

## **4. Mitigation Strategy**

### **Update Information**

The mitigation strategy section of the 2010 LMS update required extensive review and revision from the previous year. Each project listed in the Polk County 2005 LMS was reviewed and verified to attain a status of the project. They each received a status of completed, deleted, or deferred. Completed projects were finished prior to the 2010 LMS update. Deleted projects were not completed since the 2005 LMS and were no longer intended to be completed. Deferred projects are projects that were not completed due to resources or time constraints but will still be completed if the funding and resources are made available.

New projects were solicited from county agencies as well as from all jurisdictions. For jurisdictions such as the Village of Highland Park and the Town of Hillcrest Heights, which are very small (less than 300 people each) in terms of population and land area, they are affected by county wide projects, but do not have the staff or resources to carry out their own mitigation projects.

Each new and deferred project was ranked using STAPLEE criteria. Every subcategory in STAPLEE was given a numerical score and the total sum provided the project's final ranking.

## Goals and Objectives

### Goal 1 Protect the health, safety and welfare of the public.

Objective 1.1 Inform and educate the public about potential hazards and property protection measures.

Objective 1.2 Ensure new development and redevelopment complies with all applicable federal, state and local regulations.

Objective 1.3 Provide sufficient shelter space to satisfy in-County demand.

### Goal 2 Maintain high state of preparedness/coordination to mitigate and respond to disasters.

Objective 2.1 Assist business and industry in the preparation of Hazardous Materials Plans.

Objective 2.2 Maintain a capability to respond to hazardous material incidents.

Objective 2.3 Provide a capability to reduce residential hazardous material waste.

Objective 2.4 Support programs under the Emergency Planning and Community Right-To-Know Act.

Objective 2.5 Continue to develop the capacity to mitigate, prepare, respond, and recover from all hazards.

### Goal 3 Encourage economic diversification and development.

Objective 3.1 Assist and encourage new economic development and post-disaster redevelopment

Objective 3.2 Encourage public-private partnerships.

### Goal 5 Reduce the cost of disaster response and recovery.

Objective 5.1 Develop and implement guidelines for post-disaster redevelopment

Objective 5.2 Advocate property acquisition or retro-fitting for repetitive loss properties.

Objective 5.3 Establish and implement a plan for post-disaster temporary housing.

Objective 5.4 Efficiently manage all local disasters.

### Goal 6 Encourage the protection of Natural Resources.

Objective 6.1 Partner with the State and other agencies in the acquisition of lands and/or development rights for environmental protection.

Objective 6.2 Protect and restore wetlands and critical upland habitats.

Objective 6.3 Limit discharge and protect natural resources from toxic substances and harmful pollutants.

Objective 6.4 Provide and encourage preservation of open space.

Objective 6.5 Preserve and encourage planting of native vegetation.

### Goal 7 Minimize the effects of disasters on historical and cultural resources.

Objective 7.1 Conserve and protect historical and cultural resources.

### Goal 8 Stormwater Improvement

Objective 8.1 Maintain and improve existing drainage systems to regulate management of storm water runoff.

Objective 8.2 Protect the function of natural drainage features and surficial aquifer recharge areas.

Objective 8.3 Protect and preserve wetlands, floodplains and coastal lands.

### Goal 9 Reduce property damage caused by flooding.

Objective 9.1 Identify and address local flooding conditions.

Goal 10 Regulate and prioritize the construction and/or enhance the protection of critical facilities and infrastructure.

Objective 10.1 Maintain or improve critical evacuation routes.

Objective 10.2 Prioritize and retrofit existing critical facilities and infrastructure.

Objective 10.3 Encourage capital improvement expenditures for critical infrastructure.

## National Flood Insurance Program (NFIP)

Participation in the National Flood Insurance Program is listed below:

**Table 4-1 National Flood Insurance Program Participation**

<b>Jurisdiction</b>	<b>NFIP Status</b>
Unincorporated Polk County	Participating
City of Auburndale	Participating
City of Bartow	Participating
City of Davenport	Participating
Town of Dundee	Participating
City of Eagle Lake	Participating
City of Fort Meade	Participating
City of Frostproof	Participating
City of Haines City	Participating
Village of Highland Park	Not Participating
Town of Hillcrest Heights	Not Participating
City of Lake Alfred	Participating
Town of Lake Hamilton	Participating
City of Lake Wales	Participating
City of Lakeland	Participating
City of Mulberry	Participating
City of Polk City	Participating
City of Winter Haven	Participating

Each participating jurisdiction will:

1. Continue to enforce their adopted Floodplain Management Ordinance requirements, which include regulating all new development and substantial improvements in Special Flood Hazard Areas (SFHA).
2. Continue to maintain all records pertaining to floodplain development, which shall be available for public inspection.
3. Continue to notify the public when there are proposed changes to the floodplain ordinance or Flood Insurance Rate Maps.
4. Maintain the map and Letter of Map Change repositories.
5. Continue to promote Flood Insurance for all properties.

