

Project Objective

The Bryan Storm Water Masterplan was prepared to assist the City in evaluating the existing conditions of selected storm water infrastructure and to develop a storm water capital improvement plan to address existing problems. The evaluation consisted of using various sources, such as storm water master plans/studies, Geographical Information System (GIS) data and documented flooding concerns to develop drainage capital improvement projects (CIPs). The results of the evaluation were used to develop an implementation plan for the City to prioritize improvements. A list of the various sources is included in Appendix A.

The developed drainage CIPs were organized into a Microsoft Access database where they can be stored and recalled. A site visit was done to complete the data collection for projects that were missing information. The site visit included visiting project areas throughout the city, gathering information from the site and the City staff as well as taking pictures for the database.

For cost estimating purposes, a 15% contingency was used to estimate the cost for surveying and engineering, and a 20% contingency was used to estimate engineering costs for projects requiring a study as well as design. All unit costs are in 2010 dollars. The cost for maintenance is not included in the cost analysis for each alternative. It is assumed that the City will perform regular maintenance, including mowing and removal of trash and debris. The cost estimates are approximate and based on conceptual proposed improvements.

The goal of this masterplan is to produce the following deliverables to the City of Bryan for use in City planning, watershed and floodplain management, and future storm water management initiatives:

- Provide a sustainable city-wide ranked storm water Capital Improvement Plan using a Microsoft Access database that identifies existing problems, solutions and recommended budgetary needs; and
- An interactive GIS color-coded map that is linked to the Access database and shows the locations of projects
- A summary report documenting the process and ranking methodology



City-Wide Storm Water Capital Improvement Projects

Existing flooding, erosion, maintenance, and water quality problems were identified based on the analyses of existing data. Preliminary improvements were proposed to alleviate these problems and grouped into larger projects, called capital improvement projects (CIPs). These CIPs are categorized based on geographic location according to watershed. There are a total of 122 drainage project areas identified in previous studies. These storm water capital improvement projects are prioritized according to a ranking system developed through coordination with City staff. Locations of the drainage CIPs are identified on Figure 2, and each Project area is summarized in a one page report developed using the Microsoft Access database. These reports are located in Appendix B.

CIP Ranking

The storm water capital improvement projects (CIPs) developed through the data assessment are prioritized according to a ranking system developed through coordination with City staff. The ranking system was used to assess the relative severity of the identified drainage problems. The CIP ranking will assist the City in distinguishing between projects of various priorities and will be useful for budgeting purposes. The system is also intended to be a "living" document with which future projects can be added and prioritized.

Criteria Weighting

FNI coordinated with City staff to determine weights for nine different ranking criteria: life safety, street flooding, infrastructure damage, structures flooding, frequency of flooding, maintenance, project cost, funding available, and right-of-way availability. FNI created a pairwise comparison table, which allowed the City to weigh each criterion against the other. The City staff members were polled to determine which criterion was more important than another based on a scale of 1 to 3. A score of 3 means that one criterion is considered more important than another, a score of 2 means that the criteria are of the same importance, and a score of 1 means that the criterion is considered less important than another. The scores from each of the staff members present were averaged and added together to determine the weighted value assigned to each criterion, as shown in Table 3. For example, the City staff members were asked whether life safety is more important, equal to, or less important than structure flooding. According to Table 3, the City determined that life safety is considered more important than structure flooding; therefore, life safety received a score of 3 in that category. It should be noted that the scores are not whole numbers because they represent an average of the City responses during the pair wise evaluation exercise.



		Public Safety				Econ Imp	omic act	Project Timing			
		1	2	3	4	5	6	7	8	9	
	Criteria	Life Safety	Street Flooding	Infrastructure Damage	Structure Flooding	Frequency of Flooding	Project Cost	Maintenance	Funding Source	Right-of-Way Availability	Weighting Sum
Public Safety	Life Safety		3	2.5	2.25	2.75	2.75	2.75	3	3	22
	Street Flooding	1		1.25	1.5	1.75	2.25	1.25	2.25	2.5	13.75
	Infrastructure Damage	1.5	2.75		2.25	2.25	2.75	2.25	2.5	2.75	19
	Structure Flooding	1.75	2.5	1.75		2.75	2.25	2.25	2.5	2.5	18.25
	Frequency of Flooding	1.25	2.25	1.75	1.25		2.25	2.25	2.25	2.5	15.75
ic Impact	Project Cost	1.25	1.75	1.25	1.75	1.75		1.5	2.25	2.5	14
Economi	Maintenance	1.25	2.75	1.75	1.75	1.75	2.5		2.5	2	16.25
Timing	Funding Source	1	1.75	1.5	1.5	1.75	1.75	1.5		1.75	12.5
Project	Right-of-Way Availability	1	1.5	1.25	1.5	1.5	1.5	2	2.25		12.5

