



Appendix H City of Pflugerville

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As of 2010, there are 22 municipal jurisdictions in Travis County. The development and adoption of the Travis County 2004 Plan included only the unincorporated areas of the County. As part of the Plan update, three incorporated municipalities in Travis County participated in the process. The three participating communities include the following:

- City of Pflugerville
- City of Sunset Valley
- Village of the Hills

None of these communities were part of a previous mitigation plan. This appendix discusses the hazards and risks related to the City of Pflugerville.

1.1 Background

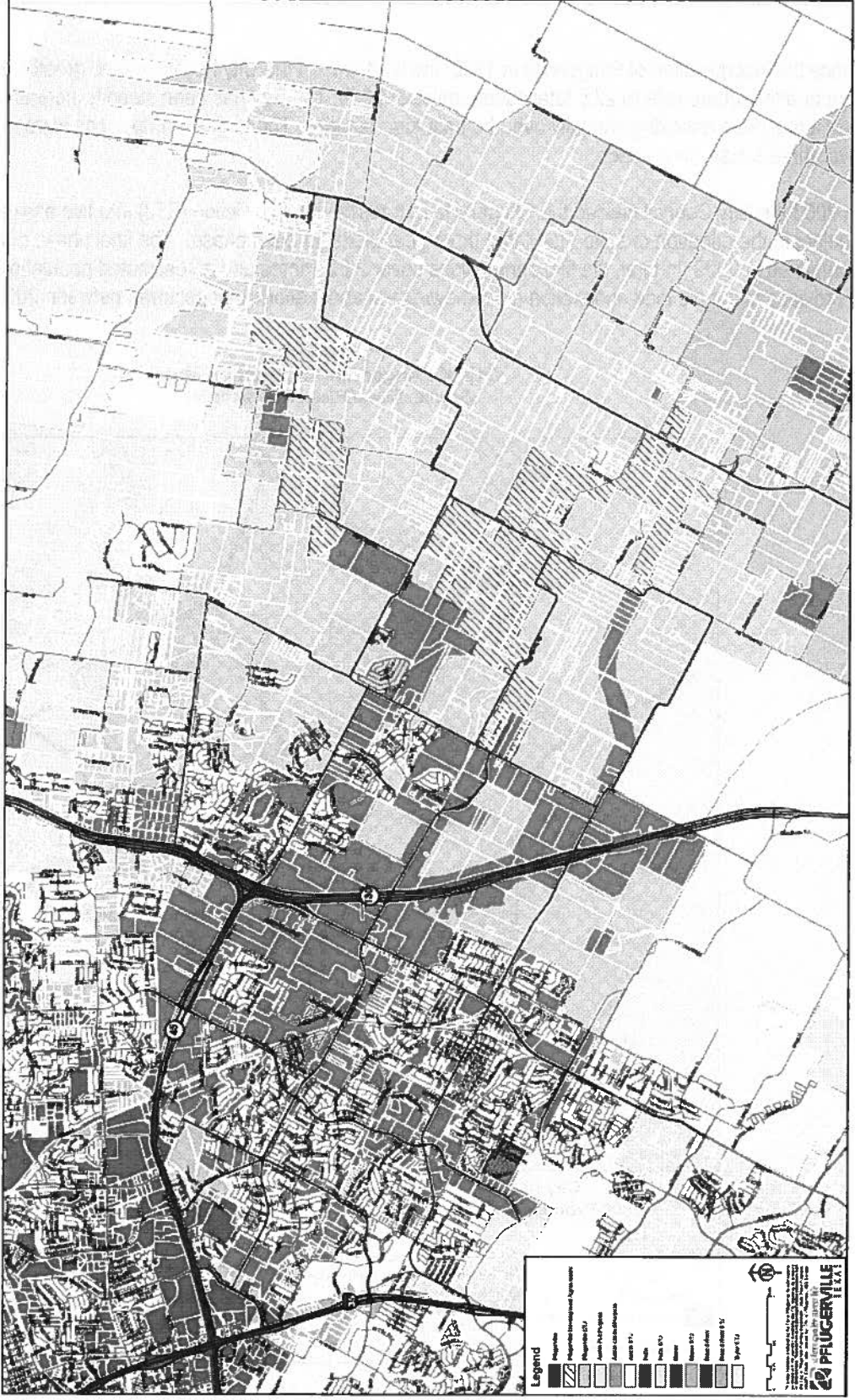
The City of Pflugerville was originally founded in 1860, and is located about 15 miles north of the Colorado River on the eastern edge of the blackland prairies, in central Texas. After a period of decline during World War II, Pflugerville began to grow slowly again in the 1960s, and was incorporated in 1965. The population rose to 452 by 1968, and to 662 by 1980. From 1980 through 1988, new development in Pflugerville made it the fastest growing community in the State. After a slight slowdown during the recession of the late 1980s, the tremendous growth resumed again during the 1990s, as the population nearly quadrupled in size from 4,444 residents in 1990, to 16,335 in 2000.¹