There are two jurisdictions that have chosen not to participate in the NFIP, the Village of Highland Park and the Town of Hillcrest Heights. Both jurisdictions cite their size, limitation of resources, and location as reasons for not participating. The Village of Highland Park has 244 people and the Town of Hillcrest Heights has 266 people (Source: US Census Bureau). With such a small population the two locations are highly limited in their resources and manpower. They also are small jurisdictions in terms of area, and the vast majority of their land and structures do not lie within the 100 year floodplain.

**Table 4-2 NFIP Insurance Policies**

Community Name	Policies In-Force	Insurance In-Force Whole \$	Written Premium In-Force \$
Auburndale, City of	90	\$21,457,400.00	\$42,773.18
Bartow, City of	72	\$12,764,900.00	\$86,392.12
Davenport, City of	58	\$13,424,400.00	\$1,609.39
Dundee, Town of	30	\$6,063,300.00	\$3,409.50
Eagle Lake, City of	5	\$1,302,200.00	\$0.00
Fort Meade, City of	13	\$2,574,600.00	\$0.00
Frostproof, City of	22	\$3,219,900.00	\$63,000.00
Haines City, City of	88	\$12,406,900.00	\$133,380.92
Lake Alfred, City of	30	\$3,508,400.00	\$0.00
Lake Hamilton, Town of	12	\$2,399,000.00	\$12,042.05
Lake Wales, City of	98	\$24,931,700.00	\$31,858.67
Lakeland, City of	1213	\$222,107,500.00	\$178,458.67
Mulberry, City of	50	\$6,476,900.00	\$12,005.28
Polk, County of	7580	\$1,546,024,900.00	\$6,751,466.22
Polk City, City of	5	\$1,282,800.00	\$0.00
Winter Haven, City of	338	\$68,822,400.00	\$220,691.10

Source: Florida Division of Emergency Management

### Community Rating System (CRS)

The Community Rating System (CRS) is a voluntary program for NFIP-participating communities. The goals of the CRS are to reduce flood losses, to facilitate accurate insurance rating, and to promote the awareness of flood insurance. The CRS has been developed to provide incentives for communities to go beyond the minimum floodplain management requirements to develop extra measures to provide protection from flooding. The incentives are in the form of premium discounts.

**Table 4-3 CRS Participants**

Community #	Community Name	CRS Entry Date	Current Effective Date	Current Class	% Discount for SFHA	Discount for Non-SFHA
120267	Lakeland, City of	10/1/1992	10/1/2004	8	10%	5%
120261	Polk, County of	10/1/1994	10/1/2003	7	15%	5%

Source: Florida Division of Emergency Management

## Mitigation Cost-Benefit Review and Prioritization

The Polk County LMS utilized the STAPLEE method in reviewing and prioritizing all the included mitigation projects. The method uses a point system to determine a priority ranking for each mitigation action. The criteria assessed with STAPLEE are the following:

### Social

- Community Acceptance
- Effect on Segment of Population
- Effect on Community (2)

### Technical

- Technically Feasible (3)
- Create more Problems
- Reasonable Timeframe

### Administrative

- Capability to Implement
- Community Provide Maintenance (3)

### Political

- Politically Acceptable
- Public Support

### Legal

- Authority to Implement (2)
- Comply with Environmental Regulations (3)
- HOA Bylaws
- Potential Legal Challenge

### Economic

- Reasonable Cost (2)
- Burden Economy
- Additional Jobs (2)

### Environmental

- Impact Floodplain/Wetland (3)
- Natural Environment
- Utility and Transportation Systems

Every subcategory was scored with favorable (1), neutral (0), or less favorable (-1) ranking. Subcategories with numbers next to them indicate a weighted category, so its ranking was multiplied by the number in parentheses. For example, a favorable (1) ranking for “Technically Feasible” would result in a score of 3, while an unfavorable (-1) ranking for “Authority to Implement” would result in a score of -2. The sum of all the subcategories provided the priority ranking for that project, with higher rankings receiving higher priority.

Deferred projects and projects submitted prior to August 2009 were scored and ranked by Polk County Emergency Management and approved by the LMSWG, while projects submitted on or

after August 2009 were required to complete an informational questionnaire by the submitting body in order to assist with efficiency and precision of the ranking process.

Completed projects and deleted projects were not ranked, but are listed to show the movement the County has made in the past five years. Some projects were deleted because the need for the project became unnecessary, or responsibility was assumed by a private party. Many projects were deferred because of a lack of funding and resources to carry them out. In some cases other projects arose that were of a more urgent nature, so other projects were deferred until such time as was feasible and possible to carry them out.

