



### Rising Together: Hernando County

### **Results of Climate Resilience Outreach Survey**



In Partnership with



and

Collaboratory Hernando

**August 10, 2017** 

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### **Findings**

### Residents' Strongest Concerns

- Water Quality was a strong concern for 65.3% of respondents, with 88.9% of households stating they have had to call the city about problems with their water, and 59.2% reporting experience with water contamination. A resident on Easy Street reported, "Ditches filled and flowing, coupled with the smell of contamination"
- ➤ Flooding, drainage, and mosquitos were top concerns of residents. 64.0% of respondents indicated that they had experience with mosquito infestation in their current home, and 43.8% of households reported drainage issues that cause standing water leading to mosquito infestations described in vivid terms such as "rampant", "hordes", an "insane amount" of mosquitos", "mosquito invasions", "large mosquito outbreaks", and "mosquito breeding grounds".

All residents responding to the survey (100%) indicated that they have problems with water or dampness in the house or yard when it rains, and all but one household reported experiencing flood-related impacts. Residents report 2-3 feet of floodwater on Mae View Circle and 3 ft of floodwater on Wood Drive.

### **Evacuation and Safety Concerns**

- A resident on Wood Drive reports that road work and busing are needed because flooding often leaves no way to get to the road out of the neighborhood.
- > 28.7% of respondents have had to evacuate because of storms in the past.
- A resident on Hale Avenue reports, "Our road washes out and floods often."
- ➤ A household on School Street reported "Water floods all the way up to the back side of the house and we can't get out due to standing water"
- Snakes were reported on Wood Drive, C Street, and Mae View Circle, with water moccasins reported on Josephine Street.

### Specific Health Concerns

- ➤ Water contamination: Fully 88.9% of households indicated they have had to call the city about problems they were experiencing with their water, and 59.2% of households reported experience with water contamination.
- Mosquito infestations: Residents expressed great concern about mosquito-borne diseases and the lack of mosquito control in their neighborhoods.
- ➤ Breathing or lung problems: 58.4% of respondents reported that someone in their household had breathing or lung problems, and 40.8% of households reported

that someone living there had asthma. This is 3.4 times the Hernando County 2013 asthma prevalence rate and 4.9 times the adult asthma prevalence in Florida of 8.3%<sup>1</sup>.

- Mold: Over half (58.2%) of residents surveyed reported experiencing mold at their current address. Mold is an asthma trigger.
- ➤ Heat: Only 4.4% of respondents reported that they or a member of their family had experienced heat-related problems.

### Extreme Weather and Sea Level Rise

- > 28.7% of respondents reported that they have had to evacuate due to a storm.
- 96.6% of respondents stated that they thought sea level rise was occurring in Hernando County.
- Most households widely underestimated their elevation, even though 60.7% of respondents reported that they were somewhat familiar with sea level rise.

The range of reported estimates of elevation was from 2 ft to 600 ft above sea level, and the actual range of elevations was 94.84 ft to 188.33 ft. Education about sea level rise should therefore include basic information about local topography so residents can understand the implications of sea level rise projections.

#### Level of concern with extreme weather:

- ➤ 48.3 % indicated they had a high level of concern for extreme weather,
- 25.8% had a medium level of concern and
- 24.7% had a very high level of concern.

<sup>&</sup>lt;sup>1</sup> "Adults Who Currently Have Asthma." *FLHealthCHARTS BRFSS Indicators Dataview Page*, Florida Department of Health, Division of Public Health Statistics & Performance Management., www.flhealthcharts.com/charts/Brfss/DataViewer.aspx?bid=20.

### **Executive Summary**

Rising Together: Hernando County 2017 is part of a broader environmental justice initiative led by Unitarian Universalist Justice Florida in vulnerable communities of coastal Florida. Rising Together partners congregations with existing leadership in vulnerable coastal communities to train residents to survey and educate their neighbors about preparation for and response to the health effects of extreme weather and climate hazards.

Funding: The pilot project, on which these efforts are based, was undertaken in Boca Raton and Delray Beach, Florida. The pilot project was funded with an EPA Environmental Justice Small Project Grant, and was used to create the training and outreach materials being used in this project, which are available on the website <a href="https://www.ReACTToolKit.net">www.ReACTToolKit.net</a>. The current 2017 replication phase of *Rising Together* has thus far included 4 additional projects in Ft. Myers, Hernando County, Naples, and Sarasota on Florida's west coast, as well as two projects on Florida's east coast in West Palm Beach and Miami. These projects have engaged overburdened communities in building coastal resilience, and in determining how the *Rising Together* materials and methods used in the communities can be improved.

<u>The Survey:</u> The survey used in this community was based on a survey created by Dr. Keren Bolter (Florida Atlantic University- Center for Environmental Studies), and was modified for use in Hernando County by UU in the Pines and Greater Love Outreach Ministries in consultation with public officials in Hernando County. Public officials consulted on survey content included: Hernando County Emergency Management.

