DeSoto County Adaptation Action Areas

Task 2: Proposed Adaptation Strategies

Completed by:

Kimley-Horn & Associates Inc.

May 15, 2025

Kimley»Horn

Contents

Introduction

Image 1: Flooding after Hurricane Ian

Florida communities face growing impacts of heavy rainfall, increased temperatures, and severe storm events, impacting infrastructure, property, and the daily lives of residents. The Adaptation Action Area (AAA) Plan serves as a strategic framework to address vulnerabilities within DeSoto County to enhance community longevity. To kick off this effort, the Central Florida Regional Planning Council (CFRPC) organized community workshops to understand the concerns of residents. A set of adaptation strategies was developed to address community concerns based on the results of the community meetings. This community outreach effort followed a vulnerability assessment which involved identifying vulnerable areas using flood data. Vulnerable areas are often disproportionately impacted by severe weather impacts due to economic and resource constraints. The adaptation strategies and vulnerability assessment, along with the quantitative data from the exposure analysis and sensitivity analysis, will inform the AAA boundaries, assist the County with prioritizing investments, and guide policymaking decisions. The DeSoto County Comprehensive Vulnerability Assessment (CVA) is being completed in accordance with the requirements outlined in Section 380.093, Florida Statutes.[1]

The vulnerability assessment involves identification of the County's critical community assets such as healthcare facilities, government buildings and libraries/community centers, schools, public health, public safety facilities, parks and natural areas, and roads and evacuation routes. The most up-to-date data and information is used to map current and projected rainfall flooding to evaluate the potential impacts on those critical assets during future weather events. The protection of these assets will ensure the County can continue to serve the community after major weather events. Combined with data related to each of the communities, the County can identify and prioritize critical action areas for investment. Adaptation Action Areas were adopted into Florida Statutes in 2011 through the Community Planning Act, Chapter 163, F.S. "Adaptation Action Area" is an optional comprehensive plan designation for areas that are vulnerable to flooding and can be used to prioritize funding for infrastructure needs and adaptation planning. This process includes assessing added vulnerabilities and risks to the identified hazards as they pertain to resource limited populations. Additional risks are being examined beyond flooding, including severe weather, wildfire, transportation, housing, and availability of healthy foods.

Public Outreach

Several meetings were held with municipal staff, community organizations and champions, and the public to gain an understanding of the specific needs of each of the communities, based on their experiences. The outcomes of these meetings informed the specific strategies and recommendations of the AAA. Following the in-person meetings, municipal staff were granted additional time to coordinate internally with relevant departments. This extension allowed for a more thorough identification of locations prone to flooding or requiring heightened attention, ensuring a more comprehensive and informed response plan.

- Meeting 1: County and Municipal Staff – December 20, 2024

  A virtual meeting was held with staff from Unincorporated DeSoto County and the City of Arcadia to gain insight regarding vulnerable areas and the trials they face, particularly related to flooding. Participants shared specific areas which flood often and discussed lower-income residential neighborhoods which are susceptible to damage from flooding and severe weather based on historic trends. Additionally, attendees provided details related to upcoming plans and projects within each jurisdiction, including a Community Redevelopment Plan and Wastewater Treatment Plan.

- Meeting 2: Vulnerable Communities – January 7, 2025

  Hosted at the Turner Agri Civic Center, this meeting was open to the public. Participants shared their experiences with flooding, including limited transportation options, flood insurance concerns, and lost property. Participants discussed specific roadways which experience flooding in downtown Arcadia, as well as areas in need of drainage improvements and upgraded culverts. Many households lack flood insurance and cannot afford to floodproof their homes. According to participants, limited transportation options create an additional barrier for vulnerable households without a personal vehicle.

  The following roadways/locations were identified as areas of concern related to flooding either during the in-person or as follow up communication from City of Arcadia staff:

  <u>Arcadia:</u>

  - 1031 E. Oak Street (Department of Health Building)
  - 12th-16th Avenues, Northeast of Turner Road.
  - 223 Parker Avenue. (Waste Water Treatment Facility).
  - 330 N. Brevard Avenue (Farm Credit Bank).
  - 400 N. Brevard Avenue (Crews Bank).
  - 9700 SW Riverview Cir (Nav-A-Gator Bar and Grill).
  - Bridle Path neighborhood.
  - DeSoto Memorial Hospital.
  - DeSoto Middle School.
  - Downtown from Manatee Avenue to US-17.
  - E. Cypress Street.

- E. Maple Street.
- East Pine.
- Golden Melody neighborhood.
- Highway 70.
- Intersection of E. Cypress Street and N. Mills Avenue (Memorial Elementary School).
- Intersection of N. Mills Avenue and E. Gibson Street.
- Lincoln Avenue.
- Monroe Avenue and Orange Avenue.
- N. Hernando Avenue.
- Oak Street.
- Owens Avenue.
- S. Dade Avenue.
- SE. Baker Street and 1st Street.
- Tillis Street.
- US-17.
- W. Bond Street.
- W. Harris Road.

Unincorporated:

- 2nd Avenue.
- 3rd Avenue.
- Lake Susie.
- Spring Lake Subdivision.

- Meeting 3: Community Organizations – January 15, 2025

  Through a series of virtual calls, key community organizations and non-profits from the County and City shared their insights based on the services they offer most often. Participants included The Patterson Foundation, Arcadia Center for the Needy, Area Agency on Aging, and Arcadia Chamber of Commerce. They shared concerns related to disaster preparedness and evacuation, disaster recovery, transportation options, and flooding. Participants discussed limited resources to aid disaster recovery, and shared anecdotes of homes damaged in past hurricanes or flooded in severe weather. Other community concerns include a lack of grocery stores, exacerbated by limited transportation options.

  Priority projects identified by the participants include:

  - Connect residents to resources provided by the Arcadia Housing Authority
  - Fortify the wastewater treatment plant to avoid loss of service in severe weather.
  - Improve stormwater management and drainage across the City and County.
  - Educate the community on the DART Bus flag-down service.
  - Expand transportation access and frequency.
  - Eliminate food deserts and expand access to nutritious foods.

- Expand assistance for the elderly in hurricane recovery.
- Prioritize stormwater and roadway improvements near the hospital.
- Improve disaster preparedness for all residents.
- Spread awareness of the resources offered by the Heartland Coalition for the Homeless for home restoration and temporary housing.
- Improve access to medical care through mobile clinics.