## New/Deferred Project List

**Table 4-4 Polk County New and Deferred Mitigation Projects**

STAPLEE Score	Project Type	Description	Mitigation Goal(s) Addressed	Hazard Mitigated	Address New or Existing	Responsible Agency	Estimated Cost	Possible Funding Source(s)	Time to Complete
	Building Retrofit	Retrofit of critical facilities/window protection to City Hall (Frostproof)	1,2,5,10	Wind, Storms	Existing	Frostproof	\$150,000	HMGP, EMPA	12-18 Months
	Building Retrofit	Retrofit/harden Fire Dept/EMS station (Frostproof)	1,2,5,10	Wind, Storms	Existing	Frostproof	\$150,000	HMGP, EMPA	12-18 Months
	Drainage	Magnolia Ave. drainage, increase pipe diameter for proper stormwater run off (Frostproof)	8,9	Flood	Both	Frostproof	\$100,000	FMA, HMGP, Capitalization Grants for Clean Water State Revolving Funds, Nonpoint Source Implementation Grants, Watershed Protection and Flood Prevention Program	12-18 Months
	Critical Facilities	Erect new fire station on newly acquired property to hurricane wind code (Mulberry)	1,2,5,10	Wind, Wildfire	New	Mulberry	\$1,500,000	Revenue bond, disaster mitigation competitive grant	12-14 months
	Land Acquisition	Land acquisition for fire department expansion (Mulberry)	1,2,5,10	Wildfire	New	Mulberry	\$100,000	Revenue bond, disaster mitigation competitive grant	3 months

	Critical Facilities	Create new EOC facility. Update & expand existing facility, new roof, generator, update communication equipment (Mulberry)	1,2,5,10	All	Both	Mulberry	\$800,000	Revenue bond, disaster mitigation competitive grant	6-8 months
	Building Retrofit	Retrofit City Hall with storm shutters, replace roof, new generator (Mulberry)	1,2,5,10	All	Existing	Mulberry	\$300,000	Revenue bond, disaster mitigation competitive grant	3-6 months
	Drainage	Alleviate flooding of streets and homes along NW 10th Dr. (Mulberry)	1,9	Flood	Both	Mulberry	\$600,000	SWFWMD, Stormwater Utility Fund	6-8 months
	Bank Stabilization	Stabilize the bank with gabions along SW 5th Ave. (Mulberry)	6,9	Flood	Both	Mulberry	\$200,000	SWFWMD, Stormwater Utility Fund	6-8 months
	Drainage Study	Road floods during rainy season - about 1/4 mile north of CR 640 on Bonnie Mine Rd	8,9	Flood	Existing	Public Works	\$20,000	HMGP, FMA	12-18 Months
	Drainage Study	Road floods during rainy season - about 1/2 mile south of CR 640 on Pebbledale Rd	8,9	Flood	Existing	Public Works	\$20,000	HMGP, FMA	12-18 Months
	Drainage Study	Ground water bubbles up out of ground and flows over road and down to Scott Lake on Live Oak Rd (near Lake Seward Drive)	8,9	Flood	Existing	Public Works	\$20,000	HMGP, FMA	12-18 Months
	Drainage Study	Water drains off of Fitzgerald and down into this sub; sub has no existing drainage system at Orange Valley Dr	8,9	Flood	Existing	Public Works	\$20,000	HMGP, FMA	12-18 Months
	Drainage Study	Cul-de-sac floods; SWFWMD is involved with backside of property at 3604 Grove Terrace Dr	8,9	Flood	Existing	Public Works	\$20,000	HMGP, FMA	12-18 Months

	Drainage Study	Standing water in road at Squire Grove subdivision - grass clippings are clogging the grated inlet at Eagle Lake Loop Rd	8,9	Flood	Existing	Public Works	\$20,000	HMGP, FMA	12-18 Months
	Drainage Study	House lower than road; water flowing down driveway into garage; House No. 500 Lake Florence Dr S	8,9	Flood	Existing	Public Works	\$20,000	HMGP, FMA	12-18 Months
	Drainage Study	House No. 1324 Long St is having high water conditions during storms	8,9	Flood	Existing	Public Works	\$20,000	HMGP, FMA	12-18 Months
	Drainage Study	Road Floods at Old Combee Road near water plant	8,9	Flood	Existing	Public Works	\$20,000	HMGP, FMA	12-18 Months
	Drainage Study	Water flowing between 2 houses; 1 house flooded at Enterprise St (near Kathleen HS)	8,9	Flood	Existing	Public Works	\$20,000	HMGP, FMA	12-18 Months
	Drainage Study	Awaiting survey, property owner to provide drainage easement at Goldenbough	8,9	Flood	Existing	Public Works	\$20,000	HMGP, FMA	12-18 Months
	Drainage Study	Hillcrest	8,9	Flood	Existing	Public Works	\$20,000	HMGP, FMA	12-18 Months
	Stormwater Improvement	Replace cross drain at Forestwood Drive W (near Ewell)	8,9	Flood	Existing	Public Works	\$80,000	HMGP	Awaiting estimate
	Stormwater Improvement	Replace endwall, line pipes on Carter Road at Mikasuki	8,9	Flood	Existing	Public Works	\$80,000	HMGP	Awaiting estimate
	Stormwater Improvement	Replace cross drain at Ewell Rd (west of Hatcher)	8,9	Flood	Existing	Public Works	\$20,000	HMGP	Awaiting estimate
	Stormwater Improvement	Slipline outfall pipe at Sweetwater Drive E (near Ewell)	8,9	Flood	Existing	Public Works	\$20,000	HMGP	12-18 Months
	Stormwater Improvement	Improve ditch to minimize road flooding at Eloise Loop Road, 1/4 mile east of Snively	8,9	Flood	Existing	Public Works	\$10,000	HMGP	12-18 Months