Content developed in the *Rising Together: Ft. Myers 2017* project was used in the Hernando County survey. Questions about experiences with heat, in addition to questions that were provided by Dr. Sandra Norman (Florida Atlantic University - Department of History) and used for oral histories during the *Rising Together* Pilot Project were included in the Ft. Myers Surveys printed in English, Haitian Creole, and Spanish. Only the English survey was adapted for use in Hernando County. The survey used appears in Appendix B. (p. 28).

Study Area: A total of 94 residents of Hernando County were educated about the public health effects of climate change, primarily in the South Brooksville area of the county. They were surveyed about their concerns related to the health impacts of climate change and extreme weather, as well as their experiences with heat, flooding, mold, respiratory illness, evacuation and contaminated water. Five of the surveys had to be eliminated due to either incomplete addresses or duplication, so 89 surveys are the subject of the following analysis. See page 7 for details by zip code.

### **Resident Engagement**

An Outreach team led by Rev. Yvonne Woods used a church van to reach residents in the 34601 zip code of Hernando County. Ten residents were trained to survey and educate their neighbors about how to stay safe and healthy as the climate changes. Unfortunately, during the community survey, two Outreach Team members became ill and one suffered a family emergency. Therefore, seven Outreach Team members did the bulk of the outreach. The team educated and surveyed 94 households.

### **Languages Spoken in Surveyed Households**

Surveying and education materials were prepared in English. All residents in the area surveyed, spoke, and read English.

### **Survey Results**

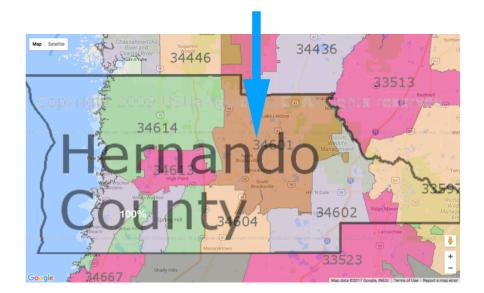
#### Section A

Section A of the survey was Background. Residents gave their street addresses, which were used for mapping and determination of demographics associated with their zip code in census data. Respondents surveyed resided predominantly in zip code 34601.

**Table 1.** Zip code data in the table below is from the 2010 Census.<sup>2</sup>

Zip Code	Number of Respondents in the Zip Code	Median Household Income	% Black or African American Population	% Hispanic Population	Avg. House Value In 2010
34601	94	\$36,326	10.4	5.4	\$89,700

**Figure 2.** Zip code 34601 is indicated on a Hernando County zip code map.<sup>3</sup>



<sup>2</sup> https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF

 $<sup>^3\ {\</sup>it http://www.zipmap.net/Florida/Hernando\_County.htm}$ 

### Survey: Section B

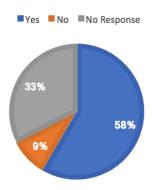
Section B of the survey focused on risks associated with climate and extreme weather. This included residents' experiences with storms, respiratory illness, and problems with heat and water quality. Results below appear in the order they were answered on the survey. Note that residents were surveyed prior to any educational discussion or exchange of information on Health and Climate.

### DO YOU HAVE PROBLEMS WHEN IT STORMS WITH WATER OR DAMPNESS IN THE HOUSE OR YARD?



Figure 3. All respondents (100%) reported that they have problems with water or dampness in the house or yard when it rains.

### DO YOU OR ANYONE IN YOUR FAMILY HAVE BREATHING OR LUNG PROBLEMS?



**Figure 4.** More than half of respondents (58.4%) reported that someone in their household has breathing or lung problems.

### HAVE YOU EVER HAD TO EVACUATE BECAUSE OF STORMS

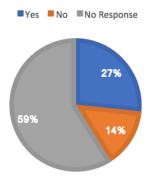
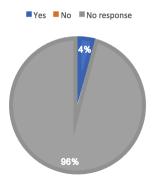


Figure 5. Although 58.9% of residents did not respond to this question, 26.7% of households surveyed have had to evacuate due to storms and 14.4% reported that they had not.

### HAVE YOU OR ANYONE IN YOUR FAMILY EVER EXPERIENCED HEAT-RELATED PROBLEMS?



**Figure 6.** Only 4.4% of respondents reported that they or a member of their family had experienced heat-related problems.

