide Projects



**Total City Wide  
Drainage Needs :  
\$ 915 M**

*As of September 22, 2016*

## Legend

- Repetitive Loss Voluntary Purchase
- City Wide Drainage Projects
- Floodplain

# Example – City Wide Project



**West Dallas Area South of  
Canada Drive**  
Before Pavaho Pump Station (2006)



**West Dallas Area South of Canada  
Drive**  
After Pavaho Pump Station (2013)

# Examples - City Wide Projects

Project ID	Name	Score	Estimate
PB174790	Levee Drainage System - Trinity-Portland Sump	196	\$65,000,000
TWM000052	Dallas Floodway Extension - Lamar Levee	186	\$55,000,000
PB174875	Repetitive Loss Properties - Voluntary Purchase	146	\$13,200,000
PB167096	Levee Drainage System - Charlie Sump	120	\$45,000,000
PB2906	Mill Creek Drainage Relief System - Phase III	96	\$150,000,000
TWM000047	West Dallas - Eagle Ford Sump Basin Phase 2	74	\$10,000,000

***Total City Wide Drainage Needs : \$ 915 M***

*As of September 22, 2016*

# Examples - Local Flood Management Projects



**Total Local Flood Management Needs:**  
**\$ 452 M**

*As of September 22, 2016*

## Legend

- or — Flood Management Projects
- Floodplain

# Example - Local Flood Management Project



**Elam Creek Phase I**  
Providing 100-yr storm protection  
Before and during construction (2008)



**Elam Creek Phase I**  
After construction (2012)

# Examples - Local Flood Management Projects

Project ID	Name	Council	Score	Estimate
PB2458	Joes Creek - West Fork Channel and Culvert Improvements	6	166	\$25,100,000
TWM000045	Williamson Branch - FPMS Alt. 2	14	131	\$13,700,000
TWM000044	Turtle Creek Trib 1 Culvert @ Fitzhugh	14	100	\$750,000
PB175008	Oak Creek Circle 3504 & 3508 Voluntary Purchase	5	95	\$170,000
PB1413	Cedar Creek Bridge @ Clarendon (Sta 111+68)	4	90.65	\$2,810,000
PB1088	Ash Creek - S Fork Channel Imprv at John West	7	90	\$2,000,000
PB1415	Cedar Creek Bridge @ Moore	4	83	\$1,476,000
TWM000022	McCommas Branch - FPMS Alt. 4	9	83	\$3,670,000
PB1418	Cedar Creek Culvert @ Polk	1	79.9	\$750,000
PB1592	Coombs Creek Bridge @ Plymouth	1	79	\$1,471,000
PB1416	Cedar Creek Bridge @ Tyler	1	78.04	\$3,450,000
PB1417	Cedar Creek Channel - ATSF RR to Ewing	4	78	\$1,740,000
PB1586	Coombs Creek Bridge @ Brooklyndell	1	78	\$260,000
PB3618	Ash Creek Trib 5B7 Bridge Improvement @ Province	9	77.76	\$1,850,000
PB3539	South Branch Culvert Improvement @ Louisiana	1	76.76	\$158,000
PB3260	Ravinia South, 123	1	75.5	\$174,000
PB3732	Turtle Creek @ Stonebridge	14	75.46	\$4,450,000
PB3731	Turtle Creek @ Hall	14	73.4	\$4,800,000
PB2557	Knights Branch @ Denton Dr.	2	73.3	\$3,570,000
PB1893	Elmwood Branch Culvert @ Edgefield	1	73	\$320,000

**Total Local Flood Management Needs: \$ 452 M**

*As of September 22, 2016*

# Examples - Local Storm Drainage Relief Projects



**Total Local Storm Drainage Relief Needs: \$ 299 M**

*As of September 22, 2016*

## Legend

● or — Storm Drainage Relief Projects



# Example - Local Storm Drainage Relief Project



## ***Ledbetter Storm Drainage Project***

***Upsizing a failed 48" Metal Pipe to 60" Reinforced Concrete Pipe  
(2016)***

# Examples - Local Storm Drainage Relief Projects

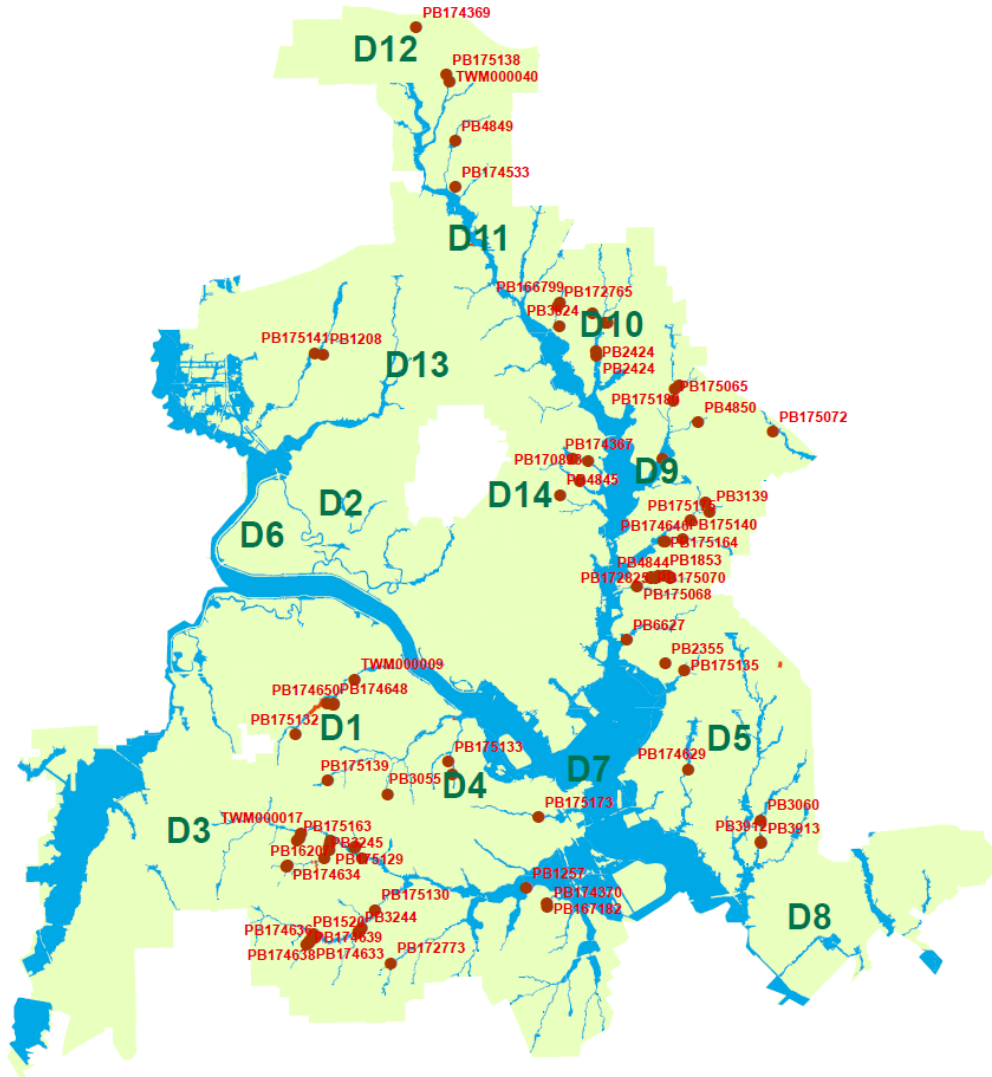
Project ID	Name	Council	Score	Estimate
PB1790	Dixon Branch Relief System (RL Areas 18 & 19)	9	360	\$100,000,000
PB174783	Pensive Drive Channel/Walnut Hill Relief System	6,13	90	\$10,500,000
PB3037	Northwest Highway @ Tulane	13	87	\$17,000,000
TWM000035	Royal Lane 3162 (RL Area 7)	13	87	\$210,000
TWM000048	Highgrove Area Drainage Relief System	6	85	\$3,400,000
TWM000033	Rexford Drive @ Shorecrest Drive	13	84	\$160,000
PB2074	Forestridge 9700 Block	10	75	\$400,000
TWM000037	San Gabriel Drive 4300 Blk	13	75	\$6,000,000
PB174375	Knights Branch Upper Relief System - Inwood/Mockingbird	2,13	74	\$16,146,000
PB2373	Hughes Lane @ Kalani Place	11	73	\$800,000
PB175076	Birchridge 14721	11	71	\$190,000
PB16208	Knight Street 2426 & 2428	2	69	\$534,000
PB2713	Lisbon Area C - Overton, Leacrest E. of Garrison	4	69	\$1,766,000
PB2792	Mapleleaf Circle/Mapleleaf Lane Area	3	69	\$791,000
TWM000026	Morning Dew Circle 3844 (RL Area 39)	4	69	\$130,000
PB3169	Plano Pky. 8800	10	69	\$545,000
TWM000030	Prairie Oak Drive 9321 (RL Area 33)	5	69	\$420,000
PB3773	Van Buren (N) - Cedar Hill Area	1	69	\$950,000
PB3909	Winslow-Henderson-Beeman Area Relief	2	69	\$10,443,000
PB16203	Throckmorton-Reagan Drainage Improvements	2	68	\$800,000

**Total Local Storm Drainage Relief Needs: \$ 299 M**

*As of September 22, 2016*

# Examples - Local Erosion Control Category Projects

**Total Local Erosion Control Needs: \$ 35 M**  
As of September 22, 2016



## Legend

● Erosion Control Projects

# Example - Local Erosion Control Category Project

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**9539 Rocky Branch Drive**  
Erosion Control project to protect a public trail  
Prior to Design (2007)



**9539 Rocky Branch Drive**  
Construction Completed (2012)

# Examples - Local Erosion Control Category Projects

Project ID	Name	Council	Score	Estimate
TWM000006	Clearbrook Lane 10500 Blk	9	85.23	\$150,000
PB175180	Meadowcliff 10844 and 10840	10	80.98	\$375,000
TWM000017	Kiest Blvd W. 2901 - Culverts	3	80.93	\$250,000
PB175175	Oates Drive 1407	9	80.33	\$187,500
TWM000011	Five Mile Pkwy W. 2200 Blk	4	72.5	\$386,000
TWM000008	Coombs Creek - Hampton to Davis	1	67.89	\$2,500,000
PB3055	Ohio W. 412, 416	4	67.47	\$89,500
PB3245	Pyka 3918	3	67.32	\$232,000
PB172784	Holliday 3445 & 3449	4	67.22	\$312,500
PB172789	El Cerrito 2460	7	67.2	\$150,000
TWM000016	Hunnicut Rd 8223	7	67.02	\$250,000
TWM000040	Stedman Cir 17315	12	66.97	\$150,000
PB175174	Joe's Creek - TXU ROW and 3900 Block Vinecrest	13	66.71	\$250,000
PB175166	Meadowcliff 10720 & 10726	10	64.92	\$437,500
PB175171	Pentagon Parkway W. 1122	4	63.12	\$475,000
TWM000028	Bonnie View over Five Mile Creek	8	62.87	\$626,000
PB172827	Leeshire 2921	7	62.87	\$250,000
PB4845	Hillside Drive 3604	9	62.73	\$150,000
TWM000007	Clubcreek Circle 8903, 8907, 8911	10	59.07	\$835,000
PB16207	Boulder Drive 4120	3	58.85	\$187,500

**Total Local Erosion Control Needs: \$ 35 M**

*As of September 22, 2016*

# Questions?

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# APPENDIX A



## Ranking Criteria

# Ranking Criteria Overview

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- Technical Criteria used to initially rank each project
- Guidance provided for Technical Selection Criteria by Transportation and Trinity River Committee on May 9, 2016
- Citizen Community Meetings
- Coordination with other proposition projects, when applicable
- City Council Direction



# TWO STEP EVALUATION PROCESS

## Technical Criteria

- ***Primary Focus: Public Safety!!***
- Project cost effectiveness
- Number of people and properties benefitted

## Balancing Criteria:

- Supports Neighborhood Plus
- Supports Economic Development
- Provides enhanced Quality of Life
- Leverages matching funds, cost share agreements

## Typical Priority Order:

*Critical Infrastructure*

*Community Needs*

*Other Projects with Local Impact as Funding Allows*

**CAPITAL IMPROVEMENT PROGRAM  
PROJECT RATING FORM**

**CATEGORY: FLOOD MANAGEMENT<sup>1</sup>**

This category includes sites for which channel improvements, levees, detention basins, or bridge or culvert replacements are necessary to reduce flooding; also included is the voluntary purchase of homes in the flood plain when no other viable alternative exists.