	Stormwater Improvement	Replace outfall pipes at Weston Road	8,9	Flood	Existing	Public Works	\$100,000	HMGP	12-18 Months
	Stormwater Improvement	Install inlets and piping at intersection of Hardin and Combee Road	8,9	Flood	Existing	Public Works	\$20,000	HMGP	Awaiting estimate
	Stormwater Improvement	Replace outfall pipe at Lois Blvd	8,9	Flood	Existing	Public Works	\$20,000	HMGP	Awaiting estimate
	Stormwater Improvement	Install trench drain at Old Berkley Roadd (near Kempski Court)	8,9	Flood	Existing	Public Works	\$10,000	HMGP	12-18 Months
	Stormwater Improvement	Line pipes, seal inlets at Forest Drive	8,9	Flood	Existing	Public Works	\$33,000	HMGP	Awaiting estimates
	Stormwater Improvement	Replace 60" cross drain at Timberlane Road (near Tindel Camp Road)	8,9	Flood	Existing	Public Works	\$85,000	HMGP	12-18 Months
	Stormwater Improvement	Endwall repairs at Cypress Parkway	8,9	Flood	Existing	Public Works	\$60,000	HMGP	12-18 Months
	Stormwater Improvement	Endwall repairs at Adair Road	8,9	Flood	Existing	Public Works	\$30,000	HMGP	12-18 Months
	Stormwater Improvement	Install french drain at Lewis Road	8,9	Flood	Existing	Public Works	\$20,000	HMGP	Awaiting estimate
	Stormwater Improvement	Replace outfall pipe at Ridgeview Drive	8,9	Flood	Existing	Public Works	\$30,000	HMGP	12-18 Months
	Stormwater Improvement	New stormwater system (including pond)	8,9	Flood	Both	Eagle Lake	\$432,800	HMGP	12-18 Months
	Stormwater Improvement	Existing flooding at Eagle Ave. and 6th St. caused by undersized and cracked or clogged pipes.	8,9	Flood	Both	Eagle Lake	\$152,600	HMGP	12-18 Months
	Stormwater Improvement	Existing flooding at East Lake Avenue near intersection of S. 7th St. caused by broken pipe	8,9	Flood	Both	Eagle Lake	\$31,100	HMGP	12-18 Months
	Stormwater Improvement	Undersized Pipes	8,9	Flood	Both	Eagle Lake	\$38,900	HMGP	12-18 Months

	Stormwater Improvement	Existing flooding on Findley Ave. between N. 8th St and N. 9th St caused by undersized pipe	8,9	Flood	Both	Eagle Lake	\$146,100	HMGP	12-18 Months
	Building Retrofit	Install 28 wind loaded overhead doors at compound.	1,2	Wind	Existing	Facilities Management	\$252,000	HMGP	12-18 Months
	Education, Public Awareness	Hurricane Expos, educational hands-on opportunities for citizens to learn and understand the science of hurricanes and how to prepare for them	1,2	Wind, Flood	Both	Public Safety	\$5,000	Public Safety Admin	Bi-annual
	Education, Public Awareness	County wide fire prevention month. Effort to educate about fire safety. Includes public events and school visitations	1,2	Wildfire	Existing	Fire Department	\$3,000	Fire Service	Annual
	Education, Public Awareness	911 Education Month - School visitations, proper use of 911 service, reduce abuse	1,2	All	N/A	E-911	\$1,000	E-911	Annual
	Education, Public Awareness	State tornado drill day. Fire fighters participate with schools and students to prepare for tornado strikes.	1,2	Wind, Storms	N/A	Emergency Management , Fire Department	\$0	N/A	Annual
	Education, Public Awareness	Hurricane preparation materials, including shelter maps, emergency kit shopping guides, and newsletters	1,2	Wind, Storms	N/A	Emergency Management	\$2,500	E-911	Annual
	Education, Public Awareness	Fire & Fall Prevention for Older Adults program. Awareness and preparation for fires, 911.	1,2	Wildfire	N/A	Fire Department	\$2,000	Polk Fire	Annual
	Education, Public Awareness	Public safety education/awareness materials (handouts, safety house, publications, educational items)	1,2	Wildfire, Wind, Storms	N/A	Public Safety	\$9,000	Polk Fire	Annual