### HAVE YOU EVER HAD TO CALL THE CITY ABOUT PROBLEMS WITH YOUR WATER?

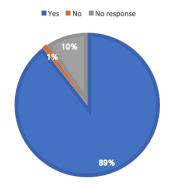
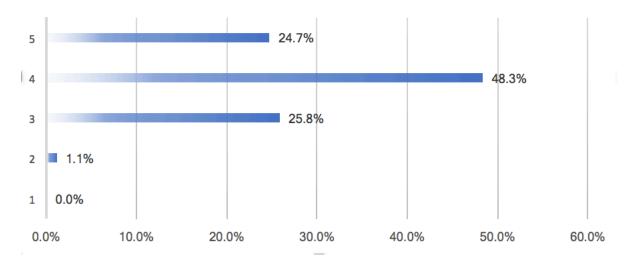


Figure 7. Fully 88.9% of households responding indicated that they have had to call the city about problems they were experiencing with their water.

Respondents were asked to rate their overall level of concern with extreme weather for Hernando County. They chose from the following responses:

1-None, 2-Low, 3-Medium, 4-High and 5-Very High.

# WHAT IS YOUR OVERALL LEVEL OF CONCERN ABOUT EXTREME WEATHER FOR HERNANDO COUNTY?

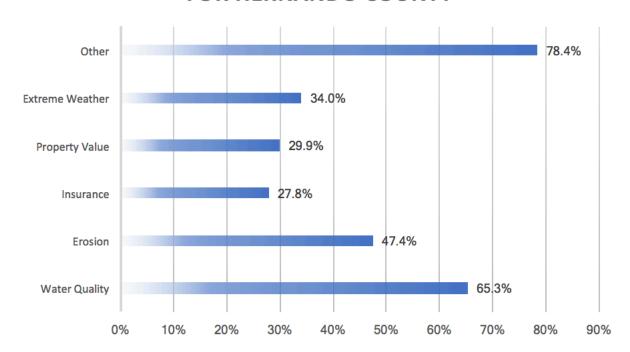


**Figure 8.** Almost half of survey respondents (48.3%) reported a high level of concern with extreme weather, followed by a medium level of concern (25.8%), and a very high level of concern (24.7%). No respondents indicated a lack of concern with extreme weather in Hernando County, and only 1.1% reported a low level of concern.

### **Residents' Strongest Concern for Hernando County**

The Sea Level Rise Risk Perception Survey asked respondents to choose their strongest concern for Hernando County from six multiple choice options: Water Quality, Insurance, Erosion, Property Value, Extreme Weather and Other, with a blank to record Other concerns. There were 294 concerns reported from the 95 responding households. The percentages below reflect all selections of each concern as a percentage of the 95 responding households.

### PLEASE CHOOSE YOUR STRONGEST CONCERN FOR HERNANDO COUNTY



**Figure 9.** Respondents could select more than one concern in response to the question. 78.4% of respondents chose "Other" as their strongest concern for Hernando County. The comments explaining the "other" concerns are listed on pages 12-14, with flooding, drainage or mosquitos appearing in 82.0% of the "Other" comments. Water Quality (65.3%), Erosion (47.4%), Extreme Weather (34.0%), Property Value (29.9%) and Insurance (27.8%) were the remaining concerns, listed in decreasing order.

### **Comments Explaining Residents' Strongest Concerns**

### **Water Quality Comments**

A Street	Poor drainage
Bethune Street	Increasing levels of good health and cleaning up local waters
C Street	Health related issues caused by standing waters
Easy Street	Disease from mosquitos, algae, mold, etc. caused by poor drainage and flooding when it rains
Hazel Avenue	Contaminated water supplies
Oaks Apartments	Disease from mosquitos, algae, mold, etc. caused by poor drainage
School Street	Disease from mosquitos, algae, mold, etc.
Wood Drive	Disease from mosquitos, algae, mold, etc. caused by poor drainage
Wood Drive	Mosquitos caused by poor water drainage
Wood Drive	Disease from mosquitos, algae, mold, etc., and from snakes

### **Extreme Weather Comments**

Hazel Avenue	Mosquito control
Josephine	Water levels have caused the appearance of moccasins in the neighborhood

### Other:

A Street	Help for the elderly living in this area
A Street	For health reasons, we need something done to improve drainage
B Street	Health concerns
B Street	With age being a factor, I'm concerned with the mold because of breathing issues, along with the mosquitos
B Street	We need improvements in health-related roads, streets and drainage
B Street	Diseases caused by mosquitos
Bethune Street	A large number of health problems in the community
Duke Street	Standing water and flooding caused by poor drainage systems
Duke Street	Being sick from mold
Eastside Avenue	Asthma events in my neighborhood
Easy Street	Diseases caused by mosquitos, algae and mold
Easy Street	Concerns are high for all flooding and water issues
Easy Street	Water backed up into yard due to poor drainage and high flood levels
Easy Street	Poor drainage causes standing water and large mosquito outbreaks
Easy Street	Flooding and poor drainage
Hazel Avenue	Mosquitos