Table 3. Pair-wise Evaluation Criteria Ranking Results for the City of Bryan



Based on this method, Table 4 shows the evaluation criteria and the appropriated weighted value in order from 1 to 9.

Rank	Evaluation Criteria	Weight
1	Life Safety	22
2	Infrastructure Damage	19
3	Structure Flooding	18.25
4	Maintenance	16.25
5	Frequency of Flooding	15.75
6	Project Cost	14
7	Street Flooding	13.75
8	Funding Source	12.5
9	Right-of-Way Availability	12.5

Table 4. Ranking Key

Criteria Descriptions

The nine ranking elements are described in detail below and organized into three categories: public safety, economic impact, and project timing.

Public Safety

 <u>Life Safety</u> - During significant rainfall events, storm waters may overtop roadways or pedestrian routes. The depths of these flows are increasingly hazardous for pedestrians, bicyclists and motor vehicle operators. The value of life safety is determined by the depth of runoff in the road. Projects with a higher depth of storm water in the roadways will receive more points for this category.

Depth	Points
Over 24 inches	10
19 to 24 inches	9
13 to 18 inches	8
6 to 12 inches	7
Less than 6 inches	5

2. <u>Street Flooding</u>: During significant rainfall events, the flooding of a roadway effectively removes that segment from the surface transportation system. Based on the location of such flooding, and the traffic loading of the street, serious problems may result by interrupting driver's ability to move through the area, particularly to critical facilities.

Road Type	Points
Major Arterial and Highway	4
Minor Arterial	3
Collector	2
Local	0

- Should a roadway be considered as a primary route to a critical facility, 3 points are added to the scoring.
- Should a roadway segment subject to flooding not have an existing alternate route, 3 points are added to the scoring.
- However, the maximum score for the street flooding criteria is 10.
- Infrastructure Damage: This category is used to account for the potential damage that may be caused to public infrastructure as a result of the situation to continue unabated. Because it is best to prevent significant damage to the infrastructure before safety becomes an issue and costs escalate dramatically, areas with a higher potential for damage will receive a higher point value for this category.

Damage Potential	Points
High	10
Moderate	7
Low	4
None	0



4. <u>Structures Flooding</u>: This category considers the number of structures (including roadways) which are subject to potential flooding or flood related damage. Projects with more structures at risk receive a higher point value.

Number of Flooded Structures	Points
3 or more	10
2	7
1	5
Number of Flooded	Points
Number of Flooded Culverts/Roads	Points
Number of Flooded Culverts/Roads 3 or more	Points 9
Number of Flooded Culverts/Roads 3 or more 2	Points 9 6
Number of Flooded Culverts/Roads 3 or more 2 1	Points 9 6 3

<u>Frequency of Flooding</u>: Although larger, more infrequent rainfall events can cause more damage during a single episode, the cumulative effect of repeated smaller events can be significant as well. Additionally, the more often flooding conditions are present, the greater the possibility of citizen complaint and personal injury. Therefore, situations which arise at lower flood intervals receiver higher point values in this category.

Storm Interval	Points
2-year Storm	10
5-year Storm	9
10-year Storm	7
25-year Storm	4
50-year Storm	2
100-year Storm	1



Economic Impact

5. <u>Project Cost</u>: It is important to recognize that each storm water capital project will vary in size of improvement, the type of project, and the overall cost. It is also important to the City to be able to provide funds for each identified project, and to obtain the most cost effectiveness for the funding provided. Because lower cost projects can be accomplished with less impact to the City budget, they receive more points in the category.