¹ City of Pflugerville, official website



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Figure H-1
City of Pflugerville Map
(Source: City of Pflugerville website)





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Pflugerville is primarily a residential community emerging from converted agricultural land. Residential land use accounts for approximately 20 percent of the current total land area of the City. Additionally, a total of 30 percent is zoned for all residential uses allowing for future growth. In 2007, Forbes rated Pflugerville as the 23rd fastest growing suburban community in the U.S., with a 70.5 percent increase in population from 2000 to 2006. Since 2006, population and household growth has continued to be strong in the northern part of the Austin region.³ Table H-1 shows the population and incorporated area growth and between 1970 and 2010.

Table H-1
City of Pflugerville – Population and Incorporated City Area Growth (1970 – 2010)
 (Source: City of Pflugerville 2030 Plan – A Comprehensive Plan, Land Use and Development Section)

Year	Population	Net Growth (%)	Area (Sq. Miles)	Net Growth %
1970	549	----	0.36	-----
1980	662	21	0.99	175
1990	4,444	571	2.36	138
2000	16,335	268	10.60	349
2010	50,850	190	21.77	105

Over the eight years from 2000 to 2008, Pflugerville approved building permits for 5,168 single-family structures and 2,523 multi-family units within the City limits (an annual average of approximately 960 permits). The population of Pflugerville and its ETJ is expected to continue to grow over the next ten years. Based on projections from the *City of Pflugerville 2030 Comprehensive Plan*, Pflugerville is forecast to add an average of 4,250 new residents per year.

As of 2010, the City owns five buildings (not counting park buildings and water/wastewater facilities). As part of the Plan update, the City was requested to provide a list of critical facilities. The City indicated there were six critical facilities in the City of Pflugerville. The list of critical facilities is shown in Table H-2.

Table H-2
City of Pflugerville Critical Facilities
 (Source: City of Pflugerville 2030 Plan – A Comprehensive Plan)

Facility Name	Street Address	Year Constructed
City Hall	100 East Main Street	1984
Justice Center	1611 Pfenning Lane	2000
Public Works Facility	2609 East Pecan Street	Varies
Water Treatment Plant	East of State Hwy 130 on Weiss Lane	2002
Central Wastewater Treatment Plant	Adjacent to Travis County NE Metro Park	1980s
Wilke Lane WWTP	Upper Portion Wilbarger Creek Watershed	1980s

³ Pflugerville 2030 Plan – A Comprehensive Plan, June 2010 (Draft)



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Table H-3
City of Pflugerville – Climatic and Geographic Design Criteria
(Source: City of Pflugerville – Building Regulations, General Provisions, Section 150.12)

Ground Snow Level	Wind Speed (MPH)	Seismic Design Category	Flood Hazard
5 lb/sq. feet	90	A	FIRM

A total of eight natural hazards were considered in the Travis County 2010 Plan update. The City participated in the development of the hazards considered for Travis County and concurs that all the hazards selected also impact the City of Pflugerville to some degree. The MPC ranked the hazards and determined that the two most significant (floods and tornadoes) warranted additional assessment. As with Travis County, the flood and tornado hazards pose the greatest risk to the City and are therefore the main focus of the Pflugerville hazard identification and risk assessment. The other hazards are described in the Section 5 of the Plan update.

The City of Pflugerville Action Plan (included in Section 1.6 of this Appendix) includes specific mitigation measures to protect buildings, people, infrastructure, and critical facilities for the eight hazards identified in the Plan update. These eight natural hazards have been profiled, but not subjected to a rigorous risk assessment. The following subsections describe the City of Pflugerville's vulnerability to the two primary hazards that the MPC determined to pose the greatest risk to the City.