Hazel Avenue	Flooding when it rains and poor drainage causing mosquito outbreaks
Hazel Avenue	Diseases caused by mosquitos, algae and mold
Hazel Avenue	High levels of disease caused by mosquitos, algae, and mold
Hazel Avenue	Diseases caused by mosquitos, algae, mold, etc.
Hazel Avenue	Diseases caused by mosquitos, algae, and mold
Hazel Avenue	Mosquito-caused diseases
Hazel Avenue	Water flooding my yard
Hazel Avenue	Standing water and mosquitos
Leonard Street	Mosquitos cause all types of diseases, and we have open ditches and flooding problems
Saint Frances	Extreme flooding and poor drainage!
School Street	Mosquitos caused by poor drainage and flooding
School Street	Poor drainage and mosquitos
School Street	Water floods all the way up to the back side of the house and we can't get out due to standing water
School Street	Poor drainage and flooding causes outbreaks of mosquitos
Stubbs	Diseases caused by mosquitos, algae, mold, etc.
Stubbs	An "insane amount" of mosquitos from flooding and standing water!

### What flood related impacts have you experienced in your neighborhood?

### Residents' Comments Regarding Flooding and Drainage

A Street	Floods when it rains
A Street	Flooding when it rains
A Street	My area holds water so mosquitos are very bad. In addition, there is much water, so we have seen mold also.
B Street	Ditches overflowing into yards and streets
B Street	Water running through my front yard and out the back
B Street	Mosquitos and overflowing ditches
B Street	Flooding that leaves standing water in ditches, which become mosquito breeding grounds
Bethune Street	<b>Ditches overflowing</b> and <u>drainage</u> problems that contribute to health issues
Bethune Street	Flooding: My yard backs up to the point that I take off my shoes to go to my car, and the water has come into my home!
C Street	Overflowing ditches that are not well-maintained
Duke Street	The poor drains have contributed to mosquito outbreaks
Duke Street	Flooding and standing water in my yard
Eastside Avenue	Mosquito outbreaks that make asthma events worse
Easy Street	No <u>drainage</u> so we have water laying around that is causing increased mosquito populations
Easy Street	Water quality and rampant mosquitos
Easy Street	Flooding and poor drainage cause mosquito invasions!
Easy Street	Water backing up in my yard more than usual, and more than it has ever been!

Easy Street	The ditches in our neighborhood do not work, causing <b>standing water</b>
Easy Street	Mosquitos, mosquitos!
Hazel Avenue	Mosquitos
Hazel Avenue	Mosquito outbreaks
Hazel Avenue	Floods of mosquitos and mold
Hazel Avenue	Hordes of mosquitos
Hazel Avenue	Flooding water levels (actual running water)
Hazel Avenue	Flooding events
Hazel Avenue	Frequent water quality issues
Hazel Avenue	When it rains, we experience <b>heavy flooding</b> in the street
Hazel Avenue	Repeated flooding issues
Hazel Avenue	Mosquitos
Hazel Avenue	Flooding, coupled with temporary repairs that lead to mosquito outbreaks
Josephine	Flooding and snakes
Leonard Street	Mosquitos day or night - the government does not spray in this part of town
Oaks Apartments	Our road washes out and floods often
Saint Frances	Flooding leading to mosquito outbreaks
School Street	Poor drainage causing mosquitos and ditches that overrun!
School Street	Outbreaks by mosquitos caused by <b>standing water</b> due to <u>poor drainage</u> and <b>flooding</b> after rain events
School Street	Very poor water drainage
School Street	Frequent outbreaks of mosquitos

School Street	High water and mosquito infestation
School Street	Poor drainage and mosquito infestation
Stubbs	Water contamination
Stubbs	Flooding in yard, with washouts and exposures of tree roots
Wood Drive	Our drainage ditches need cleaning
Wood Drive	3 feet of <b>flooding</b> rain water
Wood Drive	Poor drainage causing standing water

### **Mapped Reports of Responding Households**

All households responding to the question, "What flood related impacts have you experienced in your neighborhood?" are mapped below. To obtain a link to the Google Map with all flooding comments from surveys, together with addresses, contact Janice T. Booher at JJLBooher@comcast.net. Comments regarding flooding are available by clicking the icons when the password is entered on the interactive Google map.