Project Cost	Points
Less than \$100,000	10
\$100,000 to \$199,000	9
\$200,000 to \$349,999	8
\$350,000 to \$549,999	7
\$550,000 to \$999,999	6
\$1,000,000 to \$1,999,999	5
\$2,000,000 to \$2,999,999	4
\$3,000,000 to \$3,999,999	3
\$4,000,000 to \$4,999,999	2
\$5,000,000 to \$5,999,999	1
\$6,000,000 or more	0

6. <u>Maintenance</u>: Projects may be identified as an on-going maintenance issue due to erosion, debris, repair or other situations. Projects that have the potential to reduce the long term maintenance costs to the city should be credited with this value, therefore project with higher numbers of associated work orders over the prior 5 year period are receive more points in this category.

Number of Work Orders	Points
More than 10	10
8 to 9	8
6 to 7	6
4 to 5	4
2 to 3	2
Less than 2	0



Project Timing

7. <u>Funding Source:</u> Capital improvement projects can be funded though other sources than City funds. Developer funding, grants through various agencies and donations can all be sources of external funding for a project. Projects with a higher level of external funding should be valued higher in this category to retain the most cost effective use of City funds.

External Funding Available	Points
75% to 100%	10
50% to 74%	9
40% to 49%	8
30% to 39%	6
20% to 29%	4
10% to 19%	2
Less than 10%	0

8. <u>Right of Way Availability:</u> The timing of a project can be impacted by the availability to gain rights of way needed for construction and future maintenance. In addition, the City is not allowed to spend public funds on private property issues. Project areas where the needed rights of way have already been obtained are therefore ranked higher in this category.

Level of ROW Acquired	Points
Full City ROW	10
Full City and TxDOT ROW	8
Partial City ROW	3
No ROW	0

The drainage improvement projects were ranked to assess the benefit of the project with respect to the other drainage improvements. Each project was scored in each of the nine criteria and then multiplied by the corresponding weight to develop a total score. The projects were ranked according to the total score, with 1440 being the maximum possible score and 0 being the lowest possible total score. These calculations are completed within the access database. The city-wide ranking of CIPs is included in Table 5 later in this section and Figure 2 presents the 122 identified projects.



The final deliverable is the electronic Access database and sustainable Capital Improvement Plan. The database creates the report for the overall ranked list of projects, Table 5, as well as a one page summary of each project, shown in Appendix B. The database is also linked to the GIS color-coded map, as shown in Figure 2. If a project is changed in the database, it will be changed in the GIS map as well.

The projects identified and ranking of the projects are a planning tool to aid City staff in annual budgeting and project implementation for their storm water infrastructure. It is meant to be a tool to prioritize existing projects as well as projects as they arise in the future. It should be noted that some aspects of the Capital Improvement Plan may need to be revisited annually. The ranking criteria for each project may have changed over the course of a year, and the City may want to update their criteria weights. These changes can be made within the current database, and the process is described in the next section.



Total Final Ranking	ID / Project Number	Project Name/Location	Project Cost in 2010 dollars (\$1000)	Life Safety	Street Flooding	Infrastructure Damage:	Structures Flooding:	Frequency of Flooding:	Project Cost	Maintenance	Funding Source	Right-of- Way Availability	Total Score
1	SC11	Lynndale Acres Ph 2 Flooding: Old Hearne and McHaney Street	\$643	8	6	10	10	7	6	10	0	10	1111
2	BU05	Willow Bend Drive Flooding	\$2,320	10	4	10	10	2	4	10	0	10	1023
3	BR03	Villa Maria Road Overtopping	\$431	8	9	4	10	10	7	4	0	10	1004
3	SC08	W 17th Street Crossing Trib A	\$288	8	5	7	10	9	8	4	0	10	1004
5	BR05	Ettle Street Road Overtopping	\$288	10	3	10	6	10	8	2	0	10	987
6	SC12	Malvern Street and Southside Drive Street Flooding	\$30	8	6	10	6	7	10	2	0	10	965
7	SC01	23rd Street Drainage	\$1,195	7	4	10	9	10	5	2	0	10	947
8	SC07	W MLK St Crossing Trib A	\$403	7	8	7	10	9	7	0	0	10	945
9	BU14	Villa Maria Trib D Crossing	\$306	10	10	4	8	7	8	0	0	8	902
10	CB02	Palasota Road Crossing Tributary 5	\$230	10	6	7	3	9	8	2	0	10	901