	Education, Public Awareness	Firewise Program. Partner with DoF, have community meetings to educate people on how to harden their homes against fires.	1,2,3	Wildfire	Both	Division of Forestry, Fire Department	\$0	N/a	Annual
	Education, Public Awareness	"Hurry Let's Talk About Hurricanes and Tornadoes" kids program. Summer program camp visits to educate about hurricane and tornado preparation and safety.	1,2	Wind, Lightning, Storms, Wind	N/A	Emergency Management , Leisure Services	\$700	Polk EM	Annual
	Education, Public Awareness	Press release and warnings regarding natural disasters updates.	1,2	All	N/A	Public Safety	\$0	N/A	Recurring
	Stormwater Improvement	Provide needed improvements to substandard stormwater infrastructure	8,9	Flood, Wind	Both	Bartow	\$13,000,000	HMGP	12-18 Months
	Stormwater Improvement, Building Retrofit	Provide improvements to 14,700 linear feet of gravity sewer, 25 manholes, and the airbase master lift station	2,8,9	Flood, Wind	Existing	Bartow	\$1,500,000	HMGP	12-18 Months
	Critical Facilities	Purchase (220) MHZ 4Ch Mobile Radios for the purpose of establishing compatible communication between city personnel while working emergency services/response actions	1,2	All	N/A	Bartow	\$194,299	HMGP	12-18 Months
	Land Acquisition	Purchase of home and property located in repetitively flooded area of Peace River Estates (Carr)	5,6,9	Flood	Existing	Bartow	\$48,350	HMGP, FMA	12-18 Months
	Land Acquisition	Purchase of home and property located in repetitively flooded area of Peace River Estates (McKenzie)	5,6,9	Flood	Existing	Bartow	\$48,010	HMGP, FMA	12-18 Months

	Land Acquisition, Drainage	Ten single family homes experience recurring flooding in most storm events. Proposal seeks to purchase one home and construct drainage and conveyance system. Ave N SE& Fifth St. SE	5,6,9	Flood	Both	Winter Haven	\$390,000	HMGP, FMA	12-18 Months
	Stormwater Improvement	Seven flood prone areas have been identified in this neighborhood and the master plan is complete. Funding would aid in design, property acquisition and construction of project. North Lakeland/Robson St	5,6,8,9	Flood	Both	Lakeland	\$1,376,559	HMGP, FMA	12-18 Months
	Drainage	Street floods in heavy rains; some homes did flood, others were protected by sandbag barriers during hurricanes. Updated drain system will alleviate these flooding issues. NW 10th Dr.	5,6,9	Flood	Both	Mulberry	\$1,000,000	HMGP, FMA	12-18 Months
	Drainage	Relieves flooding and drainage problem at major intersection oh Alberta St	5,6,9	Flood	Both	Auburndale	\$500,000	HMGP, FMA	12-18 Months
	Building Retrofit	Lake Wales plans to retrofit city admin building, LWPD HQ, LWFD/EOC, Austin Center upgrade roof and add shutters	1,2	Wind, Storms	Existing	Lake Wales	\$750,000	HMGP	12-18 Months
	Building Retrofit	Modify existing Master Lift Stations against flood waters from Peace River.	3,9	Flood	Existing	Bartow	\$34,700	HMGP	12-18 Months
	Floodplain Management	Establish NAVD 88 Benchmark network countywide as integral part of Map Modernization initiative	1,2,6,9	Flood	Both	SWFWMD, Polk County	\$200,000	SWFWMD, County Funds	12-18 Months

	Building Retrofit	Retrofit Adult Day Care Centers to serve as Special Needs Shelters.	1,2	All	Existing	Public Safety	\$62,000	HMGP	12-18 Months
	Drainage	Yearly flooding a continual problem. Phase I - feasibility study, Phase II - construction, if feasible	5,6,9	Flood	Both	Polk County	\$3,900,000	HMGP	12-18 Months
	Building Retrofit	Due to low elevation, lift station floods and pump shorts out. Recommend raising lift station and replace current pump with submersible. 18 Sun Air Blvd. W	3,9	Flood	Existing	Haines City	\$250,000	HMGP	12-18 Months
	Critical Facilities	Create new city EOC/ROC in City Hall Annex during current renovations through some new design and some hardening of existing facility. 451 and 551 Third St NW	1,2,10	All	Existing	Winter Haven	\$275,000	HMGP	12-18 Months
	Building Retrofit	Install window film on the windows of six selected mission essential buildings in the city to protect them from damage during storms.	1,2,10	Wind, Storms	Existing	Lakeland	\$138,200	HMGP	12-18 Months
	Building Retrofit, Critical Facilities	Upgrade facility to serve as back up HQ for PCHD, upgrade roof, modify building to support 2 coolers for critical pharmaceuticals, modify electric system and install generator	1,2,10	All	Existing	Health Department	\$250,000	HMGP	12-18 Months
	Building Retrofits	Retrofit the Polk St. Recreation Center and Carver Recreation Center to be used by nearby residents as hurricane shelters	1,2,10	Wind, Storms	Existing	Polk County	\$35,000	HMGP	12-18 Months

	Building Retrofits	Retrofit Medalla community center to be used by nearby residents as hurricane shelters	1,2,10	Wind, Storms	Existing	Polk County	\$35,000	HMGP	12-18 Months
	Stormwater Improvement	Inspection and repair sanitary sewer system to prevent back flow of wastewater in the surface flooding after major rain events	1,8,9	Flood	Both	Lakeland	\$476,000 -	HMGP, FMA	12-18 Months
	Drainage-	During recent storms, area flooded and was pumped. Project will install pipe system to SW Canal at Cherrywood Circle	5,6,9	Flood	Both	Polk County	\$75,000	HMGP	12-18 Months
	Drainage	Rework drainage system and construct additional components that will aid in collecting storm water runoff at Fox Briar Subdivision . (108 residences)	5,6,9	Flood	Both	Winter Haven	\$340,000	HMGP	12-18 Months
	Drainage	Rework drainage system and construct additional components that will aid in collecting storm water runoff in Spanish Haven Subdivision. (94 residences)	5,6,9	Flood	Both	Winter Haven	\$125,000	HMGP	12-18 Months
	Drainage	During recent storms, area flooded and was pumped. Phase I - feasibility study; Phase II - construction, if feasible.	5,6,9	Flood	Both	Haines City	\$200,000	HMGP	12-18 Months
	Drainage	Residences and roads flood during excessive rain. Phase I - feasibility study to improve drainage systems; Phase II construction, if feasible	5,6,9	Flood	Both	Lakeland	\$540,000	HMGP	12-18 Months
	Drainage	Residences and roads flood during excessive rain. Project consists of providing positive outfall for drainage.	5,6,9	Flood	Both	Lakeland	\$1,000,000	HMGP	12-18 Months