Project:		Date:
No.	Criteria	Points
1	Frequency of flooding	
2	Depth of flooding	
3	Depth X velocity over bridges	
4	Number of affected structures X 3	
5	Ratio of (cost/affected structures)	
<b>TOTAL POINTS</b>		

**Criteria:** 1. Frequency of flooding

<u>Frequency</u>	<u>Points</u>
2-year or less	25
5-year	20
10-year	18
25-year	15
100-year	10

**SCORE =**

2. Depth of flooding (100-year)

<u>Depth</u>	<u>Points</u>
4 feet or more	30
2 to 4 feet	25
1 to 2 feet	15
Less than 1 foot	5

3. Depth and velocity of flow over bridges (100-year)

(depth of flow on roadway in feet) X (velocity in fps) = points

4. Number of affected structures

3 points per affected structure

5. Ratio of cost per affected structure

<u>Value</u>	<u>Points</u>
Less than 100,000	10
100,000 to 500,000	5
Greater than 500,000	1

<sup>1</sup> Revised 10/28/05

**CAPITAL IMPROVEMENT PROGRAM  
PROJECT RATING FORM**

**CATEGORY: STORM DRAINAGE RELIEF SYSTEMS<sup>1</sup>**

This category includes additional drainage inlets and storm sewer pipe systems to optimize existing inadequate drainage systems in developed areas.

Project:		Date:
No.	Criteria	Points
1	Type/effect of flooding	
2	Frequency of flooding	
3	Depth of flooding	
4	Number of affected structures X 3	
5	Ratio of (cost/affected structure)	
TOTAL POINTS:		

**Criteria:** 1. Type/effect of flooding

Type/effect	Points
Multiple structures	20
Single structure	10
Street only	5

**SCORE =**

2. Frequency of flooding

Frequency	Points
2-year or less	25
5-year	20
10-year	18
25-year	15
100-year	10

3. Depth of flooding (100-year)

Depth	Points
3 feet or more	30
1 to 3 feet	20
Less than 1 foot	5

2. Number of affected structures

3 points per affected structure

3. Ratio of cost per affected structure

Value	Points
Less than 50,000	10
50,000 to 500,000	5
Greater than 500,000	1

<sup>1</sup> Revised 10/28/05

**CAPITAL IMPROVEMENT PROGRAM  
PROJECT RATING FORM**

**CATEGORY: EROSION CONTROL<sup>1</sup>**

This category would provide armoring of natural creek banks to protect soil against further erosion loss. Potential projects are classified by type as follows:

Type I: Threat to houses, attached garages, streets, alleys and bridges.

Type II: Threat to pools and other permanent structures not included in Type I.

Type III: Threat to fences, yards and private retaining walls.

Project:		Date:
No.	Criteria	Points
1	Ratio of (distance creek bank to structure/depth of creek)	
2	Rate of creek bank loss	
3	Ratio of (cost/number of structures protected)	
4	Type of threat	
TOTAL POINTS		

**Criteria:** 1. Ratio of (distance to structure)/(depth)

<u>Ratio value</u>	<u>Points</u>
0 to 0.25	40
0.26 to 0.59	35
0.60 to 1.00	30
1.01 to 1.25	20
1.26 to 1.50	10
1.51 to 2.00	5
Greater than 2.00	0

**SCORE = (TOTAL POINTS  
X 0.8696) + (3 - Ratio Value)**

**SCORE =**

2. Rate of creek bank loss

<u>Rate</u>	<u>Points</u>
Rapid	40
Moderately fast	30
Moderate	25
Moderately slow	20
Slow	10
Very slow	5

3. Ratio of (cost)/(number of structures protected)

<u>Ratio</u>	<u>Points</u>
0 to 50,000	20
50,001 to 150,000	15
Greater than 150,000	5

4. Type of threat

<u>Type</u>	<u>Points</u>
I	15
II	5
III	0

<sup>1</sup> Revised 10/28/05

# Summary of May 9, 2016 Guidance

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1. *Do you want majority of flood protection category to focus on City-wide projects? **Yes***
2. *Do you prefer a neighborhood focus? **Yes***
3. *Should we consider weighing the ability to match/ leverage other funds? **Yes***
4. *Do you want to apply any weight to projects that advance neighborhood initiatives? **Yes***
5. *Do we want to continue to provide erosion control to private property? **Yes***
6. *If so, should we consider implementing an 50/50 cost share for erosion projects? **Yes***

# Summary of May 9, 2016 Guidance

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7. *Should we purchase flood-prone properties?* **Yes – qualified as “on case-by-case basis”; see below**
8. *If so, should we strictly use FEMA guidelines of purchase of repetitive loss properties that have flood insurance only?* **No**
9. *If so, should we consider purchase of properties where the cost of related improvements exceeds the cost of purchase?*  
**Yes**

# APPENDIX B



## Needs Inventory by Council District

# NEEDS INVENTORY – CD 1

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
20407	TWM000008	Coombs Creek - Hampton to Davis	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Coombs Creek - Private/Public - Design and construction of up to 1000 LF of erosion control measures on Coombs Creek from Hampton Rd to Davis St. Includes 716 and 719 N. Plymouth Rd., and the parking lot of Louise Wolff Kahn Elementary School.	1	67.89	\$2,500,000
3573	PB175171	Coombs Creek - IH-30 Outfall	Flood Protection and Storm Drainage	Repair/Replacement	Erosion Control	TWM	Partial reconstruction of IH-30 storm sewer outfall into Coombs Creek, including an angled headwall and erosion control as needed - 800' west of Edgefield on north bank	1	63.9	\$300,000
3765	PB175172	Oak Cliff Blvd, 845 N.	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Design and construction of about 50 LF of gabion wall, 12' in height, to extend erosion protection to a secondary structure shown on DCAD as detached servants' quarters, which is partially protected by an existing R-Rap wall	1	62.57	\$125,000
3800	PB175132	Ravinia S. 326 and 406	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Coombs Creek - Private - Type I, two houses threatened, 35' from bank, 120 LF 18' gabion wall	1	53.23	\$300,000
3619	PB175139	Elmwood 2227	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Elmwood Branch - Private - Type I, house threatened, 20' from bank, 75 LF of 8' gabion wall	1	52.68	\$187,500
3846	PB174648	Stevens Wood Court 914	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Coombs Creek - Private - Slight threat to home; 80 LF gabion wall, 10' height	1	50.7	\$200,000
3844	PB174649	Stevens Wood Court 902	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Peacock Branch - Private - Slight threat to home; 75 LF gabion wall, 7' height	1	49.1	\$187,500
3845	PB174650	Stevens Wood Court 906	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Peacock Branch - Private - Slight threat to home; 100 LF gabion wall, 7' height	1	40.7	\$250,000
20408	TWM000009	Coombs Creek - Kessler Pkwy & Edgefield Ave	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Coombs Creek - Public - Design and construction of erosion control of up to 250 LF on Coombs Creek near the intersection of Kessler Pkwy & Edgefield Ave. Includes replacement of existing erosion control measures	1	36.28	\$625,000
3554	PB1418	Cedar Creek Culvert @ Polk	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add culvert, FREQ. 10 YR., DEPTH 4.1, VEL. 5.8, RATING = 23.78, analysis, design and construction - Add 2-10'X10', ~100' length	1	79.9	\$750,000
3581	PB1592	Coombs Creek Bridge @ Plymouth	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Raise road, install bridge, FREQ. 2 YR., DEPTH 3.4', VEL. 6.4, RATING = 27.28, Analysis, design and construction, and voluntary purchase of apartment site	1	79	\$1,471,000
3552	PB1416	Cedar Creek Bridge @ Tyler	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Replace bridge, analysis, design and construction	1	78.04	\$3,450,000
3576	PB1586	Coombs Creek Bridge @ Brooklyndell	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Install bridge, FREQ. 100 YR., DEPTH 3.1', VEL. 10.6, RATING = 34.1, Analysis, design and construction	1	78	\$260,000
3835	PB3539	South Branch Culvert Improvement @ Louisiana	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Add culvert, raise road, FREQ. 2 YR., DEPTH 3.4', VEL. 6.9, RATING = 21.76, design and construction	1	76.76	\$158,000
3802	PB3260	Ravinia South, 123	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Voluntary purchase	1	75.5	\$174,000
3622	PB1893	Elmwood Branch Culvert @ Edgefield	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Add culvert, FREQ. 10 YR., DEPTH 3.7, VEL. 5.8, RATING = 21.46, Analysis, design and construction	1	73	\$320,000
3555	PB1419	Cedar Creek Culvert @ Winnetka	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add culvert, FREQ. 10 YR., DEPTH 2.8, VEL. 5.6, RATING = 15.68, analysis, design and construction - 200' 3-12'X12'	1	71.68	\$1,400,000
3700	PB171004	Lake Cliff @ Colorado Blvd	Flood Protection and Storm Drainage	New	Flood Management	TWM	Analysis to consider elevating Colorado Blvd. (spillway) 4.5' to increase storage and reduce overtopping of Colorado	1	71	\$56,000
3578	PB1588	Coombs Creek Bridge @ Colorado	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Raise road, install bridge, FREQ. 5 YR., DEPTH 3.2, VEL. 7.5, RATING = 23.93, design and construction	1	69	\$486,833



# NEEDS INVENTORY – CD 1

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
3681	PB16363	Kidd Springs Branch @ Colorado	Flood Protection and Storm Drainage	New	Flood Management	TWM	Analyze flow through private lake; Improve outlet structure, culverts under Kessler Lake Dr., culverts under Colorado as required to protect 2 homes, 2 roadways	1	68.92	\$973,666
3682	PB174092	Kidd Springs Branch Detention Study	Flood Protection and Storm Drainage	New	Flood Management	TWM	Analyze feasibility of adding detention at Kidd Springs Lake as alternative to culvert improvements at Colorado	1	68.92	\$84,725
3623	PB1891	Elmwood Branch Culvert @ Tyler & Vernon	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Add culvert, FREQ. 50 YR., DEPTH 3.1', VEL. 5 , RATING = 15.5, Analysis, design and construction	1	66.5	\$240,000
3575	PB1585	Coombs Creek Bridge @ Barnett	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Install bridge, FREQ. 5 YR., DEPTH 2.5', VEL. 7, RATING = 17.78, Analysis, design and construction	1	62.7	\$280,000
3620	PB1890	Elmwood Branch Bridge @ Melbourne	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Install bridge, FREQ. 2 YR., DEPTH 1.6', VEL. 5, RATING = 8, ELIMINATES FLOODING OF FOUR HOMES, Analysis, design and construction	1	60	\$210,000
3583	PB1597	Coombs Creek Culvert @ Jefferson-Westmoreland	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add culverts, analysis, design and construction - 4-10'X8' add'l culverts, ~700'	1	59	\$3,600,000
3582	PB1595	Coombs Creek Culvert @ Hampton	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add 2-10'X11.5' culverts, FREQ. 5 YR., DEPTH 2.1, VEL. 5.9, RATING = 12.63, analysis, design and construction	1	58.01	\$370,000
3574	PB1591	Coombs Creek Bridge @ 9th	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Install bridge, FREQ. 5 YR., DEPTH 2, VEL. 6.4, RATING = 13.06, Analysis, design and construction	1	58	\$335,000
3621	PB1892	Elmwood Branch Culvert @ Clarendon	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Add culvert, FREQ. 25 YR., DEPTH 2.7', VEL. 6.1, RATING = 16.47, Analysis, design and construction	1	55.45	\$300,000
3822	PB3366	Rugged Branch Culvert Improvement @ Berkley	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Add culvert, FREQ. 50 YR., DEPTH 1.1, VEL. 3.8, RATING = 8.64, design and construction	1	51.64	\$73,024
3580	PB1590	Coombs Creek Bridge @ Ivandell	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Install bridge, FREQ. 100 YR., DEPTH 1.8', VEL. 7.3, RATING = 13.36, Analysis, design and construction	1	48.35	\$215,000
3577	PB1587	Coombs Creek Bridge @ Burlingdell	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Install bridge, FREQ. 100 YR., DEPTH 1.8', VEL. 6.5, RATING = 11.7, Analysis, design and construction	1	46.7	\$150,000
3579	PB1589	Coombs Creek Bridge @ Gibsondell	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Install bridge, FREQ. 100 YR., DEPTH 1.8, VEL. 6.5, RATING 11.7, Analysis, design and construction	1	46.37	\$155,000
3584	PB1598	Coombs Creek Culvert @ Sylvan	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add 4-12'X10' culverts, FREQ. 100 YR., DEPTH ~1.5, VEL. 4.9, RATING = 7.35, supplement TxDOT construction of 2-20X12 culverts, add culverts to south, remove & reconstruct gabion channel lining, requires hydraulic analysis to optimize configuration.	1	41.35	\$1,100,000
3866	PB3773	Van Buren (N) - Cedar Hill Area	Flood Protection and Storm Drainage	Repair/Replac e	Storm Drainage	TWM	100-year upgrade to existing system, 1 house and excessive street flooding, design and construction	1	69	\$950,000
3501	PB175052	5th Street Drainage Relief System	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Design and construct 100-year drainage system for area bounded by 5th, Lake Cliff Dr., N. Lancaster, and E. Jefferson.	1	59	\$1,063,000
3862	PB3742	Tyler (S) - Berkley	Flood Protection and Storm Drainage	Repair/Replac e	Storm Drainage	TWM	100-year upgrade to existing system, 1 house and area street flooding, design and construction	1	59	\$2,585,000
3570	PB1519	Cliffdale, 322	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Design and construct relief system for flooding, 1 house, street	1	58	\$310,000
3521	PB1142	Barnett, Eli, Irwindell, Ravinia Area	Flood Protection and Storm Drainage	Repair/Replac e	Storm Drainage	TWM	Existing system upgrade - excessive street flooding. At least two houses flood, design and construction	1	56	\$1,900,000
3548	PB16206	Cedar Creek (Upper) Drainage Relief System	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Large area relief system, Hampton/Clarendon area and south, MAPSCO 53L, M, Q, R, 54J	1	54	\$1,825,626
3629	PB1997	Falls-Franklin (S) Area Relief	Flood Protection and Storm Drainage	Repair/Replac e	Storm Drainage	TWM	Provide 100 year upgrade to existing system. One structure, excessive street flooding, design and construction	1	54	\$1,220,000