Total Final Ranking	ID / Project Number	Project Name/Location	Project Cost in 2010 dollars (\$1000)	Life Safety	Street Flooding	Infrastructure Damage:	Structures Flooding:	Frequency of Flooding:	Project Cost	Maintenance	Funding Source	Right-of- Way Availability	Total Score
11	CC10	MLK Road Overtopping - FNI	\$460	9	3	10	3	9	7	2	0	10	881
12	BR02	Broadmoor Drive Road Overtopping	\$517	8	2	4	10	10	7	2	0	10	875
13	BU30	Farm Patch Flooding	\$59	5	3	7	10	7	10	2	0	10	873
14	BU04	Burton Drive Crossing	\$217	9	0	4	10	7	8	4	0	10	868
15	BU25	Oakridge Drive and Barak Lane	\$1,738	10	7	7	6	7	5	0	0	10	863
15	CC04	Boonville Road Overtopping - FNI	\$518	8	7	4	10	7	7	0	0	10	863
17	CC13	Waco Road Overtopping - FNI	\$259	8	2	4	10	9	8	0	0	10	841
18	SC03	Tennessee Avenue Crossing	\$259	7	0	4	10	10	8	2	0	10	839
19	BU49	Hillside Drive Storm Sewer Improvements	\$808	0	3	7	10	7	6	10	0	10	837
20	BU02	Avondale Crossing	\$223	8	2	4	10	4	8	4	0	10	827
21	SC13	Harwood Drive Street Flooding	\$50	5	0	4	7	7	10	8	0	10	819
22	BR25	Apple Creek Cr in Briarcrest Estates Erosion	\$966	5	3	10	9	4	6	10	0	0	814



Total Final Ranking	ID / Project Number	Project Name/Location	Project Cost in 2010 dollars (\$1000)	Life Safety	Street Flooding	Infrastructure Damage:	Structures Flooding:	Frequency of Flooding:	Project Cost	Maintenance	Funding Source	Right-of- Way Availability	Total Score
23	BU03	Esther Blvd Crossing	\$217	8	0	4	10	7	8	2	0	10	813
24	SC05	Woodville Road Crossing WF Still Creek	\$230	5	2	4	10	1	8	10	0	10	811
25	CB01	Palasota Road Crossing	\$460	5	5	10	10	2	7	0	0	10	807
26	CC11	Dumas Road Overtopping - FNI	\$230	10	0	7	8	4	8	0	0	10	799
27	TC01	Villa Maria Crossing	\$431	10	10	4	3	7	7	0	0	8	797
28	BU41	Burton Creek Tributary D and E Channel Improvements	\$1,553	10	3	7	7	4	5	6	0	3	790
29	BU15	Maloney Crossing	\$320	10	0	4	8	7	8	0	0	10	789
30	BU11	Williamson Crossing	\$251	7	3	4	10	2	8	4	0	10	788
31	CC12	Moss Road Overtopping	\$403	10	0	7	8	4	7	0	0	10	785
32	CC03	Briarcrest Road Overtopping	\$288	7	7	4	10	2	8	2	0	8	784
33	CC08	Old Reliance Road Overtopping	\$460	9	3	4	3	7	7	4	0	10	768
34	HC01	Regional Detention	\$308	7	9	7	3	2	8	2	0	10	767