	Drainage	Area experience severe flooding for many years, exacerbated by continued growth in area. Feasibility study completed; Project will install positive outfall system to alleviate flooding/create more storage in lake	5,6,9	Flood	Both	Lakeland	\$1,700,000	HMGP	12-18 Months
	Land Acq	Purchase of home and property located in repetitively flooded area of Peace River Estates (Monroe)	5,6,9	Flood	Existing	Bartow	\$70,640	HMGP, FMA	12-18 Months
	Critical Facilities	Increase current ground storage water reservoir from 150K gallons to 500K gallon	5,6,9	Flood	Existing	Utilities	\$300,000	HMGP	12-18 Months
	Drainage	Growth in area and deterioration of system make it unable to handle runoff. Phase I - develop detailed master drainage plan; Phase II construction, if feasible	5,6,9	Flood	Both	Lakeland	\$10,500,000	HMGP	12-18 Months
	Drainage	Area's pipe system has deteriorated, needs replacement	5,6,9	Flood	Both	Winter Haven	\$1,100,000	HMGP	12-18 Months
	Drainage	During recent storms, area flooded and was pumped. Phase I - feasibility study to review flooding problem; Phase II - construction, if feasible	5,6,9	Flood	Both	Winter Haven	\$540,000	HMGP	12-18 Months
	Drainage	Regrading existing drainage ditches on Wells Rd., installing new drainage ditches and installing/replacing driveway culverts	5,6,9	Flood	Both	Lakeland	\$250,000	HMGP	12-18 Months

	Drainage	Area experienced flooding over road and around homes. Project will provide outfall for drainage.	5,6,9	Flood	Both	Lakeland	\$250,000	HMGP	12-18 Months
	Drainage	Area experienced flooding over road and around homes. Project will provide positive outfall	5,6,9	Flood	Both	Lakeland	\$200,000	HMGP	12-18 Months
	Drainage	Area has experienced road flooding and was pumped. Phase I - feasibility study to determine if positive outfall possible; Phase II - construction, if feasible.	5,6,9	Flood	Both	Lakeland	\$1,040,000	HMGP	12-18 Months
	Drainage	Homes in high growth area around intersection subject to flooding. Project will implement findings of 1997 study.	5,6,9	Flood	Both	Lakeland	\$900,000	HMGP	12-18 Months
	Drainage	Stormwater system damaged during hurricanes and needs rehabilitation. Phase I - feasibility study; phase II - construction, if feasible.	5,6,9	Flood	Both	Polk County	\$90,000	HMGP	12-18 Months
	Drainage	Properties and Structures on Ariana Blvd. flooded from water flowing from Whistler Est. to Lake Ariana. Current drainage system cannot handle runoff. Project consists of design, permitting and construction of stormwater system	5,6,9	Flood	Both	Auburndale	\$200,000	HMGP	12-18 Months
	Drainage	Outfall in area is inefficient. Design, permit and construct efficient outfall. Cardinal St./Robin St	5,6,9	Flood	Both	Lakeland	\$75,000	HMGP	12-18 Months

	Drainage	Area experienced flooding in yards and roads. Project will re-establish drainage ditches. Moss Rd./Jones Rd.	5,6,9	Flood	Both	Auburndale	\$50,000	HMGP	12-18 Months
	Drainage	Area experienced flooding in yards and roads. Project will establish drainage system along roadway. Oakland Road North	5,6,9	Flood	Both	Lakeland	\$200,000	HMGP	12-18 Months
	Drainage	Area experienced flooding in yards and roads. Project will re-establish drainage ditches Keen Park Road	5,6,9	Flood	Both	Frostproof	\$50,000	HMGP	12-18 Months
	Drainage	Area experienced flooding in yards and roads. Project will establish point discharge from retention pond that overflows.	5,6,9	Flood	Both	Polk County	\$120,000	HMGP	12-18 Months
	Drainage	Growth along County Line area and in subdivision may have altered drainage patterns. Project consists of feasibility study, design, permitting and construction of positive outfall drainage system. Forestview Estates	5,6,9	Flood	Both	Lakeland	\$200,000	HMGP	12-18 Months
	Drainage	Area experienced flooding in yards and roads due to inadequate drainage system. Project is a feasibility study to determine how to handle stormwater runoff.	5,6,9	Flood	Both	Polk County	\$250,000	HMGP	12-18 Months
	Drainage	Area experienced flooding in yards due to inadequate drainage system. Project is a feasibility study to determine how to handle stormwater runoff.	5,6,9	Flood	Both	Mulberry	\$50,000	HMGP	12-18 Months