# NEEDS INVENTORY – CD 1

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
3877	PB3906	Winnetka (N) - Colorado to Stewart	Flood Protection and Storm Drainage	Repair/Replac	Storm Drainage	TWM	100-year upgrade to existing system, design and construction	1	51	\$1,308,365
3547	PB1410	Cavender @ Jefferson	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	2 houses, excessive street flooding, design and construction	1	48	\$370,000
3752	PB2932	Montana (W) 419	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house and streets flood, design and construction	1	48	\$107,103
3851	PB3629	Sunnyside 1226/Pampas 4117	Flood Protection and Storm Drainage	Repair/Replac	Storm Drainage	TWM	Outfall upgrade, participate w/City of Cockrell Hill, design and construction	1	48	\$60,854
3868	PB174258	Virginia Blvd 3541 and 3545	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Relief system to connect old private drainage system to adequate outfall to correct lot-to-lot drainage problem; will require drainage easement dedication/condemnation	1	48	\$118,800
3683	PB175179	Kidd Springs Park Storm Drainage Outfall Replacement	Flood Protection and Storm Drainage	Repair/Replac	Storm Drainage	TWM	analysis, design, and construction of a double 12X9 box culvert to replace an existing failed 8X10 horseshoe culvert and a 10X6 box culvert for a drainage system outfall through a portion of Kidd Springs Park, from Canty Street to Kidd Springs Branch; the	1	47	\$3,500,000
3758	PB3017	N. Oak Cliff Relief System - Ph 2 - Davis@Zang to W.	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Complete construction as designed with Phase 1, relief systems in Davis, 8th, and 9th Streets - Zang to Llewellyn, local drainage systems Bishop to Adams	1	46	\$5,476,878
3751	PB2933	Montana - Brookhaven Area	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	100 year relief for area street flooding, design and construction	1	45	\$736,335
3753	PB174373	Montclair N. 1111	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	~400 LF 36" pipe, ~50 LF 21" pipe, 2-10' inlets, to relieve street flooding due to inadequate existing system	1	43	\$131,760
3625	PB1906	Englewood - Oakenwald Drainage	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Design and construct storm drainage relief system from Englewood/Oakenwald intersection to existing system on Plowman.	1	38	\$547,687
3861	PB3734	Twelfth @ Marsalis	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Intersection flooding, design and construction	1	38	\$292,099
3803	PB3259	Ravinia South, 503	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Voluntary Purchase. Non-Repetitive Loss property.	1	33	\$200,000

# NEEDS INVENTORY – CD 2

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
3696	PB2557	Knights Branch @ Denton Dr.	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Add culvert, raise road, FREQ. 2 YR. DEPTH 8.1, analysis, design and construction	2	73.3	\$3,570,000
3559	PB1431	Cedar Springs Branch @ Denton	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Raise road, FREQ. 100 YR., DEPTH 3', analysis, design and construction	2	63.4	\$610,000
3537	PB174271	Brookhollow Bridge	Flood Protection and Storm Drainage	New	Flood Management	TWM	Construct bridge, channel improvements, and downstream headwall modifications at outfall of Gilford-Roanoke system; prevents flooding of Texas Specialty Hospital at Dallas, a long-term acute care facility subject to 1-2' flooding; requires agreement with	2	62	\$267,204
3560	PB1432	Cedar Springs Branch @ Production	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Raise road 1,000', FREQ. 100 YR., DEPTH 3', Analysis, design and construction	2	59	\$475,000
3557	PB1429	Cedar Springs Branch - Culvert & Channel @ Raleigh	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add culvert, 375' of channel improvement, FREQ. 2 YR., DEPTH 3.4', analysis, design and construction	2	51.2	\$1,175,000
3561	PB1434	Cedar Springs Branch Culvert @ Harry Hines	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Raise road, add culvert, channel improvement, FREQ. 100 YR., DEPTH 2.1', Analysis, design and construction	2	40	\$1,600,000
3558	PB1430	Cedar Springs Branch @ Cedar Springs Rd.	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Raise road, add culvert, FREQ. 100 YR., DEPTH 1.3', analysis, design and construction	2	33	\$1,000,000
3596	PB173347	Dallas Floodway System - Wetlands and River Habitat Improvement (BVP Ultimate Plan)	Flood Protection and Storm Drainage	New	Flood Management	TWM	Design and Construction of Headwaters Wetlands; Stormwater Wetlands at Baker, Hampton and Delta sumps; Boardwalks; Bank restoration and vegetation and meandering river as recommended in the Trinity River Balanced Vision Plan (Ultimate Plan)	2,6	30	\$160,000,000
3697	PB174375	Knights Branch Upper Relief System - Inwood/Mockingbird	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Major relief system of enclosed portion of upper Knights Branch watershed from Lowe's culvert extension (downstream of Inwood/Lemon) north on Inwood to about Wateka, using 2-12X10 box culverts, with smaller systems as necessary to provide full relief - re	2,13	74	\$16,146,000
3695	PB16208	Knight Street 2426 & 2428	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Duplex-type unit built in sag, lower than street, new construction, local system not adequate.	2	69	\$534,000
3878	PB3909	Winslow-Henderson-Beeman Area Relief	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Design and construction of a drainage relief system for area around old Ford plant - 5200 E. Grand Ave.	2	69	\$10,443,000
3852	PB16203	Throckmorton-Reagan Drainage Improvements	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Additional drainage relief systems not funded with 1995 BP project. Construct lines B, C and additional inlets on Reagan.	2	68	\$800,000
23314	TWM000050	Medical District Drive Drainage Relief System Phase 1	Flood Protection and Storm Drainage	Repair/Replace	Storm Drainage	TWM	Design and construction - Upsize existing drainage system near the Medical District Dr and Southwestern Medical Ave area. Tie into existing triple 6'x6' box culverts downstream. Downstream line will be improved by private developer.	2	67	\$1,400,000
3636	PB16235	Gilford - Roanoke Area Relief System - Phase II	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Excessive street flooding, Phase II - complete relief system in Anson and Grauwlyer Park, between Gilford and Mohawk, replace Brookhollow bridge, enlarge channel between Harry Hines and Brookhollow, gabion lining	2	60	\$1,367,198
3757	PB2977	Munger (N) 1300	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Short term - Part of Peaks Branch. One structure and area streets flood, design and construction	2,14	58	\$32,000
3769	PB3104	Pacific Avenue Relief @ Elm Street	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	CBD relief system to the Trinity River, design and construction	2,14	58	\$10,953,754
3650	PB2265	Harry Hines 5323	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	UT Southwestern Basement flooded, design and construction	2	53	\$60,854
3533	PB1263	Boone Ave @ Fire Training Center	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Street flooding, design and construction	2	50	\$322,526
3536	PB1272	Briar Cliff 1600	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house, street flooding, design and construction - add one 10' inlet, 30 LF 21" RCP	2	45	\$30,000
3715	PB2695	Lemmon @ University	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	100 year area relief system, design and construction	2	40	\$1,137,973

# NEEDS INVENTORY – CD 3

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
20416	TWM000017	Kiest Blvd W. 2901 - Culverts	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Five Mile Creek - Public - Type 1, roadway threatened, 100 LF of gabion- design and construction	3	80.93	\$250,000
3799	PB3245	Pyka 3918	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Crow Creek - Private - Type II, pool threatened - design and construction	3	67.32	\$232,000
3534	PB16207	Boulder Drive 4120	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Crow Creek - Private - Type II erosion, drive threatened	3	58.85	\$187,500
3813	PB174638	Richwood 6814	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Brooklawn Branch - Private - Slight threat to home; 150 LF gabion wall, 15' height	3	58.2	\$375,000
3815	PB174639	Richwood 6906	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Brooklawn Branch - Private - Slight threat to home; 175 LF gabion wall, 15' height	3	58.2	\$437,500
3801	PB175163	Ravinia S. 3338	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Five Mile Creek - Private - Type I, house threatened, erosion around end of mortared stone headwall at culvert outfall, 30' from house, 12' deep, about 60 LF gabion wall	3	57.02	\$150,000
20437	TWM000038	Shady Hollow Ct. 3300 Blk	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Crow Creek - Private - Type 1, five homes and one bridge threatened, 10' from bank, creek is 12' deep, approx. 500 LF of gabion. - design and construction	3	54.24	\$1,400,000
20440	TWM000041	Talbot Parkway 6760	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Woody Branch - Private - Type 1, one home threatened, 5' from bank, creek is 12' deep, approx 150 LF of gabion - design and construction	3	54.06	\$375,000
20402	TWM000003	Cedarhurst 3411, 3421	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Five Mile Creek - Private - Type 1, two homes threatened, 39' from bank, creek is 22' deep, approx. 190 LF of gabion - design and construction	3	53.41	\$475,000
3648	PB175078	Guadalupe 3033	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Five Mile Creek - Private - Type 1, slight threat to townhouse, erosion over gas pipeline, possibly short gabion wall - nearest home 30' from erosion, requires 50 LF of 16' gabion wall on creek bank, or combination flowable fill and lower wall near pipeline cut	3	53.3	\$125,000
3538	PB174642	Brooklawn 6718	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Brooklawn Branch - Private - Slight threat to home; 175 LF gabion wall, 15' height	3	53.2	\$437,500
3816	PB174636	Richwood 7014	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Brooklawn Branch - Private - Slight threat to home; 150 LF gabion wall, 14' height	3	53.2	\$375,000
3731	PB175134	Lockridge Circle 3216, 3222, 3226	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Five Mile Creek - Private - Type I, three houses threatened, 20' from bank, 250 LF of 10' gabion wall	3	53.18	\$625,000
3796	PB175137	Putting Green 6521	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Peacock Branch - Private - Type I, house threatened, 40' from bank, 100 LF of 20' gabion wall	3	53.18	\$250,000
3798	PB175142	Putting Green 6629 and 6637	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Peacock Branch - Private - Type I, two houses threatened, 75' from bank, 150 LF of 15' gabion wall	3	50.18	\$375,000
20417	TWM000018	Kiesthill Drive 3335	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Harden Branch - Private - Type 1, one home threatened, 21' from bank, creek is 17' deep, approx. 120 LF of gabion - design and construction	3	49	\$300,000
3812	PB174631	Richwood 6806	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Brooklawn Branch - Private - Slight threat to home; 175 LF gabion wall, 12' height	3	48.7	\$437,500
3740	PB174368	Matland Dr 2552	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Woody Branch - Private - ~70 LF 15' high gabion retaining wall to protect single family home; distance from home to creek bank ~40 feet	3	48.16	\$175,000
3535	PB174634	Boulder Drive 4207	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Crow Creek - Private - Slight threat to home; 75 LF gabion wall, 15' height	3	47.8	\$187,500
3531	PB174643	Blackstone 2625	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Brooklawn Branch - Private - Slight threat to home; 125 LF gabion wall, 16' height	3	47.7	\$312,500