Total Final Ranking	ID / Project Number	Project Name/Location	Project Cost in 2010 dollars (\$1000)	Life Safety	Street Flooding	Infrastructure Damage:	Structures Flooding:	Frequency of Flooding:	Project Cost	Maintenance	Funding Source	Right-of- Way Availability	Total Score
35	TB03	SH 6 Frontage Road Overtopping at Thompsons Branch	\$460	10	7	7	3	4	7	0	0	8	765
36	BU08	Duncan Street Crossing	\$137	7	0	4	8	7	9	0	0	10	737
37	BR06	Ettle Street Road Overtopping	\$431	7	7	4	3	10	7	0	0	8	736
38	BU09	Tract North of Carson Crossing	\$344	10	0	4	8	7	8	2	0	3	734
39	CB03	Industrial Boulevard Crossing	\$460	10	0	4	3	10	7	0	0	10	731
40	CC02	Green Valley Road Overtopping	\$460	8	2	7	3	7	7	0	0	10	725
41	TB04	Mumford Road Overtopping	\$460	10	2	7	3	4	7	0	0	10	722
42	BR07	SH 6 Freedom Boulevard Tributary Road Overtopping	\$460	8	4	4	3	10	7	0	0	8	718
43	BU06	Broadmoor Street Crossing	\$402	5	6	7	3	7	7	0	0	10	713
43	BU07	College Crossing	\$357	5	6	7	3	7	7	0	0	10	713
45	BU13	Cavitt Crossing	\$250	5	3	4	10	4	8	0	0	10	710



Total Final Ranking	ID / Project Number	Project Name/Location	Project Cost in 2010 dollars (\$1000)	Life Safety	Street Flooding	Infrastructure Damage:	Structures Flooding:	Frequency of Flooding:	Project Cost	Maintenance	Funding Source	Right-of- Way Availability	Total Score
46	BU10	Carson Street Crossing	\$206	5	2	4	8	7	8	0	0	10	707
47	BU51	826 and 827 Vine Street Property Flooding	\$417	5	0	10	7	9	7	0	0	3	706
48	BU48	Briar Oaks Drive Storm Sewer Improvements	\$241	5	2	7	3	7	8	2	0	10	705
49	CC16	Ursuline Ave Flooding	\$25	5	2	4	5	7	10	6	0	3	690
50	BU01	Woodland Drive Crossing	\$175	7	0	7	3	4	9	2	0	10	689
51	ТВ02	SH 6 Road Overtopping at Thompsons Branch - FNI	\$518	7	10	4	3	4	7	0	0	8	684
52	TC03	Westwood Main Street Crossing SF Turkey Creek	\$345	5	2	10	3	4	8	0	0	10	683
53	BR09	Assisted Living Road Overtopping	\$288	7	0	4	3	10	8	0	0	10	679
54	CC09	Castle Heights Subdivision Flooding - FNI	\$50	0	0	4	10	9	10	6	0	3	676
55	BU52	Truman Street between Franklin St and Truman Ave	\$58	5	0	7	3	7	10	0	0	10	673



Total Final Ranking	ID / Project Number	Project Name/Location	Project Cost in 2010 dollars (\$1000)	Life Safety	Street Flooding	Infrastructure Damage:	Structures Flooding:	Frequency of Flooding:	Project Cost	Maintenance	Funding Source	Right-of- Way Availability	Total Score
56	SC17	N Logan Ave and W 24th Street Drainage	\$460	5	3	7	3	7	7	0	0	10	672
57	CB06	S Main Ave Flooding	\$3,401	5	3	4	7	7	3	2	0	10	665
58	BU37	Kent and Oxford St Intersection Flooding	\$210	7	0	4	3	9	8	0	0	10	664
59	BU50	S College Avenue Storm Sewer Improvements	\$569	0	3	4	5	7	6	8	0	10	657
60	BR17	Briarcrest Bridge Flooding	\$460	7	7	4	3	4	7	0	0	8	642
60	TB01	N Harvey Mitchell PW Road Overtopping	\$460	7	7	4	3	4	7	0	0	8	642
62	BU12	College Crossing Trib D	\$435	5	6	4	3	4	7	2	0	10	641
63	CB07	Suncrest Street Drainage	\$35	5	0	4	5	4	10	2	0	10	637
64	BR08	Red River Drive Road Overtopping	\$316	5	0	4	3	10	8	0	0	10	635
65	CB08	Richard St. and Mockingbird St Drainage	\$35	5	0	4	3	4	10	4	0	10	634
66	CC14	Old Kurten Rd Overtopping	\$345	7	0	4	3	7	8	0	0	10	632