Images 2 & 3: Public Meeting hosted at Turner Agri Civic Center

Identified Hazards

The hazards identified by the County, community representatives, and public, include:

- Flooding
- Hurricanes and Tropical Storms
- Wildfires
- Severe Storms
- Infrastructure
- Response and Recovery
- Community Engagement
- Land Use and Urban Design
- Ecosystem Restoration
- Emergency Preparedness
- Transportation
- Housing
- Healthy Foods
- Extreme Heat

Flooding

Flooding is one of Florida's most frequent hazards and DeSoto County is prone to inland flooding from heavy rain events due to the low elevation of the County, particularly along waterbodies and

waterways, and aged infrastructure that gets overwhelmed during storm events. Additionally, many homes in the City of Arcadia are located near drainage canals and are prone to flooding during heavy rain, particularly in the southwest portion of the City.[3] Adding to these issues is the fact that the County is in the frequent path hurricanes, despite being inland, and has had 3 hurricanes and tropical since 1995.[2] Hurricanes result in high winds and heavy rain with severe flooding. Some of the most impactful hurricanes being Hurricane Irma in 2017 and Hurricane Ian in 2022.[2]

Floods can damage roads and stormwater infrastructure, result in water infiltration in sewage lines, erode riverbanks, isolate residents from homes and render wells and septic systems unusable among other things. The Peace River and Horse Creek waterways are the source of most of the County's flooding issues, while drainage canals located close to homes are also prone flood hazards. The historic flooding impacts of Hurricane Ian in 2022 set record highs for the Peace River and Horse Creek. The previous record for the Peace River was set in 1921 at 20.55 feet, with the new record coming in 2022 at 23.7 feet. The previous record for the Horse Creek was in 2003 at 18.03 feet, with the new record coming in 2022 at 21.24 feet.[3] In past flood events, DeSoto County has experienced millions of dollars of property damage, including loss of homes, businesses, and roadway infrastructure, power lines, and City and County properties. Approximately 53 structures within the County and its jurisdictions have been identified as repetitive flood property losses.[3]

Hurricanes and Tropical Storms

Hurricanes and Tropical Storms impact Florida annually, and the effects of these storms are often felt in DeSoto County. Due to the flat, low-lying topography of the region, DeSoto County is exposed to the dangers presented by hurricanes, such as heavy rains and high winds that cause flooding and flying debris. Some other concerns associated with hurricanes include tornadic activity, power outages, excessive erosion, sewer system outages, potable water system loss, and economic disruptions.

DeSoto County has been affected by several hurricanes in the past several years. Hurricane Irma caused approximately $3 million in damage.[3] Hurricane Ian caused damage to homes; according to participants in the community outreach efforts hosted by CFRPC, many residents of Arcadia are still recovering from damage. Approximately $9.2 million FEMA funds were granted to homeowners and renters in the wake of the disaster, with additional funds granted for flood insurance and to small business owners.[4] According to the 2025 DeSoto Local Mitigation Strategy, no significant damage was reported from Hurricane Milton in 2024; however, community outreach efforts revealed that there was significant flooding which impacted the community, and further damage to homes previously affected by Hurricane Ian. As development continues to expand in the City and County, more people and structures are at-risk of damage.

Severe Storms

DeSoto County is susceptible to severe weather, including lightning, thunderstorms, and tornadoes. While these severe weather events can be interconnected, they can also occur as isolated incidents. According to the Florida Climate Center, DeSoto County has between 80 to 100 thunderstorm days per year.[3] Thunderstorms can result in flooding, property damage, disruption to utility services, and even fires caused by lightning.

From 1990 to 2013, DeSoto County had over $2 million in damage caused by wind and flash floods, as well as one lighting related fatality and two injuries.[3] Severe storms can wreak havoc on

vulnerable communities in DeSoto County, as these communities often lack the resources to prepare for and recover from such weather events. Inadequate housing and lack of insurance further complicate the fallout of damage caused by severe weather and put residents at risk of displacement.

Wildfire

Wildfires have a chance of occurring during Florida's dry season, posing a risk to the agricultural lands and homes in rural areas. Wildfires can also be caused by a lightning strike and can therefore occur in conjunction with a thunderstorm. According to the DeSoto Local Mitigation Strategy, DeSoto County had 98 wildfires between 2018 and March 2024, affecting a total of 4,125 acres; based on this trend, DeSoto County can expect 15.7 wildfires each ear with an average size of 42.1 acres per event.[3]

According to the 2025 DeSoto Local Mitigation Strategy, wildfires tend to affect large tracts of agricultural properties due to the rural nature of the County. Due to the size of these tracts, they tend to burn for longer periods and emergency response tends to focus on containing the fire.[3] As development expands into rural areas, more structures and homes are at risk of being impacted by wildfires. Other concerns related to wildfires in DeSoto County include the destruction of forest areas, closing of highways due to smoke, loss of wages if crops are destroyed, and disruption of utilities.

Infrastructure

With the added stress of changes in weather patterns, the community infrastructure cannot meet the demands of the increasing frequency and intensity of severe weather events. The combination of aged infrastructure which was not designed to meet the new levels of storm intensity, coupled with increased impervious pavement, leads to utility access issues, along with reduced emergency service resources, impacts to transportation networks, and financial hardships to businesses and homeowners.

DeSoto County is focusing on several infrastructure improvements, including road repaving projects, drainage system upgrades, and railroad crossing improvements. Fortunately, funding will be available from Florida Department of Transportation's Rebuild Florida General Infrastructure Program.[5]

To combat infrastructure needs, participants of the community outreach meetings widely recommended a Master Stormwater Plan to provide guidance to support growth and conservation in the County. This can be achieved by enabling shared drainage and water management infrastructure, aligning above-ground and below-ground infrastructure, while supporting land use policies. These improvements to the infrastructure aim to attract new businesses and improve the daily lives of the residents.

Response and Recovery

DeSoto County has faced powerful hurricanes and severe storms that have impacted the community and its infrastructure, resulting in economic losses; in 2017, Hurricane Irma caused approximately $3 million in damage to homes, businesses, and infrastructure.[3] Revitalization efforts following a disaster are costly; collaboration with local non-profits can help connect residents to federal funding programs and aid offered by other organizations such as the American

Red Cross and United Way. Additionally, public education and engagement activities which teach residents of prevalent threats and strategies to prepare for severe weather, can help residents prepare for severe weather and inform them of resources to assist following a disaster.