Icons with an X – indicate households that mentioned drainage in their comments

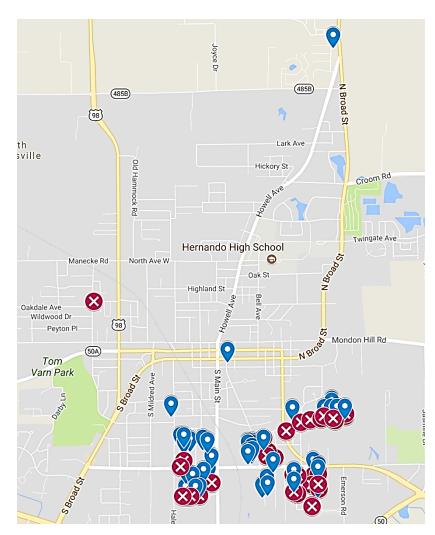


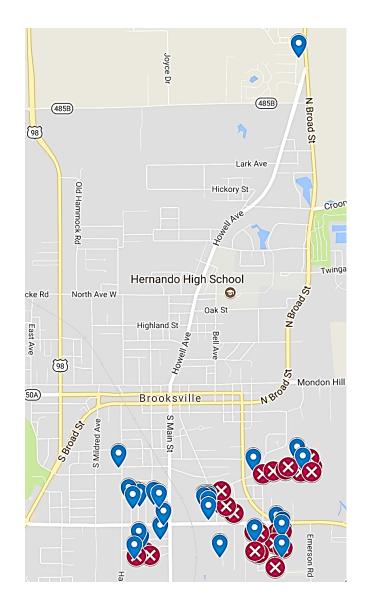
Figure 10. The geographic locations of all respondents are shown in the map above.

### **Mapped Reports of Households Commenting on Mosquitos**

### Legend

All households mapped mentioned mosquitos.

households that mention both mosquitos and drainage in their comments

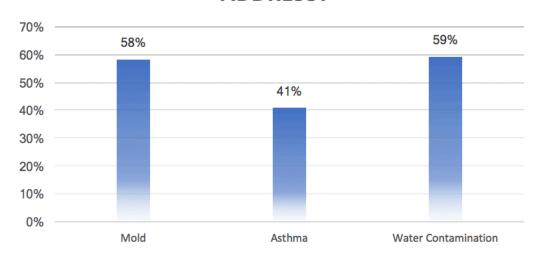


**Figure 11.** 64.0% of respondents indicated that they had experience with mosquito infestation in their current home, and 43.8% of households reported drainage issues.

### Mold, Asthma and Water Contamination

Residents were asked, "Have you or anyone in your household experienced any of the following at your current address?" Respondents circled Yes or No in response to Mold, Asthma and Water Contamination.

# HAVE YOU OR ANYONE IN YOUR HOUSEHOLD EXPERIENCED ANY OF THE FOLLOWING AT YOUR CURRENT ADDRESS?



**Figure 12.** Slightly more than a half (58.2%) of residents surveyed reported experiencing mold at their current address. Asthma was reported by 40.8% of responding households, and 59.2% of households reported experience with water contamination.

Florida CHARTS reports the Hernando County adult asthma prevalence in 2013 was 12.1%. This means that the prevalence of asthma among residents responding to the survey (40.8%) is 3.4 times the 2013 Hernando County prevalence. It is therefore important that 58.2% of households surveyed also experienced mold, because mold is a common asthma trigger.

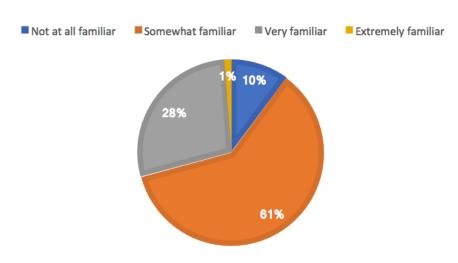
<sup>&</sup>lt;sup>3</sup> "Adults Who Currently Have Asthma." *FLHealthCHARTS BRFSS Indicators Dataview Page*, Florida Department of Health, Division of Public Health Statistics & Performance Management., www.flhealthcharts.com/charts/Brfss/DataViewer.aspx?bid=20.

<sup>&</sup>lt;sup>4</sup> "Common Asthma Triggers." *Centers for Disease Control and Prevention*. Centers for Disease Control and Prevention, 20 Aug. 2012. Web. 16 Feb. 2017. https://www.cdc.gov/asthma/triggers.html

### Section C: Land Elevation, Water Levels and Storms

Residents completed the survey prior to hearing information about the public health effects of climate change. The first survey question established respondents' self-reported familiarity with sea level rise.

### HOW WOULD YOU RATE YOUR EXISTING KNOWLEDGE ABOUT SEA LEVEL RISE?



**Figure 13.** Fully 60.7% of respondents reported that they were somewhat familiar with sea level rise. And 28.1% reported that they were very familiar with sea level rise. Only 1.1% of respondents reported that they were extremely familiar with sea level rise, and 10.1% reported that they were very familiar with it, indicating a need for further outreach and education.

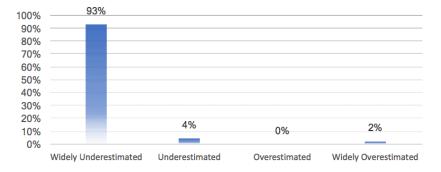
### How Many Feet do you Estimate Your Home to be Above Mean Sea Level?