	Drainage	Area experienced flooding in yards due to inadequate drainage system. Phase I - feasibility study to determine how to handle stormwater runoff; phase II - construction, if feasible. (Matching funds may be available through Neighborhood Revitalization)	5,6,9	Flood	Both	Davenport	\$2,100,000	HMGP	12-18 Months
	Infrastructure	Purchase and install two auxiliary fuel storage tanks to ensure adequate supply of fuel to city vehicles.	1,2,3	All	Existing	Lakeland	\$75,000	HMGP	12-18 Months
	Infrastructure	Generators are required at several key intersections to ensure safe traffic control.	1,2	All	Existing	Lakeland	\$10,000	HMGP	12-18 Months
	Drainage -	Flooding in MHP caused water damage some outdoor utilities and water covered interior roads and Cypress Gardens Rd. Solution to pump water to nearby Fox Lake.	5,6,9	Flood	Both	Winter Haven	\$250,000	HMGP	12-18 Months
	Drainage	Flooding impacted home. Residents do not want to sell, but want to have flood issue resolved (Sanders)	5,6,9	Flood	Both	Lakeland	\$250,000	HMGP	12-18 Months
	Drainage	Flooding impacted home. Residents do not want to sell, but want to have flood issue resolved (Peterson)	5,6,9	Flood	Both	Polk City	\$250,000	HMGP	12-18 Months
	Drainage	Flooding impacted home. Residents do not want to sell, but want to have flood issue resolved (Platt)	5,6,9	Flood	Both	Winter Haven	\$250,000	HMGP	12-18 Months

	Drainage	Flooding impacted home. Residents do not want to sell, but want to have flood issue resolved(Patterson)	5,6,9	Flood	Both	Winter Haven	\$250,000	HMGP	12-18 Months
	Land Acquisition	Purchase of home and property damaged due to flooding (Johnston)	5,6,9	Flood	Existing	Frostproof	\$53,510	HMGP, FMA	12-18 Months
	Land Acquisition	Purchase of home and property damaged due to flooding (Bass)	5,6,9	Flood	Existing	Frostproof	\$29,840	HMGP, FMA	12-18 Months
	Infrastructure	Install generator to power a/c unit of Special Care Shelter at the PCHD Specialty Care Unit	1,2,10	All	Existing	Polk County	\$129,000	HMGP	12-18 Months
	Building Retrofit	Install protective window film on all first floor windows	1,2,10	Wind, Storms	Existing	Polk County	\$22,000	HMGP	12-18 Months
	Auxiliary Power	Phase I. Install a Generator Set. Pumping leachate out of the landfill for disposal at a wastewater treatment plant. Extended periods without electricity increases the risk of leachate leaking into the groundwater and causing contamination. (Disposal Facility Leachate Pumping Station)	1,8,10	Flood	Existing	Waste Resource Management	\$29,000	HMGP	12-18 Months
	Auxiliary Power	Phase II. Install a Generator Set. Pumping leachate out of the landfill for disposal at a wastewater treatment plant. Extended periods without electricity increases the risk of leachate leaking into the groundwater and causing contamination. (Disposal	1,8,10	Flood	Existing	Waste Resource Management	\$29,000	HMGP	12-18 Months

		Facility Leachate Pumping Station)							
	Auxiliary Power	Phase III. Install a Generator Set. Pumping leachate out of the landfill for disposal at a wastewater treatment plant. Extended periods without electricity increases the risk of leachate leaking into the groundwater and causing contamination. (Disposal Facility Leachate Pumping Station South)	1,8,10	Flood	Existing	Waste Resource Management	\$35,000	HMGP	12-18 Months
	Auxiliary Power	Phase III. Install a Generator Set. Pumping leachate out of the landfill for disposal at a wastewater treatment plant. Extended periods without electricity increases the risk of leachate leaking into the groundwater and causing contamination. (Disposal Facility Leachate Pumping Station North)	1,8,10	Flood	Existing	Waste Resource Management	\$35,000	HMGP	12-18 Months
	Building Retrofit	Install protective window film on windows of the WRMD office for protection from storm damage. (Winter Haven)	1,10	Wind, Storms	Existing	Waste Resource Management	\$25,000	HMGP	12-18 Months
	Building Retrofit	Replace 4 portable storage sheds that store tools, equipment and supplies with a wind resistant permanent metal building at the North Central Landfill.	1,10	Wind, Storms	Existing	Waste Resource Management	\$650,000	HMGP	12-18 Months