Community Engagement

Community engagement is key to providing information regarding emergency preparedness and post disaster recovery resources and can be deployed through a variety of methods. Social media offers an efficient outreach method considering the high percentage of the population with internet and cellular service. Residents can sign up for the DeSoto County Sheriff's Office CodeRED notification system, or DeSoto-Alert, to receive time sensitive messages through phone calls, emails, and text messages. Other methods include providing information in utility bills, letters sent through mail, and engaging local organizations and faith-based groups.

While 17.8% of households do not have an internet subscription, 92.4% of households have one or more types of computing devices, including smartphones.[6] Outreach and engagement should include all residents, regardless of income, language, ability, and internet availability, as 23% of residents live below the poverty line, 20% speak Spanish at home, 20% have one or more disability, and 24% are over the age of 65.[7] Engaging with these residents is critical to ensuring vulnerable communities are adequately prepared for emergencies.

Land Use and Urban Design

Vulnerable communities are most negatively affected when there are no strategies to improve urban design and sustainable efforts, such as low impact development principles which improve stormwater management by reducing runoff and collecting rainwater. Another critical strategy is planting street trees along sidewalks to provide shade for pedestrians and to slow stormwater runoff. The incorporation of green infrastructure can reduce flooding and improve walkability.

The future land use designations and zoning maps can be evaluated to target infill development in areas of low flood risk, including density bonus opportunities to locate more units where residents and structures would be less susceptible to flooding. Land development regulations should address the required elevation of new structures to improve the longevity of new construction, and in combination with other measures, lead to improved insurance eligibility and lower premiums for the future residents of that construction.

DeSoto County, specifically the City of Arcadia, has a scarcity of grocery stores and medical clinics, resulting in a limited supply of fresh produce and healthcare. The land development regulations could expand to allow small-scale food retailers, mobile vendors, and medical offices in areas close to residential neighborhoods.

Ecosystem Restoration

With increasing occurrences of flood events, ecosystems are being affected close to creeks and streams due to the erosion of banks and sedimentation, which can clog streams and destroy habitats. Waterways which are particularly prone to flooding in the County include the Peace River and Horse Creek. Additionally, flooding often carries trash into these waterways, further damaging the ecosystem and resulting in a build-up of debris. Participants in the public engagement efforts shared anecdotes of how debris and overgrowth in waterways, culverts, and ditches contribute to

flooding; the cleaning of Jordan Branch after Hurricane Ian has reportedly improved flooding in that area.

According to the Southwest Florida Water Management District, invasive species pose a threat to ecosystems in the region, affecting water quality and native habitats, plants, and animals. Common invasive species in the area include Old World Climbing Fern, Cogongrass, the Melaleuca Tree, the Brazilian Peppertree, and feral hogs.[8] According to the Florida Fish and Wildlife Conservation Commission, feral hogs live in all 67 counties of Florida and disturb vegetation and soil structure by uprooting plants with their snouts, destroying ecosystems, spreading disease, and competing with local wildlife for food and habitat.[9] Effective control measures for invasive plants include mechanical removal, chemical treatments, and community involvement, while wild hogs can be trapped and hunted without any permit or license fees required; additionally. proper fencing can help keep hogs off of one's property. Educating the community on the removal of invasive species can help slow their spread and protect native species.

Emergency Preparedness

DeSoto County maintains a Comprehensive Emergency Management Plan (CEMP) to address hazards which affect the community. They also distribute an annual All Hazards Guide which includes details on DeSoto-Alert, information on evacuation routes and zones, essentials for an emergency kit and how to create an emergency plan, and other tips and information to prepare residents for different types of disasters.[10]

DeSoto County has a *Know Your Zone, Know Your* Home link to a mapping system which allows residents to find their address and evacuation zone and the nearest evacuation route, as shown below in *Figure 1: Evacuation Routes and Zones*.

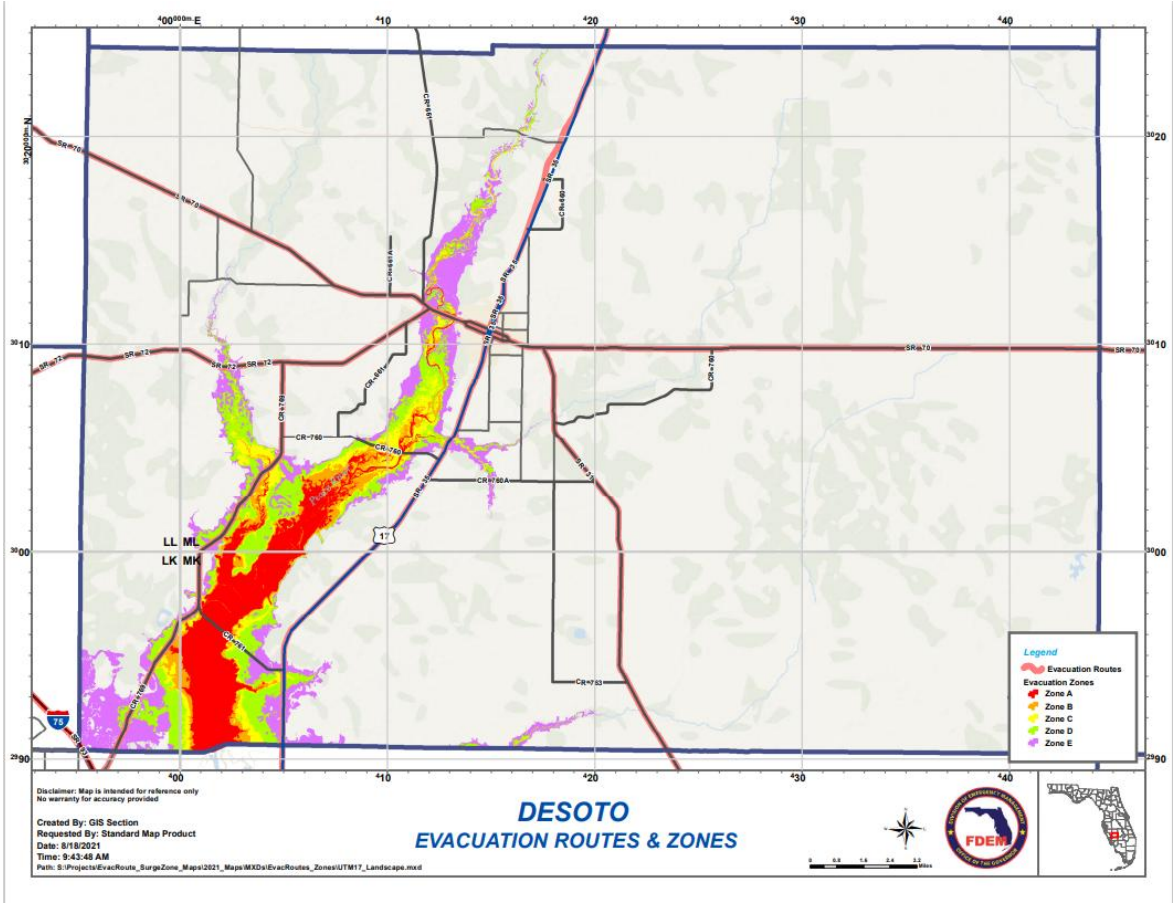

Figure 1: Evacuation Routes and Zones[12]