Residents' responses to the question, "How many feet do you estimate your home to be above mean sea level?" were compared against the actual elevations of their homes. The actual elevations were obtained by entering the address into the Eyes on the Rise<sup>5</sup> The percentage difference between the actual elevation and the elevation entered by the respondent was calculated. The responses were characterized as indicated in the table below.

**Table 2.** Characterization of responses

Widely underestimated	50% or more less than their actual elevation
Underestimated	Between 0 and 50% less than their actual elevation
Exact	Actual Elevation from Eyes On The Rise
Overestimated	Between 0 and 50% more than their actual elevation
Widely Overestimated	50% or more over their actual elevation

## HOW MANY FEET DO YOU ESTIMATE YOUR HOME TO BE ABOVE MEAN SEA LEVEL?



**Figure 14.** Most residents widely underestimated their elevation (93.3%) or underestimated it (4.5%). Zero respondents overestimated their elevation, and 2.2% overestimated it. This means that most people who took the survey overestimated their risk from sea level rise based on elevation alone. The range of reported estimates of elevation was from 2 ft to 600 ft above sea level, and the actual range of elevations was 94.84 ft to 188.33 ft. Education about sea level rise should therefore include basic information about local topography so residents can understand the implications of sea level rise projections.

McGillicuddy, Dan. "Eyes on the Rise." Citizen Eyes. FIU GIS Center, n.d. Web. 02 Apr. 2017. <a href="http://citizeneyes.org/app/">http://citizeneyes.org/app/</a>.

This is a project of Unitarian Universalist Justice Florida, led in Hernando County by

UU Church in the Pines in partnership with Greater Love Outreach Ministries.

This project was funded in part by the Unitarian Universalist Fund for Social Responsibility.

This project was funded in part by the UUFBR Endowment Fund.

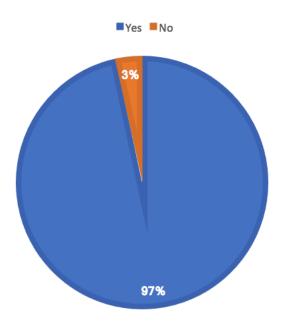
Development of the ReACT Tool Kit and the Pilot Project was funded by EPA Environmental Justice Grant

#EQ-00D35415-0 awarded to the Green Sanctuary Committee of the UU Fellowship of Boca Raton.

### Do you think that Sea Level Rise is Occurring in Hernando County Today?

Canvassers were instructed to give the survey to residents prior to educating them about the health effects of sea level rise. Therefore, this result documents residents' perceptions prior to outreach education.

### DO YOU THINK THAT SEA LEVEL RISE IS OCCURRING IN HERNANDO COUNTY TODAY?



**Figure 15.** Fully 96.6% of respondents surveyed stated that they thought sea level rise is occurring in Hernando County, with only 3.4% stating that they did.

### **Hernando County Contributors to Project Success**

**Greater Love Outreach Ministries** 

Community and Clerical Leadership Pastor Yvonne Woods

**UU Church in the Pines** 

Climate Leaders Irene Keim, Ellen Paul

**Collaboratory Hernando** 

Facilitator Robert Keim

**Outreach Team Members** 

Wanda Graham Rashawn Smith
Tawanna Baumgardner TuKierre Bostic
Nikuya Brown Nicki Washington

**Outreach Team Supporters** 

Jakaria Williams Octavia Peterson Faheem Taalin Din Adrian Castillo

**Government Officials** 

Hernando County Emergency Management

### Appendix A

Health and Climate Outreach Sheet (English) – p. 27 NOAA Extreme Weather Information Sheet – pp. 28-29

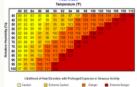
### Rising Together: Temperature, Water, Health and Strength

Modified by Greater Love Outreach Ministries and UU Church in the Pine

Sign Up for telephone alerts https://public.coderedweb.com

#### Watch for Heat Index and Air Quality Alerts

- Information about the heat index can be found at www.nws.noaa.gov/om/heat/heat-illness.shtml
- Get air quality reports from www.aimow.gov, or call 561 837-5092 to hear report.
- Heat Index over 103°, be cautious! Vulnerable populations are at risk with a the heat index of 91°
- Remain indoors in air-conditioned places during heat waves and poor air quality days.
- If outdoors, avoid strenuous activity, stay hydrated.



### **Be Safe During Storms and Floods**

- Keep storm drains, canals and gutters clear of debris to prevent floods and water damage.
- Stay Informed. Create a plan with your family and an emergency kit prepared, before an emergency. Communicate with family, friends and neighbors about your emergency plan.
- If you shelter in place, stock 1 gallon of water per person, per day; a 4-5 day supply, plus food.
- STAY OUT of floodwaters. 6" of moving water can sweep you off your feet. Water depth is difficult to gauge and hazards could be submerged.