## Completed Projects

**Table 4-5 Polk County Completed Mitigation Projects**

Project Type	Description	Mitigation Goal(s) Addressed	Hazard Mitigated	Address New or Existing	Responsible Agency	Estimated Cost	Possible Funding Source(s)
Land Acq.	Purchase of home and property located in repetitively flooded area of Peace River Estates (Williams)	5,6,9	Flood	Existing	Polk County	\$49,340	HMGP, FMA
Land Acq.	Purchase of home and property located in repetitively flooded area of Peace River Estates (Seaton )	5,6,9	Flood	Existing	Polk County	\$50,400	HMGP, FMA
Land Acq.	Purchase of home and property located in repetitively flooded area of Peace River Estates (Olliff )	5,6,9	Flood	Existing	Polk County	\$64,310	HMGP, FMA
Land Acq.	Purchase of home and property located in repetitively flooded area of Peace River Estates (Hall)	5,6,9	Flood	Existing	Polk County	\$68,470	HMGP, FMA
Land Acq.	Purchase of home and property located in repetitively flooded area of Peace River Estates (Deters )	5,6,9	Flood	Existing	Polk County	\$48,880	HMGP, FMA
Land Acq.	Purchase of home and property located in repetitively flooded area of Peace River Estates (Oakley)	5,6,9	Flood	Existing	Polk County	\$53,390	HMGP, FMA
Land Acq.	Purchase of home and property located in repetitively flooded area of Peace River Estates (Oldenburg )	5,6,9	Flood	Existing	Polk County	\$54,780	HMGP, FMA
Land Acq.	Purchase of home and property located in repetitively flooded area of Peace River Estates (Lofton)	5,6,9	Flood	Existing	Polk County	\$63,140	HMGP, FMA
Land Acq.	Purchase of home and property located in repetitively flooded area of Peace River Estates (Shiver)	5,6,9	Flood	Existing	Polk County	\$51,110	HMGP, FMA
Land Acq.	Purchase of home and property located in repetitively flooded area of Peace River Estates (Frymire)	5,6,9	Flood	Existing	Polk County	\$57,480	HMGP, FMA

Land Acq.	Purchase of home and property located in repetitively flooded area of Peace River Estates (Smith)	5,6,9	Flood	Existing	Polk County	\$65,090	HMGP, FMA
Land Acq.	Purchase of home and property located in repetitively flooded area of Peace River Estates (Kistner)	5,6,9	Flood	Existing	Polk County	\$56,850	HMGP, FMA
Land Acq.	Purchase of home and property located in repetitively flooded area of Peace River Estates (Delk)	5,6,9	Flood	Existing	Polk County	\$52,900	HMGP, FMA
Land Acq.	Purchase of home and property damaged due to flooding ( Feddeler )	5,6,9	Flood	Existing	Polk County	\$249,940	HMGP, FMA
Drainage	Residences and roads flood during excessive rain. Feasibility study completed in 1996; project will connect drainage to pumping system on Lake Grassy	5,6,9	Flood	Both	Winter Haven	\$150,000	HMGP, FMA
Drainage	Roads and elementary school in area flood. During excessive rain, have pumped area to keep water off road. Project will consist of design, permitting and construction to provide positive outfall	5,6,9	Flood	Both	Lakeland	\$150,000	HMGP, FMA
Land Acq.	Purchase of home and property due to flooding (Stepnowski)	5,6,9	Flood	Existing	Lake Wales	\$250,000	HMGP, FMA
Drainage	Street and yard flooding in the area. Phase I feasibility study of storm sewer system; Phase II construction, if feasible	5,6,9	Flood	Both	Winter Haven	\$95,000	HMGP, FMA
Drainage	Flooding in cul-de-sac; project will re-establish outfall ditches and install retention ponds.	5,6,9	Flood	Both	Polk County	\$200,000	HMGP, FMA
Drainage	Area experiences erosion and sedimentation of drainage system. Project will complete installation of stabilization materials throughout system.	5,6,9	Flood	Both	Lakeland	\$530,000	HMGP, FMA
Wind retrofit	Hardening of roof, walls for new emergency operations center.	1,2,10	Wind	New	Emergency Management	\$1,000,000	HMGP

## Deleted Projects

**Table 4-6 Polk County Deleted Mitigation Projects**

Project Type	Description	Mitigation Goal(s) Addressed	Hazard Mitigated	Address New or Existing	Responsible Agency	Estimated Cost	Possible Funding Source(s)
Drainage	Residences and roads flood during excessive rain due to inadequate drainage. Project will collect/convey stormwater more effectively	5,6,9	Flood	Existing	Polk County	\$120,000	HMGP, FMA
Drainage	Area experienced flooding over road and around homes. Project will provide outfall from depressional area.	5,6,9	Flood	Existing	Polk County	\$300,000	HMGP, FMA
Drainage	Install piping in an open ditch, because erosion in easement prevents proper maintenance of ditches.	5,6,9	Flood	Existing	Polk County	\$200,000	HMGP, FMA
Drainage	Area experienced flooding in yards and roads. Project will install piping to replace open channel system.	5,6,9	Flood	Existing	Polk County	\$150,000	HMGP, FMA
Elevation	Elevate home; repetitively flooded during storms in this and previous years (Wingate)	5,6,9	Flood	Existing	Polk County	\$250,000	HMGP, FMA
Pump Station Modifications	Retrofit pump stations to better handle water from storm events	5,6,9	Flood	Existing	Polk County	\$250,000	HMGP