# NEEDS INVENTORY – CD 3

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
3814	PB174633	Richwood 6822	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Brooklawn Branch - Private - Slight threat to home; 125 LF gabion wall, 14' height	3,8	44	\$312,500
3599	PB174099	Deep Hill Circle 2625, 2641, 2663, 2667, 2687, 2691	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Crow Creek Tributary 1 - Private - Remainder of Deep Hill sites, some vacant, no imminent threats, construct approx. 550 LF gabion wall at 4 sites, ~30' height	3	30.38	\$1,375,000
3563	PB1462	Chalk Hill Branch Bridge @ N. Counts	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Raise road, install bridge, Analysis, design and construction	3	68	\$825,000
3565	PB1464	Chalk Hill Branch Culvert @ Jefferson	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add culverts, FREQ. 2 YR., DEPTH 3.2, VEL. 4.88, RATING = 15.52, design and construction	3	64	\$500,000
3564	PB1463	Chalk Hill Branch Bridge @ S. Counts	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Raise road, install bridge, FREQ. 100 YR., DEPTH 3.6, VEL. 5.54, RATING = 19.78, design and construction	3	62.3	\$1,375,000
3712	PB2688	Ledbetter Branch Detention Basin	Flood Protection and Storm Drainage	New	Flood Management	TWM	Flood retarding basin at confluence with Five Mile Creek at Pecan Grove Park, design and construction - protects 47 or more structures from 100-year flooding - requires updated analysis	3	54	\$4,259,793
3567	PB1466	Chalk Hill Tributary - Culvert @ Clarendon	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Add culvert, FREQ. 100 YR., DEPTH 1.9', VEL. 3.42, RATING= 6.46, ELIMINATES FLOODING OF ONE STRUCTURE, design and construction	3	52.4	\$100,000
3729	PB2717	Lisbon Branch Voluntary Purchase	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	3 homes - voluntary purchase	3	50	\$219,075
3713	PB2689	Ledbetter Branch Drainage Improvements - Phase II	Flood Protection and Storm Drainage	New	Flood Management	TWM	Continuation of channel and culvert improvements at Ledbetter and Duncanville Road	3	21	\$1,095,375
3738	PB2792	Mapleleaf Circle/Mapleleaf Lane Area	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Structure and street flooding at 3212 Mapleleaf Cir. and 3129 Mapleleaf Lane, design and construction	3	69	\$791,000
3824	PB3385	Sage Valley - Wisteria Area	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	2936 Sage Valley and homes to south may be impacted by drainage coming off alley - investigate, design, construct improvements	3	66	\$176,477
3837	PB3554	Southwood - Franklin (S) Area	Flood Protection and Storm Drainage	Repair/Replace	Storm Drainage	TWM	Provide 100-year upgrade to existing system. One known garage floods, street flooding, design and construction	3	53	\$1,270,000
3755	PB2937	Monte Carlo 1600 and 3400 block (Repetitive Loss Area 37)	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	3 houses flood, design and construction	3	48	\$200,000
3709	PB2586	LaRue @ Wisteria	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house and area streets flood, design and construction	3	44	\$1,150,000
3711	PB2681	Ledbetter - Altoona to Westmoreland	Flood Protection and Storm Drainage	Repair/Replace	Storm Drainage	TWM	System Upgrade to 100 year capacity; street flooding, design and construction	3	43	\$1,137,973
3834	PB3536	Sorcey Rd. @ White Ash	Flood Protection and Storm Drainage	Repair/Replace	Storm Drainage	TWM	Enlarge culvert under Sorcey Rd. to relieve intersection flooding, design and construction	3	40	\$64,881
3635	PB2148	Gibbs Williams @ Deerfield	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	2 houses and area streets flood, design and construction	3	35	\$540,000
3654	PB2301	Hearne Ave. @ Commerce	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Property flooding, design and construction of minor relief system	3	31	\$243,416
3608	PB1829	Eastgate 4975	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Street/yard flooding, design and construction	3	30	\$300,000

# NEEDS INVENTORY – CD 4

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
20410	TWM000011	Five Mile Pkwy W. 2200 BLK	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Type 1, roadway threatened, - design and construction	4	72.5	\$386,000
3767	PB3055	Ohio W. 412, 416	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Beckley Club Branch - Private: 412 - rock channel with soil upper 8', surface erosion, Type I; 416 - Type II, driveway undercut, founded on rock, protected by brick wall	4	67.47	\$89,500
3662	PB172784	Holliday 3445 & 3449	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Crow Creek - Private - 125 LF gabion wall, 25' height, detached garage threatened	4	67.22	\$312,500
20427	TWM000028	Pentagon Parkway W. 1122	Flood Protection and Storm Drainage	Repair/Replac e	Erosion Control	TWM	Five Mile Creek - Public - Type 1, Roadway threatened, 30' from bank, creek is 40' deep - design and construction. Includes removal of existing temporary erosion control measures that is failing (r-rap wall)	4	63.12	\$475,000
3826	PB175173	Seaton 3321	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Honey Springs Branch - Private - Design and construct about 90 LF of 12-foot tall gabion retaining wall	4	53.68	\$225,000
3663	PB175131	Holliday 3605	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Crow Creek - Private - Type I, house threatened, 35' from bank, 120 LF 18' gabion wall	4	53.23	\$300,000
3664	PB175129	Holliday 3621	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Crow Creek - Private - Type I, house threatened, 35' from bank, 80 LF 18' gabion wall	4	53.23	\$200,000
3671	PB175130	Hunters View 5935	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Woody Branch - Private - Type I, house threatened, 35' from bank, 130 LF 18' gabion wall	4	53.23	\$325,000
3589	PB175136	Cripple Creek 3744, 3750, 3758	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Red Bud Branch - Private - Type I, three houses threatened, 30' from bank, 300 LF of 15' gabion wall	4	53.18	\$750,000
3609	PB175133	Edgemont 1631	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Little Cedar Creek - Private - Type I, house threatened, 30' from bank, 75LF of 15' gabion wall	4	53.18	\$187,500
3598	PB174630	Danube 1715	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Little Cedar Creek - Private - Remote threat to home; 60 LF gabion wall, 12' height	4	51.8	\$150,000
3549	PB1413	Cedar Creek Bridge @ Clarendon (Sta 111+68)	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Channel improvement, FREQ. 100 YR., DEPTH 7.2, VEL. 10.1, RATING = 72.72, Analysis, design and construction - may combine with Ewing to enclose channel between bridges	4	90.65	\$2,810,000
3551	PB1415	Cedar Creek Bridge @ Moore	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Replace bridge, FREQ. 25 YR.,DEPTH 4', VEL. 10.5, RATING = 42, Anaylsis, design and construction	4	83	\$1,476,000
3553	PB1417	Cedar Creek Channel - ATSF RR to Ewing	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Channel improvement, design and construction	4	78	\$1,740,000
3689	PB2531	Kings Branch Culvert @ Georgia	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Add culvert. FREQ. 10 YR., DEPTH 2.4, VEL. 5.5, RATING = 11.4, analysis, design and construction	4	69.2	\$195,000
3687	PB2529	Kings Branch Culvert @ Edgemont	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Add culvert, raise road, FREQ. 2 YR., DEPTH 2.1, VEL. 7.2, RATING = 15.12, analysis, design and construction	4	68.12	\$175,000
3693	PB2535	Kings Branch Culvert @ Woodin	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Add culvert, FREQ. 2 YR., DEPTH 2.5, VEL. 4.9, RATING = 12.25, 1 HOME AFFECTED, analysis, design and construction	4	67.25	\$215,000
3692	PB2534	Kings Branch Culvert @ Stella	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Add culvert, raise road, FREQ. 2 YR., DEPTH 2.2, VEL. 5.2, RATING = 11.44, analysis, design and construction	4	66.44	\$185,000
3690	PB2532	Kings Branch Culvert @ Louisiana	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Add culvert, FREQ. 2 YR., DEPTH 2.1, VEL. 5.5, RATING = 10.29, analysis, design and construction	4	65.29	\$360,000

# NEEDS INVENTORY – CD 4

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
3686	PB2528	Kings Branch Culvert @ Denley	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Add culvert, FREQ. 25 YR., DEPTH 2.1, VEL. 6.2, RATING = 18.48, analysis, design and construction	4	63.48	\$475,000
3550	PB1414	Cedar Creek Bridge @ Clarendon (Sta 149+13)	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Replace bridge, channel improvements, FREQ. 100 YR., DEPTH 7.8, VEL. 15, RATING = 117, Analysis, design and construction	4	58	\$2,215,000
3523	PB1164	Beckley Club Branch @ Missouri	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Culvert improvements in lieu of closing crossing: FREQ. 5 YR., DEPTH 1.6, VEL. 6.4, RATING= 10.24, design and construction	4	55.24	\$340,783
3688	PB2530	Kings Branch Culvert @ Genoa	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Add culvert, raise road, FREQ. 10 YR., DEPTH 1.9, VEL. 6, RATING = 11.4, analysis, design and construction	4	54.4	\$260,000
3524	PB1166	Beckley Club Branch Culvert - Illinois to Ohio	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add culvert, FREQ. 2 YR., DEPTH 3.6, VEL. 1.8, RATING = 6.48, analysis, design and construction	4	52	\$3,400,000
3556	PB1420	Cedar Crest Bridge Culvert @ Southerland	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add culvert, FREQ. 1 YR., DEPTH 1.2, VEL. 5, RATING = 6, analysis, design and construction	4	51	\$315,000
3667	PB2361	Honey Springs Br Detention Basins	Flood Protection and Storm Drainage	New	Flood Management	TWM	Design & construction of three detention basins upstream of Seaton, Linfield & Prosperity to eliminate flooding of 7 homes - A voluntary buy out should also be considered as an option	4	50	\$4,737,000
3685	PB2527	Kings Branch @ Stirling	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Close crossing, FREQ. 50 YR., DEPTH 1.8, VEL. 6, RATING = 10.78, analysis, design and construction	4	49	\$360,000
3525	PB1167	Beckley Club Branch Culvert @ Iowa	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add 2 - 84" PIPES, FREQ. 10 YR., DEPTH 2.3, VEL. 5.7, RATING = 13.11, analysis, design and construction	4	47.07	\$250,000
3526	PB1168	Beckley Club Bridge @ Georgia	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Replace ex. pipe with box, raise road, FREQ. 10 YR., VEL. 6.3, RATING = 17.01, analysis, design and construction	4	47	\$540,000
3691	PB2533	Kings Branch Culvert @ Lynn Haven	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Add culvert, FREQ. 50 YR., DEPTH 1.4, VEL. 5.7, RATING = 7.98, analysis, design and construction	4	45.98	\$245,000
3668	PB2360	Honey Springs Culvert @ Fordham	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Remove pipe, redirect headwall, FREQ. 100 YR., DEPTH 1, VEL. 2.4, RATING = 2.4, design and construction	4	35.4	\$425,979
3725	PB2713	Lisbon Area C - Overton, Leacrest E. of Garrison	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Relief system to protect homes east of Garrison on Overton and Leacrest	4	69	\$1,766,000
20425	TWM000026	Morning Dew Circle 3844 (RL Area 39)	Flood Protection and Storm Drainage	Repair/Replacement	Storm Drainage	TWM	Reconstruct about 700 LF of alley, add drainage system and inlets, to prevent flooding of two structures within a repetitive loss area as designated by FEMA	4	69	\$130,000
3882	PB3927	Woodlark Trail, 306	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Design and construction of overflow flumes on Woodlark and Glen Forest	4	68	\$51,000
3571	PB1576	Conrad - Louisiana Area Relief	Flood Protection and Storm Drainage	Repair/Replacement	Storm Drainage	TWM	Provide 100 year upgrade to existing system. 4 structures, excessive street flooding, design and construction	4	67	\$1,709,000
3698	PB2562	Kushla 3800 @ Grinnell	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	2 houses and streets flood, design and construction	4	66	\$435,000
3638	PB2153	Glen Oaks 700	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house and area streets flood, design and construction	4	58	\$396,000
3649	PB2247	Harlandale - Strickland Area	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Apartment building floods, design and construction	4	56	\$855,000

# NEEDS INVENTORY – CD 4

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
3546	PB1349	Calcutta 616 (RL Area 40)	Flood Protection and Storm Drainage	Repair/Replac Storm Drainage		TWM	One house floods, area street and alley flooding, design and construction - west of Marsalis, area excluded from Palo Duro/Rand study - relief system to Five Mile Creek	4	54	\$1,622,037
20428	TWM000029	Polk Street 3425 (RL Area 38)	Flood Protection and Storm Drainage	Repair/Replac Storm Drainage		TWM	Construct an upgrade to 100-yr capacity for existing drainage system in Polk Street northwest of US 67 to relieve flooding of three apartment buildings within a repetitive loss area as designated by FEMA	4	54	\$440,000
3506	PB16209	Ann Arbor (E) 2943	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Design and build parallel relief system from Ledbetter, up Cranfill, up Ann Arbor, to Linda Ree.	4	53	\$438,150
3849	PB3626	Sun Valley - Charlemagne	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house and street flooding, design and construction	4	53	\$248,284
3539	PB174260	Brookwood Dr 918	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Construct 2-10' inlets and approx. 4-ft high retaining wall about 150 LF behind two homes to prevent flooding from inadequate drainage on Ledbetter	4	49	\$1,890,000
3749	PB2917	Misty Glen Area	Flood Protection and Storm Drainage	Repair/Replac Storm Drainage		TWM	100 year upgrade for street flooding, design and construction	4	49	\$803,274
3684	PB2493	Kiest (E) 2700 - Magna Vista	Flood Protection and Storm Drainage	Repair/Replac Storm Drainage		TWM	100 year upgrade for existing system	4	46	\$1,335,000
3727	PB2715	Lisbon Area E - Kiest @ Garrison	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Street flooding - Kiest @ Garrison	4	45	\$425,979
3600	PB1773	Denley (S) 1243	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Street/Property flooding, design and construction	4	43	\$230,000
3735	PB2742	Louisiana W. 214	Flood Protection and Storm Drainage	Repair/Replac Storm Drainage		TWM	Replace existing damaged storm sewer from Woodin to Louisiana	4	43	\$125,000
3726	PB2714	Lisbon Area D - Fordham, Garrison to Bonnieview	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Street flooding - Fordham Road - Garrison to Bonnie View	4	41	\$2,129,896
3728	PB2716	Lisbon Branch - Mentor to Fordham	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Continuation of relief system to upgrade area to 100-year level of protection	4	41	\$3,042,710
3770	PB3111	Paloduro - Rand Area	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Street flooding, design and construction.	4	41	\$2,677,585
3739	PB2806	Marsalis - Five Mile Pkwy to Ann Arbor	Flood Protection and Storm Drainage	Repair/Replac Storm Drainage		TWM	100 year upgrade of existing systems - excessive street flooding, design and construction	4	38	\$486,833
3672	PB2386	Idaho Creek - Brookmere to Grinnell	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Enclose creek from Brookmere to Grinnell, design and construction - requires 404 Permit, may not be approved by USACE	4	36	\$651,140
3781	PB3153	Pentagon - Marsalis to Yewpon	Flood Protection and Storm Drainage	Repair/Replac Storm Drainage		TWM	100-year upgrade to existing systems - excessive street flooding, design and construction	4	30	\$1,825,626