1.3.1 Floods

The City of Pflugerville is located in the upper reaches of three watersheds: Gilleland, Wilbarger and Cottonwood Creek. These three watersheds define the natural drainage patterns of the City, flowing in a southeasterly direction to the Colorado River. Storm runoff from the higher (westerly) areas of the watersheds is conveyed through the City by underground pipes, drainage channels, and natural creeks.⁵

As noted earlier, the City's population has increased dramatically over the past 10 to 15 years, which has significantly increased the amount of impervious surfaces, resulting in the potential for more frequent flooding events, greater storm flows, and higher stream velocities. As a result of this urbanization, more frequent overtopping of inadequate drainage structures, higher sediment loading of the runoff during storm events, and accelerated erosion of the natural drainage ways has occurred. In an effort to identify and reduce flood damages, areas adjacent to the creeks susceptible to periodic flooding have been mapped by the City of Pflugerville, FEMA and others including the City of Austin.

Floods are a significant threat to the City of Pflugerville. The broad floodplains, the product of the region's hydrologic conditions and the creek characteristics, have the potential to cause flooding damage to structures (buildings, roads and bridges) located within flood-prone areas. The City of Austin's Gilleland Creek Flood Hazard Assessment identified 168 flood prone structures, including 14 overtopped bridges and culvert structures within the City of Pflugerville.⁶

Figure H-3 identifies FEMA flood zones for the City. The flood zones identified on the map include 100- and 500-year floodplains. The flood hazard data displayed on the map is Digital Flood Insurance Rate Map (DFIRM) flood

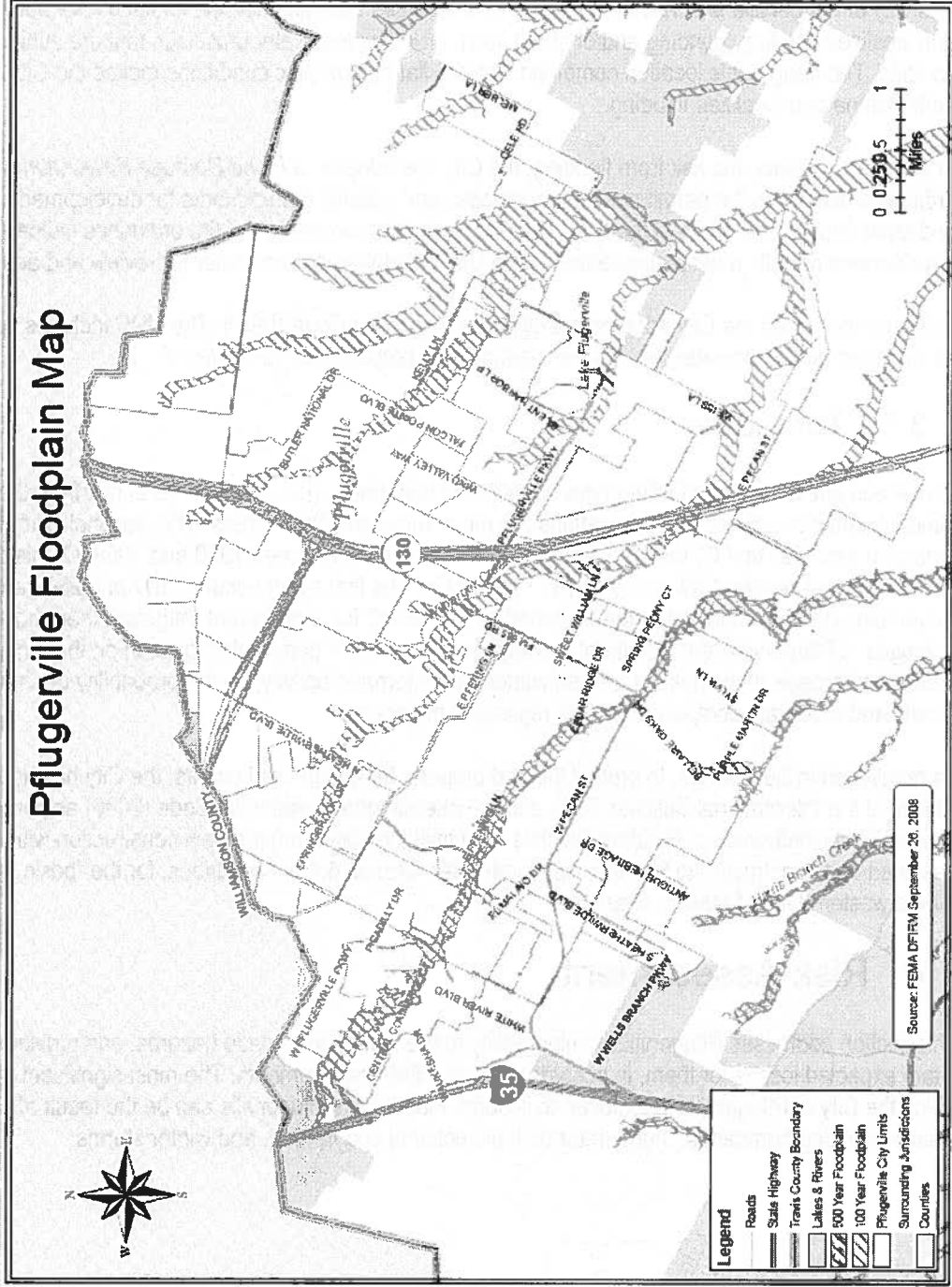
⁵ Pflugerville 2030 Plan – A Comprehensive Plan, June 2010 (Draft) – Public Facilities and Infrastructure