Transportation

DeSoto County has a county-provided transportation service called DeSoto – Arcadia Regional Transit (DART). Currently this service has seven (7) stops, primarily serving the City of Arcadia, shown in *Figure 2: DART Bus Stops*, below.[12] As identified by community organizations and public input during meetings held by CFRPC, it is not widely understood by community members that DART is a flag down service, meaning that the bus does not stop for someone waiting at a bus stop unless they wave to signal for the bus. Due to this misunderstanding among the community, there needs to be more education on how the bus system operates.

In addition to a confusing system, DART does not service enough of the community. Participants in the community meetings shared that reliable transportation is a concern and expressed a desire for more bus stops at larger developments and a more frequent schedule. The lack of county-wide public transportation services can create barriers to meeting daily needs such as employment, groceries, retail, and recreation opportunities, therefore affecting quality of life.

Figure 2: DART Bus Stops

Healthy Foods

Intensified by insufficient transportation options, DeSoto County residents face barriers to obtaining healthy foods. Lack of public transportation, safe sidewalks, and bike lanes combined with far travel distances to the nearest grocery store create complications for households without a personal vehicle. These barriers not only limit the availability of nutritional foods but also contribute to stress factors from the additional time and travel costs, resulting in negative health implications.

According to the US Department of Agriculture (USDA), a food desert refers to low-income census tracts with a substantial number of residents facing limited availability to retail outlets selling healthy and affordable foods. Distances which qualify as food deserts include half a mile from the

nearest grocery store in urban areas, and 10 miles in rural areas.[13] The USDA Food Access Research Atlas reveals that the City of Arcadia and parts of the surrounding County are classified as food deserts. Additionally, the southeast section of the City is classified as having insufficient transportation options, as more than 100 households do not own a personal vehicle and are more than half a mile from a grocery store.[14]

Infrastructure damage caused by severe weather and flooding creates additional barriers for residents living in food deserts, leading to travel delays or even increasing food insecurity if supply chains are disrupted following a disaster.

Housing

With an aging building stock, many homes within the County are at risk of damage from severe weather such as hurricanes and thunderstorms. According to the 2023 American Community Survey, 66% of homes in DeSoto County were constructed prior to the year 2000.[15] These structures are less likely to meet modern building codes designed to withstand high winds, heavy rain, and flooding. Older homes may have degraded roofing, foundations, and drainage systems, making them more susceptible to leaks, mold, or collapse. Additionally, old plumbing and electrical are more likely to fail in the event of severe weather. Retrofitting homes against flooding will reduce property damage and protect residents.

However, such home improvements can be costly, creating a barrier for low-income households to protect their homes against severe weather. The US Department of Housing and Urban Development (HUD) defines households who spend more than 30% of their income on housing as cost burdened.[16] Approximately 28% of households in the County are renters, of which 51% are cost burdened. Among homeowners, 17% are cost burdened.[15] Spending more than 30% of their income on housing places financial stress on households, reducing available funds to put towards healthcare, transportation, education, food, and savings.

Extreme Heat

Extreme heat is defined as a period of high heat and humidity with temperatures above 90 degrees for at least two to three days and can lead to injuries such as heat-stress and heat-stroke. Extreme heat can also exacerbate underlying health conditions such as cardiovascular disease, diabetes, mental health, asthma, and can increase the risk of accidents and transmission of some infectious diseases.[17] In most cases, extreme heat affects those who do not have the ability to stay inside during extreme heat, or do not have air conditioning. Children, the elderly, and people with underlying health issues are the most susceptible to extreme heat. Low-income populations may face challenges due to the cost of energy to cool their homes, as well as unhoused populations who do not have the means to seek reprieve from the heat.[3]

During the summer months of 2022, there were zero (0) heat-related deaths, and 18 heat-related emergency room visits in the DeSoto County according to Florida Department of Health Tracking Data. Data from the Arcadia weather station, acquired from the Florida Climate Center, indicates that between July 1951 and July 2020, there were 268 days with maximum temperatures above 95 degrees Fahrenheit, of which two (2) were above 100 degrees.[3]

Heat is further exacerbated by impervious surfaces, which increase the land surface temperature by absorbing sunlight; therefore, the City of Arcadia is more likely to experience higher

temperatures than unincorporated DeSoto County. Extreme heat can be combatted by increasing tree canopy coverage and reducing impervious surfaces through increased greenspaces.

Adaptation Strategies

The following strategies are intended to address the weather-related threats identified by the vulnerability assessment and the concerns discussed during public outreach.

Strategies identify opportunities to provide protection from disasters, accommodation to mitigate the effect of future threats, and relocation to avoid further damage. The recommendations consider a variety of approaches, including nature-based solutions, policy changes, infrastructure improvements, partnerships and collaboration, and funding mechanisms. The strategy descriptions incorporate specific locations of concern discussed by the public outreach participants to identify methods of intervention; comments received from the public outreach process can be found in Appendix A.

Through a comprehensive set of strategies, DeSoto County can ensure a strong future for the entire community.