# NEEDS INVENTORY – CD 5

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
3865	PB175135	Urban 3100	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5BA - Private - Type I, house threatened, 30' from bank, 100 LF 15' gabion wall	5	53.18	\$250,000
3665	PB2355	Hollis 6740	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Private retaining wall threatened, Type III - design and construction	5	44.69	\$75,000
3820	PB174629	Rosemont 7433	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Elam Creek - Private - Remote threat to home; 185 LF gabion wall, 15' height	5	42.8	\$462,500
3768	PB3060	Old Mill 286	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Hatfield Branch - Private - Type III, private retaining wall slightly threatened - design and construction	5	36.45	\$43,000
3766	PB175008	Oak Creek Circle 3504 & 3508 Voluntary Purchase	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Voluntary purchase of one frequently flooded home and adjacent lot - relief system was analyzed but cost is in excess of \$1M and it is probable that it will not eliminate the flooding problem	5	95	\$170,000
3626	PB1912	Estes Branch Bridge @ Bluffcreek	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Install bridge, channel improvement, FREQ. 2 YR., Analysis, design and construction	5	71	\$5,375,000
3783	PB3171	Pleasant Branch - Tonawanda to Bruton	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Channel improvements Station 29+00 to Tonawanda, add 4-8X5, raise and construct 3-8X5 at Belfast, raise and construct 3-10X7 at Bruton	5	54.81	\$4,250,000
3788	PB3207	Prairie Creek Channel & Bridge Improvement US175	Flood Protection and Storm Drainage	New	Flood Management	TWM	FREQ. 100 YR., DEPTH 1.1', build levee across NB service road	5	52.5	\$1,217,083
3703	PB2614	Lake June @ St. Augustine	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Raise road, channel improvement, FREQ. 100 YR., DEPTH 1.8', Analysis, design and construction	5	43.24	\$700,000
3618	PB1861	Elam Creek Voluntary Purchase (1 home)	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	1 home for voluntary purchase - 7330 Lake June Rd.	5	42	\$146,050
3704	PB2615	Lake June Branch Culvert @ Glenciff	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Add culvert, raise road, FREQ. 50 YR., DEPTH 1.1, Analysis, design and construction	5	38.3	\$750,000
3592	PB1667	Cypress Branch Culvert @ Jennie Lee	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Culvert improvements, raise road, FREQ 100 YR., DEPTH 1.5', design and construction	5	35.2	\$182,562
3617	PB1868	Elam Creek Culvert @ Rosemont Rd	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Add culvert, Analysis, design and construction	5	33.2	\$710,000
3652	PB2287	Hatfield Branch Channel @ Seagoville	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Channel improvement, FREQ. 100 YR., DEPTH 1.3, design and construction	5	32.69	\$486,833
3651	PB2286	Hatfield Branch Channel & Culvert @ St. Augustine	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Channel improvement, add culvert, raise road, FREQ. 100 YR., DEPTH 1.7', design and construction	5	30	\$1,217,083
3615	PB1863	Elam Creek @ Elam Rd.	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Bridge replacement, Analysis, design and construction	5	29	\$2,590,000
3616	PB1862	Elam Creek @ Ledbetter	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Raise roadway, FREQ. 50 YR., DEPTH .7, Analysis, design and construction	5,8	29	\$800,000
3790	PB3702	Prairie Creek Trib 271 + 36 Culvert @ Haverhill	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add culvert and headwall, FREQ. 100 YR., DEPTH .3, design and construction	5	26	\$70,000
3791	PB3703	Prairie Creek Trib 313 + 59 Culvert @ Glenciff	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add culvert, raise road, FREQ. 100 YR., DEPTH .6, VEL. .9, RATING = .54, Analysis, design and construction	5	26	\$240,000
20429	TWM000030	Prairie Oak Drive 9321 (RL Area 33)	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Construct about 1,570 LF of drainage system with inlets to prevent flooding of about eight homes on Prairie Oak, Miami, and Buttercup, within a repetitive loss area as designated by FEMA.	5	69	\$420,000
3642	PB172822	Greendale 1721	Flood Protection and Storm Drainage	Repair/Replace	Storm Drainage	TWM	Replace existing inadequate system with 100-year system to relieve flooding from street	5	63	\$71,153
3748	PB2913	Milverton @ Palisade	Flood Protection and Storm Drainage	Repair/Replace	Storm Drainage	TWM	System upgrade for 100 year capacity, excessive street flooding, design and construction	5	49	\$870,215
3732	PB2729	Loganwood 3602	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house and area streets flood, design and construction	5	48	\$255,587

# NEEDS INVENTORY – CD 6

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
20411	TWM000012	Goodnight Ln 11426	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Type 1 - one building threaten, structure is approx 18' from bank, drainage channel is 10' deep, approx. 225 LF of gabion - design and construction	6	31.64	\$562,500
3678	PB2458	Joes Creek - West Fork Channel and Culvert Improvements	Flood Protection and Storm Drainage	New	Flood Management	TWM	Channel improvements, relief system, added culvert at Denton Road, design and construction - relieves flooding of approximately 46 commercial and about 130 residential structures. Much of the concrete-lined channel is deteriorating or failed and further	6	166	\$25,100,000
20413	TWM000014	Hampton Gate	Flood Protection and Storm Drainage	Repair/Replac	Flood Management	TWM	Rehab existing Hampton Gate House, add addition box culvert - design and construction	6	61	\$500,000
3562	PB1461	Chalk Hill Branch Bridge @ Hale	Flood Protection and Storm Drainage	Repair/Replac	Flood Management	TWM	Raise road, install bridge, FREQ. 100, DEPTH 2.2, VEL., 3.81, RATING = 8.34, analysis, design and construction	6	56.3	\$850,000
3810	PB170975	Richards Branch Channel Improvements	Flood Protection and Storm Drainage	New	Flood Management	TWM	analysis, design and construction of channel improvements from Joe Field upstream - channel is partially improved, inadequate, and difficult to maintain	6	50	\$4,001,024
3679	PB2459	Joes Creek Channel - W Fork to Willowbrook	Flood Protection and Storm Drainage	Repair/Replac	Flood Management	TWM	Channel improvement, FREQ. 10 YR., DEPTH 2, Analysis, design and construction	6	48	\$830,000
3677	PB2457	Joes Creek - W Fork Bridge Imprv @ Walnut Hill	Flood Protection and Storm Drainage	New	Flood Management	TWM	Install bridge, FREQ. 100 YR., DEPTH 3.7, design and construction	6	46	\$462,491
3680	PB2460	Joes Creek Chnl Impr - Chapel Creek to Webb Chapel	Flood Protection and Storm Drainage	Repair/Replac	Flood Management	TWM	Concrete channel bottom, FREQ. 10 YR., DEPTH 3.6', Analysis, design and construction	6	39	\$950,000
17517	PB175176	Elm Fork Levee	Flood Protection and Storm Drainage	New	Flood Management	TWM	Ring-type levee to protect Stemmons North Industrial District, including interior drainage, in an area roughly bounded by Royal Lane, Luina Road, California Crossing, Northwest Highway, and Stemmons Freeway.	6,CW	25	\$150,000,000
3566	PB1465	Chalk Hill Branch IH30 & Loop 12 Interchange	Flood Protection and Storm Drainage	Repair/Replac	Flood Management	TWM	Raise dike, add culvert, FREQ. 100 YR., DEPTH .3', VEL. 5.6, RATING = 1.62, analysis, design and construction	6	21.6	\$775,000
3780	PB174783	Pensive Drive Channel/Walnut Hill Relief System	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Design and construction of a storm drainage relief system in Walnut Hill to prevent flooding of about 14 homes on Pensive, Goodyear, Ponder, Timberview and Dale Crest - about 7,000 LF of box culvert, from Pensive west along Walnut Hill to the West Fork of	6,13	90	\$10,500,000
23313	TWM000048	Highgrove Area Drainage Relief System	Flood Protection and Storm Drainage	Repair/Replac	Storm Drainage	TWM	Design and construction - Replace existing sytem from Clover Lane to Northwest Hwy, between Lakemont and Folkstone, with 100-year system.	6	85	\$3,400,000
3730	PB172769	Lively Lane 3808	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Relief system w/inlets & pipe through cul-de-sac to channel to intercept flow upstream - 2 houses affected, street & yard flooding	6	59	\$70,000
3760	PB2997	Navaro - Fort Worth Avenue Area	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house and surrounding streets flood, design and construction	6	49	\$615,844
3855	PB3719	Turnpike Distribution IV - IH30 to Commerce	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Design and construction of connection of the improved channel in the Turnpike Distribution Center	6	45	\$214,207
3637	PB2152	Ginger - Moler Area	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	3 houses flood - outfall extension, design and construction	6	30	\$133,879
3809	PB3304	Rhome - Tantor Area	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Street flooding, design and construction	6	30	\$535,516
20442	TWM000043	Topeka Avenue Storm Sewer Improvements	Flood Protection and Storm Drainage	Repair/Replac	Storm Drainage	TWM	Provide 100-year upgrade to existing system, from Munice Ave. / Bayonne Dr. to outfall - analysis, design and construction	6	29	\$17,500,000
3634	PB2085	Fort Worth @ Vilbig	Flood Protection and Storm Drainage	Repair/Replac	Storm Drainage	TWM	Provide outfall upgrade, design and construction	6	25	\$182,562

# NEEDS INVENTORY – CD 7

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
3611	PB172789	El Cerrito 2460	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5B5 - Private - 60 LF gabion wall, 15' height, detached garage/workshop threatened	7	67.2	\$150,000
20415	TWM000016	Hunnicut Rd 8223	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5B5 - Private - Type 1, one home threatened, 15' from bank, approx. 100 LF of gabion - design and construction	7	67.02	\$250,000
3714	PB172827	Leeshire 2921	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5B5 - Private - ~100 LF gabion wall, 20' height, low Type I at this time, bank well-vegetated but some undercutting present at bottom	7	62.87	\$250,000
3613	PB1853	El Cerrito 2522	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5B5 - Private - ~ 100 LF gabion wall, 20' height, Type I, 1 home threatened	7	58.2	\$250,000
3517	PB175068	Avenue Q 7512 and 7506	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5B5 - Private - Type I, 2 houses threatened - recommend voluntary purchase of both - cost of wall exceeds property values - 25' from creek bank, would require 150 LF of 15' gabion wall	7	58.14	\$375,000
3610	PB172825	El Cerrito 2420	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5B5 - Private - 70 LF gabion wall, 12' height, Type I, vertical bank, slight undercut	7	58.02	\$175,000
3705	PB175164	Lakeland 2214	Flood Protection and Storm Drainage	New	Erosion Control	TWM	South Fork of Ash Creek - Private - Home threatened; 125 LF of 15' gabion wall; 25 feet from top of bank	7	57.86	\$312,500
3658	PB175070	Highland Rd. 2447	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5B5 - Private - Type I, one house threatened, 30' from bank, 75 LF of 15' gabion wall	7	57.52	\$187,500
3771	PB6627	Parkdale Bridge @ White Rock Creek Trib	Flood Protection and Storm Drainage	New	Erosion Control	TWM	White Rock Creek - Public - Type I, channel scour - needs grout injection, grouted riprap	7	55.17	\$92,000
3569	PB4844	Claremont 8023	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5B5 - Private - Home threatened, Type I; 75 LF 10' gabion wall	7	53.18	\$187,500
3818	PB175140	Ripplewood 2712 and 2716	Flood Protection and Storm Drainage	New	Erosion Control	TWM	South Fork of Ash Creek - Private - Type I, two houses threatened, 35' from bank, 150 LF of 12' gabion wall	7	52.26	\$375,000
3784	PB16589	Poplar Springs Lane	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Estes Branch - Private - Design and construction of ~700 LF gabion mattress at 3:1 slope w/conc. toe wall to protect 12 homes adjacent to filled-in channel - 3300 and 3400 block	7	49.82	\$1,750,000
20441	TWM000042	Telegraph Ave 2459, 2511	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Unnamed Tributary to Stream 5B5 - Private - Type 1, two homes threatened, 60' from bank, creek is 10' deep, approx 125 LF of gabion - design and construction	7	27.44	\$312,500
3509	PB1088	Ash Creek - S Fork Channel Imprv at John West	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Channel improvements, FREQ 5 YR., DEPTH 4.8, analysis, design and construction	7	90	\$2,000,000
3510	PB1089	Ash Creek - S Fork Culvert Improvement at Peavy	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add culverts, FREQ. 100, DEPTH 2', VEL. 4.96, RATING = 9.92, analysis, design and construction	7	50	\$1,200,000
3508	PB1087	Ash Creek - S Fork Bridge Improvement at Ferguson	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Bridge improvement, FREQ. 5 YR., DEPTH 1.7', VEL. 5.36, RATING = 9, analysis, design and construction	7,9	45.7	\$2,950,000
3787	PB3206	Prairie Creek Bridge Improvement @ Military Pkwy	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Install bridge, FREQ. 100 YR., DEPTH 1.1', design and construction	7	32.96	\$1,217,083
3789	PB3209	Prairie Creek Channel Imprv - T&P RR to Forney Rd	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Channel improvements, FREQ. 50 YR., eliminates flooding of animal shelter, design and construction	7	31	\$608,541
3612	PB1852	El Cerrito 2470	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	4 houses and surrounding streets, design and construction	7	67	\$200,000
20409	TWM000010	Fair Park Storm Drainage Improvement	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Upsizing inlets and laterals at Fair Park - Design and Construction	7, CW	56	\$250,000
3503	PB171010	Abshire Lane 1916	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Multiple homes flood from alley - analysis, design, construction	7	54	\$900,000