⁶ Pflugerville 2030 Plan – A Comprehensive Plan, June 2010 (Draft) – Public Facilities and Infrastructure



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Figure H-3
City of Pflugerville - Floodplain Map
 (Source: FEMA – DFIRM, Travis County – Department of Transportation and Natural Resources)





1.4.1 Flood Risk in Pflugerville

The flood risk assessment method is based on analysis of NFIP data of repetitive flood loss properties. The NFIP defines repetitive loss properties as those that have received at least two NFIP insurance payments of more than \$1,000 each in any rolling ten-year period. As of Spring 2010, Travis County had 98 such properties (97 residential and one non-residential), based on a query of the FEMA BureauNet NFIP interface. Of this total, one property was located within the City of Pflugerville.

Between 1978 and May 2010, flood insurance claims (building and contents combined) were paid on one building in the City of Pflugerville. During this time period, the total NFIP paid claims for this property was \$169,847. Table H-4 compares the number of repetitive loss properties and paid claims in Travis County with the City of Pflugerville. It should be understood that while the small number of repetitive loss properties in the City suggests relatively low flood risk, the repetitive loss claims figures represent only properties that met the definition of repetitive loss, that had flood insurance, and made (and were paid) claims. It is likely that some uninsured properties in the City have occasionally flooded, but there is no public record of the event or damages.

Table H-4
Comparison of NFIP Claims for the City of Pflugerville with Travis County
(Source: FEMA – NFIP Statistics, May 2010)

	# of Policies In-Force	# of Losses	Total Paid Claims
City of Pflugerville	72	4	\$169,847
Travis County	1,905	712	\$13,817,296

Residential Repetitive Loss Properties

Table H-5 provides a summary of residential repetitive loss claims for unincorporated Travis County and the City of Pflugerville. The table below includes the number of repetitive loss properties, building and contents damages, the total number of claims, and the average claim amounts. As of May 2010, the unincorporated areas of Travis County had 96 residential RL properties in the NFIP database. The City of Pflugerville had one residential repetitive loss property.

Table H-5
Summary of Residential NFIP Repetitive Loss Statistics, Unincorporated Travis County and the City of Pflugerville
(Source: FEMA NFIP query May, 2010)

Unincorporated Area/City	Properties	Building	Contents	Total	# Claims	Average
Unincorporated Travis County	96	\$7,589,183	\$801,020	\$8,390,202	252	\$33,294
City of Pflugerville	1	\$129,558	\$15,000	\$144,558	2	\$72,279
Total / Average	97	\$7,718,741	\$816,020	\$8,534,760	254	\$33,601



Table H-7
Estimates for Treating Different Levels of Injuries
 (Source: FEMA BCA Software, Version 4.5.5.0)

Injury Death Cost	
Injury Costs	
Severity of Injury	WTP Value (Rounded \$)
Dead - Fatal	\$5,800,000
Hospitalized	\$1,088,000
Self Treat	\$12,000
Treat & Release	\$90,000

Tornado Risk – Residential Assets

The FEMA BCA module requires analysts to provide some basic project information to complete the risk assessment. Table H-8 summarizes the project information entered into the module. The general radius of the City was determined using the total square miles (22.5) and a basic area formula ($a = \pi r^2$).