1. **Encourage the installation of green infrastructure and low-impact development (LID) features in municipal codes**.
   For example, the intersection of E. Cypress Street and N. Mills Avenue in Arcadia floods during afternoon storms; defining and prioritizing the use of LID features such as bioswales, pervious pavement, and rain gardens will assist in the storage of water and slowing runoff, improving stormwater management and reducing flooding. W. Harris Road experiences major flooding as well, and should be prioritized in these efforts.
2. **Require Florida Friendly Landscaping™ for new developments to conserve water and retain runoff.**
   Florida Friendly Landscaping™ provides guidance on appropriate plants for landscaping which provide environmental benefits, such as filtering stormwater, capturing water to irrigate plants, protecting landscapes from erosion, and providing habitat for local species. The use of recommended plants can manage stormwater and reduce flooding, while improving community aesthetics, reducing water pollution, and reducing the long-term costs of stormwater management through natural interventions.
3. **Require the creation of multi-beneficial park amenities with intentional stormwater retention in county-owned parks.**
   Incorporating stormwater retention in county-owned parks can help reduce flooding by creating a permeable landscape which captures water that would otherwise overwhelm the drainage systems, while providing the community with recreational amenities.
4. **Establish an engineering standards manual to account for severe weather events and support stronger infrastructure development as necessary.**
   For example, the downtown Arcadia from Manatee Avenue to US-17 experiences flooding in rain events. Establishing an engineering standards manual is crucial for ensuring consistent and effective infrastructure planning, providing clear guidelines and minimizing the risk of poorly designed systems that may fail under stress and lead to excessive flooding such as that experienced downtown. Additionally, standards should align above-ground and below-ground infrastructure specifications and review process.

5. **Establish standards to require traffic calming measures to encourage slower driving speeds and create a more pedestrian-friendly environment.**
   Traffic calming measures include elements such as street trees, wide sidewalks, marked pedestrian crossings, and narrow lanes. Slower speeds support a more walkable environment by increasing pedestrian safety.
6. **Increase requirements to include vulnerability reductions measures such as additional hardening, higher floor elevations or incorporation of natural infrastructure.**
   Stricter development and construction standards will prioritize long-term vulnerability reductions and lead to a reduction in property damage and improve safety. Raising base floor elevations provides a buffer against flooding; hardening requirements such as hurricane shutters and breakaway walls increase a structure's ability to withstand high winds.
7. **Revise the Land Development Code to allow non-conforming structures to add flood-proofing without having to bring the entire building into compliance.**
   With aging homes that predate the existing Land Development Code, DeSoto County has many non-conforming structures. When the reconstruction, additions, or repairs exceed 50% of the structure's value, the building is required to fully comply with the updated standards. This can create a barrier for retrofitting existing structures with flood-proofing, which should therefore be exempt from the 50% rule.
8. **Streamline and modernize regulatory standards to enable greater flexibility in permitting mobile clinics and food vendors, ensuring vulnerable populations have receive essential medical services and nutritious foods.**
   Arcadia is classified as a food desert, and does not have a nearby medical clinic, both of which threaten the health of residents. Strategies to expand the reach to mobile clinics and food vendors include simplifying and expediting the permitting process, enabling flexible siting and hours of operation, and creating health focused-focused mobile vendor licenses. Provide incentives, such as reduced permit fees, for mobile vendors operating in food deserts. Partnerships with local farms can provide an opportunity to develop community-based farmers' markets and community gardens in or near food deserts. Vendors should be encouraged to accept the Supplemental Nutrition Assistance Program (SNAP) benefits and offer Double Up Food Bucks programs to ensure a broader range of patrons.
9. **Facilitate targeted infill development in areas of low flood risk.**
   Development should take place in areas of low flood risk to avoid damage, which can be facilitated through the Comprehensive Plan by increasing density and intensity in these areas, or through density bonuses. Additionally, providing impact fee credits to incentive adaptive reuse and building / façade improvements can help direct development to targeted infill areas of low flood risk. Affordable housing should be incentivized in these areas. Infrastructure investments in utilities and transportation should be aligned with land use priorities for growth and conservation.
10. **Continue to partner with non-profits such as Hope DeSoto to rebuild homes and make improvements.**
    Members of the community are still recovering from Hurricane Ian, particularly in southwest Arcadia. Many homes flooded during the hurricane and are still dealing with the removal of black mold and damaged roofs. Collaborating with local organizations is critical to recovery

efforts, providing resources and labor to assist low-income residents. Additional funding can be accessed through federal agencies such as the Department of Housing and Urban Development (HUD).

11. **Partner with local contractors to offer free or low-cost floodproofing upgrades through strategic funding programs.**
    Many members of the community are still recovering from damage to their homes from Hurricane Ian and sustained further damage during Hurricane Milton. Floodproofing upgrades can help protect against future damage, with potential upgrades including elevated structures and waterproof materials. These efforts can be funded through programs such as the Flood Mitigation Assistance Grant or Florida's Elevate Program. Prioritizing the hiring of local contractors and construction workers can stimulate the local economy and build in-community capacity for future resilience efforts. Assisting low-income communities, particularly where homes have already been damaged in past storms, is critical.
12. **Execute a written agreement between the City and County for maintenance of the stormwater system on an annual basis so it is prepared for major and unexpected rain events.**
    Execute a written, legally binding agreement between the City of Arcadia and DeSoto County to ensure the consistent and coordinated maintenance of the stormwater management system. This agreement will outline shared responsibilities, funding obligations, and maintenance schedules to ensure that drainage infrastructure is functioning optimally—particularly in preparation for major and unexpected rain events that disproportionately impact low-income communities.
13. **Work with utilities and independent agencies to identify and fortify their vulnerable critical assets.**
    Establish a coordinated effort with utility providers and independent public agencies (such as water, electricity, telecommunications, and transit authorities) to assess, prioritize, and reinforce critical infrastructure assets that are essential to the community's functioning in preparation for severe weather.
14. **Coordinate with local organizations, including nonprofits and philanthropies, to support emergency preparedness and disaster recovery.**
    Develop strategic partnerships to build a robust, community-led network for disaster preparedness and response. These partners play a vital role in reaching vulnerable populations, filling resource gaps, and delivering trusted support before, during, and after flood events and other emergencies. Public engagement activities can help educate residents on the resources that organizations such as Hope DeSoto, and the Heartland Coalition for the Homeless have to offer. Additionally, community organization facilities located in historically flood-safe areas could be utilized as non-hurricane approved emergency shelters for displaced residents before, during, or after severe weather events, while securing funding to harden these critical assets for longevity.
15. **Pursue shared drainage and water management infrastructure through public-private partnerships.**
    Public-private partnerships (PPPs) for drainage and water management help improve stormwater systems by combining government and private sector resources. Cities

collaborate with developers, utilities, and environmental groups to fund, build, and maintain shared infrastructure. Examples include joint stormwater retention projects that cut costs while boosting flood resilience. Shared drainage infrastructure is particularly necessary with the hospital which experiences flooding on the surrounding roadways due to high amounts of impervious surfaces.