Total Final Ranking	ID / Project Number	Project Name/Location	Project Cost in 2010 dollars (\$1000)	Life Safety	Street Flooding	Infrastructure Damage:	Structures Flooding:	Frequency of Flooding:	Project Cost	Maintenance	Funding Source	Right-of- Way Availability	Total Score
67	CC18	Bravo Court Flooding	\$25	5	2	4	5	7	10	2	0	3	626
68	BR01	SH 6 West Briar Creek Road Overtopping	\$460	7	4	4	3	3	7	2	0	8	618
69	CC06	Pecan Ridge Subdivision Flooding - FNI	\$50	0	0	4	10	1	10	10	0	3	614
70	SC16	Tabor Road Flooding	\$345	5	3	4	0	7	7	2	0	10	593
71	SC14	McDade Property Flooding	\$25	5	0	7	3	7	10	0	0	3	586
72	CB04	Commerce Street Property Flooding	\$403	5	4	4	3	4	7	0	0	10	582
72	CB05	Lee St and Twin City Missions Property Flooding	\$30	5	0	4	5	4	10	4	0	3	582
74	BU43	2508 and 2510 Willowbend Circle Flooding	\$400	0	0	10	10	2	7	2	0	3	572
75	TC10	Hummingbird Lane Erosion	\$144	0	3	10	5	4	9	2	0	0	544
76	BU27	Hillside Drive Flooding	\$25	0	0	4	8	7	10	0	0	3	510
77	TC04	Leon Street Flooding	\$40	0	3	0	5	4	10	2	0	10	493
78	TC02	London Bridge Crossing - FNI	\$230	7	2	0	3	1	8	0	0	10	490



Total Final Ranking	ID / Project Number	Project Name/Location	Project Cost in 2010 dollars (\$1000)	Life Safety	Street Flooding	Infrastructure Damage:	Structures Flooding:	Frequency of Flooding:	Project Cost	Maintenance	Funding Source	Right-of- Way Availability	Total Score
79	BU29	Sprucewood Street Flooding	\$25	0	0	0	5	4	10	4	0	10	484
79	CC05	Oak Forest Estates Flooding	\$50	0	0	4	10	1	10	2	0	3	484
81	BR18	E 26th Street from Dillard Street to S Coulter Drive	\$25	0	0	4	0	7	10	2	0	10	483
81	BR22	River Forest and DeLee Street Cul-de-sac Flooding	\$25	0	0	4	0	7	10	2	0	10	483
83	CC26	Pierce Street Storm Drain Improvements	\$1,726	5	0	4	3	0	5	10	0	0	474
84	BR19	Briarcreek Court Flooding	\$25	0	0	4	0	7	10	0	0	10	451
85	SC10	Shirley Lane Flooding	\$35	0	0	1	5	4	10	6	0	3	448
86	BU28	Finfeather Lake Flooding	\$25	0	0	0	5	1	10	4	0	10	437
87	CC17	Carters Creek Trib B Erosion	\$776	0	0	4	5	7	6	2	0	3	432
88	TC05	W Villa Maria Erosion	\$863	0	4	4	3	0	6	2	0	10	427
88	BR21	Freedom Blvd Culvert Flooding	\$460	0	0	4	1	7	7	0	0	10	427
90	BU31	Trib 5 Sandra Dr to Holick Ln Erosion	\$290	0	0	7	0	0	8	8	0	3	412



Total Final Ranking	ID / Project Number	Project Name/Location	Project Cost in 2010 dollars (\$1000)	Life Safety	Street Flooding	Infrastructure Damage:	Structures Flooding:	Frequency of Flooding:	Project Cost	Maintenance	Funding Source	Right-of- Way Availability	Total Score
91	HC04	Kirkwood Drive Backyard Flooding	\$30	0	2	0	0	7	10	0	0	10	403
92	CC22	Carters Creek Trib B Meadowbrook Drive Erosion	\$776	0	0	4	0	0	6	10	0	3	360
93	SC02	23rd Street Drainage Maintenance	\$20	0	6	0	0	0	10	0	0	10	347
94	BU32	Trib 5 Holick Ln to Broadmoor Dr Flooding	\$2,588	0	0	0	7	4	8	0	0	3	340
95	BU22	Texas Ave to S. College Ave. along Trib D	\$82	0	0	0	10	1	10	0	0	0	338
96	BR23	Briar Creek Tributary D Flooding	\$25	0	0	4	0	7	10	0	0	0	326
97	BU23	Williamson to Duncan Channel Improvements	\$82	0	0	7	0	1	10	2	0	0	322
98	TC06	Unnamed Trib Miana Ct Erosion	\$311	0	0	4	0	0	8	0	0	10	313
98	TC08	S Traditions Dr Erosion	\$207	0	0	4	0	0	8	0	0	10	313
100	BU40	Wayside Drive Erosion	\$155	0	0	7	0	0	9	0	0	3	296