Table H-8
Tornado Risk Assessment - Project Information

Data	Value
Project useful life	50
Number of Occupants	50,850
Gross square footage	254,250
Maximum Design Wind Speed (mph)	250
Predominant structure Type	One or 2 story Family Residence
Radius in miles for access to safe room	2.67

For the analysis it was estimated that the safe room is 254,250 square feet, with total occupancy of 50,850 residents. Based on the number of total occupants, the module calculates the occupancy based on the time of the day a tornado occurs. Table H-9 shows that average occupancy would be 39,186 residents. It should be noted that this methodology is structured to allow the use of the FEMA tornado analysis software, and not as an accurate description of a specific shelter facility.



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Table H-10
Residential Tornado Risk in the City of Pflugerville
(Source: FEMA BCA Software, Version 4.5.5.0)

SUMMARY OF BENEFITS	
Expected Annual Damages Before Mitigation	
Annual	\$ 5,432,070
Present Value	\$ 74,966,625
Expected Annual Damages After Mitigation	
Annual	\$ 90,884
Present Value	\$ 1,254,264
Expected Avoided Damages After Mitigation (BENEFITS)	
Annual	\$ 5,341,186
Present Value	\$ 73,712,361
MITIGATION BENEFITS	\$ 73,712,361
MITIGATION COSTS	\$ 5,000,000
BENEFITS MINUS COSTS	\$ 68,712,361
BENEFIT-COST RATIO	14.74

1.5 City of Pflugerville Mitigation Goal Statement

As required by the planning process, the original Mitigation Planning Committee (MPC) developed a goal Statement in 2004 for Travis County. To do so, the Committee reviewed FEMA's national mitigation goals, Travis County's Mission Statement, several examples of goal statements from other states and communities, and the State of Texas' Mitigation Goal. The committee also considered information about natural hazards that may occur in the County and their potential consequences and losses.

As part of the 2010 Plan update, Pflugerville staff reviewed the Travis County Mitigation Goal Statement and concurs with the objective and approach to protecting the health, safety, and welfare of its citizens by reducing losses due to hazards. The Pflugerville staff agreed that the Mitigation Goal Statement is considered valid as written without any modifications or changes. The final mitigation goal statement for Pflugerville is as follows:

Pflugerville Mitigation Goal Statement

It is the goal of the City of Pflugerville to protect public health, safety, and welfare and to reduce losses due to hazards by identifying hazards, by minimizing exposure of citizens and property to hazards, and by increasing public awareness and involvement.



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**Table H-11
City of Pflugerville Mitigation Actions**

No.	Action Item Description /Priority	Lead Manager	Cost Estimate /Funding	Schedule	Hazard	Cost-Effectiveness	Status as of 2010
1	Pflugerville Parkway East (FM 685 to SH130) roadway project which will eliminate the low water crossing just east of FM 685. Priority: High	City Engineer	TBD	2014	Flood	To be determined. Presumed cost effective.	Initiated in 2010 HMP.
2	Construct large detention pond near FM 685 and Pflugerville Parkway. Priority: High.	City Engineer	TBD	2014	Flood	To be determined. Presumed cost effective.	Initiated in 2010 HMP.
3	Construct drainage improvements along Railroad Ave. by Gilleland Creek. Priority: Medium.	City Engineer	\$350,000	2014	Flood	To be determined. Presumed cost effective.	The City currently has funding in the amount of \$200,000 budgeted for this project. Project is currently on hold until additional funding is allocated for the project. Utility line relocation also required prior to initiating construction.
4	Pursue grant funding from FEMAs Hazard Mitigation Grant Program (H-MGP) and Flood Mitigation Assistance (FMA) program to receive assistance with mitigating (acquisition, elevation, etc.) floodprone properties within the City. Priority: Medium.	City Manager's Office	Contingent on specifics of application; application prepared by City staff; anticipated non-federal match of 25% for FEMA programs.	Unknown as of 2010 HMP update.	Flood	Any projects submitted to FEMA grant programs subject to BCA to ensure cost-effectiveness.	Initiated in 2010 HMP.