16. **Regularly inspect and maintain gutters, culverts, drains, and other stormwater infrastructure and adopt a routine maintenance schedule in coordination with cities.** For example, the community shared that Jordan Branch beginning at the Peace River just north of the Arcadia Waste Water Treatment Facility (223 Parker Avenue) running east, parallel to W. Magnolia Street was cleaned from the river all the way to the end after Hurricane Ian in response to difficulty with the culverts along this route during Hurricane Ian. The community also shared the need for the annual clearing of the canal located at the terminus of SE. Baker Street and 1st Avenue. Retroactive efforts here are valuable, however, with an established schedule, these culverts can better withstand the effects of a severe weather event.
17. **Adopt or update sediment and erosion-control regulations or practices. Ensure guidelines accommodate changes that may occur due to the anticipated increased, heavier precipitation events.** By implementing updated practices, the county can reduce the loss of soil during heavy rains, protecting agricultural lands and natural habitats. Additionally, enhanced erosion-control measures can safeguard roads, bridges, and buildings from damage caused by flooding and sediment accumulation.
18. **Incorporate green infrastructure and LID features into drainage specifications in the engineering standards manual to slow and filter runoff.** This strategy is intended to work in tandem with strategy number one and four. The County should dictate the minimum acceptable engineering standards for the LID features to effectuate the necessary drainage quantities and at what speeds.
19. **Implement riparian restoration and creek maintenance programs to reduce flood risk and support ecosystem resilience.** Establishing a comprehensive riparian and waterway restoration strategy focused on stabilizing riverbanks, maintaining local creeks, and preserving native ecosystems will reduce flood risk and improve community resilience. This strategy emphasizes nature-based solutions that restore natural hydrology, enhance biodiversity, and prevent flooding by enhancing the absorption of excess water.
20. **Include drainage/stormwater infrastructure projects related to flood prone areas in the Local Mitigation Strategy to monitor progress and prioritize investments.** Ensure that all critical drainage and stormwater infrastructure projects—particularly those targeting flood-prone and historically underserved areas—are formally included in the County's Local Mitigation Strategy (LMS). By doing so, the community can more effectively track progress, compete for state and federal mitigation funding, and prioritize resources where the need is greatest.

21. **Expand and modernize the transportation network to promote connectedness and transportation options.**
    Perform a transportation network study to identify market opportunities for transportation options such as public transportation needs and bike lanes. Strengthening micro-mobility tactics such as enhanced networks of pedestrian and bicycle facilities will promote fairness and emphasize connectivity. Implementing streets which serve pedestrians, bicyclists, bus riders, motorists and freight handlers will support economic longevity and public health.
22. **Increase awareness and usage of the DART bus flag-down service in Arcadia to provide fair and flexible transportation for residents, especially those in impacted or vulnerable areas.**
    Conduct surveys or focus groups to understand residents' knowledge, perceptions, and barriers to using the flag-down service. Based on the results, they explain how the flag-down service works, including where and how residents can flag down a bus, safety protocols, and available routes. Highlight the benefits of using the bus, such as flexibility and convenience. Develop materials in multiple formats (e.g., flyers, posters, social media posts, videos) and languages to reach varied audiences, using plain language and visual aids to simplify complex information.

23. **Fortify County-owned assets, such as utilities, evacuation roads, and bridges to withstand flooding and severe weather events.**
    Protect and strengthen critical County-owned infrastructure to ensure continuity of essential services and safe mobility during and after severe weather events. Arcadia's wastewater treatment plant should be prioritized to ensure uninterrupted operations and protect public health and the environment. This process involves identification of critical components and assets that are essential for maintaining operations such as lift stations, backup power systems, and effluent discharge points. Risks from flooding, wind damage, power outages, and aging infrastructure should be assessed, and critical equipment should be elevated above projected flood levels accordingly using FEMA floodplain data. Perimeter barriers, such as levees and floodwalls, combined with green infrastructure to manage stormwater, can be effective in fortifying facilities.
24. **Establish a comprehensive public awareness program to ensure residents are informed of evacuation zones, clearance times, shelter locations and capacities, and evacuation routes.**
    Continue to distribute the DeSoto County All Hazards Guide annually and provide the document in both English and Spanish. Educate the community about options for mitigating the risks and hazards they face. Collaborate with local organizations to ensure that communities which are disproportionately affected by hazards, including those with low income, elderly populations, persons with disabilities, and areas with inadequate infrastructure, are educated on potential threats, steps to prepare for hazards, and how to recover after a disaster.

Resources

1. Florida Legislature. (2024). Section 380.093, Florida Statutes. Retrieved from: http://www.leg.state.fl.us/Statutes/index.cfm/Ch0838/index.cfm?App_mode=Display_Statute&Search_String=&URL=0300-0399/0380/Sections/0380.093.html
2. NOAA. Historic Hurricane Tracker – DeSoto County, FL. Retrieved from: https://coast.noaa.gov/hurricanes
3. DeSoto County Local Mitigation Strategy – Enhancing Community Resilience and Preparedness, March 2025.
4. FEMA. (2022). DeSoto County Recovery at a Glance. Retrieved from: https://www.fema.gov/fact-sheet/desoto-county-recovery-glance
5. SWFL FDOT (2025). DeSoto County Construction Projects.
6. United States Census – 2023 American Community Survey 5-Year Estimates. Retrieved from: S2801: Types of Computers and … - Census Bureau Table
7. United States Census Bureau (2024). DeSoto County, Florida. QuickFacts. Retrieved from: https://www.census.gov/quickfacts/fact/table/DeSotocountyflorida/PST045224.
8. SWFWMD. *Invasive Species in Florida: Identifying and Managing Harmful Plants and Animals*. Retrieved from: https://www.swfwmd.state.fl.us/resources/invasive-species-florida
9. Florida Fish and Wildlife Conservation Commission. *Wild Hog*. Retrieved from: https://myfwc.com/wildlifehabitats/profiles/mammals/land/wild-hog/
10. DeSoto County Emergency Management All Hazards Guide (2024). Retrieved from: https://www.desotobocc.com/DocumentCenter/View/402/2024-All-Hazards-Guide--PDF?bidId=
11. DeSoto-Arcadia Regional Transit (DART) (2025). Retrieved from: https://DeSotobus.com/.
12. DeSoto County, Florida BOCC. (2025). Evacuation Routes. Retrieved from: https://DeSotobocc.com/department/emergency_management/DeSoto-county-evacuation-routes.
13. USDA. (2011, December 1). Mapping Food Deserts in the United States. Retrieved from: https://ers.usda.gov/amber-waves/2011/december/data-feature-mapping-food-deserts-in-the-u-s
14. USDA. (2025, February 20). *Food Access Research Atlas | Economic Research Service*. Retrieved from: https://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas
15. United States Census – 2023 American Community Survey 5-Year Estimates. Retrieved from: DP04: Selected Housing Characteristics
16. HUD Office of Policy Development & Research. *Comprehensive Housing Affordability Strategy Background*. Retrieved from: https://www.huduser.gov/portal/datasets/cp/CHAS/bg_chas.html#:~:text=Cost%20burden%20%E2%80%93%20Monthly%20housing%20costs,exceeding%2030%25%20of%20monthly%20income.