# NEEDS INVENTORY – CD 7

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
3666	PB2356	Hollow Ridge 4804	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house - garage floods from street, design and construction	7	48	\$350,000
3836	PB3544	South Lamar Ph. 2 - Pear, Mooney, Bannock Area	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Additional improvements for Lamar-Pear to Bannock, Mooney Street, channel along R.R	7	48	\$1,217,083
3631	PB2005	Ferguson - IH30 to Buckner	Flood Protection and Storm Drainage	Repair/Replac	Storm Drainage	TWM	System upgrade to 100 year capacity; street flooding, design and construction	7,9	31	\$1,606,551

# NEEDS INVENTORY – CD 8

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
3532	PB1257	Bonnie View over Five Mile Creek	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Five Mile Creek - Approx. 150'X100'X2' gabion mattress; reinforcement 12 exposed drilled shafts; remove 8 drilled shaft remnants	8	62.87	\$626,000
3879	PB3912	Wixom Lane 835	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Prairie Creek Branch - Private - Type I, 1 home threatened - design and construction	8	58.44	\$53,000
3775	PB174370	Paul Quinn College 3837 Simpson Stuart Rd	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5A1 - Private - ~150 LF gabion retaining wall, 12' height, to protect student union building and nearby walkways; Stream 5A1 (Trib to Fivemile Creek); private property, will require drainage easement dedication	8	53.93	\$375,000
3640	PB172773	Glencairn 460	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Herring Branch - Private - 70 LF gabion wall, 15' height, Type I, house threatened, difficult access	8	53.88	\$175,000
3880	PB3913	Wixom Lane 861	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Hatfield Branch - Private - Type I, 1 home threatened - design and construction	8	49.33	\$53,000
3814	PB174633	Richwood 6822	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Brooklawn Branch - Private - Slight threat to home; 125 LF gabion wall, 14' height	3,8	44	\$312,500
3756	PB167182	Morningview 3810 and 3816	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5A1 - Private - Approx. 16' Gabion gravity wall to protect 3810 and 3816; Type III (fence threatened)	8	34.78	\$132,000
3786	PB3205	Prairie Creek Bridge Improvement @ Fireside	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Install bridge, FREQ. 100 YR., DEPTH 4.2, analysis, design and construction	8	71.2	\$7,840,000
3656	PB174266	Hickory Creek Floodplain Management Study	Flood Protection and Storm Drainage	New	Flood Management	TWM	Comprehensive floodplain management study with updated flood mapping and recommendations for improvements	8	70	\$220,000
3527	PB172771	Belt Line Road S. 2327	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Voluntary purchase of flood-prone property - Hickory Creek floodplain - about 4' depth	8	56	\$151,390
3785	PB3204	Prairie Creek Bridge Improvement @ Dowdy Ferry	Flood Protection and Storm Drainage	New	Flood Management	TWM	Levee, bridge, channel	8	50	\$59,000,000
3795	PB3239	Pruitt Branch Tributary Culvert Imprv @ Kingsfield	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Culvert improvements, FREQ. 100 YR., DEPTH 1.1, 1 home voluntary purchase	8	48.25	\$400,000
3653	PB2288	Hatfield Branch Culvert @ Fireside	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Add culvert, raise road, FREQ. 100 YR., DEPTH 3', design and construction	8	46	\$1,034,521
3773	PB3127	Parrish Branch Culvert @ Wheatland Rd.	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Culvert improvements, FREQ. 100 YR., design and construction	8	42.8	\$438,150
3737	PB172774	Lower Five Mile Creek Management Plan	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Channel restoration downstream of Bonnie View, mitigation, landscaping and trails. floodplain reclamation	8	41	\$28,000,000
3675	PB2432	Jan Creek Culvert @ Wheatland	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Add culvert, raise road, FREQ. 100 YR., DEPTH 1.3, design and construction	8	40	\$304,271
3616	PB1862	Elam Creek @ Ledbetter	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Raise roadway, FREQ. 50 YR., DEPTH .7, Analysis, design and construction	5,8	29	\$800,000
3823	PB3378	Rylie Creek @ St Augustine	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Raise roadway, FREQ. 100 YR., DEPTH .1, design and construction	8	25	\$243,416
3828	PB3482	Sheppard Branch Culvert Improvement @ Langdon	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Add culvert, FREQ. 100 YR., DEPTH .1, design and construction	8	25	\$121,707
3759	PB2985	Nandina - Pine Trail Area	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Design and construction of outfall, 2 to 3 homes flood	8	52	\$870,215
3645	PB2192	Greenspan - Kirnwood Area	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house and street flooding, design and construction	8	42	\$500,000
3639	PB2154	Glencairn 216	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One home floods - inadequate drainage system at low point in street	8	41	\$85,000
3657	PB2316	Hidden Valley 1286	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Inadequate drainage system causing street flooding, resulting in additional creekbank erosion	8	35	\$438,150

# NEEDS INVENTORY – CD 9

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
20405	TWM000006	Clearbrook Lane 10500 Blk	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Lippitt Branch - Public - Type 1, roadway threatened, 7-8' from bank, creek is 20' deep, approx. 60 LF of gabion - design and construction	9	85.23	\$150,000
17516	PB175175	Oates Drive 1407	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Construct about 75 linear feet of 20' gabion wall to protect home; will require removal of several trees; new wall will extend from end of existing gabions	9	80.33	\$187,500
3661	PB4845	Hillside Drive 3604	Flood Protection and Storm Drainage	New	Erosion Control	TWM	McCommas Branch - Private - Type I, replacement of failing railroad tie wall, 8' from house, about 7' height, remove existing railroad ties and construct 60 LF gabion wall - location is on bank of pond	9	62.73	\$150,000
20426	TWM000027	Northcliff Drive 9804	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Dixon Branch - Private - Type 1, one home threatened, 20' from bank, creek is 10-12' deep, approx. 140 LF of gabion - design and construction	9	58.02	\$350,000
20420	TWM000021	Lullwater Drive 8223, 8235	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Park Branch - Private - Type 1, duplex properties threatened, 25' from bank, creek is 16' deep, 75 LF of gabion - design and construction	9	57.96	\$187,500
20403	TWM000004	Chantilly Lane 6916	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Williamson Branch - Private - Type I, one home threatened, 25' from bank, 12' deep, approx. 75 LF of gabion - design and construction	9	54.29	\$187,500
3632	PB175072	Ferguson Rd. 11511	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Long Branch of Duck Creek - Private - Type I, condominium unit threatened, 20' from creek bank, 125 LF of 15' gabion wall	9	53.84	\$312,500
3702	PB175075	Lake Highlands (E.) 10684, 10688, 10692	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Dixon Branch - Private - Type I, three homes threatened, 40' from creek bank, 350 LF of 25' gabion wall	9	53.58	\$875,000
3646	PB170893	Greentree 7111 & 7045	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Rush Creek - Private - Type I, houses each ~50' from bank, 25' depth, probably two gabion wall structures with a combined length of ~150 LF	9	53.18	\$375,000
3841	PB2430	Springhill 2320	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Ash Creek - Private - House threatened, Type I; 75 LF of 12' gabion wall	9	53.1	\$187,500
20419	TWM000020	Lingo Lane 9903	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5B7 - Private - Type 1, one home threatened, 25' from bank, creek is 10' deep, approx. 55 LF of gabion - design and construction	9	52.68	\$140,000
3850	PB4850	Sunland 11835	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Lippitt Branch - Private - Home threatened, Type I; 80 LF of 10' gabion wall	9	52.68	\$200,000
3840	PB174372	Springhill 2304, 2310, 2314	Flood Protection and Storm Drainage	New	Erosion Control	TWM	South Fork of Ash Creek - Private - Two gabion walls, ~75 LF (15' high) and ~100 LF (12' high) to protect single family residences; 2304 is 30' from creek, 2314 is 45' from creek; wall will be designed to remove erosion threat, and will include protection at 2310 if needed	9	50.13	\$437,500
20438	TWM000039	Sperry Street 3130	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Beards Branch - Private - Type 1, one home threatened, 40' from bank, creek is 12' deep, approx. 80 LF of gabion - design and construction	9	47.49	\$200,000
3777	PB6626	Peavy Culvert @ Vinemont Channel	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Type I, downstream channel scour - needs riprap	9	44.97	\$100,000
3778	PB3139	Peavy Place 2344	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5B7 - Private - Type I, 1 home threatened, approx 60 LF of gabion wall - design and construction (normal bank erosion, 19' from house)	9	44.9	\$150,000
3774	PB174367	Patrick Dr 6722	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Rush Creek - Private - ~100 LF 10' high gabion retaining wall to protect single family residence; distance from home to creek bank ~100 feet	9	40.83	\$250,000
3779	PB172768	Peavy Road 2015	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Ash Creek - Private - 75 LF gabion wall, 12' height, very slow erosion rate, Type III at this time	9	40.46	\$187,500

# NEEDS INVENTORY – CD 9

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
20421	TWM000022	McCommas Branch - FPMS Alt. 4	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Replace culverts at Wendover; Remove footbridge d/s of Sperry, replace culverts and grade channel; Widen SPRR bridge opening and enlarge channel; Reduces flood risk to three homes, prevents flooding of two road crossings	9	83	\$3,670,000
3516	PB3618	Ash Creek Trib 5B7 Bridge Improvement @ Province	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Install bridge, FREQ. 100 YR., DEPTH 3.7, VEL. 4.84, RATING = 17.91, raise road, displaces estimated 3 homes	9	77.76	\$1,850,000
3515	PB3617	Ash Creek Trib 5B7 Bridge Improvement @ Peavy	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Install bridge, FREQ. 100 YR., DEPTH 3.3, VEL. 6.69, RATING = 22.08, analysis, design and construction	9	69.8	\$1,400,000
3806	PB3298	Rheinart Branch Bridges - Peavy to El Patio	Flood Protection and Storm Drainage	New	Flood Management	TWM	Combined w/El Patio bridge, install bridges, FREQ. 100, DEPTH 2.8, VEL. 2.14, RATING = 5.95, FREQ. 100 YR., DEPTH 1.9, VEL. 3.92, RATING = 7.37, and 360' channel impr.	9	61.9	\$912,813
20400	TWM000001	Beard's Branch - FPMS Alt. 3	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Add drop structure and modify pond spillway at Hillside, replace culverts at Hillside and Wendover; prevents flooding of two road crossing	9	56	\$970,000
20401	TWM000002	Cedar Springs Branch - Lomo Alto Dr @ Lemmon Ave	Flood Protection and Storm Drainage	New	Flood Management	TWM	Drainage study and design to determine solution to eliminate flooding due to the undersize system along Lemmon Ave, Lomo Alto Dr, and the Dallas North Tollway ramp at Craddock Park.	9	55	\$150,000
3511	PB1091	Ash Creek Branch @ Mercer	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Bridge Replacement, 100 YR. FREQ., DEP. 2.8, VEL. 3.64, Analysis, design and construction	9	54	\$1,850,000
3508	PB1087	Ash Creek - S Fork Bridge Improvement at Ferguson	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Bridge improvement, FREQ. 5 YR., DEPTH 1.7', VEL. 5.36, RATING = 9, analysis, design and construction	7,9	45.7	\$2,950,000
3807	PB3300	Rheinart Branch Culvert Improvement @ Garland	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Add culverts, FREQ. 100, DEPTH 1.2, VEL. 3.21, RATING = 3.85, design and construction	9	42.85	\$328,612
3808	PB3301	Rheinart Branch Culvert Improvement @ Tranquilla	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Add culverts, design and construction	9	42.21	\$102,235
3507	PB172778	Ash Creek - Bridge at Highland Road	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Replacement of Highland Bridge over Ash Creek to improve flood flows through bridge; preliminary engineering will include hydrologic and hydraulic analysis to ensure criteria are met	9	41	\$3,600,000
3512	PB1092	Ash Creek Channel - KCS RR @ Lakeland	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Close Culvert under RR, interior drainage -100 YR, design and construction	9	40	\$1,156,229
3513	PB1093	Ash Creek Culvert @ Ash Creek Dr.	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Culvert Improvement or install bridge, FREQ. 100 YR., DEPTH 1.2', VEL.3.3, Analysis, design and construction	9	38.5	\$900,000
3514	PB1094	Ash Creek Culvert @ Peavy Rd.	Flood Protection and Storm Drainage	Repair/Replacement	Flood Management	TWM	Culvert Improvement; FREQ., 2YR, DEPTH 0.9, VEL. 4.53, RATING = 4.08, Analysis, design and construction	9	34.07	\$1,200,000
3588	PB1641	Creel Creek Culvert @ Mercer	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add culvert, FREQ. 100 YR., DEPTH 1, VEL. 5.04, RATING = 4.79, analysis, design and construction	9	25	\$250,000
3724	PB2712	Lippitt Branch Culvert @ Sunland	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add culverts, FREQ. 100 YR., DEPTH .8, VEL. 3.18, RATING = 2.54, design and construction	9	23	\$365,124
3733	PB2737	Longbranch Channel - Phase 3 (RL Area 20)	Flood Protection and Storm Drainage	New	Flood Management	TWM	Bridge improvement, culvert improvement, channel improvement, construction - requires 404 Permit, may not have positive cost-benefit ratio	9	16	\$486,833