### **Assume Standing Floodwater is Contaminated**

- Floodwaters are often contaminated with fuel, chemicals, sewage and bacteria.
- Avoid ALL contact with floodwaters, and avoid inhaling evaporating fumes.
- Clean all hard surfaces with a solution of 1.5 cup bleach to 1 gallon of water.
- Wear rubber boots and gloves and a mask during cleanup.

#### **Heed the Boil Water Alert Guidelines**

- Don't drink, make ice, prepare food or brush teeth with tap water. Use bottled water if possible.
- Don't wash dishes, glasses, or cutlery in tap water. Use boiled water.
- Don't wash hands, expose open wounds or bathe babies in tap water.
- Bringing water to a roiling boil for a minimum of 1 minute, or disinfect with 8 drops of unscented bleach per
- After a boil water alert is finished, run water from all faucets for 5 minutes and change filters of water and ice systems.

### Minimize Mold Growth

- Molds are allergens; some produce toxins or release volatile compounds from materials
- Active mold is black, green or pink. Inactive mold is powdery and often white, but will reactivate with moisture.
- To prevent mold, dry things as quickly as possible.
- Throw out items that have been wet for more than 48 hours. Freezing deactivates mold.
- Homeowners can clean moldy areas less than 10 square feet with a solution of 1 cup bleach per 1 gallon of water. Wear gloves and a mask. Professionals should address larger mold areas and clean air-conditioning systems.

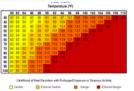
#### **Limit Exposure to Mosquitos and Algae**

- Eliminate mosquito-breeding areas. Drain items that collect water outdoors including flowerpots, birdbaths, buckets, drums, child pools, etc.
- Minimize mosquito bites. Wear long sleeves, long pants and socks outdoors, especially around dawn and dusk.
- Use insect repellent with DEET or oil of lemon eucalyptus. Limit DEET exposure in young children by washing it off
- Report algae blooms to Florida DEP, Bureau of Labs (850) 245-8159. Algae can be toxic and must be tested.



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#### **POLK**

Emergency Management	863-298-7000
Sheriff www.polk-county.net/emergence	cy-management
Sheriff	863-298-620
Auburndale Police863-965-5555 Fire	863-965-5522
Bartow Police863-534-5034 Fire	863-534-5044
Davenport Police863-419-3306 Fire	
Haines City Police863-421-3636 Fire	863-421-3611
Lake Alfred Police & Fire	863-291-5200
Lake Hamilton Police	863-439-1561
Lakeland Police863-834-6900 Fire	863-834-8200
Lake Wales Police863-678-4223 Fire	863-678-4203
Winter Haven Police863-401-2256 Fire	863-291-5677

#### SUMTER

Emergency Management	352-689-4400
http://sumtercountyfl.gov/718/Emerger	ncy-Management
Sheriff352-569-1600	or 352-728-6909
Sumter County Fire	352-689-4400
Center Hill Police	352-793-4609
Wildwood Police	

#### **NATIONAL INFORMATION**

American Red Cross
<u>www.redcross.org</u>
Centers for Disease Controlwww.cdc.gov
Environmental Protection Agencywww.epa.gov
Federal Emergency Management Agency (FEMA) 1-800-621-FEMA (3362)
<u>www.fema.gov</u>
Agencia Federal para el Manejo de Emergencias (FEMA)www.fema.gov/es
National Oceanic and Atmospheric Administration (NOAA) www.noaa.gov
National Weather Servicewww.weather.gov
Gulf of Mexico Disaster Response Center oceanservice.noaa.gov/hazards/drc/
National Data Buoy Centerwww.ndbc.noaa.gov
National Hurricane Centerwww.nhc.noaa.gov
National Centers for Environmental Information (NCEI) www.ncei.noaa.gov
National Environmental Satellite, Data, and Information Service (NESDIS)
www.nhc.noaa.gov/satellite.shtml
US Department of Homeland Securitywww.dhs.gov



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#### **NATIONAL HURRICANE CENTER MOBILE DATA**

Graphical Tropical Weather Outlook RSS/XML feed

#### **RADIO STATIONS**

WRUF 103.7 FM/850 AM (Gainesville) WFLF 540 AM (Maitland) WMGF 107.7 FM (Maitland) WOGK 93.7 FM (Ocala) WWKA 92.3 FM (Orlando) WMFE 90.7 FM (Orlando) WMTX 100.7 FM (Tampa) WWRM 94.9 FM (Tampa) WHPT 102.5 FM (Tampa)

#### NOAA WEATHER RADIO Not IT

Not manufactured by NOAA, NWR receivers can be purchased at many retail outlets and on the interne

NOAA Weather Radio (NWR) All Hazards is a nationwide network of radio stations broadcasting continuous weather information directly from a nearby National Weather Service office. NWR broadcasts National Weather Service warnings, watches, forecasts, and other hazard information 24 hours a day.