17. World Health Organization. (2024, May 28). *Heat and Health*. Retrieved from: https://www.who.int/news-room/fact-sheets/detail/climate-change-heat-and-health

Appendix A: Public Outreach Meeting Comments

Meeting 1: County and Municipal Staff – December 20, 2024

Unincorporated DeSoto County

- Lake Susie area has flooding issues. *See Strategies 1 and 2.*
- Close to the city on 2nd and 3rd Avenue is vulnerable. *See Strategies 7, 11, and 24.*
- Process of creating a CRA within these flood prone areas to develop better drainage systems. Southwest area of the City and the historic area. *See Strategies 2, 4, 12, and 18.*

City of Arcadia

- Flooding on Highway 70 and US-17 during heavy rains. *See Strategies 1 and 2, 13, 15 and 23.*
- Monroe Avenue and Orange Avenue flood and there are houses there and close to the Jordan Branch that have multiple times flooded out. *See Strategies 2, 6, 16, and 19.*
- A lot of flooding in the southwest area, which is the most vulnerable part of the City. *See Strategies 2, 6, 15, and 24.*
- Roadwork has been completed in partnership with the County around the hospital but there are still flooding issues there as well. *See Strategies 1, 2 and 15.*
- Park will be part of the CRA. Part of it is City owned but is mostly a County Park. *See Strategy 3.*
- Stormwater master plan projects are on the LMS list for DeSoto County. *See Strategies 1, 4, 12, and 17.*
- The entire Downtown area from Manatee Avenue to US-17 experiences flooding. *See Strategies 1, 2, 3, 15, and 18.*
- North of SR-70: N. Mills Avenue and E. Cypress Street flood in afternoon storms. *See Strategies 1, 2, 4, and 15.*
- N. Hernando Avenue / E. Cypress Street / E. Maple Street. *See Strategies 1, 2, 4, and 15.*
- Lincoln Avenue, W. Bond Street, Owens Avenue, S. Dade Avenue, and Tillis Street are residential streets in the southwest portion of the City which experience flooding. *See Strategies 1, 2, 4, 11, and 15.*
- East Pine Street experiences flooding and is in the southwest portion of the City, which is vulnerable. *See Strategies 1, 2, 4, 10, and 15.*
- 12th-16th Avenues, Northeast of Turner Road, experiences flooding. *See Strategies 1, 2, 4, and 15.*
- Bridle Path neighborhood, Stirrup Way, often floods. *See Strategies 1, 2, 4, and 15.*

Meeting 2: Vulnerable Communities – January 7, 2025

Unincorporated DeSoto County

- Storm surge impacts have increased over the past several years. *See Strategies 2, 4, and 18.*
- Concerns related to the impact of multifamily development on surrounding properties. *See Strategies 6 and 9.*
- The neighborhood near the Nav-A-Gator Bar and Grill just off the Peace River floods and has been affected by Hurricanes Ian, Idalia & Milton. *See Strategies 10 and 11.*
- Communities in the southwest portion of the County are multi-generational residents who have lived there for a hundred years. This area is the most vulnerable. *See Strategies 10, 14, and 24.*

- Challenges communicating the services and resources that non-profits such as Hope DeSoto have to offer. For example, Hope DeSoto installs smoke detectors, but not many people utilize the program due to communication issues. *See Strategies 10 and 14*.
- Spring Lake Subdivision off King's Highway floods all the time i.e. afternoon rainstorm. *See Strategies 1, 4, and 18*.

City of Arcadia

- Oak Street floods during any major rain event, including afternoon thunderstorms. This is a paved road with no stormwater infrastructure, but with a planned culvert replacement through CDBG funds. *See Strategies 2, 4, 15, and 18*.
- Both Crews Bank (400 N. Brevard Avenue) and the Farm Credit Bank (330 N. Brevard Avenue) were flooded during Hurricane Ian. The Crews Bank endured 5-7 feet of flooding and was demolished and reconstructed in Englewood. *See Strategies 2, 4, 15, and 18*.
- Intersection of E. Cypress Street and N. Mills Avenue floods during afternoon storms (located at the northwest corner of Memorial Elementary School). *See Strategies 1, 2, 4, 15, and 18*.
- Jordan Branch beginning at the Peace River just north of the Arcadia Wastewater Treatment Facility (223 Parker Avenue) running east, parallel to W. Magnolia Street was cleaned from the river all the way to the end after Hurricane Ian in response to difficulty with the culverts along this route during Hurricane Ian. *See Strategies 12 and 16*.
- Canal at the terminus of SE Baker Street and 1st Avenue running west towards the Peace River is all natural and has not been channelized. *See Strategies 12, 16 and 19*.
- Intersection of N. Mills Avenue and E. Gibson Street floods very quickly in a moderate to major rain event and is not on the list for drainage improvements. (located at the northwest corner of Desoto Middle School and while not directly adjacent to Desoto Memorial Hospital, is a point of access for the hospital). Drainage is needed near the middle school and hospital as it floods here. Needs to be cleaned out. *See Strategies 1, 15 and 20*.
- Roadwork has been completed in partnership with the County around the hospital but there are still flooding issues. *See Strategies 1, 15, and 16*.
- Master Stormwater Plan and Stormwater System are non-existent. *See Strategies 1, 4, 9, 15,18 and 20*.
- No flood insurance for mobile homes or manufactured homes, and most Arcadia residents can't afford flood insurance. *See Strategies 10 and 11*.
- In the Golden Melody neighborhood, grading of the roadways is a higher elevation than many of the residential properties, causing stormwater to flow into the front yards and homes. *See Strategies 6, 10, and 11*.
- Monroe and Orange flood and there are houses there which are close to the Jordan Branch and have flooded multiple times. *See Strategies 10 and 11*. *See below for Jordan Branch strategies*.
- Jordan Branch Bank flooded to include where it crosses at US-17. Culverts also flooded on US-17. The branch was cleaned out from the Peace River to the Start of the Branch after Hurricane Ian. This cleanout helped with not causing flooding with the next few hurricanes. There are plans for culverts and other stormwater projects here, funded by CDBG. *See Strategies 16, 17, and 19*.