# NEEDS INVENTORY – CD 9

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
3606	PB1790	Dixon Branch Relief System (RL Areas 18 & 19)	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	97 homes in flood plain: homes flood at 10-year flood levels; average 100-year depth 3.84'; proposed relief system consists of a deep diversion tunnel from Lake Highlands/Easton west to White Rock Lake; This project replaces the channel improvements previ	9	360	\$100,000,000
3883	PB3948	Yosemite 6664	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Garage floods, design and construction	9	68	\$42,000
3772	PB3124	Parkhurst - Brookhurst (Lake Highlands Baptist) Relief System	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Design and construction of a drainage relief system to relieve the existing undersized 42" pipe that runs under Lake Highlands Baptist Church; relief system 1,600 LF 72" pipe from Parkhurst to Northcliff to Peavy, discharge into open channel	9	66	\$847,800
3825	PB3427	San Leandro, 8600 Block	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Design and construction of a parallel relief system along Sanford Drive from Diceman to Eustis	9	66	\$973,666
3741	PB2831	Maylee - Ruth Ann to Ferguson	Flood Protection and Storm Drainage	Repair/Replac	Storm Drainage	TWM	100 year system upgrade - street flooding, design and construction	9	65	\$2,312,459
3734	PB2739	Loree 1742	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house and streets flood, design and construction	9	58	\$575,000
3762	PB3001	Newcombe 10123	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	2 homes and street flooding, design and construction	9	58	\$680,000
3659	PB166790	Highland Road at Waterside Court	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Analyze, design and construct relief system for off-site drainage into Highland on the Creek subdivision - Highland Road floods, one residence has flooded.	9	54	\$156,796
3750	PB16362	Mockingbird/Skillman Area Drainage	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Analyze existing systems from Hillside upstream, determine whether storm sewer capacity can be increased, design and construct inlets and laterals to fully utilize system.	9,14	51	\$182,562
3881	PB3921	Wood Dale 10600	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Street flooding, design and construction	9	50	\$133,879
3614	PB1857	El Patio 1334	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Yard flooding from Peavy Rd, design and construction	9	48	\$65,000
3647	PB2206	Groveland 8920	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Enclose portion of creek, design and construction	9	48	\$70,000
3655	PB2303	Heatherwood 2623	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house floods/ 4-5 additional yards and streets, design and construction	9	48	\$170,000
3701	PB2600	Lake Gardens 10415	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Design and construction of a relief system for Lake Gardens at Easton	9	48	\$330,000
3736	PB2745	Lovers (E) 6503	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house and streets flood, design and construction	9,14	48	\$60,854
3710	PB2669	Lawther Dr. 4500	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Street flooding within park, culvert inadequate, relief system needed to capture and convey surface flows, design and construction	9	40	\$350,000
3742	PB166785	Meadow Lake Avenue 7102	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Approx. 1,600 LF 36" RCP, 4 10-foot inlets; requires detailed engineering analysis and design.	9	36	\$243,305
3630	PB2000	Farola 1916	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Yard flooding, design and construction	9	35	\$140,000
3528	PB1206	Berwyn & Annapolis	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Inadequate low point system, street flooding, design and construction	9	33	\$605,000
3631	PB2005	Ferguson - IH30 to Buckner	Flood Protection and Storm Drainage	Repair/Replac	Storm Drainage	TWM	System upgrade to 100 year capacity; street flooding, design and construction	7,9	31	\$1,606,551



# NEEDS INVENTORY – CD 10

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
3744	PB175180	Meadowcliff 10844 and 10840	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Construct 150 LF of gabion retaining wall, 35-ft height, to protect two homes	10	80.98	\$375,000
3743	PB175166	Meadowcliff 10720 & 10726	Flood Protection and Storm Drainage	New	Erosion Control	TWM	East Prong of Dixon Branch - Private - Type I, two homes threatened; Construct 175 LF of 20' gabion wall	10	64.92	\$437,500
20406	TWM000007	Clubcreek Circle 8903, 8907, 8911	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Dixon Branch - Private - Type 1, three homes threatened, 10' from bank, creek is 22' deep, approx 270 LF of gabion - design and construction	10	59.07	\$835,000
20433	TWM000034	Richardson Branch Trail 8619, 8623	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Richardson Branch - Private - Type 1, one home threatened, 25' from bank, creek is 15' deep, approx. 100 LF of gabion - design and construction	10	53.51	\$250,000
3746	PB175065	Mediterranean Circle 8567	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Dixon Branch - Private - Type I, house threatened, 40' from creek bank, 110 LF of 20' gabion wall	10	53.18	\$275,000
3585	PB1603	Coppertowne 8439	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Jackson Branch - Private - 2 condos, erosion 35 feet from structure, type I - gabion mattress 100'X15'X2', repair headwall	10	53.12	\$250,000
3876	PB3888	Whitehurst Branch Phase 2	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Sidewalk/jogging path slightly threatened, Type II - design and construction	10	50.58	\$271,000
3848	PB3624	Summer Glen 9042	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Richardson Creek- Public - Type I, slight threat to street, across from 9042 & 9046 Summer Glen - design and construction	10	49.5	\$78,000
20412	TWM000013	Green Oaks Circle 9010	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Richardson Branch - Private - Type 1 - one home threaten, 20' from bank, creek is 12' deep, approx. 63 LF of gabion - Design and construction	10	40.46	\$157,500
20424	TWM000025	Meadowknoll Dr 8915	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Type II, sidewalk threaten, home is approx. 50' from bank, sidewalk is approx. 7' from bank, creek is 25' deep, approx 100 LF of gabion - design and construction	10	31.44	\$250,000
3568	PB2424	Church Rd. 9222 (Jackson Branch - E. Bank below Church Rd.)	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Type I, Apartment bldg slightly threatened (Tree Tops II, 9222 Church Rd.) ~280 LF gabion wall, 12' height	10	30.44	\$700,000
3673	PB2423	Jackson Branch - Church Road Bridge	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Improvements of Church Rd Bridge - Raise bridge and widen span, Analysis, design and construction	10	61	\$1,370,000
3602	PB1791	Dixon Branch - E Prong Culvert @ Mediterranean	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add culvert, FREQ. 100 YR., DEPTH 2.5, VEL. 5.74, RATING = 12.54, design and construction	10	59.12	\$170,392
3674	PB2429	Jackson Branch Chl. Improvs. - Kingsley to Church	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Channel Improvements - widening cross-section and providing either concrete or gabion or geotextile lining, Analysis, design and construction	10	45.29	\$785,000
3605	PB3849	Dixon Branch - West Prong Voluntary Purchase	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	1 commercial building - voluntary purchase	10	38.85	\$389,467
3603	PB1792	Dixon Branch - E Prong Culvert @ Rolling Rock	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add double barrel culvert, FREQ. 100 YR., DEPTH 1.5, VEL. 5.74, RATING = 14.25, design and construction	10	38.3	\$219,075
3604	PB1794	Dixon Branch - W Prong Improvement @ Plano Rd	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Install bridge, FREQ. 100 YR., DEPTH 1.1', VEL. 4.37, RATING = 5.85, design and construction	10	36	\$608,541
3811	PB3308	Richardson Branch Culv. Whitehurst-Green Oaks	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Add culverts at Green Oaks and Whitehurst, limited channelization, FREQ. 100 YR., DEPTH .8', design and construction	10	20	\$949,325
3633	PB2074	Forestridge 9700 Block	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	~650 LF 60" pipe to relieve flooding of one home and area streets	10	75	\$400,000
3782	PB3169	Plano Pky. 8800	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	2 houses and street flooding, design and construction	10	69	\$545,000

# NEEDS INVENTORY – CD 10

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
20423	TWM000024	Meadowknoll 8911	Flood Protection and Storm Drainage	Repair/Replac e	Storm Drainage	TWM	Add 3 inlets (1 north side, 2 south side), lateral pipe, main pipe between houses directly to creek. Approx. 400 LF pipe	10	58	\$176,000
3607	PB1812	Dunmore 9155	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house floods, street flooding, design and construction	10	56	\$545,000
3817	PB174259	Ridgehaven Dr 9809	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Construct 2-10' inlets and about 400 LF of pipe in alley, connect to ex. system in Audelia, remove and replace about 160 SY alley pavement, deepen invert to increase capacity, 2 homes flood from alley	10	54	\$118,949
3627	PB174374	Fairglen Dr 8928	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	~200 LF 21" pipe, 1-10' inlet, to relieve street flooding	10	53	\$47,520
3694	PB174100	Kingsley Creek Circle 9129	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	1 house and street floods due to lack of system capacity, add 10' inlet and lateral/culvert pipe	10	51	\$43,254
3708	PB2644	Langdale 8622	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house floods, design and construction	10	48	\$290,000
3586	PB1618	Covey 8931	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house floods, street flooding, design and construction	10	40	\$1,520,000
3660	PB2333	Hill Point @ Royal Lane	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house and street flooding, design and construction	10	30	\$267,758
3716	PB2701	Lemmonwood 7704	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Yard flooding, design and construction	10	25	\$21,907

# NEEDS INVENTORY – CD 11

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
3847	PB174533	Stonehill Drive 6312	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Meadow Creek Branch - Private - Pool threatened, approximately 16' from creek bank, 6' from wrought iron fence, creek is 11' deep, pool deck has shifted and settled, and pipe under driveway may have slipped joint - design and construction of retaining wall	11	49.4	\$89,000
3763	PB172767	Northcreek 6700 blk	Flood Protection and Storm Drainage	New	Erosion Control	TWM	White Rock Creek - Private - 150 LF gabion wall, 15' height, fences threatened, house remotely threatened, Type II at this time, trib to WRC	11	48.7	\$375,000
3670	PB2373	Hughes Lane @ Kalani Place	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Construction of large intake structure behind curb, at least two box culverts to convey pond discharge under roadway into White Rock Creek Tributary.	11	73	\$800,000
3530	PB175076	Birchridge 14721	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house and street flood, extend drainage system from Village Trail around cul-de-sac to Dentcrest, add inlets	11	71	\$190,000
3644	PB2190	Greenhollow/Sapling Way/Clearsprings Area Relief (RL Area 4)	Flood Protection and Storm Drainage	Repair/Replac	Storm Drainage	TWM	100 year upgrade to existing system. 2 houses and excessive street flooding, design and construction	11	67	\$1,450,000
3643	PB2191	Greenhollow, 8051 (RL Area 4)	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Provides short term relief for Greenhollow - Sapling Way, Phase 1, one structure, design and construction	11	63	\$40,164
3839	PB174376	Spring Grove 13300 Block	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	~3,500 LF combination 6X5 box culverts and 36" pipe to relieve system inadequate by current standards	11	63	\$2,907,360
3792	PB16202	Preston Creek Place 6166	Flood Protection and Storm Drainage	Repair/Replac	Storm Drainage	TWM	Replace existing pipe culvert with box culvert - pipe is continually submerged, inadequate, and subject to blockage causing road to flood	11	58	\$74,613
20435	TWM000036	Royal Lane 7012	Flood Protection and Storm Drainage	Repair/Replac	Storm Drainage	TWM	Property is located in at area low point. Runoff from both the street and alley. Upsize existing drainage system and add additional inlets to capture 100-yr	11	57	\$1,000,000
3505	PB1039	Alpha at Peyton (RL Area 3)	Flood Protection and Storm Drainage	Repair/Replac	Storm Drainage	TWM	Upgrade area drainage system to relieve excessive street flooding	11	39	\$2,400,000
23315	TWM000049	Teakwood-Elmridge Area Drainage Relief System	Flood Protection and Storm Drainage	Repair/Replac	Storm Drainage	TWM	Design and construction - Replace existing sytem at the Teakwood and Elmridge area with 100-year system.	11	37	\$650,000
3821	PB3362	Royal Circle 7343	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Property flooding, design and construction	11	30	\$60,854
3669	PB2372	Hughes 13228	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Property flooding, design and construction	11	25	\$60,854
3827	PB3474	Shady Cliff 6121	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Property flooding, design and construction	11	25	\$12,170