162.400 162.425 162.450 162.475 162.500 162.525 162.550 MHz MHz MHz MHz MHz MHz MHz Florida 511 is a toll-free service provided by the Florida Department of Transportation. 511 provides real-time updates on traffic conditions, including road and bridge closures, evacuation information, congestion, crashes and more. The 511 system provides information on all of Florida's interstates, toll roads and other major metropolitan roadways.

There are five convenient ways for all motorists to receive traffic updates:

- Call 511 toll free for updates in English and Spanish from any landline or mobile phone.
- Visit FL511.com for interactive roadway maps showing traffic congestion and crashes, travel times and traffic camera views
- Create a "My Florida 511" account on FL511.com to create custom routes and register for email, text or phone alerts.
- Download the free Florida 511 mobile app available on Google Play or Apple App Store.
- Follow statewide, regional or roadwayspecific Twitter feeds.

For more information, visit www.FL511.com

Florida Department of Transportation www.dot.state.fl.us

#### **PREPARED BY**

The Center for Coasts, Oceans & Geophysics of NOAA's National Centers for Environmental Information under NESDIS

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### Appendix B

Climate-Related Risk Perception in Hernando County (English) - p. 31

### Climate-Related Risk Perception in Hernando County

Investigators: Irene Keim and Jan Booher

This is a project of UU Justice Florida undertaken in Hernando County by Unitarian Universalist Church in the Pines in partnership with Greater Love Outreach Ministries.

Thank you for your interest in taking this brief survey. It may take about 5 minutes to answer the questions below. Your participation in this survey is completely voluntary and your responses will remain confidential. The purpose of the survey is to measure perceived risk to sea level rise in Hernando County, FL, and to document residents' concerns and experiences related to extreme weather, flooding, mold, and asthma.

By completing the survey, you give consent to participate in this study.

If you have questions about the study, please contact: Irene Keim  $\underline{iakeim1@gmail.com}$  or Jan Booher JJLBooher@comcast.net

This Survey was developed by Dr. Keren Bolter - FAU Center for Environmental Studies <a href="mailto:kbolter@fau.edu">kbolter@fau.edu</a>, with questions provided by Dr. Sandra Norman, FAU Department of History, and modified for Hernando County by Unitarian Universalist Church in the Pines in partnership with Greater Love Outreach Ministries.

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\* Required

### **Section A - Background Information**

1) What is your zip-code *	
Your answer	
2) What city do you live in? *	
Your answer	

3) What is the first line of your address? (ex. 235 NW 5 St)

Your answer

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### **Section B - Focusing on Risks Associated with Climate and Extreme Weather**

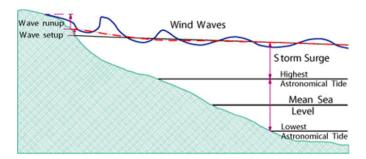
1. Do you have problems when it storms with water or dampness in the house or yard?
Yes
☐ No
2. Do you or anyone in your family have breathing or lung problems?
Yes
□ No
3. Have you ever had to evacuate because of storms?
Yes
□ No
4. Have you or anyone in your family ever experienced heat- related problems?
Yes
□ No
5. Have you ever had to call the city about problems with your water?
Yes
□ No

6.What is you for Hernand 1 = none / 2 = low	do Coun	ty?			t extrem	e weather
	1	2	3	4	5	
none	0	0	0	0	0	very high
7. Please cl	hoose yo	our stror	ngest co	ncern fo	r Hernan	do County:
☐ Water Qua	ality					
Erosion						
Insurance	<b>:</b>					
Property \	Value					
Extreme \	Veather					
Other						
8. Please be (optional) Your answer	riefly exp	olain you	ır chosei	n concei	rn:	
9. What floo neighborho These may includ Your answer	od?*	•				in your ponds. (optional)
Tour answer						
10. Have you the following Check those item	ng at you	ır curren	t addres	s?*	xperienc	ed any of
Mold						
Asthma						
☐ Water Co	ntaminatio	n				

### Section C - Land Elevation, Water Levels, and Storms

Sea level rise is an increase in height of the sea's surface relative to land.

Mean Sea Level (MSL) is the average surface height of the ocean, about halfway between low and high tide. Land elevation is measured as a height above MSL.



1.) How would you rate your existing knowledge about sea level rise? *
Not at all familiar
Somewhat familiar
☐ Very Familiar
Extremely familiar
2) How many feet do you estimate your home to be above mean sea level? * (If you don't know, please guess a number that seems reasonable to you.) Your answer
3) Do you think that sea level rise is occurring in Hernando County today? *
○ Yes
O No