Total Final Ranking	ID / Project Number	Project Name/Location	Project Cost in 2010 dollars (\$1000)	Life Safety	Street Flooding	Infrastructure Damage:	Structures Flooding:	Frequency of Flooding:	Project Cost	Maintenance	Funding Source	Right-of- Way Availability	Total Score
101	BU18	9th Street to Rosemary Channel Improvements	\$864	0	0	7	0	0	6	2	0	3	288
102	тс07	N Traditions Dr Erosion	\$690	0	0	4	0	0	6	0	0	10	285
103	BR13	Ettle Street Channel Maintenance	\$10	0	0	0	0	4	10	2	0	3	274
104	BU45	Esther to Burton Channel Improvements	\$1,553	0	0	7	0	0	5	2	0	0	236
104	BU39	Epy's Subdivision Flooding	\$25	0	0	0	0	4	10	2	0	0	236
106	CC15	Trib B Erosion - FNI	\$1,955	0	0	7	0	2	5	0	0	0	234
106	HC03	Copperfierld Subdivision Ph 2 Erosion Trib 4.1.1	\$1,760	0	0	4	3	0	5	2	0	0	234
108	BU36	Trib C and Vine Street Erosion	\$435	0	0	7	0	0	7	0	0	0	231
108	BU33	Spring Lane Residential Flooding	\$25	0	0	7	0	0	7	0	0	0	231
110	BR20	Briar Creek Estates Ph 1 Channel Erosion	\$828	0	0	4	0	0	6	4	0	0	225
111	BU42	605 Cache Street Flooding	\$776	0	0	4	0	2	6	2	0	0	224



Total Final Ranking	ID / Project Number	Project Name/Location	Project Cost in 2010 dollars (\$1000)	Life Safety	Street Flooding	Infrastructure Damage:	Structures Flooding:	Frequency of Flooding:	Project Cost	Maintenance	Funding Source	Right-of- Way Availability	Total Score
112	BU19	Rosemary to Tanglewood Drive Channel Improvements	\$1,488	0	0	4	0	0	5	2	0	3	216
113	BU24	Burton Creek Channel Maintenance Program	\$67	0	0	0	0	0	10	2	0	3	210
114	BU46	Burton to Villa Maria along Burton Creek Channel Improvements	\$1,553	0	0	7	0	0	5	0	0	0	203
115	BU17	SH6 to 29th St Improvements	\$140	0	0	4	0	0	9	0	0	0	202
116	BU44	Avondale to Esther Channel Improvements	\$1,967	0	0	4	0	0	5	0	0	3	184
117	BU38	Trib 7 and Skrivanek Drive Flooding	\$900	0	0	0	0	4	6	2	0	0	180
118	BU20	Woodland Drive to Avondale Ave Channel Improvements	\$1,348	0	0	4	0	0	5	2	0	0	178
119	тс09	Traditions Golf Course Area Erosion	\$1,840	0	0	4	0	0	5	0	0	0	146
120	BU21	Burton Creek to S. College Ave Channel Improvements	\$144	0	0	0	0	0	9	0	0	0	126



Total Final Ranking	ID / Project Number	Project Name/Location	Project Cost in 2010 dollars (\$1000)	Life Safety	Street Flooding	Infrastructure Damage:	Structures Flooding:	Frequency of Flooding:	Project Cost	Maintenance	Funding Source	Right-of- Way Availability	Total Score
121	BU34	Trib C Greenway to S College Erosion	\$569	0	0	2	0	0	6	0	0	0	122
122	CC01	Carter Erosion- University to Briarcrest	\$6,670	0	0	4	0	0	0	0	0	0	76