# NEEDS INVENTORY – CD 12

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
20439	TWM000040	Stedman Cir 17315	Flood Protection and Storm Drainage	New	Erosion Control	TWM	McKamy Branch - Private - Type 1, one home threatened, 15'-20' from bank, approx 60 LF of gabion - design and construction	12	66.97	\$150,000
20431	TWM000032	Rembrandt Terrace 18731	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 6E1 - Private - Type 1, one home threatened, 15' from bank, creek is 10' deep, approx. 60 LF of gabion - design and construction	12	58.02	\$150,000
3761	PB4849	Nedra Way 15821 and 15827	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Kiowa Branch - Private - Type 1, 2 homes threatened	12	53.18	\$145,000
3522	PB175138	Baymar Lane 6201	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5B13 - Private - Type I, house threatened, 25' from bank, 80 LF of 12' gabion wall	12	53.09	\$200,000
3545	PB174369	Brushy Creek Trail 5719	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Stream 5B17 - Private - ~120 LF 15' high gabion retaining wall to protect pool; pool is ~22 feet from creek; home is ~50 feet from creek; deck encroaches into Floodway Management Area and will be removed with project if funded	12	49.36	\$300,000
20404	TWM000005	Claren Court 7106, 7110, 7114	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Osage Branch - Private - Type III - Fence, irrigation system, and private railroad tie wall threaten. No imminent threat to the principal structure. Not enough room to build a retaining wall so the drainage channel will be enclosed with approx. 220 LF of box culvert.	12	30.69	\$165,000
3804	PB3284	Renner Creek (Voluntary Purchase)	Flood Protection and Storm Drainage	Repair/Replace	Flood Management	TWM	Voluntary purchase of 5 homes on Renner Creek between Davenport and Frankford: 7020 and 7028 Creek Bend, and 7129, 7133, and 7229 Winding Creek. 7125 Winding Creek purchased 1998 BP. 7133 refused offer.	12	51	\$1,825,626
3854	PB3699	Tree Shadow Tr. 5910	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house floods, excessive street flooding, design and construction	12	66	\$870,215
3699	PB2578	La Bolsa - Dale Port Area	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One structure and area streets flood, design and construction	12	49	\$1,156,229
3587	PB172770	Creek Bend Road 7028	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Relief system on unimproved street to convey runoff to creek - significant lot flooding	12	48	\$77,857
3745	PB174366	Meandering Way 16209	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	~200 LF 21" storm drainage pipe, 2-10' inlets, to relieve excessive gutter flow that spills down drive approach	12	48	\$54,000

# NEEDS INVENTORY – CD 13

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
17515	PB175174	Joe's Creek - TXU ROW and 3900 Block Vinecrest	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Joe's Creek - Private - Completion of earlier project by constructing gabion mattress to protect slope above retaining wall, and construction of grouted riprap channel bottom to eliminate scour hole downstream of the TXU low water crossing.	13	66.71	\$250,000
3853	PB175141	Timber Trail Dr. 10245	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Joe's Creek - Private - Type I, one house threatened, 50' from bank, 125 LF of 15' gabion wall, remove existing undermined concrete retaining wall	13	51.84	\$312,500
3529	PB1208	Betty Jane 10225	Flood Protection and Storm Drainage	New	Erosion Control	TWM	Joe's Creek - Private - Garage threatened, Joes Creek, Type I - design and construction	13	49.2	\$187,500
3831	PB3525	Slaughter Branch Culvert Improvement @ NW Hwy	Flood Protection and Storm Drainage	Repair/Replac	Flood Management	TWM	Add culvert, raise road, FREQ., 100 YR, DEPTH 4', analysis, design and construction	13	69.8	\$1,700,000
3832	PB3526	Slaughter Branch Flood Gates @ Radbrook	Flood Protection and Storm Drainage	Repair/Replac	Flood Management	TWM	Flood warning device, FREQ. 100 YR., DEPTH 5.6', design and construction	13	64	\$12,170
3544	PB1302	Browning Bridge @ Hollow Way	Flood Protection and Storm Drainage	Rehabilitation	Flood Management	TWM	Raise road, add culverts. FREQ. 100 YR., DEPTH 2.5', analysis, design and construction	13	56	\$1,340,000
3830	PB3524	Slaughter Branch Culvert Improvement @ Holloway	Flood Protection and Storm Drainage	Repair/Replac	Flood Management	TWM	Culvert improvement, raise road, FREQ. 100 YR., DEPTH 2.5', analysis, design and construction	13	55.5	\$650,000
3540	PB1298	Browning Branch Bridge & Channel @ Inwood	Flood Protection and Storm Drainage	Repair/Replac	Flood Management	TWM	Bridge Replacement with channel improvements, FREQ. 10 YR., DEPTH 3.6, 2 HOMES FLOOD, design and construction - Flood Control reports complaints about plnd FW signs - water covered roadway in June 2000 (11/9/00)	13	55	\$2,850,000
3541	PB1299	Browning Branch Bridge @ Park Ln.	Flood Protection and Storm Drainage	Repair/Replac	Flood Management	TWM	Bridge replacement, raise road, FREQ. 10 YR., DEPTH 1.5', Analysis, design and construction	13	38.5	\$2,250,000
3542	PB1300	Browning Branch Culvert @ Lakehill Court	Flood Protection and Storm Drainage	New	Flood Management	TWM	Add culverts, FREQ. 10 YR., DEPTH 1.5', analysis, design and construction	13	38	\$385,000
3833	PB3529	Slaughter Branch Tributary Culvert Imprv @ NW Hwy	Flood Protection and Storm Drainage	Repair/Replac	Flood Management	TWM	Near Meadowbrook, add culvert, FREQ. 100 YR., DEPTH 1', analysis, design and construction	13	36	\$320,000

# NEEDS INVENTORY – CD 13

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
20432	TWM000033	Rexford Drive @ Shorecrest Drive	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Design and Construction - Drainage relief system at the Rexford Drive and Shorecrest Drive area. Note: In the Bachman Creek 100-yr floodplain.	13	84	\$160,000
20436	TWM000037	San Gabriel Drive 4300 Blk	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	H&H analysis, design and construction of approximately 3200 to 3800 LF of box culvert to prevent flooding in the 4300 Blk of San Gabriel Drive	13	75	\$6,000,000
3697	PB174375	Knights Branch Upper Relief System - Inwood/Mockingbird	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Major relief system of enclosed portion of upper Knights Branch watershed from Lowe's culvert extension (downstream of Inwood/Lemon) north on Inwood to about Wateka, using 2-12X10 box culverts, with smaller systems as necessary to provide full relief - re	2,13	74	\$16,146,000
3707	PB2642	Lane Park - 7100 to 7300 Block	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	2 houses and surrounding streets flood, design and construction	13	66	\$957,000
3869	PB3837	Welch 11811	Flood Protection and Storm Drainage	Repair/Replacement	Storm Drainage	TWM	Garage flooding from alley, reconstruct 200 LF alley w/invert, Drainage Analysis of Misc. Flooding Sites 1995.	13	63	\$30,427
3502	PB1001	Aberdeen-Tulane - Phase 2	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Second phase of project to alleviate street flooding, construction.	13	55	\$3,600,000
3601	PB1781	Desco 7108	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house floods, streets flood, design and construction	13	53	\$145,000
3870	PB3840	Wentwood 7314	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Property flooding, design and construction	13	50	\$60,854
3518	PB1116	Averill Way 6040	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Apartment building flooding, design and construction	13	48	\$675,000
20445	TWM000046	Yolanda Circle 5636	Flood Protection and Storm Drainage	Repair/Replacement	Storm Drainage	TWM	Replace approx. 380 LF of 15" RCP with approx. 30" RCP - Design and Construction	13	46	\$90,000
3793	PB3228	Preston Hollow Channel - Ph 1 Edgemere to Desco	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Culvert and channel improvements along channel east of Edgemere, from Edgemere to Desco, design and construction	13	44	\$900,000
3794	PB3229	Preston Hollow Channel - Ph 2 Desco to Joyce	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Culvert and channel improvements along channel east of Edgemere, from Edgemere to Desco - continuation of Phase 1, construction based on design with Phase 1	13	44	\$900,000
3819	PB16204	Rockbrook Drive 9400	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	5 inlets, laterals, 30" main line from Rockbrook to Bachman Creek to protect Frank Lloyd Wright home from excess overland flow from unimproved streets. A similar solution will be done for the property across the creek, 9221 Sunnybrook Lane.	13	43	\$250,000
3867	PB174261	Versailles Ave N 3500	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Construct 6-10' inlets, approx. 700 LF pipe, connect to ex. System in Lemmon, relieves street flooding to 2' depth on Versailles	13	43	\$206,280
20422	TWM000023	Meadowbrook Drive 9995	Flood Protection and Storm Drainage	Repair/Replacement	Storm Drainage	TWM	Add inlets at the intersection of Meadowbrook Drive and Walnut Hill. Upsizing approx.300 LF of 24" RCP to 4'X4' Box	13	37	\$170,000
3624	PB1905	Enfield 4307 and 4309	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Yard flooding, design and construction	13	33	\$680,000

# NEEDS INVENTORY – CD 14

NeedsID	ProjectID	Name	Program	Project Type	Category	Department	Description	Council	Score	Estimate
20444	TWM000045	Williamson Branch - FPMS Ait. 2	Flood Protection and Storm Drainage	New	Flood Management	TWM	Widen bridge openings at Norris, Alderson, and Saratoga; Construct 6,400 LF of 12x12 box culvert diversion structure from desiltation structure near Patrick to SPRA; Reduces flood risk to seven homes, eliminates flooding at six road crossings.	14	131	\$13,700,000
20443	TWM000044	Turtle Creek Trib 1 Culvert @ Fitzhugh	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Upsizing the culverts at Fitzhugh Drive and Turtle Creek Trib 1 to allow for 100-year flow	14	100	\$750,000
3860	PB3732	Turtle Creek @ Stonebridge	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Rebuild bridge, replace dam, FREQ. 2 YR., DEPTH 4.9, VEL. 5.4, RATING = 26.46, analysis, design and construction	14	75.46	\$4,450,000
3859	PB3731	Turtle Creek @ Hall	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Replace bridge, FREQ. 100 YR., DEPTH 2.2', VEL. 17, RATING = 37.4, analysis, design and construction	14	73.4	\$4,800,000
3856	PB3728	Turtle Creek @ Blackburn	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Raise road, replace ex. dam upstream with a 7' collapsible dam, FREQ. 50 YR., DEPTH 5.6, VEL. 5.3, RATING = 29.7, 2 HOMES FLOOD, analysis, design and construction	14	70.68	\$4,100,000
3858	PB3730	Turtle Creek @ Cedar Springs	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Bridge improvement, analysis, design and construction	14	62	\$9,800,000
3857	PB3729	Turtle Creek @ Bowen	Flood Protection and Storm Drainage	Repair/Replac e	Flood Management	TWM	Bridge replacement, raise road, FREQ. 50YR., DEPTH 3.6, VEL. 5.7, RATING = 20.5, analysis, design and construction	14	56.52	\$4,450,000
3757	PB2977	Munger (N) 1300	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Short term - Part of Peaks Branch. One structure and area streets flood, design and construction	2,14	58	\$32,000
3769	PB3104	Pacific Avenue Relief @ Elm Street	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	CBD relief system to the Trinity River, design and construction	2,14	58	\$10,953,754
20430	TWM000031	Prescott Ave 4110	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Oversize pipe to utilize storage. 1,100 LF of approx. 30" RCP, 2-10' inlets, inlets upstream of driveway, connect to existing system at intersection of Douglas & Wycliff.	14	56	\$442,000
3591	PB1659	Crutchfield Branch - DART Track to Lindsley Dr.	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Street flooding, SP R.R. (DART) to Lindsley, design and construction	14	54	\$3,850,000
3843	PB3592	State-Thomas - Hallsville/Worthington	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Includes, systems in Hallsville, Worthington, Boll, and Thomas	14	54	\$605,560
3750	PB16362	Mockingbird/Skillman Area Drainage	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Analyze existing systems from Hillside upstream, determine whether storm sewer capacity can be increased, design and construct inlets and laterals to fully utilize system.	9,14	51	\$182,562
3864	PB3746	University (E) 5757	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Apartment property floods, design and construction	14	50	\$60,854
3736	PB2745	Lovers (E) 6503	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	One house and streets flood, design and construction	9,14	48	\$60,854
3504	PB1021	Alderson 3700	Flood Protection and Storm Drainage	Repair/Replac e	Storm Drainage	TWM	Upgrade drainage system from 3700 blk Alderson to 3800 block Skillman	14	44	\$1,131,887
3842	PB3591	State-Thomas - Flora/Boll to Fairmount	Flood Protection and Storm Drainage	New	Storm Drainage	TWM	Includes "Field of Dreams" systems	14	43	\$467,146
20414	TWM000015	Homer Street 3215	Flood Protection and Storm Drainage	Repair/Replac e	Storm Drainage	TWM	Upsizing inlets at the intersection of Homer St and Monticello Ave. Adding an inlet/s to capture drainage from alley between Monticello and Merrimac Ave near Homer St. Upsizing approx. 600 LF of 36" RCP to 60" RCP.	14		\$132,000