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No.	Action Item Description /Priority	Lead Manager	Cost Estimate /Funding	Schedule	Hazard	Cost-Effectiveness	Status as of 2010
9	Promote the purchase of flood insurance. Advertise the availability of costs, and coverage of flood insurance through the National Flood Insurance Program (NFIP). Priority: Medium.	Building Department	Cost unknown, but uses existing staff resources, City General Fund.	Ongoing	Flood	Not independently cost effective, but part of an overall strategy to implement cost-effective actions and projects.	In 2006 a brochure titled "Living in the Floodplain" was distributed to all residents within 100 feet of a floodplain.
10	Increase public awareness of hazards and hazardous areas. Distribute public awareness information regarding flood hazards, SFHAs, and the potential mitigation measures using the local newspaper, utility bill inserts, inserts in the phone book, a City hazard awareness website, and an education program for school age children. Priority: Low to medium.	Building Department	Cost unknown, but uses existing staff resources, City General Fund.	Ongoing	All hazards, in particular in flood	Not independently cost effective, but part of an overall strategy to implement cost-effective actions and projects.	Initiated in 2010 HMP.
11	NFIP Community Rating System (CRS): Look for opportunities to improve rating with the CRS. Priority: Low to medium.	Planning Department	Same.	Ongoing	Flood	Same	Initiated in 2010 HMP.
12	Sponsor a "Multi-Hazard Awareness Week", to educate the public on hurricanes, tornadoes (sheltering in place, evacuation, emergency preparedness, and structural retrofitting), flooding, (evacuation, emergency preparedness, retrofitting, and flood insurance), thunderstorms and lightning, (emergency preparedness) and hailstorms. Priority: Low to medium.	Public Information Office	\$5,000 City Budget and Grants	Ongoing	Multi-Hazard	Same	Initiated in 2010 HMP.