- There are lots of different construction types, and stormwater has never been improved. *See strategies 4, 13, 18, and 23.*
- Extending fiber optic throughout the City through a grant to the very underserved areas (comcast and open-infra), including the southwest portion of the City. *See Strategy 10.*

All Jurisdictions

- FDOT roadway construction on SR-70 is providing stormwater swales but only addressing the runoff from the roadway. No additional compensation is provided. *See Strategy 12, 15, and 20.*
- Culverts and other stormwater projects on the horizon are included in the LMS - mostly in the Jordan Branch area, including:
    - Drainage ditch behind Department of Health building at 1031 E Oak Street.
    - Forest Pines failing culvert to be replaced.
    - Kings Baker Subdivision 1/2 mile of failing culvert to be replaced.

  See Strategies 15 and 20.
- DART needs official stop locations along the route not just at the retail shopping centers, with improved bus stops and a more frequent schedule. *See Strategy 21.*
- Bus stops needed for larger developments. *See Strategy 21.*
- There are not any volunteers to take resources to residents. *See Strategy 21.*

Meeting 3: Community Organizations – January 15, 2025

Unincorporated DeSoto County

- Greater assistance is needed for the elderly in hurricane recovery. *See Strategies 10, 14, and 24.*
- Flooding across the County has increased. Flooding areas identified are consistent with those areas identified in the community workshop and other community conversations included:
    - Stormwater system needs improvements in several locations in the City.
    - The southwest area of the City, including the wastewater treatment plant, has suffered significant impacts. The wastewater treatment plant is undergoing improvements.
    - The campground north of SR 70, west of Arcadia, was flooded.
    - Road and stormwater improvements needed on roads near the hospital.

  See Strategies 2, 6, 15, 23 and 24.
- Community (government agencies, community organizations) is looking at transportation programs and providing additional assistance in evacuating communities. *See Strategies 14 and 24.*
- Disaster Preparedness is a priority across residents. Community is working together to improve robocall emergency system to reach out to as many residents as possible, as there are challenges in getting people to evacuate before it is too late. *See Strategies 14 and 24.*
- The Heartland Coalition for the Homeless has funds for home restoration and for temporary housing. They are working to get the word out. *See Strategy 14.*
- Transportation continues to be a concern. *See Strategies 5 and 21.*

- The Community of Small Harlem –had many homes flooded during Hurricane Ian. Community members supported each other to recover. This area will flood again if there are no improvements. *See Strategies 2, 11, 12,14, 15, 16, and 20*.

City of Arcadia

- The Housing Authority codeveloped a multifamily site at the southwest corner of E. Gibson Road and N. 17th Avenue called Hermosa Arcadia. Difficulty building on this site because of stormwater drainage and flooding in recent history. The parking lot flooded prior to construction during the hurricanes, because the parking lot had not yet been leveled. *See Strategy 9*.
- Standing at the corner of W. Harris and Booker T Washington Road, looking west, all of W. Harris Road was flooded following Hurricane Ian. The water did not make it to the Housing Authority's property. *See Strategies 1, 4, and 18*.
- Arcadia Peace River Campground was 28 feet under water during Hurricane Ian. Airboats were used to drop food, water, and other supplies to survivors stuck in place. *See Strategy 14*.
- Arcadia Housing Authority owns 130 units, housing 218 children. *See Strategies 10, 13, and 14*.
- A participant recounted that those who reside across from the Desoto County Fire and Rescue Station 2 at 8789 SW Co Road. Due to the overwhelming flooding, were stuck in place and airboats were dropping food, water and other supplies. *See Strategies 14 and 24*.
- The wind damage from Hurricane Ian on the Housing Authority's property at 7 Booker T Washington Road was immense. 87 of 96 units required roof replacements or remediations. The Housing Authority continues to struggle for the insurance capital to fix the remaining structures. Many of them still have tarps to prevent further damage. Further damage was caused by Hurricanes Helene and Milton following Ian, re-tarping 4-5 times per year. *See Strategies 6, 10, 11, and 13*.
- Arcadia Housing Authority owns 20 units at the southwest corner of E. Cypress Street and N. 12 Avenue. There were no flooding issues during the hurricanes, but immense wind damage to roofs, soffits, downspouts, and gutters. The Housing Authority's goal is to keep the residents housed in their units so immediate roof replacement and mold removal occurred as quickly as possible in the worst units. *See Strategies 6, 10, 11, and 13*.
- The creek crossing near the intersection of S. Orange Avenue and W. Harris Road does not have a history of flooding. The Housing Authority owns 4 units requiring flood insurance at the corner of W. Harris Road and S. Dade Avenue. *See Strategies 16 and 19*.
- The entire community was challenged by the loss of the wastewater treatment plant. *See Strategies 1 and 23*.
- Townhouses on Jordan Avenue across the street from the wastewater treatment plant were flooded during Hurricane Ian. The units were damaged back in 2004 by Hurricane Charlie and purchased knowing asbestos was present and the owner was working to renovate. Two of the buildings would have been habitable within 3-5 months but were completely flooded with Hurricane Ian. *See Strategies 10 and 11*.
- The Boys and Girls Club did not experience issues with flooding. *See Strategies 14 and 24*.

- Further education was needed for how to utilize public transit for evacuations and other services (DART bus is a flag-down service). Some of the elderly residents of the Arcadia Housing Authority utilize the DART. *See Strategy 21 and 22*.
- A food desert exists in the southwest corner of Arcadia. 18-wheeler pulls in on the 1st and 3rd Friday of every month to bring food to the Housing Authority parking lot. *See Strategy 8*.
- Many members of the Arcadia community are still recovering from Hurricane Ian, particularly in southwest Arcadia, including the removal of black mold. Many sustained additional damages during Hurricane Milton. Many of these homes include an older housing stock. *See Strategies 7, 10, 11, and 12*.
- Arcadia has no clinics nearby. The Housing Authority has a large parking lot to accommodate a mobile clinic if one were to try to reach this group. *See Strategy 8*.