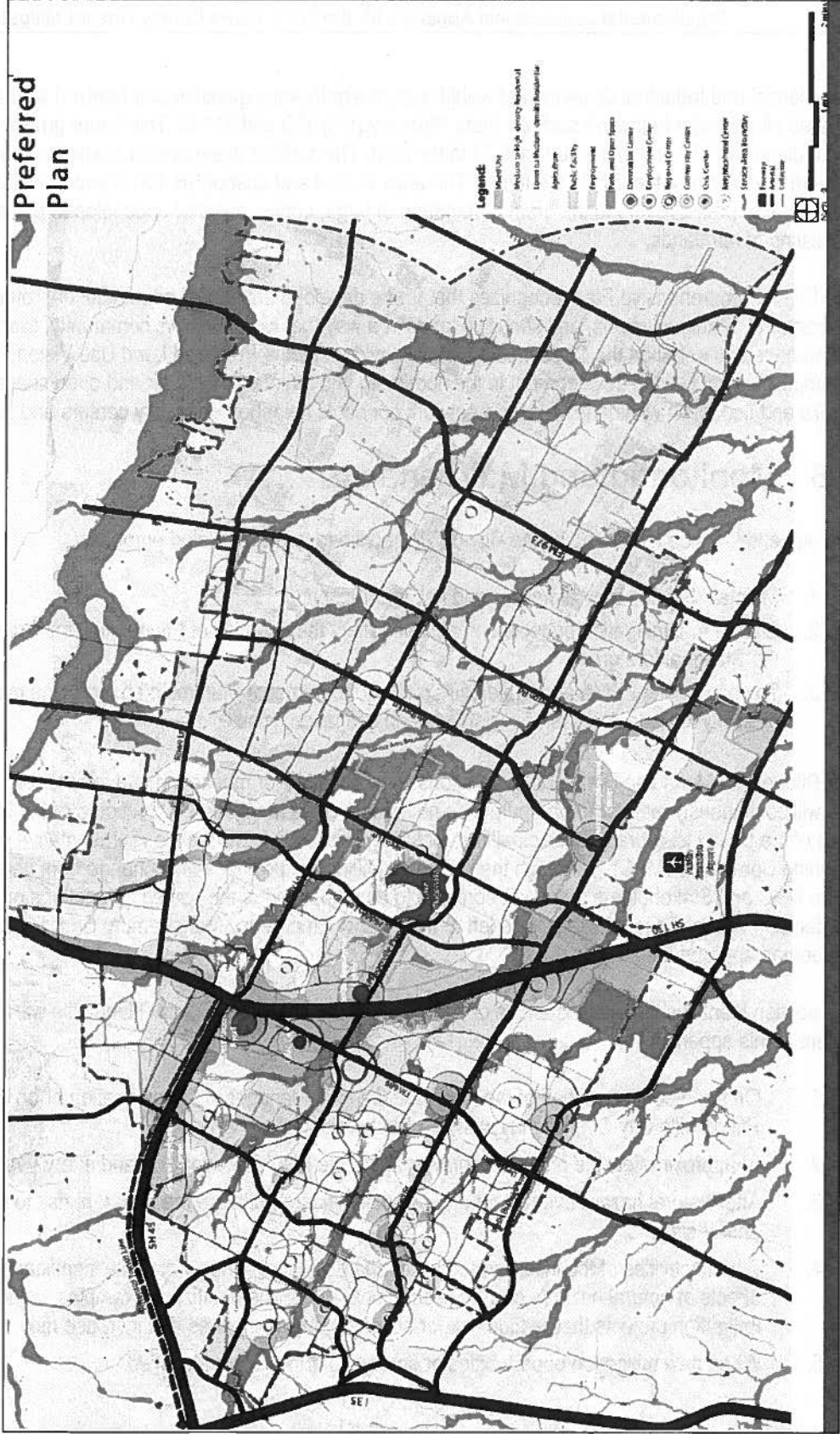
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No.	Action Item Description /Priority	Lead Manager	Cost Estimate /Funding	Schedule	Hazard	Cost-Effectiveness	Status as of 2010
17	Identify residential and non-residential structures that may be at risk from wildfire. Priority: Low.	Emergency Services District #2	Same	2012	Wildfire	Same	Initiated in 2010 HMP.
18	For at risk residential and non-residential structures, develop a wildfire vegetation maintenance program to trim back and remove vegetation near structures. Priority: Low	Planning and Forestry Departments	Estimated at \$30,000, but also uses existing staff resources. City General Fund.	Ongoing	Wildfire	Cost effective, depending on specific circumstances.	Initiated in 2010 HMP.
19	Create plan for warming centers and shelters. Priority: Low.	Police Department	Cost unknown, but uses existing staff resources. City General Fund.	2013	Winter Storm	Not independently cost effective, but part of an overall strategy to implement cost-effective actions and projects.	Initiated in 2010 HMP.
20	Create cooperative relationship with news outlets for distributing information about winter storms. Priority: Low.	Public Information Office	Same	2011+	Winter Storm	Same	Initiated in 2010 HMP.
21	Coordinate with the State to monitor and conserve existing water supplies in the County. Priority: Low.	Public Utilities Department	Same	2011+	Drought	Same	Initiated in 2010 HMP.
22	Enhance water and energy conservation at County facilities. Priority: Low to medium.	Managing Director of Operations	Same	2011+	Drought	Same	Initiated in 2010 HMP.



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Figure H-4
City of Pflugerville - Estimated Land Use Inventory, 2010
 (Source: City of Pflugerville 2030 Plan – A Comprehensive Plan, Land Use and Development Section)





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In addition to the circumstances listed above, revisions that warrant changing the text of this Appendix or incorporating new information may be prompted by a number of circumstances, including identification of specific new mitigation projects, completion of several mitigation actions, or requirements for qualifying for specific funding. Minor revisions may be handled by addenda.

Major comprehensive review of and revisions to the Travis County *Hazard Mitigation Plan Update* will be considered on a five-year cycle. Adopted in 2010, the Plan will enter its next review cycle sometime in 2014, with adoption of revisions anticipated in 2015. The MPC will be convened to conduct the comprehensive evaluation and revision to include the identification and prioritization of additional mitigation action items, as required.

1.9 Plan Adoption by the City of Pflugerville

After the draft Plan update is approved by the Texas Division of Emergency Management (TDEM) and FEMA Region VI, the Plan update will be adopted by the Pflugerville City Council. The City Council will also adopt the updated HMP by resolution. Copies of the Pflugerville and Travis County resolutions are included in Appendix C.